

IABtopics

IAB Labour Market Research Topics

Institut für Arbeitsmarkt- und Berufsforschung der Bundesanstalt für Arbeit
Institute for Employment Research of the Federal Employment Services, Germany

No. 38, 2000

Angela Rauch, Alexander Reinberg

Qualification and Employment Opportunities

Bundesanstalt für Arbeit

Federal Employment Services

Publisher of the series:

Institut für Arbeitsmarkt- und Berufsforschung der Bundesanstalt für Arbeit (IAB),
Regensburger Strasse 104, 90327 Nürnberg/Germany
Telephone: +49-911-179-0
Telefax: +49-911-179-3258

Coordinators:

IAB Topics Working Group: Lutz Bellmann, Werner Dostal, Knut Emmerich, Barbara Koller,
Gerd Peters, Hannelore Plicht, Thomas Rhein, Alexandros Tassinopoulos, Ulrich Walwei,
Heinz Werner

Translator:

Karen Scott-Leuteritz, c/o Institut für Arbeitsmarkt- und Berufsforschung der Bundesanstalt
für Arbeit (IAB), Regensburger Strasse 104, 90327 Nürnberg

Distribution:

To order apply to the IAB, Regensburger Strasse 104, 90327 Nürnberg

Annual price:

DM 30 (for German subscribers); foreign subscribers are currently supplied free of charge

Copyright:

No part of this publication may be reproduced in any form without prior written permission of
the IAB and in all reproductions full reference of the details must be given.

The series "IAB Labour Market Research Topics" is designed for the publication of selected
papers resulting from the work done by the IAB or by studies commissioned by the IAB.
Papers bearing the author's name do not necessarily represent the opinion of the IAB or the
Bundesanstalt für Arbeit.

ISSN 0945-8093

**Visit our website at <http://www.iab.de>
with English language section including
full text versions of IAB Topics (.PDF file format)**

The IAB is the research division of the German Bundesanstalt für Arbeit where scientists of
different economic and social science disciplines work. The range of research topics can be
characterized briefly as follows:

- observation of and forecasts for the German labour market
- labour market statistics
- labour market theory and policy
- evaluation of employment programmes
- regional and international labour markets
- occupation sociology
- research in skills and qualifications
- technological development and the labour market
- business and personnel management

Qualification and Employment Opportunities

- 1 Introduction**
- 2 Old *Länder***
 - 2.1 Long-term development of employment and unemployment**
 - 2.2 Qualification-specific unemployment**
 - 2.3 Labour market balances of various qualification levels**
 - 2.4 Gender-specific labour market development**
 - 2.5 Qualification-specific labour market balances and sectoral change**
 - 2.6 Qualification-specific employment balances according to working time**
 - 2.7 Development of graduate employment that is adequate for the qualification level**
- 3 New *Länder* and Berlin-East**
 - 3.1 Development of employment and unemployment after reunification**
 - 3.2 Qualification-specific unemployment**
 - 3.3 Labour market balances of various qualification levels**
 - 3.4 Gender-specific labour market development**
 - 3.5 Qualification-specific labour market balances and sectoral change**
 - 3.6 Qualification-specific employment balances according to working time**
 - 3.7 Development of graduate employment that is adequate for the qualification level**
- 4 Summary**
- 5 References**

¹ Angela Rauch and Alexander Reinberg are researchers at the Institut für Arbeitsmarkt- und Berufsforschung

1 Introduction

In recent years the public debate surrounding the economic location Germany has been characterised decisively by the alarming rise in unemployment. Record unemployment figures, increasing numbers of failing businesses and other bad tidings dominate the headlines. Little attention is being paid, however, to the fact that in the change in the economic structure there are not only losers among the workers but also winners.

These aspects of the labour market development are to be brought into the discussion here. The paper describes both the development of unemployment and that of employment between 1991 and 1997. As the change in the structure of the economy has taken place not only with regard to sectors but to an increased extent also with regard to qualifications, one of the main points of focus of this paper is the different labour market positions of individual qualification groups.

The following shows first of all that the employment crisis of the 1990s did not run the same course for all qualification levels. The great losers of this development were workers who had not successfully completed vocational training. But also those who had successfully undergone vocational training or had passed a course at technical college were affected more and more by employment cuts. Graduates from universities and polytechnics, on the other hand, were clear winners.

As clear gender-specific differences also emerge on examination of the labour market development, they are in addition discussed separately for men and for women.

Furthermore the sectoral structural change is focused upon as well as its considerable influence on these developments, as the employment crisis of the 1990s affected above all the manufacturing sector and a large number of jobs were lost there, whereas in the service sector new jobs were created, though only on a small scale. Then the changes in the distribution of the volume of work are shown, since they did not run the same course for all qualification levels either. The paper also looks into the question as to the extent to which the employment gains of graduates correspond to an increase in "inadequate" graduate employment.

The reunification of Germany was an event of historic dimensions. But the transition from the centrally planned economy of the former GDR to the social market economy took place in a radical manner and touched almost all spheres of life of eastern Germany's citizens. But even after 10 years of reunification the labour market remains split between the new and the old *Länder* - an indication that the economic and social transformation process is taking longer than was originally assumed. It is therefore necessary to discuss the current developments for eastern and western Germany separately.

The analyses are based firstly on the unemployment statistics². The microcensus³ (MC) was used to describe the developments in the field of employment. Unfortunately not all of the data needed for 1997 was available. For this reason the analysis period was divided into two periods: period one, for which all the information was available, is from 1991 to 1995; and period two from 1995 to 1997. This division makes it possible on the one hand to make a comparison on all levels of the

² Structure analyses by the Federal Employment Services (end of September each year).

³ The microcensus is a representative survey carried out annually by the Federal Statistical Office which covers 1% of all German households. (Source: Federal Statistical Office)

analysis, at least for period one, but also shows on the other hand the current development level wherever the data permit.

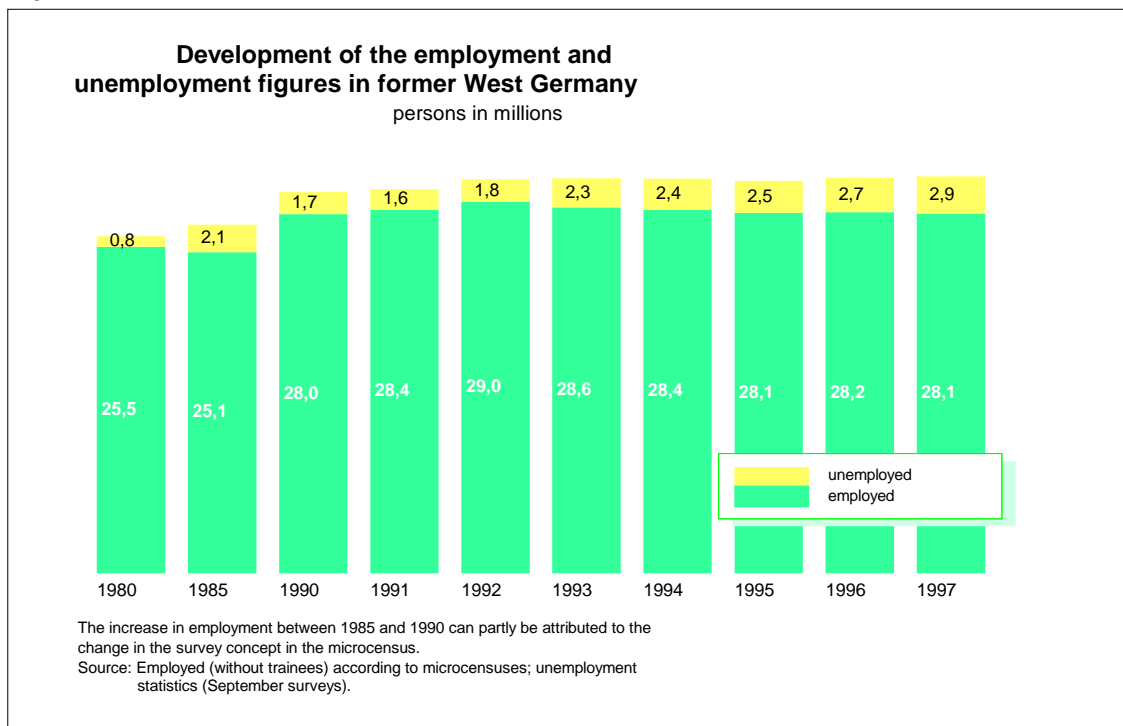
2. Western Germany

2.1 Long-term development of employment and unemployment

A historical relativisation is frequently useful for assessing current labour market situations. Thus Figure 1 first of all gives an overview of the long-term development of unemployment and employment.

According to the microcensus the number of employed (excluding trainees) in western Germany in 1991 stood at some 28.4 million. In the course of the employment crisis that began after that some 230,000 jobs were cut up until 1995. On the other hand the number of registered unemployed rose to a clearly stronger extent (880,000) than jobs were lost. This trend also continued. Between 1995 and 1997 there was a renewed increase in unemployment by 450,000, although the employment figures remained virtually unchanged⁴.

Figure 1



If one adds the employed and the unemployed together, then the size of the labour force (the labour supply) increased by almost 1.1 million people from 1991 to 1997. Key factors for this include, besides the increase in the labour force participation of women (cf. Engelbrech, Reinberg 1997), in particular increased immigration from abroad as well as changes of residence from the new to the old *Länder*. Between 1991 and 1995 alone on balance about 1.3 million immigrations

⁴ Here it must be taken into account, however, that changes in the question concept of the microcensus as of 1996 led to a sharp increase in the number of marginal part-time employment relationships (cf. Rudolph, H. 1998). In particular in the area of employment liable to social security contributions (excl. trainees) there was also a further drop of almost half a million between 1995 and 1997 (cf. Parmentier et al. 1998).

from abroad were registered in former West Germany and about 360,000 moves from eastern to western Germany (cf. joint authorship 1997). Although many found employment, this increased supply of labour could not be absorbed easily by the western German labour market, which resulted in a rise in unemployment.

It was therefore not only job losses that were responsible for the global imbalance on the labour market, but above all the expansion of the labour supply. As this general examination already shows, rising unemployment figures or rates can by no means be equated with employment losses. It also becomes clear, however, that a one-sided concentration on the number of unemployed for assessing the overall labour market situation is misleading.

In such tense phases the opportunities and risks for groups of people with different qualification levels on the labour market are redistributed, as is shown in the following.

2.2 Qualification-specific unemployment

The long-term development of the unemployment rates according to qualification levels provides initial information on the change in the structure of qualifications.

Digression:

What is understood by qualification here is successfully completed vocational training courses with formal certification. In this, the individual types of qualification stand in a hierarchical relationship to one another.

The lower end of the scale constitutes people with no training qualification (also known as low-skilled or "unskilled" people), followed by people with a qualification in a state-recognised training occupation, which can be obtained predominantly in the form of a company apprenticeship, or in some cases at full-time vocational schools (e.g. nurses or other occupations in the health and caring sector).

