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NUMBER NINE

REAL WAGES IN THE UNITED STATES

REAL WAGES

IN THE UNITED STATES

1890–1926

BY

PAUL H. DOUGLAS

PROFESSOR OF INDUSTRIAL RELATIONS
THE UNIVERSITY OF CHICAGO

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TO

THE UNIVERSITY OF CHICAGO

WHERE THE SPIRIT
OF FREE INQUIRY AND SINCERE SCHOLARSHIP
HAS BEEN A CONSTANT STIMULUS AND
INSPIRATION THROUGH THE YEARS

PREFACE

I HAVE attempted in this book to measure the material progress which the American workers have obtained during the years from 1890 to 1926. Had I foreseen that in order to complete the work it would require the major portion of my energies for six years and that it would be necessary for me to devote to it the larger part of my income for most of that time, I might not have had the courage to undertake the task. I am by no means satisfied with the completed result, but I can take some consolation in the fact that it is as good a piece of work as I can do and that, in the effort to make it so, I have not stinted my outlay of time, of energy, or of the material resources which in other respects I could ill afford.

In the effort to obtain accurate and comprehensive measurements, I have found it necessary to compute a new index of the cost of living, to work out new and refined series of wage-rates, to prepare averages of the annual earnings of the employed workers, to measure the probable amount of unemployment since 1890, and to obtain the earnings of the wage-earning class as a whole. It has thus been possible to get a measurement of the relative purchasing power, throughout the period, of hourly and weekly wage-rates, of the annual earnings of the employed and of the yearly income of the working-class as a whole. The material welfare of no less than twenty-two million workers has been measured by one or more of these tests, and, indeed, the only two classes of considerable size for which it has been impossible to work out any continuous index have been domestic servants and mercantile employees.

It will be noticed that this study shows different results from those obtained in an earlier paper of mine which was published in the *American Economic Review* for September, 1921. This is in part because the cost-of-living index used in this earlier study unintentionally served to exaggerate the actual advance in living costs which occurred between 1900 and 1915. That index was based on the retail food prices collected by the United States Bureau of Labor Statistics, and these, as I demonstrate in Part One of this book, increased from 1907 to 1914 at a much faster rate than living costs as a whole. Another defect

of the earlier paper was that the wage data were largely drawn from the hourly and full-time weekly rates of union labor. These, as is also shown in this book, were much less responsive to the general upward movement from 1914 to 1918 than were the rates for other workers, and still less responsive than the movement of the annual earnings of the employed workers and of the wage-earning class as a whole. I have felt a scientific obligation to correct every defect in this earlier paper.

It is with a real sense of gratitude and of friendship that I acknowledge the assistance I have received from so many quarters. Had it not been for these friends, I could never have finished the study. First of all, I wish to thank Harold N. Weber, Alvin D. Battey, and Leroy Stinebower for the intelligent and careful devotion which they displayed when acting as my chief assistants. I am also indebted to my friends, William T. Foster, of the Pollak Foundation, and William H. Spencer, Dean of the School of Commerce and Administration of the University of Chicago, for the unfailing support which they have given me in this, as in all other ventures. Dr. Foster has not only borne the heavy expenses connected with the publication of this volume, but made an initial grant which emboldened me to go on. Mr. Spencer, in turn, gave me assistance from the research funds of the School of Commerce at a time when it seemed that otherwise I should have to stop, and he has shown throughout a sympathy with and an understanding of the purposes which I have hoped might be aided by the study. Nor does my debt stop here. Scores of others have given information and data which have been invaluable, and among them I should like to mention Roswell F. Phelps, of the Massachusetts Department of Labor and Industries; Ralph G. Hurlin, of the Russell Sage Foundation; Hornell Hart, of Bryn Mawr College; E. B. Patton and Sidney W. Willcox, statisticians for the New York and Illinois Departments of Labor, respectively; A. J. Altmeyer, of the Wisconsin Industrial Commission; Charles E. Baldwin, of the United States Bureau of Labor Statistics; Max O. Lorenz, of the Interstate Commerce Commission; Frederick E. Croxton, of Columbus; Frederick G. Tryon, of the United States Geological Survey; Woodlief Thomas, formerly of the Federal Reserve Board; Ralph J. Watkins, formerly of the Bureau of Business Research of the Ohio State University; Seymour L. Andrew, of the American Telephone and Telegraph Company; and Paul F. Brissenden, of Columbia Uni-

versity, together with many others whom space prevents me from naming, but to whom I am no less grateful.

To those who were for a considerable period of time members of my staff, I owe a great deal for the patience and accuracy with which they carried through the drudgery involved in the prolonged process of computation, and among these I should like particularly to thank John Rollins, E. J. Kunst, A. J. Danziger, Alex Elson, George G. Lewis, and Florence Jennison, of the University of Chicago; Helen Demond, of Mount Holyoke College; and William H. Hasty and Magnus Greenman, of Amherst College.

My secretary, Mrs. A. T. Hurn, and Marian P. Cartland, of the Pollak Foundation, have given invaluable assistance in reading the proof, and Mrs. Adelaide E. Ohlendorf has been good enough to prepare the index. Miss Cartland's extraordinary care has in particular saved me from many errors. Harvey Scheel and R. R. Krogman have drawn the charts.

Every effort has been made to ensure the accuracy of each figure, and all data and computations have been carefully checked. But it is perhaps idle to hope that, in a study which has required approximately 18,000 work hours and for which approximately 3,000,000 computations have been made, all errors have been eliminated.

And now I must leave this book, imperfect as it is, to the reader, by whom I hope it will be critically judged. Its defects may perhaps be pardoned if it serves in some measure to lay a foundation for the better studies which I hope may grow out of it.

PAUL H. DOUGLAS

CHICAGO, *February* 4, 1930

SUGGESTIONS TO THE READER

For those who want to *skim* the book, read Chapters I and XXXII.

For those who wish to go into the book in more detail, but who are not particularly interested in methods, read Chapters I, IV, XII, XXII, XXVI, XXIX, and XXXII.

For those who do not care to go into the detailed methods and some of the more detailed results, *omit* Chapters V, XIV, XV, XVI, XXIII, and XXVII.

CONTENTS

PART IV

UNEMPLOYMENT AND THE REAL EARNINGS OF THE WAGE-EARNING CLASS AS A WHOLE

LIST OF TABLES

LIST OF CHARTS

APPENDIX

APPENDIX A

A COMPARISON OF THE METHODS FOLLOWED AND RESULTS OBTAINED BY PAUL F. BRISSENDEN IN COMPUTING PERCENTAGES OF UNEMPLOYMENT AND AVERAGES OF THE EARNINGS OF FACTORY WORKERS WITH THOSE OF THE PRESENT STUDY

THE attention of the reader should be drawn to a Census Monograph by Paul F. Brissenden, *The Earnings of Factory Workers*, which covers some of the same ground covered by the present study, and the methods and results of which should be compared with those of this volume. Dr. Brissenden has evidently lavished care and attention upon his study, which bears manifest witness to the integrity and zeal of the author.

In order to compare these studies, it is necessary to analyze in some detail the methods used by Dr. Brissenden and to show how they differ from those employed in the present study. It is also necessary to account for the results obtained by the various methods and to appraise their significance.

Dr. Brissenden rejects the *average earnings of employed workers* (total paid out in wages in a given year divided by the average number employed), which is used in this study as an adequate measurement of wages, and computes, instead, what he terms: (1) the average hypothetical 'full-time' yearly earnings, or what the worker would have supposedly received had he been employed every hour within a 306 day working year; (2) the average actual yearly earnings which are found by correcting the 'full-time' yearly earnings by an allowance in each of the years for unemployment.

His reason for not using the average earnings of employed workers, or what he terms the 'Census average,' is apparently that it does not measure either what the workers would have received had they been employed full time or the average amount which they actually did receive after including unemployment.[1] Two other criticisms which he makes of this average are that, first, since the average number employed is based on payroll statistics, it includes more workers than are actually employed on the average; and, second, just because it is an average, it does not make allowance for changes in the sex and age composition of the working force, or for the changing proportions of the various types of labor which are employed. These criticisms are well taken, but it does not follow that they are sufficient to justify abandoning this type of unit for those which he adopts, which have, as we shall see, other defects.

It should constantly be borne in mind that we have again and again explicitly pointed out that, because our averages of the earnings of the employed workers do not include unemployment, they should not be taken to indicate what the average earnings of the wage-earning class are. Moreover,

[1] Paul F. Brissenden, *The Earnings of Factory Workers*, Washington, 1929; pp. 275–82.

we have constructed indexes of unemployment to take account of this very factor. The primary questions are, therefore:

(1) Whether it is better (*a*) to proceed directly from the Census average of the earnings of the employed workers to the average actual earnings of the wage-earning class by making an allowance for unemployment, as is done in my study, or (*b*) to attempt to build up the Census average into an average of full-time earnings and then to deflate this, in turn, by an allowance for short time and unemployment, as is done by Brissenden.

(2) Whether Brissenden's methods of expanding the Census average into a full time average and then of deflating it again are adequate and correct.

The discussion which follows will perhaps be slightly more intelligible if it is realized at the outset that what Brissenden terms the 'Census average wage' and what I call the 'average earnings of the employed workers' constitute virtually the same statistical unit. They both represent the total paid out in wages, divided by the average number of workers on the payroll; and they both use the Census data for these units. They are therefore identical for Census years. They differ for the years intervening between Censuses only because of the use of different sources and methods. But even here the differences are in general not great.

1. Brissenden's Expansion of the Census Average into an Average of Full-Time Earnings

Dr. Brissenden arrives at his basic figure of 'full-time' annual earnings by utilizing the report of the Census Bureau on the *Earnings of Wage-Earners*[1] in manufacturing in 1904. This gave the average actual weekly earnings of the wage-earners in their busiest week of 1904 for some 331 separate manufacturing industries and for all manufacturing as a whole. The average for all manufacturing was $10.06. Now, as Brissenden points out, there is some time lost, even during the busiest period. Consequently, the average full-time yearly earnings could not be found by multiplying these averages of actual weekly earnings by 52 weeks, or if we allow for holidays, by 51 weeks. His method of making this allowance for lost time in 1904[2] is (*a*) to take the percentages of unemployment among New York trade unionists for one month in 1904, when the given industries were at their respective peaks, and assume that this measured the degree of under-employment in New York State at that time; (*b*) to modify these ratios into ratios for the country as a whole, on the assumption that the latter would differ from the New York ratios as they did in the Censuses of 1889, and 1899, when, as will be remembered, detailed data by industries and sections were gathered on unemployment.

In this way, Brissenden computed that the ratio of actual employment in all manufacturing to full employment for the busiest month of 1904 (October) was .870. Ratios were also worked out for 41 separate industries by similar methods.

Since the average actual earnings in the busiest week of that year were

[1] *Earnings of Wage-Earners*, Bulletin 93 of the United States Census Bureau, Washington.

[2] See chap. xiv of his Monograph (pp. 287–305), for a fuller discussion of the method used.

$10.06, this figure was multiplied by the reciprocal of .870 or by 1.149, which was the ratio of full time to the time assumed to have been worked; and the product, or $11.56, was declared to be the full-time weekly earnings. This was in turn multiplied by 51, to secure the full-time yearly earnings of $590.[1] A similar procedure was followed in the case of the separate industries.

Average 'full-time' earnings were found for the other Census years on the assumption that they would bear the same ratio to the average for 1904 as the Census averages in these years bore to the 1904 Census average. Since the 1899 Census average was $426, or 89 per cent of the 1904 Census average of $477, the application of this ratio to the estimated 'full-time' average for 1904 of $590 gave an average for 1899 of $525. Similar methods were used for the other Census years.

These 'full-time' averages for the Census years were then estimated for the intercensal years, on the assumption that they would fluctuate within a Census period in the same relative degree as the average earnings of the employed workers. These latter averages are the ones which I have attempted to work out in Part III of this book. We both, of course, used the Census averages for the Census years, but the sources and methods which Brissenden used to find the probable averages for the intervening years were somewhat different from mine:

(1) For the years 1899–1914, Brissenden used as his source the average earnings in Massachusetts alone, while I included those in Wisconsin, New Jersey, Pennsylvania, Connecticut, Iowa, Ohio, and South Carolina. From 1914 on, Brissenden used the simple average of the Bureau of Labor Statistics series and that of Massachusetts. It will be remembered that I used New York, Massachusetts, New Jersey, Pennsylvania, and South Carolina to find the earnings for 1915, and that thereafter I used the average for the thirteen industries covered by the Bureau of Labor Statistics plus the twenty-two additional industries included in the New York reports, plus those for a few industries which were contained only in the reports of the Massachusetts Bureau. From 1922 on, I used the expanded series of the Bureau of Labor Statistics almost exclusively. I used the New York statistics during the period 1915–23, rather than the Massachusetts data, because I wished to get monthly indexes of earnings which were impossible to obtain from the Massachusetts statistics.

(2) Brissenden then found the ratios which these averages for the intercensal years bore to their corresponding average for the preceding Census year, and applied this ratio to the 'full-time' earnings which had been obtained for this preceding year. Thus, for example, he found that the Massachusetts average for 1902 was 7.4 per cent higher than the Massachusetts average for 1899. The estimated full-time earnings for 1899 were $525, so that the estimated full-time earnings for 1902 were obtained by multiplying this figure by 1.074, giving an average of $566.[2] The 1903 relative of Massachusetts earnings in comparison with their 1899 average was 1.102 and this gave $579 as the estimated full-time wage for that year. The Census average

[1] *Op. cit.*, Table 134; p. 297.

[2] Strictly speaking, the average should be $564; that is, $535 × 1.0743.

for 1904, as expanded into full-time earnings, was, as has been stated, $590 and this was used as a point of reference for computing the average earnings for 1905, 1906, 1907, and 1908. The average for 1909, in turn, furnished the basis for applying the Massachusetts ratios for the four subsequent years.

It will have been noted that Brissenden assumes that the average earnings in the country as a whole would move from one Census year to the year *before* the next Census in the same ratio as did the earnings in the sample used for interpolation. No correction, however, was made for the fact that the difference between the average earnings of the sample and of the Census never remained constant from one Census year to another, and that therefore the Census average probably did not move in precisely the same ratio during the intercensal years as did that of the average of the State and of the Bureau of Labor Statistics figures. The rather elaborate method used in the present study to allow for these deviations in the rates of relative growth has already been described in Chapter XIII. Dr. Brissenden's method, however, not only does not allow for the gradual drift of State and Census averages into different ratios than prevailed in the preceding Census years, but it also malforms the real movement of earnings by throwing all the burden of correction upon the second of the two Census years which bound a Census period. This is well illustrated in the case of the period 1899–1904. The two Census averages for these years were, as stated, $426 and $477. These were built up into estimates of full-time yearly earnings of $525 and of $590. The year 1903 was, as we have seen, given an interpolated yearly average of $579 because the Massachusetts average was 10.2 per cent greater in that year than it had been in 1899. This meant, therefore, that Brissenden's index shows an increase of $11, or 2 per cent, from 1903 to 1904. This, however, is a paradoxical result, in view of the fact that the Massachusetts average for 1904 was itself only $467, or 1 per cent less than the average of $471 for 1903. The country-wide averages were therefore presumed to follow those of Massachusetts with mechanical fidelity for all of the years from 1899 to 1903, but since the Census average for 1904 was already known, the Massachusetts average was then assumed to move in an opposite direction from that of the nation as a whole from 1903 to 1904. Such a direct reversal of assumptions seems difficult to defend. An almost precisely similar situation is created for the period 1909–14. The Massachusetts average for 1913 was 11.2 per cent higher than for 1909, and this made Brissenden's estimate of the Census average earnings and of 'full-time' earnings for 1913 equal $576 and $712, respectively. Now the Census average for 1914 was $580 and the built-up 'full-time' average was $719. According to Brissenden's index, there was therefore an increase of 1 per cent in earnings during this year. Yet the Massachusetts figures, which are supposedly being used, show an actual decline from $569 to $563 during this year.

As a matter of fact, the 1903 and the 1913 averages should in all probability have been higher than those which Brissenden obtained, in order to allow for the decreases in 1904 and 1914. During the five years 1899–1904, the Census average increased by 12 per cent, while the Massachusetts average increased by only 9.5 per cent. The Census average rose by another 12 per

cent from 1909 to 1914, while the Massachusetts average was again increasing by only 9 per cent. In both of these cases, therefore, the Massachusetts figures understated the increases which were being obtained during this period in the country as a whole. The method adopted in the present study, of making an even allowance for differences in the rates of change, avoids the difficulties into which one is plunged by the use of Brissenden's method.

It is also doubtful whether Brissenden's averages sufficiently measure the drop in earnings which the employed workers suffered in 1908. He shows a fall of only 1 per cent, whereas my index registers a decrease of 9 per cent.

Turning, however, from the question of the adequacy of the methods and sources used for interpolation, let us examine somewhat more closely the precise meaning and the validity of Brissenden's unit of 'full-time' employment. The legitimacy of this proceeding depends in part upon whether full-time earnings are in fact secured by building up the average actual earnings by the modified index of unemployment. Lost time, as Dr. Brissenden elsewhere notes,[1] is composed not only of (1) 'unemployment without employment,' but also of (2) 'unemployment within employment.' This last occurs where the worker, although he has a job, yet loses some time within a pay period because of illness, absence, or the failure of management to provide continuous employment. Now it is one of the merits of the unit which I have called the 'average earnings of the employed workers,' and which Brissenden terms the 'Census wage,' that it does include this 'unemployment within employment.' Consequently, as we shall later see, when correcting this average for unemployment, it is necessary to modify it only by making allowance for 'unemployment without employment.'

But if Dr. Brissenden wishes to obtain a figure which will measure the *full-time earnings* of *all the workers*, he should clearly take cognisance of the time lost *within* as well as *without* employment during the busiest month, and hence he should have added to the actual earnings the wages foregone during the percentage of the time thus lost. This he has not done, since the New York statistics of trade unions which furnished the basis for the expansion coefficient measured only unemployment without employment. Yet there must have been some lost time, even within the busiest weeks of 1904. Even had this percentage of unemployment therefore been accurate, Brissenden would not have obtained from it alone an index of the total amount of lost time. Consequently, he could not have secured a completely accurate measure of what the earnings would have been had full time been worked.

There is good reason to believe that the measure of unemployment for 1904 was in itself faulty. This estimate for 1904, based on the New York figures, was that the percentage for the country as a whole was 13.0 per cent. Our index for manufacturing and transportation combined was only 7.1 per cent for that year. If manufacturing alone could have been segregated, this average might have been raised slightly, yet because of the predominant influence of manufacturing upon this general average, this increase would of necessity have been only slight. In all probability the average for manufacturing alone could not have exceeded 8 per cent. This seems to have been much nearer

[1] *Op. cit.*, chap. xvi.

the real condition than Brissenden's estimate of 13.0 per cent. The New York trade-union averages of unemployment seem, as a matter of fact, to have been consistently higher throughout the period 1897–1914 than the real average for the country as a whole.

Now I suppose it may be urged that the defects which I have pointed out in the averages of 'full-time' earnings serve in a sense to offset each other, since, if the omission of lost time within employment makes the average 'full-time' earnings too low, the use of the modified New York trade-union statistics of unemployment, on the other hand, makes the average too high. But we have no right to assume that these two sets of errors do in fact compensate each other and leave us with a correct average for 1904.

It is, moreover, almost certain that this is not effected for the other years. By changing the amounts of so-called 'full-time' earnings from year to year, as compared with 1904, by the relative changes in the average earnings of the employed workers, an assumption is made that changes in the latter measure changes in the former. This would be true only if 'unemployment within employment' remained the same. If, however, the ratio of the time thus lost were to change from, let us say, 8 to 2 per cent, the result would be that the average earnings of the employed workers would rise by 6 per cent. But this would reflect merely an increased steadiness of work on the part of those who hold jobs and could not therefore mean an increase in the full-time earnings which had always been a potential for the workers. Now while the relative amount of 'unemployment within employment' does not fluctuate as widely with the business cycle as does 'unemployment without employment,' some variation undoubtedly is present which is not taken account of in Brissenden's index of average full-time earnings. The fact that, according to the present study, the yearly earnings of the employed workers rose more rapidly than the full-time weekly earnings is in itself some, although not conclusive, evidence that the relative amount of lost time has in part decreased.

2. Brissenden's Deflation of Full-Time Earnings to Actual Earnings

Nor is this all. Brissenden finds it necessary to compute an index of unemployment, including lost time in employment, in order to deflate the full-time earnings to an 'actual' basis. This he does by a complicated process involving the following steps:[1] (1) Two 'bench mark' percentages of unemployment are computed from basic data in W. I. King's study of *Employment, Hours, and Earnings in Prosperity and Depression*. Bench Mark A is found by assuming that, even at the peak of employment during the third quarter of 1920, there was 5 per cent of unemployment, although this may have been a slight overestimate, since the average for the entire year, according to the later study of the National Bureau of Economic Research, was only 4.6 per cent. The total available hours in this period were therefore set as 5 per cent more than those actually worked.[2] The total hours which King estimated were actually worked in 1921 were then compared with the estimate of the total hours available in the third quarter of 1920 and found to be, for

[1] *Op. cit.*, chap. xvi. [2] *Ibid.*, pp. 332–33.

all manufacturing, 65.8 per cent of this former total. This made the percentage of unemployment and of underemployment for 1921 equal to 34.2.

