Was Prometheus most Unbound in Europe? The Labour Force in Europe During the late XIXth and XXth Centuries

Hartmut Kaelble
Freie Universität Berlin

One of the most firmly rooted images of industrialisation and economic development in the contemporary period assumes a process of progress from a traditional and predominantly agrarian society to a modern society in which industrial work prevails and then to a post-industrial society of predominantly service work. Specialists as well as textbooks would have us believe that there were two major turning points in the history of each modernised society: the emergence of industrial society when the industrial sector surpassed the agrarian sector (in most modern societies in the late XIXth and the first half of the XXth centuries), and the emergence of post-industrial society when the service sector out-did the industrial sector (mostly during the postwar period). Looking at economic development in these terms the changes in the nature of the labour force do not constitute simply one aspect amongst many. Together with rates of growth and sectoral output they provide the most common way of describing and analysing industrialisation and economic development. Among European social scientists this idea is usually referred to as the Fourastié model, while American social scientists often prefer to call it the Fisher-Clark model. However, it is clear that this model has not been the invention of a few particularly brilliant scholars, but is part of the mainstream of postwar perceptions of long-term social change.

This article will argue that this is a European rather than a world-wide reality. Projecting this idea onto the non-European world, even the developed countries, means seeing them

through European eyes and the European experience is superimposed on the economic history of other regions of the world. Neither the US nor Japan nor the smaller non-European developed societies such as Canada and Australia followed the European pattern of changing employment structures which was a uniquely European experience. The notions of an "industrial" and a "post-industrial" society also make sense only in Europe. Prometheus, as the symbol of industrial labour, is most appropriate to society as a whole in this region of the world: but nowhere was he so fully unbound as here.

In the first part of this article we shall begin by putting forward statistical evidence for the uniqueness of the structure of the labour force in XIXth and XXth century Europe. We shall then discuss various explanations for this peculiarly European path. Finally, we shall offer some brief and highly speculative suggestions on the social consequences.

1. The European path of occupational change

The idea of a world-wide pattern of development in three phases from agrarian society to industrial society and then to post-industrial society has remained unchallenged because the comparative historical analysis of the history of the labour force since the industrial revolution remains a neglected field in social and economic history. There are only a very small number of comparative studies that are either largely unknown or very recent.[1] There are good reasons for the paucity of comparative

[1] cf. P. Bairoch/J.-M. Limbor, Changes in the Industrial Distribution of the World Labour Force by Region, 1880-1960. In: *International Labour Review* 98.1968; J. Singelmann, The Sectoral Transformation of the Labour Force in Seven Industrial Countries, 1920-1970. In: *American Journal of Sociology* 83.1978; ibid., From Agriculture to Services. The Transformation of Industrial Employment (London: Sage 1978) (most stimulating for this article pp. 109 ff.); P.K. O'Brien, The Analysis and measurement of the Service Economy in European Economic History. In: R. Fremdling/P.K. O'Brien (eds.), *Productivity in the Economy of Europe*, (Stuttgart: Klett Cotta 1983).

historical research on the labour force. First of all, the collection of data for comparisons from many statistical sources in many different languages and from many different libraries is an extremely tedious and time-consuming process. Moreover, many historians have grave doubts about the reliability of official industrial and occupational statistics, and it is alleged that they are often misleading in the ways they define and document industrial and occupational activities, frequently neglecting important sections of industrial labour such as large areas of women's work or the "informal" economy. Since official industrial and occupational statistics are often seen to reflect the perceptions of statistical bureaus rather than reality, some historians prefer small in-depth local studies of changes in the labour force. Thirdly, historians often distrust comparative study, arguing that the definitions of specific occupations and activities vary greatly from country to country and also from census to census. Hence, the standardisation of official industrial and occupational statistics from several countries can be risky and may not lead to useful and significant conclusions. Finally, some historians are also discouraged by the lack of agreement among sociologists on the appropriate definition of sectors of employment.[2]

This article treats this topic because many of these handicaps have become less severe during the last ten years or so. First, several large data collections have been amassed at considerable expense and published during recent years.[3] They include most European countries and are all based upon the official censuses. These data collections and studies try hard to standardise European labour force statistics over time and across countries. They do this in some cases for the three main sectors, and in others

[2] For a short discussion of the major controversial points cf. appendix.

[3] cf. P. BAIROCH, ed., *The Working Population and its Structure* (Brussels 1968); B.R. MITCHELL, *European Historical Statistics*, 1750-1970 (London: MacMillan 1975); P. FLORA, Quantitative Historical Sociology. In: *Current Sociology* vol. 23.1975, no. 2 (The Hague: Mouton 1977); Id., *State, Economy, and Society in Western Europe, 1815-1975*, vol. 2 (Frankfurt: Campus, 1987); OECD. *Historical Statistics 1960-1985* (Paris: OECD 1987).

also need more specific industrial and service branches. Hence, some inventive, carefully considered proposals for the standardisation of definitions in the official statistics have been made. If used with caution, they can be helpful. Secondly, numerous studies of the change of the labour force in individual European and non-European countries have recently been published. They start from the same basic ideas and definitions. For a number of European countries, the historian has now a choice between four or five time–series of long-term change in the labour force. This is in sharp contrast to the situation only fifteen years ago when historians had to start from scratch and for many European countries had to calculate time–series directly from census statistics. Comparative research has clearly been improved by this abundance of data.[4] Finally, a few in depth comparative local studies deal with the history of the labour force.[5] They offer interesting insights for the discussion of the conclusions to be drawn from the official census.

This large variety of research helps us to see now more clearly the characteristics of the change of the labour force in contemporary Europe.[6] Four aspects are striking:

1. The most important European peculiarity is a quite inconspicuous one: only in Europe was industrial work the most dynamic sector of employment from the industrial revolution until the post-war era. Only in this region did industrial activities clearly outdo service activities. Only in Europe was the

[4] We refer to some of these studies in the appendix. The full references to all these studies will be included in the longer German version.

[5] P.R. SHERGOLD, *Working Class Life. The "American Standard" in Comparative Perspective 1899-1913* (Pittsburgh: University of Pittsburgh Press 1982), pp. 15 ff.; R. SCHUEREN, *Staat und ländliche Industrialisierung*, Dortmund 1985.

[6] This article covers Western Europe in its present definition (i.e. without Eastern Europe and without the Soviet Union). Owing to the lack of occupational or industrial censuses before the turn of the century for large parts of East Europe, this area is touched upon only eventually. Consequently, the graph on Austria includes only the territory of the Austrian Republic after the fall of the Habsburg monarchy. Russia and the Soviet Union are treated as a separate case.

number of people who worked in factories and workshops larger than the number of people who worked in shops, offices, armies, as servants in households, in restaurants, on ships, railways, trucks, in ports, as doctors, lawyers, architects, consulting engineers. Prometheus, the symbol of industrial activity, was nowhere as unbound as in Europe.

This special industrial intensity of European economic activity can be seen from graph 1. It shows the long-term change of sectoral activity for most European countries. The predominance of the industrial sector is especially clear in Britain, Germany, Belgium, Austria, Switzerland, and Italy. In these countries a long period of industrial supremacy over the service sector existed. The majority of Europeans lived in these countries which were amongst the early industrialisers. To be sure, the pattern does not apply to all European countries. Industrial intensity is less clear in France, Spain, Portugal, Denmark, Finland. In these countries the period during which industrial production predominated over the service sector was much shorter.[7] Most of these countries form part of the XIXth century European periphery and industrialised relatively late. Still, a distinct period of industrial predominance can be found in all these cases. In another group of European countries the predominance of industrial activities never existed at all. In the

[7] The European way can also be observed in Central and South East Europe. After the Second World War in all these countries (except Bulgaria) the industrial sector employed more people than the service sector until very recently. One factor can be seen in the policy of rigid industrial development of post-war East European governments. It is interesting, however, that the European way of extensive industrial employment can be seen in Czechoslovakia and Yugoslavia from the interwar period on (when industrial statistics become available) and in Hungary even from 1910 on. These countries employed more than one third of the total East European labour force (excluding the USSR) (cf. BAIROCH, ed., *Working Population*). It is also important that the largest of these East European countries, Poland, which employed another third of the East European labour force, does not show a clear predominance of the service sector over the industrial sector until 1930. Regional statistics seem to show that the European way of employment clearly existed in the Western parts of Poland (cf. M.M. DROZDOWSKI/J. ZARNOWSKI, Die sozialstrukturellen Veränderungen in der II. Republik Polen. In: *Studia historicae oeconomicae* 4.1969, pp. 50 ff.).

Netherlands, Norway, and Greece, the service sector was larger than the industrial sector throughout contemporary history. One might add Ireland for the period after 1876. However, the number and size of these deviant countries is small. Moreover, at least the Netherlands and Norway are not real exceptions since their economies provide services for the European economy in general. This division of labour probably existed between many other industrial regions and service regions although the national statistics tend to conceal it. For Europe as a whole, graph 1 shows beyond doubt that the industrial sector predominated over the service sector for many decades from the Industrial Revolution until very recently.

