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A METHODOLOGICAL NOTE ON REAL WAGES
DURING THE INTER-WAR YEARS

Peter ScholliersO)

Abstract: The main conclusion to this brief article is a plea to reconsider all price and wages series with respect to the 20th century with the same enthusiasm and criticism as the historians of the 19th century have applied to their series. Looking more closely at commonly used price and wages series with regard to the United Kingdom, France and Belgium during the inter-war period, it appears that both price and wages series in these countries should be revised. Such reconsideration of Belgian price and wage index figures was done: a totally new picture of the evolution of Belgian real wages emerges. The revised series provide a much more pessimistic view than the older series. The deviation is particularly significant in the 1930's (e.g. no less than 30% in 1932!). Based on this finding, a new standard of living debate could perhaps start.

I. One of the most interesting topics by far in the field of economic and social historiography is the development of real wages. These are a barometer of economic features (such as investment and productivity), of social matters (such as purchasing power) and of political factors (such as labour relations). Of crucial importance is the attention paid to the development of the standard of living. One of the famous debates in economic history is of course that on the British standard of living during the industrial revolution. Numerous articles are frequently devoted to this subject(1). An increasing number of publications now also deals with the two decades before World War I(2). Interest in the development of purchasing power during the inter-war years is growing as well(3).

There is however a noticeable difference between the methodological approaches to these periods. New methodologies and revised statistical evidence are often provided with respect to the 19th century, whereas the inter-war years have to deal with series published by governments, international organizations or individual researchers up to early 1960's (see the accompanying bibliography). New and critical research is seldom devoted to the latter period and the "old" figures are commonly used.

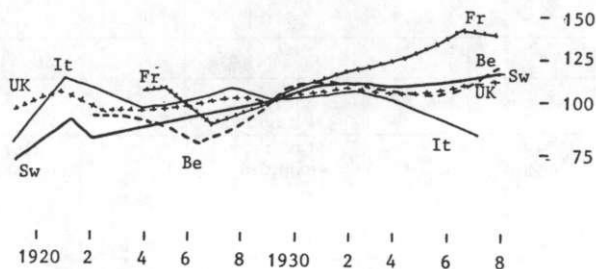
How should we explain these methodological differences between the 19th and the 20th centuries? Statistics with respect to the 19th century have to be constructed by the researchers himself, who therefore stands close to primary sources and is well aware of the methodological problems. The researchers dealing with the 20th century is provided with ready-made national statistical series and is therefore tempted to use these without considering obvious historical criticism.

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This short note aims at raising some questions with regard to existing and commonly used series of wages and prices for the inter-war years. Real wage series in some countries will be looked at, but only three countries will be considered closely: viz. France, the United Kingdom and Belgium. The last of these will be taken as a case-study.

II. Real wage figures for the inter-war years mostly involve national and aggregate data (in contrast to the 19th century). The statistical offices of most countries provided these series of prices and wages, which have been reprinted by, amongst others, B.R. Mitchell and by the I.L.O.(4). By simply dividing the wages series by the price series, an index number of real wages can be obtained. International comparisons, therefore, are quite easy to make. Let us consider some real wage graphs which are mostly based on series provided by national statistical offices(5). The overall picture is one of increasing purchasing power throughout the inter-war period. Italy is the exception, but here real wages fell only in the latter half of the 1930's. If real wages alone are considered in these countries, no such calamity as a profound economic crisis occurred between the wars. Those who were able to keep their jobs, benefited from the rapidly falling price levels. Mass unemployment was the main burden of the crisis. The neoclassical concept of the direct relationship between high unemployment and high real wages was based on this finding(6).

Graph 1: Real wages in five countries, 1919-1939



Most historical research since the 1940's has done nothing more than repeat the methodology and the results(7). The overall picture of the development of rising real wages during the inter-war years has been repeatedly confirmed. Some researchers, however, have looked more closely at the price and wages series. For instance, E.H. Phelps Brown published in 1968 a comparison of real wages in five countries(8). He introduced some new series into the calculations. Thus, the official French price index was replaced by the more complete Paris index computed by J. Singer-Kefel(9). Similarly, the series from G. Bry were used to compute revised German wages series(10). These, however, turned out to involve only minor changes and the general picture of rising purchasing power during the inter-war period remained(11). Even the real wage series presented by J. Kuczynski showed increasing purchasing power (without necessarily reaching pre-war levels in any inter-war year)(12). The concept of rising purchasing power in most European countries during the inter-war period is, indeed, strongly imprinted in present-day historical research. Recent books confirm this picture(13). But isn't this picture a myth?