Bench Mark B was found by taking the year of peak employment, which was set for manufacturing as a whole in 1916, and which varied for specific industries from that year to 1923, and assuming that the ratio of actual employment to full-time employment was that which was shown by King for employed workers during the first quarter of 1920. This ratio was for all manufacturing 98.1 per cent, and the percentage of unemployment in the peak of 1916 was accordingly set at 1.9. But here Dr. Brissenden evidently overlooked the fact that this was merely the *ratio of time worked by those on the payroll to the time which they could have worked.* It did not include the time lost by those who were not employed at all. This is clearly shown by the title of King's table which Dr. Brissenden quotes,[1] namely, *An Estimate... of the Per Cent of Full-Time Worked by the Average Employee while on the Payroll.*

In other words, while Dr. Brissenden, in setting up this bench mark, now takes account of 'unemployment within employment,' which he had ignored in getting his estimates of full-time earnings for 1904, he nevertheless ignores 'unemployment without employment' which was what he had previously emphasized. Now, if our estimate of 3.5 per cent for 1916 be correct, it would follow that the total percentage of lost time, according to Bench Mark B, should be 5.4 per cent instead of 1.9 per cent.

(2) Dr. Brissenden's second step consisted in applying, over the period of years, percentage deviations of employment from 'normal' to the percentages of unemployment (or the computed ratios of employment to the available labor hours) in the bench mark years.[2] These deviations were arrived at in an ingenious and complicated manner. The relationship between changes in the indexes of physical production from 1919 to 1923 inclusive and changes in the numbers employed was studied and it was found that, on the average, a change of 1 per cent in the total product for all manufacturing industries was accompanied by a corresponding change in the numbers employed of .698 per cent, or approximately seven tenths as great a relative change. Different ratios were worked out for separate groups of industries [3] and then applied to appropriate individual industries.

The year 1919 was taken as the starting-point of 100 and changes in 'normal' employment were deduced from changes in production. E. E. Day's 'adjusted' index was then used to measure these changes in production. By 'adjusted' was meant the deviation of production from the secular trend. This latter term was treated as 'normal.'

Brissenden assumed that the year 1919 could be regarded as 'normal' and that, since the index of production rose 3 per cent above 'normal' in

[1] W. I. King, *Employment, Hours, and Earnings in Prosperity and Depression*, New York, 1923; p. 49.

[2] For the steps in this method see chap. xv; pp. 311–37.

[3] The regression equations of X (employment) on Y (production) were:

Iron and steel.....	X = .560 Y	Leather goods	X = .672 Y
Metals, machinery...	X = .495 Y	Paper.....	X = .522 Y
Cotton manufactures.	X = .256 Y	Printing.....	X = .081 Y
Woolen goods.....	X = .942 Y		

1920, the index of employment therefore rose by .698 per cent × 3 or by 2.094 per cent, and it was accordingly set as 102.1. In the following year the index of production was only 78 per cent of 'normal,' and the ratio of employment to normal was therefore placed as 100 − (.698 × 22) or as 84.6. In a similar fashion, the indexes of employment in comparison with normal were found for each and every year from 1899 to 1925 from the index of production in comparison with its 'normal.'

(3) These indexes of employment were then applied to the bench mark averages which had been worked out by the methods previously described. Thus the relative index for 1921 was 84.6, and since the ratio of actual employment to full employment in that year was found by Method A to be 65.8, the two were regarded as equivalent. The estimated percentages on the basis of Bench Mark A were then found by assuming that the relative changes in the index of employment from 1921 measured corresponding relative changes in the index of unemployment. In 1923, the index of employment was 1.07, and the estimated ratio of actual to full employment was consequently found by the following ratio: 1.07 : .846 = X : .658, or .832. In 1915, for example, the index of employment to normal was .982 and then the ratio of actual employment to full was .982 : .846 = X : .658, or .764.

The same method was applied to convert the averages of Bench Mark B into averages for the other years. Thus in 1916, when the ratio of actual to full employment was declared to be .981 (although, as we have seen, it was probably much nearer .946, that is, 1.00 − .054), the index of employment in terms of its 'normal' was 1.073. Then the 1915 average was found by the ratio .982 : 1.073 = X : .981, which gave a result of .897.

The wide disparity between the percentages of unemployment resulting from the use of these two methods[1] is shown in Table 217.

It is thus seen that Method A gives a percentage of unemployment which is on the average nearly three times as great as that obtained by Method B, and that in some years the differences between them are even greater. Thus in 1916, which is the base year chosen for Method B, the percentage according to Method A is no less than 8.7 times as great as that by Method B, while the same ratio between the two also applies in the case of 1906. In 1923, Method A is 7.7 times; and in 1905 and 1907, 4.8 times as great as Method B. Indeed, in only two years (namely, 1908 and 1921) was the percentage according to Method A less than twice that obtained by Method B.

Dr. Brissenden took the simple average of these two percentages as his choice of the most probable amount of unemployment, because it was decided 'that the true ratio of actual to full employment must fall somewhere between the result obtained by Method A and the result obtained by Method B,'[2] and also, apparently, because the average of 18.1 per cent of unemployment which was thus obtained for 1904, closely approximated the 14.5 per cent which the factories lost in that year from not being in operation.

When we find two indexes which, though designed to measure the same phenomena, differ so widely from each other, it is surely unwise to believe that merely averaging them thereby cancels the errors of both and leaves a

[1] For the data, see Table 148 in Dr. Brissenden's Monograph; p. 330. [2] *Ibid.*

TABLE 217. DISPARITY BETWEEN PERCENTAGES OF UNEMPLOYMENT SHOWN BY METHODS A AND B OF BRISSENDEN

Year	Percentage of Unemployment According to		Ratio of Method A to B (A ÷ B)
	Method A	Method B	
1899	22.0	8.3	2.7
1900	24.2	10.9	2.2
1901	21.5	7.7	2.8
1902	19.3	5.1	3.8
1903	20.9	7.1	2.9
1904	24.7	11.5	2.1
1905	18.1	3.8	4.8
1906	16.5	1.9	8.7
1907	18.1	3.8	4.8
1908	29.0	16.7	1.7
1909	20.4	6.4	3.2
1910	21.5	7.7	2.8
1911	25.8	12.8	2.0
1912	20.4	6.4	3.2
1913	20.4	6.4	3.2
1914	26.4	13.4	2.0
1915	23.6	10.3	2.3
1916	16.5	1.9	8.7
1917	19.3	5.1	3.8
1918	20.9	7.1	2.9
1919	22.2	8.6	2.6
1920	20.6	6.7	3.1
1921	34.2	22.7	1.5
1922	24.4	11.2	2.2
1923	16.8	2.2	7.7
1924	22.8	9.2	2.5
Average	22.0	8.3	2.7

correct result. In view of the contradictory nature of the materials out of which the average is obtained, the final result becomes highly questionable.

As a matter of fact, several more than questionable assumptions were made in the construction of the indexes. I have already mentioned the fact that in computing the B bench mark figure, only the allowance for time lost within employment was made, while the unemployment without employment was neglected. Had this been included, the disparity between Methods A and B would have been reduced, with the result that the average would have been raised and the actual yearly earnings reduced.

But three basic assumptions should here be noted. (1) The first is that 'normal' employment and 'normal' labor supply move together. It is difficult enough at best to determine what this 'normal' or secular trend of employment is, since there is no one definitive method for its determination, and the test of the final result must always be more or less of an æsthetic judgment,[1] but to assume an equality between it and the secular trend of the labor supply

[1] For a beautifully clear statement of this point, see Henry Schultz, *Statistical Laws of Demand and Supply with Especial Reference to Sugar*, Chicago, 1928; pp. 47–49.

is indeed most dangerous. It is precisely this, as we have seen, which is constantly assumed by nearly all of those who attempt to use fluctuations in employment as a direct measurement of unemployment. This is, however, one of the very issues upon which we most desire information, and to assume it as correct is in effect to beg the question. If, for example, the 'normal' labor supply were not increasing as rapidly as 'normal' employment, then the 'normal' percentage of unemployment would be shrinking; while if the labor supply were increasing more rapidly, the 'normal' percentage of unemployment would be rising. Yet neither of these tendencies would be shown if the fluctuations of employment around its normal were alone applied, as in this case, to bench mark percentages relating to one year only.

(2) In the second place, Dr. Brissenden assumes that a change of production from its 'normal' was accompanied throughout the period by the same relative change in employment from its 'normal' as occurred during the years 1918–23. Now there is evidence to indicate that the long-run changes of production and labor hold a fairly constant relationship with each other through the period. C. W. Cobb of Amherst College and I have indeed shown that the movement of production during the period 1899–1922 could have been described by the formula $1.01\ L^{\frac{3}{4}}\ C^{\frac{1}{4}}$ where L represents the index number of workers employed, and C an index number of fixed capital reduced to dollars of constant purchasing power.[1] It is just this long-time relationship which is eliminated by the method of taking out the secular trends of both employment and production and of measuring only the deviations from the trend.

It does not follow, however, that these deviations from the trend bear a constant relation to each other. It is well known that the efficiency of labor varies within the business cycle, being higher when jobs are scarce and lower when jobs are plentiful. It is dangerous, therefore, to compute employment from production on the assumption that there is a constant relationship between the fluctuations from 'normal' of the two series.

(3) Finally, it is more than questionable whether indexes of unemployment can be worked out for specific manufacturing industries and even for manufacturing as a whole. This is because the supply of labor from which workers are drawn for specific industries is not divided into a series of hermetically sealed groups, each serving only a given industry, but is, instead, in the case of unskilled and even of semi-skilled labor, a general pool from which all industries draw their men. It follows that, since we cannot isolate the specific workers who are in reserve for an industry such as iron and steel, it is virtually impossible to measure the unemployment in that industry. The percentages of actual to full employment which were worked out by Dr. Brissenden for the various individual industries are therefore highly supposititious.

It is not even accurate to assume that there is a separate labor supply for manufacturing alone, since in fact there is an interchange between it, transportation, the building trades, public utilities, and even personal service. It follows, therefore, that it is necessary to compute a percentage of unem-

[1] C. W. Cobb and P. H. Douglas, 'A Theory of Production,' *American Economic Review*, March, 1928; pp. 139–65.

ployment over as wide a base as possible, and that the result for the whole will be much more accurate than that for any of its parts.

In view of all of these facts, it would appear that it is more accurate to compute an index of unemployment which is based on: (1) statistics of the actual labor supply in each of the years for as large a group as possible; (2) statistics of the most probable numbers employed in each of the years derived directly from employment statistics. By subtracting the latter set of totals from the former, we obtain the most probable numbers and percentage of the unemployed. This percentage can then be applied directly to the earnings of the employed workers. Since these already make allowance for the loss of earnings resulting from unemployment within employment, they need only to be modified by statistics of unemployment without employment in order to obtain the average earnings of the wage-earning class. It is precisely this method which has been followed out in the present study.

The differences between Brissenden's final estimated average percentages of unemployment in manufacturing during the various years and our averages for manufacturing and transportation combined are shown in Table 218.

TABLE 218. COMPARISON OF BRISSENDEN'S ESTIMATES OF UNEMPLOYMENT AND LOST TIME IN MANUFACTURING WITH THOSE OF THE PRESENT STUDY FOR MANUFACTURING AND TRANSPORTATION.

Year	Brissenden's Average	Douglas-Stinebower Average	Per Cent by which Brissenden Average Exceeds that of Douglas and Stinebower
1899	15.1	7.7	7.4
1900	17.5	6.3	11.2
1901	15.6	4.5	11.1
1902	12.2	3.5	8.7
1903	14.0	3.5	10.5
1904	18.1	7.1	11.0
1905	10.9	4.0	6.9
1906	9.2	3.5	5.7
1907	10.9	3.5	7.4
1908	22.8	12.0	10.8
1909	13.4	5.1	8.3
1910	14.6	3.7	10.9
1911	19.3	5.6	13.7
1912	13.4	4.0	9.4
1913	13.4	5.4	8.0
1914	19.9	12.9	7.0
1915	16.9	12.4	4.5
1916	9.2	3.5	5.7
1917	12.2	3.5	8.7
1918	14.0	3.5	10.5
1919	15.4	4.0	11.4
1920	13.6	4.3	9.3
1921	28.4	21.2	7.2
1922	17.8	15.4	2.4
1923	9.5	4.4	5.1
1924	16.0	8.3	7.7
Average	15.1	6.6	8.5

Had our index been computed separately for manufacturing, it would have been slightly, but only slightly, higher than our combined index.

Since Brissenden's index includes lost time within employment while ours does not, it would naturally be expected that his averages should appreciably exceed ours. This is, in fact, the case. Brissenden's average percentage of lost time and unemployment for the twenty-six years from 1899 to 1924 inclusive was 15.1 per cent, while our average for unemployment in manufacturing and transportation was 6.6 per cent. Had manufacturing alone been considered, it is probable that our average would have been approximately 7.0 per cent.

3. The Paradox that Brissenden's Average, which Includes a Deduction for Unemployment, should Exceed the Census Average, which does not

Turning now to a comparison of the various sets of average earnings which have been worked out in this study with those of Brissenden, we find that not only are his averages of annual 'full-time' earnings greatly in excess of my averages for the 'employed' workers, as might be expected, but that even his averages of 'actual' earnings, which supposedly deduct for unemployment and lost time, are slightly in excess of my 'Census' averages for the 'employed' workers, which, while deducting for lost time within employment, do not make any deduction for unemployment. It follows, therefore, that his averages of 'actual' earnings are still more in excess of my average of earnings for the class *attached* to manufacturing. This last figure was obtained by applying the proportion of the labor supply for manufacturing and transportation which was employed in the various years to the average earnings of the employed wage-earners in manufacturing. Had it been possible to have computed this ratio for manufacturing alone, it would, because of the greater amount of unemployment there than in transportation, have been slightly lower. The consequent earnings of those attached specifically to manufacturing (in so far as they can be separated) were therefore actually somewhat lower than those given by my methods in Table 219, and the difference between them and Brissenden's averages, which are supposed to measure the same thing, is in fact somewhat greater than appears in this table.

A clearer impression of the degree to which Brissenden's average of actual earnings exceeds my averages for both the employed in manufacturing and for those attached is by simply measuring the difference between them. This is done in Table 220.

In all but three years, therefore, Brissenden's averages of 'actual' yearly earnings (which included deductions for unemployment and short time) were higher than the Census average which I have computed and which does not make any deduction for unemployment. In all but five years, indeed, his averages of 'actual' earnings exceeded his own 'Census averages.'[1] The amount of this excess of the 'actual' over the 'Census average' ranged generally from 3 to 10 per cent. In the Census year of 1899, Brissenden's average was 5 per cent more than that of the Census; in 1904, it was 1 per

[1] *Op. cit.*, Table 20; p. 58.

TABLE 219. COMPARISON OF AVERAGES OF PRESENT STUDY FOR MANUFACTURING WITH RESULTS OF BRISSENDEN'S STUDY

Year	Average Earnings According to Present Study (in dollars)		Average Earnings According to Brissenden (in dollars)	
	Employed Workers	Those Attached Actual Earnings[a]	Employed Workers, Full-Time Earnings	Those Attached Actual Earnings
1899	426	394	525	446
1900	435	408	544	449
1901	456	435	552	471
1902	473	456	566	497
1903	486	469	579	498
1904	477	443	590	483
1905	494	474	602	536
1906	506	488	626	568
1907	522	504	650	579
1908	475	418	643	496
1909	518	492	643	557
1910	558	537	654	559
1911	537	507	662	534
1912	550	528	684	592
1913	578	547	712	617
1914	580	505	719	576
1915	568	488	732	608
1916	651	628	846	768
1917	774	747	980	860
1918	980	946	1284	1104
1919	1158	1112	1433	1212
1920	1358	1300	1722	1488
1921	1180	930	1462	1047
1922	1149	972	1424	1171
1923	1254	1199	1566	1317
1924	1240	1137	1560	1310
1925	1280	1215	1582	1402
1926	1309	1250	1610	1436

[a] Obtained by multiplying the average earnings of those employed in manufacturing by the proportion of the labor supply for manufacturing and transportation which was employed in each of the several years.

cent more; in 1909, the excess amounted to 7 per cent; in 1919, to 5 per cent; in 1923, to 5 per cent; and in 1925, to 10 per cent. Two of the years in which the 'average earnings of the employed' exceeded Brissenden's 'actual earnings' were Census years; namely, 1914 and 1921. In 1914, however, this amounted to only $4 or less than 1 per cent. In 1921 the difference was much greater, amounting to $133 or 12 per cent. In each case, however, the amount of unemployment is known to have been more than this amount, and consequently the real average 'actual' earnings were even less in these years than Brissenden's estimates.

Since the Census average already covers short time, it needs only to be scaled down for unemployment to give the actual earnings. It is therefore clearly a contradiction in terms, for another figure, which purports to make allowance for unemployment as well as short time, to be so almost uniformly higher than it. How, it may be queried, can a figure which, because it in-

TABLE 220. AMOUNT BY WHICH BRISSENDEN'S AVERAGE OF ACTUAL EARNINGS EXCEEDS THE AVERAGES OF THE PRESENT STUDY FOR (1) THOSE EMPLOYED IN AND (2) THOSE ATTACHED TO MANUFACTURING

Year	Amount by which Brissenden's Average 'Actual' Earnings Exceed those of Present Study (in dollars)		Year	Amount by which Brissenden's Average 'Actual' Earnings Exceed those of Present Study (in dollars)	
	Average of those Employed	Average of those Attached		Average of those Employed	Average of those Attached
1899	20	52	1913	39	70
1900	14	41	1914	− 4	71
1901	15	36	1915	40	120
1902	24	41	1916	117	140
1903	2	29	1917	86	113
1904	6	40	1918	124	158
1905	42	62	1919	54	100
1906	62	80	1920	130	188
1907	57	75	1921	−133	117
1908	21	78	1922	22	199
1909	39	65	1923	63	118
1910	1	22	1924	70	173
1911	−3	27	1925	122	187
1912	42	64	1926	127	186

cludes unemployment, should be lower than the Census average (which does not take account of the earnings lost through unemployment, but which in other respects should be the same) be actually higher?

All the evidence seems to indicate, therefore, that Dr. Brissenden's averages of actual earnings are too high in absolute terms, and that this excess is caused by either or both of the following factors: (1) The use of too high a percentage of unemployment for 1904, when the average earnings of the employed were expanded to secure the full-time earnings; (2) The use of too low a percentage for lost time and unemployment to deflate this full-time average.

It seems clear that most of this difficulty resulted because Dr. Brissenden introduced several unnecessary steps in his computations, and thereby multiplied the possibilities of error. Instead of moving directly from the average earnings of the employed to the average of those attached, through the intermediate step of computing the relative amount of unemployment, Brissenden tried to expand the average earnings of the employed into full-time earnings (though, as we have pointed out, he omitted lost time within the busiest week of 1904) and then tried to deflate this by an allowance for both part time and unemployment. He thus first put unemployment in and then took it out, and therefore, in effect, largely cancelled any attempt to deduct its absolute volume from the average earnings. In addition (1) the method of expanding the Census average for unemployment by using the New York trade-union percentages of 1904 seems to have been faulty, since these almost certainly showed a larger amount of unemployment than then prevailed in the country as a whole. (2) It is by no means certain that the full-time earnings of the

mployed fluctuated in precisely the same ratio as the Census average wage. he fact that actual earnings, according to my indexes, increased relatively ore rapidly than full-time earnings does, indeed, offer some evidence to indiate that the relative amount of lost time within employment may, with better management, have diminished during this period. (3) The attempt to obain a measure of unemployment, by assuming that the ratios between emloyment and production which prevailed during 1919 and 1923 prevailed hroughout all of the years of the period, is somewhat dangerous, and to apply his to the bench mark figures is an indirect method of obtaining percentages f unemployment which can be reached by more direct means. The method lso involves the assumption that the trends of employment and of the labor upply bear a constant ratio to each other, which need not be the case.