In contrast to Europe, the industrial sector never predominated over the service sector in any modern non-European society. This is also very clear from graph 1. In Canada, Australia, and Japan the service sector always had a distinct lead over the industrial sector (cf. graph 1). In the United States, during the XIXth century the service sector was at least never distinctly smaller than the industrial sector, as it was in Europe. Thereafter, the gap between the rising service sector and the stagnating industrial sector widened continually. This contrast between the United States and Europe is especially important since it is often alleged that there was a period in XIXth century American economic history during which industrial activities predominated over service activities just as in Europe. This assessment, however, is usually based on a very wide definition of the industrial sector which is taken to include transport and communication. As transport and communication are never included in statistics of European industrial activity, the similarity between the American and European labour forces becomes a statistical artefact. In fact, industrial activities in the United States were never as extended as in Europe. It is true that the predominance of the industrial sector did exist in the New England States and in the industrial belt of the Northeastern States. But it was counterbalanced by a very strong service sector in the American South

and West.[8] Hence, on the whole the United States differ clearly from Europe. The European path of the change of the labour force seems to have been unique. Even the industrialising countries of the Third World seem to follow patterns other than the European one.[9]

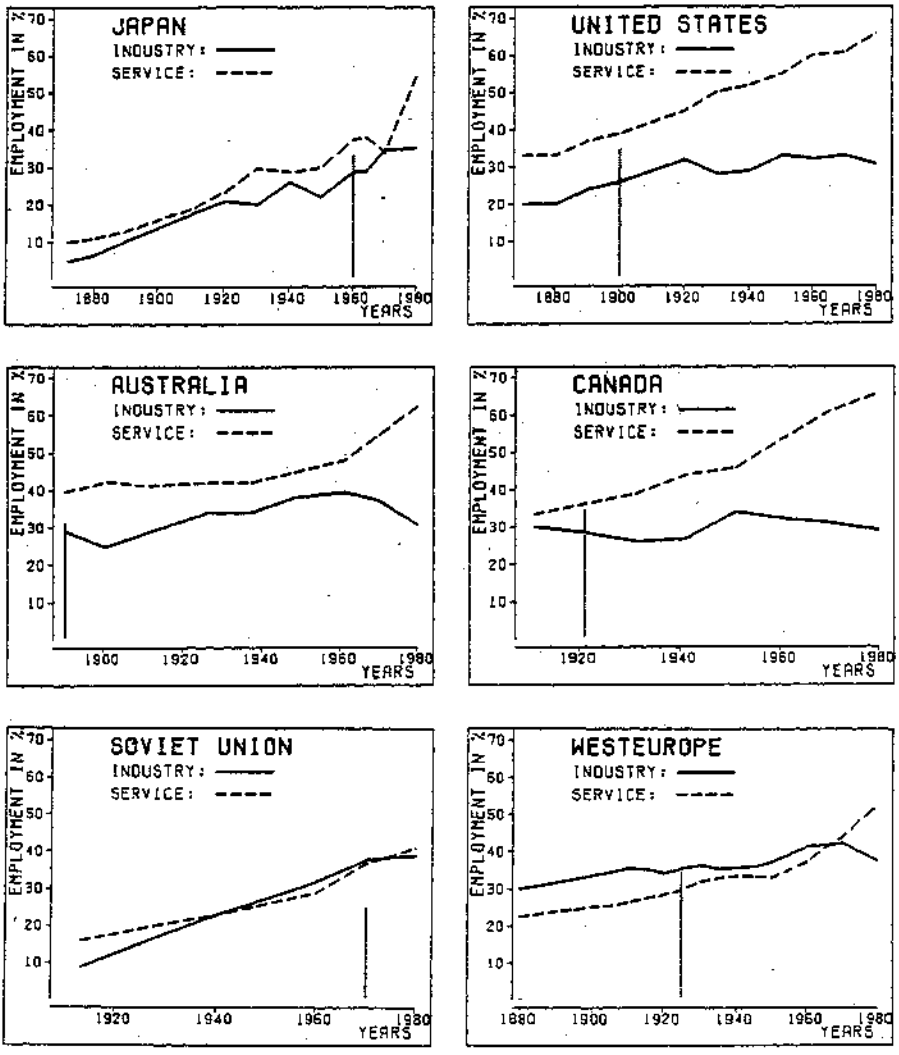
The Soviet Union is a special case. To be sure, it does have a period of slight industrial predominance. In the census of 1960 and 1970 the industrial sector employed somewhat more people than the service sector (cf. graph 1). Even in this case, however, the pattern is not very clear. Not only is the period of industrial predominance short. The lead of the industrial sector over the service sector is also small. What is more important are the reasons for this economic structure. One cannot reject out of hand the argument that the lead of the industrial sector has to do with the enforced industrialisation of the Soviet economy to the detriment of economic services, and Soviet economic policy makes it difficult to compare the employment structure of the Soviet Union to that of the industrialised countries outside the communist sphere.

2. It follows from this that a period in which industrial society predominated can be found only in European history. To put it more precisely, only in contemporary European history did the industrial sector employ a larger share of the labour force than the agrarian sector and also the service sector. No-

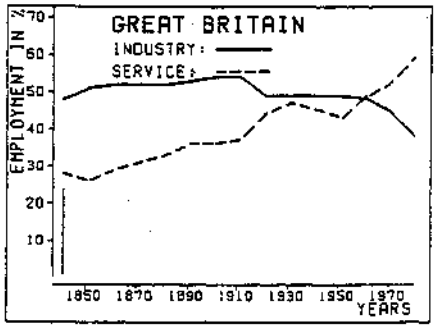
[8] cf. V.R. FUCHS, *The Service Economy* (New York: NBER 1968), pp. 26 f. Fuchs uses the extended definition of the industrial sector including transport and communication. Even if one takes this into account, the "European" pattern of the Eastern and Northern regions in the United States seems to be distinct.

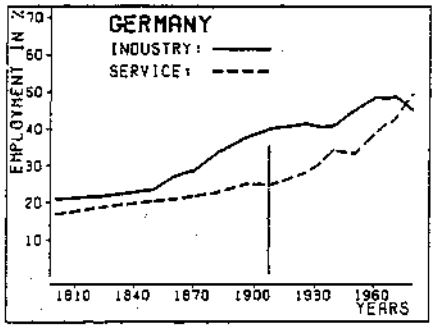
[9] Communist China might be an exception according to CHU-YUAN CHENG, *China's Economic Development* (Boulder 1982), p. 414. In the 1950's, the industrial sector (17% of the labour force in 1957) was larger than the service sector (11% in 1957). However, the extended definition of the industrial sector (including transport, communications and utilities) is also applied in these statistics. Hence, they cannot be directly compared to the European ones. For other Third World countries cf. BAIROCH, ed., *Working Population*.

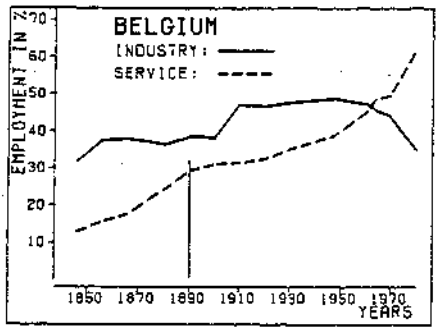
Graph 1
INDUSTRIAL AND SERVICE EMPLOYMENT IN EUROPEAN AND NON EUROPEAN SOCIETIES, 1800-1980

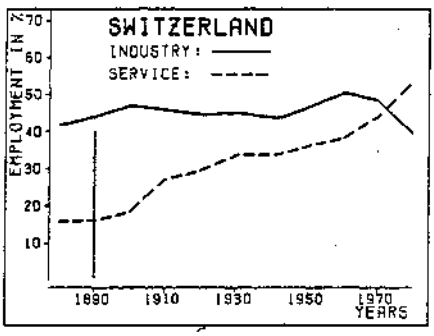


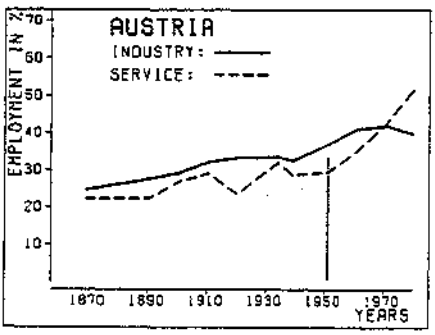
Sources: Cf. appendix. The vertical line in each graph indicates the census at which agrarian employment ceased to be the largest sector. Only in the British and Australian case did this happen before the time series actually starts. Industry includes mining, manufacturing, construction, and utilities. Service includes all other branches except agriculture and fishery.

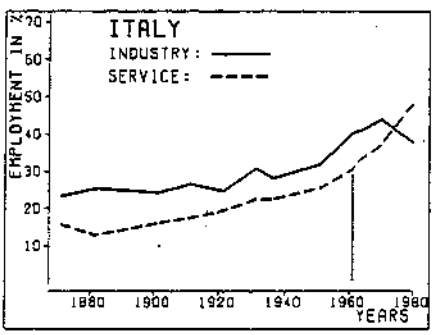

GREAT BRITAIN
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
70
60
50
40
30
20
10
1850 1870 1890 1910 1930 1950 1970
YEARS

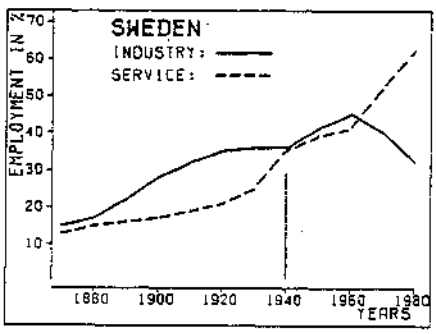

GERMANY
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
70
60
50
40
30
20
10
1810 1840 1870 1900 1930 1960
YEARS

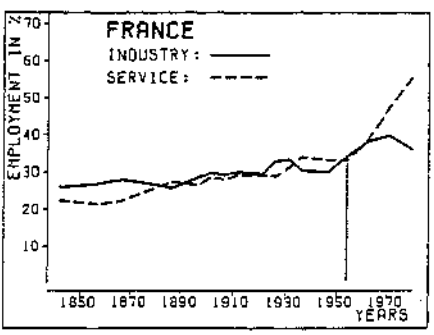

BELGIUM
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
70
60
50
40
30
20
10
1850 1870 1890 1910 1930 1950 1970
YEARS

