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# THE REGIONAL STRUCTURE OF EMPLOYMENT IN GERMANY, 1895-1970

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**Abstract:** The article covers the long-term change of the regional disparities of employment in Germany between 1895 and 1970 using Regierungsbezirke as regional units and following up 18 branches of economic activity for women as well as for men. It is shown that an arch-like development can be found in the long-term perspective: rising regional disparities during industrialisation until the period after World War I and diminishing regional disparities between the 1930s and 1970. It is also argued that Germany is **not** a special case in this respect. Similar though not fully identical changes can be shown also for Britain, Italy, France (after 1950), Belgium, and Austria. Five reasons are seen as the most important ones for the former increase and recent decrease of regional disparities in employment: the changing regional nature of growth industries; the decline of regional specialisation; the alteration of the transport systems and the basic energies; changes in regional purchasing power; the end of regional isolation and non-industrialisation.

The study of long-term change of regional disparities in employment structure in 20th-century Germany is as rare as in many other European countries. Apart from studies of very recent changes in West Germany, there is no research parallel to the study of Britain by C.H. Lee or of Belgium by Guido de Brabander or of Italy by Vera Zamagni.(1) No doubt, a lively debate on the history of regional disparities especially on income is going on in Germany.(2) It concentrates, however, on the pre-1914 period and covers mainly the effects of 19th-century industrialisation for regional disparities in income. The long-term perspective of the 20th century is almost totally neglected. This is unfortunate since Germany is an important case for the general debate on the rise and decline of regional disparities.

## 1. The Main Questions

The lack of research on Germany is clearly not due to the lack of important and fascinating questions. There is a definite need for research in various respects from which we choose just one in this article: the long-term change of regional disparities of the employment structure. The basic question which we raise is whether regional disparities in employment structure increased or decreased in the long run during the 20th century. The main motivation of our study comes from the interest in regional

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disparities of prosperity and material well-being. No doubt, our article can contribute to this debate only in an indirect sense since regional disparities in employment are not directly linked to regional disparities in standard of living. Highly agrarian regions are not necessarily poor regions; predominantly industrial regions and strongly service oriented regions are not necessarily rich regions. Nevertheless, we see the regional disparities of employment structure as a first-rate precondition to be studied in a project of regional inequality, especially as another part of this project will explore regional disparities of wages and salaries in Germany during about the same period.(3)

In the long debate on the increase or decrease of regional inequality during economic development two well-known opposite views predominate: on the one hand the view of a long-term decrease of regional disparities because of the geographical expansion and the end of the insularity of industrialisation and because of regional policies of governments; on the other hand the view of a long-term increase of regional inequalities mainly due to the sustained concentration of capital, highly qualified labour, economic networks, scientific knowledge and political power in dynamic metropolitan regions. This article tries to show that the confrontation of the two views was overdone. Both views put forward convincing arguments for the explanation of the long-term change of regional disparities in employment and it is therefore useless to discuss these views only as strict alternatives. We rather tend to combine the two views and to discuss the idea of a wave of regional disparities of employment: a period of an increase of regional disparities during the industrialisation period and a period of decrease of regional disparities during the past decades. This theory is the more attractive since several well-known factors which are central to the discussion of regional disparities in fact lead us to expect a long-term wave of regional disparities.

- (1) The insularity of industrialisation: Most economic historians agree that one of the most important characteristics of 19th century industrialisation was insularity. Especially Sidney Pollard has drawn our attention to this fact. A map of 19th century industrial Europe would not be a map of red, industrial countries versus black, non-industrial countries, but a map of a rising number of red regional dots in a black sea. Industrialisation was a regional development rather than national economic growth. Hence, most historians agree that 19th century industrialisation led to rising disparities between the pioneering industrial or service regions and the agrarian regions and, in addition, between modern agrarian and traditional agrarian regions. One has to add, however, that economic development in the most advanced European countries of the 20th century gradually became less insular and more nationwide; it finally also affected the regions so far untouched and, hence, led to a halt of the increase or even to a decrease of regional disparities. A wave of regional disparities seems to be the most probable consequence.(4)
- (2) The accumulation of advantages in the advanced metropolitan areas: One of the major arguments of the theories of a sustained increase of regional disparities is the persistent accumulation of economic advantages in the most advanced metropolitan areas. They continuously attracted not only capital, but also highly qualified labour, research institutes, economic services such as banks, consulting, insurances, and often were attractive cultural hubs and political centers making access to political decision more easy for the metropolitan businessmen. In a self-sustained process, all these advantages reinforced each other to the detriment of other regions. One has argued that it is difficult to imagine a situation in which this self-sustained accumulation of advantages could be interrupted, except for major political upheavals (as for instance in the case of Berlin since 1945). Nevertheless, the accumulation of local advantage also might lead to a dead end. Extremely high local price levels in metropolitan areas, deteriorating

living conditions and environments, insufficient local traffic and transport, rising rates or criminality, deteriorating local political cultures, rising political pressure from disadvantaged regions might also lead to a decrease of regional disparities as we know it from Paris and London. Once again, a wave of regional disparities would not be just a very remote, highly improbable possibility.

- (3) The changing nature of the purchasing power: Long-term changes of mass purchasing power could lead to similar effects for two well known reasons. On the one hand, purchasing power became regionally more and more disparate, since subsistence households which did not go on the market neither as customers nor as producers nor as wage-earners disappeared only in industrializing areas. They became more and more concentrated in stagnating agrarian regions and reduced purchasing power primarily there. To be sure, one should not overrate the purchasing power of wage-earners during the industrial revolution since wages were low. But they had some effects on rising regional disparities in employment especially as long as they were spent primarily on food and rents with strong effects on local jobs. On the other hand, various economic historians demonstrated that regional disparities in income and wages increased mainly due to the insularity of early industrialisation which led also to rising regional disparities in demand and, hence, in employment.

These trends are known to have changed during the late 19th and the 20th century. Subsistence households gradually disappeared and contributed less and less to regional disparities of purchasing power. Moreover, historians seem to agree that regional disparities in income and wages decreased in 20th century industrial societies in the long run. In so far as they still affected substantially local economies and local jobs, they led also to a reduction of regional disparities in employment. Once again, the general trends of income and purchasing power lead us to expect a wave of regional disparities.(5) During the 19th century industrialisation, regional disparities in purchasing power were strong not only because subsistence households were regionally concentrated in some agrarian areas and weakened mass purchasing power there: even in urbanised areas mass purchasing power was limited because of the low standard of living; regional disparities in wages often increased during industrialisation. Moreover, middle class and upper class income gained most in this period and often led to a strong demand for luxury goods, whose production and trade was again regionally very concentrated. For all these reasons, regional disparities in purchasing power increased and, hence, often also employment. During the 20th century, most of these tendencies gradually changed. Subsistence households gradually disappeared. Real wages not only increased; regional differences tended to be less distinct. The rise of inequality of income usually came to a halt or even decreased somewhat. All this worked in favour of a decrease of regional disparities. In addition, with the spread of commerce over all regions, employment effects of regionally still concentrated consumption power were much more scattered than before.

- (4) Finally, recent regional historical research tends to demonstrate the variety of possibilities of regional economic specialization during European industrialisation: not only mining, iron and steel, and textile as the three textbook ways of regional industrialisation, but also modern farming, engineering, consumer goods, and last but not least services as the most consistently promising way in the very long run. Hence, regional disparities during industrialisation in Europe not only increased due to gaps between advanced and stagnating regions, but also due to the differences in the ways of regional development. In the past decades, however, this multitude of regional paths was drastically reduced in Europe with the crisis of textile, mining, and iron and steel regions. Regional employment structure became somewhat more uniform - a further argument for the wave of regional disparities in employment.(5a)

This is simply to remember that a wave of regional disparities, i.e. an increase during the 19th century industrialisation and a decrease during the past decades is not implausible. To check this theory empirically is the main purpose of this article.

For this theory of a wave in the early rise and recent fall of regional disparities of employment, Germany is of interest mainly because it is unspectacular and inconspicuous. Germany is one of the European countries where one would expect least a strong increase or decrease of regional disparities. She never had a metropolitan center which reinforced regional disparities to the same degree as Paris did in France, or London in Britain, or Dublin in Ireland, or Vienna in post-1918 Austria. In contrast perhaps to the whole of the German Empire, with its known disparities between the advanced West and the backward agrarian territories East of the Elbe river, West Germany is especially considered to be economically very homogenous. No major regional disparity would easily come to the mind of the historian. In the EEC of today, West Germany is in fact one of the European countries with low domestic disparities. Not only Italy, but also Belgium, Spain, in some respects even France, are countries with a more uneven regional economic development.(6) Hence, in contrast to her political history and in contrast to many aspects of her social history, Germany is interesting for our question because of her normality. Among the larger European countries West Germany seems to be the best case for the study of the minimum rise and the minimum fall of regional disparities. Only smaller countries such as Switzerland or the Netherlands belong to the same type of non-centralised homogenous European countries.

Some basic research has been done already for Germany: the two opposite ends of the wave of regional disparities can already be seen in the German case. On the one hand, the study by Frank B. Tipton on regional disparities in the employment structure in the second half of the 19th century shows that regional disparities increased during the period of industrialisation. Though Tipton's study is based on rather large undifferentiated regional units and economic branches his conclusions can be considered as important evidence for the first part of the wave, i.e. for the increase of regional disparities in employment, especially between the rising industrial centers of the Ruhr, Berlin, Saxony and Upper Silesia, and the backward agrarian areas East of the Elbe river.(7) On the other hand, some studies of regional disparities of employment in the EEC demonstrate that West Germany joins the general European post-war trend of decreasing regional disparities in employment. Though these studies once again tend to use very large regional units (i.e. the German Länder) they can be considered as signs on the wall for the second part of the wave, i.e. for the decrease of regional disparities in employment.(8) Based on this research our study tries to build the bridge for which some sorts of the ramps do exist already: It explores the long-term change of regional disparities in employment from the late industrialisation period almost until the present, i.e. from the census of 1895 until the census of 1970, the last one so far. Moreover, it uses smaller, more differentiated regional units, i.e. Regierungsbezirke, instead of federal states and Prussian provinces and, hence, makes the conclusions less dependant on oddities and eccentricities of administrative borders. Finally, it tries to overcome the difficulties rising in the comparison of two totally different political units, the German Reich before 1945 and the Federal Republic of Germany. These technical post-war problems are what we have to discuss first.

