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Volume Author/Editor: Clarence D. Long

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WAGES AND EARNINGS  
IN THE UNITED STATES  
1860-1890



# CHAPTER 1

## Introduction

### *The Time and the Questions*

This monograph examines the changing level and structure of industrial wages in the United States between 1860 and 1890. Both of these years falling in a time of peace and at business peaks,<sup>1</sup> the wage comparisons between them benefit from comparable cyclical conditions; but otherwise the economy of the nation had changed markedly during the intervening thirty years. Indeed, these years rank among the most turbulent and dynamic in the nation's history, for they included one of its greatest wars, one of its sharpest inflations, one of its most protracted deflations,<sup>2</sup> and one of its longest and most widespread depressions.<sup>3</sup> They also bore witness to enormous economic growth. Clark has observed, perhaps with some exaggeration, that there was "a greater expansion of industry during 1860-1914 than in all the previous history of the race";<sup>4</sup> and the portion of time under review here could surely claim its share in that development. Employment in manufacturing and construction tripled, and Persons' index of physical output in manufacturing rose six times.<sup>5</sup> The iron and steel industry starting at almost scratch in 1860, had by 1890 become the largest producer in the world.<sup>6</sup>

Part of the economic growth was due to an enormous population addition, equal to the entire number of inhabitants in 1860. A third of the addition stemmed from a net immigration of about 10 million, mainly unskilled workers from Britain and northwestern and central Europe, rising to a flood in the decade of the 1880's. It was associated with an internal migration on a "previously unknown scale," as

<sup>1</sup> Arthur F. Burns and Wesley C. Mitchell, *Measuring Business Cycles*, National Bureau of Economic Research, 1946, p. 78.

In 1893 the Commissioner of the Bureau of Labor wrote: "The year 1860 represents, more nearly than any other year during this half-century, normal economic conditions." Carroll D. Wright, "Cheaper Living and the Rise of Wages," *Forum*, October 1893, p. 223.

<sup>2</sup> "Seldom has a highly organized business community carried on its transactions for 17 years on the basis of such unstable prices." Wesley C. Mitchell, *Gold, Prices, and Wages under the Greenback Standard*, 1908, p. 249.

<sup>3</sup> Rendigs Fels has characterized the decline from 1873 to 1878 as our longest and second most severe contraction, though he points out that it was a mild contraction so far as production was concerned. "American Business Cycles, 1865-79," *American Economic Review*, June 1951, pp. 344-345.

<sup>4</sup> Victor S. Clark, *History of Manufactures in the United States*, Vol. II, 1929 edn., p. 6.

<sup>5</sup> *Historical Statistics of the United States, 1789-1945*, Bureau of the Census, 1949, p. 179. The initial date of the index was 1863.

<sup>6</sup> Clark, *op.cit.*, p. 250. Actually Clark uses 1893 as the date.

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Union and Confederate veterans and the surplus populations of the eastern farms took up the western lands. The North gained nearly two million persons at the expense of the South, while the West beyond the Mississippi gained, at the expense of the East, a number equal to the net immigration from abroad.<sup>7</sup> The westward migration was aided by a more than fivefold increase in railroad mileage<sup>8</sup> as numerous companies raced to tie the nation together with an iron network, stimulating, and stimulated by, the start of many new manufacturing industries in both South and West.

Thus the period—no longer than a generation—provides every major variety of experience for a study of wage behavior. It also furnishes an opportunity—which we shall not exploit fully—to see how wages behave in the absence of strong unions. The national trade-union movement put down many of its roots in this period; severe strikes were called; and unions no doubt exercised marked influence in some industries and occupations. But it is highly questionable whether, up to at least 1880, most firms in manufacturing were either touched directly by unions, or obliged in setting wage rates to take the threat of unionization very strongly into account.<sup>9</sup>

What questions then do we ask concerning wage behavior in these three decades of war and peace, inflation and deflation, boom and depression, immigration and migration, industrial expansion and consolidation, and transition from weak unionism to the early beginnings of a firmly established national trade-union movement?

Can we arrive statistically at a true average dollar wage level for workers in manufacturing and building?