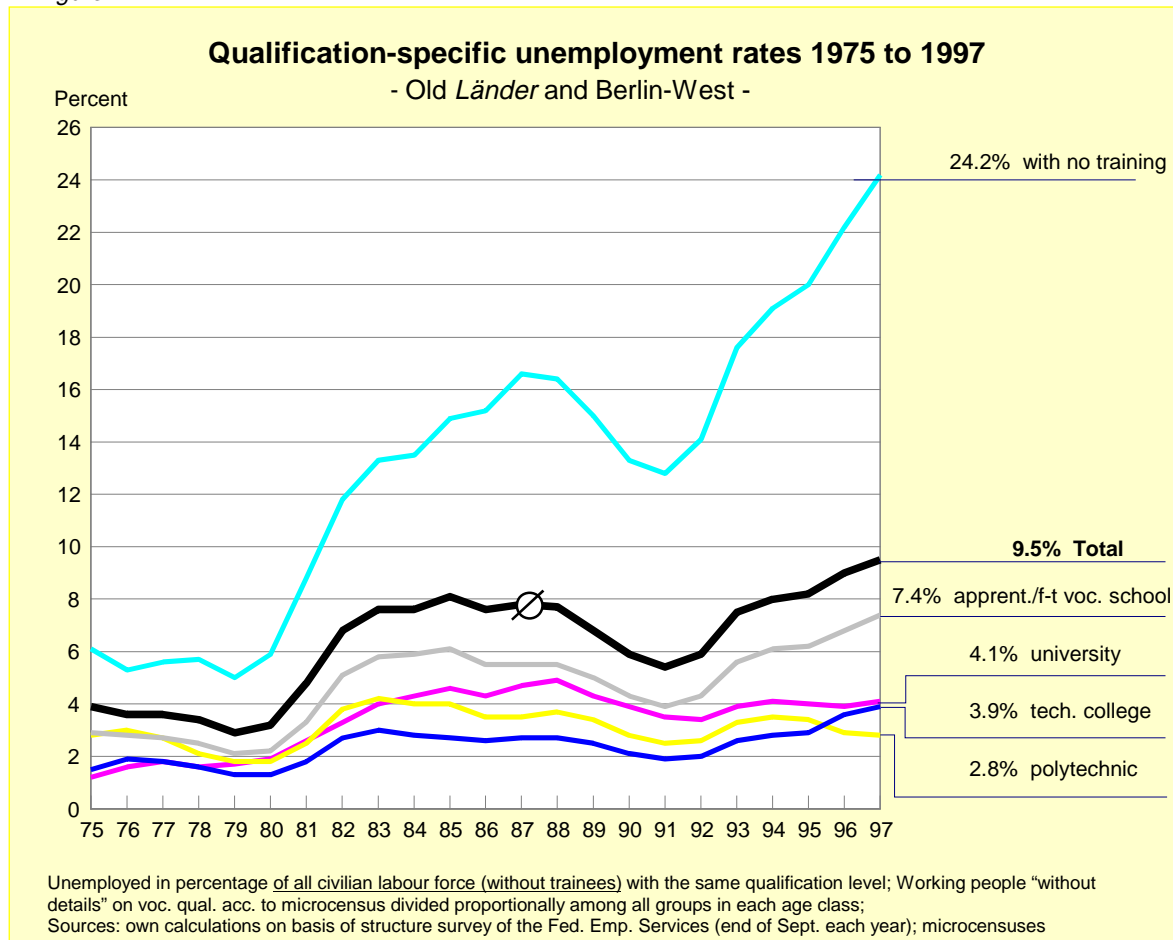
People with a qualification from a technical college mainly occupy middle management positions in companies (mainly master craftsmen and technicians, but also comparable positions in commercial and administrative occupations).

The higher education sector is divided into two levels: the polytechnics (Fachhochschulen) offer an application-related training (e.g. in engineering, computer science, but also in business administration or social education). The courses of study are shorter than those at universities and a polytechnic qualification does not generally permit continuation of studies to doctorate level. At the upper end of the scale there are university and college graduates, whose qualifications are predominantly gained at universities (incl. universities of technology, medicine and education etc.) or at academies of art and which permit direct access to doctorate studies. Comprehensive information on the German education system can also be obtained from the website of EURYDICE under the address: <http://www.eurydice.org/Eurybase/Files/DEVO/tc2DEVO.htm>.

What becomes clear is that qualifications become the individual's decisive competition factor in the employment crisis. The lower the vocational qualification, the poorer the position on the labour market.

People without a vocational training qualification have by far the greatest labour market risk (Figure 2). Though the unemployment rate for this group had already more than tripled between 1980 and 1995 (from 5.9% to 20.0%), there was a further increase up until 1997. In the meantime almost one in four "unskilled" workers in western Germany is jobless (24.2%).

Figure 2:



In comparison with this, unemployment in all the other qualification levels remained below average.

Nevertheless, recently the labour market positions of the groups "apprenticeship" and "technical college" have also deteriorated increasingly. The gap between the apprenticeship/full-time vocational school level and the two graduate groups, which remained relatively constant until 1992, grew clearly from 1993 onwards. In 1997 the unemployment rate of this group reached its highest level since 1975, at 7.4%. The same can be said of those successfully completing courses at technical colleges, who had always shown the lowest jobless rates until the mid-1990s. These rates have, however, risen sharply since 1996 (1.9% in 1991; 3.9% in 1997).

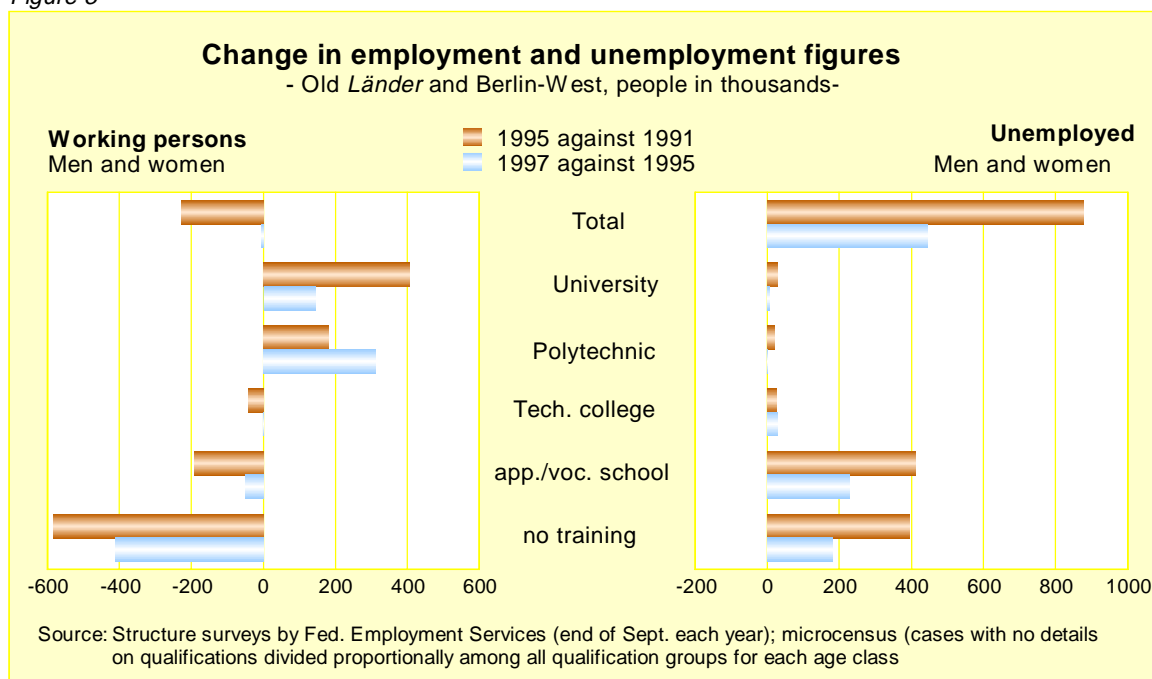
The two groups with higher education qualifications did most favourably. In the case of graduates of polytechnics the unemployment rates have even fallen in recent years (from 3.4% in 1995 to 2.8% in 1997) and in the case of university graduates the rates stabilised at a level of about 4%. (1997: 4.1%).

2.3 Labour market balance of various qualification levels

The unemployment rates of the individual training levels constitute an important indicator for the change in the qualification structure on the labour market. However, they do not give an insight into the underlying absolute changes in the working population and the unemployment figures. Figure 3 shows the balanced changes among the working population and the unemployed, differentiated according to qualification levels for two periods - the first period from 1991 to 1995, and the second from 1995 to 1997.

What is obvious first of all is that the labour market for graduates has developed positively compared with all of the other qualification levels. Whereas neither the jobless figures for polytechnic graduates nor those for university graduates increased noticeably, in both of the periods they were able to make clear employment gains. In spite of the employment crisis, therefore, the employment system remains in the position to absorb the increased number of graduate workers. In addition to this, industry has very recently been lamenting a lack of workers at least for some graduate occupational fields (e.g. computer scientists, mechanical, electrical and electronic engineers) - an indication of the fact that the full capacity of the labour market to absorb graduates has not yet been reached (cf. Schreyer 1999).

Figure 3



In both of the comparison periods, employment losses occurred in the middle qualification levels. They were lower, however, than the increase in the number unemployed. This is particularly true of the apprenticeship/full-time vocational school group, which is the strongest in numerical terms, but at least in the second period it applies to the technical college level, too. The unemployment rates of these qualification levels have therefore not only risen in recent years because of job cuts but also because the labour supply in this category (number of economically active people) has grown⁵.

⁵ At least until the mid-1990s the labour supply increased as a result of an influx of resettlers of German origin and migrants from former East Germany, a considerable number of whom can be classed in this middle qualification group.

The picture is completely different for the "unskilled". In both of the periods together this group lost almost 1 million jobs. On the other hand, the growth in the number of unemployed remained, at just under 600,000, clearly below the employment losses. Taken together, these two components show that the number of economically active people without formal vocational training fell clearly in both periods. If, however, the supply of labour falls and the unemployment rates nevertheless rise, it becomes clear that the capacity of the labour market to absorb workers without formal qualifications is decreasing. This results in "unskilled" workers who have been made redundant not only moving into unemployment but also increasingly joining the hidden labour force or leaving the labour force altogether. Just how precarious the situation has become in the meantime also becomes clear from another perspective. In September 1997 almost half of all the registered unemployed in western Germany (46%) had no formal vocational qualification, although this group now makes up only about 18% of the total labour force.

What else is obvious is that the structural changes in both of the periods proceeded in a very similar way. The two periods differ only regarding level. This can of course be explained in the main by the different length of time that they describe. For period one is almost twice the length of period two. Apart from this and apart from changes in detail, the basic development directions of the change in the qualification structure in the employment system were noticeably stable in both periods.

2.4 Gender-specific labour market developments

A gender-specific analysis of the labour market development shows that in western Germany there was a regrouping of men and women in the area of overall employment. Whereas men had to take definite employment losses in both periods, the women were able to notch up gains (cf. Figure 4). At the same time the number of registered unemployed rose clearly for both men and women. These developments led to the gender-specific unemployment rates converging. Whereas on the whole the female jobless rate increased by about a third between 1991 and 1997 (from 6.3% to 9.8%), the male jobless rate virtually doubled in the same period of time (from 4.8% to 9.3%; cf. annex 1).

Although among the "unskilled" there were only losers, the employment cuts affected women in particular. The rise in the number of unemployed was clearly lower than the losses in employment in return. This fact also shows, however, that the supply of labour decreased above all among the unskilled women.

Graduates had to accept a comparatively moderate increase in unemployment in both of the periods. Here both women and men were able to chalk up clear employment gains in the two periods. In this respect the segment of the highly qualified was the only one to record positive developments for both sexes in the employment crisis.