. While Brissenden's Averages of Actual Earnings are too High, their Relative Movement is Closely Similar to that of the Present Study

But while I believe Dr. Brissenden's averages of actual earnings are, in bsolute terms, higher than they should be, and that those of the present

TABLE 221. COMPARISON OF RELATIVE MOVEMENT OF ANNUAL MONEY EARNINGS OF THOSE ATTACHED TO MANUFACTURING ACCORDING TO DOUGLAS'S INDEX, COMPARED WITH THAT OF BRISSENDEN

Year	Douglas's Index of Average Money Earnings of those Attached to Manufacturing 1899 = 100	Brissenden's Index of Average 'Actual' Earnings in Manufacturing after Allowance for Unemployment 1899 = 100	Relation of Brissenden's Index to Douglas's Index	
			Points	Per Cent
1900	104	101	− 3	−3
1901	110	106	− 4	−4
1902	116	111	− 5	−4
1903	119	112	− 7	−6
1904	112	108	− 4	−4
1905	120	120	0	0
1906	124	127	+ 3	+2
1907	128	130	+ 2	+2
1908	106	111	+ 5	+5
1909	125	125	0	0
1910	136	125	−11	−8
1911	129	120	− 9	−7
1912	134	133	− 1	−1
1913	139	138	− 1	−1
1914	128	129	+ 1	+1
1915	126	136	+10	+8
1916	159	172	+13	+8
1917	190	193	+ 3	+2
1918	240	248	+ 8	+3
1919	282	272	−10	−4
1920	330	334	+ 4	+1
1921	236	235	− 1	−1
1922	247	263	+16	+7
1923	304	295	− 9	−3
1924	289	294	+ 5	+2
1925	308	314	+ 6	+2
1926	317	322	+ 5	+2

study are a much closer approximation to reality, it should nevertheless be noted that his measurements of *relative* changes in the *actual* earnings of those attached to manufacturing are very similar indeed to mine. I have reduced our averages to relatives, with the respective averages for 1899 serving as the point of reference for each, and these are as shown in Table 221.

The difference between the two was, therefore, never greater than 8 per cent, while in twenty of the twenty-seven years it did not exceed 4 per cent, and in thirteen years it was not more than 2 per cent. Despite their differences in absolute earnings, therefore, the two studies do tend to corroborate each other in the *relative changes* in earnings which they show after making allowance for unemployment. Since Dr. Brissenden has now adopted my cost of living index, there is no difference between the two studies in this respect.[1]

[1] In an earlier article, Dr. Brissenden used the index of relative retail food prices as his cost of living index, which made the relative position of labor throughout the period appear much less favorable than it was in reality. See Paul Frederick Brissenden, 'Changes in the Purchasing Power of Manufacturing Labor Incomes in the United States, 1899–1925,' *Weltwirtschaftliches Archiv*, Kiel and Jena, 27 Band, 1928; pp. 122–62.

APPENDIX B

INDEXES OF WHOLESALE PRICES

TABLE 222. INDEXES OF WHOLESALE PRICES OF CLOTHING, FURNITURE, FUEL AND LIGHT, TOBACCO AND SPIRITS

Year	Clothing	Furniture	Fuel and Light	Tobacco and Spirits	Year	Clothing	Furniture	Fuel and Light	Tobacco and Spirits
890	113	111	105	96	1903	106	114	159	112
891	110	111	103	98	1904	107	113	138	113
892	110	109	100	95	1905	110	109	132	115
893	106	105	100	96	1906	117	114	136	116
894	94	103	92	99	1907	125	123	141	116
895	94	96	102	103	1908	113	120	*	118
896	90	89	105	101	1909	118	119	*	118
897	90	86	94	100	1910	119	123	*	116
898	95	94	92	105	1911	116	131	*	117
899	99	96	108	108	1912	118	140	*	118
900	106	106	121	110	1913	120	154	*	116
901	99	106	118	113	1914	118	153	*	118
902	101	113	139	113					

* Spliced for these years by a combined index of the retail prices of coal and gas. With April, 1907, as 100, the indexes for April in the following years were: 1908, 100; 1909, 99; 1910, 98; 1911, 96; 1912, 94; 1913, 96; 1914, 96; December, 1914, 94.5; 1915, 94.2.

APPENDIX C

MONTHLY INDEXES OF THE MOVEMENT OF MONEY AND REAL EARNINGS IN THE MAIN GROUPS OF MANUFACTURING INDUSTRIES, 1915–26 AND FOR RAILROADS, 1921–26

(*Note.* Corresponding monthly averages and indexes have been worked out for each of the thirty-eight separate manufacturing industries, and if there is sufficient demand, mimeographed copies will be furnished by the author to any one who wishes this information.)

TABLE 223. AVERAGE RATE OF YEARLY EARNINGS, BY MONTHS (in dollars)

Year and Month	Food	Beverages and Tobacco	Textiles	Clothing	Iron and Steel	Non-Ferrous Metals	Lumber and its Manufactures	Paper and Printing	Stone, Clay, and Glass	Land Vehicles	All Manufacturing Industries	Steam Railroads	
												Wage-Earners	Clerical Employees
1915													
Jan.	566	516	406	521	611	651	500	684	535	816	551		
Feb.	557	518	407	552	642	661	509	650	534	786	552		
March	541	540	422	565	662	718	526	661	544	835	563		
April	557	548	416	531	679	647	529	667	516	860	565		
May	561	553	426	494	672	664	538	673	537	814	562		
June	553	577	419	509	695	653	544	672	566	826	570		
July	536	560	403	518	668	629	537	681	567	758	561		
Aug.	533	575	421	540	692	625	519	677	553	801	570		
Sept.	535	572	425	541	693	628	533	682	553	762	570		
Oct.	548	566	409	562	703	619	545	694	562	837	579		
Nov.	559	578	426	561	707	658	513	700	571	810	579		
Dec.	578	570	433	530	743	671	548	691	556	822	587		
1916													
Jan.	572	575	439	561	718	690	541	681	506	843	598		
Feb.	584	567	461	604	764	725	551	674	539	854	617		
March	596	575	466	620	775	719	561	687	551	883	628		
April	597	565	468	610	785	759	581	690	504	874	631		
May	605	590	491	538	823	780	595	696	547	903	646		
June	626	595	486	559	830	795	570	698	573	911	650		
July	600	581	461	529	766	783	580	683	559	791	622		
Aug.	597	594	479	617	822	807	593	683	638	873	654		
Sept.	614	621	493	677	850	835	609	697	645	921	676		
Oct.	627	600	484	627	874	844	619	705	648	936	679		
Nov.	639	612	503	597	886	850	631	730	664	921	693		
Dec.	659	626	532	602	914	889	632	734	661	922	710		
1917													
Jan.	671	595	534	633	918	873	606	725	624	906	711		
Feb.	662	595	535	701	904	846	587	711	631	968	715		
March	665	607	539	717	948	863	634	728	653	1025	741		
April	665	586	528	628	912	808	636	725	637	1007	722		
May	662	618	565	615	1009	872	663	740	669	1062	762		
June	698	629	576	643	999	896	690	742	684	1047	772		
July	684	613	574	667	964	874	684	732	614	1038	760		
Aug.	696	626	569	697	1009	921	707	745	709	1001	778		
Sept.	713	625	577	721	1027	1015	709	759	741	1078	796		
Oct.	730	630	594	732	1134	934	720	772	770	1112	829		
Nov.	744	638	634	702	1160	940	747	812	785	1143	853		
Dec.	758	634	643	697	1146	960	733	804	780	1136	850		
1918													
Jan.	767	624	618	721	1078	844	679	807	713	1006	814		
Feb.	775	639	589	805	1121	928	696	810	741	1052	836		
March	778	666	673	854	1189	993	747	879	796	1139	868		
April	814	685	714	772	1214	1079	816	897	792	1175	926		
May	841	689	736	818	1319	1107	851	893	847	1276	971		
June	888	754	751	829	1330	1127	880	924	916	1248	995		
July	895	740	790	878	1313	1149	881	920	852	1267	1005		
Aug.	906	693	793	871	1368	1148	901	952	964	1374	1027		
Sept.	940	749	817	871	1444	1207	947	984	1012	1374	1071		
Oct.	986	753	771	884	1545	1226	942	1005	982	1409	1087		
Nov.	1023	798	701	825	1426	1195	935	1017	984	1280	1032		
Dec.	1074	845	837	879	1540	1318	979	1082	1102	1351	1127		

TABLE 223 (*continued*)

Year and Month	Food	Beverages and Tobacco	Textiles	Clothing	Iron and Steel	Non-Ferrous Metals	Lumber and its Manufactures	Paper and Printing	Stone, Clay, and Glass	Land Vehicles	All Manufacturing Industries	Steam Railroads	
												Wage-Earners	Clerical Employees
1919													
Jan.	1008	815	773	926	1492	1235	954	1062	1076	1338	1090		
Feb.	980	798	704	912	1488	1198	932	1047	1067	1434	1073		
March	1005	816	720	1035	1475	1167	937	1084	1083	1422	1093		
April	979	785	749	984	1424	1172	946	1068	1034	1411	1079		
May	1015	834	792	934	1387	1193	977	1072	988	1433	1091		
June	1039	838	870	967	1408	1193	984	1113	1074	1342	1113		
July	1028	880	878	1087	1392	1236	1001	1112	1071	1353	1131		
Aug.	1052	889	881	1202	1508	1193	1032	1142	1075	1351	1172		
Sept.	1096	952	893	1252	1526	1302	1086	1196	1139	1453	1216		
Oct.	1069	949	868	1175	1538	1359	1082	1167	1097	1573	1223		
Nov.	1120	989	882	1206	1567	1364	1128	1196	1160	1568	1241		
Dec.	1167	1013	1027	1302	1593	1382	1153	1309	1169	1526	1303		
1920													
Jan.	1149	991	1031	1350	1624	1374	1145	1321	1191	1634	1317		
Feb.	1151	963	1013	1416	1630	1392	1105	1320	1171	1565	1303		
March	1188	1044	1042	1474	1723	1452	1136	1395	1253	1663	1364		
April	1115	1013	1058	1359	1683	1452	1208	1373	1203	1620	1351		
May	1243	1098	1071	1328	1739	1455	1217	1431	1357	1684	1389		
June	1247	1094	1109	1272	1759	1478	1235	1444	1392	1659	1399		
July	1233	1087	1088	1279	1703	1502	1222	1408	1256	1638	1371		
Aug.	1206	1086	1098	1291	1740	1473	1213	1432	1441	1751	1389		
Sept.	1228	1087	1071	1181	1778	1536	1100	1445	1454	1710	1381		
Oct.	1244	1090	929	1294	1788	1460	1186	1478	1493	1834	1377		
Nov.	1228	1071	927	1165	1771	1459	1182	1456	1499	1463	1334		
Dec.	1215	1049	919	1129	1758	1365	1114	1410	1481	1442	1309		
1921													
Jan.	1234	992	852	1133	1652	1270	992	1383	1362	1443	1224		
Feb.	1228	904	861	1231	1513	1252	964	1350	1271	1271	1107		
March	1212	932	884	1320	1470	1199	988	1372	1244	1336	1214		
April	1163	912	892	1230	1375	1199	985	1361	1236	1556	1189		
May	1194	935	900	1134	1333	1184	977	1351	1235	1616	1198		
June	1137	933	903	1139	1244	1197	987	1373	1221	1599	1186		
July	1136	911	865	1200	1177	1135	963	1372	1111	1558	1167	1532	1538
Aug.	1103	923	864	1278	1205	1141	957	1362	1193	1573	1171	1588	1594
Sept.	1126	915	868	1198	1161	1091	964	1371	1183	1490	1162	1524	1537
Oct.	1124	876	823	1062	1176	1090	967	1372	1157	1426	1127	1592	1569
Nov.	1098	836	822	1051	1193	1098	953	1355	1149	1363	1114	1520	1536
Dec.	1132	866	896	1124	1232	1094	973	1398	1179	1302	1109	1531	1558
1922													
Jan.	1091	845	848	1113	1173	1114	953	1389	1159	1318	1125	1543	1547
Feb.	1078	806	862	1171	1158	1072	890	1321	1097	1338	1106	1465	1475
March	1087	846	828	1056	1214	1130	928	1396	1080	1387	1114	1620	1595
April	1055	796	808	999	1216	1140	937	1372	1083	1554	1109	1499	1532
May	1086	879	824	1038	1250	1160	970	1391	1112	1602	1137	1554	1570
June	1083	914	827	1057	1267	1176	974	1395	1166	1600	1150	1545	1566
July	1062	920	827	1172	1216	1144	981	1375	1187	1409	1137	1541	1514
Aug.	1021	917	824	1235	1202	1183	968	1377	1177	1541	1154	1669	1565
Sept.	1033	916	824	1211	1348	1249	1006	1427	1193	1551	1178	1658	1519
Oct.	1073	897	839	1147	1361	1223	990	1395	1154	1557	1170	1682	1546
Nov.	1099	917	884	1122	1423	1263	1020	1422	1209	1616	1191	1619	1526
Dec.	1121	909	899	1122	1466	1309	1025	1448	1214	1609	1210	1639	1530

TABLE 223 (*continued*)

Year and Month	Food	Beverages and Tobacco	Textiles	Clothing	Iron and Steel	Non-Ferrous Metals	Lumber and its Manufactures	Paper and Printing	Stone, Clay, and Glass	Land Vehicles	All Manufacturing Industries	Steam Railroads	
												Wage-Earners	Clerical Employees
1923													
Jan.....	1099	877	888	1234	1448	1307	990	1409	1150	1424	1196	1664	1547
Feb.....	1093	875	898	1261	1457	1287	993	1409	1136	1558	1194	1516	1467
March..	1108	896	920	1315	1497	1387	1014	1425	1201	1609	1236	1663	1568
April...	1101	889	930	1203	1489	1400	1045	1437	1215	1641	1239	1568	1518
May.....	1157	907	980	1127	1593	1438	1071	1458	1275	1647	1279	1614	1557
June....	1163	914	968	1147	1561	1425	1080	1452	1321	1611	1280	1575	1541
July....	1140	912	935	1176	1485	1424	1063	1450	1300	1625	1259	1575	1540
Aug.....	1081	872	925	1171	1554	1394	1066	1410	1307	1646	1246	1611	1579
Sept....	1151	893	928	1077	1537	1436	1077	1431	1325	1584	1259	1536	1529
Oct.....	1115	933	915	1166	1591	1446	1104	1453	1322	1716	1284	1650	1593
Nov....	1178	931	920	1142	1587	1447	1116	1441	1344	1700	1279	1534	1563
Dec.....	1167	946	933	1104	1587	1477	1106	1464	1336	1628	1294	1523	1559
1924													
Jan.....	1189	914	910	1152	1541	1464	1057	1460	1346	1385	1261	1604	1580
Feb.....	1185	909	917	1182	1576	1453	1073	1472	1331	1603	1287	1538	1523
March..	1182	921	902	1167	1582	1460	1089	1487	1316	1659	1281	1608	1567
April...	1188	902	884	1117	1575	1428	1088	1496	1298	1662	1266	1545	1570
May.....	1210	920	870	1082	1558	1420	1078	1488	1305	1583	1250	1561	1588
June....	1153	934	840	1077	1468	1385	1080	1481	1306	1470	1217	1505	1552
July....	1119	912	809	1062	1361	1316	1023	1456	1279	1393	1166	1553	1590
Aug.....	1049	941	845	1112	1443	1407	1046	1455	1293	1487	1202	1561	1584
Sept....	1090	909	876	1159	1455	1442	1065	1485	1269	1525	1214	1560	1567
Oct.....	1073	903	918	1158	1502	1461	1071	1504	1313	1580	1237	1647	1614
Nov....	1114	935	914	1120	1510	1439	1071	1499	1307	1541	1223	1539	1550
Dec.....	1214	945	961	1142	1585	1452	1083	1530	1316	1547	1253	1622	1596
1925													
Jan.....	1224	940	945	1208	1574	1456	1013	1522	1273	1307	1211	1655	1598
Feb.....	1209	884	943	1270	1595	1411	1066	1521	1304	1662	1270	1609	1620
March..	1196	889	947	1279	1600	1446	1090	1529	1310	1679	1281	1619	1594
April...	1179	824	929	1150	1573	1397	1068	1520	1300	1693	1258	1567	1586
May.....	1216	925	935	1106	1590	1413	1075	1525	1319	1681	1277	1569	1581
June....	1164	944	898	1111	1549	1411	1081	1511	1306	1627	1284	1571	1586
July....	1122	939	901	1193	1492	1427	1052	1495	1277	1618	1267	1599	1602
Aug.....	1133	950	915	1225	1536	1433	1059	1502	1315	1650	1280	1605	1598
Sept....	1111	918	871	1170	1499	1446	1076	1504	1289	1582	1254	1582	1581
Oct.....	1135	939	926	1208	1595	1446	1108	1558	1336	1702	1321	1666	1629
Nov....	1180	963	928	1174	1588	1489	1104	1575	1338	1729	1324	1583	1565
Dec.....	1237	956	946	1155	1630	1496	1112	1594	1339	1663	1329	1635	1609
1926													
Jan.....	1249	960	936	1197	1587	1457	1048	1563	1303	1397	1271	1623	1580
Feb.....	1220	881	940	1261	1621	1451	1100	1570	1309	1650	1321	1531	1537
March..	1221	937	934	1259	1642	1481	1104	1588	1336	1653	1333	1678	1635
April...	1215	937	923	1131	1622	1472	1081	1588	1326	1650	1318	1588	1601
May.....	1242	944	911	1089	1612	1472	1089	1587	1345	1632	1313	1590	1599
June....	1201	940	909	1106	1611	1462	1099	1586	1344	1569	1313	1583	1601
July....	1151	955	883	1080	1540	1423	1055	1560	1299	1487	1272	1599	1617
Aug.....	1132	1012	915	1143	1564	1441	1098	1566	1336	1612	1310	1621	1613
Sept....	1157	967	912	1135	1573	1400	1110	1564	1308	1574	1298	1601	1600
Oct.....	1151	974	946	1178	1636	1462	1135	1592	1352	1648	1338	1653	1623
Nov....	1166	980	939	1069	1606	1445	1125	1586	1342	1579	1310	1615	1599
Dec.....	1247	958	957	1155	1627	1462	1119	1610	1353	1439	1309	1673	1626

TABLE 224. RELATIVE REAL EARNINGS, BY MONTHS (1914 = 100)
(in dollars)

Year and Month	Food	Beverages and Tobacco	Textiles	Clothing	Iron and Steel	Non-Ferrous Metals	Lumber and its Manufactures	Paper and Printing	Stone, Clay, and Glass	Land Vehicles	All Manufacturing Industries	Steam Railroads	
												Wage-Earners	Clerical Emp'oyees
1915													
Jan.	105	98	100	105	87	106	95	105	96	111	98		
Feb.	104	94	101	112	92	109	98	100	97	108	97		
March	102	99	106	116	96	119	102	103	100	116	100		
April	105	100	104	109	99	107	103	104	95	119	101		
May	105	100	106	100	97	109	104	104	98	112	99		
June	104	105	104	104	100	108	105	104	103	114	101		
July	100	103	100	105	95	103	103	105	103	104	99		
Aug.	100	104	105	110	100	108	100	105	101	110	101		
Sept.	99	103	105	109	99	103	102	105	100	104	100		
Oct.	101	101	100	112	99	100	103	106	100	109	100		
Nov.	102	102	103	111	99	106	96	106	101	109	100		
Dec.	106	101	105	105	105	108	103	105	99	111	101		
1916													
Jan.	102	100	104	109	99	109	100	101	88	111	101		
Feb.	104	98	109	117	105	114	101	99	93	112	104		
March	106	99	110	119	106	112	103	101	95	115	105		
April	104	96	109	115	105	117	104	100	85	112	104		
May	105	100	113	101	110	119	106	100	92	116	106		
June	107	99	111	104	109	120	100	99	96	115	105		
July	103	97	105	98	101	118	102	97	93	100	101		
Aug.	102	99	109	115	108	122	105	97	106	110	106		
Sept.	103	101	110	123	110	123	105	97	105	114	107		
Oct.	104	97	107	113	112	123	106	97	104	114	106		
Nov.	104	96	108	105	111	121	105	98	105	110	106		
Dec.	106	97	113	106	113	125	104	97	103	109	107		
1917													
Jan.	105	90	111	108	111	120	96	94	95	104	105		
Feb.	102	89	110	117	107	115	93	91	95	110	104		
March	101	89	109	118	111	115	99	91	96	114	106		
April	99	84	104	101	104	105	97	89	92	110	101		
May	96	87	109	97	113	111	99	89	94	114	105		
June	98	88	108	98	108	111	100	87	94	109	103		
July	97	85	108	103	106	109	100	88	85	109	102		
Aug.	98	86	107	107	110	114	103	87	97	104	104		
Sept.	98	83	105	107	109	123	100	86	99	109	103		
Oct.	97	81	105	106	116	109	99	85	100	109	104		
Nov.	98	81	111	100	118	109	101	88	100	111	106		
Dec.	99	80	111	98	115	110	98	87	99	109	104		
1918													
Jan.	96	76	103	98	104	98	88	84	87	93	98		
Feb.	96	76	96	106	106	101	88	83	89	95	97		
March	98	80	111	115	113	106	95	90	98	104	105		
April	101	83	118	104	116	118	104	92	98	107	108		
May	102	81	118	107	123	118	106	89	100	114	111		
June	105	86	118	106	121	117	107	90	105	108	111		
July	104	83	121	110	117	117	105	88	96	106	110		
Aug.	103	76	120	107	120	115	105	90	107	115	110		
Sept.	104	81	121	105	123	118	106	90	109	112	112		
Oct.	106	80	112	104	120	118	106	91	104	113	112		
Nov.	111	84	101	97	119	114	104	91	104	102	105		
Dec.	116	86	119	102	127	125	106	96	116	107	114		