It is unfortunate that this article covers regions in one European country rather than regions in the whole of Europe or Western Europe. For three reasons, the history of regional disparities in the whole of Western Europe ought to be investigated. First, the change in other European countries is an important way of measuring the distinctiveness of regional disparities and of analysing their change. It is much easier to judge any decline or rise of regional disparities if we know whether it occurred to the same degree in other European countries or whether it was in fact unique. Hence, comparisons with regional disparities in other European countries are very useful.

Therefore, we refer to regional disparities in other European countries. Moreover, it was argued that the economic rise and fall of regions cannot be investigated and understood simply within the national framework. Regions in one country often depend very much upon regions in other countries. The rise of the 20th-century Rotterdam area has much to do with the rise of the Ruhr region. The fall of the Hamburg region has much to do with the cut links to regions which are now in East Germany and in Czechoslovakia. Hence, what we need is a wider European approach to regional disparities including at best all West European regions. Finally, regional disparities are a major political issue of the European Community. It was argued that huge regional disparities are a fundamental problem of the European integration. They are not really reduced by the European regional policy and clearly reinforced by the Mediterranean extensions of the European Community. It would be extremely important to know whether regional disparities are in fact more severe in the European Community than in large countries such as the US or the USSR and whether disparities are increasing or decreasing in the long run. To be sure, there are studies of the regional disparities in the European Community in the short-run perspective of the past decades. For the long-run perspective, however, regional time series of sectoral employment are still not available. Disparities of German regions as European regions and in the wider frame-work of Europe therefore cannot yet be investigated in this paper. We hope to do so in a later stage of our project.

## 2. Definitions: Regions, Branches of Activity, Periods of Time

One might wonder why regional disparities in 20th century Germany employment was never investigated during a lively debate on the 19th century. There are, however, various methodological obstacles which make the long-term history of regional disparities in 20th century Germany more difficult than in most other West European countries. They cover the definition of regions, the classification of employment activities and the sources. We shall discuss them first and at the same time explain the decisions we made.

### The Regions

First of all, 20th-century Germany is a nightmare for all historians who explore long-term historical changes of regions and, hence, depend upon a certain stability of regional borders over time. Regional borders in Germany changed more often than in most other European countries. This is partly due to the well-known fact that the national borders of Germany changed three times since the foundation of the Bismarck Empire, i.e. in 1919 when some territories were transferred to France, Denmark and the new state of Poland, then again in 1945 when the Eastern parts of Germany became Polish, and finally during the definite foundation of two separate German states in 1949. What we compare in fact are three different territories: up to 1919 a territory which includes the French Alsace-Lorraine, some Danish counties, and the Western parts of 1918 Poland; up to 1945 a territory which includes contemporary West Germany, to-day East Germany and the Western parts of contemporary Poland; after 1949 The Federal Republic of West Germany. Difficulties are perhaps even greater for the less well-known fact that the domestic administrative borders in Germany changed much more radically than in most other West European countries. Due to the reorganisation of the federal level and the foundation of the new federal Länder by the Allied government after 1945, and due to various far-reaching "normal" district reforms in the late Empire, in the inter-war period and after the foundation of the Federal Republic of Germany regional administrative borders changed completely since the 1880's. Only a few Regierungsbezirke, the administrative regions upon which our investigation is based, kept the same borders from the 1890's until 1970 when the last census so far was done.

Our first and basic decision was to take small regions, i.e. the Regierungsbezirke below the level of the German Länder which are often used for studies of regional disparities. No doubt, the Regierungsbezirke are much more appropriate than the Länder which are in some cases too large (some of them being larger than most of the smaller European countries) and vary too much in size for a study of regional disparities. The 39 West German Regierungsbezirke of today comprise regions with about a half to two million inhabitants (except for the Regierungsbezirke Oberbayern, North Wurttemberg, Arnsberg with roughly 3 million inhabitants and the Regierungsbezirk Düsseldorf with more than 5 million inhabitants). They are much more similar to regions in other West European countries such as the Italian regioni, French regions and British standard regions, or the Belgian and Dutch provinces. To be sure, we would have preferred to base the study on economically defined regions. As in other European countries West German economic regions were defined in the 1970's. They are in fact used by planning authorities. It is almost impossible, however, to find differentiated employment data for tracing these planning regions back into the late 19th century. Moreover, the 38 planning regions and the 39 Regierungsbezirke differ only in some areas of Northern Germany and of the Ruhr region.(9) We also decided not to take the administrative units below the level of the Regierungsbezirke, i.e. the Kreise, mainly because the many changes of the borders of these administrative units cannot be overcome by the historian of the employment structure.

As the geographical borders of the Regierungsbezirke (and their historical counterparts) also changed profoundly during the past, we follow regional disparities in two perspectives. On the one hand, we start from the 1970 West German Regierungsbezirke and follow up the regional employment disparities between the stable boundaries of their territories back to 1895 (even if they did not exist as administrative units before). For all administrative regions of pre-1945 Germany outside today's West Germany, we used the same method tracing back Regierungsbezirke (and their historical counterparts) in the borders of 1937 and 1914, respectively for 1937 German regions and for 1914 German regions. In this way we observe changing employment structure in exactly the same geographical regions of employment; we make sure that changing regional disparities are not simply due to changing borders. On the other hand, we also compare regional disparities in West Germany and Germany before 1945, respectively, between the Regierungsbezirke (and the respective administrative regions of the past which often had other callings) in their historical borders. In this way, we followed up regional disparities between administrative regions as they existed in German history in the historical borders of Germany. In a country with dramatic changes of regional and national borders neither of the two perspectives should be neglected.(10) Especially the first one made this study extremely difficult and cost us much time and work.

#### **Classification of Branches of the Active Population**

Moreover, even specialists of the history of employment kept away from the study of regional disparities of the active population since they knew of a difficulty which is in principle not a particularly German one: the alterations of the definitions of occupational activity from census to census. One of the tedious, though normal tasks of each study of the long-term change of employment structures is the standardization of the classification of occupations and fields of activity. In our case we had to find the best standardization of the highly different occupational groupings through 7 censuses between 1895 and 1970. A helpful list of 34 consistent economic activities between 1875 and 1970 was drawn up by Angelika Willms-Herget and Reinhard Stockmann.(11)

The study of regional disparities in Germany, however, complicates these difficulties: In order to keep the borders of our regional units roughly stable over time and in order to cover approximatively the territories which were moved from one Regierungsbezirk to the other during the changes of administrative or national borders we need employment statistics of the small administrative units, i.e. the Kreise. For these small administrative units employment statistics are often published in a way less differentiated than for the national or the Länder level.

Our goal was simple: We tried to establish a list of economic activities with the greatest possible differentiation. Facing the difficulties of a regional comparative study, we could follow up the long-term change of employment structure for only 17 branches of economic activities (cf. table 1). For the censuses of 1961 and of 1970 we had to reduce these branches even to 15 ones since important differentiations were given up in 1961 (cf. table 1).

### Sources

As far as the sources are concerned, our study is based on the published statistics of the occupational rather than the industrial census. In this respect we use a type of source different from some other European studies of the regional disparities in employment structure. No doubt, in various respects the industrial census based on questionnaires sent directly to the work place has clear advantages. Occupational categories tend to be more differentiated. Occupations of individuals are often more clearly and more correctly described. Vague occupational categories such as unskilled workers or merchants ("Kaufmann") are less frequent. Above all, the relationship of individuals with branches of economic activities is clearer. The category of unknown activities is smaller. Nevertheless, we used the occupational census rather than the industrial census for various inevitable reasons:

First, the German industrial census of the 19th and early 20th centuries does not cover the whole of the society. Only from 1950 all work places are actually covered. During the interwar period and more so during the period before 1914 large parts of the agriculture and of the public services are explicitly excluded. The census is called Gewerbezahlung rather than Arbeitsstättenzahlung. In 1882, almost half of the active population in Germany worked in the agricultural sector. In 1925, it was still more than a quarter. The results of the separate agricultural census are difficult to combine with the industrial census because of double counting and because of different conceptions of secondary activities. Hence, for our long-term perspective of the **whole** German economy the coverage of the German industrial census is too limited.

Secondly, the German industrial census poses severe problems for regional studies. To be sure the published statistics of the industrial census are broken down regions of medium size (Regierungsbezirke) as well of small size (Kreise). However, for the Kreise they are published in crucial years only in very broad categories which do not allow to reach consistent standardized branches of activities for the whole period of our study. For reasons already mentioned we need the differentiated data on the level of the small administrative regions (Kreise). The unpublished original questionnaires do not exist any more. Hence, the German industrial census is not always published in a way suitable for an indepth regional study.

Moreover, the superior quality of the German industrial census compared to the occupational census is not clear in all respects. No doubt, it is crucial for detailed and highly differentiated studies of individual occupations. But for studies of large branches of activity such as ours this is much less clear. The occupational census in prewar and interwar Germany had various purposes and, hence, various forms of publication. The results were not just broken down by individual occupations and by



the occupational position (independants versus dependants, employees versus workers, family workers etc.), but also - most important here - by exactly the same branches of activity as the industrial census. The German occupational census was in fact criticized by contemporaries for being too much of an industrial census (though the questionnaires were sent to households) rather than being a proper occupational census. Until 1907, the questionnaire contained no question asking for occupations in the modern sense.(12) Hence, using the occupational census for exploring branches of economic activities comes close to the intentions of the statistical office of that time.

