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CHAPTER 2

Trends in Wage Levels

Money Wages

AVERAGE WAGE LEVELS

In this chapter we are concerned only with broad changes in wage levels. The changes may be measured in terms of wage rates, that is, in terms of prices established for an hour of labor, or sometimes for a normal work-week. Alternatively, they may be measured in terms of hourly or weekly earnings which reflect factors other than rates, such as number of hours worked, premium pay for overtime or night work, and changes in the composition of the working force. In the evaluation of wage changes it should be kept in mind that wages are not necessarily the whole income of wage earners. Particularly during the first half of the period under review, rental income from sub-tenants, and produce from garden plots significantly supplemented wage income received. Furthermore, in some industries such as mining, wages were generally supplemented by so-called *Deputate*, that is, by emoluments in kind. But lack of statistical information on these and other elements of income restricts the present analysis to wage payments proper—in marks of varying or fixed purchasing power.

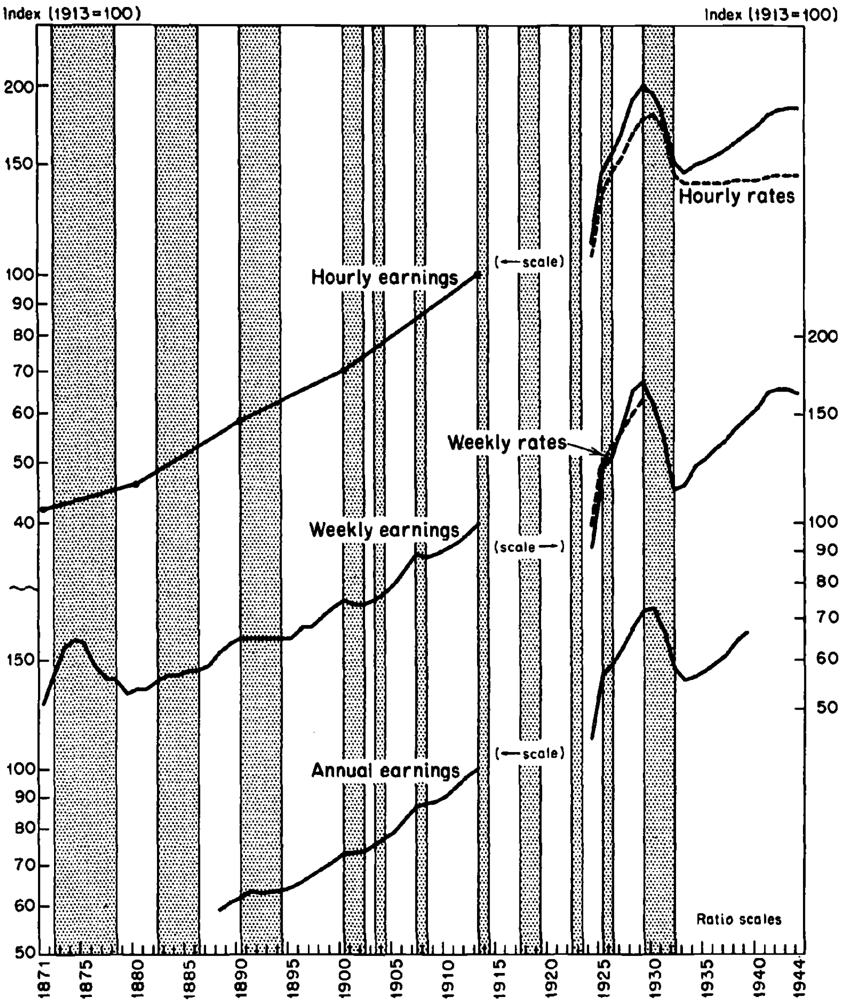
During the seventy-five years of the Reich's existence there was a pronounced rise in wage levels. In 1871 the average German industrial worker earned 10 to 15 marks a week, in 1913 about 25, and in 1944 more than 40. That is, weekly earnings increased more than threefold over the long period, roughly doubled between 1871 and 1913, and rose by about 60 percent between 1913 and 1944. These observations are based on Table 15, Appendix Table A-2, and the data underlying their computation.[1] The average rate of growth from 1871 to 1944 was 1.6 percent per year, and there was little difference in this rate between the years before 1913 and the years after. There is in fact a surprising consistency in the general direction of wage trends throughout the Reich's history, as can be seen from Chart 2.

Comprehensive information on hourly earnings exists only for 1913 and the postinflation years. However, inferences as to the trend of hourly wages during the years prior to 1913 can be drawn from the behavior of weekly earnings and from available data on normal working hours. Estimates of changes in hourly earnings levels between 1871, 1880, 1890,

[1] For weekly earnings there exists fairly comprehensive information over the whole period under investigation. For 1871 to 1913, Jürgen Kuczynski constructed a wage index designed to approximate weekly earnings. For 1913 and the postinflation years there are data published by the Statistische Reichsamt. The Kuczynski index and the Reichsamt data are presented in Appendix Table A-2, with notes discussing the character of these measures.

CHART 2

Hourly and Weekly Money Wages, All Industry, 1871–1944



Shaded areas represent business contractions.
Source: Table 1, Appendix Tables A-2 and A-55.

1900, and 1913 are included in Table 15.[2] We find, for the long period, that hourly earnings rose more than fourfold. They were around 20 pfennigs in 1871, close to 50 pfennigs in 1913, and a little below 90 pfennigs in 1944. The average rate of increase was 2.1 percent a year between 1871 and 1944. This is, of course, a sharper rise than that of weekly earnings, which were affected by the shortening of the workweek.

[2] This table gives also the assumptions on the length of the workweek, which underlie these estimates.

TABLE 15
Hourly and Weekly Wages, Selected Years, 1871-1944
(1913 = 100)

	HOURLY WAGES		WEEKLY WAGES	
	Rates	*Earnings*[a]	*Rates*	*Earnings*
Year				
1871	...	42	...	51
1880	...	46	...	54
1890	...	58	...	65
1900	...	70	...	75
1913	100	100	100	100
1918	...	...	...	200
December 1923	...	...	...	86,200 billion
January 1924	92	...	84	...
1924	107	112	99	91
1925	135	146	124	123
1929	177	200	158	169
1932	144	151	...	113
1939	141	168	...	148
1944	144	184[b]	...	162[b]
Averages				
1924-32	154	166	...	136
1924-39	148	162	...	134
1924-44	147	166[b]	...	141[b]

[a] Estimates of hourly earnings for 1871, 1880, 1890, and 1900 were based on weekly earnings and the following assumptions concerning the number of hours worked per week: 72 hours in 1871; 70 hours in 1880; 67.8 hours in 1890; 64.2 hours in 1900; and 60 hours in 1913. Note that the adjustment does not depend on the accuracy with which the average level is gauged, but merely requires a realistic estimate of the rate of decrease in the length of the workweek.

[b] The "Ostmark" is included from 1940 on.

SOURCE: Appendix Table A-2. Rates for January 1924, estimated here, are weighted averages of rates for skilled and unskilled. Basic data directly from *Wirtschaft und Statistik.*

As with weekly earnings, the average rate of growth of hourly earnings is rather similar before and after World War I.

In view of the limitations of the data for the period before World War II,[3] it is fortunate that we can make a broad check on the representativeness of the depicted earning trend by comparing it with an independently derived series of annual earnings. These earnings are presented, for the years 1888 to 1913 and 1924 to 1939, in Appendix Table A-55 and Chart 2. They are based on payroll and employment data, compiled by the German

[3] J. Kuczynski's index is based on a combination of daily, weekly, and annual rates or earnings in selected cities and establishments. This implies a relatively small sample, of restricted industrial coverage, with at least the possibility of statistical bias through selection of larger and more highly unionized enterprises.

workmen's compensation insurance over the period of its existence.[4] For the years 1888 to 1913 the over-all earnings index confirms the weekly earnings trends previously described. For the period 1913 and after, the annual earnings index exhibits a somewhat steeper upward trend than the weekly earnings estimates of the Statistische Reichsamt.

In the three-quarters of a century under consideration, the broad upward trend of wages was modified by strong cyclical and episodic fluctuations, discussed at length in later chapters. Here our concern is with the broad trends in wages through all major phases of the Reich's history, and with only those short-term events that contribute to an understanding of the major long-term trends.

1871 to World War I. During the first four years of the Reich's history, average weekly earnings increased between 25 and 30 percent in response to the feverish business activity of the *Gründerjahre*. With the collapse of this huge investment spree, wages suffered a decline of about 20 percent, which brought them down almost to their low levels of 1871. From the low point, reached in 1879, wages began to move upward, continuing without major interruptions[5] up to the outbreak of World War I.

The rise of earnings from the mid-1890's to 1913 was somewhat more rapid than the increase had been from 1871 to 1894—a fact apparently related to the steeper price movements and perhaps the accelerated growth of labor organizations during the later period. However, the steady advance of money wages was scarcely modified either by the persecution of labor organizations during Bismarck's anti-Socialist laws (1878-90) or by the subsequent extremely favorable climate of what was called the springtime of social reform (*Sozialpolitischer Frühling*).

War and Inflation. With the outbreak of World War I wages began to climb at a faster rate. During the four years 1914-18 weekly earnings of Ruhr miners,[6] for instance, doubled—an increase that matched the gain achieved during the four preceding decades. The wartime rise in average weekly wages of course reflects an increase in hours. However, since the average number of hours worked per week probably did not increase much more than 10 percent during the course of the war,[7] hourly wages must have gone up approximately 80 percent.