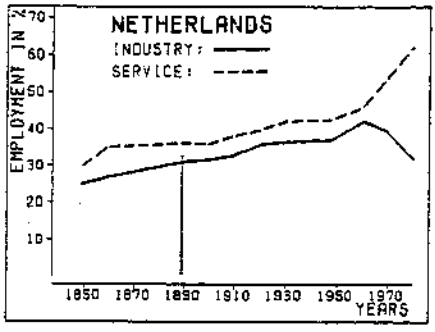

SWITZERLAND
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
70
60
50
40
30
20
10
1890 1910 1930 1950 1970
YEARS

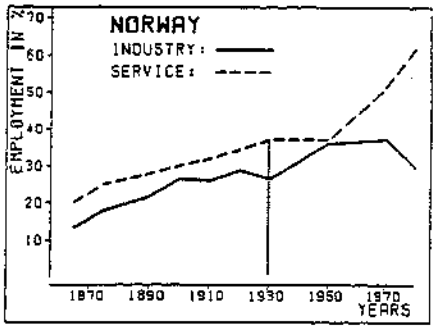

AUSTRIA
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
70
60
50
40
30
20
10
1870 1890 1910 1930 1950 1970
YEARS

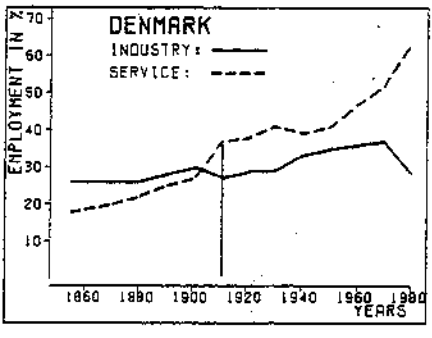

ITALY
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
70
60
50
40
30
20
10
1880 1900 1920 1940 1960 1980
YEARS

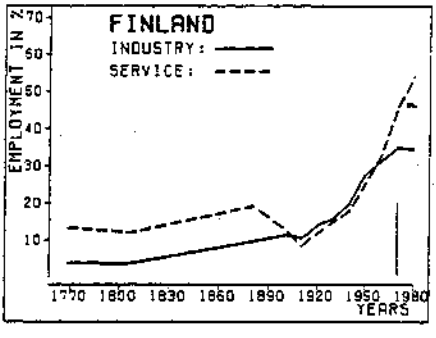

SWEDEN
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
70
60
50
40
30
20
10
1880 1900 1920 1940 1960 1980
YEARS

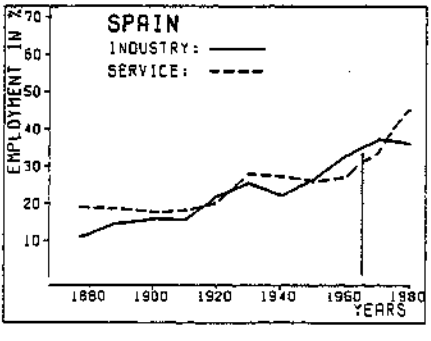

FRANCE
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
70
60
50
40
30
20
10
1850 1870 1890 1910 1930 1950 1970
YEARS

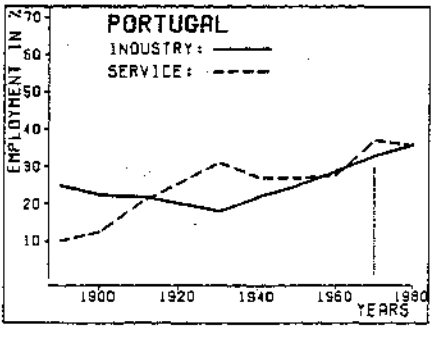

NETHERLANDS
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
10
20
30
40
50
60
70
1850 1870 1890 1910 1930 1950 1970
YEARS

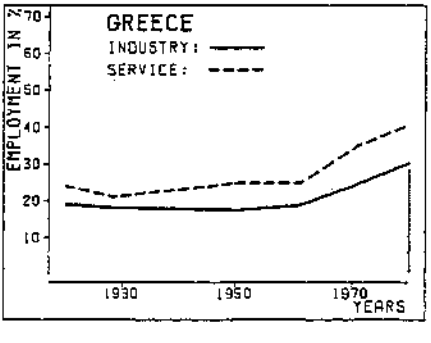

NORWAY
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
10
20
30
40
50
60
70
1870 1890 1910 1930 1950 1970
YEARS

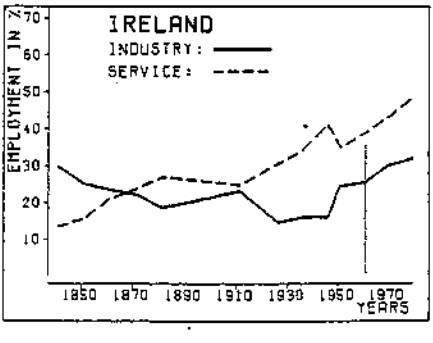

DENMARK
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
10
20
30
40
50
60
70
1860 1880 1900 1920 1940 1960 1980
YEARS


FINLAND
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
10
20
30
40
50
60
70
1770 1800 1830 1860 1890 1920 1950 1980
YEARS


SPAIN
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
10
20
30
40
50
60
70
1880 1900 1920 1940 1960 1980
YEARS


PORTUGAL
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
10
20
30
40
50
60
70
1900 1920 1940 1960 1980
YEARS


GREECE
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
10
20
30
40
50
60
70
1930 1950 1970
YEARS


IRELAND
INDUSTRY:
SERVICE:
EMPLOYMENT IN %
10
20
30
40
50
60
70
1850 1870 1890 1910 1930 1950 1970
YEARS

Time series

1) *Austria*

Year of census	Industry (%)	Service (%)
1869	25	22
1890	28	22
1900	29	27
1910	32	29
1920	(33)	(24)
1934	33	32
1919	32	29
1951	37	29
1961	41	35
1971	42	42
1980	40	52

2) *Belgium*

Year of census	Industry (%)	Service (%)
1846	32	13
1856	38	16
1866	38	18
1880	36	24
1890	39	29
1900	38	31
1910	47	31
1920	47	32
1930	48	35
1947	49	39
1961	47	45
1964	46	49
1970	44	50
1980	35	62

3) *Denmark*

Year of census	Industry (%)	Service (%)
1855	26	18
1870	26	20
1880	26	22
1890	28	25
1901	30	27
1911	27	37
1921	29	38
1930	29	41
1940	33	39
1950	35	41
1960	36	47
1970	37	52
1980	29	63

4) *Finland*

Year of census	Industry (%)	Service (%)
1769	4	13
1805	4	12
1880	10	19
1900	(11)	(13)
1910	(11)	(8)
1920	14	12
1930	16	15
1940	20	18
1950	28	25
1960	32	33
1970	35	45
1980	34	54

Time series

5) *France*

Year of census	Industry (%)	Service (%)
1842	26	22
1856	27	21
1866	28	22
1886	26	27
1896	29	27
1901	30	28
1906	29	28
1911	30	29
1921	29	29
1926	33	29
1931	33	31
1936	31	34
1946	30	33
1954	34	33
1962	38	38
1970	40	46
1980	36	55

6) *Germany*

Year of census	Industry (%)	Service (%)
1800	21	17
1825	22	19
1849	24	20
1861	27	21
1871	29	22
1882	34	23
1895	38	25
1907	40	25
1925	41	28
1933	40	31
1939	41	34
1950	45	33
1961	48	39
1965	48	41
1971	49	43
1980	45	49

7) *Greece*

Year of census	Industry (%)	Service (%)
1920	(19)	(24)
1928	(18)	(21)
1950	18	25
1961	19	25
1971	25	35
1980	31	41

8) *Great Britain*

Year of census	Industry (%)	Service (%)
1841	48	28
1851	51	26
1861	52	29
1871	52	31
1881	52	33
1891	53	36
1901	54	36
1911	54	37
1921	49	44
1931	49	47
1951	49	43
1961	48	49
1970	45	52
1980	38	59

Time series

9) *Ireland*

Year of census	Industry (%)	Service (%)
1841	30	14
1851	25	16
1861	24	21
1871	22	24
1881	19	27
1911	23	25
1926	15	31
1936	16	34
1946	16	41
1951	24	35
1961	26	39
1970	30	43
1980	32	48

10) *Italy*

Year of census	Industry (%)	Service (%)
1871	23	16
1881	25	13
1901	24	16
1911	27	17
1921	25	19
1931	31	22
1936	28	23
1951	32	26
1961	40	31
1964	41	34
1970	44	37
1980	38	48

11) *Netherlands*

Year of census	Industry (%)	Service (%)
1849	25	30
1859	27	35
1889	31	36
1899	32	36
1909	33	38
1920	36	40
1930	36	42
1947	37	42
1960	42	46
1970	39	54
1980	32	62

12) *Norway*

Year of census	Industry (%)	Service (%)
1865	14	21
1875	18	25
1890	22	28
1900	26	30
1910	26	32
1920	29	34
1930	27	37
1950	36	37
1960	37	44
1970	37	51
1980	30	62

Time series

13) *Portugal*

Year of census	Industry (%)	Service (%)
1890	25	10
1900	22	13
1911	22	21
1930	18	31
1940	(22)	(27)
1950	25	27
1960	29	28
1970	33	37
1980	36	36

14) *Spain*

Year of census	Industry (%)	Service (%)
1877	11	19
1887	15	19
1900	16	18
1910	16	18
1920	22	20
1930	26	28
1940	22	27
1950	27	26
1960	33	27
1965	35	31
1970	37	34
1975	37	40
1980	36	45

15) *Sweden*

Year of census	Industry (%)	Service (%)
1870	15	13
1880	17	15
1890	22	16
1900	28	17
1910	32	19
1920	35	21
1930	36	25
1940	36	35
1950	41	39
1960	45	41
1970	40	52
1980	32	62