Figure 4



Contrary gender-specific developments occurred, however, in the middle qualification levels. Whereas women with an apprenticeship/full-time vocational school qualification were able to gain jobs in both periods, men had to accept considerable job losses. Although the number of unemployed females also went up in both periods, the rise was not as high as the figure for men. To a limited extent this also applies to the technical college level. Consequently, besides graduates, women who had completed an apprenticeship or had passed a course at full-time vocational school count among the winners of the labour market turbulences of the 1990s, at least as far as the labour market balance is concerned.

One reason for women doing comparatively well lies in the structural shift from the manufacturing sector to the service sector. The decline in employment affected above all industries in which predominantly men work. Conversely women are traditionally more strongly represented in the growing service sector. Thus the number of jobs in the manufacturing industry (including construction) fell by some 15% between 1991 and 1997, whilst employment grew by 12% in the service sector.

A further reason can be seen in the stronger shift from full-time to part-time jobs (cf. Federal Statistical Office, various years), since part-time employment continues to be a women's domain. Thus the part-time rate among men stood at a mere 4.2% in 1997, that of women on the other

hand stood at 39% (cf. *ibid.*). The largest employment gains were however achieved in the part-time sector. However, what is responsible for this development - according to the German Institute for Economic Research (DIW) - is not necessarily "... a systematic decline of full-time employment. It is far more the case that the 'regular employment relationship' - measured by the entire labour force - is losing importance because the activity rate is increasing and more and more of the previously non-active population are pursuing part-time work" (DIW-Wochenbericht 1998, p.807).

2.5 Qualification-specific labour market balances and sectoral change

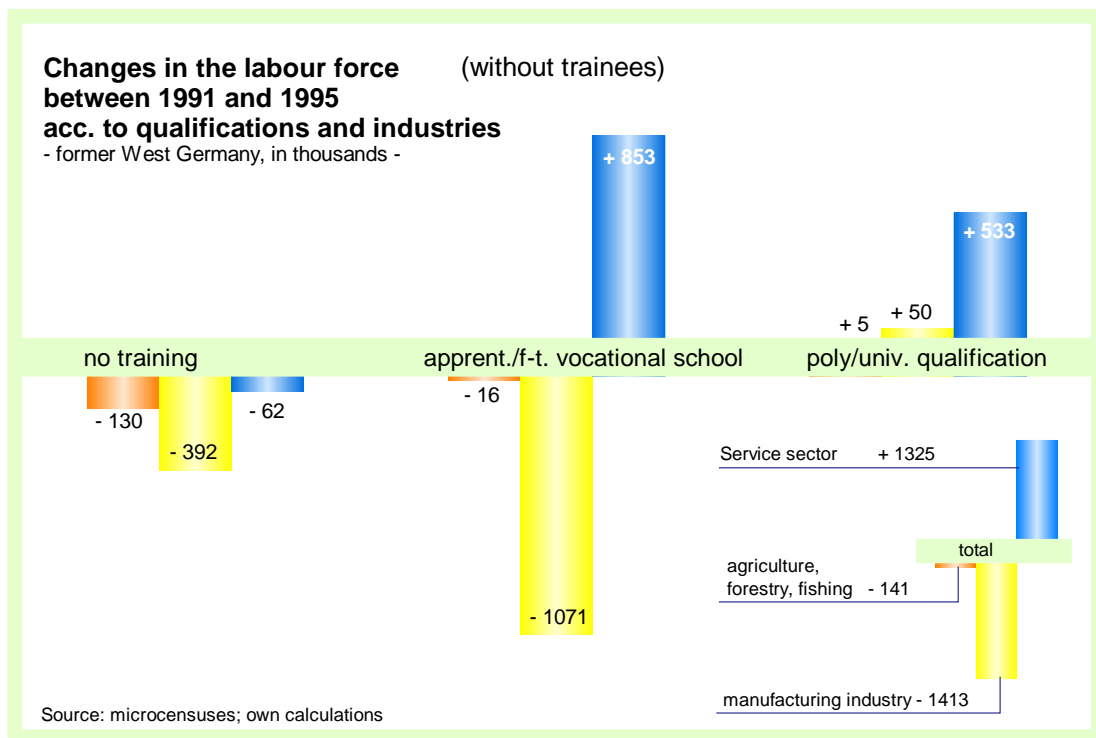
The changes in the qualification structure of the labour force are connected with the changes in the sectoral structure. Between 1991 and 1995, a total of 140,000 jobs were lost in agriculture and forestry (primary sector) and a further 1.4 million in the manufacturing industry (secondary sector), whereas conversely in the same period employment gains amounting to 1.3 million jobs could be chalked up in the services sector (tertiary sector) (Figure 5). It was only by means of the gains in the tertiary sector that the employment losses could be held in check in the balance, at 230,000 people.

These sectoral shifts in emphasis led, however, to very different results in the various qualification groups.

The main people affected by this development were workers without formal vocational training, those who had completed a company apprenticeship and those who had passed a technical college course. They lost some 1.6 million jobs in manufacturing, agriculture and forestry together. Nevertheless, an important difference can be ascertained between these groups. Whereas the "unskilled" lost jobs in all sectors, the high employment losses of almost 1.1 million jobs in the primary and secondary sectors among those who had completed an apprenticeship and those who had attended technical college were compensated for at least in part by employment gains in the service sector (+853,000).

The sectoral structural change had a decidedly favourable effect on graduate employment, however. Graduates of polytechnics and universities gained jobs in all branches of the economy, but in particular in the service sector (+533,000), in which 78% of all higher education graduates were already working in 1995. But even in the manufacturing industry, which was badly affected by the crisis, they were able to gain at least 50,000 jobs - in contrast to all the other qualification groups.

Figure 5



Interesting developments on the graduate labour market can also be seen with regard to the employment forms. Seen in absolute terms, the job gains were still concentrated on the area of dependent employment, but on the other hand there is an increasing number of graduates starting up their own businesses. Between 1991 and 1995 the number of self-employed graduates rose by 145,000. This means that almost a quarter of all gains in the area of graduate employment could be attributed to business start-ups. In contrast with this the leap into self-employment played hardly any role among all the other qualification groups (balanced: +7000).

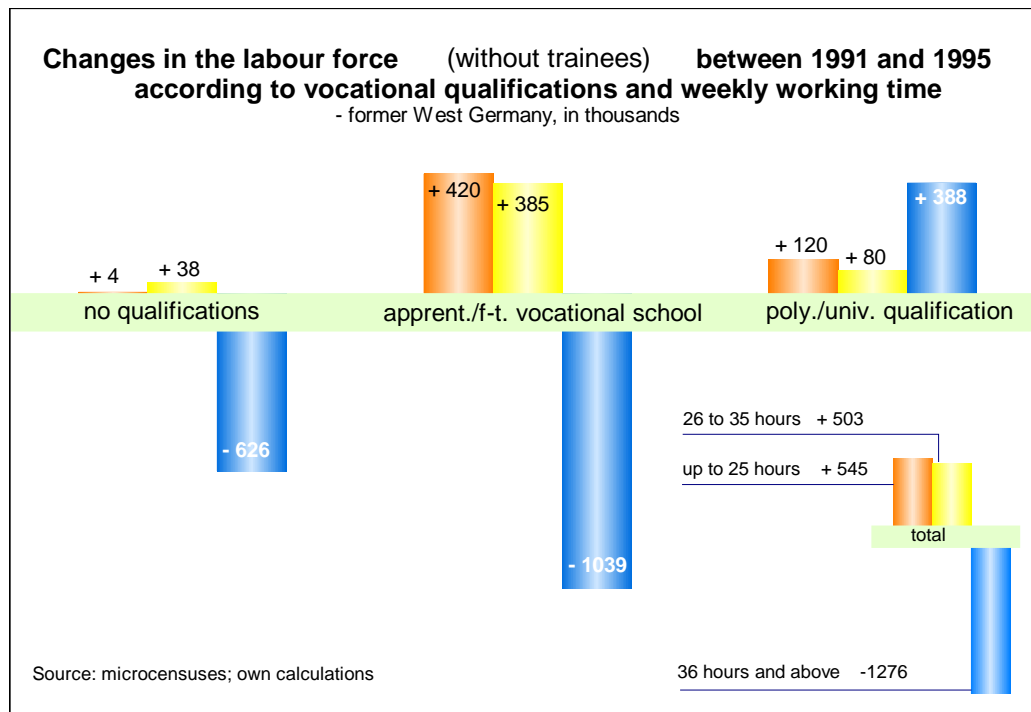
2.6 Qualification-specific employment balances according to working time

The employment balances discussed so far always referred to jobs or holders of jobs. Especially in recent years a demand for more part-time work has frequently been expressed for the fairer distribution of a shrinking volume of work and for an improved compatibility of family and occupation. In this respect the question comes to mind as to whether the employment balances discussed so far, which are person-related and qualification-specific, do not portray a distorted picture because they fail to take into consideration the different distribution of the volume of work over the individual qualification levels. It is therefore necessary to take into account the changes in working time when calculating the balance.

Unfortunately the data material used does not permit a clear differentiation between full-time and part-time work, because the standard working week is regulated very differently in the individual branches of the economy. Thus for instance in the metal and electrical industries the 35-hour working week was already introduced years ago as the collectively agreed standard working week. In spite of all the lack of clarity it is possible to recognise at least the trend in the

restructuring of working time by means of the data material classified according to weekly hours of work (cf. Figure 6).

Figure 6



As concerns the "unskilled" it was almost exclusively jobs with a long working week that were lost, probably in particular full-time jobs (36 hours and above: -626,000), which were not even approximately compensated for by gains in the part-time sector. This means that the unskilled lost even more volume of work than is expressed in the person-related employment balances.

Workers with an apprenticeship or technical college qualification, too, lost the most in the class "36 hours and above" with more than 1 million job losses. But unlike the low-skilled they were able to achieve gains at least in part-time employment (up to 25 hours: +420,000) and in the mixed class "26-35 hours", which is not clearly delimitable (+385,000). Nevertheless it must be pointed out that, referring to the volume of work, this qualification segment, too, had to accept heavier setbacks than is expressed by the job balances. This change in the structure of working time affected predominantly women. They lost above all full-time jobs in the manufacturing industry and gained mainly part-time jobs in the service sector (cf. Engelbrech, Reinberg 1997).

Graduates mainly gained full-time jobs (36 hours and above: +388,000), but were also able to reinforce their position in the part-time sector (up to 25 hours: +120,000) and in weekly working times of 26-35 hours with +80,000. This means that in contrast to all the other comparison groups, those with higher education gained clearly more in volume of work than the person-related job balances show.

When taking the volume of work into account, the gap in the employment balances between the lower and the upper qualification levels diverges even more widely than has been shown so far.

2.7 Development of graduate employment that is adequate for the qualification level

As shown, the growing number of university graduates in recent years has led to a continuous increase in the size of the graduate workforce. An explanation pattern often expressed in this connection implies that as a result of the high degree of underemployment, graduates press for jobs that do not necessarily require a higher education qualification or in other words: underemployment triggers off a displacement competition from "top" to "bottom".

Let us look into this thesis in the following.

If increased displacement processes were responsible for the change in the qualification structure on the labour market of the nineties, then this would have become noticeable in a distinct increase in "inadequate" graduate employment. Analyses by Büchel and Weißhuhn⁶ which use data from the socio-economic panel to estimate for the period 1984-1995 the extent of employment of polytechnic and university graduates which is inadequate for the qualification level speak more against this thesis at least for western Germany. Although the proportion of inadequately employed western German graduates rose slightly between 1991 and 1995 from 13.7% to 14%, this small increase of 0.3 percentage points can hardly explain the considerable employment gains of over 400,000 among graduates in this period.

