


This PDF is a selection from an out-of-print volume from the National Bureau of Economic Research

Volume Title: New Measures of Wage-Earner Compensation in Manufacturing, 1914-57

Volume Author/Editor: Albert Rees

Volume Publisher: NBER

brought to you by  COR

provided by Research Papers in Economi

Volume URL: <http://www.nber.org/books/rees60-1>

Publication Date: 1960

Chapter Title: Concepts of Compensation

Chapter Author: Albert Rees

Chapter URL: <http://www.nber.org/chapters/c9484>

Chapter pages in book: (p. 1 - 6)

Concepts of Compensation

This paper will explore some new measures of the total hourly compensation of manufacturing wage earners. This subject is obviously of importance because of its bearing on both the welfare of the wage earner and the costs of production. The measure now in general use is the U.S. Bureau of Labor Statistics series "average hourly earnings in all manufacturing." This is a satisfactory monthly series for current use, but for some analytical and historical purposes it has two serious drawbacks. First, it takes no account of the increasingly important part of wage-earner compensation made up of wage supplements. Second, it does not allow for changes in the amount of time paid for but not worked. I shall present here some estimates that attempt to remedy these drawbacks—estimates of average compensation per hour at work, where compensation is the sum of wages and wage supplements. Manufacturing wage earners or production workers are covered; salaried employees are excluded.

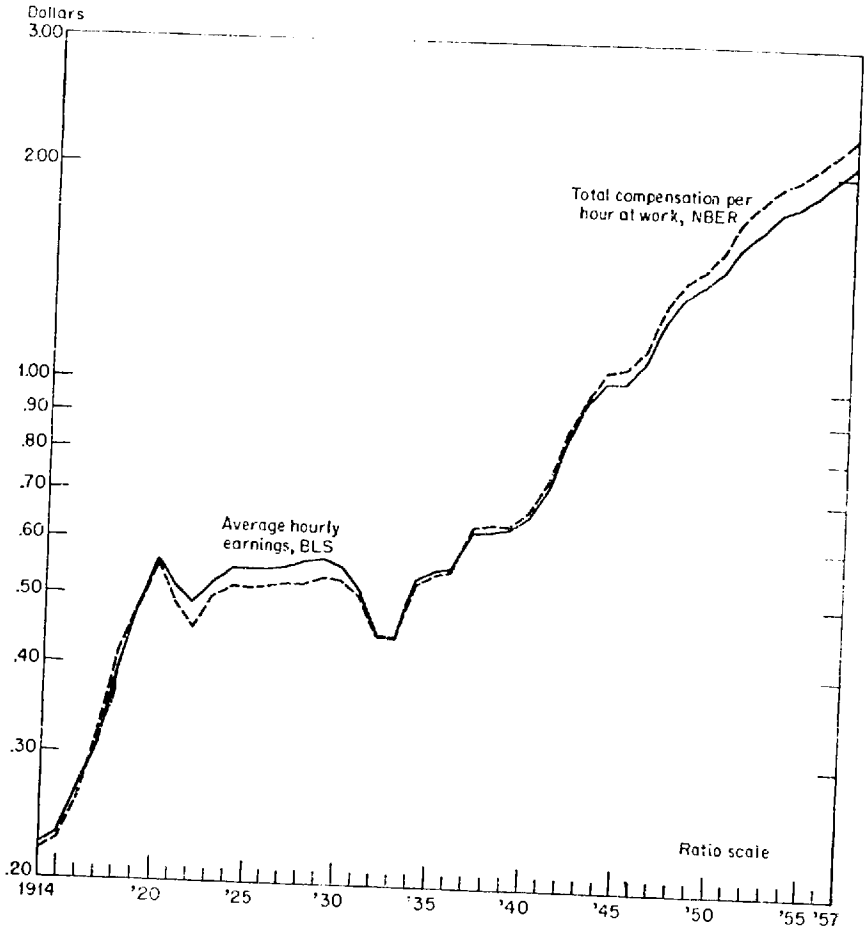
Largely because of the differences in concept mentioned above, the new NBER series "total compensation per hour at work" rises more rapidly after 1929 than the BLS series "average hourly earnings." The two series are compared in Chart 1. From 1929 to 1957, the NBER series rises 325 per cent, while the BLS series rises 266 per cent. The spread between the two series widens steadily toward the end of the period, suggesting that the conceptual differences may become even more important in the future. Before 1929, the differences in concept do not affect the comparison between the series. There are, however, differences resulting from the use of different sources of data and methods of estimation.

