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But the chief determinants of the longer-run trends in the general level of real wages and in the level of real wages in individual industries appear to be those with which we began our discussion.

RECENT PRODUCTIVITY TRENDS IN PERSPECTIVE

Recent events are always of special interest. We therefore now take a closer look at productivity and a few related changes since World War II, viewing them in the perspective of the full record. For the private domestic economy we find that:

Output per manhour (and much the same may be said of output per weighted manhour) rose between 1945 and 1957 at an average rate that was high, though not unprecedently so, for a twelve-year period. The postwar rate was significantly higher than the average rate over the full period 1919-57, and still more so than the rate over 1889-1957.

Tangible capital was pushed up at an extraordinarily high rate — faster than in any preceding period of similar length. Since output rose at a rate only moderately better than average, output per unit of tangible capital fell.

Output per unit of labor and capital combined rose during 1945-57 at a rate slightly better than the long-run average and about the same as the average for 1919-57.

Real hourly earnings in manufacturing — not including certain types of supplementary employee remuneration — rose about as rapidly as over the full period 1919-57, and therefore less rapidly over the postwar period than output per manhour and more rapidly than total productivity. The postwar difference between the annual rates for real hourly earnings in manufacturing and total productivity appears to have been about the same as the difference over the longer period 1919-57 and between 1889 and 1919.

Most of these facts have already been presented in the charts above. The set of calculations provided in Table 7 may be helpful. It should be emphasized that because of cyclical and other fluctuations in the figures, the average rates of change over the postwar period were calculated by comparing the average level in 1945-48 with the average in 1953-57; and that we are focusing on output, input, and earnings expressed only in real terms (that is, adjusted

for price change), and are thus passing over aspects of recent developments that are crucial for the problem of inflation.

It may surprise those people who have heard of the "new" technological age that output per manhour (and also output per weighted manhour) rose during the period after the war at an average rate that, though high, was within the range of experience for earlier periods of similar length. Even if the average postwar rate is calculated for the period beginning with 1947 and ending with 1955, it is not without an earlier parallel.

The index of output per unit of labor and capital combined is, of course, a weighted average of the labor and capital productivity indexes. Since output per unit of tangible capital fell substantially between 1945 and 1949, and then fluctuated about a fairly constant level, output per unit of labor and capital combined rose much less rapidly than output per manhour. The considerable diversity of experience to which total productivity was subjected during the postwar period averaged out to an annual rate of 2.1 per cent for the period as a whole — the same, as has been mentioned, as the average for the longer period 1919-57.

The rise in real hourly earnings relative to total productivity came mainly in the second half of the period. In manufacturing, for example (which appears to have had a fairly typical experience),²⁷ real hourly earnings rose between 1948-53 and 1953-57 about five per cent more than total productivity. Over the full postwar period — comparing 1945-48 with 1953-57 — real hourly earnings in manufacturing rose at a rate approximately halfway between the

²⁷Indexes of real average (gross) hourly earnings of production workers or nonsupervisory employees in the nonagricultural industries for which data are available are as follows for selected periods:

	1945-1948	1948-1953	1953-1957
Metal mining	100.0	112.7	137.9
Railroads (Class I)	100.0	119.3	137.7
Bituminous coal mining	100.0	115.7	134.0
Building construction	100.0	111.1	131.0
Electric light and power	100.0	107.7	126.7
Manufacturing	100.0	109.2	125.5
Retail trade	100.0	108.0	123.6
Hotels (year-round)	100.0	107.1	123.3
Wholesale trade	100.0	106.4	123.1
Telephone	100.0	105.9	122.5
Laundries	100.0	101.0	107.6

(The hourly earnings are those reported by the U.S. Bureau of Labor Statistics, deflated by the BLS consumer price index. The averages are calculated with the terminal years — for example, 1945 and 1948, in the case of 1945-1948 — given half weight.)