Did money wages rise slowly or rapidly? Can we construct a wage index which reflects the true relative advance in the price of labor? Or, are the changes hopelessly obscured by shifts of workers between occupations, and by varying practices with respect to hours worked, overtime premium payments, bonuses, deductions, fringe benefits, and payments in kind?

Did wages rise slowly or rapidly in dollars of constant value—that is, adjusted to retail prices of cost-of-living items?

How did wages respond to the turbulence during the years between 1860 and 1890? To the Civil War? To the great depression of the 1870's? To the prolonged and almost uninterrupted deflation of prices from the end of the Civil War to 1890—a quarter of a century?

<sup>7</sup> *Historical Statistics*, pp. 30, 33-34.

<sup>8</sup> *Ibid.*, p. 200.

<sup>9</sup> *Report on the Statistics of Wages in Manufacturing Industries . . .*, by Joseph D. Weeks, *1880 Census*, Vol. xx, pp. xv, 3-563. However, the *Report on Trade Societies in the United States* indicates "marvelous development of organization during the years 1879 and 1880." (Vol. xx, p. 3.)

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How did wages compare at a given time among different regions, industries, and occupations? Did these relationships vary as between East and West and South? Between metals and cotton? Between skilled and unskilled, males and females, adults and youths? Did the consolidation of the nations' internal economy through the construction of the rail network, and the vast movement of population tend noticeably to make wages in different regions, industries, and occupations more alike?

Finally, how did wages and earnings respond to such influences as labor supply, employment, productivity, and unionization?

These are the questions. How far we can answer them depends on the amount and quality of the statistics.

### *The Kind of Wage Statistics Needed*

An effective study of the wage rate requires a good deal of knowledge about the firm paying it, the worker receiving it, and the service for which it is paid. Ideally, an average wage for the nation's manufacturing and building industries should rest on the wage received by every worker, classified by his personal characteristics and his precise occupational job description, as well as by the nature of his firm and its industrial classification. Such information would earmark variations in the price of a given quantity and quality of labor, as industries and occupations alter in character, as workers grow older and become more or less skillful, as women supplant men or children and immigrants the native-born in industrial jobs.

It would also be desirable to know how many hours the worker puts in as straight-time and as overtime; the rate for overtime; the prevalence of bonuses, tips, or gratuities in addition to the quoted wage; the nature of allowances in the form of reduced rent, firewood, garden privileges, or merchandise at discount prices; the amount of deferred compensation in the form of retirement pensions, paid vacations, and sick benefits; the extent of wage deductions through a worker's being charged for tools and materials used or for damages to equipment or product; the amount of his out-of-pocket payments to underhands; and the loss for workers paid in merchandise instead of cash.

Such wage statistics would be the ideal; we now consider the actual data.

### *Sources and Coverage of Data*

Our wage statistics as distinguished from annual earnings data derive from three principal sources: the Aldrich Report, covering our full period, the Weeks Report, covering all except the last decade; and Bulletin 18 of the Department of Labor, covering all except the first decade. There are also wage statistics from the *First Annual Report*

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of the *Commissioner of Labor* for 1885, and from the 1900 census report by Davis R. Dewey for 1890, but these surveys give information for only a single year, and are used here mainly to test the levels of the Aldrich Report data.<sup>10</sup>

This section examines the content, coverage, and reliability of these data. It compares the methods used in this and other studies to combine the data of different occupations, firms, and industries into averages. In addition, it analyzes the data on average annual earnings from the decennial censuses for 1860, 1870, 1880, and 1890. The annual earnings data are full of pitfalls but they offer an additional check on the trend of wages during this period.