16) *Switzerland*

Year of census	Industry (%)	Service (%)
1880	42	16
1890	44	16
1900	47	18
1910	46	27
1920	45	29
1930	45	34
1941	44	34
1950	47	36
1960	51	38
1970	48	44
1980	40	53

Time series

17) *West Europe*

Year of census	Industry (%)	Service (%)
1880	30	23
1890	32	24
1900	34	25
1910	36	26
1920	34	29
1930	36	32
1940	36	34
1950	37	33
1960	42	37
1970	43	44
1980	38	53

18) *Australia*

Year of census	Industry (%)	Service (%)
1890	29	40
1900	25	42
1910	28	41
1926	34	42
1937	34	42
1948	38	45
1961	39	48
1970	37	55
1980	31	62

19) *Canada*

Year of census	Industry (%)	Service (%)
1911	30	34
1921	29	37
1931	26	39
1941	27	44
1951	34	46
1961	32	54
1979	31	61
1980	29	66

20) *Japan*

Year of census	Industry (%)	Service (%)
1872	5	10
1880	7	11
1890	10	13
1900	14	16
1910	18	19
1920	21	24
1930	20	30
1940	26	29
1950	22	30
1960	29	38
1964	29	38
1970	35	34
1980	35	54

Time series

21)

Year of census	Industry (%)	Service (%)
1913	9	16
1940	23	23
1960	32	29
1970	38	37
1980	39	41

Soviet Union

22)

Year of census	Industry (%)	Service (%)
1870	20	33
1880	20	33
1890	24	37
1900	26	39
1910	29	42
1920	32	45
1930	28	50
1940	29	52
1950	33	55
1960	32	60
1970	33	61
1980	31	66

USA

Annot.: Agriculture can be calculated as the residual share of employment. Inadequately described activities are excluded. Numbers in brackets: High proportions of activities which are inadequately described.

where else in the world was work in factories and workshops for a certain period so prominent in the economy.

Once again, this argument does not apply to all European countries in the same way (cf. graph 1). The most striking case is Britain with its very long period of industrial predominance lasting at least from the first industrial census in 1840 till around 1960. Other clear cases are Germany, Belgium, Austria, and Switzerland, where the period of industrial society lasted from about the end of the XIXth century till very recently. These are the Fourastiélands in Europe. They were part of the XIXth century industrialising inner Europe. About half of the West Europeans lived and live in these countries. They had a strong impact on the overall development of Europe. In a further group of countries, the period of industrial society was shorter and the predominance of the industrial sector was not very distinct. This is true for Sweden, Finland, Italy, Spain, and Portugal. All of them belonged to the XIXth century European economic periphery. Though in a much weaker way, these countries still

support the argument of a unique industrial society in Europe. About a fourth of the West Europeans lived in these societies. Apart from these countries, France — from which Fourastié's ideas come — is a singular case. Just about the time when the industrial sector surpassed the agrarian sector, it was in its turn outdone by the service sector. Industrial society was a point in time rather than a period of time.[10] Finally, there is a group of European countries in which industrial society never existed and in which the predominance of agrarian activities was followed directly by a predominance of the service sector. These are again small countries such as the Netherlands, Norway, Denmark, Ireland, and Greece. They partly reflect modern intra-European divisions of labour rather than being cases of non-European trends. Some of these countries belong to the extreme economic periphery of Europe. Most important is that in spite of these inner-European varieties, Europe as a had a pronounced period of industrial society. It lasted about forty years from the middle of the 1920's until the middle of the 1960's (cf. graph 1).

No modern society outside Europe witnessed such an industrial society in the strict sense. In the United States as well as in Japan, the USSR, Australia, and Canada, there was a direct transition from agrarian society to service society. The first act of Fourastié's drama was followed directly by the third act. In most of these countries there was never even the slightest indication that an industrial society might develop as was the case in France. In most cases, the industrial sector was always far smaller than the service sector. In the United States (with a wide definition of the industrial sector) and in the USSR the rise of an

[10] In most East European countries, an industrial society in this strict sense emerged as well. It existed in Czechoslovakia already in the interwar period. In almost all other East European countries, i.e. in Hungary, in Poland, in Romania, in Yugoslavia, it came into existence only after the Second World War. The pattern of industrial society is so clear then that it cannot simply be seen as a consequence of economic policy. The main exception in Eastern Europe is Bulgaria, in which the industrial sector never clearly outdid the tertiary sector (cf. BAIROCH, ed., *Working Population*). Bulgaria seems to be much closer to the structure of the Soviet Union.

industrial society in the strict sense was somewhat more probable, since the lead of the service sector over the industrial sector was not so clear. In the United States, however, the agrarian sector fell behind the modern economic activities only when the service sector had increased its lead over the industrial sector after the turn of the century. In the Soviet Union, the industrial sector lost its short-term lead over the service sector just when the agrarian sector fell back behind the other sectors. So even in the Soviet Union with its rigid policy of favouring industrial employment, a distinct period of industrial society cannot be found. No doubt the reasons why industrial society did not come into existence outside Europe were different in each of these countries. It is highly unlikely that a convincing overall explanation will be found. But it is clear that all of them differ from Europe in having experienced a period of industrialisation without a subsequent historical period of an industrial society proper (cf. graph 1).

3. As a further consequence, the service society in post-war Europe was also different from modern non-European countries — ironically the term "post-industrial" society was invented in the United States but only makes sense when applied to Europe to describe the period after industrial society.

In the European service societies the gap between rising service work and stagnating or even diminishing industrial work never became as wide as in non-European developed societies. On the European average, the service sector was about forty percent larger than the industrial sector in 1980. In the United States, Canada, and Australia, the difference was about a hundred percent.[11] Only some smaller European countries such as Sweden, Denmark, Norway, and Belgium came close to the structure overseas, perhaps partly due to their provision of ser-

[11] Calculated for "OECD Europe" and the overseas societies in 1980 from OECD, *Historical Statistics 1960-1980*, OECD 1982, pp. 34 f.

vices to other countries in the European division of labour. Moreover, the drive toward the service society seems to have been less powerful in recent European history. Deindustrialisation, i.e. the diminution of the share of the labour force employed in industry, did not take place to a greater extent in Europe than elsewhere. Thus the process of deindustrialisation in Europe has not had the effect of bringing the European structure of employment closer to the non-European one with its lower share of industrial labour. To be sure, deindustrialisation was particularly strong in certain European countries, especially in old industrial countries such as Britain, Belgium, Switzerland, and also in most Scandinavian countries. However, in France, Italy, Spain, and Germany, deindustrialisation or industrial stagnation in the post-war period was far less distinct than in overseas modern societies. In some of these countries, the share of the labour force employed in industry has even grown in recent years.[12] A majority of Europeans live in these areas with low deindustrialisation. Microstudies of occupations in industry do not forecast a rapid technological diminution of industrial jobs in the future.[13]

Nor does the recent development of the service sector in European societies lead us to assume that Europe will become as service oriented as modern societies overseas in the foreseable future. It is true that in some European societies such as France, Italy, Spain, and Switzerland, the service sector had expanded more rapidly than in the United States or Canada or Australia

[12] It should be noted that these comparative tendencies look different if absolute numbers of the labour force in service and industry are compared. It is striking that between 1960 and 1980 the industrial labour force in absolute terms increased in the United States (1.3% per anno), in Japan (2.2), in Canada (2.2), and Australia (1.0), whereas it decreased in many European countries and stagnated in Europe as a whole (0.1). This, however, has to do with the rapid growth of the population and the still more rapid increase of the labour force in the non-European countries (cf. OECD, *Historical Statistics*, pp. 22-26).

[13] cf. W. MUELLER, Wege und Grenzen der Tertiarisierung. Wandel der Berufsstruktur in der Bundesrepublik Deutschland 1950-1980. In: J. MATTHES (ed.), *Krise der Arbeitsgesellschaft?* (Campus: Francfort 1983).

or Japan. In other European countries such as Britain, Germany, and the Netherlands; the growth of service employment was much lower. European diversity in this respect seems to be considerable. What is important is that, in Europe as a whole, service work did not increase more rapidly than elsewhere in the world. Hence, recent history does not indicate that the difference in the share of service work between Europe and non-European developed societies will level off. European societies do not simply march behind modern societies overseas: they seem rather to follow a different path altogether, in spite of basic tendencies common to all modern societies.

The uniqueness of the European development was reinforced after the Second World War by the striking growth of inner-European similarities in sectoral employment patterns. Before and between the wars, disparities in employment structure were pronounced, especially between the pioneers of the industrial revolution such as Britain, Belgium and Switzerland, with about half of the working population in the industrial sector, and countries of the European periphery such as Spain, Ireland, and Finland, with no more than one in ten working in industry. Only after the Second World War did these striking international disparities decline. Strict statistical measurement points to continuously rising similarities after World War II.[14] A somewhat disconcerting variety of individual development patterns finally led to a common European path.

4. Finally, the wealth of time series and research on the transformation of the labour force leads us to conclude that the

[14] The variation coefficient was calculated for the share of industrial employment and for the share of service employment weighted by the corresponding size of employment for each country in industry and service, respectively. For the industrial sector the coefficient is 52% in 1880, 46% in 1900, 38% in 1920, 28% in 1950, 21% in 1960, 17% in 1970, 15% in 1980. For the service sector, the coefficient is 28% in 1880, 31% in 1900, 32% in 1920, 19% in 1950, 20% in 1960, 14% in 1970, 12% in 1980. Calculated for West Europe in the present sense (cf. annot. 1) from materials upon which the graph 1 is based. For detailed references cf. appendix (sources and time series).

simple size of the service sector is not a sensitive instrument for measuring the development of a society, as has been assumed in the models of Fourastié and Fisher-Clark and in many studies and textbooks thereafter. The share of the labour force working in the service sector tells us not only about the rise of the service society but also about different ways in which employment is transformed. Throughout their recent history, some societies in the world have been more service oriented than others. The United States, Canada, Australia, Japan, and the USSR are not more advanced than Europe simply because their service sector now employs a larger part of the active population. To draw from this very fact the conclusion that the non-European countries are pioneers of the service society, in whose steps the European late-comers follow, means to forget history, as indeed many social scientists have. History shows that the larger service sector in non-European countries indicates first of all a different, more service-oriented historical path. It will be extremely difficult to demonstrate in a convincing way which share of service work in non-European societies (different from each other) would correspond to which share of service work of the same stage of development in European societies. In any case, the history of the labour force sheds many doubts on the common assumption that in the future European societies will come increasingly to resemble service societies overseas whether of West or East. The European future is much more difficult to forecast. It could follow a path of its own as in the past.