[4] The earnings data were only recently derived and published. See W. Grumbach and F. König, "Beschäftigung und Löhne der deutschen Industriewirtschaft, 1888-1954," *Weltwirtschaftliches Archiv*, 1957, Heft 1, pp. 125-55. For a brief description of the data, see note to Appendix Table A-55.

[5] The index (presented in Chart 2) shows mainly retardations of growth and only two small actual declines (from 1900 to 1901 and from 1907 to 1908).

[6] Data on average weekly wages of coal miners in the Ruhr district were chosen to represent the broad tendencies during this decade. They are available throughout the period 1913-23 and correspond rather well to some broader indexes available for portions of the period. For details see notes to Appendix Table A-2.

[7] The increase to an average of about 11 hours a day may appear small, in view of the long working time in armament factories. However, the average is affected by short hours in certain civilian industries and by increasing part-time work in practically all industries.

Germany's defeat in 1918 and the resultant demobilization, cession of territories, occupation of the Ruhr, and hyperinflation brought about unusual phenomena in wage behavior. At first wages went up moderately; then they climbed at an increasingly rapid pace until, at the end of 1923, they reached fantastic heights—about a trillion times[8] prewar levels. Wage developments during war and inflation mark a dramatic interruption of long-term trends in German wage levels.

The stabilization of the currency in January 1924 brought prices and money wages down again to a mark-and-pfennig basis. The currency was stabilized by the government; one trillion old reichsmarks were to equal one new rentenmark. This placed the value of the stabilized mark roughly in line with the prewar currency. New wage levels were arrived at not by government decree but by collective bargaining processes. Both the employers and the trade unions formulated their proposals with reference to "normal" conditions such as had existed before the war. The employers' representatives held that, inasmuch as the national product had declined since 1913, wage rates should also be set below prewar levels.[9] The workers' spokesmen, on the other hand, pointed out that even with "gold" wages at prewar levels the laboring classes would suffer hardship, since the purchasing power of gold had decreased in comparison with 1913.[10]

The outcome of these negotiations showed that the bargaining power of the employers' organizations was stronger than that of the unions. Unemployment at that time was extremely high; at the end of 1923, 28 percent of union members were unemployed, and an additional 42 percent worked short time.[11] With the stabilization of January 1924 average hourly wage rates[12] were about 8 percent below 1913 levels. Weekly rates compared still less favorably with those of 1913 because of the reduction in working hours.

[8] There may be some danger of misunderstanding due to the different terms for large numbers used in Germany and in this country. The wage increase was 1,000,000,000,000 times—here called a trillion. For increases by 1,000,000,000 (the German *Milliarde*) the term billion will be used below.

[9] The *Vereinigung Deutscher Arbeitgeberverbände* (VDA) gave the following directions to its members: "The wage rate, expressed in rentenmarks, should not exceed two-thirds of prewar levels. The resultant decrease in income should be compensated by additional hours. Prevailing higher rates should be reduced. Arbitration decisions leading to higher rates should be prevented by nonparticipation of employers in the proceedings." Translated from Franz Nast, *Arbeitszeit und Arbeitslohn im Deutschen Baugewerbe, 1869-1925* (Frankfurt a/M, 1928), p. 92.

[10] For a recital of the arguments on both sides, see International Labour Office, "The Workers' Standard of Life in Countries with Depreciated Currencies," *Studies and Reports*, Series D, No. 15 (Geneva, 1925), p. 78.

[11] *Jahrbuch* 1928, p. 386.

[12] For 1913 and the period starting with January 1924 comprehensive wage rate statistics, compiled by the Statistische Reichsamt, are available. They cover the most important centers for each of twelve industries, and from 1928 on for each of eighteen. In each industry the wage rates are a combination of minimum time rates and standard piece rates for adult workers in selected representative occupations. For further description of these data, see notes to Appendix Table A-2.

Weimar Prosperity and Depression. In January 1924 living costs turned out to be about 30 percent above their 1913 level, a development that could scarcely have been foreseen by the parties to the wage negotiations. The high cost of living, coupled with the setting of wage rates below prewar levels, created enormous pressure toward wage increases. The steep upward trend of wages during 1924 and part of 1925 is to be regarded, therefore, as a poststabilization adjustment of the low initial wage levels. Hourly rates increased by 32 percent between January 1924 and January 1925, and went up another 20 percent between January 1925 and January 1926. The comparable increases in weekly rates were 33 percent and 18 percent respectively. The difference reflects minor changes in the length of the normal workweek.

From 1924 onward, wage levels can be followed on an annual basis in the form of hourly and weekly earnings, hourly rates, and—for the years 1924-29—weekly rates. These series are presented in Appendix Table A-2, Chart 2, and, for selected years, in Table 15. For 1924 to 1932, trend movements are difficult to determine because of the large cyclical amplitudes of wage movements during the 1926-29 expansion and the Great Depression that followed. On the average, over those nine years, hourly rates were about 54 percent above their 1913 levels (Table 15). The increase in hourly earnings was somewhat larger—66 percent. The greater increase in hourly earnings is due to the fact that they include voluntary payments in excess of minimum rates as well as premium pay for overtime and night work—elements which tended to play a larger role in the interwar period. The smaller increase in weekly earnings—36 percent—is due, of course, to the drop in working hours.[13]

The National Socialist Expansion. After March 1933 wage rates were set and controlled by the National Socialist regime. During the years of totalitarian rule continuing to 1945, wage rates were kept close to the depression levels of 1933,[14] despite the huge expansion of industrial production. In contrast to the rigid level of wage rates, hourly earnings between 1933 and 1944 rose 26 percent, weekly earnings 41 percent. The greater rise of weekly as compared with hourly earnings reflects the important influence of the increase in working hours. Compared with 1913 levels, on the other hand, the level of hourly earnings reached by the end of World War II was about 84 percent above 1913, that of weekly earnings only about 62 percent. The reason for the lower comparative showing of weekly earnings over this period lies, among other things, in the effect of part-time work, especially of women, on average weekly earnings during World War II.

Gross Earnings and Net Earnings. Thus far our observations on trends

[13] For weekly earnings and perhaps hourly rates as well, these averages may be considered to be roughly in line with secular trends as depicted in Chart 2. Averages of hourly earnings, however, are decidedly above long-term trends.

[14] It is true that these were minimum rates, but at the depth of the depression they were close to rates actually paid.

in wages have been based on "gross wages," that is, wages before deductions for taxes, social insurance contributions, and involuntary fees. It is desirable to present also a computation of "net earnings," that is, earnings after such deductions.

Average legal deductions from weekly earnings can be ascertained for some benchmark years of the period before World War I and for the years 1924-44. As a share of earnings, deductions increased from about 3 percent in 1890 to 6 percent in 1913, to 12 percent in 1929, and to about 15 percent during World War II. These amounts withheld went to pay taxes and social insurance contributions—the latter accounting for the greater part of such deductions throughout all the years.[15] Other contributions, such as union dues (and, in the Nazi period, Labor Front dues, quasi-compulsory contributions to the *Winterhilfe*, and so on) are not calculable for the whole period. They are estimated to have absorbed an additional 1 or 2 percent of weekly earnings in 1929, and 2 or 3 percent in 1941.[16] Data on gross and net weekly earnings are presented in Table 16. Although the trend of net earnings is not drastically different from that of gross earnings, the levels of average net earnings for, say, 1924-32 or 1933-39 would compare less favorably with prewar levels than average gross earnings would.

SELECTED RATES AND EARNINGS

Wage behavior cannot be studied on the basis of comprehensive indexes alone. Such series share the shortcomings of all aggregates in that they hide as much as they reveal. They do not show, for instance, the variety of divergent activities underlying the average levels; they understate the extent of fluctuation in the components; and they fail to record systematic changes in the structure of the aggregates. In the present wage analysis, the broad indexes conceal the differences in wage behavior as between industries, skill groups, men and women, regions of the country, and the like. Specifically, the only index of German wages available for the years 1871-1913 (Kuczynski), does not provide separate indexes for rates and earnings, or for daily, weekly, and annual wages, but instead combines all these wage types. Such a combination may have been inescapable if one sought to obtain the greatest possible comprehensiveness. But the result does not lend itself to the sort of analysis that deals with differential behavior of various wage types or with cyclical measures. For such analysis we must seek less comprehensive but more homogeneous data.

Several fairly homogeneous long-term series have been assembled in Appendix Tables A-3 through A-9 and are graphically presented in Charts 3, 4, and 5. From these series, important differences in wage behavior emerge. Hourly wage rates of unskilled building workers, for example,

[15] For details see *Wirtschaft und Statistik*, 1938, pp. 158-61.

[16] See René Livchen, "Net Wages and Real Wages in Germany," *International Labour Review*, July 1944, pp. 66-69.