Finally, even if the industrial census and the occupational census would have been perfectly synchronised, they would show different aspects of regional disparities. The industrial census which is based on work places shows primarily regional disparities in investments and places of work. The occupational census which is based on households tends to show regional disparities in employment chances available by commuting, and of purchasing power of consumers. Both aspects are important for the study of regional disparities. Therefore, in the best of all cases one ought to use both censuses rather than to overdo the discussion on the relative advantage of one census against the other.

Taking into account all these circumstances we think that in our case the occupational census is a sufficient statistical base for the study of long-term change of the regional disparity in employment structure.

### 3. Findings

Does the theory of a wave of regional disparities, increasing during industrialisation and diminishing during the past decades apply to 19th and 20th centuries Germany? Testing this theory we have to make an important qualification: the quality of 19th and 20th century censuses in Germany allows us to cover a period of time which is shorter than we would wish: the period between the census of 1895 and the census of 1970. We cannot go back further in time because recalculation of earlier censuses are either extremely costly (as the census of 1882) or inappropriate for our regional purposes. We cannot go on after 1970 since no further census is available so far (the next is one being done in 1987). Moreover, some intervals between the censuses are unusually long especially because no census was done for 18 years between 1907 and 1925 and more so because the censuses of 1933 and 1939 did not give us appropriate published data for the regions this study is covering, i.e. the Regierungsbezirke. This raises problems especially for the study of the turn from the rise to the decline of regional disparities.

We should add, however, that it would be unrealistic to expect a clear short-term turning-point in a complicated process such as the development of regional disparities. Many regional national and international factors intervene. So we should rather expect a long period of undetermined tendency in which the trend of rising regional disparities weakens only slowly and in which the opposite trend of decreasing regional disparities takes off only gradually. Even if the intervals between the censuses would be shorter it is highly improbable that an exact turning point could be traced. Finally we should mention that our findings for the period between 1895 and 1907 are complemented by the regionally less differentiated study by Tipton of the period between the 1860's and 1907 and by studies of the regional structure of the EEC during the 1970's.(13)

The idea of a wave of regional disparities is clearly supported by our findings. Regional disparities in Germany clearly increased between 1895 and 1925 and clearly decreased between 1950 and 1970. This is the case not only for the regional concentration of individual economic branches. It can also be observed for individual regions

if compared to the general trend of employment. Moreover, both male and female employment do show these tendencies. We shall present our findings in all details and shall begin with the increase of regional disparities between 1895 and 1925.

#### The Increase of Regional Disparities

It comes by no surprise that the regional concentration of agriculture rose during industrialisation. As can be seen from table 1 regional differences in agricultural employment in fact increased distinctly between 1895 and 1925. It is surprising, however, that this is not due to rapidly falling agricultural employment in the pioneering industrial regions. They did not differ very much in this respect from the total decline of agricultural jobs in this late phase of industrialisation in Germany. It was rather the heavily agricultural regions which diverged most from the general tendencies: Agricultural employment in these regions not only remained stable but even increased at least until 1907. This was the case in several Eastern regions: In the Bromberg region it rose from 57% in 1895 to 60% in 1907, in the Marienwerder region from 60% to 62%, in the Gumbinnen region and in the Koeslin region from 62% to 65% and in the Altenstein region from 63% to 65%. The same is the case, however, also for some Western regions: In the Osnabrück region agricultural employment rose from 56% to 58%, in the Trier region from 63% to 67%, in Lower Bavaria (Niederbayern) even from 67% to 70%.<sup>(14)</sup> This increase may be partly due to changing census methods in counting female family workers. On the whole, however, one can say that rising differences in agriculture are not due to the rapid industrialisation of insular and pioneering industrial and service regions, but due to the total lack of industrialisation in a number of heavily agrarian regions. As agricultural employment fell below half of the total active population only around the turn of the century, the rise of regional disparities in this economic branch had a strong overall impact on German society.

Regional concentration also increased somewhat in industry between 1895 and 1907. This is also not due to a rapid rise of industrial employment in some insular pioneering regions. Industrial employment in heavily industrial regions such as the Düsseldorf region (60% in 1895 to 62% in 1907) or the Arnsberg region (62% to 64%), the city of Berlin (48% to 50%) or the Saar region (55% to 57%) did not increase more rapidly than on the German average (34% to 36%). Rising regional disparities were again mainly due to the non-industrialisation of agrarian regions where industrial employment did not increase or even fell such as in the Trier region (20% to 19%) and in Lower Bavaria (17% to 16%). So it was not (or not any more in this late stage of industrialisation) the insularity of industrialisation, but the isolation of some agrarian regions still untouched by industrialisation which led to strong regional differences.<sup>(15)</sup>

Rising regional disparities are even more clear in individual industrial branches: In most branches regional disparities either increased or they remained virtually stable during most of the time between 1895 and 1925 in those branches which already reached a very high level of regional concentration such as mining, iron and steel, textiles (cf. table 1). Regional disparities strongly rose in three branches: in engineering, in textiles (though not on the territory of West Germany) and in the clothing industries. Employment in engineering was concentrated in 1925 more than in 1895 in the centers of this branch, i.e. in the cities of Berlin and Bremen, in the Saxonian regions of Leipzig, Dresden, and Chemnitz, in the Cologne and Düsseldorf area, in North Baden (Nordbaden), Middle Franconia (Mittelfranken), and in the Braunschweig region. In the textile industry the reverse was true. Concentration of employment did not become stronger in the regions which specialized most in this branch, i.e. in Saxony and Thuringia, in the Rhine area, in Franconia and in Alsace. Employment rather diminished in those regions which had few jobs in textiles anyway. The same is the case for the clothing industries.<sup>(15a)</sup> Only in one industrial branch this general

tendency towards high or increasing regional disparities could not be found: in the electricity, gas, water works. In this industry which spread out from the pioneering big cities, regional disparities clearly diminished (cf. table 1). But this is an exception to an otherwise consistent trend in important industries toward high regional disparities in this late period of industrialisation.

Regional disparities did not increase in the service sector. In most of its branches, regional disparities were distinctly smaller than in industrial branches of activity (cf. table 1). Moreover, in some modern service branches regional disparities even clearly fell between 1895 and 1925. This was the case for producer services and for commerce. Hence, a certain part of services developed in a way which was different from the whole of the economy and which - as it turned out in the post-war period - became the predominant way in the future. Before 1914 these were still exceptional tendencies.

General tendencies towards an increase of regional disparities can also be demonstrated by looking at individual regions and by comparing them to the overall average tendencies of German employment structure. Once again, the same conclusion: a predominant majority of individual regions in fact moved away from the German average between 1895 and 1925 (cf. table 2).(15b) Different types of regions coincided in this trend: highly specialized regions such as Berlin (until 1907) and Bremen which were very strong in various branches such as engineering, clothing, construction, most services; the heavily industrial regions of Arnsberg and Saar; the Chemnitz region specializing in engineering and metal industries; also strongly agrarian regions such as Lower Bavaria (Niederbayern), Upper Palatinate (Oberpfalz), Trier, Allenstein, Gumbinnen, Marienwerder; but also regions very close to the average German employment structure such as North Baden (Nordbaden), Württemberg, Magdeburg, Merseburg, Potsdam, Stettin, Breslau. Only a small minority of 9 (1895-1907) and 15 (1907-1925) out of 64 regions moved in the opposite direction and came closer to the average German employment structure. On the whole the predominant tendency of a clear deviation from the average German employment structure could be found not only among modern regions, but perhaps even to a stronger degree among the agrarian regions still untouched by industrialisation at that time.

Regional disparities increased in female work as well as in male work. To be sure there are clear differences between the sexes in regional disparities: Regional disparities were more distinct in female work: in most economic branches female work was regionally more concentrated than male work. This is the case for most industrial and service branches (though not for important fields of female economic activity such as agriculture and textiles). Moreover, regions which specialized strongly on certain economic branches did so more in female work than in male work. Finally, disparities in female work changed more dramatically than male work. On the whole, contrasts and alterations were more distinct in female work mainly because during industrialisation female work was accepted only in a few branches and because female work usually lasted only for a short time-span of the life cycle and, hence, changed more rapidly in certain regions than male work.(16)

In spite of these clear differences between female and male work, common tendencies of rising regional disparities did predominate in the late period of industrialisation in Germany. Regional disparities increased both in female and in male work in agriculture as well as in industrial branches such as textiles or clothing. In male as well as in female work the majority of individual regions moved away from the German average. The most extreme regions are mostly the same in female and male employments 17) To be sure, one should not exaggerate the common trends in the economic activities of the two sexes. Given their basic contrasts, there are, however, more common tendencies than one might expect: they predominantly go towards high or rising regional disparities.

The overall increase of regional disparities was not a short-term rise during 1895 and 1925. The study by Frank B. Tipton shows that regional disparities in employment structure started already in the 1886's. To be sure, this was demonstrated only for large regions, i.e. only for some German federal states and mostly for Prussian provinces only, also not for female and male work separately.(18) Still, we do not expect that a more differentiated study would show opposite tendencies for the period before 1895.

Increasing regional disparities are the more plausible as the same trend can be found in other European countries. Not only in Britain, but also in Belgium and in Italy, regional disparities of employment rose distinctly in agriculture as well as in industry (an exception being Austria). To be sure, these countries did not follow the exact same path of development. On the whole, however, there probably was a common European path of rising regional disparities during industrialisation - a path which was joined by Germany (cf. table 3).

#### **The Decrease of Regional Disparities**

This rise of regional disparities in employment ended in the 1920's. In the present situation of our research project we do not yet know when exactly it turned into a decrease of regional disparities. It is, however, highly improbable that a sudden turning point can be found partly because occupational censuses are less frequent in the three decades because of wars and political instability 1914 and 1949, partly also because fundamental alterations of employment structures usually do not happen in a few years and finally because changes of long-term trends are hidden behind erratic events of the interwar years such as the economic crisis and the wars.