Explanations for the European Path of Sectoral Employment

Why did the structure of employment in Europe develop in this unique way? Why was there always more industrial work and less service work in contemporary Europe than elsewhere? It is certainly not easy to find convincing explanations. Any explanation has to start from scratch for lack of intensive direct research on the European path and, hence, must be highly spe-

culative. Moreover, one cannot expect that all non-European countries differ from Europe for the same reason. Different explanations are to be found for old or new, large or small, Asian or American, communist or Western societies, early or late industrialisers, First, Second or Third World countries. There is no room here to enter into these extended explanations. Instead, we shall try in the first place to find an explanation for why one major country, the United States, differs from Europe. This country, which is perhaps the most similar to Europe, has been the subject of intensive and easily accessible research. Other non-European countries will be treated only superficially. In addition, explanations are difficult since Europe is by no means homogeneous. No explanation will apply to all European countries, often not even to all large ones. The best one can do is to consider first some general explanations and then the degree to which they apply to the various European countries.

Four explanations are worth taking into consideration; Europe as a workshop rather than as a market place in the world economy; Europe as a reservation of traditional, qualified, labour-intensive industrial work; Europe saving service work due to her geographical density of population; Europe having a tradition of industrial rather than service work for women. Some social scientists prefer one highly plausible explanation to several less convincing ones. In this case there is no way of avoiding a discussion of a number of hopefully not weak explanations. They are presented here in summary form although a more thorough study will be needed.

1. *Europe as the workshop of the world.* The first reason why the industrial sector was and is so large in European economies has to do with Europe's role as a major workshop of the world economy providing manufactureed goods far in excess of domestic demand.

This relates to the well known fact that the contemporary European economies produced far more manufactured goods

for foreign markets than the economy of the United States, the USSR or even for a long time Japan. It is striking that the strong export orientation of European industry is apparent even if the trade between European countries is discounted. This is shown in table 1 which excludes internal European trade for reasons mentioned below. Before and during the World Wars, Europe's share of world *trade* in manufactured goods was much larger than her share in the world *production* of manufactured goods. In contrast to that, the United States' share of world trade in manufactured goods was smaller than her share of world production of manufactured goods. To be sure, all this changed when the European position in world trade and production declined after the Second World War. Even then, however, Europe's share of the world market in industrial goods remained larger than America's, whereas her position in the world production of manufactured goods compared to the United States was still the reverse. So even after the Second World War, European industry was more strongly export-oriented than industry in the US, and, probably, the USSR. Japan alone started to play a similar role in the world market.

I do not want to enter here the debate on how favourable for Europe the terms of trade were and whether they reinforced industrialisation in Europe and postponed industrialisation in the Third World.[15] What is important for our argument are the employment effects of these characteristics of the European eco-

[15] cf. for recent, partly summarising contributions: P.K. O'Brien, European Economic Development. The Contribution of the Periphery. In: *Economic History Review* 35.1982; P. Bairoch, International Industrialization Levels from 1750 to 1980. In: *Journal of European Economic History* 11.1982; W. Fischer, *Die Weltwirtschaft im 20. Jahrhundert* (Göttingen: Vandenhoeck & Ruprecht 1979), pp. 22 ff.; P. Kriedte, *Landlords and Merchant Capitalists. Europe and the World Economy 1500-1800* (Leamington Spa: Berg Publishers), ch. 3.2; W. Woodruff, *Impact of Western Man*, updated version (Washington: Univ. Press of America 1980); A. Maddison, *Economic growth and structural change in advanced countries*, in: I. Leveson - J.W. Wheeler (eds.), *Western Economies in transition* (Boulder: Westview Press 1980); I. Wallerstein, *The Capitalist World-Economy* (London: Cambridge Univ. Press 1979).

nomy. As the European industries produced manufactured goods in excess of domestic demand to a greater extent than other modern economies, relatively more industrial jobs were created in Europe and, hence, the industrial work force was larger in European societies. Moreover, as the share of goods manufactured in Europe and distributed on foreign markets outside Europe was more substantial than the respective shares of manufactures in other modern economies, jobs in transport, trade, and related activities were less numerous in Europe than elsewhere. Finally, the European economies imported to a large degree raw materials and food from overseas in exchange for exported manufactures. The employment effects of these mass commodities are in general modest in trade and transport, more modest at any rate than the employment effect of the distribution of finished goods. Hence, the structure of European imports did not lead to jobs numerous enough to counterbalance the creation of industrial jobs and the loss of service jobs by exportation. It did not eliminate the European pattern of a strong industrial sector.[16]

One might even assume that the differing levels of industrial employment in the various European countries were influenced by the export intensity of manufactured goods. In 1913, countries with a large share of exported manufactures such as Britain and Germany (52% and 21%, respectively) had a large indust-

[16] Perhaps it is now easier to understand why internal European trade is disregarded. If included, the creation of industrial jobs in the country from which the inner-European exports come would be counterbalanced by the creation of service jobs in the European country where the inner-European exports go. For Europe as a whole, the effects would probably neutralize each other. Hence, our argument, if mainly based on evidence from internal European trade, would be false, Moreover, to state high European exports with the inclusion of the internal European trade would mean to reassert only the well known fact that among developed countries the smaller economies such as the European ones export a larger share of production than the larger economies such as the United States, the Soviet Union, or Japan. (cf. S. KUZNETS, Economic Growth of Small Nations. In: E.A.G. ROBINSON (ed.), *Economic Consequences of the Size of Nations* (London: Macmillan 1960), pp. 18 ff. This is not the point we are discussing here. Hence, internal European trade is disregarded here.

rial sector (cf. graph 1), whereas a country with a relatively low share of exported manufactures such as France (14%), had a more modest industrial sector.[17] Even if a different interpretation is found for these intra-European variations, it seems to make sense that the special situation of Europe in the world market for manufactured goods at least partially explains the industrial intensity of her economy and will also be important for the future employment structure of Europe, though more research is undoubtedly needed to check and reinforce this argument.

2. *The labour intensive European industrialisation:* A second reason why the industrial sector was and still is so large in European societies has to do with industrial productivity in a wide sense of the word. To clarify this argument: a rise in industrial production can be envisaged in two different ways. The first way is for industrial production to rise mainly through the growth of industrial labour. This can happen because of an increase in the *share* of industrial employment. In our graph 2, which combines the development of productivity and the change of the employment structure, this appears as a horizontal line. Or an increase in industrial production can also occur simply due to a rise in the *absolute* number of the industrial labour force, without any change in the structure of employment. In this case, a massing of the dots (i.e. the census data) appears in the graph. In neither case does industrial growth depend upon increased productivity. If followed over a long period the major consequence of this path to industrial growth is a rising share of the industrial labour force. On the whole, the European economies tended to follow this path for an especially long time. Only after the Second World War did they clearly leave it for the second alternative. Even then, the former pattern

[17] Calculated from A. MAIZELS, *Industrial Growth and World Trade* (Cambridge: Cambridge UP 1963), pp. 433, 535.

of labour-intensive industrialisation had late effects in a continuing high share of industrial work.[18]

In the second way, industrial production can rise through the application of labour-saving techniques and through a strong increase in industrial productivity. If an economy took this path at an early stage, the share of industrial labour remained relatively modest. The growth of industrial output did not depend upon an increase in the industrial share of employment. This development appears in graph 2 as vertical lines and large jumps between the dots. This is basically the way in which the "new" societies, i.e. the American as well as the Australian and Canadian economy, developed after the turn of the century. Before then, at least the American economy also seems to have industrialised in a labour-intensive way. It appears from graph 2 that the crucial period of divergence came in the early twentieth century when the "new" societies moved to the second, labour-saving way of industrial growth whereas the European economies continued to follow the labour-intensive path to industrialisation.[19] After the Second World War, when the European economies also switched to this path, the differences may not have become any greater. But they have certainly not yet been eradicated.

Why was industrial growth in Europe particularly labour intensive? I think this has to do with technological change in Europe as well as with the strong traditions of European handicraft and the European consumer.

Only the first of these aspects has been discussed intensively in recent research. The debate among economic historians has

[18] The explanation does not apply to the differences between Europe and Japan. The development of the Japanese economy, which was not included in the graph for lack of space, looks very much like the European one except for the low level of the share of industrial labour. As we said before, no explanations can cover all countries.

[19] In graph 2 the dots are standardised points of time which allow direct comparisons between the graphs. Giving the dates of censuses would have made the interpretation of the graph much more difficult.