TABLE 16

Weekly Gross and Net Earnings, 1913 and 1925-1944

	WEEKLY GROSS EARNINGS		AVERAGE LEGAL DEDUCTIONS[a]		WEEKLY NET EARNINGS	
	1913=100 (1)	*Marks* (2)	*Percent* (3)	*Marks* (4)	*Marks* (5)	*1913=100* (6)
Year						
1913	100.0	26.14	6.0	1.57	24.57	100.0
1924	91.2	23.84	7.5	1.79	22.05	89.7
1925	122.9	32.12	7.0	2.25	29.87	121.6
1926	127.6	33.35	9.0	3.00	30.35	123.5
1927	143.2	37.37	10.0	3.74	33.63	136.9
1928	163.8	42.81	11.5	4.92	37.89	154.2
1929	168.7	44.09	12.0	5.29	38.80	157.9
1930	155.4	40.61	12.0	4.87	35.74	145.5
1931	136.7	35.73	12.5	4.47	31.26	127.2
1932	112.9	29.51	12.5	3.69	25.82	105.1
1933	115.4	30.16	12.5	3.77	26.39	107.4
1934	123.8	32.36	13.0	4.21	28.15	114.6
1935	126.8	33.15	13.0	4.31	28.84	117.4
1936	131.6	34.39	13.5	4.64	29.75	121.1
1937	136.2	35.59	13.5	4.80	30.79	125.3
1938	142.8	37.31	14.0	5.22	32.09	130.6
1939	148.2	38.72	14.0	5.42	33.30	135.5
1940[b]	152.6	39.89	15.0	5.98	33.91	138.0
1941	162.6	42.51	15.0	6.38	36.13	147.0
1942	163.6	42.76	15.0	6.41	36.35	147.9
1943	164.3	42.94	15.0	6.44	36.50	148.6
1944	162.4	42.45	15.0	6.38	36.14	147.1
Averages						
1924-32	135.8	35.49			31.71	129.1
1924-39	134.2	35.07			30.92	125.8
1924-44[b]	140.6	36.75			32.08	130.6

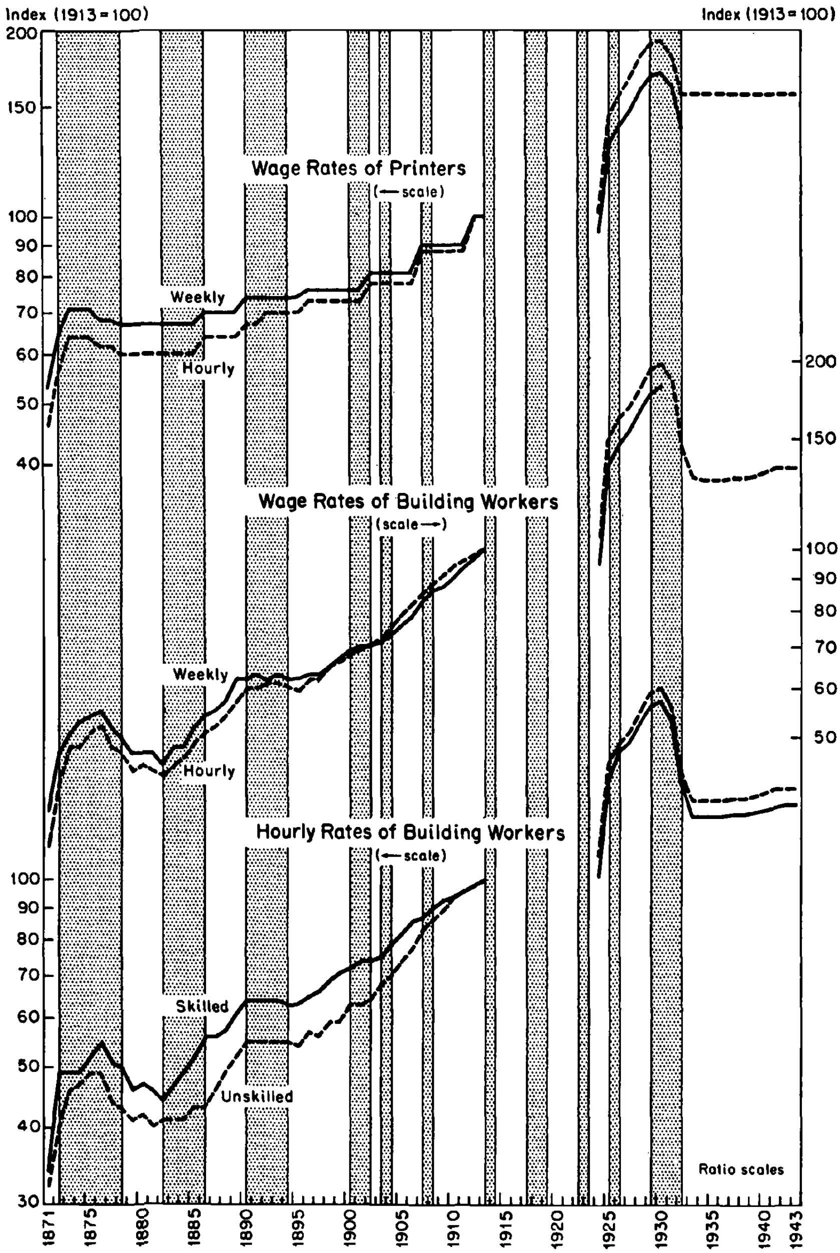
[a] Deductions include taxes and social insurance contributions.
[b] The "Ostmark" is included from 1940 on.

SOURCE, by column:
(1) Appendix Table A-2 and its sources.
(2) 1913-36, *Jahrbuch* 1941-42, p. 384. For 1937-44, based on 1936 levels and movement of index (col. 1).
(3) 1913 and 1928-37, *Wirtschaft und Statistik*, 1938, pp. 160-61. For 1924-27, Jürgen Kuczynski, *Germany 1800 to the Present Day*, p. 239. For 1938-41 René Livchen, "Net Wages and Real Wages in Germany," *International Labour Review*, July 1944, p. 67.

increased more than those of skilled building workers—particularly between 1890 and 1913, when rates of unskilled workers went up 82 percent and those of skilled workers only 56 percent (see Chart 3).