### THE ALDRICH REPORT

The wage data are stated to have been taken by investigators of the Department of Labor "from actual payrolls" of business firms<sup>11</sup> (Appendix Table A-1), gathered in such a way that we have for the period 1860-90 from 78 firms, about 500 continuous series of occupational wage-quotations, each "showing the pay received by persons of one sex employed at one kind of work on one establishment," the great majority daily wage-rates, given for January and July.<sup>12</sup> On the average, wage data were reported for over 5,000

<sup>10</sup> Still other series might have been compiled in this study from the reports of various state departments of labor; but most of the state collections do not begin until late, are seldom continuous, and seem largely noncomparable. See Carroll D. Wright: "Nearly every one of the other bureaus in the country has at times published fragmentary wage and cost-of-living statistics; but the attempt of the student of real wages to ascertain from any single report, successive rates of wages and successive prices of commodities for a long period of years has either met with comparative failure or involved a labor which discouraged him almost at the start." From "Cheaper Living and the Rise of Wages," *Forum*, October 1893, p. 222.

<sup>11</sup> Carroll D. Wright, *loc.cit.*

The statistics of the Aldrich Report were collected under the direction of Wright, then Commissioner of the United States Bureau of Labor; Nelson W. Aldrich was chairman of the Senate Committee which made the report: *Wholesale Prices, Wages, and Transportation*, Report by Mr. Aldrich from the Committee on Finance, March 3, 1893, 52nd Congress, 2nd Session, Senate Report 1394.

<sup>12</sup> Little is known about the collection aside from this. The courtesy of Harry Douty and Richard Jones, in making possible an exploration of the archives of the Department of Labor resulted in the discovery of the wage schedule used by the investigators. The schedule was skimpy and included no instructions, but it did reveal *that a separate schedule was filled out for each employee*, with the firm's name, business, post office, street number, and state, and the employee's name, sex, and occupation. Space was provided for the payroll date of January and July for each year during 1840-91; also provided were columns for the industry, the unit of payment, and the wage rate. Although in the Aldrich Report the hours worked are indicated in detail for January and July of each year, the actual schedule provided only a single box for this entry at the top of the form. An exhaustive search of government archives and the private papers of Senator Aldrich and Carroll Wright—in the hope of discovering the original schedules as they were filled out for the individual workers and information about the sources and methods—was completely without result.

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earnings; the number varied widely over the period. Most were skilled and semiskilled manual workers; some unskilled manual laborers were among them also. A few (not included in this study) were sales clerks in two New Hampshire stores or worked on railroads or on city works. Clerical and managerial employees were entirely omitted; also piece-workers, as far as can be told. The original wage data covered about a score of industries, of which about three-fourths were manufacturing; the rest were miscellaneous nonmanufacturing, and—except for the building industry—were not analyzed in this investigation.<sup>13</sup> The industries varied widely in their importance in the economy and in the number of firms and employees represented.<sup>14</sup> In no sense was the sample a true cross section of the nation's firms, industries, or employees. The number of establishments on which most industries rested was small. Twenty-five were reported for the building trades and twenty-two for metals; but only one was reported for each of six of the industries used in this study, and we rely for the remaining industries on the records of two to four firms. Nearly two-thirds of the employees, in fact, were in less than a fourth of the establishments. Less than half of the industries included were represented by 100 or more employees. The Aldrich Report covered only the New England and Middle Atlantic states, and tells us nothing about the South and West.

### THE WEEKS REPORT

Weeks, like the Aldrich Committee, gathered his data from payroll records so as to give a continuous wage history of the same occupations in the same firms for some one date each year over a considerable period.<sup>15</sup> (See Appendix Table A-3.) In each of the more

<sup>13</sup> The Aldrich Report also contained supplementary series on wages in the coal, iron, glass, and pottery industries, as well as on salaries of public schoolteachers, by rank, in large cities, but the series were not accompanied by data on the number of persons employed at these wages.

<sup>14</sup> The manufacturing industries together with the number of firms and the average number of employees represented during 1860-90 were: agricultural implements (1 firm; 21 employees); ale, beer, porter (1; 43); books and newspapers (3; 120); carriages and wagons (1; 22); cotton goods (4; 715); ginghams, included in cotton goods in this study (1; 707); illuminating gas (4; 394); leather (2; 61); lumber (2; 34); metals and metallic goods (19; 1,094); paper (1; 33); spices, excluded from this analysis (1; 19); stone (6; 488); white lead (1; 10); woolen goods (3; 283). Building trades were represented by 21 establishments with 436 earners. The nonmanufacturing industries, not analyzed in this study, were: sidewalks (1; 17); railroads (1; 269); city public works (4; 953); dry goods stores (1; 10); grocery stores (1; 4).