TABLE 7

Rates of Increase in Productivity in the Private Domestic Economy,
and in Real Hourly Earnings in Manufacturing, 1945-1957

PRIVATE DOMESTIC ECONOMY					
	<i>Output per unweighted manhour</i>	<i>Output per weighted manhour</i>	<i>Output per unit of tangible capital</i>	<i>Output per unit of labor and capital combined</i>	<i>Real Hourly Earnings in Manufac- turing</i>
Annual Percentage Rate of Change					
1945-46	-5.1	-5.2	-6.5	-5.5	-2.1
1946-47	0.4	-0.6	-2.4	-1.0	-0.5
1947-48	3.4	2.9	-1.4	2.0	1.4
1948-49	3.8	4.4	-4.6	2.3	4.8
1949-50	7.8	6.5	5.5	6.3	3.6
1950-51	2.5	1.5	0.3	1.3	0.5
1951-52	2.1	1.5	-0.3	1.1	2.7
1952-53	4.0	3.2	-0.2	2.4	5.1
1953-54	2.4	3.1	-4.4	1.2	1.9
1954-55	4.8	4.7	5.7	5.0	4.2
1955-56	0.8	0.6	-1.2	0.2	3.8
1956-57	2.5	2.4	-1.9	1.3	1.0
Average Annual Percentage Rate of Change					
1945-48 to 1948-53	3.4	2.8	-1.0	2.0	2.2
1948-53 to 1953-57	3.2	2.9	0.0	2.2	3.1
1945-48 to 1953-57	3.3	2.9	-0.5	2.1	2.7

Source: Tables A and C. The estimates for the more recent years are preliminary. In calculating the averages for 1945-48, 1948-53, and 1953-57, terminal years were given a weight of one-half.

corresponding rates for output per manhour and output per unit of labor and capital. Real hourly earnings in the economy as a whole seem to have risen more rapidly than in manufacturing, however, and therefore more rapidly than both output per manhour and total productivity during the postwar period. Since the economy-wide index of earnings covers supplementary employee benefits, and the manufacturing index does not, some difference in this direction is to be expected.²⁸ But the estimate for all workers is probably too rough to be taken seriously as an accurate indication of the trend over so short a period.

Indeed, in any analysis of trends in the postwar period it is necessary to keep in mind not only that there have been considerable year-to-year variations in the rate of growth in real wages, in pro-

²⁸See the discussion in the second paragraph following.

ductivity, and in the relation between the two, but also that the figures are subject to a considerable margin of error, especially large in proportion to the annual changes. Although the data for recent years are, as a rule, more complete and of better quality than those for the earlier decades, they suffer in some degree from the usual statistical deficiencies.

Further, the recent period has seen a number of developments that serve to feed doubts about the precision of the estimates. These include a growing disparity between hours worked and hours paid for, a matter stressed first by the presentation of two alternative estimates of output per manhour in the January 1958 Economic Report of the President and second by the prospective initiation by the Bureau of Labor Statistics of a periodic survey to measure the difference between hours paid for and hours worked in manufacturing industries.²⁹

Also of growing importance have been items of supplementary employee remuneration — “fringe benefits” — that do not enter the usual calculations of hourly earnings. In 1953 manufacturing establishments reporting such items to the Bureau of Labor Statistics paid out 7 cents per payroll hour for private pensions credits, 3 cents for “insurance, health, and welfare,” and 6.5 cents for such legally required payments as Old Age and Survivors insurance, unemployment and workmen’s compensation, and state temporary disability insurance.³⁰ The total of these amounted to almost 9 per cent of the 1953 payroll of reporting establishments. The percentage was undoubtedly smaller in earlier years and larger in later. The rise

²⁹The two Economic Report estimates of average annual percentage change in output per manhour in the private economy differ as follows with respect to growth between 1948-53 and 1953-57. (Year-to-year changes, of course, differ even more widely.) Based on manhours paid for (as estimated on the basis of Bureau of Labor Statistics data), output per manhour rose at an average annual rate of 3.0 per cent. Based on manhours worked (as estimated on the basis of Bureau of the Census data), the rate of increase was 3.5 per cent.