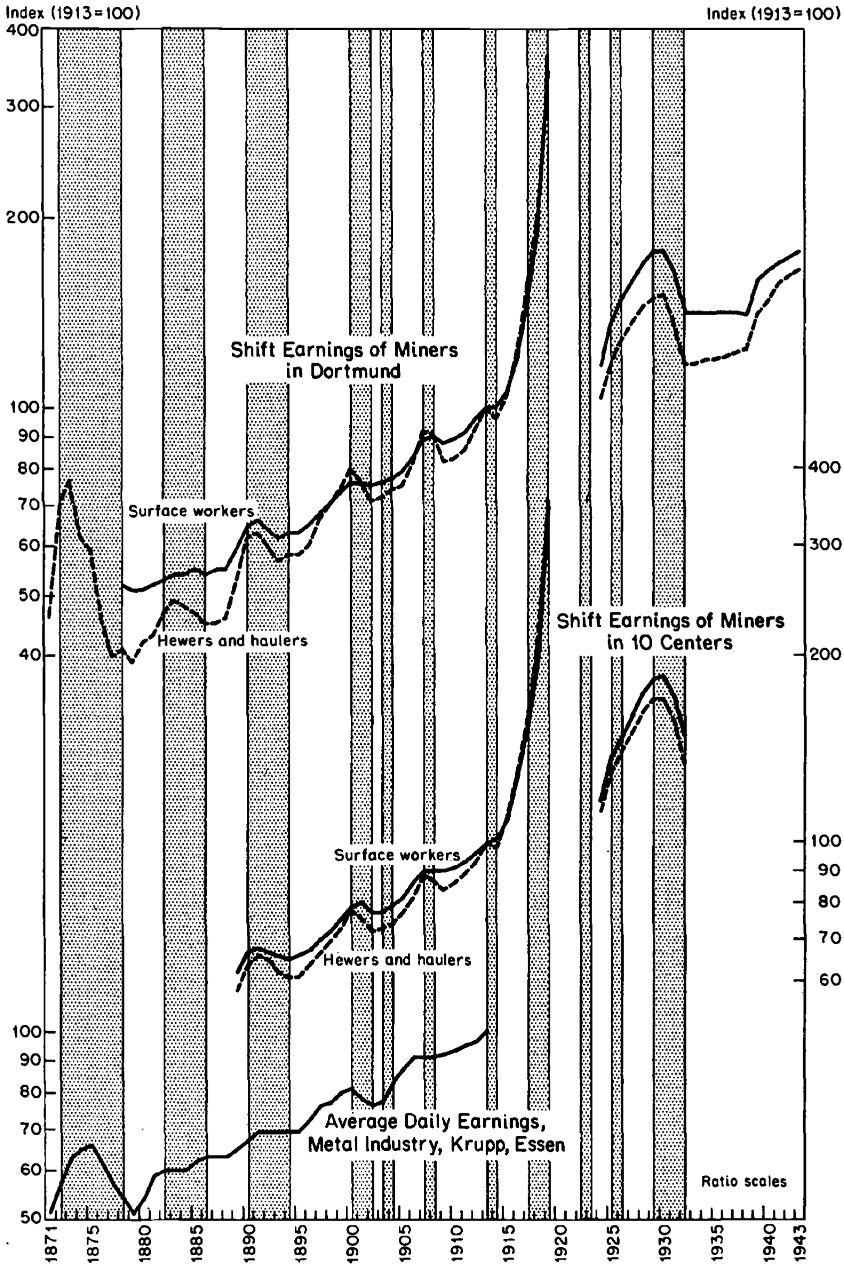
CHART 3

Wage Rates and Earnings, Printers and Building Workers, 1871–1913 and 1924–1943



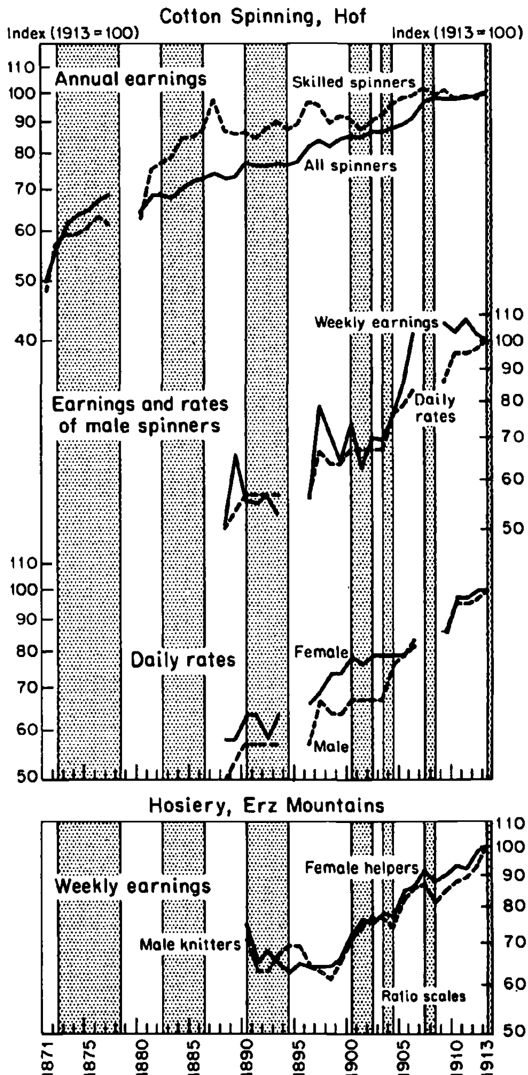
Shaded areas represent business contractions.
Source: Appendix Tables A-3, A-4, and A-5.

CHART 4
Earnings of Miners and Metalworkers, 1871–1913 and 1924–1943



Shaded areas represent business contractions.
Source: Appendix Table A-8.

CHART 5
Wage Rates and Earnings, Textile Workers, 1871–1913



Shaded Areas represent business contractions.
Source: Appendix Tables A-9 and A-10.

Earnings of hewers and haulers, in Dortmund as well as in the combined ten mining centers, show considerably wider short-term fluctuations than earnings of mine workers above ground (see Chart 4). The earnings of a group of skilled cotton spinners in Hof fluctuate sharply, whereas wages of all workers in the entire spinning department show a fairly smooth upward trend. Daily rates of male and female workers in the same cotton mill in Hof exhibit very divergent movements between 1888 and 1907 (see Chart 5).

Despite the divergences just noted, there remains a decided resemblance among all these series, and between them and the comprehensive indexes previously discussed. Thus we find that from 1871 to 1913 all wages go up, the smallest increase being 88 percent (weekly rates of printers), the largest 212 percent (hourly rates of unskilled building workers). The doubling of weekly wages assumed for the country as a whole is not incompatible with the movements of these sample series. The similarities are apparent also after World War I. From 1913 to the average of 1924-32 the comprehensive indexes of weekly earnings rose roughly 36 percent, and those of hourly earnings 66 percent. The comparable increases in the less comprehensive wage series ranged from 31 percent for shift earnings of underground coal miners in Dortmund to 70 percent for hourly rates of unskilled building workers. Obviously, as far as long-term trends are concerned, there is a marked uniformity in wage movements[17] —not difficult to explain. Labor is a relatively homogeneous economic category, at least to the extent that major long-term changes affecting the demand, supply, or costs of some labor are likely to affect all labor. Although, over the short term, labor markets are predominantly local, over the long term, substitution of skills and relatively high mobility within the country as a whole create the semblance of a national market.

Hourly wages increase more than weekly wages. This, of course, is a corollary of the trend toward the shorter workday and workweek. In examining the comprehensive indexes, it was necessary to infer the movement of hourly wages from 1871 to 1913 from our general knowledge of the decrease in working hours. However, for some industries, the derivation of hourly wages can be based on more adequate information. The decline in working time between 1871 and 1913 amounts to about 13 percent for both building and printing (see Appendix Tables A-3, A-4, and A-5). These percentages are somewhat lower than the 17 percent assumed for all industries in Germany, probably because both building and printing enjoyed a favorable initial situation during the early years of the Reich.[18] Between 1913 and, say, 1929, hourly rates of building workers went up

[17] Compared, for instance, with price trends. See the following section on Wages and Prices for further discussion.

[18] In printing, the point of decreasing returns from additional hours is reached relatively early, for in such work constant attention to detail is of paramount importance. Printers therefore have scarcely known the almost never-ending working day, characteristic, for example, of early textile operations. Furthermore, printers were the first to conclude nationwide labor contracts. Building workers had analogous advantages, notably the local character of their work—which excluded competition from outside areas and permitted local organizations to influence wage levels. Finally, the printing and building wage data presented here refer to fairly large cities, which led the way in reducing hours of work.

by 95 percent, while weekly rates reflected the general reduction in working hours. In this they resemble closely the conditions in manufacturing at large, as can be seen in the hourly and weekly wage rate indexes in Charts 2 and 3.

Rates and earnings for the same type of work, especially when given on an hourly basis, must be expected to move in fairly close unison over the long run. This resemblance is apparent in the data on wages of cotton spinners in Hof (Chart 5), despite the erratic fluctuations in earnings which reflect premium pay for overtime. It is also evident in the almost identical trends of hourly rates and hourly earnings for "all industry," as depicted in Chart 2.

Wages and Prices

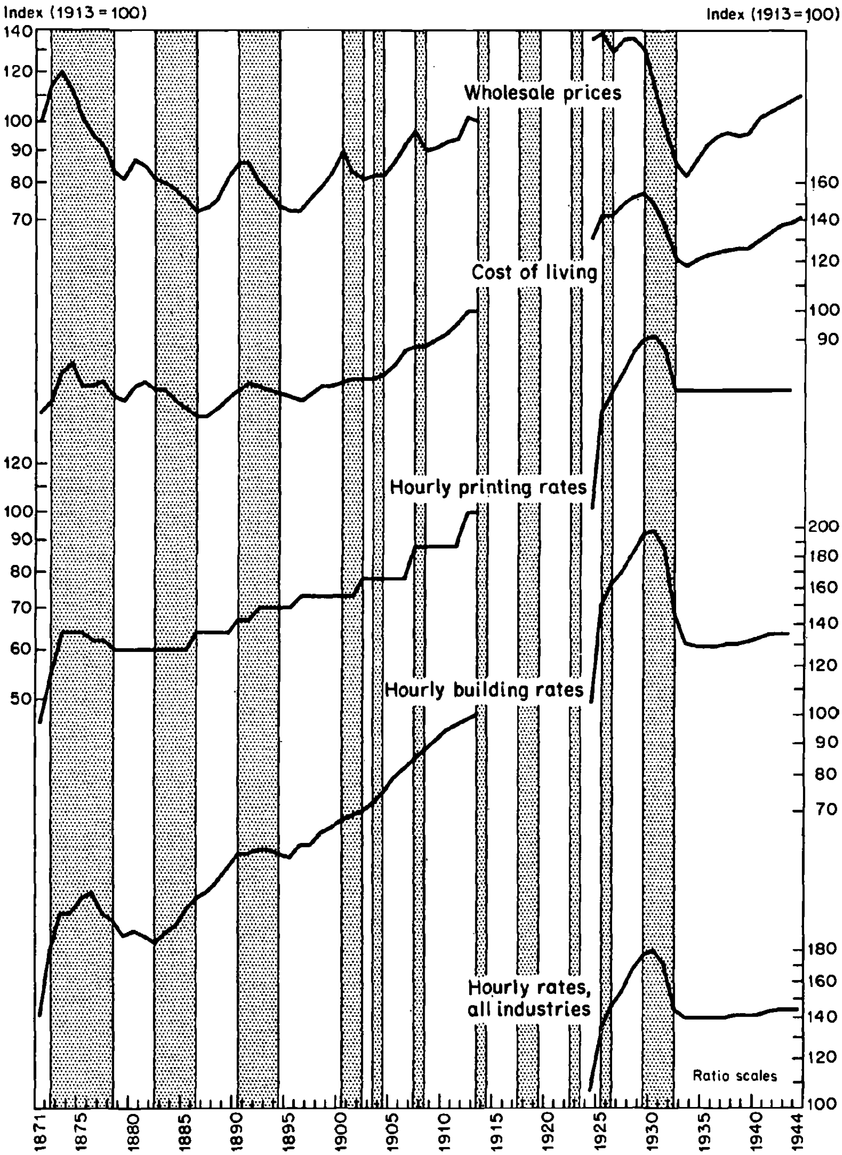
GENERAL

Since wage rates are in fact prices paid in one of the most important markets of an industrial economy, it is of theoretical interest to establish how prices for units of labor behave in comparison with other prices. Moreover, wage rates form a basic cost element in all business enterprises. It is important, therefore, to know how they move in comparison with other costs and with prices of finished products. Finally, from the point of view of income, a comparison of wages and prices is essential to an appraisal of the variable purchasing power of money wages. For such purposes, wages should be compared with retail prices of consumers' goods in proportions typically bought by wage earners—that is, with "living costs."

In any analysis of wages and prices over long periods of time, there are difficult problems of comparability. The product to which a historical price series refers—even if it is only a single commodity—will seldom remain unchanged. This is obviously true of manufactured goods, and sometimes may even apply to staples. Historical prices, too, are often ill defined and may vary over time with regard to details of quotation and terms of sale. Furthermore, index numbers must be used to make comparisons of sufficiently broad coverage, and since the movements of different prices vary widely, the selection of the series conditions the behavior of the index. Finally, there is the problem created by the changing relative importance of the goods included.