TABLE 224 (*continued*)

Year and Month	Food	Beverages and Tobacco	Textiles	Clothing	Iron and Steel	Non-Ferrous Metals	Lumber and its Manufactures	Paper and Printing	Stone, Clay, and Glass	Land Vehicles	All Manufacturing Industries	Steam Railroads	
												Wage-Earners	Clerical Employees
1919													
Jan.	107	84	109	107	122	116	105	94	111	105	110		
Feb.	107	84	101	107	124	114	104	94	112	114	110		
March	109	86	104	122	123	111	105	97	114	113	112		
April	105	82	107	114	117	110	104	95	108	111	109		
May	107	86	111	107	113	111	106	94	102	112	109		
June	109	86	122	110	114	110	106	97	110	104	110		
July	107	87	121	122	111	113	107	96	108	103	111		
Aug.	107	87	119	132	118	106	108	96	106	101	112		
Sept.	111	94	121	138	119	116	114	101	113	109	117		
Oct.	104	90	112	124	115	116	108	94	104	113	112		
Nov.	106	91	111	123	114	113	110	94	107	109	111		
Dec.	110	92	128	132	115	114	111	102	107	105	115		
1920													
Jan.	104	87	124	132	113	109	106	99	104	108	112		
Feb.	104	84	121	138	113	110	102	98	103	104	111		
March	107	91	124	143	119	115	105	104	109	110	115		
April	97	86	123	128	113	111	108	99	110	104	111		
May	108	92	123	125	116	111	109	103	114	107	114		
June	108	92	128	119	117	113	110	104	117	106	114		
July	106	91	125	119	113	114	108	100	105	104	111		
Aug.	107	93	129	124	119	115	110	105	124	114	116		
Sept.	109	93	126	113	121	119	108	106	125	111	115		
Oct.	111	93	110	125	123	114	109	109	129	120	116		
Nov.	110	93	110	113	122	115	109	108	131	96	113		
Dec.	114	95	114	115	127	112	107	109	135	99	116		
1921													
Jan.	118	86	108	118	122	108	98	110	126	102	111		
Feb.	123	88	114	133	116	110	99	112	124	93	113		
March	122	91	118	144	114	106	102	114	122	99	115		
April	119	90	121	136	108	108	103	115	122	117	114		
May	124	94	124	127	106	108	104	116	124	123	117		
June	119	95	126	129	100	110	106	119	125	123	117		
July	119	92	120	136	95	104	103	119	113	120	115	110	106
Aug.	115	93	119	144	96	104	102	117	120	120	115	114	109
Sept.	119	93	121	137	94	101	104	119	118	115	115	110	107
Oct.	118	89	115	121	95	101	105	120	118	110	112	115	109
Nov.	116	86	115	120	97	102	104	118	118	106	111	111	107
Dec.	121	89	127	130	101	103	107	123	122	102	111	112	109
1922													
Jan.	119	89	123	131	98	107	107	125	123	106	116	116	111
Feb.	118	85	125	139	97	103	100	120	117	108	114	110	106
March	121	92	123	128	104	111	106	129	117	114	117	124	117
April	118	86	120	121	104	112	107	127	117	127	117	115	113
May	121	95	122	125	107	114	111	128	120	131	119	119	115
June	121	99	122	127	108	115	111	128	126	131	121	118	115
July	118	99	122	141	104	112	112	127	128	115	119	118	111
Aug.	114	100	123	149	111	117	112	128	128	127	122	129	116
Sept.	121	99	122	146	116	123	115	132	129	127	124	127	112
Oct.	119	96	123	137	116	119	113	128	124	127	122	128	113
Nov.	120	97	128	133	120	122	115	129	129	130	123	123	110
Dec.	122	96	130	133	123	125	115	131	129	129	125	123	110

TABLE 224 (*continued*)

Year and Month	Food	Beverages and Tobacco	Textiles	Clothing	Iron and Steel	Non-Ferrous Metals	Lumber and its Manufactures	Paper and Printing	Stone, Clay, and Glass	Land Vehicles	All Manufacturing Industries	Steam Railroads	
												Wage-Earners	Clerical Employees
1923													
Jan.	121	94	130	147	123	126	112	128	128	115	124	126	112
Feb.	121	94	132	151	124	125	113	129	122	127	125	115	107
March	122	95	134	156	127	134	115	129	128	130	128	126	114
April	121	95	136	143	126	135	118	131	130	132	128	118	110
May	126	96	142	139	134	138	120	132	135	132	132	121	112
June	127	97	140	136	131	137	121	131	140	129	132	118	111
July	123	96	134	138	124	135	118	130	137	129	128	117	110
Aug.	117	92	133	138	130	133	119	127	138	131	127	120	113
Sept.	124	93	132	125	127	136	119	127	138	125	128	113	108
Oct.	119	97	130	135	131	136	122	129	137	135	130	122	113
Nov.	125	96	130	132	130	135	122	127	139	133	128	112	110
Dec.	125	98	132	128	130	139	121	129	139	128	130	112	110
1924													
Jan.	128	95	130	134	127	138	117	130	140	109	128	118	112
Feb.	128	95	131	138	131	138	119	131	140	134	131	114	109
March	128	97	130	137	132	139	122	134	139	133	131	120	112
April	130	96	128	132	132	137	122	135	138	134	131	116	113
May	132	98	126	128	131	137	121	135	139	127	129	117	115
June	126	99	122	127	123	133	121	134	135	118	125	113	112
July	122	97	117	126	114	126	115	132	136	112	120	117	115
Aug.	114	99	122	131	121	134	117	131	137	119	123	117	114
Sept.	118	95	126	136	121	137	119	133	134	121	124	116	112
Oct.	115	94	131	135	124	138	118	134	137	125	125	122	115
Nov.	120	98	130	130	125	136	118	133	137	122	124	114	110
Dec.	130	98	137	132	131	137	119	136	137	122	126	119	113
1925													
Jan.	130	97	134	130	129	136	111	134	132	102	122	121	112
Feb.	130	92	135	148	132	133	118	135	136	131	129	112	108
March	129	93	135	149	132	137	120	136	137	133	130	120	113
April	127	86	133	134	130	132	118	136	136	134	128	116	113
May	131	96	133	129	131	133	119	136	138	133	129	116	112
June	134	97	127	128	127	132	118	133	135	127	129	115	111
July	118	96	126	136	121	132	114	130	131	125	126	116	111
Aug.	119	97	128	140	124	133	115	131	135	121	127	116	111
Sept.	117	94	122	134	122	134	117	131	132	123	125	115	110
Oct.	119	95	129	137	128	133	119	135	136	131	130	120	113
Nov.	122	97	127	132	126	135	117	135	134	131	129	113	107
Dec.	128	98	130	130	130	136	118	137	135	127	130	117	110
1926													
Jan.	130	97	129	135	127	133	112	135	132	107	125	116	109
Feb.	128	89	131	143	130	133	118	136	133	127	130	110	106
March	128	95	130	143	133	137	119	138	136	128	132	121	113
April	128	95	129	129	131	136	117	138	135	127	131	115	111
May	131	96	127	124	131	136	118	138	138	126	130	115	111
June	127	96	127	126	131	136	119	138	138	122	131	115	111
July	122	96	125	124	126	133	115	137	134	116	128	117	113
Aug.	121	105	130	132	129	135	121	138	139	127	132	119	114
Sept.	122	99	128	130	128	130	121	137	135	123	130	117	113
Oct.	122	100	133	135	133	136	123	139	139	128	133	120	113
Nov.	123	100	131	122	130	134	122	138	137	123	130	117	111
Dec.	131	98	133	131	131	135	121	140	138	111	130	121	113

TABLE 225. RELATIVE MONEY EARNINGS, BY MONTHS (1914 = 100)
(in dollars)

Year and Month	Food	Beverages and Tobacco	Textiles	Clothing	Iron and Steel	Non-Ferrous Metals	Lumber and its Manufactures	Paper and Printing	Stone, Clay, and Glass	Land Vehicles	All Manufacturing Industries	Steam Railroads	
												Wage-Earners	Clerical Employees
1915													
Jan.	104	91	99	103	88	105	94	103	95	110	95		
Feb.	102	92	99	109	90	106	96	98	95	106	95		
March	99	96	102	112	93	115	99	100	97	112	97		
April	102	97	101	105	96	104	99	101	92	116	97		
May	103	98	103	98	95	107	101	102	95	109	97		
June	101	102	102	101	98	105	102	102	101	111	98		
July	98	99	98	103	94	101	101	103	101	102	97		
Aug.	97	102	102	107	97	100	98	102	98	108	98		
Sept.	98	101	103	107	98	101	100	103	98	102	98		
Oct.	100	100	99	111	99	100	102	105	100	109	100		
Nov.	102	102	103	111	99	106	96	106	101	109	100		
Dec.	106	101	105	106	105	108	103	105	99	110	101		
1916													
Jan.	105	102	107	111	101	111	102	103	90	113	103		
Feb.	107	101	112	120	108	117	104	102	96	115	106		
March	109	102	113	123	109	116	106	104	98	118	108		
April	109	100	114	121	110	122	109	104	90	118	109		
May	111	105	119	107	116	125	112	105	97	121	111		
June	114	105	118	111	117	128	107	106	102	123	112		
July	110	103	112	105	108	126	109	103	99	106	107		
Aug.	109	105	116	122	116	130	112	103	113	117	113		
Sept.	112	110	120	134	120	134	115	105	115	124	117		
Oct.	115	106	118	124	123	136	116	107	115	126	117		
Nov.	117	109	122	118	125	137	119	110	118	124	120		
Dec.	121	111	129	119	129	143	119	111	117	124	122		
1917													
Jan.	123	105	130	125	129	140	114	110	111	122	123		
Feb.	121	105	130	139	127	136	110	108	112	130	123		
March	122	108	131	142	133	139	119	110	116	138	128		
April	122	104	128	124	128	130	120	110	113	135	125		
May	121	110	137	122	142	140	125	112	119	143	131		
June	128	112	140	127	141	144	130	112	121	141	133		
July	125	109	139	132	136	141	129	111	109	140	131		
Aug.	127	111	138	138	142	148	133	113	126	135	134		
Sept.	130	111	140	143	144	163	133	115	132	145	137		
Oct.	134	112	144	145	160	150	135	117	137	150	143		
Nov.	136	113	154	139	163	151	140	123	139	154	147		
Dec.	139	112	156	138	161	154	138	122	139	153	147		
1918													
Jan.	140	111	150	143	152	136	128	122	127	135	140		
Feb.	142	113	143	159	158	149	131	123	132	141	144		
March	142	118	163	169	167	160	140	133	141	153	155		
April	149	121	173	153	171	173	153	136	141	158	160		
May	154	122	179	162	186	178	160	135	150	172	167		
June	162	134	182	164	187	181	165	140	153	168	172		
July	164	131	192	174	185	185	166	139	151	170	173		
Aug.	166	123	193	173	192	185	169	144	171	185	177		
Sept.	172	133	198	173	203	194	178	149	180	185	185		
Oct.	180	134	187	175	217	197	177	152	174	189	187		
Nov.	187	141	170	163	201	192	176	154	175	172	178		
Dec.	196	150	208	174	217	212	184	164	196	182	194		

TABLE 225 (*continued*)

Year and Month	Food	Beverages and Tobacco	Textiles	Clothing	Iron and Steel	Non-Ferrous Metals	Lumber and its Manufactures	Paper and Printing	Stone, Clay, and Glass	Land Vehicles	All Manufacturing Industries	Steam Railroads	
												Wage-Earners	Clerical Employees
1919													
Jan.	184	144	188	183	210	199	179	161	191	180	188		
Feb.	181	141	171	181	209	193	175	158	190	193	185		
March	184	145	175	205	208	188	176	164	192	191	188		
April	179	139	182	195	200	188	178	162	184	190	186		
May	186	148	192	185	195	192	184	162	175	193	188		
June	190	149	211	192	198	192	185	168	191	180	192		
July	188	152	218	215	196	199	188	168	190	182	195		
Aug.	192	158	214	238	212	192	194	173	191	182	202		
Sept.	200	169	217	248	215	209	204	181	202	195	210		
Oct.	195	168	211	233	216	218	203	177	195	212	211		
Nov.	205	175	214	239	220	219	212	181	206	211	214		
Dec.	213	180	249	258	224	222	217	198	208	205	225		
1920													
Jan.	210	176	250	267	228	221	215	200	212	220	227		
Feb.	210	171	246	280	229	224	208	200	208	210	225		
March	217	185	253	292	242	233	214	211	223	224	235		
April	204	180	257	269	237	233	227	208	230	218	233		
May	227	195	260	283	245	234	229	216	241	226	240		
June	228	194	269	252	247	238	232	218	247	223	241		
July	225	193	264	253	240	241	230	213	223	230	236		
Aug.	221	193	267	256	245	237	228	217	256	235	240		
Sept.	225	193	260	234	250	247	224	219	258	230	238		
Oct.	227	191	226	256	252	235	223	224	265	247	237		
Nov.	225	190	225	231	249	235	222	220	266	197	230		
Dec.	222	186	223	224	247	219	209	213	263	194	226		
1921													
Jan.	226	163	207	224	232	206	187	209	241	194	211		
Feb.	225	160	209	244	213	201	181	204	226	171	206		
March	222	165	215	261	207	193	186	208	221	180	209		
April	213	162	217	244	193	193	185	206	220	209	205		
May	218	166	218	235	188	190	184	204	219	217	207		
June	208	165	219	226	175	192	186	208	217	215	205		
July	208	162	210	238	166	182	181	206	197	210	201	193	186
Aug.	202	164	210	253	170	183	180	206	212	212	202	200	192
Sept.	206	162	211	237	163	178	181	207	205	200	200	192	185
Oct.	206	155	200	210	165	178	182	208	206	192	194	200	189
Nov.	201	148	200	208	168	177	179	205	204	183	192	191	185
Dec.	207	154	218	223	173	176	183	212	209	175	191	193	188
1922													
Jan.	199	150	206	220	165	179	179	210	208	177	194	194	187
Feb.	197	143	209	232	163	173	167	200	195	180	191	184	178
March	199	150	201	209	171	182	174	211	192	187	192	204	192
April	193	141	196	196	171	183	176	208	192	209	191	189	185
May	199	158	200	205	176	186	182	210	198	215	196	195	189
June	199	162	201	209	178	189	183	211	207	215	198	194	189
July	194	163	201	232	171	184	184	208	211	190	196	194	183
Aug.	187	163	200	243	182	190	182	208	209	207	199	210	189
Sept.	196	162	200	240	190	201	189	216	212	209	203	209	183
Oct.	196	159	204	227	191	197	186	211	206	209	202	212	186
Nov.	201	163	214	222	210	204	192	215	215	217	205	204	184
Dec.	206	161	218	222	206	209	193	219	216	216	209	206	185

TABLE 225 (*continued*)

Year and Month	Food	Beverages and Tobacco	Textiles	Clothing	Iron and Steel	Non-Ferrous Metals	Lumber and its Manufactures	Paper and Printing	Stone, Clay, and Glass	Land Vehicles	All Manufacturing Industries	Steam Railroads	
												Wage-Earners	Clerical Employees
1923													
Jan.	201	155	216	244	204	210	186	213	204	191	206	209	187
Feb.	200	155	218	250	205	207	187	213	202	210	206	191	177
March	203	159	223	260	211	223	191	216	213	216	213	200	189
April	201	158	226	238	209	225	196	217	216	221	214	197	183
May	212	161	238	233	224	231	201	221	226	221	221	203	188
June	213	162	235	227	220	229	203	220	235	217	221	198	186
July	208	162	227	233	209	229	200	219	231	219	217	198	186
Aug.	198	155	225	232	219	224	200	213	232	221	215	203	190
Sept.	210	158	225	213	216	231	202	216	235	213	217	193	184
Oct.	204	165	222	231	224	232	208	220	235	231	221	208	192
Nov.	215	165	223	226	223	233	210	218	239	229	221	193	189
Dec.	213	168	227	219	223	237	208	221	237	219	223	192	188
1924													
Jan.	217	162	221	228	217	235	199	221	239	186	217	202	191
Feb.	217	161	223	234	222	234	202	223	236	228	222	193	185
March	216	163	219	231	223	235	205	225	234	223	221	202	189
April	217	160	215	221	222	230	205	226	231	223	218	194	189
May	221	163	211	214	217	228	203	225	232	213	216	196	192
June	211	166	204	213	206	223	203	224	232	198	210	189	187
July	205	162	196	210	191	212	192	220	227	187	201	195	192
Aug.	192	167	205	220	203	226	197	220	230	200	207	196	191
Sept.	199	161	213	230	205	232	200	225	225	205	209	196	189
Oct.	196	160	223	229	211	235	201	228	233	212	213	207	195
Nov.	204	166	222	222	212	231	201	227	232	207	211	194	187
Dec.	222	168	233	226	223	233	204	231	234	208	216	204	193
1925													
Jan.	224	167	229	239	221	234	190	230	226	176	209	208	193
Feb.	221	157	229	251	224	227	200	230	232	223	219	190	183
March	219	158	230	253	225	232	206	231	233	226	221	204	192
April	216	146	225	228	221	225	201	230	231	228	217	197	191
May	222	164	227	219	224	227	202	231	234	226	220	197	191
June	213	167	218	220	218	227	203	229	232	219	221	198	191
July	205	166	219	236	210	229	198	226	227	217	218	201	193
Aug.	207	168	222	243	216	230	199	227	234	210	221	202	193
Sept.	203	163	211	232	211	232	202	228	229	213	216	199	191
Oct.	208	166	225	239	224	232	208	236	237	229	228	210	197
Nov.	216	171	225	232	223	239	208	238	238	232	228	199	189
Dec.	226	169	230	229	229	241	209	241	238	224	229	206	194
1926													
Jan.	228	170	227	237	223	234	197	236	231	188	219	204	191
Feb.	223	156	228	250	228	233	207	237	233	222	228	193	185
March	223	166	227	249	231	238	208	240	237	222	230	211	197
April	222	166	224	224	228	237	203	240	236	222	227	200	193
May	227	167	221	216	227	237	205	240	239	219	226	200	193
June	220	167	221	219	227	235	207	240	239	211	226	199	193
July	210	169	214	214	217	229	198	236	231	200	219	201	195
Aug.	207	179	222	226	220	232	206	237	237	217	226	204	195
Sept.	212	171	221	225	221	225	209	237	232	212	224	201	193
Oct.	210	173	230	233	230	235	213	241	240	222	231	208	196
Nov.	213	174	226	212	226	232	211	240	238	212	226	203	193
Dec.	228	170	232	229	229	235	210	244	240	193	226	210	196

NOTE TO TABLES 223, 224, AND 225

Some of the month-to-month fluctuations which are shown above may seem to exaggerate the actual movement. When analyzed, however, the large majority of these instances fall into the following sets of cases:

(1) The sharp decline in January, 1921, of the average earnings in beverages and tobacco, textiles, iron and steel, non-ferrous metals, lumber and stone, clay, and glass. These were due to the business depression of that period, which caused wages to be cut and many factories to go on part time.

(2) The recession which set in during May, June, and July of 1924 in the output of textiles, iron and steel, lumber, and automobiles.

(3) The attempts to relieve the war-time congestion of the railways in January, 1918, by closing down factories for a portion of each week upon the orders of the Fuel Administration. This reduced the average earnings in the iron and steel, non-ferrous metals, lumber, stone, clay and glass, and land vehicle industries.

(4) The loss of employment in November, 1918, because of the celebration of both the false and the true armistices.

(5) The slack season in the automobile industry, which in recent years has reached its depths in January.

(6) The seasonal fluctuations in the clothing industry, which have affected average earnings as well as employment, because of the rule in union plants that the burden of slack time is to be evenly divided.

(7) The tendency for the average earnings in the food industries to rise at the end of the year because of the decline in the numbers of cannery workers, with their lower average.

(8) The effect of the shopmen's strike in July and August, 1922, which caused the average earnings in the industries manufacturing railroad equipment to fall.

(9) A midsummer decline in the output of the glass industry.