<sup>15</sup> *Report on the Statistics of Wages in the Manufacturing Industries with Supplementary Reports on the Average Retail Prices of Necessaries of Life and on Trade Societies, and Strikes and Lockouts*, by Joseph D. Weeks, 1880 Census, Vol. xx, pp. ix-xi. The Weeks investigation could obtain no useful wage data from employees (p. xvi).



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prominent manufacturing, mechanical, and mining industries in various sections of the country, "typical" establishments were selected, based on their age, standing, productive capacity, and general reputation. From these firms were secured "the most complete and accurate returns practicable." The mailing list of firms was said to be prepared after much correspondence with experts in each industry and recourse to trade directories and publications. No important branch of manufacturing was overlooked, but the information on some was not returned or was unsatisfactory. Moreover, of the more than fifty industries with satisfactory returns, less than a score could be used in the present investigation, for only that many had wage data covering the entire period 1860-80.

Views differ as to adequacy of methods and accuracy of results. Carroll D. Wright, who may have felt some need to justify his Aldrich investigation, declared that the Weeks statistics of wages "were averages [rather than actual payments] in nearly every instance, made up in counting rooms of manufacturing concerns, the method of arriving at the average, the elements entering into it . . . not being known to the officers in charge of the work."<sup>16</sup> The report itself, conceding that the first returns were unsatisfactory, indicated that they were checked over carefully by the investigators and "Not infrequently . . . were passed backward and forward several times before a final adjustment was reached."<sup>17</sup>

It is probably not possible to decide which data are best. The Weeks data span fewer years, give almost no employment information nor wage data for males and females, report wages for only once a year, and do not always refer to the same month (indeed, they do not even indicate the month). On the other hand, they embrace more establishments, industries,<sup>18</sup> and states—for they also include wages paid by many establishments in the South and West (we follow Mitchell in classifying the western states as those beginning with Ohio). In addition, the Weeks Report tells more about how the data were gathered and offers possibly better information on methods of paying wages. It states that the data do not usually cover overtime, holiday and Sunday work, and other extra earnings, and that it has deducted any payments to helpers and underhands, so that the worker's wage

<sup>16</sup> Wright, *op.cit.*, p. 221.

<sup>17</sup> Weeks Report, p. xv.

<sup>18</sup> The Weeks Report covers over 600 establishments in over fifty industries; the establishments were probably better distributed among industries than was the case in the Aldrich Report. On the other hand, much of the Weeks data were fragmentary. From that source, the present investigation makes its fullest reliance on 67 establishments in 18 manufacturing industries; from the Aldrich data, on 49 establishments for the 13 manufacturing industries, and 21 establishments for the building trades.

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covers what he receives only for his own work. Finally, Weeks attempted to convert piece rates into daily wages, wherever the firms could furnish information on time put in by piece workers.

### BULLETIN 18 OF THE DEPARTMENT OF LABOR<sup>19</sup>

If the Aldrich and Weeks Reports are reticent as to sources and methods, Bulletin 18 is virtually silent (Appendix Table A-4). It provides no separate data by firm or industry, but merely wage quotations for each of 14 occupations in each of twelve large cities in the East, West, and South—quotations that in most instances were taken directly from payrolls, in each city, of at least two establishments that had existed and done business continuously since 1870.<sup>20</sup>

The Labor Department regarded these wage levels as being higher than the average in the specified occupation for the entire country, because they were drawn only from the larger industrial centers. The report converted the wages for 1870-78 into equivalents in gold, but for present purposes, they were reconverted into currency on the basis of the greenback price of gold which the Department of Labor showed on the tables.

