REAL WAGES IN MANUFACTURING
1890–1914

CHAPTER 1

Introduction and Summary

THE economic history of the United States has been marked by a strong and persistent rise in real wages. Only one period has seemed to stand out as an exception to this trend—the twenty-five years just before World War I. Previous students of this period have concluded that real wages from 1890 to 1914 were essentially stationary.

Such a long break in the upward trend of real wages could occur for one of two basic reasons. Perhaps the economy as a whole was stagnant during this period and per capita national income did not rise. What we know about changes in productivity and improvements in technology during the period seems to rule out this explanation. Or perhaps there were special factors affecting the labor market that prevented wage earners from sharing in the rise of per capita income.

The second explanation is more plausible than the first. The period 1890–1914 differs from earlier periods in that the frontier had closed by about 1890, in the sense that little good agricultural land was still available for original settlement. The period also differs from both earlier and later periods in the volume and composition of immigration. Many more immigrants came to the United States in this period than in any other of equal length, and more of them came from places where levels of skill and education were low. These forces could have worked to lower the incomes of wage earners relative to other incomes.

We undertook this study because the forces just mentioned did not seem to us to be powerful enough to account fully for the recorded behavior of the trend of real wages. We felt that part, at least, of this behavior might be the result of faulty statistics. This led us to construct new estimates of real wages for workers in manufacturing.

Our estimates of money wages differ from those available previously in having a broader coverage of manufacturing wage earners. They are based on data from the *Censuses of Manufactures* and the reports of the labor bureaus of several states. Our estimates of average hourly money earnings are shown in the first column of Table 1. These estimates lie at a lower level than the best estimates

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TABLE 1

Average Hourly Earnings, All Manufacturing, 1890–1914
(money and real terms)

	Average Hourly Earnings (current dollars)	Cost-of-Living Index (1914=100)	Average Hourly Earnings[a] (1914 dollars)
1890	0.144	91	0.158
1891	0.144	91	0.158
1892	0.145	91	0.160
1893	0.151	90	0.168
1894	0.139	86	0.162
1895	0.138	84	0.165
1896	0.144	84	0.172
1897	0.140	83	0.168
1898	0.137	83	0.166
1899	0.146	83	0.176
1900	0.151	84	0.179
1901	0.158	85	0.185
1902	0.165	86	0.191
1903	0.170	88	0.193
1904	0.169	89	0.190
1905	0.172	88	0.194
1906	0.184	90	0.204
1907	0.191	94	0.203
1908	0.184	92	0.201
1909	0.186	91	0.203
1910	0.198	95	0.209
1911	0.202	95	0.213
1912	0.207	97	0.213
1913	0.221	99	0.224
1914	0.220	100	0.220

SOURCE: See Tables 10, 22, and 44, following.

[a] Here, and throughout the study, the figures shown have been rounded independently. Thus this last column was computed from data having more places than are shown in columns one and two.

previously available, those of Paul H. Douglas.[1] However, the trend of our estimates of money wages is only very slightly steeper than that of Douglas's estimates.

We have also constructed a new cost-of-living index for 1890–1914, shown in the second column of Table 1. This index uses Douglas's estimates of changes in the prices of food, liquor, and tobacco. It incorporates new indexes of the retail prices of clothing and home furnishings, based on mail order catalogues. These replace the

[1] Presented in his pioneering study *Real Wages in the United States, 1890–1926,* Boston, 1930.

wholesale price indexes used by Douglas. We have also developed an index of rents based on newspaper advertisements. The inclusion of rents and the correspondingly lower weight given to food account for the largest part of the difference between the NBER cost-of-living index and the Douglas index. Finally, we have constructed a new index of prices for fuel and light, using more retail prices and fewer whole-sale prices than Douglas used. Rates for illuminating gas before 1907, which are the major new element in this fuel and light index, were obtained from utility companies.

Our index of the cost of living rises appreciably less than Douglas's. When we use it to deflate our money wage series, we find that the real earnings of manufacturing workers rose 37 per cent from 1890 to 1914, or at an annual compound rate of 1.3 per cent (see the last column of Table 1). This rate of increase is slightly lower than that shown for manufacturing by Clarence D. Long's study of changes in real wages from 1860 to 1890.[2] It is considerably lower than the rate of increase in real wages since 1914. These differences suggest that the closing of the frontier and the high level of immigration in our period did have some effect in holding down real wages, though not nearly as large an effect as previously believed.

The rate of growth of real wages in manufacturing for 1890–1914, as shown by our study, is less rapid than the increase in output per man-hour in manufacturing. This is to be expected because capital-output ratios in manufacturing were rising until 1919. The costs of using more capital per unit of output had to be covered before real wages could rise if the influx of capital was to be sustained. However, the rate of growth of real wages was the same as the rate of growth of output per weighted unit of labor and capital combined for the private domestic economy, as estimated by John W. Kendrick.[3]

Chapter 2 reviews the measures of changes in real wages presented in the previous literature and discusses the explanations advanced for the failure of real wages to rise. Chapter 3 presents our measures of money wages in all manufacturing and in several manufacturing industries, and explains the methods used to derive them. Chapter 4 discusses the construction of our cost-of-living index. Chapter 5 deals with the movement of our real wage series and returns to the dis-cussion of its relation to trends in productivity.

[2] *Wages and Earnings in the United States, 1860–1890*, Princeton University Press for National Bureau of Economic Research, 1960.

[3] *Productivity Trends in the United States*, Princeton University Press for National Bureau of Economic Research, in press.