Hence, we mainly cover the period of definite decrease of regional disparities in employment structure, i.e. the period since the Second World War. Once again, the trend is clear. Now, however, it goes in the opposite direction. This can be demonstrated again for individual economic branches, for individual regions, separately, for male as well as female work.

Regional disparities declined in the two sectors which had become the major ones: in industry and in services. In industry as a whole the decrease of regional disparities was more spectacular than the rise in the late period of industrialisation which we just dealt with. The degree of regional disparities in 1970 (and more so in 1980) was clearly below the situation of 1895, perhaps even below the situation in the early industrial revolution although the regions investigated for that time are not fully comparable with post-war regions.(19) Moreover, the main momentum of the mitigation of regional disparities now came from the agrarian regions. It was the rapid rise of industrial jobs in these regions which primarily made up for the regional convergences. The end of the growth or even the decline of industrial employment in the industrial regions was only a secondary reason.(20)

The decrease of regional disparities between 1950 and 1970 can also be observed, if less clearly, on the level of individual industrial branches. In the majority of industrial branches regional disparities decreased continuously, at least between the censuses of 1950 and 1970. Only in the textile and clothing industries, concentration clearly resumed in certain regions. As these industries declined, the impact of the reconcentration on the whole of the industrial sector became weaker and weaker. In addition, an expanding branch, the construction, slightly reconcentrated in this period. In important other industries, however, such as iron and steel, metal and engineering, chemicals, food, electricity, gas, and water works regional differences were on the decline.

Regional disparities since World War II also decreased clearly in the service sector. The ambivalent trends which characterized this sector in the late period of industrialisation now gave way to a predominant tendency towards a reduction of regional differences to about the same degree as in industry. This was the more important as the service sector in the 1970's became the largest sector in West German society. Therefore, trends in the service sector had a strong impact on the society as a whole.

Regional differences were reduced in individual service branches even more clearly than in individual industrial branches. Regional disparities in service branches were not only much lower than in most industrial branches. They also declined in almost all branches in 1970 compared to 1950 as well as compared to 1925. There is just one minor exception: in transport regional disparities rose temporarily during the 1950's and stayed on the same level over the whole period between 1950 and 1970. Even in this case, however, regional disparities did not re-increase. They clearly fell since 1925. For all these reasons the service sector can be considered as the main motor for the reduction of regional disparities after World War II.

The big exception in this general trend toward less regional disparities is agriculture. Regional disparities in agricultural employment rose distinctly between 1950 and 1970. The trend which was clear already before World War I, continued until the present. This trend was distinct in female as well as in male employment. In fact, regional disparities in agriculture were much stronger in 1970 than ever before (cf. table 1). At the same time, however, agricultural employment became more and more marginal in German society. It fell from 22% in 1950 to 6% in 1980. Therefore, the impact of this exceptional increase of regional disparities became weaker and weaker.

There is no German peculiarity in these post-war trends of regional disparities of employment. The same basic trend can be found in other European countries as well as in the EEC as a whole. In Britain, France, Italy as well as in Belgium and Austria regional disparities of industrial and service employment fell almost to the same degree and mostly to a similar level as in West Germany. So did the EEC as a whole (cf. table 3). Agriculture was also the major exception in these countries and in the EEC as a whole. Regional disparities rose distinctly in this sector. Once again, regional trends of employment in Germany are just part of a general European trend.

The trend of decreasing regional disparities, i.e. the second part of the wave, is also distinct on the level of individual regions. Since the Second World War individual regions gradually joined the mainstream of employment structure in West Germany. Less and less regions diverged from the average trends of employment structure in the way they did before 1914. Between 1950 and 1960 only every fifth West German region diverged from the mainstream of employment. Between 1961 and 1970 it was only every twentieth region, i.e. only two regions, Holstein and Oldenburg. This trend of joining the mainstream of employment structure can be observed in all main types of regions: in urban administrative regions such as Berlin, Hamburg, Bremen which heavily concentrated upon services after World War II; in heavy industrial regions such as Arnsberg, Düsseldorf, Münster, Saar; in the strongly agrarian regions such as Lower Bavaria (Niederbayern), Upper Palatinate (Oberpfalz), Upper Franconia (Oberfranken), Lower Franconia (Unterfranken), Swabia (Schwaben), South Baden (Südbaden), Osnabrück, Lüneburg, and, from 1950 on, also in the Upper Hesse (Oberhessen), the Koblenz, the Trier region, and the Aurich region (cf. table 2).

It is important that all these reductions of regional disparities can be observed in female as well as in male work. Female as well as male work became regionally much less concentrated in industry as a whole as well as in the services as a whole. Even on the level of individual industries and services, trends are roughly similar in the employment of the two sexes with a few exceptions such as food, construction, transport, social services, and public services. The same is the case for the level of

individual regions. In both male and female work less and less regions deviated from the average tendency of employment. Between 1925 and 1950 it was only a minority of 8 regions in female work and 3 regions in male work (out of 39 West German regions), between 1950 and 1961 only 9 regions in female work and 11 regions in male work, between 1961 and 1970 only 3 regions in female work and 6 regions in male work.(21) To be sure, contrasts between male and female work were distinct also after the Second World War. Regional disparities were and mostly remained stronger in female work. Female work in all sectors and in almost all individual branches was regionally more concentrated even in 1970. Eccentric regions (being different from the overall West German average) were clearly more eccentric in female work than in male work.(22) Moreover, the decline of regional disparities was more dramatic and predominated more exclusively in female work. In male work, it was less strong and more contradictory in having more exceptions in individual branches of industry and services. It would be fascinating to explore these contrasts in more detail. Taking them into account, however, it is surprising how similar the general tendencies in female and male labour were.

To be sure, stabilities do exist over this long period of almost eighty years. There is a first geographical stability: For Western Germany, maps on the geographical distribution of the most industrialised and developed regions show a corridor of economic development which goes from Hanover over Bielefeld, the Ruhr area, Cologne and, after an interruption in the Rhine valley, resuming again in Frankfurt, continuing in Mannheim-Ludwigshafen, Stuttgart, Augsburg and Munich. No doubt, the interruptions of industrialisation and urbanization in this corridor were longer before 1914 than in the present. But this bended corridor was already visible. More important was a second stability: The "eccentric" regions, i.e. the regions whose employment structure diverged most strongly from the overall average did not change very much during these eighty years. Among the thirteen regions which were the eccentric ones in 1895 nine were still eccentric in 1970. In 1895, these were the three urban administrative regions of Berlin, Hamburg, Bremen; the three heavy industrial regions of Arnberg, Dusseldorf and Saar, and seven strongly agrarian regions of Lower Bavaria (Niederbayern), Upper Palatinate (Oberpfalz), Lower Franconia (Unterfranken), Upper Franconia (Oberfranken), Osnabruck, Lüneburg, and Trier. Only four out of these thirteen "eccentric" regions came closer to the German average between 1895 and 1970, three agrarian regions and one industrial region, i.e. the Dusseldorf region which diversified its industries (cf. table 4). They were replaced again by three agrarian regions in Northern Germany, i.e. Aurich, Stade, and Schleswig, and by one of the most dynamic new industrial regions, South Wurttemberg (Südwürttemberg-Hohenzollern) which concentrated strongly in textiles and clothing (cf. table 4). In spite of this stability the meaning of an "eccentric" region changed between 1895 and 1970. Before the First World War it meant not only a substantial difference from the overall average, but also in almost all cases a strong tendency of rapid deviation. After World War II eccentric regions were not only much closer to the overall average; in almost all cases the deviation also was reduced substantially between 1950 and 1970. Hence, even in this rather stable ranking order of "eccentric" and unspectacular regions, the wave of regional disparities is remarkably clear.

Summing up we think that a definite wave of regional disparities in employment structure did exist in Germany during the past hundred and twenty years or so, with rising regional disparities during industrialisation and with clearly diminishing regional disparities since World War II at the latest. This wave of regional disparities is the more important as it can be shown in various ways: in the regional concentration and deconcentration of individual economic activities, in the divergence and convergence of individual regions in relation to the overall average of employment structure, in female as well as in male work, in the territory of the whole of Germany as well as

in the territory of today's West Germany.(23) This wave of regional disparity is the more plausible as it was shown also for other European countries such as Britain, Italy, Belgium, and Austria and, at least for the diminishing part of the wave, also for Western Europe (i.e. for the EEC). The wave of regional disparities might even be part of a larger process of regional disparities since regional distribution of income seems to follow a similar long-term pattern of change.(24)

### **Reasons for the Wave of Regional Disparities**

These empirical findings might be more acceptable if they are explained by convincing reasons. The wave of regional disparities in fact comes by no surprise as major developments in the regional nature of the leading industries and services, in basic innovation of energies and transport, in the major types of regional industrialisation, in the change of the regional limits of industrialisation, in changes of the purchasing power of consumers, and finally in the changing nature of female work support these empirical findings. All these developments in fact reinforced regional disparities during industrialisation and diminished disparities in recent decades. In this last section of the paper, we present these explanations for the wave of regional disparities in more details. In some respects we take up again the short theoretical remarks at the beginning of our essay.