Despite certain deficiencies in clarity the microcensus also provides some important indicators in explanation, such as for example the position in the company and the income. Although the employment gains of graduates were concentrated mainly on middle company positions and not on the management levels, contrary to popular opinion middle positions within the company hierarchy are not in any way contradictory to academic job contents. On the one hand there are graduate occupations for which managerial functions are rather atypical, such as a teacher or a judge; on the other hand for graduates entering the workforce their career usually begins in such middle positions in the company whilst managerial functions can generally only be attained after many years of work experience (cf. Plicht et al 1994). In addition to this the newly created graduate jobs are by no means badly remunerated. The analysis of changes according to net monthly income shows more that the greatest gains were achieved in the uppermost income bracket of DM 4500 and above (cf. Reinberg 1997).

Thus the present results at least do not give any obvious indications of any considerable expansion of graduate employment that is inadequate for the qualification level. It is more the case that the employment gains among graduates seem to be concentrated on the middle company positions and quite well-paid jobs. This means that in explanation of the change in the structure of qualifications on the western German labour market, displacement processes in a downward direction played more of a subordinate role.

⁶ cf. Büchel, Weißhuhn 1996

3. New Länder and Berlin-East

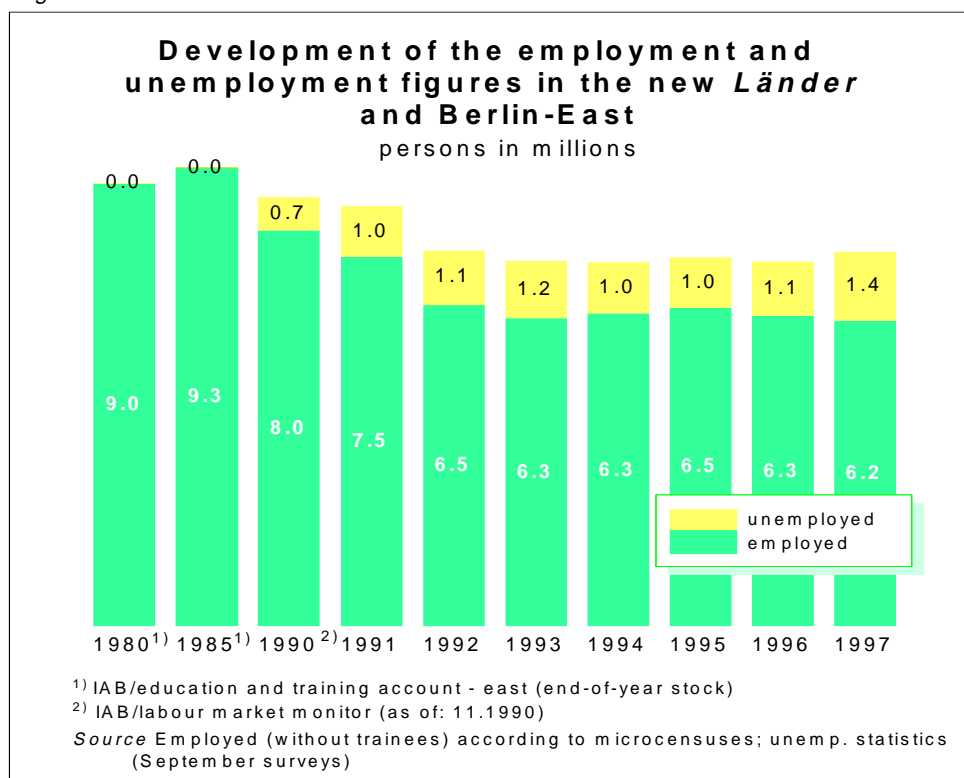
After the German reunification the transition from the centrally planned economy of the former GDR to the social market economy took place in a radical manner. It touched practically all areas of life of the citizens in the new *Länder*, not least though the labour market. The initial euphoria of bringing the living conditions in the East into line with those of the West in a comparatively short time is in the meantime giving way to the view that it is probably more a case of long-term processes. And this is trying the patience of eastern Germany's citizens, as the following accounts prove.

3.1 Development of employment and unemployment after reunification

In the former GDR the level of employment was determined considerably by the demographic development as a result of the political constitution. Though unemployment existed formally, it was quantitatively insignificant (cf. Fischer et al 1993). The labour force participation of women was also markedly high. The female activity rates stood at over 90% in the eighties (cf. Friedrich Ebert Stiftung 1987).

The level of employment was correspondingly high. In 1980 nine million GDR citizens were in work (Figure 7), in 1985 already 9.3 million and just before the fall of the Berlin Wall, in September 1989, the employment figure stood at 9.6 million (cf. Bielenski 1991).⁷

Figure 7



But already shortly before reunification the first repercussions of the economic transformation process were noticeable. By the end of 1990 the number of people in gainful employment had

⁷ This includes an estimate value of about 0.7 million employed people who were classified in the so-called X sector (police, military and national security organs) and were not shown in GDR statistics.

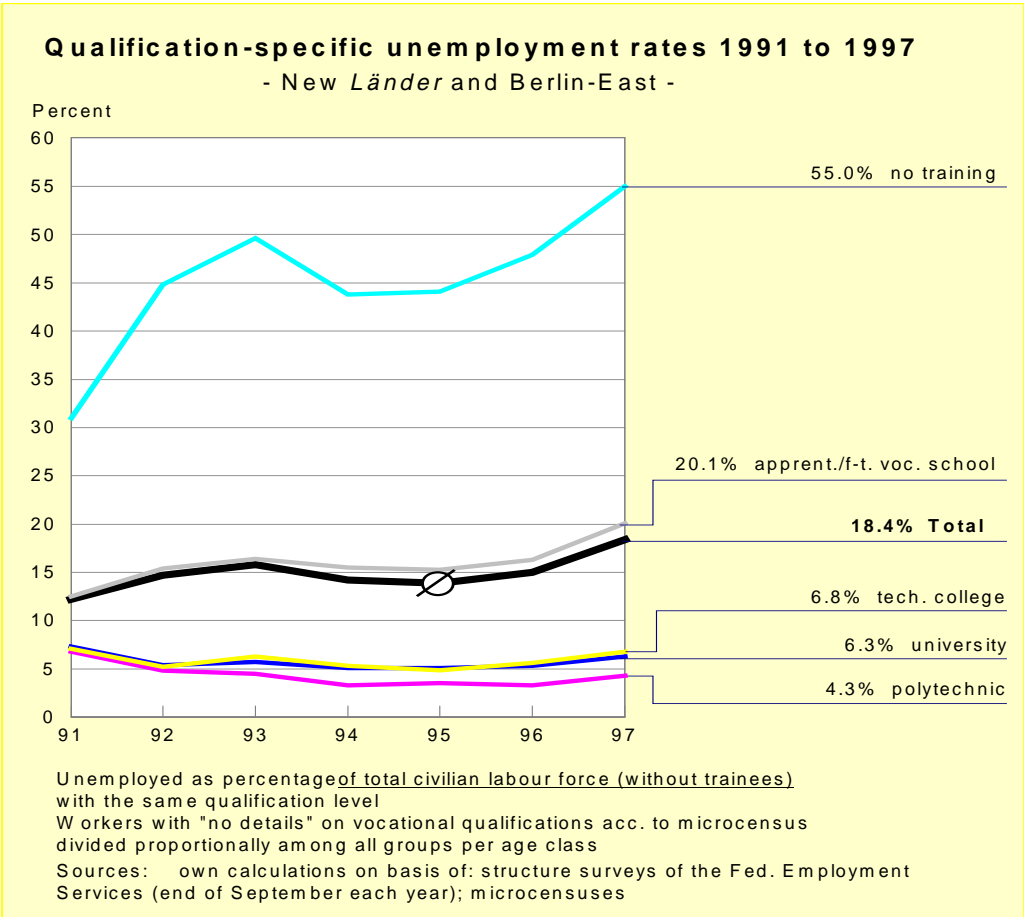
fallen to 8 million. At the same time unemployment occurred on a larger scale for the first time (670,000). As early as the following year a further 500,000 jobs were lost, combined with a rise in unemployment to some 1 million people. The number of economically active people levelled off at the low level of 6.2 million by 1997, whilst unemployment rose to over 1.3 million in 1997.

So much on the developments of the former GDR. The focus of this paper, however, is the absolute figures of the labour market balances since reunification and they have developed quite differently in the two parts of the country.

3.2 Qualification-specific unemployment

Along the development of the qualification-specific unemployment shows that there continues to be a gap between the labour markets of western and eastern Germany. Although the order in which the qualification groups in the East are affected by unemployment are largely identical to those in the West, the gaps between the individual qualification groups are not the same. In 1997 the overall unemployment rate in eastern Germany was, at 18.4%, almost double that in the West (9.5%). The greater degree to which unemployment affected people can be seen at all qualification levels, in particular though among those without formal qualifications (Figure 8).

Figure 8



More than half of all economically active people without vocational training (55%) were out of work in 1997. Two years previously it was 44.1%, in 1991 the rate stood at just 31%.

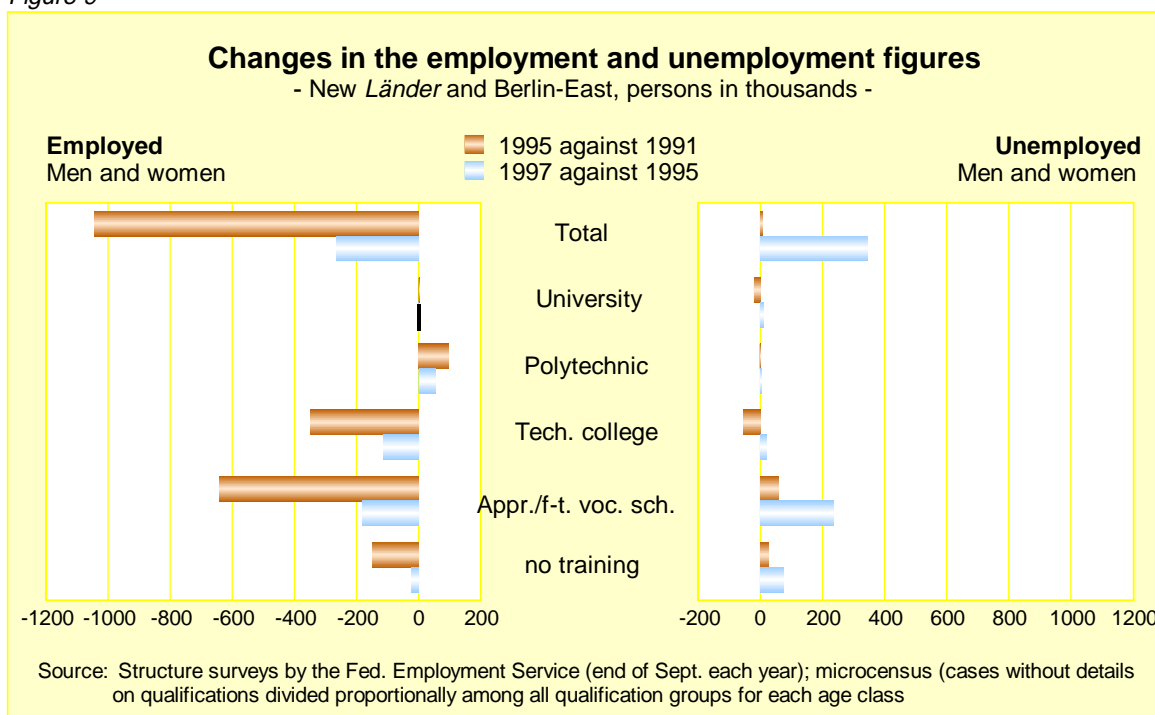
The level apprenticeship/full-time vocational school is affected to a clearly overproportionate extent. Between 1995 and 1997 their rates grew from 15.3% to 20.1% (1991: 12.5%).