Money Earnings

The first column of Table 1 shows the new estimates of average money earnings per hour at work. Column 2 presents the familiar series of the

Concepts of Compensation

CHART 1 Two Measures of Wage-Earner Compensation, 1914-57



Bureau of Labor Statistics, average earnings per hour paid for. The years 1915-18 have been added, using the all-manufacturing estimates of Paul H. Douglas as an interpolator.¹

The conceptual difference between earnings per hour at work and per hour paid for is important only after 1939. When earnings are measured per hour at work, an increase in the time represented by paid vacations, paid sick leave, or paid holidays will increase average hourly earnings. In the BLS series, an increase in time paid for but not worked leaves hourly earnings unchanged. The former concept seems preferable

¹ *Real Wages in the United States, 1890-1926*, Boston, Houghton Mifflin Co., 1930, p. 108.

Concepts of Compensation

TABLE 1

Average Hourly Compensation in Manufacturing, 1914-57

Year	Average Earnings per Hour at Work, NBER ^a (1)	Average Earnings per Hour Paid for, BLS (2)	Wage Sup- plements per Hour at Work (3)	Total Compensation per Hour at Work (4)
1914	.220	.223		.220
1915	.226	.230		.226
1916	.262	.265		.262
1917	.316	.310		.316
1918	.417	.393		.417
1919	.477	.477		.477
1920	.553	.555		.553
1921	.488	.515		.488
1922	.451	.487		.451
1923	.499	.522		.499
1924	.516	.547		.516
1925	.513	.547		.513
1926	.517	.548		.517
1927	.522	.550		.522
1928	.522	.562		.522
1929	.530	.566	.004	.534
1930	.526	.552	.004	.530
1931	.502	.515	.004	.506
1932	.441	.446	.005	.446
1933	.437	.442	.004	.441
1934	.523	.532	.004	.527
1935	.537	.550	.005	.542
1936	.542	.556	.011	.553
1937	.606	.624	.027	.633
1938	.603	.627	.036	.639
1939	.603	.633	.035	.638
1940	.634	.661	.036	.670
1941	.701	.729	.036	.737
1942	.827	.853	.037	.864
1943	.934	.961	.041	.975
1944	1.00	1.02	.047	1.05
1945	1.01	1.02	.052	1.06
1946	1.08	1.09	.051	1.13
1947	1.24	1.24	.059	1.30
1948	1.35	1.35	.061	1.41
1949	1.39	1.40	.073	1.46
1950	1.46	1.46	.094	1.55
1951	1.61	1.59	.115	1.73

Concepts of Compensation

TABLE 1 (Continued)
Average Hourly Compensation in Manufacturing, 1914-57

Year	Average Earnings per Hour at Work, NBER ^a (1)	Average Earnings per Hour Paid for, BLS (2)	Wage Sup- plements per Hour at Work (3)	Total Compensation per Hour at Work (4)
1952	1.71	1.67	.121	1.83
1953	1.81	1.77	.127	1.94
1954	1.83	1.81	.139	1.97
1955	1.90	1.88	.149	2.05
1956	1.99	1.98	.163	2.15
1957	2.09	2.07	.185	2.27

NOTES TO TABLE 1

Column 1. For sources and methods, see Section 2.

Column 2. Source: *Monthly Labor Review*, July 1955, pp. 801-806, and Douglas, *Real Wages in the United States*, p. 108.

Column 3. For sources and methods, see Section 3.

Column 4. Sum of columns 1 and 3. Detail may not add to total because of rounding.

^a The NBER figures for 1920-31 and 1954-57 differ in most cases from those in *Wages, Prices, Profits, and Productivity*, New York, 1959. For the earlier period the differences are due to changes in the method of estimation; for the latter, to the use of more recent data.

as a measure both of the hourly income of workers and of the hourly labor costs of employers. There can be little doubt that an additional paid holiday, for example, increases both the attractiveness of a job to a worker and the cost of obtaining a given amount of work.

The series shown in column 1 does not account for forms of time paid for but not worked other than those mentioned above. It thus understates the rise in earnings per hour of actual work to the extent that there has been an increase in pay for such things as lunch periods, coffee breaks, wash-up time, call-in time, and jury duty. According to a survey by the Chamber of Commerce of the United States, such items amounted to 2.5 per cent of payroll for manufacturing firms in 1957.² Because the firms surveyed are substantially larger than the average of all manufacturing firms, they probably made higher payments for time not worked than did all firms.

The series on earnings per hour at work is based largely on data from the Census of Manufactures and the Annual Surveys of Manufactures.