- (1) The nature of growth industries. First of all, the basic nature of the leading industries and services reinforced the long-term wave of regional disparities. European industrialisation was based upon growth industries which were and still are extremely concentrated in certain regions. This is true especially for the heavy industries. No other industries were and still are as strongly concentrated in certain regions as mining and the iron and steel industries. After World War II the degree of concentration of these industries was still outstanding. In the late period of industrialisation (1907) on the territory of West Germany 81% of the jobs in mining and 77% of the jobs in the iron and steel industries were concentrated in only four regions i.e. for the mining industries in the Saar region, and in the regions of Düsseldorf, Arnsberg, Münster, and for the iron and steel industries in the Saar region, in the regions of Düsseldorf, Arnsberg, Aix-la-Chapelle (Aachen). In the whole of the German Reich, concentration of these branches was even more extreme (table 1). Strong regional concentration was also a characteristic of the textile industries though less than in the heavy industries. Since about the turn of the century, textiles rank third among the regionally most concentrated industries (cf. table 1). On the territory of West Germany in 1907 about a half of the jobs in textiles were found in only four regions, especially in the Düsseldorf region, but also in North Württemberg (Nordwürttemberg), Upper Franconia (Oberfranken), and South Baden (Südbaden).(25) The extreme concentration in certain regions is not a characteristic of the period of industrialisation only. Even after World War II, these industries were still regionally the most concentrated ones (cf. table 1). Hence, regional concentration has to do with the basic nature of these economic activities. As these industries had their strongest impact and weight in employment during industrialisation, they reinforced the overall tendency towards high regional disparities during that period. In 1895, four out of the 13 "eccentric" regions specialized strongly in these growth industries of the industrial revolution (cf. table 4). These industries declined after World War II and lost much of their impact and jobs. Only two regions out of the 13 most "eccentric" regions in fact still specialized in these economic activities in 1970 (cf. table 4). An important momentum for strong regional disparities weakened and, hence, gave way to a decrease of regional differences in employment in Germany.

- (2) The regional limits of employment change. A second major reason for the wave of regional disparities was the obvious fact that the basic pattern of employment change, the rise of industrial and service jobs and the decline of agricultural jobs did not take off at the same time in all regions of countries like Germany. In general, one can say that it started in early industrialisation as an insular process in a few regions, expanded during industrialisation into the majority of regions, leaving still untouched substantial insulas of traditional agrarian regions, and reaching only in recent decades all regions in countries of inner Europe. It is important for the development of Germany around 1900 that regional disparities were not only reinforced in early industrialisation when industrial or modern service regions were still very insular, but also in the late period of industrialisation when only a certain number of backward agrarian regions was still untouched by industrialisation.

To be sure, these agrarian regions were not totally uninfluenced by industrialisation. Quite to the contrary, migration and flows of capital out of these regions, the regional terms of trade, the political relationship with other regions and with the central government were strongly influenced by the industrialisation in other parts of Germany and Europe. Employment structures would probably have developed in a different way without industrialisation elsewhere. These regions were, however, untouched by industrialisation in the narrow sense that the rise of the share of industrial and modern service jobs did not yet take off. It is difficult to say whether this was a zero numbers game and whether the stagnant employment structure was the pre-condition of the rise of modern industrial and service jobs in other regions. In any case, the stagnation of employment structure in about a quarter of West German regions (and an even larger proportion in Germany as a whole) and, hence, the deviation from the large majority of German regions in which industrial and service jobs was a second important momentum for regional disparities during industrialisation. In 1895, about a half of the "eccentric" regions in the territory of West Germany in fact belonged to this type of stagnant agrarian region falling back behind the mainstream of employment structure (cf. table 4). It probably was the most important factor working in favor of rising regional disparities at that time.(26)

This momentum became weaker or even disappeared when these last niches of agrarian stability were taken by industrialisation during the recent decades. Without any exception employment structure started to change dramatically in these former stagnant regions. Industrial jobs as well as service jobs often increased even more rapidly in these regions than on the West German average. To be sure, the deviation from the mainstream of employment structure did not fully disappear in all regions; in 1970, it was still substantial in the least industrialized West German regions of 1895, in the Trier region and in Lower Bavaria (Niederbayern). However, three out of the six highly agrarian "eccentric" regions of 1895, i.e. Lüneburg, Osnabrück, Unterfranken had industrialized so rapidly until 1970 that they came close to the West German average of employment structure (cf. table 2 and 4). Hence, with the fall of the former regional barriers of industrialisation, regional disparities decreased substantially in West Germany since World War II. This is a first-rate factor for the mitigation of regional disparities of employment.

- (3) The reduction of paths of regional industrialisation. A third reason for the wave of regional disparities is the change in the variety in regional paths of industrialisation. Nineteenth century Europe did not witness only one single uniform regional path of industrialisation and employment change. At least six types of regional industrialisation can be found during that period: the mining region, the iron and steel region (the two often combined in Germany), the textile region (the Düsseldorf region combining all these paths), the engineering and metal goods region, the modern service region (Berlin, Hamburg, Bremen combining the two latter ones), and, often forgotten, the modernized agricultural region. This



multitude of regional paths of industrialisation led to a multitude of employment structures also among industrializing regions. This can be seen not only in economic sectors, but also if individual industrial and service branches are examined (only modern agrarian regions not being discernible from traditional ones in terms of employment only). As the number of industrializing regions increased, regional disparities were reinforced even among relatively modern regions, not only between modern and backward regions. So among the "eccentric" regions of 1895 large differences can be found between the consumer goods and service oriented cities of Berlin, Hamburg, Bremen, the heavy industrial regions of Arnsberg, Saarland, the multispecialized region of Diisseldorf, combining heavy and textile industries, and the clothing region of Upper Franconia (Oberfranken) (cf. table 4).

This diversity of paths of industrialisation was substantially reduced since the Second World War. Three out of these five possibilities of modern regional specialization ended (we do not count mining separately since in Germany it never fully dominated over regions of the size we are exploring): the heavy industrial region either disappeared or went into severe crisis in the 1970's. The textile region disappeared even earlier in the 1950's. The predominately agricultural region also disappeared because of the extreme rise of agrarian productivity; so even in rural regions a growing majority of the active population worked outside agriculture. The interlude of specialization in construction still visible around 1970 (cf. table 4) ended with the economic crisis and the end of population growth in the 1970's and the 1980's. What remained were only two promising ways of specialization: modern services, and engineering in a broad sense including electronics. Because of this far-reaching reduction in the variety of promising paths of regional industrialisation, regional disparities also were reduced in the past two or three decades.

- (4) Energy and transportation. A fourth reason for the long-term wave of regional disparities is the change of the major energies and the major means of transportation since the beginning of the industrial revolution. The major energies of the period of industrialisation, i.e. water, coal and still to a large degree wood was by no means evenly distributed among regions. This is obvious for coal, but also, if less true, for water and wood. These energies could not easily be redistributed among regions, since transport was almost impossible for water and expensive for coal and wood, given the contemporary means of transport. Hence, certain regions were in a favourable energy situation which was difficult to compensate by other economic resources. Especially during early industrialisation, regional development of industry very much followed the regional distributions of coal and water.

Contemporary means of transportation could not really make up for these disadvantages of the many regions without coal, water and wood (or without other resources). The main new means of transportation of the early industrialisation, i.e. canals, railways, also turn-pikes, were very capital-intensive and did not penetrate into all parts of regions. Even the perhaps most flexible means of transportation, the railway, often was a zero numbers game between communities when actual decisions on building of the railway lines came up. For all these reasons the main energies and means of transportation of the early industrialisation reinforced or even widened regional disparities of employment structure though it is difficult to say how important this factor was compared to the other factors mentioned already.

The effect of 20th century energies and means of transportation went into the opposite direction. The major new sorts of energy, electricity, and later on oil were not linked to specific regions. Both energies could be transported almost everywhere. As far as energy is concerned, industrial plants and service centers could be established in whatever region. Hence, energies gradually lost their reinforcing effects on

regional disparities. The same is also true for means of transportation. One of the new 20th century means of transportation, the automobile, could penetrate into all corners of a country much more easily and effectively than railways, canals, and turn-pikes used by coaches. Although the other new 20th century means of transportation, the plane, partly reinforced regional disparities, the automobile mitigated them more efficiently and partly replaced the early industrial railways and canals. On the whole, new energies and means of transport during the 20th century weakened rather than reinforced regional disparities of employment. They came into effect especially after World War II, when electricity networks covered all regions, when oil came into common use and when the automobile became the predominant means of transportation in Germany as in other European countries.

- (5) The purchasing power of consumers. A fifth though less important reason of the wave of regional disparities was the development of regional power of consumption. During early industrialisation regional purchasing power of consumers diverged at least for two reasons: on the one hand regional concentration of subsistence households which had no links with the market and no purchasing power on the market became regionally more and more concentrated in the agrarian regions untouched by industrialisation and became less and less in the industrializing regions in which market-oriented households of wage-earners, of lower middle class and the middle class predominated. Hence, the size of the demand for consumer goods diverged regionally. Since this was still often a demand for goods produced on the spot, it still had a strong effect on the spot in employment in consumer goods industries, in commerce and in personal services. Regional disparities in these types of employments increased. We have to qualify, however, that this is a purely theoretical argument since research on subsistence households is rare. On the other hand, there is some evidence that regional disparities increased also between modern wages at least until the end of the 19th century.(27) Given the low standard of living, one should not overestimate the purchasing power of wage-earners for consumer goods. Still, rising regional disparities of wages might have some effects on reinforcing regional disparities of employment especially in commerce.

The development of the regional purchasing power of consumer during the 20th century once again led to the opposite direction. With the rise of modern agriculture subsistence households almost disappeared and almost all households were, though to a somewhat different degree, linked to the market. Purchasing power rose also in those regions in which subsistence households had played an important role before. Moreover, there is strong evidence that regional differences in wages and salaries weakened distinctly during the 20th century, especially after the Second World War. Hence, former regional differences in purchasing power were reduced. For both reasons, regional disparities especially in employment in commerce, banking, in personal services were reduced (cf. table 1). Once again, it is difficult to say how important this factor was.