The rest of the groups then follow with a clear gap. The rate of the technical college level stood at 6.8% in 1997, that of university graduates at 6.3%. Like in western Germany it was also eastern Germany's polytechnic graduates who, at 4.3%, were least affected by unemployment. What the three last-mentioned groups have in common is that their rates remained comparatively stable in recent years or even fell slightly.

3.3 Labour market balances of various qualification levels

In order to assess the actual events on the labour market it is important particularly in the new *Länder* to interpret the development of the unemployment rates against the background of the employment and unemployment figures. Between 1991 and 1995 the employment figure in eastern Germany fell from 7.5 million to 6.5 million. In the same period unemployment hardly changed though. The supply of labour (economically active people plus the unemployed) fell by about 1 million in this period.

Figure 9



Also between 1995 and 1997 the employment cuts continued, although they had slowed down distinctly. But unlike in the first period there was now a clear increase in unemployment. What contributed to this was not least the cutting back of employment and training measures from 1996.

In both of the observation periods the job losses fell heavily almost solely on the lowest and the two middle qualification levels (Figure 9). The level apprenticeship/full-time vocational school was the one hardest hit by the employment cuts, followed by people with technical college qualifications and those with no formal qualifications. Almost the entire increase in the number of unemployed in the second period was supplied by just these three qualification levels.

Also between 1995 and 1997 only university and polytechnic graduates escaped the employment cuts. Of the two graduate groups in particular polytechnic graduates were able to gain jobs again. Like in the first half of the decade the rise in unemployment among graduates remained very limited even after 1995.

The causes for the serious decrease in the labour force, which continued into the mid-1990s in the new *Länder*, could be found mainly in a large number of people moving to western Germany, in a reduction in the labour force participation of eastern German women, in older workers taking advantage of early retirement regulations, in the intensive use of employment and training measures and not least in a rapid increase in the participation of young eastern Germans in education and training.

Some of these factors that characterised the phase of radical change have ceased to apply since the mid-nineties. The wave of moves to western Germany has subsided, the early retirement regulations have for the most part ended, active employment and training measures have been cut back clearly, the employment inclination of eastern German women remains high and still lies above that of western German women. And the participation of young people in education and training has already risen above the level in the West.

For these reasons there is probably no reason to expect another clear reduction in the labour supply in the coming years, such as the one which was still easing the pressure on the eastern German labour market considerably until the mid-nineties (cf. Fuchs 1998).

3.4 Gender-specific labour market development

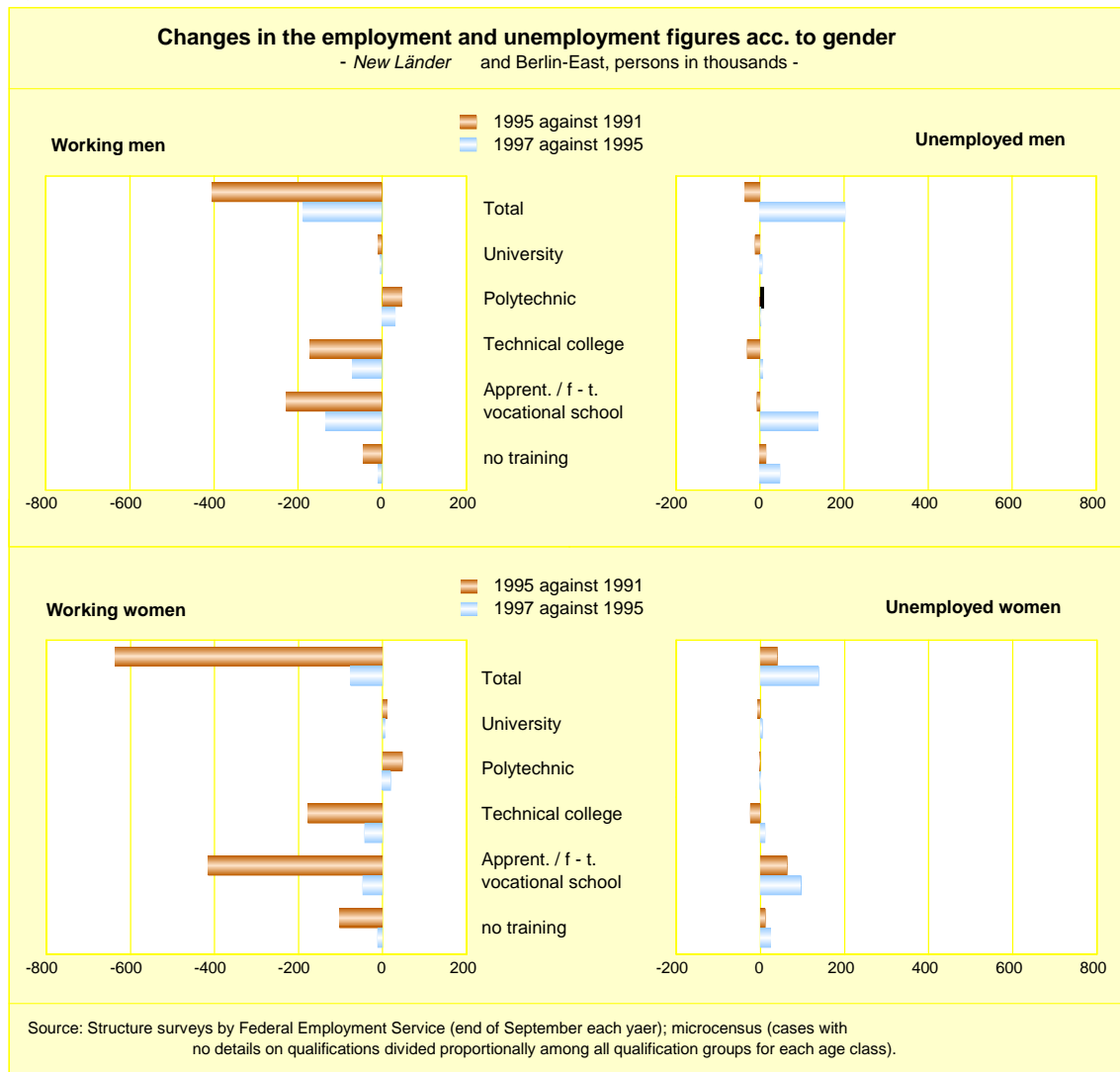
Until as late as the mid-1990s women were hit to an overproportionate extent by the decline in employment following the fall of the Berlin Wall. Between 1991 and 1995 they bore a good two thirds of the entire decline in employment which amounted to a total of about one million.

In the second period there were indications that the tension on the labour market was easing slightly for women in the new *Länder*. Since 1995 more men than women have lost their jobs in eastern Germany, too, which led to a definite increase in unemployment in particular among men (cf. Figure 10).

Nevertheless, very little has changed in the unequal gender-specific labour market risk. In 1997, too, the female unemployment rate, at 22.4%, was still clearly higher than that of men (14.8 percent; annex 1).

However, these developments that were different as regards gender-specific matters did not affect all qualification levels. At least until 1995 women in the middle and lower qualification levels were the clear losers of the crisis. In the segment apprenticeship/full-time vocational school alone they lost almost twice as many jobs as men in this period. A comparable disparity can also be seen among the "unskilled". At technical college level the employment losses among men and women roughly balanced each other; and in the area of graduate employment women and men participated in the gains to an equal degree.

Figure 10



Also the change in the trend after 1995 was concentrated on the middle and lower qualification levels. In the two middle qualification levels it was now above all men's jobs that were the victims of the employment crisis. In the segment of "workers without formal qualifications" the reduction of employment relationships, which had affected women in particular up until 1995, slowed down considerably. Among the men the unemployment stocks also built up more intensively in the second period than they did among women.

A comparison of the two periods makes clear that at least shortly after the fall of the Berlin Wall the structural change in eastern Germany triggered off an increased displacement competition between men and women. Until the mid-1990s women lost more than half of all jobs not only in the manufacturing sector; they were also unable to maintain their position in the previously "female" service sector for which men were now pressing increasingly.

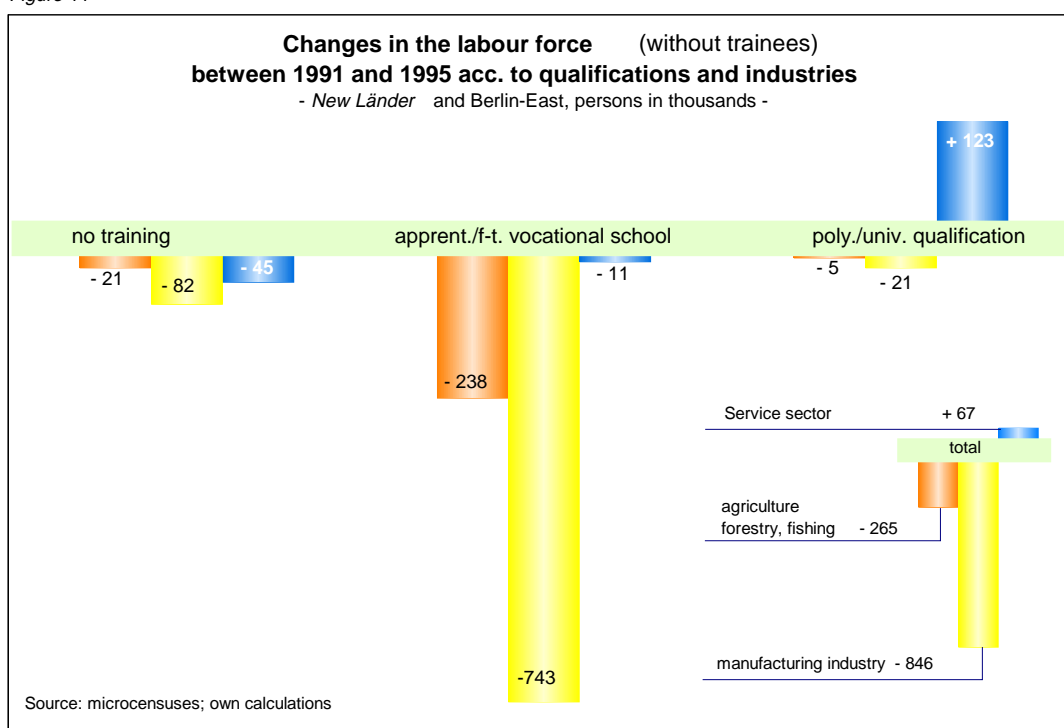
It is only since the mid-nineties that the burdens of the economic transformation process in the new *Länder* have hit both sexes roughly equally hard. The employment losses in the manufacturing industry now concentrated on men. The growths in the service sector, which were small anyway, were allotted almost equally to men and women. In view of rather bleak future

prospects for eastern Germany's labour market, we can only hope that no new displacement competition falling heavily on women will begin, since their labour market situation is already more than tense with an average unemployment rate of over 22% in 1997.

3.5 Qualification-specific labour market balances and sectoral change

Like in former West Germany the employment losses were concentrated in eastern Germany, too, in the manufacturing sector (secondary sector) and in agriculture and forestry (primary sector). In both of these sectors of the economy together more than 1.1 million jobs were cut between 1991 and 1995. But unlike in western Germany the service sector (tertiary sector) did not have enough momentum to compensate decisively for the considerable job losses in the primary and secondary sectors of the economy. The balance of gains and losses in the service sector here was a mere +67,000 (Figure 11).