APPENDIX D

SYSTEMS OF WEIGHTING USED FOR WAGE-RATES AND ANNUAL EARNINGS

TABLE 226. WEIGHTS EMPLOYED IN COMPUTING AVERAGE ANNUAL EARNINGS FOR ALL INDUSTRIES

Year	Manufacturing	Steam Railroads	Street Railways	Telephones	Telegraphs	Gas and Electricity	Clerical Workers	Coal Miners	Postal Employees	Federal Gov't Employees (executive departments)	Teachers	Ministers	Farm Labor	Total	Year
1890.....	154	28	3			1	20	8	1		15	4	55	289	1890
1891.....	157	30	3			1	19	8	1		15	4	58	296	1891
1892.....	161	33	3			1	19	9	1	1	15	4	60	307	1892
1893.....	165	33	3			1	19	9	1	1	15	4	63	314	1893
1894.....	169	31	3			1	18	10	1	1	16	4	65	319	1894
1895.....	173	30	3			1	18	10	1	1	16	4	68	325	1895
1896.....	177	32	3			2	18	10	1	1	16	4	70	334	1896
1897.....	181	32	4			2	17	10	1	1	16	4	73	341	1897
1898.....	185	34	4			2	17	10	1	1	17	4	75	350	1898
1899.....	189	36	5			2	17	11	1	1	17	4	78	361	1899
1900.....	195	39	5			2	18	12	1	1	17	4	80	374	1900
1901.....	200	41	5			2	19	14	1	1	17	5	83	388	1901
1902.....	207	46	5	2	1	*	21	21	1	1	18	5	85	414	1902
1903.....	213	50	6	3	1	*	23	23	2	1	18	5	88	433	1903
1904.....	219	50	6	3	1	2	24	24	2	1	18	5	90	445	1904
1905.....	228	53	7	4	1	2	26	25	2	1	19	5	93	466	1905
1906.....	237	58	8	5	1	3	29	26	2	1	19	5	95	489	1906
1907.....	246	64	8	5	1	3	31	27	2	1	20	5	96	511	1907
1908.....	256	54	8	6	1	3	33	28	2	1	20	5	100	516	1908
1909.....	265	57	9	6	1	3	36	29	2	1	21	5	103	537	1909
1910.....	267	64	10	6	1	3	38	29	2	1	21	5	106	552	1910
1911.....	269	63	10	6	1	4	39	29	2	1	22	5	103	554	1911
1912.....	271	65	10	6	1	4	41	30	2	1	22	5	101	560	1912
1913.....	273	69	10	6	2	4	42	30	2	1	23	5	98	566	1913
1914.....	276	64	10	7	2	4	45	31	3	1	24	5	96	568	1914
1915.....	292	64	11	7	2	4	49	29	3	2	25	5	94	587	1915
1916.....	309	64	11	8	2	4	54	29	3	2	25	5	92	606	1916
1917.....	326	64	11	8	2	4	58	30	3	2	26	5	89	628	1917
1918.....	343	64	11	8	2	5	63	30	3	3	26	5	87	650	1918
1919.....	360	66	11	8	3	5	67	31	3	4	27	5	85	675	1919
1920.....	360	70	11	9	3	5	67	31	3	3	28	5	82	677	1920
1921.....	278	57	11	9	3	5	55	23	4	2	29	5	80	571	1921
1922.....	308	52	11	9	3	5	58	24	4	2	30	5	77	593	1922
1923.....	351	60	11	10	3	5	60	25	4	2	30	5	75	651	1923
1924.....	317	60	11	10	3	5	61	31	4	2	31	5	73	613	1924
1925.....	320	60	11	11	3	5	63	30	4	2	31	5	71	616	1925
1926.....	323	61	11	11	3	5	63	30	5	2	32	5	68	619	1926

* Data on earnings missing.

TABLE 227. WEIGHTS EMPLOYED IN COMPUTING AVERAGES OF HOURLY EARNINGS, HOURS PER WEEK, AND FULL-TIME WEEKLY EARNINGS

Year	Cotton Goods	Boots and Shoes	Men's Clothing	Hosiery and Knit Goods	Woolens and Worsteds	Lumber (sawmills)	Iron and Steel	Slaughtering and Meat-Packing	Manufacturing (payroll)	Metal Trades	Granite and Stone	Printing (book and job)	Printing (newspaper)	Lumber (planing mills)	Bakers	Year
1890	9	9	8	8	8	12	7	2	50	10	1	2	3	3	2	1890
1891	9	9	8	8	8	12	7	2	50	10	1	2	4	3	2	1891
1892	10	9	8	8	8	12	7	2	51	11	1	2	4	3	2	1892
1893	10	9	8	8	8	12	8	2	51	11	1	2	4	3	2	1893
1894	10	9	8	8	8	12	8	2	51	12	2	2	4	3	2	1894
1895	11	9	8	8	8	12	8	2	52	12	2	2	4	3	2	1895
1896	11	9	8	8	8	12	8	2	52	13	2	2	4	3	2	1896
1897	11	9	8	8	8	12	8	2	53	13	2	2	4	3	2	1897
1898	12	9	8	8	8	12	9	2	55	14	2	2	4	3	2	1898
1899	12	9	8	8	8	12	9	2	55	14	2	2	4	3	2	1899
1900	12	9	8	4	8	12	9	2	56	15	2	2	4	3	3	1900
1901	13	9	8	4	8	12	9	2	57	15	2	2	4	3	3	1901
1902	13	7	8	4	8	13	10	2	61	16	2	2	4	3	3	1902
1903	13	7	8	4	8	13	10	2	62	17	2	2	4	3	3	1903
1904	14	7	8	4	8	14	10	2	64	18	2	4	4	4	3	1904
1905	14	7	7	4	8	14	10	2	65	18	2	4	4	4	3	1905
1906	14	7	7	5	8	14	10	2	66	19	2	4	4	4	4	1906
1907	15	8	7	5	8	15	11	2	70	20	2	4	4	4	4	1907
1908	15	8	7	5	8	15	11	2	70	21	2	4	4	4	4	1908
1909	15	8	8	5	7	15	11	2	72	21	2	4	4	4	4	1909
1910	15	8	8	5	7	15	12	4	74	21	2	4	4	4	4	1910
1911	16	8	8	6	7	15	12	4	76	21	2	4	4	4	4	1911
1912	16	8	7	6	7	14	13	4	75	21	2	4	4	4	5	1912
1913	16	8	7	6	7	14	13	5	76	20	2	5	5	4	5	1913
1914	17	9	7	6	7	13	14	5	78	20	2	5	5	4	5	1914
1915	17	9	7	6	7	13	14	5	78	20	2	5	5	4	5	1915
1916	17	9	7	6	7	12	15	6	79	20	2	5	5	4	5	1916
1917	17	9	7	7	7	12	16	6	81	20	2	5	5	4	6	1917
1918	18	9	7	7	7	11	16	6	81	20	1	5	5	4	6	1918
1919	18	9	7	7	7	11	17	6	82	19	1	5	5	4	6	1919
1920	18	9	7	7	7	11	17	6	82	19	1	5	5	4	6	1920
1921	17	8	7	6	7	8	10	5	67	13	1	5	4	3	6	1921
1922	18	9	7	7	7	10	14	5	77	16	1	5	4	4	6	1922
1923	19	9	8	8	8	12	17	5	85	18	1	5	5	4	7	1923
1924	19	9	8	8	8	11	17	5	85	14	1	5	5	4	7	1924
1925	18	8	7	7	7	11	16	5	79	16	1	5	5	4	6	1925
1926	18	8	7	7	7	11	16	5	79	16	1	5	5	4	6	1926

TABLE 227 (*continued*)

Year	Manufacturing (union)	All Manufacturing	Building Trades	Unskilled Labor	Farm Labor	Coal Miners (anthracite)	Coal Miners (bituminous)	Steam Railroad Employees	Able Seamen	Postal Employees	Federal Gov't Employees (executive departments)	Teachers	Ministers	Total	Year
1890.....	21	154	46	66	55	5	8	31	2	1	1	15	4	388	1890
1891.....	22	157	46	69	58	5	8	32	2	1	1	15	4	398	1891
1892.....	23	161	47	72	60	5	9	34	2	1	1	15	4	411	1892
1893.....	23	165	47	74	63	5	9	33	2	1	1	15	4	419	1893
1894.....	25	169	48	77	65	5	10	31	2	1	1	16	4	429	1894
1895.....	25	173	48	80	68	6	10	32	2	1	1	16	4	441	1895
1896.....	27	177	48	83	70	6	10	33	2	1	1	16	4	451	1896
1897.....	27	181	49	86	73	6	10	34	2	1	1	16	4	463	1897
1898.....	28	185	49	88	75	6	10	36	2	1	1	17	4	474	1898
1899.....	28	189	50	91	78	6	11	39	2	1	1	17	4	489	1899
1900.....	30	195	51	94	80	6	12	42	2	1	1	17	4	505	1900
1901.....	30	200	53	95	83	6	14	45	2	1	1	17	5	522	1901
1902.....	31	207	55	96	85	6	15	50	2	1	1	18	5	541	1902
1903.....	33	213	56	97	88	6	17	53	2	2	1	18	5	558	1903
1904.....	35	219	58	98	90	6	18	53	2	2	1	18	5	570	1904
1905.....	35	228	60	99	93	7	18	58	2	2	1	19	5	592	1905
1906.....	37	237	61	99	95	6	19	64	2	2	1	19	5	610	1906
1907.....	38	246	63	100	98	7	21	62	2	2	1	20	5	627	1907
1908.....	40	256	65	100	100	7	21	58	2	2	1	20	5	637	1908
1909.....	40	265	66	101	103	7	22	64	2	2	1	21	5	659	1909
1910.....	39	267	67	102	105	7	22	68	2	2	1	21	5	669	1910
1911.....	39	269	68	103	103	7	22	68	2	2	1	22	5	672	1911
1912.....	41	271	68	104	101	7	22	71	2	3	1	22	5	677	1912
1913.....	41	273	69	105	98	7	23	71	2	3	1	23	5	680	1913
1914.....	41	276	69	106	96	7	23	62	2	3	2	24	5	675	1914
1915.....	41	292	70	108	94	7	22	62	2	3	2	25	5	692	1915
1916.....	41	309	71	110	92	6	22	68	2	3	2	25	5	715	1916
1917.....	41	326	71	112	89	6	24	71	2	3	2	26	5	737	1917
1918.....	41	343	72	113	87	6	25	75	2	3	3	26	5	760	1918
1919.....	40	360	73	114	85	6	25	78	2	3	4	27	5	782	1919
1920.....	40	360	70	115	82	6	26	71	2	3	3	28	5	771	1920
1921.....	32	278	65	115	80	6	27	67	2	4	2	29	5	680	1921
1922.....	36	303	75	115	77	6	28	61	2	4	2	30	5	708	1922
1923.....	40	351	80	115	75	6	28	70	2	4	2	30	5	768	1923
1924.....	36	317	80	115	73	6	26	66	2	4	2	31	5	726	1924
1925.....	37	320	85	115	71	6	24	66	2	4	2	31	5	731	1925
1926.....	37	323	85	115	68	6	24	67	2	5	2	32	5	734	1926

APPENDIX E

AVERAGES OF ANNUAL EARNINGS IN STATES FOR SPECIFIC INDUSTRIES (BASIS FOR INTERPOLATION)

Where two averages are given for the same Census year, the size of the sample was altered. The first represents the average of the former sample, the second the average of the latter sample. Monthly averages were in the main computed from 1915 on, based on the average earnings in the industries covered by the United States Bureau of Labor Statistics and the New York Department of Labor. In a few cases (notably street railways and the gas and electrical industries) State earnings were used beyond 1921, but they are not published because of lack of space. They will be sent to any one on request.

TABLE 228. AVERAGES OF ANNUAL EARNINGS IN STATES
(in dollars)

Year	Butter, Cheese, and Condensed Milk	Bakeries	Canning and Preserving	Confectionery	Slaughtering and Meat-Packing	Cotton Manufacturing	Woolens and Worsteds	Knit Goods	Silk Goods	Men's Clothing	Women's Clothing	Shirts	Clothing as a Whole	Blast Furnaces and Rolling Mills
1889		365		365		337	362	273	317				403	474
1890		354		354		343	361	274	319				408	506
1891		366		366		348	371	278	327				409	516
1892		395		395		350	373	293	316				411	515
1893		339		339		377	357	273	296				422	502
1894		330		330		319	320	257	288				414	443
1895		334		334		336	363	279	324				423	474
1896		334		334		340	345	264	342				395	441
1897		358		358		335	355	266	379				398	461
1898		323		323		324	356	266	337				402	494
1899		333		{333 {473		332	362	277	{343 {342	391		290	{399 {345	538
1900				429		361	379	283	326	340		297	357	561
1901				420		362	387	284	321	350		306	361	601
1902				397		385	397	297	343	394		332	387	618
1903				441		392	399	301	356	410		344	396	640
1904				377	473	366	390	295	352	375		{356 {356	388	601
1905				413	469	367	413	316	377	406		351	403	622
1906				352	524	398	433	358	372	426		365	423	647
1907				335	543	439	445	347	407	430		374	431	662
1908				397	517	435	438	321	372	382		350	422	569
1909	517	570	388	{430 {359	{540 {519	{415 {369	447	341	{419 {393	{430 {460	421	337	443	632
1910	522	558	336	360	534	368	443	345	393	477	456	335		675
1911	570	579	276	354	551	367	449	361	410	546	470	347		691
1912	592	583	374	362	559	393	480	357	423	513	480	342		731
1913	636	608	352	413	577	414	457	437	454	540	506	370		835
1914	{651 {721	{602 {605	{327 {411	{443 {472	{588 {719	{407 {406	{494 {507	{409 {432	{462 {439	{509 {614	{483 {556	{370 {431		{815 {821
1915	741	632	468	479	727	420	498	434	409	588	734	422		768
1916	765	693	504	509	799	503					903	468		
1917	877	779	592	579	916	590					888	521		
1918	1068	948	745	710	1149	746					1043	615		
1919	1268	1107	897	852	1337	944	1051	780	782	1178	1321	703		1068
1920	1574	1302	1044	1036	1538						1603	858		
1921	1345	1388	911	979	1456						1565	748		

TABLE 228 (*continued*)

Year	Foundries and Machine Shops	Sawmills	Planing Mills	Furniture	Tanned Leather	Boots and Shoes	Trunks and Valises	Saddlery and Harness	Paper and Pulp	Paper Boxes	Book and Job Printing	Druggists' Preparations	Rubber	Stone Quarrying
1889.....	503	409	369	424	466	491	437		411	328	518	400	385	465
1890.....	512	404	388	412	454	499	540		418	389	524	423	403	476
1891.....	534	418	389	408	449	495	581		416	382	516	398	399	493
1892.....	531	410	389	446	449	504	594		421	402	515	411	400	497
1893.....	505	395	375	394	435	480	550	523	404	399	546	399	419	484
1894.....	470	360	348	373	413	486	496	508	407	389	510	429	391	456
1895.....	521	366	349	400	429	468	478	541	404	391	508	418	430	450
1896.....	505	395	339	378	407	462	504	532	397	358	502	406	430	484
1897.....	509	415	331	371	416	454	506	556	402	349	501	415	428	479
1898.....	532	432	356	383	430	442	497	503	404	331	476	415	447	480
1899.....	537	448	{359 376	393	436	453	463	524	411	341	506	373	442	498
1900.....	537	476	383	408	428	449	470	485	407	352	502	401	445	508
1901.....	542	489	383	411	455	467	455	519	426	361	524	422	454	518
1902.....	567	503	442	426	477	472	412	513	451	349	513	445	472	529
1903.....	578	505	453	435	459	499	458	525	454	369	554	426	456	554
1904.....	{567 569	531	457	424	485	496	{454 463	508	458	357	550	445	484	557
1905.....	581	503	450	428	483	520	451	502	463	375	547	417	468	598
1906.....	602	555	464	487	507	529	493	483	466	383	558	420	472	628
1907.....	612	545	522	491	510	546	530	505	481	396	574	451	477	622
1908.....	548	545	478	503	495	530	515	616	493	394	609	448	509	645
1909.....	{598 592	{545 534	{508 542	{522 524	504	535	547	584	{503 500	406	609	441	{516 514	{701 677
1910.....	620	411	555	531	521	555	547	628	509	413	620	431	530	640
1911.....	631	381	625	538	530	563	566	662	515	418	632	431	540	655
1912.....	644	390	636	530	539	571	545	637	546	441	669	476	554	719
1913.....	649	396	716	629	498	600	668	711	563	455	690	494	587	755
1914.....	{704 730	{379 577	{698 682	{570 615	{591 590	{585 599	656	668	{554 611	{445 502	{585 835	{504 627	{596 588	{755 643
1915.....	709	546	661	604	561	596	587	823	639	508	858	656	653	685
1916.....	830	573	717	652			663	737		558	890	686	701	770
1917.....	948	630	819	754			764	806		636	934	743	822	869
1918.....	1208	812	967	891			804	977		767	1084	900	967	1112
1919.....	1329	920	1126	1065	1220	1103	1041	1133	1232	936	1298	1020	1163	1244
1920.....	1560	1141	1422	1299			1370	1227			1615	1186	1399	1556
1921.....	1283	1108	1303	1173			1198	1089			1649	1156	1121	1251

TABLE 228 (*continued*)

Year	Clay Products	Glass	Brass, Bronze, and Copper	Plated Ware	Tobacco	Beverages (non-spirituous)	Liquors, Malt	Carriages and Wagons	Railroad Cars and Rolling Stock	Motor Vehicles	Farm Equipment	Electrical Machinery	Street Railways	Gas and Electricity
1889.....	375	324	471	499	281	655	575	578	525		368	515		569
1890.....	426	347	464	533	305	654	554	600	539		445	556	589	575
1891.....	442	356			286	581	613	620	530		485	605	555	481
1892.....	440	400			297	654	585	627	539		501	573	531	524
1893.....	435	388			319	630	615	645	512		456	440	565	532
1894.....	346	358			317	648	607	619	467		397	603	512	581
1895.....	443	378	526		333	664	599	603	538		423	525	526	557
1896.....	345	387	500	487	317	653	601	601	495		525	505	512	588
1897.....	338	429	500	499	318	678	626	595	534		494	470	568	632
1898.....	368	458	510	500	319	648	628	612	576		513	528	554	633
1899.....	406	467	{515 508	475	325	{619 542	{576 633	{608 590	606		478	538	579	553
1900.....	406	466	513	448	337	542	669	604	611		531	515	617	575
1901.....	408	460	501	458	333	564	667	605	614		530	524	604	584
1902.....	429	474	503	525	358	576	715	614	627		558	525	567	
1903.....	449	442	523	525	359	555	697	613	663		566	507	560	
1904.....	418	492	517	523	362	572	699	610	{649 645		541	572	576	567
1905.....	452	498	572		348	580	711	593	625		574	577	599	568
1906.....	471	642	537	552	344	583	744	630	638		574	549	603	620
1907.....	465	617	490	579	370	638	748	668	646		594	540	{587 620	{676 828
1908.....	433	496	486	611	372	651	739	664	555		626	558	621	795
1909.....	486	514	{529 593	{722 720	359	597	733	646	592	648	{611 544	566	650	813
1910.....	519	563	604	664	366	638	882	676	675	731	572	600	670	812
1911.....	503	579	595	700	373	657	905	694	683	772	570	605	682	833
1912.....	542	593	720	707	380	651	918	701	629	689	611	622	{680 681	821
1913.....	579	655	743	700	389	653	918	709	764	789	652	639	714	853
1914.....	{543 588	{641 644	{706 676	{679 722	{386 436	{655 878	935	570	{758 758	{781 831	{585 755	{622 700	750	856
1915.....	604	563	697	725	433	866	957	739	794	832	745	715	765	862
1916.....	651	690	777			879	{956 1028	803			852		818	910
1917.....	770	841	911			939	1048	850			947		{896 899	{1097 1009
1918.....	942	990	1134			1137	1043	966			1176		1155	1258
1919.....	1127	1147	1272	1308	784	1302	1129	1120	1535	1364	1323	1259	1448	1467
1920.....	1409		1519			1404	1322	1302			1542		1686	1619
1921.....	1190		1298			1415	1543	1414			1375		1633	1561

APPENDIX F

ILLUSTRATION OF THE METHOD OF INTERPOLATION FOLLOWED FOR ALL MANUFACTURING INDUSTRIES 1889–1915 AND 1915–19

Year	Census Average	State Average	Relation of Census to State Average
1889	$434.00	− $426.20	= + $7.80
1899	426.00	− 445.33	= − 19.33
Total change in relative position of Census average to that of the States			= −$27.13
Annual adjustment = $\frac{-\$27.13}{10}$			= −$2.71

Year	State Average	Adjustment	Estimated Census Average
1889	$426.20	+ $7.80	= $434
1890	433.74	+ 5.09	= 439
1891	439.95	+ 2.37	= 442
1892	446.77	− .33	= 446
1893	423.28	− 3.05	= 420
1894	391.96	− 5.77	= 386
1895	424.69	− 8.49	= 416
1896	417.39	− 11.19	= 406
1897	422.10	− 13.90	= 408
1898	428.14	− 16.61	= 412
1899	445.33	− 19.33	= 426

Year	Census Average	State Average	Relation of Census to State Average
1899	$426.00	− $443.96	= −$17.96
1904	477.00	− 489.27	= − 12.27
Total change in relation of Census to State average			= − $5.69
Annual adjustment = $\frac{-\$5.69}{5}$			= − $1.14

Year	State Average	Adjustment	Estimated Census Average
1899	$443.96	− $17.96	= $426
1900	451.88	− 16.82	= 435
1901	471.18	− 15.68	= 456
1902	487.47	− 14.55	= 473
1903	499.78	− 13.41	= 486
1904	489.27	− 12.27	= 477

Year	Census Average	State Average	Relation of Census to State Average
1904	$477.00	− $489.25	= −$12.25
1909	518.00	− 526.42	= − 8.42
Total change in relation of Census to State average			= −$ 3.83
Annual adjustment = $\frac{-\$3.83}{5}$			= −$.77

Year	State Average	Adjustment	Estimated Census Average
1904	$489.25	− $12.25	= $477
1905	505.71	− 11.50	= 494
1906	516.74	− 10.73	= 506
1907	531.84	− 9.96	= 522
1908	483.90	− 9.19	= 475
1909	526.42	− 8.42	= 518

Year	Census Average	State Average	Relation of Census to State Average
1909	$518.00	− $504.52	= +$13.48
1914	580.00	− 592.48	= − 12.48
Total decrease in relation of Census to State average			= −$25.96
Annual adjustment = $\frac{-\$25.96}{5}$			= −$5.19

Year	State Average	Adjustment	Estimated Census Average
1909	$504.52	+ $13.48	= $518
1910	549.78	+ 8.28	= 558
1911	533.94	+ 3.09	= 537
1912	552.12	− 2.10	= 550
1913	585.40	− 7.29	= 578
1914	592.48	− 12.48	= 580

Year	Census Average	State Average	Relation of Census to State Average
1914	$580.00	− $630.08	= −$50.08
1919	1158.00	− 1177.82	= − 19.82
Total change in relation of Census to State average			= −$30.26
Annual adjustment = $\frac{\$30.26}{5}$			= −$6.05

Year	State Average	Adjustment	Estimated Census Average
1914	$630.08	− $50.08	= $580
1915	611.56	− 44.03	= 568

The monthly averages of 1915 were found by the following method, which was followed (save for the changes noted in the text) for the Census years of 1919, 1921, 1923, and 1925.