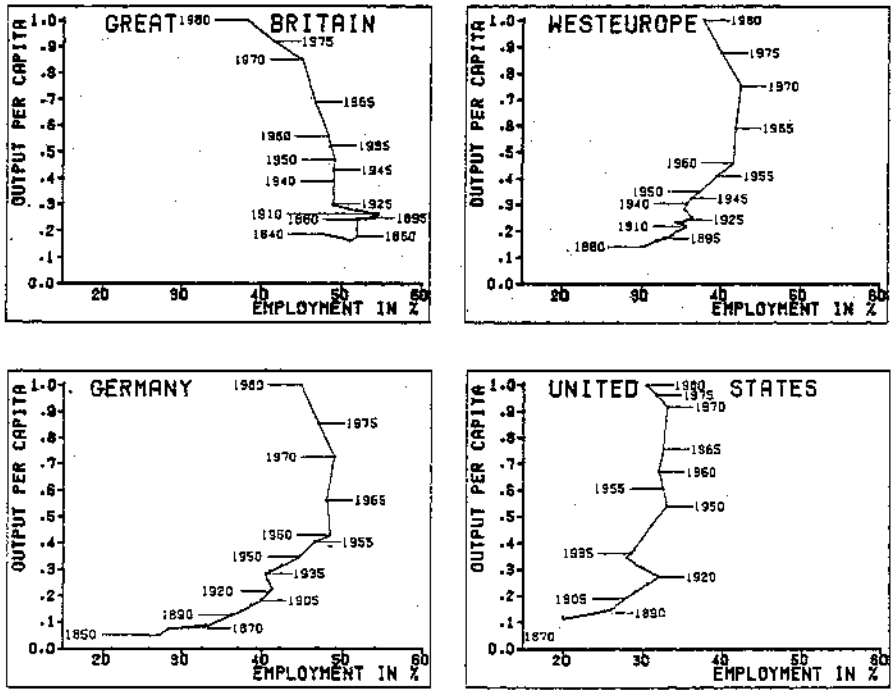
shown that the use of labour-saving machinery in several crucial manufacturing branches from the middle of the XIXth century up to the First World War was, at least in the United States, more widespread and more advanced than in Europe because of the scarcity of American labour and because of the greater abundance of American natural resources. This argument, which is summarised here, was first put forward in considerable detail by John Habakkuk, in a comparison of America and England. In spite of some criticism one can say that most subsequent research has corroborated his ideas.[20] Moreover, inter-European comparisons including Britain, France, and Germany indirectly give the impression that a similar difference — though perhaps to a smaller degree — existed between the Undited States and the other major European industrial societies.[21] It may well be that it took until the end of the XIXth century for the employment effects of the slow application of new technologies in Europe to be reflected in the substantially larger size of the overall European industrial sector.

Mainly because of the two World Wars, this technological gap persisted and even widened in the first half of the twentieth century. Comparisons between the United States on the one hand, and Britain and Germany on the other hand for the 1930's and the 1950's demonstrate the superior productivity of the

[20] H.J. Habakkuk, *American and British Technology in the 19th Century* (Cambridge: Cambridge UP 1962); S.B. Saul (ed.), *Technological Change: The United States and Britain in the 19th Century* (London: Methuen 1970); E. Asher, *Relative Productivity, Sector Intensity, and Technology in the Manufacturing Sectors of the US and the UK during the 19th Century* (New York: Arno Press 1977); A.J. Field, Land Abundance, Factor Returns, and 19th Century American and British Technology: A Ricardian/Linear Production Model Retrospective, in: L. Jörberg/N. Rosenberg (eds.), *Technical Change, Employment, and Investment* (Lund: University of Lund 1982), pp. 65-82; N. Rosenberg, Technological Progress and Economic Growth. In: *ibid.*, pp. 7 ff.

[21] cf. P. O'Brien/C. Keyder, *Economic Growth in Britain and France* 1780-1914 (London: Allen & Unwin 1978), pp. 82 ff.; V. Hentschel, Produktion, Wachstum und Produktivität in England, Frankreich und Deutschland von der Mitte des 19. Jahrhunderts bis zum Ersten Weltkrieg. In: *Vierteljahrschrift für Sozial-und Wirtschaftsgeschichte* 68.1981.

Graph 2
INDUSTRIAL PRODUCTIVITY AND INDUSTRIAL LABOUR FORCE
IN EUROPE, USA, CANADA AND AUSTRALIA



Source: index of industrial productivity (1980 = 1.0): P. BAIROCH, International Industrialisation Levels from 1750 to 1980. In: *Journal of European Economic History* 11.1982; share of industrial labour force (%): cf. appendix. The absolute rise of production as well as of the industrial labour force does not appear in the graph. For the idea of the graph cf. A. MAIZELS, *Industrial Growth and World Trade* (Cambridge: Cambridge UP 1963), p. 33. Each dot indicates a time span of five years. If the dots are very crowded, not all dates of censuses are given for lack of space.

American economy in almost all industrial branches. Consequently, the industrial sector in most European societies remained much larger than in the United States. Only from the 1950's on, did the gap in productivity between Europe and the United States diminish. Productivity increased much more rapidly in the major European economies.[22] Subsequent convergence of the shares of industrial labour cannot be observed at this point, but the above-mentioned decrease in the absolute size of the industrial labour force in Europe compared to an increase in the non-European modern societies, however, might reflect the closing of the technological gap.

As yet, the state of research does not permit a definitive answer. This is also true of other possible obstacles of the application of labour-saving technologies in Europe, such as the artisanal "tradition" of European industries i.e. the substantial share of traditional, highly-skilled handicrafts surviving in some European industries as well as the traditional preference of the European consumer for refined, precious, individualistic, sometimes very durable, and labour-intensive, consumer goods and the social, national, and regional distinctions which go with these products to which labour-saving technologies are often difficult to apply. These factors may also have kept the industrial sector large in Europe.

3. *Population density in Europe.* A third important factor for the relatively small service sector in Europe is the high density of population. In this respect contrasts between Europe and other industrial nations are very pronounced. Around 1890, in Europe as a whole there were 37 inhabitants per square kilometre compared to only 8 in the United States, 5 in Russia, 1 in Canada und 0,4 in Australia. Only a few European countries such as Sweden (11), Norway (6), Finland (6) had such a

[22] Very inspiring for this argument is: A. MADDISON, *Phases of Capitalist Development* (Oxford: Oxford UP 1982), pp. 96-125.

low overall population density, mainly for climatic reasons. Even European countries in more favourable climatic zones with a density of population which was low for European standards, such as Ireland (61), Spain (35), Austria (80), and France (71), were clearly different from non-European societies. Profound differences endure until the present in spite of higher population growth overseas.[23] The overall ratio of population density is admittedly a crude indicator; regional variations of population density make a great difference. A population which is largely concentrated in a few highly urbanised areas (as in Australia) has different impacts on the occupational structure than a more evenly distributed population. Moreover, the effects of population density on the employment structure very much depend on the organisation of services and government policies, which changed profoundly. In this short article we can only point to basic peculiarities of Europe.

High density of population in Europe saved service labour in various respects. First of all, the short distances in densely populated Europe reduced the need for labour in transportation. Throughout the twentieth century, ton-kilometres per head of population in the railways were much lower in most European countries than in the US, Canada, and the USSR. Only Sweden was clearly above the European average because of its low density of population. After the Second World War, commercial vehicles per head of population as well as freight ton kilometres in aviation per head of population were low in Europe com-

[23] In 1980 there were almost 95 inhabitants per square kilometre in Western Europe compared to 24 in the United States, 12 in the USSR, 2 in Canada and in Australia (cf. c. 1890: *Ritters geographisch-statistisches Lexikon* (Leipzig 1895); 1980: *UN Statistical Yearbook* 1979/80, pp. 69 ff.).

Quite obviously, outmigration from Europe did not clearly reduce the strong European population density. Outmigration might, however, have contributed to the European path in reducing the agrarian sector without increasing at the same time the service sector as in Third World countries to-day. I did not consider this as a further factor of the European path since I have doubts that the American or Canadian or Australian service sector was larger mainly because it was overcrowded by rural immigrants more than in Europe.

pared to the United States, Canada and Australia. Only small countries in inner Europe such as Belgium and especially the Netherlands had a high ratio of air freight to population due to their international role in aviation.[24] Because of this lower demand for transportation in more densely populated Europe, employment in the transportation sector was smaller. Railway personnel, truck drivers, seamen, dockworkers, air plane crews, workers in gas stations, and workers in the related repair services and administrations were clearly less numerous in Europe than in the US, Canada, Australia, and the USSR. The same was probably also true of long-distance communication when communication was still labour intensive, and of trade.[25]

High population density in Europe may also have saved labour in other branches of the service sector. Basic services such as schooling, health, public administration, and church services could be provided by fewer personnel in Europe than in sparsely populated non-European countries. No doubt, smaller numbers of service personnel may have been a reflection, not only of a higher population density, but also of less favourable

[24] For lack of space, a comprehensive table was not been included. In 1935 (1970) the freight-ton-kilometres per head of population in the railways amounted to 3215 (5450) in the US, 3120 (7538) in Canada, 859 (2031) in Australia (lower perhaps due to the role of shipping) compared to 539 (736) in Western Europe as a whole, 1008 (1175) in Germany, 659 (1387) in France, 553 (484) in Britain, 570 (805) in Belgium, and 619 (2152) in Sweden, to give European countries with relatively high numbers. Freight-ton-kilometres per capita in aviation in 1970 amounted to 26 in the US, 17 in Canada, 19 in Australia, 9 in Western Europe as a whole, 9 in France, 9 in Britain, 8 in Germany, 19 in the Netherlands, 19 in Belgium, 12 in Sweden. The number of commercial motor vehicles per capita (1000) in 1970 was 88 in the US, 70 in Canada, 78 in Australia compared to 33 in France, 31 in Britain, 17 in Germany, 28 in Belgium, 24 in Italy. Cf. *UN. Statistical Yearbook* 1949/50, pp. 293 ff.; *UN. Statistical Yearbook 1979/80*, pp. 69 ff., 554 ff. Domestic shipping is not included in the statistics of the UN.