Similar difficulties arise on the side of wages. Jobs change in character in the course of technological progress; occupational designations are frequently inexact; index-number problems arise here too. And if we seek to compare wages and prices, we must remember also that the compared series typically refer to different markets. Labor markets and product markets can rarely be matched either industrially or regionally. For all these reasons, the reader is asked to keep in mind the unavoidable limitations in the following comparisons of wage rates and prices.

CHART 6
Wage Rates and Prices, 1871–1913 and 1924–1944



Shaded areas represent business contractions.
Source: Appendix Tables A–1, A–2, A–3, and A–4.

WAGE RATES AND WHOLESALE PRICES

From 1871 to 1944 wage rates rose while wholesale prices, on the average, did not. This is the most striking difference to be observed between the two trends. The historical index of wholesale prices computed by the Institut für Konjunkturforschung shows almost the same level in 1871, in 1913, and in 1944.[19] By contrast, wage rates trebled or quadrupled over the long period. This appears from examination of Appendix Tables A-3 and A-4, and from Chart 6.

During the period 1871-1913, wholesale prices followed part of a long cycle, from the *Gründerjahre* peak in 1873 to a double trough in 1886 and 1896, and up again to World War I. The long Kondratieff wave was modified by relatively sharp shorter cycles which corresponded by and large to changes in general business activity. Wage rates differed substantially from wholesale price movements in all the described respects. Instead of the Kondratieff movements they showed a general growth trend. Instead of returning to initial levels, they doubled or trebled. Except for the *Gründerjahre* cycle, the short-term fluctuations in wage rates were mild, as is frequent in series with steep upward slopes.[20] For 1913 and 1924-44, price-wage comparisons may be based on comprehensive measures in both fields. The Jacobs-Richter index is still used,[21] but the wage rates are now measured by average union rates in a large number of industries. From 1913 to 1933, prices increased only about 10 percent, wage rates as much as 44 percent. The intervening movements also are sharply differentiated, as can be seen on Chart 6.

The question arises why wage trends deviate so markedly from those of prices—why rates for labor can quadruple over seven decades while raw material prices fluctuate about the same level. The basic reason is, of course, the increasing productivity of labor, whereby the price of a unit of labor can rise without involving an increase in labor costs per unit of product. On the product side, rising productivity means a tendency toward reduction of labor input per unit and thus of prices. On the wage side, the dominant mechanisms produce pressures toward increased rates. Although wage rates can be and have been reduced in major contractions, they are rarely cut promptly and, if the contractions are short

[19] A. Jacobs and H. Richter, "Die Grosshandelspreise in Deutschland von 1792 bis 1934," *IKF Sonderheft* No. 37 (Berlin, 1935.) The index (hereafter referred to as Jacobs-Richter index) covers 13 major and 45 minor commodity groups of agricultural and industrial raw materials. For further description see Appendix Table A-1. The wholesale price index prepared by Otto Schmitz reports 1871 at 123 and 1913 at 127 percent of the 1879-88 level. See *Index Numbers of Wholesale Prices in the United States and Foreign Countries*, Bureau of Labor Statistics, Bul. 284, 1921.

[20] The foregoing statements are based on a comparison of wholesale prices and wage rates of printers and building workers, the only wage-rate series available for all years prior to 1913.

[21] The movements of the broader 400-commodity index of the Statistische Reichsamt deviate only in detail from those of the Jacobs-Richter index. But use of the latter is continued here since it is available for the entire period 1871-1945.

and mild, are usually left alone. This resistance to wage decreases, which will be discussed later in connection with the cyclical rigidity of rates, affects the course of wage trends, for if rates frequently go up and rarely go down their levels must gradually rise. Product prices are of course affected both by the tendency toward reduced labor input and that toward increased labor costs per hour. These forces balanced over the years under review, so that the available price indexes[22] stand, at the end of the Third Reich, approximately where they were at the beginning of the Second.

We may learn a little more about the comparative trends of wages and prices if we follow their course period by period (see Appendix Tables A-1 and A-2, and Chart 6). The decline of wholesale prices from the foundation of the Reich to the latter years of the century was largely an international phenomenon.[23] The wage rate increase during these years was made possible by the low initial level of wages relative to prices, and by the great advances of productivity during the early years of German industrialization. And the latter factor, perhaps abetted by the growth of unions, was presumably responsible for the fact that between 1890 and 1913 wage rates increased more rapidly than wholesale prices.

The relatively small increase of wage rates, compared with wholesale prices, between 1913 and 1924 must be understood in terms of the immediate postinflation situation. The dearth of supply, in the presence of a huge postponed demand for consumers' and producers' goods, made money "dear" and prices relatively high. However, the stabilization of 1924 came at a time when unemployment was already widespread and productivity relatively low. This situation encouraged efforts to restore profits by reducing labor costs and led to extremely low poststabilization wages. The subsequent years witnessed a reversal of trends: from 1924 to 1930 prices dropped slightly, but wages increased by about three-quarters. The price decline became possible through decisive improvements in production techniques brought about by the "rationalization movement," and through the rising volume of production during the late 1920's. The wage rise is attributable in part to these very increases in productivity, furthered by the poststabilization adjustments and favored by the prevailing social climate.

The economic realities of the Great Depression forced wage rates down sharply, although not to the same degree as wholesale prices. Finally, the behavior of prices and wages between 1933 and 1944 must be understood against the background of National Socialist economic policy. Stabilizing wage rates and permitting price rises helped to attain the "guns-before-butter" production goals of the new regime—in marked

[22] It would be desirable to compare wage rates with a broader price index, covering manufactured goods as well. Such an index is unfortunately not available for the period prior to 1913.

[23] It is sometimes explained as a consequence of decreasing gold production, increasing demand for gold for monetary purposes, and increasing production of commodities. Cf. *IKF Sonderheft* No. 37, p. 44.

contrast to the preceding expansion with its stable prices and increasing wage rates. All in all, the experience of 1871-1944 suggests that wage rates were rather independent of price changes.

Important among the findings that emerge from our data is the pronounced resemblance among wage trends, in contrast to the wide diversification among wholesale price trends. The latter is illustrated in the following tabulation:

Wholesale Prices, Jacobs-Richter Index,
Selected Years, 1871-1933
(1913 = 100)

	1871	*1890*	*1913*	*1929*	*1933*
Total index	100	86	100	131	82
Cattle	65	74	100	127	64
Vegetables	99	98	100	122	93
Building materials	128	100	100	163	101
Chemicals	183	89	100	120	59
Textiles	123	83	100	150	67

SOURCE: *IKF Sonderheft* No. 37, p. 83.

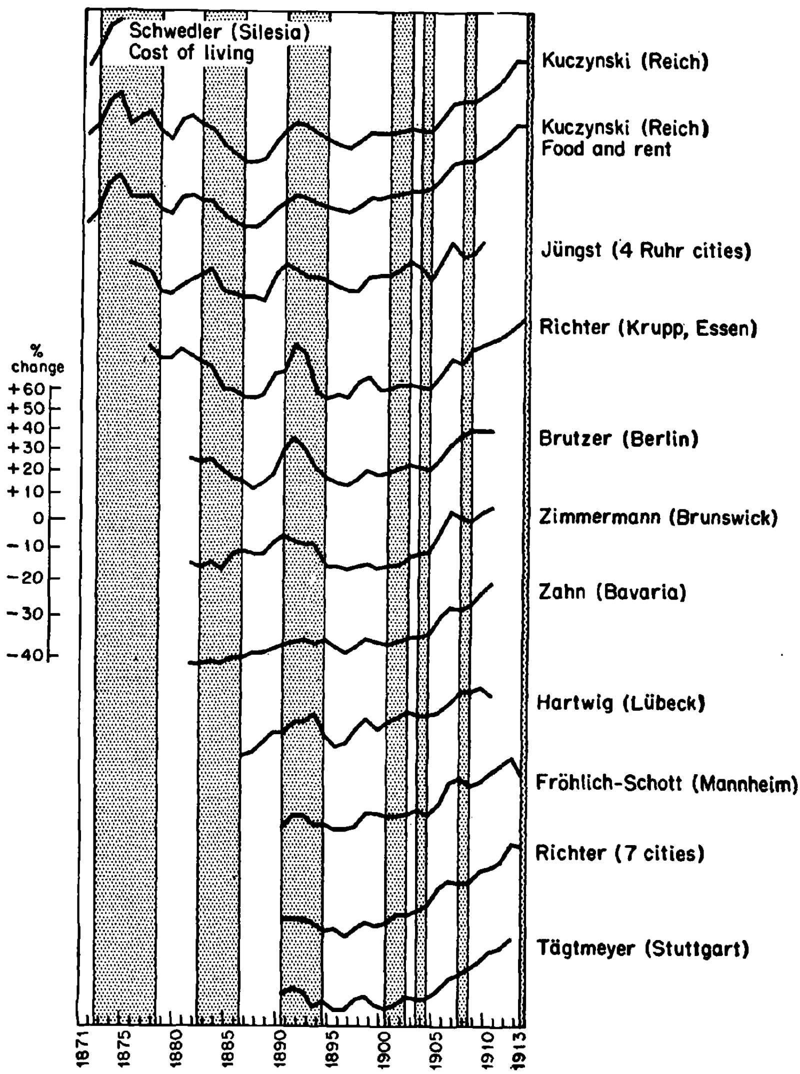
The homogeneity among wage trends can be explained by the substitutability of labor within skill groups, and by the fact that increased productivity affects the living costs of all workers in a similar way. The diversification of prices, on the other hand, reflects the limited substitution among commodities and the fact that productivity increases in one group of goods do not necessarily affect others. The data in the above tabulation bear on this point. Price trends are more diverse before than after 1913, as should be expected in a period of initial industrialization. It was in those early years that growth rates and productivity gains differed most sharply from one industry to another.