The average earnings by months of 35 industries (New York and Bureau of Labor Statistics) were weighted by the relative numbers employed and the following averages obtained, which were transformed to a yearly basis. These are given in the first column, while the second column gives their ratios to that of the average for the year as a whole. The third column applies this ratio to the average for the year as a whole, which was found in the manner described above. In the Census years of 1919, 1921, 1923, and 1925, ratios worked out by this method were used to find the earnings for the separate months.

Month	Average Rate of Annual Earnings (in dollars)	Ratio to Average for 1915	Census Average (in dollars)
Av. for 1915	659.36	1.000	568
January	639.60	.970	551
February	641.16	.972	552
March	654.16	.992	563
April	655.20	.994	565
May	652.60	.990	562
June	661.96	1.004	570
July	651.04	.987	561
August	661.44	1.003	570
September	661.44	1.003	570
October	671.84	1.019	579
November	671.84	1.019	579
December	681.72	1.034	587

The methods followed to find the most probable earnings in the months intervening between December, 1915, and January, 1919, were:

1. The differences in dollars between the average of the Census and the Bureau of Labor Statistics and New York data were found to be for December, 1915, and January, 1919:

	Census	B.L.S. and New York	Difference
December, 1915	587.00	−681.70	−94.70
January, 1919	1090.00	−1135.70	−45.70

The difference between the two was thus narrowed in 37 months by $49. This was an average monthly change of $1.32.

2. The averages based on the Bureau of Labor Statistics and New York monthly figures were then adjusted by adding an amount which began with $94.70 in December, 1915, and diminished by $1.32 with each month. The averages of the Bureau of Labor Statistics and of New York are given in the first column of the following table, the amount of the most probable deviation in the second column, and the final estimate of what the most probable Census earnings would have been in the final column.

Year	Month	Ratio of Average Yearly Earnings (B.L.S. and N.Y.) (in dollars)	Amount of Deviation (in dollars)	Estimated Rate of Annual Earnings for Country as a Whole (in dollars)
1915				
	December	681.72	−94.70	587
1916				
	January	691.60	−93.36	598
	February	708.76	−92.04	617
	March	718.64	−90.72	628
	April	720.20	−89.39	631
	May	733.72	−88.07	646
	June	736.84	−86.74	650
	July	707.72	−85.42	622
	August	737.88	−84.10	654
	September	759.20	−82.77	676
	October	760.24	−81.45	679
	November	772.72	−80.12	693
	December	788.84	−78.80	710
1917				
	January	788.32	−77.48	711
	February	790.92	−76.15	715
	March	815.36	−74.83	741
	April	795.60	−73.50	722
	May	834.08	−72.18	762
	June	842.40	−70.86	772
	July	829.92	−69.53	760
	August	846.56	−68.21	778
	September	863.20	−66.88	796
	October	894.40	−65.56	829
	November	917.28	−64.24	853
	December	913.12	−62.91	850
1918				
	January	875.16	−61.59	814
	February	896.48	−60.26	836
	March	956.80	−58.94	898
	April	983.32	−57.62	926
	May	1025.52	−56.29	971
	June	1050.40	−54.94	995
	July	1058.20	−53.64	1005
	August	1079.00	−52.32	1027
	September	1121.64	−51.00	1071
	October	1136.20	−49.67	1087
	November	1080.56	−48.35	1032
	December	1174.16	−47.02	1127
1919				
	January	1135.68	−45.70	1090

Because of lack of space the averages used for interpolation subsequent to 1919 are not printed, but they will be sent to interested persons upon application.

APPENDIX G

THE GAIN OR LOSS IN TERMS OF DOLLARS

WITH THE AVERAGE PURCHASING POWER FOR THE DECADE 1890–99, WHICH WORKERS IN VARIOUS LINES OF INDUSTRY HAVE EXPERIENCED TOGETHER WITH THE AVERAGE MOVEMENT FOR THE PERIOD

This material is shown under three main headings:

A. The Gain or Loss in Real Hourly Earnings
B. The Gain or Loss in Real Full-Time Weekly Earnings
C. The Gain or Loss in Real Annual Earnings

The first two tables are given in this Appendix, while the third is printed under Appendix H. The method followed was to divide the average money wages or earnings for each year by the cost of living index, and thus reduce all such averages to 1890–99 dollars. The gains and losses for the various years as compared with 1890–99 were then summated and averaged. In a few cases some other year or years were used as the base.

A. TABLE 229. HOURLY EARNINGS — GAIN OR LOSS SINCE 1890–99

(Change measured in 1890–99 dollars)

Year	All Industries			Manufacturing			Building Trades		
	Real Hourly Rates	Change from 1890–99 (= .211)		Real Hourly Rates	Change from 1890–99 (= .203)		Real Hourly Rates	Change from 1890–99 (= .346)	
		+	−		+	−		+	−
1900	.211	.....	.....	.203	.002		.353	.007	
1901	.213	.002		.203	.....	.....	.363	.017	
1902	.215	.004		.205	.002		.370	.024	
1903	.215	.004		.203	.....	.....	.374	.028	
1904	.219	.008		.205	.002		.384	.038	
1905	.224	.013		.209	.006		.394	.048	
1906	.226	.015		.209	.006		.401	.055	
1907	.222	.011		.205	.002		.394	.048	
1908	.228	.017		.207	.004		.415	.069	
1909	.230	.019		.207	.004		.419	.073	
1910	.222	.011		.203	.....	.....	.405	.059	
1911	.219	.008		.199		.004	.398	.052	
1912	.226	.015		.207	.004		.408	.062	
1913	.226	.015		.207	.004		.405	.059	
1914	.226	.015		.207	.004		.405	.059	
1915	.232	.021		.211	.008		.419	.073	
1916	.232	.021		.217	.014		.401	.055	
1917	.219	.008		.205	.002		.356	.010	
1918	.222	.011		.211	.008		.325		.021
1919	.228	.017		.221	.018		.325		.021
1920	.236	.025		.229	.026		.356	.010	
1921	.255	.044		.248	.045		.436	.090	
1922	.266	.055		.252	.049		.439	.093	
1923	.283	.072		.266	.063		.474	.128	
1924	.291	.080		.272	.069		.509	.163	
1925	.291	.080		.270	.067		.519	.173	
1926	.296	.084		.268	.065		.543	.197	
Totals		.675			.474	.004		1.690	.042
Net		.675			.470			1.648	
Average		.035			.017			.061	
Per cent of 1890–99 Average		12			8			18	

A. TABLE 229 (*continued*)

Year	Coal Mining			Unskilled Labor			Government Employees		
	Real Hourly Rates	Change from 1902 (= .214)		Real Hourly Rates	Change from 1890–99 (= .148)		Real Hourly Rates	Change from 1890–99 (= .448)	
		+	−		+	−		+	−
1900				.142		.006	.417		.031
1901				.147		.001	.417		.031
1902	.214			.145		.003	.403		.045
1903	.229	.015		.142		.006	.363		.085
1904	.248	.034		.145		.003	.358		.090
1905	.239	.025		.148	.....	.....	.358		.090
1906	.243	.029		.147		.001	.345		.103
1907	.230	.016		.145		.003	.332		.116
1908	.239	.025		.149	.001		.358		.090
1909	.237	.023		.154	.006		.363		.085
1910	.226	.012		.147		.001	.349		.099
1911	.221	.007		.145		.003	.345		.103
1912	.231	.017		.147		.001	.345		.103
1913	.219	.005		.148	.....	.....	.340		.108
1914	.221	.007		.149	.001		.354		.094
1915	.239	.025		.157	.009		.358		.090
1916	.244	.030		.160	.012		.340		.108
1917	.263	.049		.160	.012		.296		.152
1918	.270	.056		.181	.033		.269		.179
1919	.278	.064		.178	.030		.273		.175
1920	.271	.057		.166	.018		.264		.184
1921	.338	.124		.151	.003		.305		.143
1922	.362	.148		.157	.009		.327		.121
1923	.365	.151		.175	.027		.327		.121
1924	.348	.134		.176	.028		.336		.112
1925	.316	.102		.178	.030		.345		.103
1926	.311	.097		.179	.031		.354		.094
Totals		1.252			.250	.028			2.855
Net		1.252			.222				2.855
Average		.052			.008				.106
Per cent of 1890–99 Average		24			5				24

A. TABLE 229 (*continued*)

Year	All Manufacturing			Industries for which Union Rates were Used					
				Union Rates Group			Metal Trades		
	Real Hourly Rates	Change from 1890–99 (= .203)		Real Hourly Rates	Change from 1890–99 (= .330)		Real Hourly Rates	Change from 1890–99 (= .317)	
		+	−		+	−		+	−
1900	.205	.002		.323		.007	.314		.003
1901	.203	.....	.....	.327		.003	.314		.003
1902	.205	.002		.327		.003	.317	.....	.....
1903	.203	.....	....	.320		.010	.314		.003
1904	.205	.002		.327		.003	.317	.....	.....
1905	.209	.006		.330	.....	.....	.320	.003	
1906	.209	.006		.323		.007	.317	.....	.....
1907	.205	.002		.317		.013	.311		.006
1908	.207	.004		.320		.010	.304		.013
1909	.207	.004		.323		.007	.304		.013
1910	.203	.....	.....	.314		.016	.301		.016
1911	.199		.004	.310		.020	.298		.019
1912	.207	.004		.314		.016	.301		.016
1913	.207	.004		.314		.016	.295		.022
1914	.207	.004		.317		.013	.298		.019
1915	.211	.008		.323		.007	.304		.013
1916	.217	.014		.317		.013	.311		.006
1917	.205	.002		.287		.043	.288		.029
1918	.211	.008		.287		.043	.317	.....	.....
1919	.221	.018		.294		.036	.311		.006
1920	.229	.026		.304		.026	.298		.019
1921	.248	.045		.376	.046		.349	.032	
1922	.252	.049		.383	.053		.349	.032	
1923	.266	.063		.393	.063		.361	.044	
1924	.272	.069		.419	.089		.380	.063	
1925	.270	.067		.419	.089		.390	.073	
1926	.268	.065		.419	.089		.399	.082	
Totals		.474	.004		.429	.313		.329	.206
Net		.470			.117			.123	
Average		.017			.004			.005	
Per cent of 1890–99 Average		8			1			2	

A. TABLE 229 (*continued*)

Year	Industries for which Union Rates were Used								
	Granite and Stone			Book and Job Printing			Newspaper Printing		
	Real Hourly Rates	Change from 1890–99 (= .407)		Real Hourly Rates	Change from 1890–99 (= .297)		Real Hourly Rates	Change from 1890–99 (= .448)	
		+	−		+	−		+	−
1900	.403		.004	.306	.009		.439		.009
1901	.407	.....	.....	.306	.009		.444		.004
1902	.411	.004		.306	.009		.444		.004
1903	.415	.008		.297	.....	.....	.435		.013
1904	.419	.012		.309	.012		.444		.004
1905	.419	.012		.315	.018		.457	.009	
1906	.411	.004		.315	.018		.448	.....	.....
1907	.403		.004	.309	.012		.439		.009
1908	.419	.012		.324	.027		.457	.009	
1909	.423	.016		.327	.030		.461	.013	
1910	.399		.008	.318	.021		.444		.004
1911	.387		.020	.318	.021		.430		.018
1912	.391		.016	.324	.027		.435		.013
1913	.391		.016	.321	.024		.435		.013
1914	.391		.016	.327	.030		.439		.009
1915	.399		.008	.333	.036		.448	.....	.....
1916	.383		.024	.312	.015		.417		.031
1917	.330		.077	.267		.030	.354		.094
1918	.322		.085	.244		.053	.314		.134
1919	.330		.077	.264		.033	.327		.121
1920	.342		.065	.285		.012	.327		.121
1921	.440	.033		.383	.086		.426		.022
1922	.468	.061		.410	.113		.452	.004	
1923	.476	.069		.419	.122		.448	.....	.....
1924	.492	.085		.437	.140		.484	.036	
1925	.492	.085		.431	.134		.479	.031	
1926	.541	.134		.431	.134		.475	.027	
Totals		.535	.420		1.047	.128		.129	.623
Net		.115			.919				.494
Average		.004			.034				.018
Per cent of 1890–99 Average		1			11				4

A. TABLE 229 (*continued*)

Year	Industries for which Union Rates were Used					
	Planing Mills			Bakers		
	Real Hourly Rates	Change from 1890–99 (= .295)		Real Hourly Rates	Change from 1890–99 (= .205)	
		+	−		+	−
1900	.295	.....	.....	.205	.....	.....
1901	.298	.003		.203		.002
1902	.298	.003		.207	.002	
1903	.298	.003		.205	.....	.....
1904	.301	.006		.209	.004	
1905	.307	.012		.213	.008	
1906	.304	.009		.211	.006	
1907	.298	.003		.203		.002
1908	.307	.012		.219	.014	
1909	.304	.009		.226	.021	
1910	.298	.003		.223	.018	
1911	.292		.003	.226	.021	
1912	.295	.....	.....	.240	.035	
1913	.289		.006	.244	.039	
1914	.289		.006	.246	.041	
1915	.301	.006		.254	.049	
1916	.292		.003	.244	.039	
1917	.263		.032	.223	.018	
1918	.242		.053	.226	.021	
1919	.251		.044	.258	.053	
1920	.298	.003		.301	.096	
1921	.389	.094		.379	.174	
1922	.384	.089		.392	.187	
1923	.404	.109		.396	.191	
1924	.443	.148		.408	.203	
1925	.434	.139		.414	.209	
1926	.425	.130		.383	.178	
Totals		.781	.147		1.627	.004
Net		.634			1.623	
Average		.023			.060	
Per cent of 1890–99 Average		8			29	

A. TABLE 229 (*continued*)

Year	Industries for which Payroll Data were Used								
	Payroll Rates Group			Cotton Goods			Boots and Shoes		
	Real Hourly Rates	Change from 1890–99 (= .145)		Real Hourly Rates	Change from 1890–99 (= .096)		Real Hourly Rates	Change from 1890–99 (= .172)	
		+	−		+	−		+	−
1900	.144		.001	.098	.002		.169		.003
1901	.142		.003	.097	.001		.165		.007
1902	.146	.001		.097	.001		.167		.005
1903	.144		.001	.096	.....	.....	.169		.003
1904	.142		.003	.095		.001	.174	.002	
1905	.146	.001		.097	.001		.177	.005	
1906	.148	.003		.101	.005		.174	.002	
1907	.148	.003		.108	.012		.172	.....	.....
1908	.145	.....	.....	.111	.015		.175	.003	
1909	.148	.003		.108	.012		.181	.009	
1910	.146	.001		.104	.008		.170		.002
1911	.145	.....	.....	.103	.007		.169		.003
1912	.151	.006		.111	.015		.169		.003
1913	.154	.009		.108	.012		.175	.003	
1914	.154	.009		.110	.014		.175	.003	
1915	.155	.010		.116	.020		.174	.002	
1916	.168	.023		.119	.023		.182	.010	
1917	.167	.022		.120	.024		.162		.010
1918	.174	.029		.130	.034		.163		.009
1919	.186	.041		.137	.041		.181	.009	
1920	.196	.051		.166	.070		.191	.019	
1921	.190	.045		.142	.046		.215	.043	
1922	.194	.049		.144	.048		.220	.048	
1923	.210	.065		.159	.063		.224	.052	
1924	.213	.068		.158	.062		.218	.046	
1925	.206	.061		.147	.051		.213	.041	
1926	.203	.058		.137	.041		.220	.048	
Totals		.558	.008		.628	.001		.345	.045
Net		.550			.627			.300	
Average		.020			.023			.011	
Per cent of 1890–99 Average		14			24			6	

A. TABLE 229 (*continued*)

Year	Industries for which Payroll Data were Used								
	Men's Clothing			Hosiery and Knit Goods			Woolens and Worsteds		
	Real Hourly Rates	Change from 1890–99 (= .146)		Real Hourly Rates	Change from 1890–99 (= .107)		Real Hourly Rates	Change from 1890–99 (= .121)	
		+	−		+	−		+	−
1900	.143		.003	.096		.011	.128	.007	
1901	.142		.004	.102		.005	.126	.005	
1902	.140		.006	.107	.....	.....	.125	.004	
1903	.139		.007	.108	.001		.123	.002	
1904	.146	.....	.....	.105		.002	.121	.....	.....
1905	.150	.004		.112	.005		.125	.004	
1906	.152	.006		.113	.006		.129	.008	
1907	.147	.001		.114	.007		.129	.008	
1908	.137		.009	.120	.013		.127	.006	
1909	.153	.007		.118	.011		.128	.007	
1910	.149	.003		.113	.006		.123	.002	
1911	.165	.019		.110	.003		.121	.....	.....
1912	.168	.022		.117	.010		.134	.013	
1913	.184	.038		.122	.015		.128	.007	
1914	.184	.038		.124	.017		.131	.010	
1915	.188	.042		.135	.028		.136	.015	
1916	.193	.047		.138	.031		.148	.027	
1917	.185	.039		.134	.027		.155	.034	
1918	.187	.041		.134	.027		.159	.038	
1919	.190	.044		.131	.024		.196	.075	
1920	.242	.096		.142	.035		.214	.093	
1921	.276	.130		.149	.042		.224	.103	
1922	.321	.175		.156	.049		.208	.087	
1923	.324	.178		.170	.063		.225	.104	
1924	.327	.181		.175	.068		.227	.106	
1925	.318	.172		.177	.070		.215	.094	
1926	.314	.168		.184	.077		.204	.083	
Totals		1.451	.029		.635	.018		.942	.....
Net		1.422			.617			.942	
Average		.053			.023			.035	
Per cent of 1890–99 Average		36			21			29	