III. There are sufficient reasons to reconsider the wage and price series and, perhaps the concept of increasing real wages. To start with, let us consider more closely the price index figures, which have been computed mostly by national statistical offices. We shall focus on the United Kingdom, France and Belgium.

The British official price index figures was based on household budgets of 1904 and was adapted to change expenditure patterns in 1912. But surely spending patterns continued to change after 1912, under the influence of the Great War, inflation and social policy (e.g. rent controls). Comparing the weightings used for the official price index figure with the patterns of family expenditure (in percentages) provided by the budget inquiry of 1937/1938, it is apparent that several important shifts occurred

Table 1: Official index figures & comparisons with inter-war budget inquiries

Great Britain			France				Belgium		
official index		budget 1938	official index			budget*	official index	budgets	
			I	II	III		1929	1936	
food	60	40.1	77	89.5	60	60	60.7	58.3	44.6
housing	16	12.7	-	-	10.	12.8	5.3	9.1	20.2
light/heat	8	7.6	23	7.5	5	5	8.9	5.0	6.7
clothing	12	9.5	-	-	15	12.6	21.4	15.3	11.1
miscellan.	4	30.1	-	3.0	10	9.5	3.6	12.2	17.4
no.of goods	42		13	34	41		56		
no.of local-ities	600		(no national index figure)				60		
mode of calculation	weighted by budget 1904, adopted to expenditures of 1912.		I,II:arbitrarily weighted III:weighted by budget 1930				arbitrarily weighted		
*weighting used by J.Singer-Kérel on the basis of several budget inquiries.									

sources: Great Britain: A. Chapman, *Wages and salaries in the United Kingdom, 1920-1938*. Cambridge 1953, p. 29.

France: Nombres-indices du coût de la vie. Geneva 1925, p.24.
J. Singer-Kérel, *op.cit.*, p. 25, 425-428.

Belgium: P. Scholliers, *Loonindexering en sociale vrede (Wage indexation and social peace)*. Brussels 1985, p. 127.

during the 1920's and the 1930's which were not taken into account by the official index (as shown in table 1). The most obvious ones are the decline of food spending and the increase in expenditure on miscellaneous items. This was of course clear to researchers into British price movements, who criticised the official index figure(14). A revised index figure was calculated by R. Stone and D. Rowe, which deviated from the official one by some percentage points(15). This revised index figure was, however, not based on employees' budgets but on national accounts, so involving the

whole of British society. Expenditure patterns certainly varied in the different social strata. There is, in other words, no appropriate price deflator for the incomes of British wage-earners during the 1920's and 1930's.

Perhaps the revised price index figure might provide us with a clue as to the development of prices in relation to employees' spendings. This index figure takes expenditure patterns during the inter-war years into account, which the official index does not. The spending of wage-earners probably resembled more the national average spendings in the 1930's than they matched pre-war working-class spending patterns. The revised index figure therefore indicates that prices remained more stable during the 1930's than is shown by the fall of the official price index figure. The use of the revised index figure therefore points to a more conservative view of the development of real wages(16).

Let us now turn to French price data(17). Several official price index figures were calculated. The first one was published from 1912 on and involved large cities and county-towns. A national average was not calculated. Only 13 products were taken into account. A second index figure, containing 34 products, was published in 1930 but, again, a national average was lacking. Both index figures were characterized by an extremely unsatisfactory composition(18). Food accounted for over 75%, and spending on housing and clothing was absent (see table 1). From the early 1920's on, several "Commissions du coût de la vie" published local index figures, involving 41 products and based on all kinds of different weightings. From 1931 on, equivalent weightings had to be applied for all regional price index figures. Their composition is much more satisfactory. A national average is still lacking. France therefore has three series of regional price index figures but no national average. Two of the index figures are most unsatisfactory, whereas one was matched to the spending patterns of working-class families from 1931 onwards.