- (6) Changing character of female labour. A final reason for the wave of regional disparities can be found in the changing character of female labour. During industrialisation and way into the 20th century working women were mostly young, unmarried, hence mobile, with the perspective of only a short period of economic activity before marriage and ready to take over low paid jobs. Economically active men were much more often older, married, less mobile, with the perspective of a life long economic activity. Hence, women were more ready to take over jobs outside their region of origin though still keeping strong links with their family of origin. This situation of female labour could have two contrasting consequences. In labour markets which were spread all over the country, predominantly young and unmarried women were more ready to migrate. In this situation, regional disparities in women's work were less distinct than in

men's work. This is especially the case in the social services which became an important labour market for women at the end of the 19th century. In labour markets, however, which were concentrated in certain regions, women migrated more easily and concentrated more in those regions favourable for these economic branches. This is the case in the few industries in which women were accepted in large numbers during the 19th century, i.e. in textiles, clothing, specific food industries, later on in electronics. The main effect of women's labour outside the agriculture and services leads into this direction: Women's labour reinforced regional disparities during this period.

After World War II women's work changed. Older, married and less mobile women increased with a perspective of life long economic activity only shortly interrupted during the early marriage. These women did not migrate as easily and take over as cheap jobs as the young women of the industrial revolution. Hence, they were no longer regionally more concentrated than men. In 1970, in individual regions women's work stopped being much more regionally concentrated and more eccentric than men's work. Moreover, women's work became predominantly service work, clearly more than men's work.(28) As service work always was and is regionally less concentrated than industrial work and more recently also agricultural work, regional disparities also decreased in the labour market of this sex. For these reasons, women's work became a factor in the reduction of regional disparities.

### Summary

The main finding of our essay is a long-term wave of regional disparities of employment: a clear rise of regional disparities of employment during industrialisation until the interwar period and an even more distinct decrease in the past decades. This wave of regional disparities is a far-reaching development which can be shown not only in the regional concentration of individual branches of activity, but also in the deviation of individual regions from the overall average, in female work as well as male work. It is not a German peculiarity. It was also demonstrated for 19th and 20th centuries Belgium by Guido de Brabander and can be shown also for Italy, for Britain, and for Austria. It would come by no surprise if it turns out to be a general development in European regional history. This, however, is still to be shown.

These empirical findings are explained by several other developments:

- (1) The leading industries of the industrialisation period, i.e. textiles, mining, iron and steel, reinforced regional disparities since they were (and still are) regionally extremely concentrated. Quite to the contrary, the leading industries and services of the past decades, i.e. chemicals and electrical industries, car manufacturing, economic and social services were regionally much less concentrated and, hence, reduced regional disparities in employment;
- (2) Industrialisation was largely a regional process leading to an insular economic development during its early beginnings and, after its break-through, still to an insular world of largely untouched agrarian regions. Hence, in both stages of industrialisation, regional disparities tended to increase because of a deviation of advanced regions first and then because of a deviation of stagnating agrarian regions later on. During the past decades, these Insulas of agrarian stagnation disappeared in Germany as in other modern European countries. This is a central condition for the wave of regional disparities.
- (3) The modern energies and means of transportation of the industrial revolution, i.e. coal, water, wood, and canals, railways, stabilized or even reinforced regional disparities. Coal, water and wood were difficult to be transported and, hence, gave certain regions strong advantages; canals and railways either served only specific regions or had at least ambivalent effects partly destroying industries in small, less competitive regions. Energies and means of transportation of the 20th

century rather tended to reduce regional disparities. The new energies, i.e. electricity and oil could be brought even to remote regions; the car as a new means of transportation was much more flexible regionally than railways or canals. Hence, the energies and means of transport also led to a wave of regional employment structure.

- (4) Regional disparities during industrialisation became distinct also because a variety of regional paths of economic development existed during industrialisation, not only the textbook industrializing regions specializing in textiles, mining, iron and steel, but also the specialization in engineering, consumer goods, modern farming, and modern services. This regional variety was reduced during the past decades mainly because of the crisis of European textiles, mining, iron and steel. This crisis made regional employments less varied than during industrialisation. It also led to a wave of regional disparities.
- (5) Regional disparities of purchasing power with all its effects on local economies and local employment increased during industrialisation partly because subsistence households concentrated more and more in stagnating agrarian regions, partly also because modern wages became more disparate for a certain period in early industrialisation. To be sure, consequences for employment are indirect but might still be substantial. In the 20th century, subsistence households disappeared and lost their former impact on regional purchasing power. Wages also tended to converge regionally. In so far as they had an effect on local jobs, this also led to a reduction of regional disparities in employment. Once again, a long-term wave is the most probable consequence.
- (6) Female work during industrialisation tended to reinforce regional disparities partly because women who were active on the labour market usually were unmarried, young and mobile, and, hence, easily concentrated regionally, partly also, as far as industries and some services are concerned, because they were accepted mainly in activities which were regionally very disparate. This consequence of female work disappeared in the 20th century partly because the services which always were and still are the regionally least disparate sector became the main domain of female work, partly also because the rise of married active women reduced the regional mobility of female labour and also tended to reduce regional disparities.
- (7) Finally, government and municipal policies might also have supported the wave of regional disparities (or at least did not counteract) for at least two reasons: Regional policies of German governments during industrialisation tended to encourage primarily modern activities and hence supported mainly the rising industrial regions. Moreover, the weight of municipal budgets in the public expenditures was also unusually strong during the 19th century. Hence, rich regions tended to reinvest public budgets in the region and in this way tended to reduce the redistribution by the central budget. Regional disparities in this way were also reinforced. During the past decades, compensating regional policies became a primary target of government policies. Since the weight of central budgets became more important in Germany, this might also have had effects on the reduction of regional disparities, though it will be difficult to trace these effects.

Taken together, all these explanations make the wave of regional disparities even more convincing. So it is not only supported by our empirical findings from the German censuses between 1895 and 1970. After all it also seems to be logic from the wider development of economic and social history of Germany. This special issue is a first step towards broadening the view and towards asking whether it also applies to Europe as a whole.

## NOTES

- (1) CH. Lee, Regional Structural Change in the Long Run: Great Britain 1841-1971, in: S. Pollard, ed., *Region and Industrialisation*, Göttingen: Vandenhoeck & Ruprecht 1980, pp. 254-275; id., *Regional Growth and Structural Change in Victorian Britain*, in: *Economic History Review* 33.1981; id., *The Service Sector, Regional Specialization and Economic Growth*, in: *The Geography* (2) 10.1984; G. de Brabander, *Regional Specialization, Employment and Economic Growth in Belgium Between 1846 and 1970*, New York 1981; id., *Regional Differentiation of Economic Growth in Belgium, 1846-1977*, in: *Historical Social Research* No.33. 1985; id., *De regional- sectoriële verdeling van de economische activiteit in België (1848-1979)*, Louvain 1984; Vera Zamagni, *Industrializzazione e squilibri regionali in Italia. Bilancio deir'età giolittiana*, Bologna: Il Mulino 1978; cf. also her article in this special issue; For a more extended version of this article including more detailed tables and longer technical comments cf. H. Kaelble/R. Hohls, *Der Wandel der regionalen Disparitäten in der Erwerbsstruktur Deutschlands 1895-1970*, in: J. Bergmann/J. Brockstedt/R. Fremdling/R.Hohls/H. Kaelble/H. Kiesewetter/K. Megerle, *Regionen im historischen Vergleich*, Opladen 1988. This article is based on a project financed by the Volkswagen foundation. The project was directed by Henk van Dijk and Hartmut Kaelble. We have to thank M. Fennema (Rotterdam) for having corrected our English style.
- (2) cf. for summaries of the discussion: R. Fremdling/T. Pierenkemper/R. Tilly, *Regionale Differenzierung in Deutschland als Schwerpunkt wirtschaftshistorischer Forschung*, in: R. Fremdling/R. Tilly, eds., *Industrialisierung und Raum*, Stuttgart 1979; W. Abelshausen, *Staat, Infrastruktur und regionaler Wohlstandsausgleich im Preußen der Hochindustrialisierung*, in: F. Blaich, ed., *Staatliche Umverteilung in historischer Perspektive*, Berlin 1980, pp. 10 ff.; H. Kaelble, *Industrialisation and Social Inequality in 19th Century Europe*, Leamington Spa 1986, pp. 14 ff.; a more recent comparative contribution: J. Söderberg, *Regional Economic Disparity and Dynamics, 1840-1914: A Comparison Between France, Great Britain, Prussia and Sweden*, in: *Journal of European Economic History* 14.1985; covering the 20th century: J. Williamson, *Regional Inequality and the Process of National Development: A Description of the Pattern*, in: *Economic Development and Cultural Change* 13.1965.
- (3) This study is part of a larger project in which Rüdiger Hohls investigates regional disparities in wages in Germany between the 1890-s and the present.
- (4) cf. S. Pollard, *Industrialisation and the European Economy*, in: *Economic History Review* 24.2975; id., *Peaceful Conquest. The Industrialisation of Europe 1760-1970*, Oxford 1981; id., *Industrialisation and Integration of the European Economy*, in: O. Büsch, ed., *Industrialisierung und Europäische Wirtschaft im 19. Jahrhundert*, Berlin 1976 (with a discussion mostly in English).
- (5) cf. especially Williamson, *Regional Inequality*; also Söderberg, *Regional Economic Disparity*; Abelshausen, *Staat*.
- (5a) Most stimulating: Lee, *Regional Growth*; id., *Service Sector*; K. Megerle, *Württemberg im Industrialisierungsprozeß Deutschlands*, Stuttgart 1982.
- (6) In 1980, the variation coefficient of regional industrial employment was 13% in West Germany compared to 21% in the EEC, 26% in Italy, 18% in France, 25% in Belgium, 15% in the Netherlands. Only Britain was similar to West Germany with a coefficient of 12% (calculated from: Kommission der Europäischen Gemeinschaft-

ten. Die Regionen Europas. Zweiter periodischer Bericht über die sozio-ökonomische Lage und Entwicklung der Regionen der Europäischen Gemeinschaft, Brussels 1984, pp. D2 ff.).