Figure 11



The group with no vocational qualifications and that of apprenticeship/full-time vocational school lost altogether in all economic sectors just over 1.1 million jobs, mainly in the primary and secondary sectors. In addition to this they also had to accept job losses in the service sector. Any compensation for the job cuts in the manufacturing industry resulting from the shift towards a service society thus passed by these qualification groups.

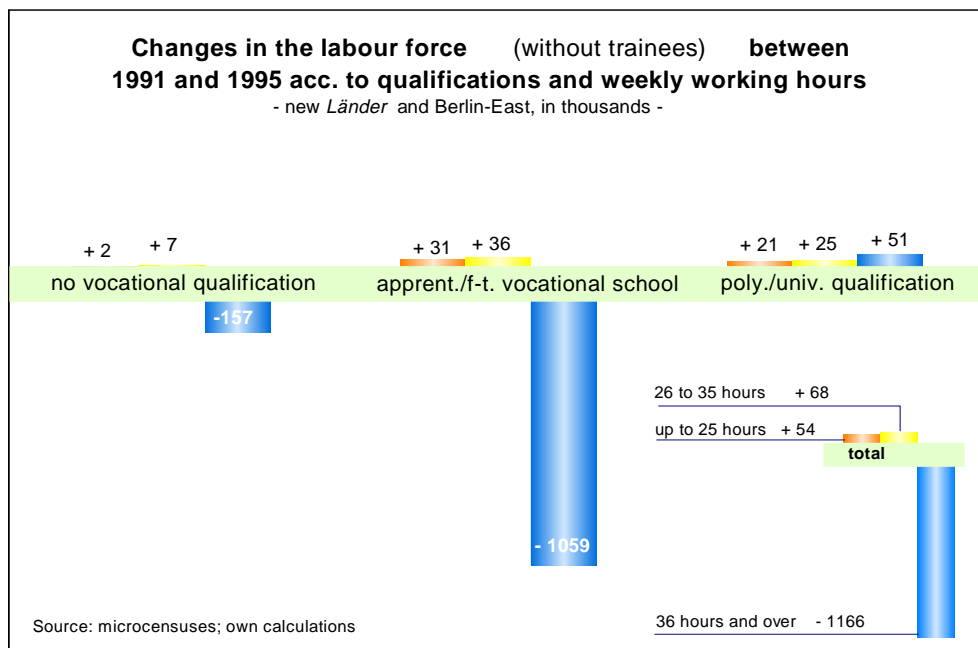
In contrast to all the other qualification levels, workers with higher education qualifications not only escaped the drastic employment losses in the primary and secondary sectors to a large extent, they were even able to gain another 123,000 jobs in the service sector. In eastern Germany, of all the qualification groups only graduates benefited in numerical terms from the expansion of the service sector.

Also as far as becoming self-employed is concerned, the picture is similar to that in the West, as the greatest employment gains among eastern German graduates can be attributed to business start-ups (+75,000). Thus 55% of all new business start-ups in eastern Germany between 1991 and 1995 were ventured by graduates. This circumstance is all the more remarkable as graduates made up a mere 15% of overall employment in 1995.

3.6 Qualification-specific employment balances according to working time

For the new *Länder*, too, it is necessary to look into the question as to whether the qualification-specific labour market balances discussed so far, which are linked to employment figures, are still valid when taking into consideration the volume of work. Figure 12 shows the profit/loss calculation according to working time classes for various qualification groups.

Figure 12



Here the following picture emerges:

Unskilled workers lost almost exclusively full-time jobs (36 hours and above: -157,000). In comparison with this the job gains in the two lower working time classes (up to 25 hours and 26 to 35 hours) are quantitatively rather insignificant with +2000 and +7000 respectively. This means that in eastern Germany, too, this group lost far more volume of work than the person-related employment balances express.

A comparable picture can be seen for workers who have completed an apprenticeship or passed a course at full-time vocational school. They lost a total of 1.06 million full-time jobs between 1991 and 1995. But unlike in the West this qualification group was not able to compensate even approximately for the considerable losses in full-time employment with an increase in part-time employment. The plus of jobs in the delimitable part-time sector of up to 25 working hours per week did just as modestly, with +31,000, as the employment gains in the hard-to-delimit full-time / part-time class of "26 to 35 hours" (+36,000). As regards the losses in volume of work, in eastern Germany people who had completed an apprenticeship or passed a course at full-time

vocational school were consequently the main losers of all the comparison groups in the whole of Germany.

The opposite is found among the two graduate groups. They gained clearly more volume of work in eastern Germany, too, than the person-related job balances show, since they were able not only to gain 51,000 full-time jobs, but also to strengthen their lead in the two lower working time classes.

3.7 Development of graduate employment that is adequate for the qualification level

For eastern Germany there is some reason to believe that the comparatively favourable labour market position of graduates could only be achieved at the expense of a growing share of "inadequate" employment.

For instance Büchel and Weißhuhn⁸ detect a clear increase in the number of university graduates in employment for which they are overqualified from 19.3% to 28.5% between 1991 and 1995. However, the authors rightly point out that these findings can only be compared partly with the western German labour market situation. In the new *Länder* the problems associated with the quantitative delimitation of inadequate employment are always also mingled with the question as to the extent to which the vocational qualifications acquired during the times of the GDR were still usable under market economy conditions. Although it is hardly possible to distinguish the two components clearly, on the other hand alone the extent of this development at least until the mid-nineties suggests increased displacement processes from top to bottom.

The results of the microcensus, too, point in the same direction. Thus eastern German graduates were only able to achieve employment gains in the lower half of the company positions, whereas they had to accept job losses in the higher positions (cf. Reinberg 1997).

4. Summary

In Germany it has been true for years that the lower the formal vocational qualification level, the poorer the position on the labour market. Whilst university and polytechnic graduates were able to gain jobs continuously in the nineties, the labour market chances of people without a vocational training qualification deteriorated constantly. In 1997 almost one in four people with no vocational qualification was out of work in western Germany, and the figure for eastern Germany was already more than one in two. But also the middle qualification levels are being more and more seriously affected by employment cuts. These fundamental development directions in the change in the qualification structure in the employment system proceeded in a noticeably stable manner and are identical in the old and the new *Länder* to a large extent.

The changes in the qualification structure of the labour force are connected with the change in the sectoral structure. The employment crisis of the nineties affected the manufacturing sector in particular. Alone in western Germany about 1.4 million jobs were lost in this sector of the economy between 1991 and 1995, with another 850,000 lost in the new *Länder*, and this was almost solely at the expense of the lower and middle qualification levels. In the same period the service sector in western Germany recorded gains of a good 1.3 million jobs. People who had completed an apprenticeship or passed a course at full-time vocational school were also able to participate in this growth, but measured by overall employment, graduates benefited most from it. It was different in eastern Germany: there the development in the service sector did not have

⁸ Cf. Büchel, Weißhuhn 1996

enough momentum to balance out the considerable job losses in the manufacturing industry even to a small extent. It was almost exclusively graduates who benefited from the employment increases in the service sector, which were only small anyway.

Particularly in recent times the demand is being heard for more part-time employment in order to distribute more fairly a shrinking volume of work as well as to improve the compatibility of family and occupation. In this respect one cannot help asking whether a different picture would emerge of the employment balances of the different qualification levels if the volume of work were taken into account. Between 1991 and 1995 part-time work increased considerably in western Germany, but only slightly in eastern Germany. Also these developments did not proceed equally for all qualification levels. Whereas unskilled workers and people with a vocational training qualification mainly lost full-time jobs and were only able to gain part-time jobs on a smaller scale, graduates made gains predominantly in the full-time sector, but also in part-time employment. This means that when taking into consideration the volume of work the discrepancies between the upper and lower qualification levels grow even wider than is expressed by the person-related job balances.

If this labour market development is considered according to gender-specific aspects, then it can be ascertained that in the old *Länder* the situation of the men on the labour market has deteriorated considerably. Whereas they have had to accept employment losses since 1991, women are recording gains, above all in the middle qualification levels. As a consequence of these developments the unemployment rates of men and women in the west are at virtually the same level. In the new *Länder*, on the other hand, the decline in employment after reunification fell most heavily on women, at least until the mid-nineties. This trend has reversed in the meantime, however. After 1995 the loss of jobs affected above all men with an apprenticeship or a vocational college qualification. Nevertheless women continue to be far more seriously affected by unemployment than men.

For the two parts of the country there are different answers to the question as to the extent to which the employment gains of graduates correspond to an increase in "inadequate" graduate employment. Formulated cautiously, the present results are in favour of answering the question positively for eastern Germany. But this does not apply to western Germany where the present results do not give any noticeable indication at least of a great expansion of graduate employment that is unsuited to the qualification level.

5. References

Amtliche Nachrichten der Bundesanstalt für Arbeit: Verschiedene Jahrgänge

Autorengemeinschaft (1997): Der Arbeitsmarkt 1996 und 1997 in der Bundesrepublik Deutschland. Mitteilungen aus der Arbeitsmarkt- und Berufsforschung 1/1997.

Autorengemeinschaft (1998): Der Arbeitsmarkt in der Bundesrepublik Deutschland in den Jahren 1997 und 1998. Mitteilungen aus der Arbeitsmarkt- und Berufsforschung 1/1998.

Bielenski, H., v.Rosenblatt, B. (1991): Arbeitsmarktmonitor für die neuen Bundesländer. Umfrage 11/90 - Textband -. BeitrAB 148.1. Nürnberg.

Büchel, F., Weißhuhn, G. (1996): Ausbildungsinadäquate Beschäftigung der Absolventen des Bildungssystems. Berichterstattung zu Struktur und Entwicklung unterwertiger Beschäftigung in West- und Ostdeutschland. In: Wirtschaftswissenschaftliche Dokumentationen (TU-Berlin).

Beschäftigungsperspektiven der Absolventen des Bildungswesens - Analysen und Projektionen bis 2010 und Folgerungen für die Bildungspolitik -. In: Bund-Länder-Kommission: Materialien zur Bildungsforschung Heft 45.

Deutsches Institut für Wirtschaftsforschung (DIW) Wochenbericht 1998, No. 44, 65th year.

Engelbrech, G., Reinberg, A. (1997a): Beschäftigungskrise trifft im Westen vor allem die Männer, im Osten die Frauen. IAB-Kurzbericht No. 9/1997.

Engelbrech, G., Reinberg, A. (1997b): Frauen und Männer in der Beschäftigungskrise der 90er Jahre. Entwicklung der Erwerbstätigkeit nach Branchen, Berufen und Qualifikationen: IAB-Werkstattbericht No.11/1997

Fischer, G., u.a. (1993): Bestand und Bewegungen im Bildungs- und Beschäftigungssystem der Bundesrepublik Deutschland. Ergebnisse der Bildungsgesamtrechnung für die alten und neuen Bundesländer. BeitrAB 170. Nürnberg.

Friedrich-Ebert-Stiftung (Ed.); (1987): Frauen in der DDR. Auf dem Weg zur Gleichberechtigung? Die DDR. Realitäten - Argumente. In: Soziales und Wirtschaft.

Fuchs, J. (1998): Arbeitsmarkt Ostdeutschland. Angebot an Arbeitskräften bleibt weiter hoch. IAB-Kurzbericht No.10/1998.