J. Singer-Kérel therefore calculated revised price index figures. She considered a complete "shopping-basket" of goods and services (214 items) and used weightings based on budget inquiries. Her findings deviated, as can be expected, from the official index figures (e.g. by as much as 10% in 1926). From 1932 to 1935, the official index figure (Paris, 13 products) fell 31%, the Singer-Kérel series only 20%. The fall in the price level turned out to be more moderate than had been claimed, a phenomenon which was also noted in the United Kingdom. Real wages therefore increased to a lesser extent than can be assumed from the official price index. The Singer-Kérel series are used mostly to calculate French real wages, though J. Fourastié has criticised some of the methodological aspects(19).

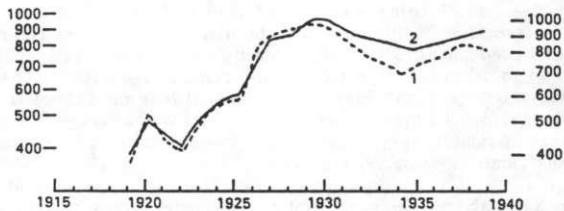
It is important to remember, however, that the series by J. Singer-Kérel involve data for Paris. Real wages in the provinces and national real wages are derived from the Paris data. The official price statistics show that there was quite an important difference between Paris and the provincial data. The Paris index figure increased faster than the provincial index figures(20). It is therefore desirable to consider price developments in other French towns in order to obtain trustworthy national, weighted price index figures.

Finally, Belgium's price statistics must be looked at. The official price index figure was not computed by means of results of a budget inquiry: there was no direct weighting of items. There were, however, implicit weightings (which are represented in table 1). According to the national budget inquiry of 1928/1929, the implicit weighting of food expenditures was satisfactory, but the weighting of all other items was not. According to an inquiry by the Christian trade Union in 1936, not one item was satisfactory! Spending on housing, food and miscellaneous items were particularly badly represented. This led of course to incorrect price index figures.

Contemporaries were aware of this. A violent debate emerged between employees and employers as to the value of official index figures, since wages of more than half a million employees were linked to the fluctuations of the price index. Hoping to calm down this violent debate which was disturbing the social peace, the government produced a cost-of-living index figure based on a budget inquiry of 1921. This index figure was not satisfactory either, though it was an improvement on the first official series.

Since no other price index figures were calculated in Belgium, we decided to compute a revised Belgian price index for the years 1918-1940. All existing criticism by contemporaries and all statistical "rules" were taken into account. An index including 118 prices of commonly used products and services, weighted by the results of various budget inquiries into working class expenditure for the years 1921, 1928/1929, 1932 and 1936, was calculated(21). This revised price index figure resembled the official Belgium price index during the 1920's, but deviated greatly from it during the 1930's. This is shown in graph 2.

Graph 2: Official price index figure (1, —) and revised price index (2, -); Belgium 1919-1939 (1914 = 100).



The deviation was highly significant during the first half of the 1930's, reaching as high as 19.5% in 1934! The official price index fell much faster than the revised one. The main reason for this was that the official price index took no account of some very important items, especially rent. In contrast with the fall in most other prices, house rent increased up till 1933, thus absorbing a growing share of family expenditure. Again, it is clear, that the official price index figure was most unsatisfactory.

This is the same conclusion that was drawn from the French and the British price index figures. It shows that more research into the development of price index figures, the cost of living and the patterns of family spendings is necessary. Existing price index figures should therefore be used with great caution. Considering the possibilities of the statistical offices in the inter-war period, this warning is also valid for other countries than those considered here.

IV. With regard to wages series, other major problems arise. National statistical offices provided wages series which have been often completed by individual research. In his "European Historical Statistics", B. R. Mitchell, for example, used additional wage data from Bowley, Hoffman, Bagge, Simiand, Bry, Kuczynski and others. The consequence is that the nature of the wages series presented is divergent. B. R. Mitchell considers "daily wages", "weekly earnings of insured males involved in accidents", "gross weekly wage", "hourly wage" or many other categories. A national, weighted homogeneous average of well defined wages is seldom given.