A. TABLE 229 (*continued*)

Year	Industries for which Payroll Data were Used								
	Lumber (sawmills)			Iron and Steel			Slaughtering and Meat-Packing		
	Real Hourly Rates	Change from 1890–99 (= .144)		Real Hourly Rates	Change from 1890–99 (= .215)		Real Hourly Rates	Change from 1890–99 (= .166)	
		+	−		+	−		+	−
1900	.141		.003	.221	.006		.154		.012
1901	.141		.003	.221	.006		.151		.015
1902	.143		.001	.228	.013		.153		.013
1903	.141		.003	.221	.006		.156		.010
1904	.141		.003	.209		.006	.159		.007
1905	.147	.003		.213		.002	.153		.013
1906	.151	.007		.215	.....	.....	.149		.017
1907	.148	.004		.211		.004	.146		.020
1908	.143		.001	.198		.017	.143		.023
1909	.145	.001		.202		.013	.148		.018
1910	.147	.003		.209		.006	.143		.023
1911	.143		.001	.206		.009	.144		.022
1912	.144	.....	.....	.213		.002	.144		.022
1913	.144	.....	.....	.224	.009		.143		.023
1914	.140		.004	.215	.....	.....	.144		.022
1915	.134		.010	.219	.004		.153		.013
1916	.144	.....	.....	.249	.034		.158		.008
1917	.145	.001		.249	.034		.153		.013
1918	.154	.010		.264	.049		.169	.003	
1919	.166	.022		.277	.062		.173	.007	
1920	.153	.009		.264	.049		.161		.005
1921	.137		.007	.232	.017		.199	.033	
1922	.144	.....	.....	.224	.009		.196	.030	
1923	.156	.012		.256	.041		.203	.037	
1924	.151	.007		.271	.056		.211	.045	
1925	.151	.007		.269	.054		.201	.035	
1926	.150	.006		.260	.045		.204	.038	
Totals		.092	[.036		.494	.059		.228	.299
Net		.056			.435				.071
Average		.002			.016				.003
Per cent of 1890–99 Average		1			7				2

B. Table 230. Full-Time Weekly Earnings — Gain or Loss since 1890–99

(Change measured in 1890–99 dollars)

Year	All Industries			Manufacturing			Building Trades		
	Real Weekly Earnings	Change from 1890–99 (= $10.73)		Real Weekly Earnings	Change from 1890–99 (= $12.07)		Real Weekly Earnings	Change from 1890–99 (= $17.35)	
		+	−		+	−		+	−
900	$10.52		.21	$12.07	.....	.....	$17.00	.....	.35
901	10.52		.21	11.95		.12	17.18	.....	.17
902	10.52		.21	11.95		.12	17.35	.....	.....
903	10.41		.32	11.83		.24	17.35	.....	.....
904	10.62		.11	11.83		.24	17.70	.35	
905	10.84	.11		12.07	.....	.....	18.22	.87	
906	10.84	.11		11.95		.12	18.56	1.21	
907	10.62		.11	11.71		.36	18.04	.69	
908	10.94	.21		11.71		.36	19.09	1.74	
909	11.05	.32		11.83		.24	19.26	1.91	
910	10.62		.11	11.47		.60	18.39	1.04	
911	10.52		.21	11.23		.84	18.04	.69	
912	10.73	.....	.....	11.59		.48	18.39	1.04	
913	10.73	.....	.....	11.47		.60	18.22	.87	
1914	10.73	.....	.....	11.47		.60	18.22	.87	
1915	11.16	.43		11.59		.48	18.74	1.39	
1916	11.16	.43		11.95		.12	17.87	.52	
1917	10.52		.21	11.10		.97	15.79		1.56
1918	10.73	.....	.....	11.23		.84	14.40		2.95
1919	10.84	.11		11.59		.48	14.23		3.12
1920	11.05	.32		11.71		.36	15.79		1.56
1921	11.70	.97		12.55	.48		19.26	1.91	
1922	12.23	1.50		12.91	.84		19.26	1.91	
1923	12.98	2.25		13.52	1.45		20.82	3.47	
1924	13.20	2.47		13.64	1.57		22.38	5.03	
1925	13.31	2.58		13.64	1.57		22.90	5.55	
1926	13.41	2.68		13.52	1.45		23.94	6.59	
Totals		14.49	1.70		7.36	8.17		37.65	9.71
Net		12.79				.81		27.94	
Average		0.47				0.03		1.03	
Per cent of 1890–99 Average		4			.....			6	

B. TABLE 230 (*continued*)

Year	Coal Mining			Unskilled Labor			Government Employees		
	Real Weekly Earnings	Change from 1902 (= $11.71)		Real Weekly Earnings	Change from 1890–99 (= $8.82)		Real Weekly Earnings	Change from 1893–99 (= $19.55)	
		+	−		+	−		+	−
1900				$8.47		.35	$18.18		1.37
1901				8.56		.26	17.99		1.56
1902	$11.71			8.47		.35	17.60		1.95
1903	12.08	.37		8.29		.53	16.42		3.13
1904	12.91	1.20		8.38		.44	16.42		3.13
1905	12.48	.77		8.56		.26	16.62		2.93
1906	12.72	1.01		8.47		.35	15.84		3.71
1907	11.98	.27		8.29		.53	15.44		4.11
1908	12.50	.79		8.64		.18	16.42		3.13
1909	12.33	.62		8.82	.....	.....	16.81		2.74
1910	11.81	.10		8.29		.53	16.23		3.32
1911	11.56		.15	8.11		.71	15.84		3.71
1912	12.05	.34		8.29		.53	16.03		3.52
1913	11.46		.25	8.38		.44	15.84		3.71
1914	11.56		.15	8.29		.53	16.03		3.52
1915	12.47	.76		8.73		.09	16.42		3.13
1916	12.51	.80		8.82	.....	.....	15.44		4.11
1917	12.97	1.26		8.82	.....	.....	13.49		6.06
1918	13.11	1.40		9.88	1.06		12.12		7.43
1919	13.41	1.70		9.61	.79		12.12		7.43
1920	13.09	1.38		8.91	.09		11.73		7.82
1921	16.28	4.57		8.11		.71	13.88		5.67
1922	17.47	5.76		8.47		.35	14.86		4.69
1923	17.63	5.92		9.35	.53		14.86		4.69
1924	16.85	5.14		9.44	.62		15.25		4.30
1925	15.28	3.57		9.61	.79		15.64		3.91
1926	15.03	3.32		9.61	.79		16.23		3.32
Totals		41.05	.55		4.67	7.14		.....	108.10
Net		40.50				2.47			108.10
Average		1.50				0.09			4.00
Per cent of 1890–99 Average		13				1			20

B. TABLE 230 (*continued*)

Year	Transportation			Professional (teachers and ministers)			Farm Labor		
	Real Weekly Earnings	Change from 1890–99 (= $10.98)		Real Weekly Earnings	Change from 1890–99 (= $11.18)		Real Weekly Earnings	Change from 1890–99 (= $4.39)	
		+	−		+	−		+	−
1900	$10.54		.44	$11.29	.11		$4.48	.09	
1901	10.43		.55	11.40	.22		4.57	.18	
1902	10.43		.55	11.18	.....	.....	4.57	.18	
1903	10.32		.66	10.96		.22	4.57	.18	
1904	10.54		.44	11.40	.22		4.83	.44	
1905	10.65		.33	11.63	.45		5.09	.70	
1906	10.65		.33	11.63	.45		5.09	.70	
1907	10.43		.55	11.52	.34		4.87	.48	
1908	10.98	.....	.....	12.41	1.23		5.18	.79	
1909	10.98	.....	.....	12.63	1.45		5.18	.79	
1910	10.76		.22	12.19	1.01		5.05	.66	
1911	10.76		.22	12.30	1.12		4.92	.53	
1912	10.98	.....	.....	12.63	1.45		5.05	.66	
1913	10.87		.11	12.52	1.34		5.05	.66	
1914	10.87		.11	12.86	1.68		4.87	.48	
1915	11.42	.44		13.42	2.24		5.00	.61	
1916	11.00	.11		12.75	1.57		5.00	.61	
1917	10.43		.55	11.40	.22		5.18	.79	
1918	11.97	.99		9.95		1.23	5.31	.92	
1919	11.09	.11		10.06		1.12	5.49	1.10	
1920	11.86	.88		10.06		1.12	5.44	1.05	
1921	12.52	1.54		13.30	2.12		4.08		.31
1922	12.96	1.98		15.43	4.25		4.26		.13
1923	12.74	1.76		15.32	4.14		4.70	.31	
1924	12.85	1.87		15.43	4.25		4.70	.31	
1925	13.07	2.09		15.32	4.14		4.70	.31	
1926	13.18	2.20		15.54	4.36		4.74	.35	
Totals		13.97	5.06		38.36	3.69		13.88	.44
Net		8.91			34.67			13.44	
Average		0.33			1.28			0.50	
Per cent of 1890–99 Average		3			11			11	

B. TABLE 230 (*continued*)

Year	All Manufacturing			Industries for which Union Rates were Used					
				Union Rates Group			Metal Trades		
	Real Weekly Earnings	Change from 1890–99 (= $12.07)		Real Weekly Earnings	Change from 1890–99 (= $17.70)		Real Weekly Earnings	Change from 1890–99 (= $17.20)	
		+	−		+	−		+	−
1900	$12.07	.....	.....	$17.17		.53	$16.86		.34
1901	11.95		.12	16.99		.71	16.68		.52
1902	11.95		.12	16.82		.88	16.51		.69
1903	11.83		.24	16.46		1.24	16.17		1.03
1904	11.83		.24	16.64		1.06	16.17		1.03
1905	12.07	.....	.....	16.82		.88	16.51		.69
1906	11.95		.12	16.46		1.24	16.34		.86
1907	11.71		.36	15.93		1.77	15.82		1.38
1908	11.71		.36	16.28		1.42	15.48		1.72
1909	11.83		.24	16.28		1.42	15.48		1.72
1910	11.47		.60	15.75		1.95	15.14		2.06
1911	11.23		.84	15.40		2.30	14.96		2.24
1912	11.59		.48	15.40		2.30	14.96		2.24
1913	11.47		.60	15.40		2.30	14.79		2.41
1914	11.47		.60	15.40		2.30	14.79		2.41
1915	11.59		.48	15.75		1.95	15.14		2.06
1916	11.95		.12	15.22		2.48	15.14		2.06
1917	11.10		.97	13.63		4.07	13.76		3.44
1918	11.23		.84	13.63		4.07	14.79		2.41
1919	11.59		.48	13.63		4.07	14.28		2.92
1920	11.71		.36	13.81		3.89	13.42		3.78
1921	12.55	.48		17.35		.35	16.17		1.03
1922	12.91	.84		17.70	.....	.....	16.34		.86
1923	13.52	1.45		18.23	.53		16.86		.34
1924	13.64	1.57		19.29	1.59		17.89	.69	
1925	13.64	1.57		19.29	1.59		18.06	.86	
1926	13.52	1.45		19.12	1.42		18.40	1.20	
Totals		7.36	8.17		5.13	43.18		2.75	40.24
Net			.81			38.05			37.49
Average			0.03			1.41			1.39
Per cent of 1890–99 Average		.....				8			8

B. TABLE 230 (*continued*)

Year	Industries for which Union Rates were Used								
	Granite and Stone			Book and Job Printing			Newspaper Printing		
	Real Weekly Earnings	Change from 1890–99 (= $19.42)		Real Weekly Earnings	Change from 1890–99 (= $16.49)		Real Weekly Earnings	Change from 1890–99 (= $21.85)	
		+	−		+	−		+	−
1900	$18.45		.97	$16.00		.49	$20.98		.87
1901	18.04		.78	16.00		.49	20.98		.87
1902	18.84		.58	15.67		.82	20.76		1.09
1903	18.64		.78	15.34		1.15	20.32		1.53
1904	18.84		.58	15.67		.82	20.54		1.31
1905	18.84		.58	16.00		.49	20.98		.87
1906	18.45		.97	15.67		.82	20.54		1.31
1907	18.06		1.36	15.34		1.15	19.88		1.97
1908	18.64		.78	15.67		.82	20.54		1.31
1909	18.84		.58	15.67		.82	20.76		1.09
1910	17.87		1.55	15.17		1.32	20.10		1.75
1911	17.28		2.14	15.17		1.32	19.45		2.40
1912	17.28		2.14	15.50		.99	19.67		2.18
1913	17.09		2.33	15.34		1.15	19.67		2.18
1914	17.28		2.14	15.50		.99	19.67		2.18
1915	17.48		1.94	15.01		1.48	20.10		1.75
1916	16.70		2.72	14.84		1.65	18.57		3.28
1917	14.57		4.85	12.70		3.79	15.73		6.12
1918	13.98		5.44	11.71		4.78	13.98		7.87
1919	14.57		4.85	13.53		2.96	14.64		7.21
1920	14.95		4.47	13.69		2.80	14.64		7.21
1921	19.23		.19	17.31	.82		18.79		3.06
1922	20.39	.97		18.30	1.81		20.76		1.09
1923	20.97	1.55		18.47	1.98		20.54		1.31
1924	21.56	2.14		19.29	2.80		21.63		.22
1925	21.75	2.33		18.96	2.47		21.41		.44
1926	23.69	4.27		18.96	2.47		21.63		.22
Totals		11.26	42.72		12.35	32.10		.....	63.69
Net			31.46			19.75			62.69
Average			1.17			0.73			2.32
Per cent of 1890–99 Average			6			4			11

B. TABLE 230 (*continued*)

Year	Industries for which Union Rates were Used					
	Planing Mills			Bakers		
	Real Weekly Earnings	Change from 1890–99 (= $15.54)		Real Weekly Earnings	Change from 1890–99 (= $13.09)	
		+	−		+	−
1900	$15.38		.16	$12.70		.39
1901	15.54	.....	.....	12.57		.52
1902	15.38		.16	12.70		.39
1903	15.23		.31	12.30		.79
1904	15.54	.....	.....	12.57		.52
1905	15.70	.16		12.57		.52
1906	15.38		.16	12.44		.65
1907	15.07		.47	11.91		1.18
1908	15.54	.....	.....	12.70		.39
1909	15.54	.....	.....	13.09	.....	.....
1910	15.07		.47	12.83		.26
1911	14.76		.78	12.70		.39
1912	14.92		.62	12.83		.26
1913	14.61		.93	12.83		.26
1914	14.14		1.40	12.96		.13
1915	14.61		.93	13.35	.26	
1916	14.14		1.40	12.70		.39
1917	12.43		3.11	11.52		1.57
1918	11.19		4.35	11.52		1.57
1919	11.50		4.04	12.70		.39
1920	13.52		2.02	14.27	1.18	
1921	17.40	1.86		18.06	4.97	
1922	17.25	1.71		18.59	5.50	
1923	18.18	2.64		18.85	5.76	
1924	19.89	4.35		19.37	6.28	
1925	19.58	4.04		19.64	6.55	
1926	19.11	3.57		18.33	5.24	
Totals		18.33	21.31		35.74	10.57
Net			2.98		25.17	
Average			0.11		0.93	
Per cent of 1890–99 Average			1		7	

B. TABLE 230 (*continued*)

Year	Industries for which Payroll Data were Used								
	Payroll Rates Group			Cotton Goods			Boots and Shoes		
	Real Weekly Earnings	Change from 1890–99 (= $9.00)		Real Weekly Earnings	Change from 1890–99 (= $5.96)		Real Weekly Earnings	Change from 1890–99 (= $10.09)	
		+	−		+	−		+	−
1900	$8.91		.09	$6.08	.12		$9.89		.20
1901	8.82		.18	6.02	.06		9.69		.40
1902	9.00	.....	.....	5.96	.....	.....	9.69		.40
1903	8.82		.18	5.90		.06	9.59		.50
1904	8.73		.27	5.84		.12	9.99		.10
1905	8.91		.09	5.96	.....	.....	10.19	.10	
1906	9.00	.....	.....	6.20	.24		9.89		.20
1907	9.00	.....	.....	6.56	.60		9.79		.30
1908	8.73		.27	6.68	.72		9.99		.10
1909	8.91		.09	6.44	.48		10.29	.20	
1910	8.73		.27	6.08	.12		9.69		.40
1911	8.64		.36	5.96	.....	.....	9.84		.61
1912	8.91		.09	6.44	.48		9.28		.81
1913	9.00	.....	.....	6.26	.30		9.69		.40
1914	8.91		.09	6.26	.30		9.59		.50
1915	9.09	.09		6.56	.60		9.48		.61
1916	9.81	.81		6.73	.77		9.89		.20
1917	9.63	.63		6.73	.77		8.58		1.51
1918	9.81	.81		7.27	1.31		8.48		1.61
1919	10.26	1.26		7.89	1.43		9.18		.91
1920	10.44	1.44		8.58	2.62		9.28		.81
1921	9.99	.99		7.45	1.49		10.39	.30	
1922	10.35	1.35		7.57	1.61		10.70	.61	
1923	11.16	2.16		8.40	2.44		10.90	.81	
1924	11.16	2.16		8.34	2.38		10.70	.61	
1925	10.71	1.71		7.75	1.79		10.49	.40	
1926	10.62	1.62		7.33	1.37		10.80	.71	
Totals		15.03	1.98		22.00	.18		3.74	10.57
Net		13.05			21.82				6.83
Average		0.48			0.81				0.25
Per cent of 1890–99 Average		5			14				2

B. TABLE 230 (*continued*)

Year	Industries for which Payroll Data were Used								
	Men's Clothing			Hosiery and Knit Goods			Woolens and Worsteds		
	Real Weekly Earnings	Change from 1890–99 (= $8.09)		Real Weekly Earnings	Change from 1890–99 (= $6.46)		Real Weekly Earnings	Change from 1890–99 (= $7.18)	
		+	−		+	−		+	−
1900	$7.93		.16	$5.75		.71	$7.61	.43	
1901	7.85		.24	6.07		.39	7.47	.29	
1902	7.69		.40	6.40		.06	7.32	.14	
1903	7.60		.49	6.40		.06	7.25	.07	
1904	8.01		.08	6.20		.26	7.04		.14
1905	8.25	.16		6.65	.19		7.32	.14	
1906	8.33	.24		6.72	.26		7.54	.36	
1907	8.09	.....	.....	6.72	.26		7.54	.36	
1908	7.52		.57	6.98	.52		7.40	.22	
1909	8.33	.24		6.85	.39		7.47	.29	
1910	8.01		.08	6.52	.06		7.04		.14
1911	8.90	.81		6.33		.13	6.89		.29
1912	8.98	.89		6.59	.13		7.54	.36	
1913	9.47	1.38		6.78	.32		7.18	.....	.....
1914	9.47	1.38		6.78	.32		7.18	.....	.....
1915	9.55	1.46		7.30	.84		7.40	.22	
1916	9.63	1.54		7.43	.97		8.11	.93	
1917	9.14	1.05		7.04	.58		8.47	1.29	
1918	9.06	.97		7.04	.58		8.62	1.44	
1919	9.06	.97		6.78	.32		10.05	2.87	
1920	11.25	3.16		7.36	.90		10.34	3.16	
1921	12.46	4.37		7.62	1.16		10.84	3.66	
1922	14.08	5.99		7.88	1.42		10.12	2.94	
1923	14.24	6.15		8.59	2.13		10.99	3.81	
1924	14.40	6.31		8.85	2.39		11.20	4.02	
1925	14.00	5.91		9.04	2.58		10.63	3.45	
1926	13.91	5.82		9.43	2.97		10.12	2.94	
Totals		48.80	2.02		19.29	1.61		33.39	.57
Net		46.78			17.68			32.82	
Average		1.73			0.65			1.21	
Per cent of 1890–99 Average		21			10			17	

B. TABLE 230 (*continued*)

Year	Industries for which Payroll Data were Used								
	Lumber (sawmills)			Iron and Steel			Slaughtering and Meat-Packing		
	Real Weekly Earnings	Change from 1890–99 (= $9.35)		Real Weekly Earnings	Change from 1890–99 (= $14.46)		Real Weekly Earnings	Change from 1890–99 (= $9.95)	
		+	−		+	−		+	−
1900	$9.07		.28	$15.04	.58		$9.35		.60
1901	9.07		.28	14.89	.43		9.05		.90
1902	9.07		.28	15.47	1.01		9.25		.70
1903	8.88		.47	15.04	.58		9.35		.60
1904	8.98		.37	13.88		.58	9.55		.40
1905	9.36		.09	14.46	.....	.....	9.25		.70
1906	9.44	.09		14.46	.....	.....	8.95		.99
1907	9.26		.09	14.17		.29	8.76		1.19
1908	8.88		.47	13.16		1.30	8.56		1.39
1909	9.07		.28	13.59		.87	8.86		1.09
1910	9.16		.19	14.03		.43	8.66		1.29
1911	8.88		.47	13.74		.72	8.66		1.29
1912	8.88		.47	14.03		.43			1.29
1913	8.88		.47	14.75	.29		8.66		1.29
1914	8.60		.75	14.03		.43	8.66		1.29
1915	8.32		1.03	14.32		.14	9.15		.80
1916	8.79		.56	16.63	2.17		9.45		.50
1917	8.60		.75	16.77	2.31		9.15		.80
1918	8.98		.37	17.64	3.18		8.76		1.19
1919	9.44	.09		18.22	3.76		8.36		1.59
1920	8.79		.56	16.63	2.17		7.76		2.19
1921	7.95		1.40	14.75	.29		9.65		.30
1922	8.42		.93	14.17		.29	9.85		.10
1923	9.07		.28	15.18	.72		10.65	.70	
1924	8.79		.56	15.04	.58		10.75	.80	
1925	8.79		.56	14.60	.14		10.05	.10	
1926	8.70		.65	14.17		.29	10.15	.20	
Totals		.18	12.61		18.21	5.77		1.80	22.43
Net			12.43		12.44				20.63
Average			0.46		0.46				0.77
Per cent of 1890–99 Average			5		3				8