Fuchs, J., Schnur, P., Walwei, U., Zika, G. (1998): Arbeitsmarktperspektiven bis 2010. Trübe Aussichten signalisieren hohen Handlungsbedarf. Erste Modellrechnungen des IAB mit Schwerpunkt Ostdeutschland. IAB-Werkstattbericht No.12/1998.

Heidenreich, H-J. (1991): Erste Ergebnisse des Mikrozensus April 1990. In Wirtschaft und Statistik 11/1991.

Kohler, H., Rudolf, H., Spitznagel, E. (1996): Umfang, Struktur und Entwicklung der geringfügigen Beschäftigung. Eine Bestandsaufnahme. IAB-Kurzbericht 2/1996.

Minks, K.-H. (1996): Absolventenreport Ingenieure. Ergebnisse einer Untersuchung zum Berufsübergang von Absolventen ingenieurwissenschaftlicher Diplom-Studiengänge. Ed.: Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie. Bonn.

Plicht, H., u.a. (1994): Zur Ausbildungsadäquanz der Beschäftigung von Hochschulabsolventinnen und Absolventen. Versuch einer Quantifizierung anhand der Mikrozensus 1985 bis 1991. Mitteilungen aus der Arbeitsmarkt- und Berufsforschung 3/94.

Reinberg, A., u.a. (1995): Auswirkungen der Bildungsexpansion auf die Erwerbs- und Nichterwerbstätigkeit. Mitteilungen aus der Arbeitsmarkt- und Berufsforschung 3/1995.

Reinberg, A. (1997): Bildung zahlt sich immer noch aus. IAB-Werkstattbericht No. 15/1997.

Riede, T. (1994): Analysen zur Freiwilligkeit in der Auskunftserteilung im Mikrozensus. Sind Stichprobenergebnisse bei freiwilliger Auskunftserteilung verzerrt? In: Wirtschaft und Statistik 9/1994.

Rudolph, H. (1998): "Geringfügige Beschäftigung" mit steigender Tendenz. IAB-Werkstattbericht Nr.9/1998. Amtliche Nachrichten der Bundesanstalt für Arbeit: Various years.

Schreyer, F. (1999): Ingenieurinnen und Ingenieure. Turbulenzen und Zyklen am Arbeitsmarkt. In: IAB-Materialien Nr.3/1999.

Statistisches Bundesamt (Ed.); (various years): Bevölkerung und Erwerbstätigkeit. Fachserie 1. Wiesbaden.

Statistisches Bundesamt (Ed.); (various years): Stand und Entwicklung der Erwerbstätigkeit: Fachserie 1 - Reihe 4.1.1. Wiesbaden.

Strukturanalysen der Bundesanstalt für Arbeit (1980 to 1996): Bestände sowie Zu- und Abgänge an Arbeitslosen und offene Stellen. In: Amtliche Nachrichten der Bundesanstalt für Arbeit (published annually).

Tessaring, M. (1994): Langfristige Tendenzen des Arbeitskräftebedarfs nach Tätigkeiten und Qualifikationen in den alten Bundesländern bis zum Jahre 2010. Erste Aktualisierung der IAB/Prognos-Projektionen 1989/91. Mitteilungen aus der Arbeitsmarkt- und Berufsforschung 1/94.

Weißhuhn, G., u.a. (1994): Arbeitskräftebedarf in Deutschland bis 2010. Arbeitskräfteeinsatz 1978-1990 und Szenarien bis 2010 für die alten und neuen Bundesländer. In: Studien zu Bildung und Wissenschaft Nr.116, Bonn.

Annex 1a: Qualification-specific unemployment rates according to gender and regional classification

Qualification level	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997						
Germany (1)																													
Men																													
																							(3)	(3)					
no training	6.0	4.7	5.1	5.1	4.3	5.4	8.9	12.8	14.4	14.7	16.0	15.9	17.6	17.2	15.4	14.0	15.1	17.4	21.3	22.2	23.2	26.0	29.2						
apprent./f-t. voc. school	2.6	2.2	2.0	1.8	1.5	1.6	2.6	4.6	5.2	5.3	5.4	4.7	4.8	4.8	4.3	3.9	4.8	5.2	6.6	6.8	7.0	8.1	9.2						
tech. college	1.2	1.3	1.0	0.7	0.5	0.6	0.8	1.3	1.5	1.3	1.2	1.1	1.2	1.3	1.2	1.0	2.6	1.8	2.2	2.3	2.3	2.8	3.2						
polytechnic	2.6	2.7	2.4	1.7	1.4	1.3	1.8	2.9	3.3	3.0	2.8	2.4	2.5	2.7	2.4	2.1	2.3	2.2	2.9	3.1	3.1	2.8	2.8						
university	1.3	1.6	1.7	1.4	1.4	1.6	2.1	2.7	3.2	3.4	3.5	3.2	3.4	3.6	3.2	2.9	3.7	3.2	3.7	3.8	3.7	3.7	4.0						
total	3.4	2.8	2.7	2.5	2.0	2.3	3.8	6.1	6.8	6.8	7.0	6.4	6.7	6.5	5.7	5.0	5.7	6.2	7.7	8.0	8.2	9.3	10.3						
Women																													
no training	6.1	5.8	6.2	6.3	5.7	6.2	8.7	10.8	12.2	12.3	13.9	14.6	15.6	15.7	14.5	12.7	14.1	16.4	19.4	19.9	20.7	22.3	24.6						
apprent./f-t. voc. school	3.5	4.0	4.1	3.8	3.3	3.4	4.6	6.1	6.8	6.8	7.3	6.7	6.6	6.5	5.9	5.0	7.3	8.3	9.5	9.5	9.3	9.6	11.0						
tech. college	3.4	5.1	5.9	6.3	4.7	4.1	6.1	9.2	9.5	9.4	9.2	8.5	8.3	8.4	7.5	6.1	6.5	5.7	7.0	6.3	6.0	7.0	8.0						
polytechnic	4.1	4.7	4.6	3.7	3.8	4.1	5.6	7.7	8.0	7.9	8.5	7.8	7.3	7.5	6.8	5.3	5.0	4.5	5.1	4.4	4.2	3.3	3.5						
university	1.1	1.5	1.9	2.0	2.1	2.4	3.6	4.5	5.6	6.2	6.9	6.7	7.1	7.5	6.4	5.7	6.0	5.2	5.4	5.2	5.2	5.0	5.5						
total	4.7	4.8	5.0	4.9	4.3	4.5	6.2	8.0	8.9	8.9	9.6	9.4	9.5	9.4	8.4	7.1	8.5	9.6	11.0	10.9	10.8	11.2	12.5						
Men + Women																													
no training	6.1	5.3	5.6	5.7	5.0	5.9	8.8	11.8	13.3	13.5	14.9	15.2	16.6	16.4	15.0	13.3	14.5	16.9	20.3	21.0	21.9	24.2	26.9						
apprent./f-t. voc. school	2.9	2.8	2.7	2.5	2.1	2.2	3.3	5.1	5.8	5.9	6.1	5.5	5.5	5.5	5.0	4.3	5.9	6.6	7.8	8.0	8.0	8.7	10.0						
tech. college	1.5	1.9	1.8	1.6	1.3	1.3	1.8	2.7	3.0	2.8	2.7	2.6	2.7	2.7	2.5	2.1	3.9	3.1	3.8	3.6	3.6	4.3	4.8						
polytechnic	2.8	3.0	2.7	2.1	1.8	1.8	2.5	3.8	4.2	4.0	4.0	3.5	3.5	3.7	3.4	2.8	3.0	2.8	3.5	3.4	3.4	3.0	3.0						
university	1.2	1.6	1.8	1.6	1.7	1.9	2.6	3.3	4.0	4.3	4.6	4.3	4.7	4.9	4.3	3.9	4.5	3.9	4.3	4.3	4.3	4.2	4.5						
total	3.9	3.6	3.6	3.4	2.9	3.2	4.8	6.8	7.6	7.6	8.1	7.6	7.8	7.7	6.8	5.9	6.9	7.6	9.1	9.2	9.3	10.1	11.3						
Old Länder and Berlin-West																													
Men																													
																							(3)	(3)					
no training	6.0	4.7	5.1	5.1	4.3	5.4	8.9	12.8	14.4	14.7	16.0	15.9	17.6	17.2	15.4	14.0	14.0	15.5	19.5	21.1	22.0	24.7	27.1						
apprent./f-t. voc. school	2.6	2.2	2.0	1.8	1.5	1.6	2.6	4.6	5.2	5.3	5.4	4.7	4.8	4.8	4.3	3.9	3.7	4.1	5.7	6.3	6.3	7.1	7.6						
tech. college	1.2	1.3	1.0	0.7	0.5	0.6	0.8	1.3	1.5	1.3	1.2	1.1	1.2	1.3	1.2	1.0	1.0	1.1	1.6	1.8	1.9	2.4	2.6						
polytechnic	2.6	2.7	2.4	1.7	1.4	1.3	1.8	2.9	3.3	3.0	2.8	2.4	2.5	2.7	2.4	2.1	1.9	2.1	2.8	3.1	3.0	2.7	2.6						
university	1.3	1.6	1.7	1.4	1.4	1.6	2.1	2.7	3.2	3.4	3.5	3.2	3.4	3.6	3.2	2.9	2.7	2.7	3.2	3.5	3.4	3.3	3.4						
total	3.4	2.8	2.7	2.5	2.0	2.3	3.8	6.1	6.8	6.8	7.0	6.4	6.7	6.5	5.7	5.0	4.8	5.4	7.1	7.8	7.9	8.8	9.3						
Women																													
no training	6.1	5.8	6.2	6.3	5.7	6.2	8.7	10.8	12.2	12.3	13.9	14.6	15.6	15.7	14.5	12.7	11.8	12.9	15.9	17.3	18.1	19.8	21.4						
apprent./f-t. voc. school	3.5	4.0	4.1	3.8	3.3	3.4	4.6	6.1	6.8	6.8	7.3	6.7	6.6	6.5	5.9	5.0	4.3	4.4	5.5	5.8	5.9	6.4	7.0						
tech. college	3.4	5.1	5.9	6.3	4.7	4.1	6.1	9.2	9.5	9.4	9.2	8.5	8.3	8.4	7.5	6.1	5.1	5.0	6.0	6.0	6.0	7.7	8.0						
polytechnic	4.1	4.7	4.6	3.7	3.8	4.1	5.6	7.7	8.0	7.9	8.5	7.8	7.3	7.5	6.8	5.3	4.2	4.1	4.7	4.4	4.3	3.5	3.4						
university	1.1	1.5	1.9	2.0	2.1	2.4	3.6	4.5	5.6	6.2	6.9	6.7	7.1	7.5	6.4	5.7	5.2	4.8	5.2	5.2	5.1	4.9	5.2						
total	4.7	4.8	5.0	4.9	4.3	4.5	6.2	8.0	8.9	8.9	9.6	9.4	9.5	9.4	8.4	7.1	6.3	6.6	8.1	8.4	8.6	9.2	9.8						
Men + Women																													
no training	6.1	5.3	5.6	5.7	5.0	5.9	8.8	11.8	13.3	13.5	14.9	15.2	16.6	16.4	15.0	13.3	12.8	14.1	17.6	19.1	20.0	22.2	24.2						
apprent./f-t. voc. school	2.9	2.8	2.7	2.5	2.1	2.2	3.3	5.1	5.8	5.9	6.1	5.5	5.5	5.5	5.0	4.3	3.9	4.3	5.6	6.1	6.2	6.8	7.4						
tech. college	1.5	1.9	1.8	1.6	1.3	1.3	1.8	2.7	3.0	2.8	2.7	2.6	2.7	2.7	2.5	2.1	1.9	2.0	2.6	2.8	2.9	3.6	3.9						
polytechnic	2.8	3.0	2.7	2.1	1.8	1.8	2.5	3.8	4.2	4.0	4.0	3.5	3.5	3.7	3.4	2.8	2.5	2.6	3.3	3.5	3.4	2.9	2.8						
university	1.2	1.6	1.8	1.6	1.7	1.9	2.6	3.3	4.0	4.3	4.6	4.3	4.7	4.9	4.3	3.9	3.5	3.4	3.9	4.1	4.0	3.9	4.1						
total	3.9	3.6	3.6	3.4	2.9	3.2	4.8	6.8	7.6	7.6	8.1	7.6	7.8	7.7	6.8	5.9	5.4	5.9	7.5	8.0	8.2	9.0	9.5						
New Länder and Berlin-East																													
Men																													
																							(2)	(3)	(3)				
no training																							26.8	39.9	44.8	37.5	39.1	44.9	53.6
apprent./f-t. voc. school																							9.2	9.7	10.1	9.0	9.8	11.9	15.3
tech. college																							6.7	4.0	4.4	3.7	3.6	4.5	5.3
polytechnic																							5.7	3.7	3.2	2.9	3.3	3.5	4.5
university																							7.0	4.9	5.4	5.0	4.9	5.2	6.2
total																							9.5	10.0	10.5	9.0	9.6	11.5	14.8
Women																													
no training																							34.0	48.2	53.0	48.2	48.0	50.2	56.2
apprent./f-t. voc. school																							16.0	21.9	23.8	23.0	21.7	21.4	25.6
tech. college																							7.4	6.3	7.9	6.6	5.9	6.4	8.0
polytechnic																							8.9	6.8	7.0	4.2	3.7	2.9	4.0
university																							7.9	6.3	6.0	5.4	5.3	5.4	6.6
total																							15.0	19.8	21.5	19.9	18.7	18.8	22.4
Men + Women																													
no training																							31.0	44.8	49.6	43.8	44.1	47.9	55.0
apprent./f-t. voc. school																							12.5	15.4	16.4	15.5	15.3	16.3	20.1
tech. college																							7.1	5.2	6.3	5.3	4.9	5.6	6.8
polytechnic																							6.8	4.8	4.5	3.3	3.5	3.3	4.3
university																							7.3	5.4	5.7	5.1	5.1	5.3	6.3
total																							12.2	14.7	15.8	14.2	13.9	15.0	18.4