This may not burden the research if one is interested in a broad picture of the wage development. However, if one is interested in more specific factors, it is of importance to use hourly wages (e.g. for the development of labour cost, wage differentials), weekly or yearly wages (e.g. for purchasing power). Unfortunately, this has been somewhat overlooked.

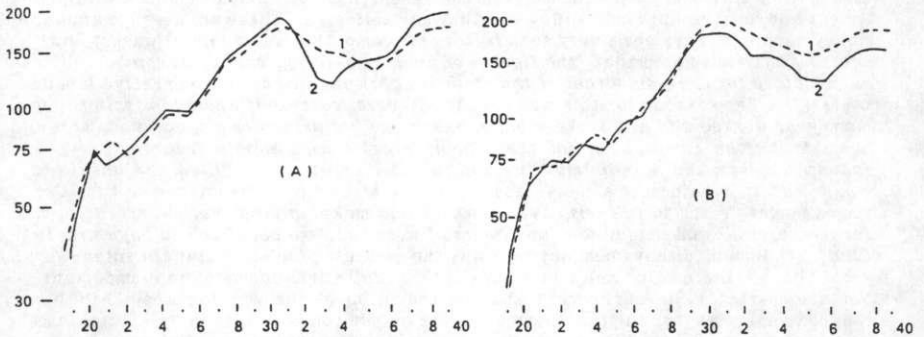
Let us look more closely at the wages series in Great Britain, France and Belgium. The British series are based mostly on the research by A. Chapman and R. Knight. Recent and very recent books follow the Chapman series(22). These are average annual money earnings. They seem very satisfactory for computing average real wages. However, A. Chapman noted that *"the figures of average earnings cannot be considered as satisfactory for analysis either of the standard of living (...) or of comparative labour costs"*(23). The reasons for this was that the figures *"represent average earnings per man-year worked and not average annual earnings per person employed"*, and, moreover, that *"the composition (of the labour force) varies widely from industry to industry in sex and age distribution and in the proportion of skilled and unskilled employed"*. D. H. Aldcroft e.g. was acutely aware of this problem and wrote that the wages series *"refer to full-employed workers and make no proper allowance, if any, for irregularities of employment and hours of work, welfare benefits and payments in kind"*(24). He added that unemployment was the greatest problem during the inter-war years. He hit the nail on the head: not only was full-time unemployment important, but also part-time unemployment and the reduction of the working week. All this reduced yearly wages, but the Chapman series do not consider this. More appropriate series of hourly or weekly wages should therefore be considered. This creates no major problem since an important number of various wages series exists for the inter-war period (Routh, Bowley, Clark, Ramsbottom and others - see the appendix) (25). The use of these series enable to consider regional and inter-industrial wage developments as well.

France lacks a national wages series but quite a large amount of semi-official wage data exists, covering male or female workers, the Paris region or the provinces and hourly or weekly wages(26). Next to those general series, specific wages are provided by Siminand, Sauvy, Lavirotte, Jeanneney and others. Thus, French wage data are quite abundant. Most of these series are based on hourly wages but, by means of data on the average working week, have been converted into weekly wages(27). At first sight, then, French wages series appear to be adequate. However, J. Singer-Kérel noted that the wages series were more *"résultats approximatifs"*, since most series were set up from insufficient data(28). Also J. Lhomme was obliged to present real wage series for the 1920's based on hourly wages, thus omitting crucial information on the development of the working week(29). Finally, the rich series by F. Siminand only run up to 1930. It therefore seems that French wages data should be reconsidered too. Again, this poses no major problems since wages series are abundantly available.

Finally, let us turn to Belgian wages data. Index figures of hourly wages in industry have been calculated by the "Banque Nationale de Belgique" for the years 1919-1939(30). These cover wages of unskilled or skilled labourers working in sheltered or competing sectors. Given that the working week is not taken into account, these wages are of no great use for information on the standard of living(31). There are, alas, no other series. We therefore decided to calculate revised wage series reflecting the effective income of wage-earners on a yearly basis. This included data on the short-time evolution of the working week, of premium and penalties and of all other factors that may limit or augment effective income. Since existing statistics mostly fail to provide such information, this was looked for in company wage records, as well as in all possible official sources (e.g. public administration accounts). Three wage index figures were calculated: one for the competing sector (metals, textiles, min-

ing,...), one for the sheltered sector (clothing, printing, food,...) and a weighted average. The results are presented in graph 3, where a comparison is drawn with the index figures based on hourly wages(32).