[25] For the lower European share of labour force in trade, transportation, and communication taken together between 1920 and 1970 cf. SINGELMANN, *Sectoral Transformation*, p. 1229 (except for Britain about 1910 and 1920 and Japan about 1970); id., Agriculture to Services, pp. 67 ff. Similar evidence for a longer period of time and more countries though with problems of definition in BAIROCH (ed.), *Working Population*.

and less advanced schools and health systems, a lower general standard of living, or a lesser religious zeal in Europe. So service statistics which, moreover, are often not strictly comparable, must be interpreted with caution. In spite of these reservations some evidence points to the employment effects of population density even among professions. For a massive field of service employment such as education, one can show that interwar elementary schooling in America was provided by far more teachers per pupil than in most European countries.[26] It seems that this was not simply due to the provision of better education by American communities. The larger number of teachers has also to do with the very high share of one-room school houses in which a small number of pupils was often taught by one teacher. They reflect the educational constraints of a sparsely populated contry. Thus, in the interwar period, more than half of the American schools were "one teacher public schools" compared to only about a third *Einklassenschulen* (one room schools) in Germany. Only after the Second World War were the one-teacher schools in the United States gradually replaced thanks to public school transport carrying 18 million pupils per day in 1970 and creating new jobs in another field of the service sector.[27] Careful comparative research in further branches of the service sector might lead to more evidence of high shares of service jobs in countries with low density of population, and of the inverse employment effects in densely populated Europe.

A fourth factor deserves more attention. It is related to the European family. Intensive research, especially by English histo-

[26] Eductional statistics for the pupil-teacher ratio in the US start only in the 1930's. At this time it is 33 in the US (public elementary day schools) compared to 42 in Germany, 41 in Austria, 43 in Italy, 52 in Spain, 37 in France, 35 in Switzerland. Only Sweden (20) and Britain (28) had lower ratios than the US, perhaps partly due to different definitions. Cf. Statistical History of the United States, New York: Basic Books 1976, p. 368; B.R. MITCHELL, *European Historical Statistics* (London: MacMillan 1975), pp. 760 ff.

[27] cf. the statistical history of the US, New York: Basic Books 1976, p. 368, 376; P. LUNDGREEN, *Sozialgeschichte der deutschen Schule im Überblick, Teil II: 1918-1980* (Göttingen: Vandenhoeck & Ruprecht 1981), p. 43.

rians, has shown that at least up to the XIXth century a distinct European family structure was to be found. Its features were late marriage for men and women, a substantial share of unmarried persons, and a high proportion of nuclear family households consisting only of parents and children.[28] The most important aspect for our argument here is that the share of young unmarried women, who were usually more prepared to work than married women, was especially high in Europe. It might be because of this large XIXth century European reserve of female labour that a tradition of *industrial* female work was built up during industrialisation in Europe to a much larger degree than in the United States and Japan. Certain "female" industries such as textiles and clothing could expand much more in XIXth century Europe because of this reserve of female labour and also led to a generally larger industrial sector than in the US and Japan.[29] Moreover, XIXth century European societies may have developed norms and sanctions easily admitting working-class women to work and at the same time keeping middle-class women from working outside the household more strictly than

[28] cf. R. WALL/J. ROBIN/P. LASLETT (eds.), *Family Forms in Historic Europe* (Cambridge: Cambridge UP 1983) (with further references to the work of these authors); M. MITTERAUER/R. SIEDER, *Vom Patriarchat zur Partnerschaft. Strukturwandel der Familie* (München: Beck 1977); Z. SZEMAN, Die Herausbildung und Auflösung der Großfamilie in Ungarn. In: *Zeitschrift für Soziologie* 10.1981 (European marriage patterns in Hungary).

[29] In the large European countries around a fourth or even more of the women (working outside the household) were engaged in industrial work at the turn of the century. In Japan and the United States, female work in industry was much less frequent whereas Australia and Canada were close to the European pattern. Cf. BAIROCH (ed.), *Working Population*; for "female" industrial branches cf. A. WILLMS, The Socialisation of Womens's Work: The Case of Germany 1882-1978. In: K. HVIDTFELD et.al. (eds.), *Strategies for Integrating Women into the Labour Market* (Copenhagen 1982); cf. the contributions by P.M.M. KLEP, P. SCHYBERGSON, K. VATTULA on the Netherlands and the Scandinavian Countries and by C. GOLDIN and K. SOKOLOFF on the industrial employment of women (around 30% of all industrial workers in the Northeast of the US, high for American standards but on the lower end of the European scale) in: E. BOSERUP (ed.), *Female Labour Force during and after the Industrial Revolution*, International Economic History Congress, theme B 5 (Budapest 1982).

elsewhere. In having to give up these deeply-rooted sanctions and norms European societies, especially the middle classes, found it much more difficult to adapt to the white blouse revolution, i.e. to the expansion of white collar job opportunities for women since the turn of the century.[30] This might have led to the female response to the demand for white collar labour being much weaker in Europe than in the United States and to the striking fact that the proportion of women (rather than the proportion of men) in the service sector was and still is much lower in Europe than in the US.[31] In general, it is even especially low in those European countries with large industrial sectors and large numbers of female industrial workers in the XIXth century. This is admittedly highly speculative, but it is certainly worth further consideration.

Conclusion

This article is a contribution to a debate and is intended to stimulate thought. It argues that the history of the labour force in XIXth and XXth century Europe was unique. The peculiarity consists mainly in a much higher proportion of industrial labour than in modern non-European societies and leads to the result that only in Europe did an industrial society proper (i.e. a

[30] It is interesting to compare the access regulations for women around the turn of century in the postal service. Overseas societies were very open whereas societies with strong female engagement in industries and strong overall economic activity of women were far less liberal.

[31] For a high proportion of service work in the economic activity of women in the United States, Australia, Canada compared to a much lower proportion in Europe cf. BAIROCH (ed.), *Working Population.* It is interesting that the striking exceptions in Europe are countries with an exceptionally large service sector such as the Netherlands, Norway, and more recently other Scandinavian countries also. However, Britain is also different. On the other hand, Japan has always had a very "male" service sector. This shows again that there are no overall explanations.

[31] For social legislation cf. P. FLORA/A.J. HEIDENHEIMER (eds.), *The Development of the Welfare States in Europe and America* (New Brunswick: Transaction Books 1981), pp. 52 ff., 82 ff.; for career mobility cf. H. KAELBLE, *Immobile Europeans?* (Leamington Spa: Berg 1985), ch. 1.

period with dominating industrial employment) come into existence. It is argued that even with the present predominance of service work, European society is still more industrial and by no means follows the path of overseas countries such as the United States, falsely considered as worldwide pioneers of service or post-industrial societies. Moreover, the article discusses several explanations for the European path, mainly the high exportation of manufactures from Europe to the world market outside Europe which created industrial jobs; the labour intensive industrialisation of Europe and its after-effects; the high density of population in Europe, which saved labour in several branches of the service sector; and the European family pattern, which may have caused female work be more oriented toward industrial and less oriented toward service work than, for example, in the US. The European path of sectoral employment is also important because of its wider implications. There is no room to go into details here. But I think one could show that the history of European employment at least reinforced a peculiar characteristic of the European social structure i.e. a large industrial working class and a small petit bourgeoisie, relatively modest chances of upward career mobility for unskilled workers, specific forms of purely industrial cities, more pronounced class structure and class consciousness, and, as a response, an earlier introduction of social legislation and state intervention.

Table 1

THE SHARE OF EUROPE, THE US, AND JAPAN IN THE WORLD MARKET FOR MANUFACTURES AND IN WORLD PRODUCTION OF MANUFACTURES

	US		Europe[c]		Germany		France[c]		Britain[c]		Japan	
	Exports[a] (1)	Production[b] (2)	Exports[a] (3)	Production[b] (4)	Exports[a] (5)	Production[b] (6)	Exports[a] (7)	Production[b] (8)	Exports[a] (9)	Production[b] (10)	Exports[a] (11)	Production[b] (12)
1913	13%	32%	73%	41%	22%	15%	8%	6%	36%	14%	2%	3%
1928/29	20%	39%	57%	35%	16%	12%	7%	6%	25%	10%	4%	3%
1938/39	19%	31%	59%	37%	17%	13%	5%	4%	23%	11%	7%	5%
1953/55	24%	45%	54%	26%	11%	6%	8%	3%	20%	8%	5%	3%
1963/65	16%	35%	34%	27%	—	6%	—	4%	—	6%	7%	5%
1973	12%	35%	30%	25%	15%	6%	5%	4%	6%	5%	10%	9%
1979/80	12%	32%	30%	23%	9%	6%	6%	3%	5%	4%	10%	9%

a = Share of the world export of manufactures.
b = Share of the world production of manufactures (industry excluding mining and construction).
c = Exports outside Europe only.
Sorces: Exports 1913, 1929, 1937, 1955 calculated from: A. Maizel, *Industrial Growth and World Trade*, Cambridge: Cambridge Univ. Press 1962, p. 430 f. (exports from specific countries), 434 (world exports without internal European trade); exports 1963: UN. *Statistical Year book* 1979/80, p. 465 ff.; exports 1973 and 1979/80: *Yearbook of International Trade Statistics* 1975, vol. I UN New York 1976; ibid., 1979, vol. I, UN New York 1980 (for 1975 and 1979/80 The share of industrial exports going into non-European markets is not given. Instead, the respective share of all exports was used as an approximation for the calculation in table 1); production: P. Bairoch, International Industrialisation levels from 1750 to 1980, in: *Journal of European Economic History* 11.1982, p. 304. 1913-1953/55 "Europe" includes Belgium, France, Germany, Italy, The Netherlands, Switzerland, the United Kingdom (Maizel, id., p. 419); 1963/65-1979/80 "Europe" covers the EEC and the EFTA.