Kendrick’s series falls about midway between the two, though his index, like the second one above, is based primarily on hours worked. But there are other sources of difference between his and the other indexes in the choice of the weight-base and of employment estimates, and in the treatment of income on foreign assets.

³⁰*Problems in Measurement of Expenditures on Selected Items of Supplementary Employee Remuneration*, Bulletin No. 1186, Department of Labor, 1956. The study was undertaken by the Bureau of Labor Statistics with financial assistance from the National Bureau.

Kendrick’s index of real hourly earnings in the economy at large includes an allowance for these items, as estimated by the Department of Commerce.

in the real hourly earnings of factory workers in recent years has thus been understated.

Less clear in their effect on the postwar statistics are difficulties in the estimation of tangible capital. These have been caused by inflation, coupled with the prevalence of original-cost depreciation accounting; and by a number of temporary and permanent revisions in the internal revenue code governing the calculation of depreciation changes.

Developments since the war have affected not only the statistics that one must use to describe the course of events. As is always the case, these developments have also generated new factors that played a part in recent events. Some are factors that will persist and influence the trends of the future. Others will turn out to be peculiar to the period. A detailed study of the period is essential if the nature and significance of these new factors are to be assessed. Essential also is a study of the longer record. For only in the light of the longer record can the new factors be recognized and weighed.

Even our brief survey of this record suggests, however, that the postwar period probably resembles past periods more than it departs from them. In the recent, as in the early decades of the period since 1889, the *main* source of the rise in real wages is to be found not in special factors but in the persistent features of our economic development — the upward trend in productivity and the upward trend in tangible and other capital per worker.

TABLE A

Annual Indexes of Output, Input, and Productivity, 1889-1957
 Estimates for the Private Domestic Economy

YEAR	GROSS PHYSICAL OUTPUT	INPUT					
		Manhours		Tangible Capital		Total Input, Weighted ^a	
		Un-weighted	Weighted	Un-weighted	Weighted	Estimate A	Estimate B
1889	22.3	51.1	44.6	30.7	29.8	44.5	39.8
1890	24.2	53.0	46.2	32.2	31.1	46.3	41.3
1891	25.3	54.3	47.6	34.0	32.8	47.8	42.8
1892	27.7	56.1	49.5	36.0	34.8	49.6	44.8
1893	26.3	55.5	48.6	37.8	36.6	49.9	44.8
1894	25.5	53.5	46.1	39.1	37.7	49.0	43.6
1895	28.8	56.8	49.9	40.6	39.2	51.8	46.7
1896	28.1	56.8	49.9	42.1	40.6	52.3	47.2
1897	31.0	58.6	51.7	43.4	41.7	53.9	48.7
1898	31.6	58.9	51.9	44.8	43.1	54.6	49.3
1899	34.6	63.2	56.7	46.2	44.4	57.9	52.9
1900	35.5	63.9	57.5	47.7	46.1	58.9	54.0
1901	39.6	66.7	60.7	49.1	47.6	61.3	56.7
1902	39.8	69.6	64.3	50.6	49.3	63.7	59.7
1903	41.9	71.6	66.6	52.4	51.3	65.6	61.9
1904	41.2	70.6	64.9	53.7	52.8	65.4	61.3
1905	44.3	74.0	69.0	55.2	54.2	68.2	64.4
1906	49.6	77.0	72.4	57.4	56.3	71.0	67.5
1907	50.5	78.7	74.3	59.5	58.6	72.8	69.5
1908	46.0	75.3	70.1	61.2	60.4	71.2	67.4
1909	52.1	79.4	74.9	62.6	61.8	74.4	71.0
1910	52.5	81.5	77.5	64.4	63.7	76.4	73.3
1911	54.5	83.0	79.0	66.1	65.7	77.9	75.0
1912	57.3	85.6	82.2	67.5	67.3	80.2	77.7
1913	59.7	86.3	83.2	69.2	69.4	81.2	79.0
1914	54.8	84.7	80.7	71.0	71.5	80.7	78.0
1915	56.4	83.9	80.4	72.5	73.2	80.6	78.3
1916	65.1	90.0	88.3	73.6	74.4	85.1	84.1
1917	63.0	91.9	90.7	75.0	76.3	86.8	86.3
1918	67.5	91.1	90.0	76.3	78.4	86.7	86.5
1919	69.7	88.2	86.7	77.5	80.3	85.1	84.9
1920	70.0	89.4	87.9	78.9	82.0	86.4	86.2
1921	67.5	80.5	77.8	79.8	83.2	80.3	79.3
1922	71.8	86.5	84.6	80.8	83.8	84.9	84.4
1923	82.0	93.4	93.0	82.9	85.5	90.4	90.9
1924	83.6	91.2	90.0	85.5	87.7	89.6	89.3