Graph 3: Belgium: index figures of hourly wages (curve 1) and of yearly wages (curve 2) in competing sectors (A) and sheltered sectors (B).



These graphs show clearly the divergent development of hourly and yearly wages. The fluctuation of the business cycle apparently reinforced the trend of hourly wages. Thus, during the 1930's yearly wages first fell faster than hourly wages, but afterwards they rose more rapidly. It goes without saying that the evolution of real wages differs according to whether hourly wages or yearly wages are used.

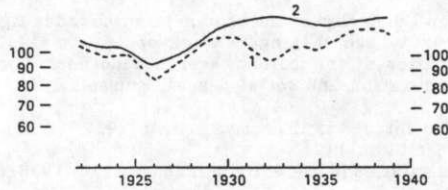
The last word on wages series during the inter-war period has not yet been written. The available number of wages series for the three countries causes confusion as to the nature of the series (hourly, weekly, male, female, average and so on). But together, this large amount of wage data provides quite a rich field. The most urgent task to be carried out is perhaps to make an inventory of all available wage data and to order these. This would undoubtedly help research into wage evolution.

V. What about the development of real wages and the standard of living? It has appeared that many historians present real wages for the inter-war years. Some of them are well aware of the value of the data and of the methodological problems, but others seem to neglect these fundamental points. Criticism of the price and wages series is nevertheless crucial to interpreting developments. Therefore, if there is to be a conclusion to this brief note, it should be this plea: let us reconsider all price and wages series with respect to the 20th century with the same enthusiasm and criticism as the historians of the 19th century have applied to their series. In the light of the very recent research into Belgian real wages, such a reconsideration of price and wages series sounds rather promising. Indeed, a totally new picture of the evolution of Belgian wages now emerges. Graph 4 compares the old with the revised series.

The revised series provide a more pessimistic view than the older series. The deviation is particularly significant from 1930 to 1936. A deviation of no less than 30% appears in 1932! Such findings call for a reinterpretation of economic performance, the standard of living, labour movement strategies, social policy and political events (such as the explanation of a widespread strike movement in the Walloon coalmines in 1932M33). The reconsideration of price and wages series for the inter-war years has

here turned out to be valuable. It would therefore be useful to revise as many real wage series (by region, by industry, by skills) in as many countries as possible with regard to the 20th century.

Graph 4: Belgium; index figures for real wages, "old" series (2) and revised series (1).



NOTES

With thanks to Frank Winter for correcting the English version of this article.

- 1 E.g. P. H. Lindert /J. G. Williamson, *English workers' living standards during the industrial revolution: a new look*, in: EHR 1983, p. 1-25; L. D. Schwarz, *The standard of living in the long run: London 1700-1860*, in: EHR 1985, p. 24-41.
- 2 E.g. V. Zamagni, *The daily wages of Italian industrial workers (1898-1913)*, in: *Revista di Storia Economica* 1984, I; T. R. Gourvish, *The standard of living 1890-1914*, in: A. O'Day, (ed.), *The Edwardian Age: conflict and stability*. London 1979.
- 3 E. g. S. Bonnell, *Real wages and employment in the Great Depression*, in: *Economic Record* 1981, p. 277-281; J. A. Dowie, 1919-1920 is in need of attention, in: EHR 1975, p. 429-450.
- 4 B. R. Mitchell, *European historical statistics, 1750-1970*, London 1975, p. XVII.
- 5 France, Italy, Sweden, U.K.: B. R. Mitchell, op.cit., p. 186-187 and 742-746; Belgium: M. Neiryneck, *De loonen in Belgie sedert 1846*, Leuven 1943 (Mitchell's series for Belgium is not used since figures for the 1920's are erroneous).
- 6 The theory, which was very popular during the 1930's, says that high real wages unavoidably lead to high unemployment (see e.g. J. Bellerby/K.S. Isles, *La politique des salaires et l'étalon or en Grande Bretagne*, in: *Revue Internationale du Travail*, August 1930, vol. XXII, no. 2, p. 141-161).
- 7 A recent example is provided by a paper given at the "Utrecht-Conference on Income and Wealth distribution in historical perspective" (August 1986): S. Bonnell /R. Rimmel, *Trend and cyclical changes in real wages, productivity and the distribution of income during the 1930's*.
- 8 E. H. Phelps Brown with M. H. Browne, *A century of pay*, London 1968.
- 9 J. Singer-Kérel, *Le coût de la vie à Paris 1840-1954*, Paris 1961.
- 10 G. Bry, *Wages in Germany 1871-1945*, Princeton 1960.
- 11 E.H. Phelps Brown/M. H. Browne, op.cit., p. 257.
- 12 J. Kuczynski, *Die Geschichte der Lage der Arbeiter unter dem Kapitalismus*, Berlin 1961-1967.
- 13 E.g. J. Stevenson, *British society, 1914-1945 (The Pelican Social History of Britain)*, Harmondsworth 1984, p. 117; Y. Lequin, *Histoire des Français XIXe-XXe siècles*, La Société. Paris 1983, p. 390.
- 14 E.g. N. Branson/M. Heinemann, *Britain in the thirties*, Saint Albans 1973, p. 154-155; J. A. Dowie, op. cit., p. 443 (note 1).
- 15 R. Stone/D.R. Rowe, *The measurement of consumers' expenditure and behaviour in the United Kingdom, 1920-1938*, Cambridge 1966, p. 114 (deviation reached 6.1% in