APPENDIX: SOURCES

References are given only to those materials which are used for the graphs. Other time series which, after thorough consideration, were not used, are not referred to. Additional references will be given in a more detailed study. P. BAIROCH (ed.), *The Working Population and its Structure* (Brussels 1969) (up to about 1960) is used for *Belgium, Finland* (1880-1910), *Greece* (up to 1926 only), *Ireland, Portugal, Canada* (up to 1929 only). This time series is complemented for 1970 and 1980 by OECD, *Historical Statistics 1960-1980* (Paris: OECD 1982), pp. 34 f. P. FLORA, *State, Economy, and Society in Western Europe 1815-1975*, vol. 2 (Frankfurt 1984) is used for Finland (1920-1970), France, Great Britain, Italy, the Netherlands and Switzerland, complemented as well for 1980 by the OECD-data. For other countries national time series were preferred: *Austria*: A. KAUSEL, Österreichs Volkseinkommen 1830-1913. In: *Geschichte und Ergebnisse der zentralen amtlichen Statistik in Österreich 1828-1979* (Wien: Österreich. statist. Zentralamt 1979), p. 699 (1869-1910 in the borders of post-Habsburg Austria only); H. KOLLER, Österreich 1945 bis zur Gegenwart. In: Handbuch der europäischen Wirtschafts- und Sozialgeschichte, ed. by W. FISCHER, vol. 6 (Stuttgart: Klett 1985) (1934-1980); *Denmark*: O. HORNBY, Nordeuropa 1850-1914. In: *Handbuch der Wirtschafts- und Sozialgeschichte*, ed. by W. FISCHER, vol. 5 (Stuttgart: Klett 1985), table 8 (1855-1910); O. KRANTZ, Die skandinavischen Länder. Schweden, Norwegen, Dänemark und Finnland. In: *ibid.*, vol. 6 (Stuttgart: Klett 1985), table 6 (prepublished under the title of the article (Stuttgart: Klett 1980) (labour force including dependants related to the total population 1910-1950); *Germany:* F.-W. HENNING, *Die Industrialisierung in Deutschland 1800-1914* (Paderborn: Schöningh 1973), p. 20 (1800-1825); W.G. HOFFMANN et. al., *Das Wachstum der deutschen Industrie seit der Mitte des 19. Jahrhunderts* (Berlin: Springer 1965), pp. 204 f. (1849-1871); *Bevölkerung und Wirtschaft 1872-1972*, ed. by the *Statistisches Bundesamt* (Stuttgart: Kohlhammer 1972), p. 142 (1882-1971); *Greece*: apart from the sources mentioned above: H. SUNDHAUSEN, Wirtschafts- und Sozialgeschichte Griechenlands 1914-1975. In: *Handbuch der europäischen Wirtschafts- und Sozialgeschichte*, ed. by W. FISCHER, vol. 5, table 5 (1951-1971); *Norway:* F. HODNE, *An Economic History of Norway* (Bergen: Tapir 1975), p. 128 (1865); *Historisk Statistikk 1978*, ed. by the statistisk sentralbyrå (Oslo 1978), pp. 36 f. (1875-1970); *Spain:* J. HARRISON, *An Economic History of Modern Spain* (Manchester: Manchester U.P. 1978), Tab. 17 (1877-1910), Tab. 33 (1920-1930), Tab. 40 (1930-1975); *Sweden:* HORNBY, op. cit. (1870-1910); KRANTZ, op. cit. (1910-1970) (labour force including dependants related to the total population 1910-1930). In all these cases, the OECD statistical series mentioned above were used for 1980. The graph on *Europe* does not cover Eastern Europe (Poland, GDR, Czechoslovakia, Romania, Hungary, Bulgaria, Albania, Yugoslavia) for lack of appropriate censuses before 1900 and also not the Soviet Union. It includes Austria only in the borders after the fall of the Habsburg Empire. The time series for Europe was calculated by interpolating the census data of each individual country at each completed decade (1870, 1880...) and by adding up these data to the European sum.

Non-European countries: Australia: J.A. DOWIE, The Service ensemble. In: C. FORSTER (ed.), *Australian Economic Development in the 20th Century* (New York: Praeger 1970), p. 256 (1890-1961); OECD, *Historical Statistics* (1980); *Canada:*

BAIROCH (ed.), *Working Population* (1911-1921); D.A. WORTON, The Service Industries in Canada, 2946-1966. In: R. FUCHS (ed.), *Production and Productivity of the Service Sector* (New York. NBCR 1969), p. 243 (1931-1961); OECD, *Historical Statistics* (1970-1980); *Japan:* K. EMI, *Essays on the Service Industry and Social Security in Japan* (Tokyo: Kinokuniya 1978), p. 4; *Soviet Union:* S. MERL, Wirtschafts- und Sozialgeschichte Rußlands und der Sowjetunion, 1914-1980. In: *Handbuch der europäischen Wirtschafts- und Sozialgeschichte*, ed. by W. FISCHER, vol. 6, (Stuttgart: Klett 1985) (1922-1980) (table 13); *United States:* V.R. FUCHS, *The Service Economy* (New York: NBER 1968), p. 24 (based on S. LEBERGOTT, *Manpower in Economic Growth* (New York: McGraw Hill 1964), p. 513-516; the time series by FUCHS and LEBERGOTT was recalculated in order to make it comparable with the European data: With the same methods as those used by FUCHS and LEBERGOTT, transport and communication were excluded from the industrial sector and included in the service sector). A continuously higher share of the service sector in the US since 1870 is shown also in an internationally standardised recalculation of employment statistics by the ILO. Cf. the World's Working Population. In: *International Labour Review* 73. 1956, p. 508.

DEFINITIONS

One reason why social historians hesitate to work on the history of the labour force is the controversy over basic definitions. The subdivision of the labour force into the agrarian sector, the industrial sector including extractive industries, manufacturing, construction and public facilities, and the service sector including commerce, banking and insurance, transport and communication, public administration, the army, social services such as medical services, education, churches and personal services is still the most usual one among historians as well as in international statistics of the labour force by the ILO and by the OECD.[1] Although this commands strong international consensus, the definition has been challenged for various reasons. One shortcoming is seen in the lack of a clear functional distinction of the sectors. Especially the service sector is considered to be too much a mixed sector that includes producer services especially in transport, but also in commerce and the profession on the one hand, and services to the consumer in the strict sense on the other hand. Hence, a broader definition of the industrial sector is proposed which includes above all transport.[2] This extended definition of the industrial sector was not used here partly because transport and communication also comprise services to the consumer and partly because this study relies heavily upon the international statistics mentioned above. Moreover, our basic conclusions are not affected by such a redefinition of the industrial sector though they would have to be reformulated if the extended definition (including transport) would be applied.

A second weakness of the usual sectorial definition of the labour force is seen in the undifferentiated treatment of the service sector which is said to include too many divergent elements. Hence, the service sector is subdivided not only into producer and consumer services, but also into economic and social services, into public and private social services, and separate personal services in households or by private enterprises. Along these lines, in an important comparative study of the history of the labour force, the service sector is subdivided into five subsectors: the distributive services (transportation, commerce), the producer services (banking, insurance, legal services, consulting etc.), the social services (medical services, education, churches, postal services, government administration), and personal services (domestic services, repair, hotels, restaurants, laundries, barber shops etc.).[3] Apart from some details, such a subdivision seems to be useful. In this essay, it was not applied only for lack of space. It will be an important guide-line of a larger

[1] Cf. International Labour Office.

[2] Cf. V.R. Fuchs, *The Service Society* (New York: NBER 1968), p. 14 ff.

[3] Cf. J. Singelmann, *From Agriculture to Services. The Transformation of Industrial Employment* (Beverly Hills: Sage 1978).

study. At least in the seven countries for which this subdivision was applied over a longer span of time of social history, i.e. from 1920 to 1970, the statistics do fit quite well into the conclusions of this essay. It is not simply the service sector as a whole, but also the subsectors which show a European and a non-European pattern, respectively. Only Japan deviates clearly.[4]

A third critique of the usual sectoral definition of the labour force is a more radical one. It argues that a major structural revolution of modern societies is neglected by the usual definition: the rise of the information sector, i.e. the labour force engaged in producing, processing, and distributing information. This information sector is considered to be the most rapidly growing sector. It is alleged to have outdone all the traditional sectors taken together in recent years at least in the most advanced societies.[5] Exact calculations have been done for the long-term development since the middle of the XIXth century in the United States, but only since about 1950 in various European countries.[6] Therefore, it is still too early to make a long-term comparative analysis of the information sector in European and American societies. After a first glance especially at the long-term change in the US it seems that this is mainly another subdivision of the service sector. In fact, the relative size of the agrarian sector and the industrial sector is about the same with or without the application of this new sectoral definition of the labour force.[7] Hence, it seems to make sense to postpone the discussion on the information sector until a more extended study including a differentiated treatment of the service sector is possible and until more exact and long-term studies of the European information sector are available.[8]

[4] SINGELMANN, *ibid.*

[5] Cf. F. MACHLUP, Knowledge and Knowledge Production (Princeton: Princeton UP 1980); id., *The Production and Distribution of Knowledge in the United States* (Princeton: Princeton UP 1964).

[6] Cf. M.U. PORAT, *The Information Economy, Definition and Measurement* (Washington: US Department of Commerce 1977), pp. 119 ff. (calculation for the US in the period from 1860 until 1980); OECD, *Information Activities, Electronics and Telecommunications Technologies. Impact of Employment, Growth and Trade*, vol. 1 (Paris 1981), pp. 22 ff. (Calculations for the US, Canada, the UK, Sweden, France, West Germany, Austria, Japan, and Finland 1950-1975).

[7] Cf. FUCHS, *Service Economy*, p. 24 or graph 1 of this article; PORAT, *Information Economy*, p. 121.

[8] Cf. for a good trend report on the recent studies of tertiary professions: W. MÜLLER, Wege und Grenzen der Tertiarisierung: Wandel der berufsstruktur in der Bundesrepublik Deutschland 1950-1980. In: J. MATTHES (ed.), *Krise der Arbeitsgesellschaft* (Frankfurt: Campus 1983).