WAGE RATES AND RETAIL PRICES

The most striking aspect of the retail price index depicted in Chart 6 is the manner in which it follows a middle course between wholesale prices and wage rates. This can be observed both with regard to long-term trends and short-term movements.[24] While wage rates between 1871 and 1944 more than treble, and wholesale prices at the end of this period revert to their initial level, retail prices just about double. From 1871 moving toward the end of the century, wholesale prices decline and wage rates increase, whereas cost of living tends to maintain its level. From the turn of the century to the outbreak of World War I, the rise of living costs

[24] All observations on retail price behavior in this section will be based on cost of living data, that is, on prices of consumers' goods in proportions typically bought by working class families. For information about the nature and representativeness of the cost-of-living index numbers used up to 1913, see Chart 7, Appendix Table A-11 and its note. For postwar years, see Appendix Table A-33 and the discussion in Chapters 4 and 5.

CHART 7
Cost of Living, 1871–1913



Except where otherwise indicated, the series cover food alone.
Shaded areas represent business contractions.
Source: Appendix Table A-11.

again is intermediate between that of wholesale prices and wage rates. A deviation from this pattern occurs between 1913 and 1924, when cost of living increases more sharply than either wage rates or wholesale prices. This situation, brought about by the unrealistic setting of wage rates at the time of the stabilization, is soon corrected: after the poststabilization adjustment the "normal" situation is reestablished and cost of living, in relation to 1913, resumes its intermediate level. From 1925 to 1929, wholesale prices are stable, cost of living rises moderately, and wage rates sharply. During the Great Depression cost of living again plays its intermediate role: it declines more than wage rates, while wholesale prices slump more than the other two measures. Finally, between 1933 and 1944 wholesale prices rise markedly, wage rates little, and retail prices intermediately.[25]

An explanation of the intermediate position of retail prices between wholesale prices and wage rates may be that the proportion of labor costs is larger in retail prices than in wholesale prices. This would be true even for identical finished commodities, since distribution costs are to a large extent labor costs. It is certainly true of the wholesale and retail price indexes used in this study, inasmuch as the wholesale index represents largely raw materials and semifinished goods. Whenever there is a discrepancy between the movements of wholesale prices and wage rates, retail prices are likely to be affected by both trends. Modification in this relation may of course be brought about by different demand-supply conditions in wholesale markets, as compared with retail markets.

The closer resemblance of retail prices to wage rates, as compared with wholesale prices to wage rates, must have been furthered also by the frequent direct bearing of cost of living on wage determination. The steep increase in money wage levels between 1900 and 1913 was definitely influenced by the sharp rise in retail prices.[26] The relation of wage rates and cost of living emerges still more clearly during World War I and the Great Inflation. During the years of hyperinflation wage rates were in fact frequently geared by sliding scale agreements to the movements of cost of living. Also, the large poststabilization rise of wage rates in 1924-25

[25] The above description of the behavior of retail prices is presented in nonquantitative terms. Although the intermediate position of living costs is surprisingly well maintained, it cannot be described by a simple or a weighted average between wholesale prices and wage rates. The quantitative relation between the three measures changes over time, and it depends largely on the character and coverage of the particular wage and price indexes chosen. This suggests the limited reliability of estimates of cost-of-living behavior derived from wholesale prices and wages, for periods during which no reliable retail price statistics are available. Estimates of this sort have been presented by Rufus S. Tucker, in "Gold and the General Price Level," *Review of Economic Statistics*, January 1934, p. 9.

[26] This price development was commonly attributed to the high tariff and sales tax policies brought about by the coalition of "Steel and Rye" —a pact between heavy industry and Junkerdom. For a description of the pact and its social consequences see Alexander Gerschenkron, *Bread and Democracy in Germany* (University of California Press, 1943), particularly pp. 44, 62-64, 85.

could be traced to the gross maladjustment between wage rates and cost of living at the time of the currency reorganization.[27] While wage rates and wholesale prices are usually juxtaposed in tabular or graphic comparison, wages are frequently related to retail prices of consumers' goods in the form of quotients, called real wages. Rates or earnings are divided by cost-of-living indexes, and the results purport to show the changing purchasing power of the given wage payments. While this device has distinct merits as long as consumption habits remain fairly stable, it loses some of its significance whenever such conditions do not prevail. Indeed, the result of the deflation of wages by cost of living becomes more difficult to interpret the greater the change in consumption patterns. Such changes are greatest over long periods of time and during wars or other national emergencies. And it is precisely for such periods of broad changes in consumption patterns and price levels that statistical adjustment of money wages by living costs is most needed and least successful. Yet despite its shortcomings, the division of wages by living costs is an indispensable tool of wage analysis. Trends in the resultant "real wages" will now be discussed.

Real Wages

GENERAL

Average weekly real earnings increased by about 55 percent from 1871 to 1944, a record quite different from the trebling of money earnings already noted. The difference is produced, of course, by the doubling of retail prices for consumers' goods, which markedly reduced the purchasing power of the increased money earnings. From the beginning of our period up to 1913, weekly real earnings increased 35 percent, or 0.7 percent per annum on the average. From 1913 to 1944 the total increase was 15 percent and the annual average increase 0.45 percent. Thus—in contrast to the continuity of money wage trends—the average rate of growth in weekly real earnings was significantly lower for the period after World War I than for the earlier period. The corresponding increases for hourly earnings are 64 percent (or 1.2 percent per year) before World War I and 30 percent (or 0.9 percent per year) between 1913 and 1944. These observations on real wages are based on Table 17, Chart 8, and the data presented in Appendix Tables A-12 and A-13. Chart 8 points, moreover, to a major change in the direction of the trend of real earnings, which occurred about 1913. The break is more pronounced for weekly real earnings than for hourly real earnings, because of the sharp reduction of working hours between the era of the Kaiserreich and that of the Weimar Republic.

The general growth in real wage levels before World War I, the break in trends after 1913, and the emergence of a second trend segment starting

[27] Cost-of-living advances influence changes not only in wage levels but also in the wage structure, a relationship to be discussed in detail in Chapter 3.

TABLE 17
Real Wages and per Capita Production, Selected Years, 1871-1944
(1913 = 100)

	Real Hourly Wages		*Real Weekly Earnings*		*Per Capita Production*	
					Consumers' Goods	*Total*
	Rates (1)	*Earnings* (2)	*Gross* (3)	*Net* (4)	(5)	(6)
Year						
1871	...	61	74	78	57	34
1880	...	61	70	71	52	37
1890	...	77	87	88	76	55
1900	...	91	98	99	86	77
1913	100	100	100	100	100	100
1924	82	86	70	69	92	74
1929	115	130	110	102	101	106
1932	120	125	94	87	79	61
1939	112	133	117	108	110	127
1944	102	130	115	104	...	...
Averages						
1924-32	108	117	96	91	94	88
1924-39	111	121	101	94	95	94
1924-44	109	124	105	97	...	...

SOURCE, by column:

1871-1913

(2) Money wages, Table 1; deflated by cost-of-living index, Appendix Table A-1.
(3, 5, 6) Appendix Table A-13.
(4) Real weekly gross earnings less social insurance contributions (0%, 3%, 3%, 4%, 5% for 1871, 1880, 1890, 1900, and 1913 respectively). See Jürgen Kuczynski, *Germany, 1800 to the Present Day*, p. 134.

1913-1944

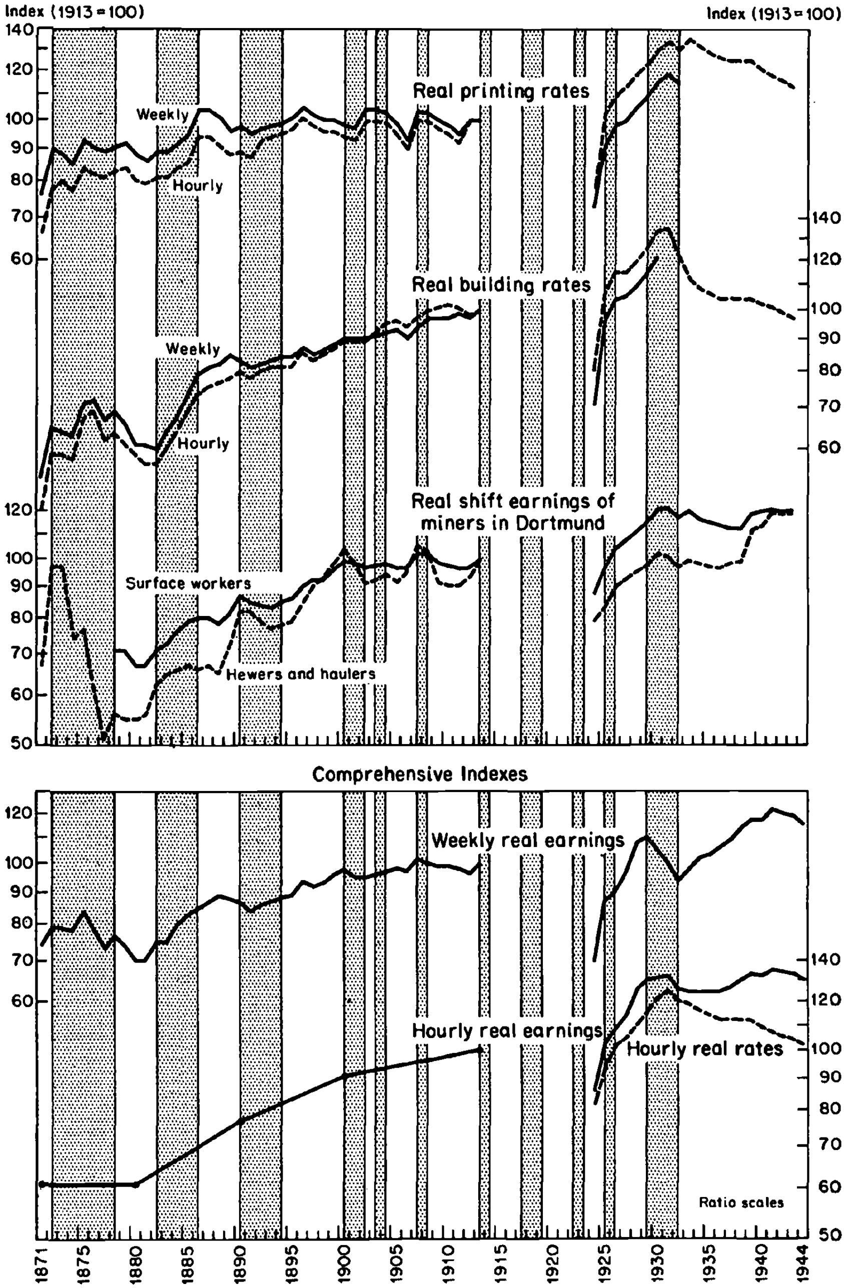
(1 to 3, 5, 6) Appendix Table A-13.
(4) Net money earnings, Table 2; deflated by cost-of-living index, Appendix Table A-1.