² Chamber of Commerce of the United States, *Fringe Benefits, 1957*, Washington, 1958, p. 13, sum of lines 3 and 4 d. For further discussion of the sampling bias in the Chamber of Commerce data, see pp. 24-25 below.

Concepts of Compensation

In 1957, hours of work as measured by the Survey of Manufactures were 5.1 per cent lower than hours paid for as reported by BLS. This in itself should cause earnings per hour at work to be 5.4 per cent higher than earnings per hour paid for. In addition to this conceptual difference, however, there is a difference in the sample of establishments covered. The survey uses a probability sample, whereas BLS, which needs prompt and frequent reporting, uses a "cutoff" sample that excludes the smallest firms. In each of the years since World War II, the conceptual difference and the sampling difference have roughly offset one another, so that the figures in columns 1 and 2 differ little or not at all. Before 1940 only the sampling difference is important, for there was little paid leave. Column 1 lies below column 2 from 1932 to 1940 for this reason.

Section 2 discusses other differences between the two series and explains the construction of the estimates in column 1. The largest differences between the series occur in the 1920's, the decade that presents the greatest difficulties in measurement. Although the estimates for the 1920's presented here seem to me to be more accurate than the BLS estimates, I do not regard them as definitive. I hope that they can be improved as a result of work now being done by my colleagues H. Gregg Lewis and Ethel B. Jones.

It should be kept in mind that changes in average hourly earnings for all manufacturing reflect both changes in wage rates for particular jobs and changes in the industrial and occupational composition of manufacturing wage earners. Since the shifts in composition have on the whole been toward high-wage occupations and industries, average hourly earnings rise more than would a fixed weight index of wage rates.³

According to the estimates of column 1, between 1914 and 1957 the average money earnings of manufacturing wage earners rose from 22 cents per hour of work to \$2.09, a ninefold increase. To measure the increase in total hourly compensation, we must add to this the increase in wage supplements.

Wage Supplements

Wage supplements are defined here to include employer contributions to social insurance and to private pensions, insurance, and health and welfare funds. They do not include other items sometimes considered fringe benefits, such as irregular bonuses, subsidies to company cafeterias, or discounts on goods bought from the company.

The series on wage supplements shown in column 3 of Table 1 is

³ For data on shifts in the occupational composition of the labor force, see Gertrude Bancroft, *The American Labor Force: Its Growth and Changing Composition*, New York, John Wiley & Sons, 1958.

Concepts of Compensation

based on the data of the national income accounts on supplements to wages and salaries by type and on unpublished data furnished by the National Income Division, U.S. Department of Commerce, which divide "supplements to wages and salaries" in manufacturing into "employer contributions for social insurance" and "other labor income." To reach the series used here, rough estimates had to be made of the division of supplements between wage earners and salaried workers, and the aggregate data had to be divided by estimates of man-hours worked to put them on an hourly basis. The methods of estimation are discussed in Section 3.

Data on wage supplements are not available before 1929. The 1929 figure was only 0.4 cents per hour at work, most of which probably represented the cost of the workmen's compensation. The amount in earlier years must have been smaller still, and the error caused by its omission seems negligible.

From 1929 to 1957, the estimated cost of wage supplements per hour at work rose from 0.4 cents to 18.5 cents. The first big jump comes in the late 1930's, following the enactment of the social security law. After 1943, private pensions, insurance, and welfare plans become increasingly important.

Total Compensation

Adding money wages and wage supplements gives total compensation per hour at work, as shown in the fourth column of Table 1. Total compensation increased from 22.0 cents per hour in 1890 to \$2.27 in 1957, more than ten times the initial level.

The level of total compensation more than doubled from 1914 to 1920—years of labor shortages and rapid inflation during and immediately after World War I. The recession of 1920-21 brought the sharpest drop in the series.⁴ By 1923, it was rising again, though throughout the prosperous years 1923-29 it did not regain the level of 1920. From 1930 to 1933 the Great Depression caused a fall in the series. Since 1933, the rise in total compensation has been continuous, except for an insignificant drop from 1938 to 1939. The sharpest rises occurred during World War II and the Korean War.

⁴It may be considered strange that the drop in total compensation per hour at work should be larger from 1920 to 1922 (10.2 cents) than from 1929 to 1932 (8.9 cents), although the depression of 1929-32 was more severe than that of 1920-22. The explanation probably lies in the nature of the preceding peaks. The wage level of 1920 was reached as the climax of a rapid inflation, and was widely regarded as abnormally high. On the other hand, wages in 1929 had been roughly constant for several years, so that reductions were made slowly and with more reluctance.