### THE FIRST ANNUAL REPORT OF THE COMMISSIONER OF LABOR<sup>21</sup>

The data in this report were gathered by fifteen agents who worked with "faithfulness and assiduity" for 10 months on all aspects of the depression including the collection of wage data.<sup>22</sup> "The wages in nearly all cases were taken direct from the payrolls."<sup>23</sup> The report covered well over 500 establishments in 36 manufacturing industries in the United States and provided daily average wage rates classified by occupation, industry, and state. It furnished separate wage rates for adult males, adult females, and children and youths, and additional information on hours and days of work (Appendix Table A-7). The

<sup>19</sup> September 1898; edited by Carroll D. Wright.

<sup>20</sup> "Thus continuous and accurate returns for the period covered have been made possible, greatly enhancing the value of the tables." The Department gathered a great deal of information which it did not publish, including data on "number of employees working on full time and receiving each specified rate of pay. This information in its detail is extremely interesting, but almost 400 pages of the Bulletin would have been required for its publication. . . ." Bulletin 18, pp. 666-667, 670-693.

<sup>21</sup> *The First Annual Report of the Commissioner of Labor*, March 1886, "Industrial Depressions," pp. 143-226.

<sup>22</sup> "The agents of the Bureau have, as a rule, been met with courtesy and a desire to furnish the information sought; yet it should be distinctly understood that if the manufacturers of any locality miss comparative data in the construction of tables . . . the lack of completeness is due entirely to the apprehension of manufacturers that the information required would do them some harm, or to their positive refusal to furnish the information," p. 6.

<sup>23</sup> P. 141.

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data, gathered for only 1885,<sup>24</sup> can tell us nothing about wage behavior over time; but since the survey was based on twenty-five times as many employees as the Aldrich Report, it may be useful as a bench mark in testing the level of the Aldrich wages and as an indication of whether the level was higher or lower than that of all workers in 1885.

### THE DEWEY CENSUS REPORT

The Dewey Report for 1890, collected in connection with the census of 1900 (Appendix Table A-8, below), restricted inquiry "to a few stable and normal industries." When collected, the data for 1890 were twelve years old. Many records had been destroyed or left with previous owners of firms that had changed hands. Others could not be used because they were obscure, especially where child labor was concerned. The data do not all refer to the same month, but rather to a full-time payroll during a normal period, thus avoiding periods characterized either by overtime or by slackness, holidays, and short time. (The census year included the twelve months ending May 31, 1890.)

The Dewey Report data do have certain advantages. They were extracted from actual records of employers; were based insofar as possible on wage rates rather than earnings; and were classified by industry, occupation, sex, and broad age groups—under 16, and 16 and older. Efforts were made to take account of allowances and deductions, and to exclude the wages of nonproduction workers—supervisors, officials, and office workers. Though far from complete, the figures compiled were nevertheless comprehensive by the standards of our Weeks and Aldrich data, covering over thirty industries and more than 100,000 workers. "On the whole, the Dewey Report was probably the most important and most reliable report on wages which had, up to that time, been published in the United States."<sup>25</sup>

### IN SUMMARY

It will be appreciated that the statistics of this period are far short of ideal. First, some industries were not covered in the original reports and others could not for various reasons be used in this analysis.<sup>26</sup> The number of firms reported was very small and almost

<sup>24</sup> The report does not indicate what month of 1885 the wage data refer to, or even whether the wage data of all the establishments refer to the same month.

<sup>25</sup> Paul F. Brissenden, *Earnings of Factory Workers 1899 to 1927; An Analysis of Payroll Statistics*, Census Monographs x, 1929, p. 261.

<sup>26</sup> Of the 21 two-digit manufacturing industries which exist at present, all but one—electrical machinery—had some operation in 1860-90. In the main, these industry groups were fairly well represented. The Aldrich Report represented 13 of them, omitting ordnance, furniture, instruments, miscellaneous, tobacco, apparel, and rubber products; Weeks also represented 13, omitting printing, chemicals, petroleum and coal products, and rubber products, as well as ordnance, instruments, and miscellaneous. The First Annual Report represented all 20 of the existing two-digit industries.

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certainly unrepresentative, for it is the superior employers who tend to survive for long periods, or to keep records if they do survive, and to furnish data if they were kept—firms were not reported if they went out of business before 1880 or 1890, and new firms were not covered because they had too brief a wage history or escaped notice.