at low levels but exhibiting sharp growth rates—all these developments must be understood against the background of German economic history. The relation between real-wage behavior and general economic trends will be set forth in the period-by-period description of real wages with which the rest of this chapter is concerned.

1871 TO WORLD WAR I

Average weekly real earnings roughly followed the economic fortunes of the *Gründerjahre* by first rising and then falling, until the beginning of the 1890's. In 1880 and 1881 real earnings were lower than they had been in 1871; from then on they went up. After a rather steep rise during the 1890's and part of the subsequent decade, the growth lost momentum and

CHART 8
Real Wages, 1871–1913 and 1924–1944



Shaded areas represent business contractions.
Source: Appendix Tables A-12 and A-13, and Table 17.

weekly real earnings began to level out. In fact, between 1900 and 1913, the increase in weekly real earnings amounted to only 2 percent.

According to the data presented in the tables and charts just mentioned, the level of weekly real earnings reached in 1900 was not significantly exceeded until 28 years later—and then only during the four years 1928-31, by an average of about 6 percent.[28] Thus, for practical purposes, weekly real earnings appear to have reached their upper peacetime limits as early as 1900. This finding seems so startling that it calls for corroboration from outside sources. Some evidence can be obtained from other computations of real earnings, from the notes of contemporary observers, and from reports on the behavior of related economic measures, such as per capita real income.

The findings from such corroborative evidence may be summarized as follows. Some students, working with smaller segments of the German wage and price picture, have found that real earnings increased by 16 to 36 percent between 1890 and 1913;[29] others have found that they remained virtually the same,[30] while still others have reported a decline in real earnings of as much as 17 percent between 1900 and 1910, possibly less between 1900 and 1913.[31]

For the five to eight years preceding World War I the yearbooks of many unions contain discussions of price developments and their effects on the earnings of workers. It may be significant that the yearbooks of textile workers' and food workers' unions contain reports implying actual decreases of real wages for at least some of their members and comment bitterly on the duties and indirect taxes held responsible for the rises in living costs.[32] The yearbooks of metalworkers' unions merely state that increasing prices forced them to intensify their fight for higher wages.[33] Obviously real-wage experience during that period varied greatly from industry to industry. Victor Böhmert, one of the pioneers in the field of German labor statistics, reported at the end of 1909 and 1910 that the lower income groups in particular were suffering from recent steep price increases. He pointed out that some industries favored by patents and

[28] It was again exceeded in the course of the armament prosperity under National Socialism, but the significance of that excess is doubtful, a point to be discussed later on.

[29] See, for instance, Adam Müller, *Reallöhne vor und nach dem Kriege in Südwestdeutschland* (Frankfurt a/M, 1930), pp. 63-65.

[30] For example, Kurt Richter, *Die Reallohnbewegung in Deutschland, England und den Vereinigten Staaten von Amerika, 1890-1913, insbesondere in ihrer Beziehung zur Golderzeugung* (Würzburg, 1937), Table 9, facing p. 68.

[31] Carl von Tyszka, "Löhne und Lebenskosten in Westeuropa, 1914," Verein für Sozialpolitik, *Schriften*, Vol. 145 III, p. 289. This estimate was made contemporaneously —von Tyszka, a trained observer, obviously considered a decline of the given extent as compatible with his personal observations.

[32] See, for example, Verband der Bäcker, Konditoren und verwandten Berufsgenossen Deutschlands, *Jahrbuch* 1909 (Hamburg), pp. 14-16; *Jahrbuch* 1912, p. 17; *Jahrbuch* 1913, *passim*.

[33] Deutscher Metallarbeiterverband, *Jahr- und Handbuch* 1908, p. 91; also 1910, p. 62, and 1912, p. 77.

protective tariffs were paying sufficiently high wages to compensate for the high price levels. This was true, for instance, in the machinery industry, in building, furniture making, book and art printing, and embroidering. On the other hand, millions of unskilled workers and day laborers as well as broad sections of the lower middle classes were hard hit by the price advances.[34] A final, indirect check on the course of real wages is provided by per capita real national income. The increase of per capita money income (by about 35 percent) between 1900 and 1913 is almost matched by that of retail prices (about 30 percent)—for an increase of per capita real income of about 4 percent between these years. All in all, the corroborative evidence confirms the finding of this study that weekly real earnings leveled off after 1900. Hence it must be accepted as fact that, though money earnings increased by about a third between 1900 and 1913, the gain was largely offset by price increases in consumers' goods. A minority of German workers suffered an actual decrease in real earnings; a majority experienced stability or a moderate rise, with the average real earnings level advancing by only a small percentage.

It should not be assumed, however, that the two decades prior to World War I brought no benefits to German wage earners. While average weekly real earnings remained almost static, working time per week declined. In other words, real earnings per hour increased during these years. A rough adjustment of weekly earnings for reductions in hours shows that from 1871 to 1913 average hourly real earnings increased by about 64 percent. From 1890 to 1900 the rise amounted to 18 percent and from 1900 to 1913 to about 10 percent.

WAR AND INFLATION

World War I brought one of the sharpest drops in average real earnings during the entire wage history of the Reich. Despite the doubling of money wages during 1914-18, average real weekly earnings decreased every year, reaching a level about 35 percent below prewar standards by the end of the war. These observations are based on the wage and cost-of-living information published by the Statistische Reichsamt.[35] From 1918 on, real earnings began to increase considerably. In 1919 they were within 20 percent of prewar levels, in 1921 within 10 percent. However, the frenzied race between prices and wages during the last two years of the Great Inflation was definitely lost by wages. Average weekly earnings during 1922 and 1923 were 30 percent below 1913 levels. In comparing inflation levels with 1913 real earnings levels, a clear distinction must be made between weekly and hourly earnings. While the workweek may have

[34] See periodical *Der Arbeiterfreund*, 1909, pp. 454-55; and 1910, p. 440.

[35] For the war years it is not possible to make separate statements on weekly and hourly earnings. The length of the working day increased in the war industries, but decreased in several consumers' goods industries. On the average, the working day just prior to the final defeat was probably somewhat longer than ten hours. See Chapter 1, section on Trends in Hours of Work.

averaged 60 hours in 1913, it was reduced by law to 48 hours during the 1919-23 period. This means that at their peak, in 1921, average hourly real earnings must have been about 11 percent above those of 1913, and in 1922 and 1923 about 12 percent below the 1913 levels.[36]