- (7) Frank B. Tipton, *Regional Variations in the Economic Development of Germany During the 19th Century*, Middletown: Wesleyan University Press 1976.
- (8) cf. W. Molle, *Regional Disparity and Economic Development in the European Community*, Westmead 1980, pp. 401-407; C. Krieger/C.S. Thoroe/W. Weskamp, *Regionales Wirtschaftswachstum und sektoraler Strukturwandel in der Europäischen Gemeinschaft*, Tübingen: Mohr 1985, pp. 164-167; CS. Thoroe, *Changes in the Regional Growth Pattern in the European Community*, in: H. Giersch, ed., *Towards an Explanation of Economic Growth*, Tübingen 1980, pp. 283-311.; D. Keeble/P.L. Owens/C. Thompson, *Centrality, Peripherality and EEC Regional Development*, Cambridge 1981.
- (9) *Raumordnungsprogramm für die großräumige Entwicklung des Bundesgebietes, Schriftenreihe 06 des Bundesministers für Raumordnung, Bauwesen und Städtebau*, vol. 2, Bad Godesberg 1975.
- (10) Data of the Regierungsbezirke in their historical borders rather than in stable borders can be found in our data set. Post-war East German regions are not included in our data set since the new post-1949 East German administration units (Bezirke) in no way coincide with the former Regierungsbezirke of that territory. We did not try to bridge these administrative reforms also because our main interest is the history of West Germany.
- (11) cf. R. Stockmann/A. Willms-Herget, *Erwerbsstatistik in Deutschland. Die Berufs- und Arbeitsstättenzählung als Datenbasis der Sozialstrukturanalyse*, Francfort 1985, pp. 210- 280.
- (12) cf. as a good summary: Stockmann/Willms-Herget, pp. 29 ff; *Statistik des Deutschen Reiches*, N.F., Bd. 202, Berlin 1909, p. 4\* (reprint of the questionnaire).
- (13) Tipton, *Regional Variations*; cf. annot. 6.
- (14) Kaelble/Hohls, *Erwerbsstruktur*, tables in the appendix.
- (15) Kaelble/Hohls, *Erwerbsstruktur*, tables in the appendix.
- (15a) Kaelble/Hohls, *Erwerbsstruktur*, tables in the appendix.
- (15b) We should qualify that we here compare West German regions with the average on the West German territory. Our findings apply also to the whole of pre-war Germany. Cf. Kaelble/Hohls, *Erwerbsstruktur*, table 4.
- (16) cf. Kaelble/Hohls, *Erwerbsstruktur*, tables 5-8; for women's labour in Germany cf. U. Frevert, *Frauen-Geschichte zwischen bürgerlicher Verbesserung und Neuer Weiblichkeit*, Francfort 1986; W. Müller/A. Willms, *Strukturwandel der Frauenarbeit 1880-1980*, Francfort 1983; R. Stockmann, *Gewerbliche Frauenarbeit in Deutschland 1875-1980*, in: *Geschichte und Gesellschaft* 11.1985; U. Knapp, *Frauenarbeit in Deutschland zwischen 1850 und 1933*, in: *Historical Social Research* No. 28.1983 and No. 29.1984; dies., *Frauenarbeit in Deutschland*, 2 Bde., München 1984.
- (17) cf. Kaelble/Hohls, *Erwerbsstruktur*, tables 5-8.

- (18) **cf.** Tipton, *Regional Variations*, ch. 3 and 4.
- (19) Tipton, *Regional Variations*, p. 47.
- (20) **cf.** Kaelble/Hohls, *Erwerbsstruktur*, tables A13 ff.
- (21) **cf.** Kaelble/Hohls, *Erwerbsstruktur*, tables 5-8.
- (22) Kaelble/Hohls, *Erwerbsstruktur*, tables 7-8.
- (23) We did not go into details about this point. Table 1, however, illustrates well that degrees and tendencies of regional disparities run surprisingly parallel in the German Reich as a whole and on the territory of West Germany between 1895 and 1925. Other aspects of employment structure not presented here reinforce the impression that in the German Reich as a whole including the backward East regional disparities were not fundamentally different from regional disparities in West Germany if followed back until 1895.
- (24) Williamson, *Regional Inequality*.
- (25) Kaelble/Hohls, *Erwerbsstruktur*, tables in the appendix.
- (26) For the whole of Germany **cf.** Kaelble/Hohls, *Erwerbsstruktur*, table 4.
- (27) **cf.** Söderberg, *Regional Economic Disparity*; H. Hesse, *Die Entwicklung der regionalen Einkommensdifferenzen im Wachstumsprozeß der deutschen Wirtschaft vor 1913*, in: W. Fischer, ed., *Beiträge zu Wirtschaftswachstum und Wirtschaftsstruktur im 16. und 19. Jahrhundert*, Berlin 1971, pp. 273ff.
- (28) For the change of employment structure of women **cf.** Müller/Willms, *Strukturwandel*; Stockmann, *Frauenarbeit*; Frevert, *Frauen-Geschichte*; **cf.** also Kaelble/Hohls, *Erwerbsstruktur*, tables 5-8.

Table 1

Regional disparities of employment structures in Germany, 1895-1970  
(variation coefficients)

	Germany <sup>a</sup>			West Germany <sup>b</sup>					
	1895	1907	1925	1895	1907	1925	1950	1960	1970
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Agriculture	35	42	47	37	45	49	48	57	63
(2) Industry	36	37	36	30	31	23	23	18	15
(2.1) Mining	225	225	212	222	220	216	193	188	196
(2.2) Iron and Steel	235	232	155	205	205	149	143	102	104
(2.3) Metal industries	54	58	65	59	62	66	59	...	...
(2.4) Engineering and electrical	49	62	64	42	53	60	44	—	—
(2.3) Metal industries.	45	53	58	45	50	55	42	38	30
-2.4) engineering and electrical									
(2.5) Chemicals	104	108	129	91	91	114	82	77	68
(2.6) Textile ind.	163	175	171	113	109	106	96	...	...
(2.7) Clothing	35	41	44	38	44	46	34	...	...
(2.6) Textile and									
-2.7) Clothing	89	99	99	53	54	54	53	56	62
(2.8) Food	36	38	36	36	39	38	26	21	20
(2.9) Construction	26	24	17	23	24	19	13	15	16
(2.10) Electricity, water, gas	92	77	36	95	83	40	34	27	24
(2.11) Other industries	31	35	36	25	30	36	34	36	39
(3) Services	33	32	33	35	37	38	26	20	17
(3.1) Producer services	107	84	60	111	89	67	47	40	33
(2.2) Transportation etc.	43	38	44	46	43	49	31	34	31
(3.3) Commerce	56	52	44	63	58	49	32	20	17
(3.4) Social services	19	19	23	16	18	22	21	21	19
(3.5) Public services	53	56	35	38	41	40	31	23	26
(3.6) Personal services	28	33	29	31	37	32	21	18	15
(4) Proportion of active population	9	9	8	8	10	8	7	6	7

a Regierungsbezirke (and corresponding administrative units) in the borders of 1913 (for 1895 and 1907) and of 1937 (for 1925), respectively.

b Territory of West Germany only. Regierungsbezirke in the borders of 1970. For the exact definition of sectors and branches cf. H. Kaelble/R. Hohls, Der Wandel der regionalen Disparitäten in der Erwerbsstruktur Deutschlands, 1895-1970, in: J. Bergmann/J. Brockstedt/R. Fremdling/R. Hohls/H. Kaelble/H. Kiesewetter/K. Megerle, Regionen im historischen Vergleich, Opladen 1987.

Source: data from the published statistics of the Statistisches Reichsamt and the Statistisches Bundesamt, and from unpublished statistics of the Statistischen Landesämter (1970). Detailed data to be published in: H. Kaelble/R. Hohls, Regionale Erwerbsstruktur in Deutschland bzw. der Bundesrepublik, 1882-1970. Eine statistische Dokumentation, pres. 1988.



Table 2

Concentration of economic activities in West German regions, 1895-1970  
(index of concentration for male and female labour)

	1895	1907	1925	1950	1961	1970
	(1)	(2)	(3)	(4)	(5)	(6)
Schleswig	27	24	46	38	49	49
Niederbayern	62	75	76	56	55	46
Hamburg	78	73	72	60	50	45
Stade	29	34	56	45	48	42
Oberfranken	41	50	57	39	44	42
Trier	55	70	72	65	55	41
Bremen	69	66	71	60	50	40
Südw.-Hohenzollern	39	47	53	44	41	35
Saarland	54	53	60	46	41	35
Aurich	30	43	58	47	50	35
Oberpfalz	53	62	63	43	40	33
Arnsberg	64	61	56	47	41	33
Berlin	49	71	69	61	43	31
Starkenburger	28	36	32	30	26	28
Nordwürttemberg	16	20	30	24	27	27
Osnabrück	41	53	53	39	35	27
Pfalz	20	32	35	31	30	25
Holstein	23	25	20	20	22	25
Oldenburg	28	28	44	27	25	25
Münster	25	38	48	37	32	24
Schwaben	35	47	52	34	30	24
Rheinessen	25	26	25	28	25	24
Detmold	20	29	35	25	26	23
Köln	24	26	30	26	28	23
Unterfranken	43	52	52	38	30	23
Mittelfranken	22	28	31	21	24	23
Koblenz	26	36	43	36	29	23
Düsseldorf	51	49	46	40	29	23
Aachen	28	27	24	25	23	20
Lüneburg	40	51	60	36	25	20
Wiesbaden	27	24	23	25	24	20
Braunschweig	16	12	11	20	19	18
Nordbaden	17	19	23	21	17	18
Oberhessen	36	37	52	34	26	17
Kassel	22	31	33	27	22	16
Südbaden	34	40	42	31	23	16
Hannover	14	12	17	17	16	15
Oberbayern	16	26	23	17	15	14
Hildesheim	13	21	26	18	15	13

**Source:** cf. annot to table 1. The table includes all Regierungsbezirke of the Federal Republic of Germany in the borders of 1970. The regions are put in a ranking order according to the concentration of economic activities in 1970. The usual indicator of concentration was used and calculated by the following formula:

$$E = I / (UR - ID)$$

ID= employments in an individual West German branch of activity in relation to the total West German active population.