APPENDIX H

BALANCE OF GAIN AND LOSS, IN DOLLARS, FOR SPECIFIC INDUSTRIES OVER THE AVERAGE OF THE YEARS 1890–99, FOR HOURLY RATES, FULL-TIME WEEKLY EARNINGS, AND ANNUAL EARNINGS OF THE EMPLOYED

TABLE 231. AVERAGE ANNUAL EARNINGS — AVERAGE NET YEARLY CHANGE IN REAL MONEY EARNINGS

Year	All Industries (excluding farm labor)			Manufacturing			Steam Railroads			Street Railways		
	Real Money Earnings	Change from 1890–99 (= $474)		Real Money Earnings	Change from 1890–99 (= $420)		Real Money Earnings	Change from 1890–99 (= $550)		Real Money Earnings	Change from 1890–99 (= $540)	
		+	−		+	−		+	−		+	−
1890	$469		5	$424	4		$539		11	$540	.....	....
1891	483	9		437	17		550	.....	.....	524		16
1892	488	14		441	21		556	6		529		11
1893	479	5		420	.....	....	561	11		524		16
1894	465		9	399		21	567	17		524		16
1895	483	9		428	8		561	11		524		16
1896	465		9	407		13	550	.....	.....	535		5
1897	465		9	407		13	545		5	556	16	
1898	465		9	412		8	539		11	556	16	
1899	469		5	416		4	534		16	578	38	
1900	465		9	412		8	517		33	572	32	
1901	474	.....	....	424	4		512		38	556	16	
1902	469		5	428	8		506		44	518		22
1903	469		5	420	.....	....	512		38	502		38
1904	469		5	416		4	523		27	529		11
1905	483	9		433	13		512		38	562	22	
1906	479	5		424	4		512		38	556	16	
1907	474	.....	....	416		4	528		22	524		16
1908	465		9	395		25	556	6		540	.....	....
1909	488	14		428	8		534		16	556	16	
1910	493	19		437	17		528		22	529		11
1911	474	.....	....	407		13	534		16	518		22
1912	483	9		416		4	545		5	508		32
1913	493	19		420	.....	....	556	6		513		27
1914	493	19		416		4	572	22		529		11
1915	502	28		416		4	600	50		551	11	
1916	517	43		437	17		583	33		540	.....	....
1917	498	24		433	13		556	6		491		49
1918	512	38		449	29		655	105		508		32
1919	512	38		466	46		611	61		562	22	
1920	521	47		475	55		633	83		562	22	
1921	550	76		479	59		660	110		626	86	
1922	569	95		500	80		693	143		626	86	
1923	597	123		538	118		677	127		637	97	
1924	597	123		529	109		671	121		659	119	
1925	597	123		533	113		666	116		653	113	
1926	611	137		542	122		671	121		648	108	
Totals		999	33		815	66		1110	337		766	271
Net		956			749			773			495	
Average		35.41			27.74			28.63			18.33	
Per cent of 1890–99 Average		7			7			5			3	
Divisor		27			27			27			27	

Note: The years 1890–99 were omitted in calculating the totals and averages.

TABLE 231 (*continued*)

Year	Telephones			Telegraphs			Gas and Electricity			Clerical Workers		
	Real Money Earnings	Change from 1902 (= $368)		Real Money Earnings	Change from 1902 (= $491)		Real Money Earnings	Change from 1890–99 (= $651)		Real Money Earnings	Change from 1890–99 (= $935)	
		+	−		+	−		+	−		+	−
1890							$663	12		$823		112
1891							581		70	870		65
1892							615		36	870		65
1893							627		24	926		9
1894							691	40		954	19	
1895							659	8		972	37	
1896							670	19		963	28	
1897							705	54		972	37	
1898							696	45		1010	75	
1899							600		51	982	47	
1900							587		64	954	19	
1901							571		80	935	...	.....
1902	$368	.....	....	$491	....	.....	.....			926		9
1903	342		26	494	3		.....			898		37
1904	340		28	522	31		483		168	916		19
1905	350		18	507	16		473		178	935	...	.....
1906	346		22	497	6		488		163	898		37
1907	328		40	505	14		495		156	870		65
1908	348		20	529	38		493		158	916		19
1909	354		14	513	22		509		142	935	...	.....
1910	325		43	506	15		484		167	898		37
1911	317		51	506	15		490		161	916		19
1912	329		39	503	12		482		169	907		28
1913	319		49	522	31		481		170	898		37
1914	343		25	534	43		469		182	907		28
1915	388	20		581	90		472		179	926		9
1916	382	14		542	51		457		194	916		19
1917	345		23	431		60	478		173	832		103
1918	316		52	381		110	501		150	776		159
1919	341		27	391		100	522		129	776		159
1920	343		25	400		91	501		150	757		178
1921	421	53		471		20	554		97	870		65
1922	464	96		484		7	585		66	898		37
1923	457	89		484		7	579		72	907		28
1924	471	103		490		1	613		38	935	...	.....
1925	462	94		484		7	603		48	935	...	.....
1926	463	95		504	13		613		38	963	28	
Totals		564	502		400	408		...	3292		47	1092
Net		62				8			3292			1045
Average		2.58				0.13			131.68			38.70
Per cent of 1890–99 Average		1				0			20			4
Divisor		24				24			25		27	

Note: The years 1890–99 were omitted in calculating the totals and averages.

TABLE 231 (*continued*)

Year	Federal Employees (in executive departments)			Teachers			Ministers		
	Real Money Earnings	Change from 1892–99 (= $1074)		Real Money Earnings	Change from 1890–99 (= $285)		Real Money Earnings	Change from 1890–99 (= $777)	
		+	−		+	−		+	−
1890				$248		37	$769		8
1891				262		23	777		
1892	$1074			265		20	785	8	
1893	1106	32		276		9	808	31	
1894	1149	75		291	6		847	70	
1895	1138	64		296	11		808	31	
1896	1095	21		296	11		769		8
1897	1063		11	299	14		754		23
1898	1020		54	305	20		738		39
1899	999		75	311	26		707		70
1900	977		97	311	26		692		85
1901	977		97	314	29		676		101
1902	956		118	311	26		668		109
1903	924		150	308	23		653		124
1904	924		150	328	43		660		117
1905	934		140	342	57		660		117
1906	913		161	342	57		653		124
1907	870		204	342	57		660		117
1908	913		161	376	91		692		85
1909	913		161	393	108		684		93
1910	859		215	385	100		622		155
1911	848		226	385	100		645		132
1912	848		226	399	114		660		117
1913	827		247	399	114		653		124
1914	816		258	405	120		676		101
1915	848		226	425	140		723		54
1916	816		258	408	123		684		93
1917	730		344	362	77		598		179
1918	634		440	316	31		544		233
1919	612		462	328	43		497		280
1920	580		494	328	43		497		280
1921	644		430	439	154		629		148
1922	709		365	519	234		707		70
1923	709		365	524	239		692		85
1924	730		344	533	248		715		62
1925	741		333	537	252		738		39
1926	763		322	530	245		761		16
Totals			6994		2694				3340
Net			6994		2694				3340
Average			259.04		108.81				120.00
Per cent of 1890–99 Average			34		37				15
Divisor		27			27			27	

Note: The years 1890–99 were omitted in calculating the totals and averages.

TABLE 231 (*continued*)

Year	Food Group			Textile Group			Clothing Group			Iron and Steel Group		
	Real Money Earnings	Change from 1889–99 (= $393)		Real Money Earnings	Change from 1890–99 (= $311)		Real Money Earnings	Change from 1890–99 (= $372)		Real Money Earnings	Change from 1890–99 (= $524)	
		+	−		+	−		+	−		+	−
1900				$308		3	$365		7	$508		16
1901				302		9	365		7	514		10
1902				308		3	376	4		519		5
1903				295		16	368		4	508		16
1904				286		25	365		7	493		31
1905				292		19	379	7		514		10
1906				302		9	379	7		519		5
1907				308		3	365		7	508		16
1908				308		3	372	.....	...	472		52
1909	$428	35		308		3	387	15		519		5
1910	412	19		289		22	379	7		508		16
1911	400	7		283		28	398	26		493		31
1912	412	19		299		12	383	11		498		26
1913	408	15		305		6	387	15		508		16
1914	404	11		295		16	365		7	514		10
1915	412	19		308		3	394	22		503		21
1916	420	27		323	12		405	33		550	26	
1917	400	7		320	9		383	11		566	42	
1918	416	23		336	25		383	11		608	84	
1919	436	43		342	31		443	71		603	79	
1920	432	39		361	50		458	86		603	79	
1921	479	86		355	44		480	108		540	16	
1922	479	86		367	56		487	115		561	37	
1923	495	102		398	87		506	134		655	131	
1924	502	109		379	68		484	112		645	121	
1925	498	105		383	72		495	123		655	131	
1926	506	113		383	72		480	108		665	141	
Totals		865	0		526	180		1026	39		887	286
Net		865			346			987			601	
Average		43.06			12.81			36.56			22.26	
Per cent of 1890–99 Average		12			4			10			4	

TABLE 231 (*continued*)

Year	Lumber Group			Leather Group			Paper and Printing Group		
	Real Money Earnings	Change from 1890–99 (= $334)		Real Money Earnings	Change from 1890–99 (= $447)		Real Money Earnings	Change from 1890–99 (= $496)	
		+	−		+	−		+	−
1900	$381	47		$389		58	$451		45
1901	384	50		402		45	466		30
1902	397	63		398		49	451		45
1903	384	50		398		49	461		35
1904	401	67		407		40	466		30
1905	381	47		420		27	471		25
1906	401	67		411		36	461		35
1907	381	47		402		45	436		60
1908	387	53		416		31	476		20
1909	384	50		420		27	476		20
1910	321		13	407		40	461		35
1911	324		10	402		45	456		40
1912	351	17		402		45	481		15
1913	384	50		411		36	486		10
1914	384	50		402		45	476		20
1915	387	53		411		36	496	.....	.....
1916	397	63		416		31	471		25
1917	377	43		389		58	422		74
1918	391	57		389		58	427		69
1919	414	80		420		27	456		40
1920	414	80		425		22	496	.....	.....
1921	394	60		465	18		556	60	
1922	424	90		478	31		605	109	
1923	454	120		483	36		615	119	
1924	458	124		478	31		635	139	
1925	448	114		474	27		640	144	
1926	454	120		478	31		655	159	
Totals		1662	23		174	850		730	673
Net		1639				676		57	
Average		60.70				25.04		2.11	
Per cent of 1890–99 Average		18				6		0 4	

TABLE 231 (*continued*)

Year	Stone, Clay, and Glass Group			Beverages and Tobacco Group			Land Vehicles Group		
	Real Money Earnings	Change from 1890–99 (= $431)		Real Money Earnings	Change from 1890–99 (= $478)		Real Money Earnings	Change from 1890–99 (= $490)	
		+	−		+	−		+	−
1900	$440	9		$459		19	$461		29
1901	444	13		445		33	466		24
1902	448	17		445		33	466		24
1903	444	13		421		57	461		29
1904	457	26		425		53	47J		20
1905	474	43		425		53	475		15
1906	500	69		411		67	500	10	
1907	461	30		406		72	485		5
1908	435	4		445		33	495	5	
1909	465	34		435		43	495	5	
1910	440	9		421		57	524	34	
1911	418		13	411		67	539	49	
1912	431	.....	.....	421		57	505	15	
1913	435	4		416		62	564	74	
1914	405		26	406		72	534	44	
1915	405		26	411		67	593	103	
1916	397		34	397		81	598	103	
1917	388		43	344		134	583	93	
1918	409		22	330		148	573	83	
1919	440	9		363		115	583	93	
1920	474	43		368		110	573	83	
1921	491	60		368		110	598	108	
1922	504	73		382		96	662	172	
1923	543	112		387		91	691	201	
1924	556	125		392		86	662	172	
1925	547	116		387		91	681	191	
1926	552	121		392		86	652	162	
Totals		930	164		0	1993		1805	146
Net		766				1993		1659	
Average		28.37				73.81		61.44	
Per cent of 1890–99 Average		7				15		13	

APPENDIX I

A RANKING OF THE NON-AGRICULTURAL WAGE GROUPS IN THE ORDER OF THE RELATIVE GAINS IN THE AVERAGE YEARLY EARNINGS OF EMPLOYED WORKERS MADE BY 1926 OVER THE BASES OF 1890–99 AND 1914, RESPECTIVELY

Ranking	Wage Group	1890–99		Ranking	Wage Group	1914	
		Index of Money Earnings	Index of Real Earnings			Index of Money Earnings	Index o Real Earning
1.	Teaching	448	186	1.	Anthracite Coal	295	170
2.	Fruit and Canning	428	182	2.	Paper Boxes	250	144
3.	Bituminous Coal	366	152	3.	Book and Job Printing	250	144
4.	Clay	356	148	4.	Silk	248	143
5.	Newspaper Printing	343	143	5.	Newspaper Printing	247	142
6.	Women's Clothing *	341	145	6.	Clay	246	141
7.	Lumber	339	141	7.	Trunks and Valises	245	141
8.	Woolens	337	140	8.	Marble and Stone	245	141
9.	Hosiery	333	138	9.	Women's Clothing	244	141
10.	Printing, Book and Job	333	138	10.	Woolens	243	140
11.	Rubber	329	137	11.	Plated Ware	241	139
12.	Iron and Steel	328	136	12.	Hosiery	237	137
13.	Silk	322	134	13.	Telephone	235	135
14.	Butter and Cheese *	320	136	14.	Brass and Bronze	233	135
15.	Railway Cars	318	132	15.	Bituminous Coal	230	132
16.	Men's Clothing *	315	134	16.	Rubber	230	132
17.	Paper and Pulp	314	130	17.	Men's Clothing	229	132
18.	Petroleum Refining	312	129	18.	Furniture	228	132
19.	Paper Boxes	304	126	19.	Foundries	227	131
20.	Furniture	299	124	20.	Gas and Electricity	227	131
21.	Bread and Baking	294	122	21.	Teaching	226	130
22.	Steam Railways	293	122	22.	Bread	225	130
23.	Street Railways	290	120	23.	Glass	224	129
24.	Foundries	288	120	24.	Iron and Steel	223	128
25.	Tanned Leather	286	119	25.	Leather	223	129
26.	Brass and Bronze	285	118	26.	Confectionery	221	127
27.	Marble and Stone	283	117	27.	Druggists' Preparations	221	127
28.	Plated Ware *	276	118	28.	Paper and Pulp	219	126
29.	Trunks and Valises	274	114	29.	Electrical Machinery	216	125
30.	Confectionery	273	113	30.	Slaughtering	214	124
31.	Planing Mills	271	113	31.	Street Railways	212	122
32.	Druggists' Preparations	270	112	32.	Fruit and Canning	211	122
33.	Cotton	268	111	33.	Railway Cars	209	120
34.	Electrical Machinery	267	111	34.	Petroleum Refining	207	120
35.	Agricultural Implements	260	108	35.	Cotton	206	118
36.	Glass	260	108	36.	Steam Railways	203	117
37.	Slaughtering	259	110	37.	Planing Mills	203	117
38.	Saddlery and Harness	258	110	38.	Motor Vehicles	198	114
39.	Clerks (Manufacturing)	252	104	39.	Boots and Shoes	197	113
40.	Boots and Shoes	250	104	40.	Lumber	196	113
41.	Shirts	241	103	41.	Ministers	195	112
42.	Clerks (Railway)	240	100	42.	Shirts	194	112
43.	Ministers	235	96	43.	Butter and Cheese	193	111
44.	Postal Service	232	96	44.	Tobacco	193	111
45.	Carriages	229	95	45.	Clerks (Railway)	193	112
46.	Gas and Electricity	227	94	46.	Saddlery	192	110
47.	Tobacco	208	87	47.	Agricultural Implements	189	109
48.	Beverages	207	86	48.	Clerks (Manufacturing)	184	106
49.	Government Employees	168	70	49.	Postal	184	106
				50.	Carriages	182	105
				51.	Beverages	170	98
				52.	Telegraph	164	94
				53.	Government Employees	159	91

* 1889 and 1899 = 100.

TABLE 231 (*continued*)

Year	Stone, Clay, and Glass Group			Beverages and Tobacco Group			Land Vehicles Group		
	Real Money Earnings	Change from 1890–99 (= $431)		Real Money Earnings	Change from 1890–99 (= $478)		Real Money Earnings	Change from 1890–99 (= $490)	
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1906	500	69		411		67	500	10	
1907	461	30		406		72	485		5
1908	435	4		445		33	495	5	
1909	465	34		435		43	495	5	
1910	440	9		421		57	524	34	
1911	418		13	411		67	539	49	
1912	431			421		57	505	15	
1913	435	4		416		62	564	74	
1914	405		26	406		72	534	44	
1915	405		26	411		67	593	103	
1916	397		34	397		81	598	10	
1917	388		43	344		134	583	93	
1918	409		22	330		148	573	83	
1919	440	9		363		115	583	93	
1920	474	43		368		110	573	83	
1921	491	60		368		110	598	108	
1922	504	73		382		96	662	172	
1923	543	112		387		91	691	201	
1924	556	125		392		86	662	172	
1925	547	116		387		91	681	191	
1926	552	121		392		86	652	162	
Totals		930	164		0	1993		1805	148
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Average		28.37				73.81		61.44	
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7.	Lumber	339	141	7.	Trunks and Valises	245	141
8.	Woolens	337	140	8.	Marble and Stone	245	141
9.	Hosiery	333	138	9.	Women's Clothing	244	141
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11.	Rubber	329	137	11.	Plated Ware	241	139
12.	Iron and Steel	328	136	12.	Hosiery	237	137
13.	Silk	322	134	13.	Telephone	235	135
14.	Butter and Cheese *	320	136	14.	Brass and Bronze	233	135
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16.	Men's Clothing *	315	134	16.	Rubber	230	132
17.	Paper and Pulp	314	130	17.	Men's Clothing	229	132
18.	Petroleum Refining	312	129	18.	Furniture	228	132
19.	Paper Boxes	304	126	19.	Foundries	227	131
20.	Furniture	299	124	20.	Gas and Electricity	227	131
21.	Bread and Baking	294	122	21.	Teaching	226	130
22.	Steam Railways	293	122	22.	Bread	225	130
23.	Street Railways	290	120	23.	Glass	224	129
24.	Foundries	288	120	24.	Iron and Steel	223	128
25.	Tanned Leather	286	119	25.	Leather	223	129
26.	Brass and Bronze	285	118	26.	Confectionery	221	127
27.	Marble and Stone	283	117	27.	Druggists' Preparations	221	127
28.	Plated Ware *	276	118	28.	Paper and Pulp	219	126
29.	Trunks and Valises	274	114	29.	Electrical Machinery	216	125
30.	Confectionery	272	113	30.	Slaughtering	214	124
31.	Planing Mills	271	113	31.	Street Railways	213	122
32.	Druggists' Preparations	270	112	32.	Fruit and Canning	211	122
33.	Cotton	268	111	33.	Railway Cars	209	120
34.	Electrical Machinery	267	111	34.	Petroleum Refining	207	120
35.	Agricultural Implements	260	108	35.	Cotton	205	118
36.	Glass	260	108	36.	Steam Railways	203	117
37.	Slaughtering	259	110	37.	Planing Mills	203	117
38.	Saddlery and Harness	258	110	38.	Motor Vehicles	198	114
39.	Clerks (Manufacturing)	252	104	39.	Boots and Shoes	197	113
40.	Boots and Shoes	250	104	40.	Lumber	196	113
41.	Shirts	241	103	41.	Ministers	195	112
42.	Clerks (Railway)	240	100	42.	Shirts	194	112
43.	Ministers	235	98	43.	Butter and Cheese	193	111
44.	Postal Service	232	96	44.	Tobacco	193	111
45.	Carriages	229	95	45.	Clerks (Railway)	193	112
46.	Gas and Electricity	227	94	46.	Saddlery	192	110
47.	Tobacco	208	87	47.	Agricultural Implements	189	109
48.	Beverages	207	86	48.	Clerks (Manufacturing)	184	106
49.	Government Employees	168	70	49.	Postal	184	106
				50.	Carriages	182	105
				51.	Beverages	170	98
				52.	Telegraph	164	94
				53.	Government Employees	159	91

* 1899 and 1899 = 100.

BIBLIOGRAPHICAL NOTE

THIS is not a complete bibliography of the movement of wage-rates, earnings, unemployment, and the cost of living in the United States. It is merely a list of some of the more important sources which the student of wage history will wish to consult. Reasons of space prevent a full bibliography from being published at this time, but it is hoped that this note may be of some service, despite the necessary omissions.

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INDEX OF SUBJECTS

INDEX OF AUTHORS