Source: John Kendrick, "Productivity Trends in the United States" (in preparation), Appendix A.

^aEstimate A is a weighted combination of unweighted manhours and unweighted tangible capital. Estimate B is a weighted combination of weighted manhours and weighted tangible capital.

PRODUCTIVITY: OUTPUT PER

<i>Manhour</i>		<i>Unit of Tangible Capital</i>		<i>Unit of Total Input (weighted)</i>		YEAR
Un-weighted	Weighted	Un-weighted	Weighted	Estimate A	Estimate B	
43.6	50.0	72.6	74.8	50.1	56.0	1889
45.7	52.4	75.2	77.8	52.3	58.6	1890
46.6	53.2	74.4	77.1	52.9	59.1	1891
49.4	56.0	76.9	79.6	55.8	61.8	1892
47.4	54.1	69.6	71.9	52.7	58.7	1893
47.7	55.3	65.2	67.6	52.0	58.5	1894
50.7	57.7	70.9	73.5	55.6	61.7	1895
49.5	56.3	66.7	69.2	53.7	59.5	1896
52.9	60.0	71.4	74.3	57.5	63.7	1897
53.7	60.9	70.5	73.3	57.9	64.1	1898
54.7	61.0	74.9	77.9	59.8	65.4	1899
55.6	61.7	74.4	77.0	60.3	65.7	1900
59.4	65.2	80.7	83.2	64.6	69.8	1901
57.2	61.9	78.7	80.7	62.5	66.7	1902
58.5	62.9	80.0	81.7	63.9	67.7	1903
58.4	63.5	76.7	78.0	63.0	67.2	1904
59.9	64.2	80.3	81.7	65.0	68.8	1905
64.4	68.5	86.4	88.1	69.9	73.5	1906
64.2	68.0	84.9	86.2	69.4	72.7	1907
61.1	65.6	75.2	76.2	64.6	68.2	1908
65.6	69.6	83.2	84.3	70.0	73.4	1909
64.4	67.7	81.5	82.4	68.7	71.6	1910
65.7	69.0	82.5	83.0	70.0	72.7	1911
66.9	69.7	84.9	85.1	71.4	73.7	1912
69.2	71.8	86.3	86.0	73.5	75.6	1913
64.7	67.9	77.2	76.6	67.9	70.3	1914
67.2	70.2	77.8	77.0	70.0	72.0	1915
72.3	73.7	88.5	87.5	76.5	77.4	1916
68.6	69.5	84.0	82.6	72.6	73.0	1917
74.1	75.0	88.5	86.1	77.9	78.0	1918
79.0	80.4	89.9	86.8	81.9	82.1	1919
78.3	79.6	88.7	85.4	81.0	81.2	1920
83.8	86.8	84.6	81.1	84.1	85.1	1921
83.0	84.9	88.9	85.7	84.6	85.1	1922
87.8	88.2	98.9	95.9	90.7	90.2	1923
91.7	92.9	97.8	95.3	93.3	93.6	1924

(table concludes on next pages)