IR= employment in an individual branch of activity in a region in relation to the total active population of the region.

Sectors and branches of economic activity as defined in table 1.

Table 3

Regional disparities in West European countries, 1840-1980

		1840	1850	1870	1880	1890	1900	1910
		(1)	(2)	(3)	(4)	(5)	(6)	(7)
Austria	agriculture	-	-	40	-	-	38	38
	industry	-	-	44	-	-	40	35
	services	-	-	60	-	-	52	48
Belgium (provinces)	agriculture	-	17	-	-	-	37	48
	industry	-	30	-	-	-	38	28
	services	-	19	-	-	-	16	21
Britain (counties)	agriculture	40	-	52	-	-	-	66
	industry	31	-	31	-	-	-	35
	services	20	-	27	-	-	-	22
Britain (standard regions)	agriculture	-	-	-	-	-	-	-
	industry	-	-	-	-	-	-	-
	services	-	-	-	-	-	-	-
France (régions)	agriculture	-	-	-	-	-	-	-
	industry	-	-	-	-	-	-	-
	services	-	-	-	-	-	-	-
Germany (Regierungs- bezirke)	agriculture	-	-	-	-	35	-	42
	industry	-	-	-	-	36	-	36
	services	-	-	-	-	33	-	32
Germany (Länder)	agriculture	-	-	-	-	-	-	-
	industry	-	-	-	-	-	-	-
	services	-	-	-	-	-	-	-
Italy (regioni) series I	agriculture	-	-	-	14	-	-	17
	industry	-	-	-	26	-	-	28
	services	-	-	-	26	-	-	32
Italy (regioni) serie II	agriculture	-	-	-	-	-	-	-
	industry	-	-	-	-	-	-	-
	services	-	-	-	-	-	-	-
Western	agriculture	-	-	-	-	-	-	-
Europe	industry	-	-	-	-	-	-	-
(EEC)	services	-	-	-	-	-	-	-
Western	agriculture	-	-	-	-	-	-	-
Europe	industry	-	-	-	-	-	-	-
(EEC)	services	-	-	-	-	-	-	-

· after 1945 West Germany only.

Annotation: Years in the head of the columns are only approximate. The exact years are: for Austria: 1869, 1900, 1910, 1920, 1934/38, 1951, 1961; for Belgium: 1846, 1896, 1910, 1937, 1947, 1961, 1970; for Britain (counties): 1841, 1871, 1911, 1931, 1957, 1971; for Germany as in table 1; for Italy (series I): 1881, 1911, 1936, 1950, 1961.

Table 3

## Regional disparities in West European countries, 1840-1980 (continue)

		1930	1940	1950	1960	1970	1980
		(8)	(9)	(10)	(11)	(12)	(13)
Austria	agriculture	39	-	43	48	-	-
	industry	28	-	21	17	-	-
	services	42	-	35	27	-	-
Belgium (provinces)	agriculture	-	49	52	60	66	-
	industry	-	24	23	18	18	-
	services	-	15	15	13	13	-
Britain (counties)	agriculture	73	-	75	-	78	-
	industry	34	-	30	-	20	-
	services	18	-	18	-	13	-
Britain (standard regions)	agriculture	-	-	68	67	60	65
	industry	-	-	16	15	12	15
	services	-	-	14	13	11	9
France (regions)	agriculture	-	-	38	45	48	49
	industry	-	-	33	27	20	16
	services	-	-	24	18	14	11
Germany (Regierungs- bezirke)	agriculture	47	-	48	57	63	-
	industry	36	-	23	17	15	-
	services	33	-	26	20	17	-
Germany (Länder)	agriculture	-	-	53	56	62	-
	industry	-	-	18	13	12	-
	services	-	-	28	2	16	-
Italy (regioni) series I	agriculture	-	23	-	38	-	-
	industry	-	34	-	22	-	-
	services	-	32	-	27	-	-
Italy (regioni) serie II	agriculture	-	-	33	40	48	54
	industry	-	-	37	39	22	20
	services	-	-	32	26	19	16
Western	agriculture	-	-	61	70	76	-
Europe (EEC)	industry	-	-	34	26	19	-
	services	-	-	32	25	18	-

- after 1945 West Germany only.

Annotation: Years in the head of the columns are only approximate. The exact years are: for Austria: 1869, 1900, 1910, 1920, 1934/38, 1951, 1961; for Belgium: 1846, 1896, 1910, 1937, 1947, 1961, 1970; for Britain (counties): 1841, 1871, 1911, 1931, 1957, 1971; for Germany as in table 1; for Italy (series I): 1881, 1911, 1936, 1950, 1961.

## Sources:

**Austria:** J.P.H. Möller, Wandel der Berufsstruktur in Österreich zwischen 1869 und 1961, Wien 1974; **Belgium:** Guido de Brabander, De Regionaal-sectoriële verdeling van de economische activiteit in België (1846-1970), Leuven 1984, S. 132 ff., 184, 210; **Britain** (countries): CH. Lee, British Regional Employment Statistics, 1841-1971, Cambridge 1979 (Lee gives two variations of recalculations of the census of 1911. The first one was taken for the proper comparison with 1841 and 1871); Britain (standard regions): W. Molle et.al., Regional Disparities and Economic Development in the European Community, Westmead 1980, pp. 401, 404, 407 (1950, 1960, 1970); C. Krieger et.al., Regionales Wirtschaftswachstum und sektoraler Strukturwandel in der Europäischen Gemeinschaft, Tübingen 1985, S. 164-167 (recalculated); **France:** ibid; **Germany** (Regierungsbezirke): data taken from table 1; Germany (Länder): same source as Britain (standard regions); **Italy** (regioni) series I: V. Zamagni, A Century of Change: Trends in the Composition of the Italian Labour Force, 1881-1981, in: H. van Dijk/H. Kaelble, eds., Employment Structure in 20th Century Europe, Special Issue of the Historical Social Research, Oct. 1987; **Germany:** data taken from table 1 for Regierungsbezirke; Länder: same source as for France; Western Europe: for 1950-1980 data for the EEC in the borders of 1973: same sources as for Britain (standard regions).

Table 4

The West German<sup>a</sup> regions concentrating most strongly on specific economic branches, 1895-1970

Regions most strongly concentrating upon specific branches in 1895 (top third)	Economic branches upon which the region concentrates most in 1895	Leaving the group of regions most strongly concentrating upon specific branches (1970 compared to 1895)
(1)	(2)	(3)
1. <u>The most specialised regions.</u>		
Hamburg.....	engineering (3), clothing (6), electricity (1), producer services (2), transport (8), commerce (20), social services (3), personal services (21)	
Bremen.....	engineering (3), clothing (6), food (8), construction (10), producer services (1), transport (8), commerce (15), social services (3), personal services (20)	
Arnsberg.....	mining (18), iron and steel (6), metal goods (12)	
Niederbayern.....	agriculture (67)	
Trier.....	agriculture (63)	
Düsseldorf.....	iron and steel (4), metal industries (9), clothing (15)	leaving
Saarland.....	mining (19), iron and steel (6)	
Oberpfalz.....	agriculture (62)	
Berlin.....	engineering (3), clothing (11), construction (9), producer services (1), transport (5), commerce (12), social services (3), public services (6), personal services (20)	
Unterfranken.....	agriculture (58)	leaving
Osnabrück.....	agriculture (56)	leaving <sup>b</sup>
Oberfranken.....	agriculture (48), textile (10)	
Lüneburg.....	agriculture (56)	leaving

a Territory of today West Germany also in 1895. All regions in the administrative borders of 1970.

b Coefficient of concentration of the region after leaving still very close to the upper third (cf. table 2).

Source: cf. annotation table 1.

Table 4

The West German<sup>a</sup> regions concentrating most strongly on specific economic branches, 1895-1970 (continue)

Regions most strongly concentrating upon specific branches in 1895 (top third)	Entering the group of regions most strongly concentrating upon specific branches (1970 compared to 1895)	Economic branches upon which the region concentrates most in 1970
(1)	(4)	(5)
<u>1. The most specialised regions</u>		
Hamburg		electricity (2), producer services (9), transport (11), commerce (20), social services (9), personal services (7)
Bremen		food (6), electricity (2), transport (13), commerce (19)
Arnsberg		mining (5), iron and steel (15)
Niederbayern		agriculture (26)
Trier		agriculture (22), construction (9)
Düsseldorf		
Saarland		mining (6), iron and steel (13)
Oberpfalz		agriculture (17)
Münsterlin		electricity (2), commerce (15), social services (12), personal services (7)
Unterfranken		
Osnabrück		
Oberfranken		textile, clothing (11)
Lüneburg		
	Südwürttemberg-	
	Hohenzollern	metal goods, engineering (1), textile clothing (10)
	Aurich	agriculture (16), construction (12)
	Schleswig	construction (10), public services (18), personal services (7)
	Stade	agriculture (20), food (6), construction (11)

a Territory of today West Germany also in 1895. All regions in the administrative borders of 1970.

b Coefficient of concentration of the region after leaving still very close to the upper third (cf. table 2).

Source: cf. annotation table 1.

Annotation: The table contains the 13 regions of the Federal Republic of Germany with the highest overall coefficient of concentration in 1895 (column 1) and in 1970 (column 5). Those regions who belong to this group in 1895, but not in 1970 are labelled as "leaving" in column 3. Those regions who belong to this group in 1970, but not in 1895 are listed in column 4. Column 2 and 5 list those branches of activities upon which individual regions concentrate most. The number in brackets behind each activity gives the proportion of the regional active population working in this branch. Activities are listed if a region has at least the third highest proportion among all West German regions. Only for strongly agricultural regions the proportion of the population active in agriculture is always given.