Second, the number of employees covered, while presenting a considerable task in manipulation of data, was tiny compared to total employment in manufacturing and building.

Third, none of the published reports identified the workers individually, and it was therefore impossible to tell, when a given wage-rate fell, whether the actual wage-rate schedule had fallen or whether, merely, a high-wage worker had quit and had been replaced by a new worker at a beginner's rate. Data on the number and sex of the workers were given only by the Aldrich, First Annual, and Dewey Reports; information on age was confined to some occupational classifications for "children or youths" or "boys" or "girls."

Fourth, the data were confined almost entirely to daily rates and gave only small representation to piece-rate earnings (which may advance more rapidly than time rates, as methods and machinery improve). Little or no wage representation was given to sales, clerical, supervisory, or managerial employees.

Fifth, the occupational classifications were rather general and—in a period of great technological change when new machinery and methods were breaking down old jobs and creating new skills—did not necessarily reflect actual developments in the quality and intensity of effort of the workers.

Sixth, most of the data seemed to come closer to measuring wage rates than earnings, but some of the data were based on the latter and no explicit indication was given as to which data are which. Except possibly for the Aldrich data, the reports were obscure as to what month the data refer to, or even to whether they always refer to the same month.

Seventh, while the Weeks Report attempted to eliminate overtime and other premium payments so as to express wages in the price of a regular workday, and to take account of allowances and deductions so as to make the daily wage reflect the actual rather than the nominal wage, it could scarcely do so adequately; the other reports make no mention of an attempt.

Eighth, none of the wage reports taken separately provided a continuous wage series for the whole nation and the entire period. The Aldrich Report covered manufacturing and building for 1860-90, but only for the Northeast. The Weeks Report gave some coverage to all regions but only for 1860-80 and only for manufacturing. Bulletin

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18 also covered all major regions but only for selected large cities and selected occupations during 1870-90. However, the average annual earnings data of the decennial censuses while they do not provide reliable indication of how wage rates were moving in the nation as a whole, or even perhaps how average earnings were behaving, may furnish an independent check on the change in the industrial and regional structure of earnings over time.

Finally, the quality of both collection and tabulation was uncertain in view of the small size of the statistical staffs, the skimpiness of the descriptions, and the delay in gathering the data—from old records, years after the wages were earned.

Are the wage materials useless, then, for study of wage behavior during these years?

A principal advantage is their continuousness over a long period for the same nominal occupations, firms, and industry; we are not in the position, as are students of wages in some nations or periods, of having to patch our series together from smaller series, sometimes covering different periods and sometimes relating to different concerns or parts of the industry.<sup>27</sup> Another advantage is their variety of classification, by sex, occupation, firm, industry, and locality: we are not forced to say, "as almost always in regard to historical wage statistics, it has been practically impossible to compile averages for different groups of workmen, which can be compared with each other for the same year."<sup>28</sup> A third advantage is that the data are based—so far as we can tell—on actual business records and, while subject to clerical or other technical error, do not depend for their accuracy on the memory, truthfulness, or knowledge of an employee or some member of his family. And a fourth advantage is that the data come in independent sets, each taken by different investigators or staffs from the records of entirely different firms, but often duplicating the same occupation, industry, and locality; thus we can test for accuracy through comparison of the levels and rates of change. All in all, while much inferior to the wage data of the present day, the materials for 1860-90 are very likely as good as, or superior to, those of many other nations.

<sup>27</sup> Gösta Bagge, Erik Lundberg, and Ingvar Svenilsson, *Wages in Sweden, 1860-1930*, Vol. II, Part I, 1933: "The work of patching together all these different sources of Swedish wage statistics has not only been laborious and lengthy but has also entailed many risks of errors and mistakes. . . . As is so often the case in regard to wage statistics, our problems have been mainly problems of finding and turning to useful account different and often defective sources." (Pp. 10-11.)

<sup>28</sup> P. 11. "We have been reduced to . . . studying not the wages themselves, but their rates of change." See also Arthur L. Bowley, *Wages and Income in the United Kingdom since 1860*, 1937, p. 3.