TABLE A, *concluded*

YEAR	GROSS PHYSICAL OUTPUT	I N P U T					
		<i>Manhours</i>		<i>Tangible Capital</i>		<i>Total Input, Weighted^a</i>	
		Un- weighted	Weighted	Un- weighted	Weighted	Estimate A	Estimate B
1925	86.6	94.5	93.6	88.2	89.8	92.7	92.5
1926	92.0	97.8	97.5	91.6	92.7	96.0	96.1
1927	93.0	97.2	97.3	94.6	95.4	96.5	96.8
1928	93.9	98.1	97.9	97.5	97.7	97.9	97.8
1929	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1930	90.8	93.1	91.9	101.7	102.0	95.2	94.3
1931	84.0	85.4	82.3	101.9	102.1	89.4	87.1
1932	71.8	75.6	71.2	100.3	99.9	81.5	78.1
1933	70.0	74.9	70.5	97.6	96.5	80.3	76.7
1934	76.9	73.6	70.8	95.2	93.8	78.8	76.3
1935	83.8	77.6	74.9	94.2	92.5	81.6	79.1
1936	94.5	83.4	82.6	94.1	92.5	86.0	85.0
1937	101.0	88.6	87.4	95.3	93.8	90.2	88.9
1938	95.4	81.0	79.3	95.9	94.6	84.4	82.8
1939	104.1	85.2	84.2	96.0	94.3	87.7	86.6
1940	110.2	88.9	88.6	97.3	95.9	90.9	90.3
1941	130.4	96.9	99.3	99.7	99.0	97.6	99.3
1942	142.6	104.4	108.6	101.6	101.7	103.9	107.1
1943	153.1	108.2	114.2	101.6	101.8	106.8	111.5
1944	162.8	106.7	112.7	100.7	100.9	105.5	110.1
1945	160.4	100.9	106.3	99.7	99.8	100.7	104.9
1946	153.5	101.7	107.3	100.9	102.1	101.6	106.2
1947	157.4	103.9	110.6	104.0	107.3	104.0	110.0
1948	163.8	104.5	111.9	108.0	113.3	105.4	112.3
1949	162.9	100.1	106.6	112.2	118.1	102.8	109.1
1950	178.7	101.9	109.8	116.3	122.8	105.0	112.6
1951	188.5	105.1	114.4	121.5	129.1	108.6	117.5
1952	194.0	105.7	115.7	125.8	133.2	110.0	119.4
1953	202.9	106.3	117.2	129.6	139.6	111.3	121.9
1954	199.5	102.1	111.8	133.0	143.6	108.6	118.5
1955	217.3	106.1	116.3	137.1	148.0	112.6	122.9
1956	222.6	107.8	118.4	142.1	153.4	115.0	125.7
1957	225.2	106.4	116.9	146.5	158.2	114.8	125.5