WEIMAR PROSPERITY AND DEPRESSION

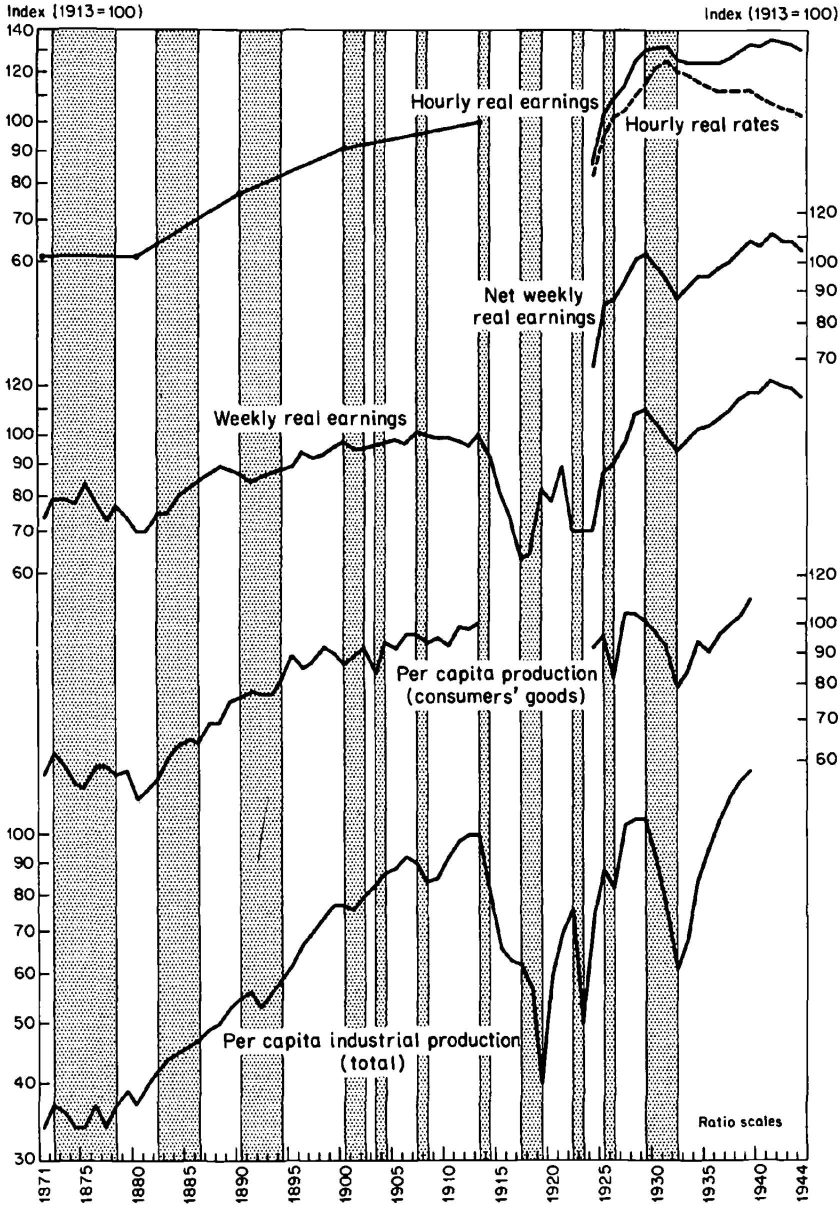
In January 1924 hourly money wage rates were 8 percent below 1913, and weekly rates 16 percent below. Since the cost of living had advanced by about 30 percent during this period, the poststabilization rate of real wages was close to 30 percent below 1913 for hourly, and 35 percent below 1913 for weekly rates. This situation led to the strong pressures toward increases in money wages, previously described. Here it must be added that the rapid rise in money wages, following the low stabilization levels, was accompanied by further advances in prices of consumers' goods which no doubt affected the extent and duration of the poststabilization adjustment of money wages. However, the net effect of this race between wages and prices was a substantial increase in real wages from their low stabilization levels. Between January 1924 and January 1925, hourly real wage rates increased by 24 percent, in the following twelve months by 16 percent—resulting in an increase of 45 percent during these two years, though even in 1925 hourly real wage rates stood at 5 percent below those of 1913. The increases in weekly real rates between the two 12-month periods were 26 percent and 15 percent respectively, again amounting to 45 percent for the two years, yet the level reached in 1925 was 12 percent below that of 1913.

Chart 8 and Appendix Table A-13 (Part III) show the movement of rates and earnings during the years following the stabilization of the currency. Hourly real rates went up 40 percent from 1924 to 1929, reaching a point about 15 percent above 1913. The comparable increase in weekly rates was 37 percent, but their relative standing in the prosperous year of 1929 was only 3 percent above 1913. It should be remembered that these rates are minima set for designated occupations and that, particularly in prosperous years, they were exceeded by rates actually paid and still more by average earnings.

In hourly earnings, the excesses over minimum rates are attributable to voluntary payments above the minima as well as to premium rates for overtime, night, and Sunday work. For weekly earnings, the increase in hours worked per week adds to the discrepancy. In both cases changes in the composition of the working force and in the nature of the work itself tend to modify earnings. For these reasons the increase in earnings between 1924 and 1929 exceeds that of rates. Hourly real earnings increased 51 percent during that period, weekly real earnings 57 percent. It may be

[36] For *all* German workers the average working day was about 10 hours in 1913 and 8 hours in 1919-23. For workers covered by collective agreements it was about 9½ hours in 1913 and 8 hours in 1919-23.

CHART 9
Real Wages and Production, 1871–1944



Shaded areas represent business contractions.
Source: Table 17 and Appendix Tables A-13 and A-49. Net weekly real earnings computed from Table 16 and Appendix Table A-49.

noted that hourly real rates and hourly real earnings continued their advance beyond 1929, reaching a peak as late as 1931. At their highest point before the Great Depression, hourly real earnings reached a level 32 percent above that prevailing before World War I, whereas weekly real earnings never exceeded 1913 levels by more than 10 percent.

During the Great Depression the sharp reductions in money wages were accompanied by declines in living costs. These declines were greater than those of hourly rates; consequently they led to an increase in real wage rates and dampened the decline in real earnings, both hourly and weekly. The postinflation years of the Weimar Republic, 1924-32, show average hourly real earnings 17 percent above the levels reached before World War I, but average weekly real earnings 4 percent below.

THE NATIONAL SOCIALIST EXPANSION

The advent of the National Socialist dictatorship brought about basic changes in real wage trends. The virtual stabilization of money wage rates at depression levels, in the face of rising living costs, led to a gradual decline of hourly real rates. By the end of the World War II these rates had about returned to 1913 levels. This decline in real rates could, however, be counterbalanced by efficiency premiums, by overtime payments, by shifts into more highly paid jobs. Thus average hourly real earnings stayed at about 1933 levels until 1936, then increased by about 9 percent to their peak in 1941, and finally slid down by a few percent toward the end of the war. The 1941 standing was an all-time high—it was 4 percent above 1929, 35 percent above 1913, and 121 percent above 1871 levels.

In comparison to hourly real earnings, weekly real earnings showed a considerably steeper rise during the period of National Socialism. Between their low point in 1932 and their peak in 1941 they increased 30 percent. Like hourly earnings, they show a small decline from 1941 to the end of the war. Their standing in 1944, the last year for which information is available, was 5 percent above 1929, 15 percent above 1913, and 56 percent above 1871 levels.[37]

Real Wages and Production

COMPARISON OF TRENDS

The relation of real wage movements to changes in economic conditions is now to be investigated by comparison of real earnings with trends in production per capita of population. The relevant data are to be found in Table 17, Chart 9 and Appendix Table A-13.

In Chart 9 we may observe a marked resemblance between per capita production and trends in real earnings. In fact, it seems that the behavior of real wages can be explained largely in terms of changes in economic

[37] For a critical discussion of these measures, see Chapter 5, pp. 260ff.

conditions as reflected in per capita industrial production. The steeply increasing trend of industrial production during the initial industrialization of the German economy, 1871-1900, corresponds to the general rise in real earnings. The decline in the rate of production growth and the more pronounced cyclical fluctuations between 1900 and 1913 coincide with the gradual leveling off in the upward trend of weekly real earnings. The break in trend at 1913, and the decline during World War I are shared by real earnings and per capita production. And so are the main features of the subsequent development—the steep general interwar movement as well as many of the short-term fluctuations, such as the postwar recovery, the hyperinflation decline, the poststabilization recovery, the ups and downs of Weimar prosperity and depression, and the expansion under National Socialism.

Trend slopes shown by total per capita production are steeper than those of real earnings, largely because of the sharp rise in producers' goods production. Comparison of per capita production of consumers' goods and real earnings shows a stronger resemblance in trend slopes, a not unexpected development in view of the somewhat closer economic relation of real earnings to consumers' than to producers' goods.[38]

LEVELS BEFORE AND AFTER WORLD WAR I

Among the major findings of the preceding portions of this study are the breaks in real-wage and production trends brought about by World War I, and the unfavorable position of their postwar levels as compared with those of 1913. Here we shall examine these levels in quantitative terms. According to Table 17, hourly real rates during the interwar period (1924-39) lie around 10 percent above 1913 levels, hourly real earnings about 20 percent above. But this advance is almost exactly compensated by the decline in hours, so that average weekly real gross earnings during these years are at practically the same level as they were shortly before the outbreak of World War I. This finding corresponds roughly to the fact that average per capita production levels during the interwar period were slightly below those of 1913. If allowance is made for legal deductions from wages, the correspondence becomes closer. Weekly real net earnings during the interwar period average 6 percent below 1913 levels—exactly the same as per capita production. The averages for the 1924-32 period also are close: net weekly real earnings during this period average 9 percent below 1913 levels, compared with 12 percent in the case of per capita production. Perhaps a more instructive comparison would be that between real wages and production of consumers' goods. For the interwar period and for the 1924-32 period, the levels relative to 1913 are again rather similar.

[38] There are, of course, important factors, such as unemployment, savings, inventories, making for differences between the behavior of real earnings and of consumers' goods production.

CONCLUSION

The resemblance between real earnings and per capita production, with regard both to trends and to interwar levels, calls for cautious interpretation. The coverage of the two series is basically different. The production indexes relate to all manufactured goods, whereas the real earnings series relate to the purchasing power (applicable to manufactured and nonmanufactured consumers' goods, services, and savings) of employed industrial wage earners only. Thus the precise matching of average interwar levels, at 94 percent of 1913, is coincidental and has no economic significance. The significant result of the comparison lies in the finding that real wage trends tended to follow the economic fortunes of the country and are to be explained largely in those trems.

There is no doubt that the behavior of wages is affected also, particularly over shorter periods, by conditions other than broad economic trends. Such influences will be examined in Chapters 4 and 5, which deal with wage behavior during business cycles and during abnormal economic conditions. For the present, however, we are still concerned with long-term trends, specifically with long-term changes in the wage structure. This is the subject of the following chapter.