- 1920, 4.6% in 1933 and only 0.4% in 1927, 1928 and 1938).
- 16 N. Branson/M. Heinemann, *op. cit.*, p. 156.
 - 17 Based on J. Singer-Kérel, *op. cit.*, p. 22-26.
 - 18 This also was the opinion of A. Sauvy, *Histoire économique de la France entre les deux guerres*, Paris 1972, vol. 3, p. 353.
 - 19 J. Fourastié, *Le coût de la vie à Paris de 1840 à 1954*, in: *Revue d'économie politique*, 1962, p. 64-72.
 - 20 The divergence between the Paris and the provincial price index figures was particularly high in the 1920's. See: J. Singer-Kérel, *op. cit.*, p. 141.
 - 21 For a complete explanation of the method, see: P. Scholliers, *Loonindexering en sociale vrede (Wage indexation and social peace)*, Brussels 1985, p. 156-159 and 328-331.
 - 22 E.g. D. H. Aldcroft, *The Inter-War Economy: Britain 1919-1939*, London 1970, p. 352; J. Stevenson, *op. cit.*, p. 117.
 - 23 A. Chapman, *Wages and salaries in the United Kingdom, 1920-1938*, Cambridge 1953, p. 28.
 - 24 D. H. Aldcroft, *op. cit.*, p. 351.
 - 25 J. A. Dowie (1919-1920 is in need of attention, *op. cit.*) presents revised hourly and weekly wage series for the years 1914-1924.
 - 26 E.g. the series produced by the I.L.O.: *Les variations du niveau général des salaires*, in: *Revue Internationale du Travail*, starting in July 1929, p. 122-135.
 - 27 This was done by A. Sauvy (*op. cit.*, vol. 2, p. 518) and by J. Singer-Kérel (*op. cit.*, p. 447).
 - 28 J. Singer-Kérel, *op. cit.*, p. 450.
 - 29 J. Lhomme, *Le pouvoir d'achat de l'ouvrier français au cours d'un siècle: 1840-1940*, in: *Le Mouvement Social* 1968, no. 63, p. 56.
 - 30 This index figures has been published and commented on by I. Cassiers, *Une statistique des salaires horaires dans l'industrie belge, 1919-1939*, in: *Recherches économiques de Louvain* 1980, p. 57-85.
 - 31 Yearly wages of coalminers do exist (averages of all workers) which can be used for calculating real wages in this sector.
 - 32 A complete description of the sources and the methodology, see: P. Scholliers, *op. cit.*, p. 269-273, 336.
 - 33 Real wages fell abruptly between January 1931 and the summer of 1932 in the mines of the "Borinage" (by approximately 30%), thus causing general discontent.

APPENDIX

Sources of wages and price series in Great Britain, France and Belgium, 1918-1940 (see also references in the notes).

International:

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