PRODUCTIVITY: OUTPUT PER

<i>Manhour</i>		<i>Unit of Tangible Capital</i>		<i>Unit of Total Input (weighted)</i>		YEAR
Un-weighted	Weighted	Un-weighted	Weighted	Estimate A	Estimate B	
91.6	92.5	98.2	96.4	93.4	93.6	1925
94.1	94.4	100.4	99.2	95.8	95.7	1926
95.7	95.6	98.3	97.5	96.4	96.1	1927
95.7	95.9	96.3	96.1	95.9	96.0	1928
100.0	100.0	100.0	100.0	100.0	100.0	1929
97.5	98.8	89.3	89.0	95.4	96.3	1930
98.4	102.1	82.4	82.3	94.0	96.4	1931
95.0	100.8	71.6	71.9	88.1	91.9	1932
93.5	99.3	71.7	72.5	87.2	91.3	1933
104.5	108.6	80.8	82.0	97.6	100.8	1934
108.0	111.9	89.0	90.6	102.7	105.9	1935
113.3	114.4	100.4	102.2	109.9	111.2	1936
114.0	115.6	106.0	107.7	112.0	113.6	1937
117.8	120.3	99.5	100.8	113.0	115.2	1938
122.2	123.6	108.4	110.4	118.7	120.2	1939
124.0	124.4	113.3	114.9	121.2	122.0	1940
134.6	131.3	130.8	131.7	133.6	131.3	1941
136.6	131.3	140.4	140.2	137.2	133.1	1942
141.5	134.1	150.7	150.4	143.4	137.3	1943
152.6	144.5	161.7	161.3	154.3	147.9	1944
159.0	150.9	160.9	160.7	159.3	152.9	1945
150.9	143.1	152.1	150.3	151.1	144.5	1946
151.5	142.3	151.3	146.7	151.3	143.1	1947
156.7	146.4	151.7	144.6	155.4	145.9	1948
162.7	152.8	145.2	137.9	158.5	149.3	1949
175.4	162.8	153.7	145.5	170.2	158.7	1950
179.4	164.8	155.1	146.0	173.6	160.4	1951
183.5	167.7	154.2	145.6	176.4	162.5	1952
190.9	173.1	156.6	145.3	182.3	166.4	1953
195.4	178.4	150.0	138.9	183.7	168.4	1954
204.8	186.8	158.5	146.8	193.0	176.8	1955
206.5	188.0	156.7	145.1	193.6	177.1	1956
211.7	192.6	153.7	142.4	196.2	179.4	1957

TABLE B
Summary Statistics for Individual Industrial Groups and Divisions
Indexes for 1953 Relative to 1899

	I N P U T			O U T P U T P E R U N I T O F				Real Hourly Earnings	Price of Product
	Output	Labor	Tangible Capital	Total	Labor	Tangible Capital	Total Input		
Farming, based on gross output	203	} 62	151	83	} 330	134	244	} 247	420
Farming, based on net output	153								
Mining									
Metals	279	71	121	88	391	231	317	239	220
Anthracite coal	51	35	50	35	148	103	147	362	436
Bituminous coal	237	95	267	103	248	89	230	378	725
Oil and gas	2,434	401	855	486	.607	285	501	409	613
Nonmetals	671	143	239	172	470	280	390	158	210
Manufacturing									
Foods	554	220	299	230	252	186	241	308	355
Beverages	475	196	202	200	242	235	238	224	283
Tobacco	661	46	700	106	1,442	94	620	276	257
Textiles	382	108	177	118	354	216	325	378	308
Apparel	552	205	550	224	269	100	246	313	283
Lumber products	128	67	152	72	192	84	177	334	1,061
Furniture	486	240	248	233 ^b	202	196	208 ^b	326	479
Paper	1,406	342	765	391	411	184	359	405	345
Printing, publishing	1,058	238	282	245	444	376	432	321	571
Chemicals	2,335	400	942	537	583	248	435	377	178
Petroleum, coal products	2,875	385	1,431	831	746	201	346	577	194
Rubber products	4,953	507	1,399	564	978	354	878	371	58
Leather products	185	90	115	94	206	161	198	306	432

TABLE B, concluded

	INPUT			OUTPUT PER UNIT OF				Real Hourly Earnings	Price of Product
	Output	Labor	Tangible Capital	Total	Labor	Tangible Capital	Total Input		
Manufacturing (cont.)									
Stone, clay, glass	757	171	348	184	443	217	412	334	334
Primary metals	910	267	629	321	341	145	284	366	245
Fabricated metals	1,133	358	638	389	316	178	291	347	319
Machinery, nonelectric	1,046	384	581	418	272	180	251	333	339
Electrical machinery	6,264	1,693	2,742	1,854	370	228	338	332	276
Transportation equipment	4,059	615	1,026	669	661	396	608	398	415
Miscellaneous mfg.	1,038	331	556	355	313	187	292	223	314
Transportation*									
Railroads	396	91	152	102	437	261	390	352	191
Local transit	296	84	50	80	351	595	372	296	270
Communications, public utilities									
Telephone	4,048	1,391	1,704	1,318 ^b	291	238	307 ^b	308	230
Telegraph	310	130	76	118	239	409	263	306	286
Electric light and power	24,550	964	2,035	1,390	2,560	1,207	1,764	289	62
Manufactured gas	846	69	75	72	1,219	1,129	1,176	431	86
Natural gas	3,311	673	3,551	1,118	492	93	296	333	442

Source: Kendrick, "Productivity Trends in the United States" (in preparation). Slight inconsistencies are due to rounding of figures.