Unemployed as % of the entire civilian labour force (excluding trainees) with the same qualification level

IABIA.Reinberg (Oct. 1998)

Workers with no details on qualifications were divided proportionally according to age classes across all qualification groups
(Sources: Federal Employment Services (Special studies on unemployment; at end of September each year); microcensuses)

1) 1975 -1990 only former West Germany

2) Qualification structure of the unemployment according to the 1991 microcensus, structures according to the basic figures of the unemployment statistics

3) provisional results

Annex 1b: Unemployment and employment figures according to qualification level, gender and regional classification

Unemployed (in thousands)

Qualification level	Men			Women			Total		
	1991	1995	1997	1991	1995	1997	1991	1995	1997
Old Länder and Berlin-West									
no training	387	626	743	374	530	596	762	1157	1339
apprent./f-t.voc.school	375	636	757	315	464	572	690	1100	1329
tech.college	19	36	50	29	37	51	47	73	100
polytechnic	18	34	32	13	17	17	31	50	50
university	39	58	60	40	50	55	79	108	115
total	839	1390	1643	771	1098	1290	1610	2488	2933
New Länder and Berlin-East									
no training	68	83	131	123	134	160	191	217	290
apprent./f-t.voc.school	251	243	382	399	463	560	650	706	942
tech.college	52	20	28	66	41	52	118	62	80
polytechnic	6	6	9	5	4	5	12	9	14
university	34	22	28	24	16	21	58	38	49
total	411	375	578	617	658	797	1028	1033	1375
Germany									
no training	455	709	874	497	665	755	952	1374	1630
apprent./f-t.voc.school	626	880	1140	714	926	1132	1340	1806	2272
tech.college	70	57	77	95	78	103	165	135	180
polytechnic	24	39	41	18	21	22	43	60	64
university	73	80	88	64	66	75	137	146	163
total	1250	1765	2220	1388	1756	2088	2638	3521	4308

Source: Structure survey by the Federal Employment Services (end of September each year)

Employed (in thousands)

Qualification level	Men			Women			Total		
	1991	1995	1997 ¹⁾	1991	1995	1997 ¹⁾	1991	1995	1997 ¹⁾
Old Länder and Berlin-West									
no training	2458	2304	2079	2804	2374	2188	5262	4678	4267
apprent./f-t.voc.school	10122	9622	9370	7047	7355	7559	17169	16977	16929
tech.college	1985	1899	1890	529	574	581	2514	2473	2471
polytechnic	955	1050	1249	295	381	493	1250	1431	1742
university	1455	1661	1721	726	927	1011	2181	2588	2732
total	16975	16536	16309	11401	11611	11832	28376	28147	28141
New Länder and Berlin-East									
no training	193	148	138	239	136	124	432	284	262
apprent./f-t.voc.school	2535	2308	2174	2088	1673	1625	4623	3981	3799
tech.college	735	564	494	824	646	603	1559	1210	1097
polytechnic	108	156	188	55	103	123	163	259	311
university	445	435	429	276	287	293	721	722	722
total	4016	3611	3423	3482	2845	2769	7498	6456	6192
Germany									
no training	2651	2452	2217	3043	2510	2312	5694	4962	4529
apprent./f-t.voc.school	12657	11930	11544	9135	9028	9184	21792	20958	20728
tech.college	2720	2463	2384	1353	1220	1184	4073	3683	3568
polytechnic	1063	1206	1437	350	484	616	1413	1690	2053
university	1900	2096	2150	1002	1214	1304	2902	3310	3454
total	20991	20147	19732	14883	14456	14601	35874	34603	34333

Source: Microcensuses, own calculations by the IAB

Workers with no details on qualifications were divided proportionally according to the age classes across all qualification groups

1) provisional results

The papers published in this series:

- 1 Ulrich Walwei, Heinz Werner
Employment and Social Dimensions of the Single European Market (1993)
- 2 D. Bogai, F. Buttler, K. Emmerich, W. Klauder, M. Koller, G. Kühlewind, U. Möller
Promoting Employment Instead of Financing Unemployment -
Advocating an Investive Employment and Labour Policy in the New German States
(1993)
- 3 Gerhard Kühlewind
Long-term Labour Market Projections - Methods and Results for the Federal Republic
of Germany - (1993)
- 4 Manfred Tessaring
Manpower Requirements by Levels of Qualification in West Germany until 2010;
Implications of the 1989 IAB/Prognos Projection for the Qualification Structure of Jobs
(1993)
- 5 Ulrich Walwei
Monopoly or Coexistence: An International Comparison of Job Placement (1993)
- 6 Heinz Werner
The Integration of Foreign Workers into the Labour Market, (France, Germany,
Netherlands, Sweden) (1994)
- 7 Friedrich Buttler/Ulrich Walwei
The Employment Contract: Cooperation Requires Stability (1994)
- 8 Friedrich Buttler/Manfred Tessaring
Human Capital as a Location Factor: Arguments for the Education Policy Discussion
from a Labour Market Policy Standpoint (1994)
- 9 Barbara Koller
Social and Occupational Integration of Immigrants of German Origin in Germany
(1994)
- 10 Gerhard Kühlewind
Gainful Employment and the Inter-generational Contract (1995)
- 11 Johann Fuchs
Long-term Labour Force Projections for Germany - the Concept of Potential Labour
Force - (1995)

The papers published in this series (continued):

- 12 Heinz Werner
Economic Integration and Migration; the European Case (1995)
- 13 Alfons Barth
IAB Long-term Labour Market Projections and Policy Simulation with the SYSIFO
Macroeconometric Model - Concept and Application (1995)
- 14 Thomas Rhein
The European Monetary Union: Possible Consequences for Employment and Earnings
(1995)
- 15 Lutz Bellmann/Susanne Kohaut
Determinants of Wages in the German Service and Manufacturing Sectors: An
Empirical Analysis Based on the IAB Establishment Panel (1995)
- 16 Ulrich Walwei/Heinz Werner
More Part-time Work as a Cure for Unemployment?
Results of an International Comparison (1996)
- 17 Ulrich Walwei
Placement as a Public Responsibility and as a Private Service
An International Comparative Perspective of the Reorganization of Placement Systems
(1996)
- 18 Heinz Werner
Temporary Migration of Foreign Workers - Illustrated with Special Regard to East-West
Migrations (1996)
- 19 Lutz Bellmann
Wage Differentiation and Long-term Unemployment - An International Comparison
(1996)
- 20 Lutz Bellmann
The IAB Establishment Panel with an Exemplary Analysis of Employment Expectations
(1997)
- 21 Werner Karr
Conceptual Problems in the Understatement of Long-term Unemployment (1997)
- 22 Ulrich Walwei
Flexibility of Employment Relationships: Possibilities and Limits (1997)

The papers published in this series (continued):

- 23 Elmar Hönekopp
Labour Migration to Germany from Central and Eastern Europe - Old and New Trends (1997)
- 24 Lutz Bellmann, Herbert Düll, Jürgen Kühl, Manfred Lahner, Udo Lehmann
Patterns of Enterprise Flexibility: IAB Establishment Panel Results, Western Germany, 1993-95 (1997)
- 25 Heinz Werner
Labour Market Trends in the United States - Lessons We Can Learn (1998)
- 26 Udo Brixy, Susanne Kohaut
Employment Growth Determinants in New Firms in Eastern Germany
- Based on a Combination of IAB Establishment Database and IAB Establishment Panel (1998)
- 27 Petra Beckmann
Working Hours and Wishes Concerning Working Hours Among Women in Western and Eastern Germany
- Results of an Empirical Study from 1995 (1998)
- 28 Gerhard Engelbrech
Total (E)quality Management: Paradigmatic Shift in Personnel Management (1998)
- 29 Hans-Uwe Bach et al.
Labour Market Trends and Active Labour Market Policy in the Eastern German Transformation Process 1990-1997 (1998)
- 30 Frank Wießner
The Bridging Allowance as an Instrument of Labour Market Policy - a Provisional Appraisal (1998)
- 31 Ulrich Walwei
Job Placement in Germany: Developments Before and After Deregulation (1998)
- 32 Melanie Kiehl, Heinz Werner
The Labour Market Situation of EU and of Third Country Nationals in the European Union (1999)
- 33 Heinz Werner
Countries With Successful Employment Policy - What Is Behind Their Success? (1999)

The papers published in this series (continued):

- 34 Edeltraut Hoffmann/Ulrich Walwei
The Change in Employment Forms - Empirical Results and First Explanatory Approaches (1999)
- 35 Alexandros Tassinopoulos/Heinz Werner
To Move or Not to Move? - Migration of Labour in the European Union (1999)
- 36 Christian Brinkmann
Controlling and Evaluation of Employment Promotion and the Employment Services in Germany (1999)
- 37 Lutz Bellmann/Martin Brussig
Productivity Differences Between Western and Eastern German Establishments (1999)
- 38 Angela Rauch/Alexander Reinberg
Qualification and Employment Opportunities (2000)