*The index in Chart 4 covers also waterways, motor transport, pipelines, airlines, and services allied to transportation.

^bInconsistency due to chaining indexes calculated on several weight-bases. See Kendrick's forthcoming report for a full explanation.

TABLE C

Indexes of Real Hourly Earnings, 1889-1957

Year	Private Domestic Economy,		Year	Private Domestic Economy,	
	Manufacturing, Wage Earners ^a	All Workers ^b		Manufacturing, Wage Earners ^a	All Workers ^b
1889	47.3	47.0	1924	96.9	
1890	48.5		1925	94.4	
1891	48.5		1926	93.9	
1892	48.9		1927	96.0	
1893	51.3		1928	99.3	
1894	49.5		1929	100.0	100.0
1895	50.1		1930	100.1	
1896	52.1		1931	102.6	
1897	51.2		1932	98.9	
1898	50.2		1933	103.6	
1899	53.1	53.4	1934	120.5	
1900	54.4		1935	121.3	
1901	56.1		1936	121.4	
1902	58.1		1937	131.5	125.3
1903	58.3		1938	134.6	
1904	57.4		1939	138.0	
1905	59.0		1940	143.0	
1906	61.8		1941	150.1	
1907	61.3		1942	158.5	
1908	60.4		1943	168.1	
1909	61.8	62.3	1944	175.4	
1910	62.9		1945	172.3	
1911	64.2		1946	168.6	
1912	64.6		1947	167.8	
1913	67.4		1948	170.1	166.0
1914	66.5		1949	178.2	
1915	64.7		1950	184.6	
1916	70.3		1951	185.5	
1917	70.6		1952	190.6	
1918	74.6		1953	200.3	210.3
1919	83.5	77.5	1954	204.2	
1920	83.9		1955	212.7	
1921	87.3		1956	220.7	
1922	88.6		1957	223.0	237.6
1923	92.7				

^aSource: Hourly earnings for 1919-57 are those of the Department of Labor; 1890-1914, Rees, "Real Wages in Manufacturing, 1890-1914" (typescript, 1958); 1914-19, interpolated by the index for payroll manufacturing industries given by Douglas, *Real Wages in the United States, 1890-1926* (Houghton-Mifflin, 1930); 1889, Rees's figure for 1890 extrapolated by data in Long, *Wages and Earnings in the United States: 1860-1890*, in press. The cost of living index for 1914-57 is that of the Department of Labor; 1890-1914, Rees; 1889-90, Long.

^bSource: Kendrick, Chapter V. This index is derived by multiplying the index of real gross national product per unweighted manhour (in the private domestic economy) by an index of the estimated percentage of national income (also for the private domestic economy) received by wage earners, salaried workers and entrepreneurs. The deflator involved is the implicit index

of price of the national product at "factor cost." Alternative indexes of real hourly earnings, obtained by deflating by the implicit index of national product price at "market" (A, below) or by the BLS-Rees-Long index of the cost of living (B, below), are as follows:

	A	B
1889	52.1	54.0
1899	59.2	60.3
1909	64.9	74.3
1919	76.6	82.3
1929	100.0	100.0
1937	120.5	118.2
1948	171.8	176.7
1953	209.6	215.0
1957	236.8	249.0

Index A is given in the work by Kendrick cited. It should be noted that Kendrick's deflators, and the deflators in the sources he used, were calculated before the new indexes of Rees and Long were available.

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