

# Labour Market in Downturn

The German labour market situation has deteriorated considerably as a result of the economic setback. As recently as last year, unemployment had fallen noticeably and employment risen appreciably. Furthermore, during its revision of the employment statistics in August 2000, the Federal Statistical Office revised the number in the employed labour force upwards (for 1999, for instance, by some 1.8 million). However, this higher employment level is almost exclusively the result of the improved coverage of marginal full-time employment work, as defined in the reform on this type of employment that came into force in April 1999.<sup>1</sup> The revised data also provide a much more favourable picture of employment trends, especially in the second half of the 1990s. For the time being, however, in view of the downturn, this positive trend will not continue.

## Employment reacts strongly to economic cycle

Between 1991 and 1993, the employment trend was marked by the direct effects of German reunification and the subsequent recession. During this period, the number of people in employment fell by over one million (cf. figure 1). Overcoming the recession led to a stabilisation of employment. However, the slight increase achieved during the upturn in 1994 was followed by another drop, due in particular to the 1995-96 crisis in the east German construction sector. All in all, despite slight growth, there was no sustained increase in employment during this three-year period.

A significant increase in employment – by about 1.5 million new jobs – did not occur until the strong upturn between 1997 and 2000, and was driven primarily by the financial, real estate (letting) and corporate services sectors, which achieved a 6.4% increase. At the other end of the spectrum were the manufacturing (-0.3%), agriculture and forestry (-1.0%), and construction (-2.7%) sectors. This development illustrates the economy's continuing structural adjustment away from an industrial towards a services focus.

The increase in employment over this period can be explained mainly by the expansion of so-called part-time marginal employment,<sup>2</sup> which is particularly prevalent

<sup>1</sup> With the reform of 1 April 1999, marginal employment has been included in social insurance registration procedures.

in the services sector. This trend was reflected in the comparison of older data with the revised data of August 2000. There was, further, a continuing increase in regular part-time working: the total share of part-time work rose from 11.8% in 1991 to 17.6% last year.<sup>3</sup>

However, this generally positive development came to an end with the cyclical downturn that began in autumn 2000. Against the backdrop of unfavourable cyclical forecasts, the prospects for this year, too, are gloomy. Thus, employment has fallen since the beginning of this year; in the first two quarters, a drop of approximately 30 000 persons per quarter has been recorded.<sup>4</sup> The expectation of a 0.7% increase in gross national product (GDP) for this year<sup>5</sup> implies growth of 0.5% for the second half of 2001. This speed will not suffice to halt the downward trend in employment. Until the middle of next year, a further fall in the number of those in employment must be anticipated.

In view of the strong increase in part-time work, the expansion of employment – measured against the number of those in work – has been exaggerated. A more precise indicator is the volume of work. Two different concepts have been used here to measure the volume of work: the performed volume of work (whole economy) and the paid volume of work (employees subject to social insurance contributions only).<sup>6</sup> The first measures the number of working hours that are actually effected by the labour force, with due consideration for factors such as vacation time, sick leave, and overtime. The second, on the other hand, measures remunerated hours worked – independently of the volume of work actually performed. However, by including the factor of work, this concept is better able to illustrate the cost burden.

A decidedly weaker employment trend results from the development of the volume of work than from the change in the number of those in employment. In terms of the employed labour force, 1991 levels had been almost attained by the end of 2000; in terms of the number of hours worked, on the other hand, this was far from the case (cf. figure 2). Seen from this angle, the employment trend was highly unfavourable in the 1990s. The gap between the two indicators (i.e., persons and hours) has become ever greater, especially since the mid-1990s.

<sup>2</sup> Those exclusively in marginal employment work fewer than 15 hours per week and earn less than DM 630 per month.

<sup>3</sup> Cf.: OECD: *Employment Outlook*, June 2001.

<sup>4</sup> These figures are based on series seasonally adjusted by the Berlin Method.

<sup>5</sup> Cf.: The German and the world economy in the autumn of 2001. In: *Economic Bulletin*, no. 11, November 2001.

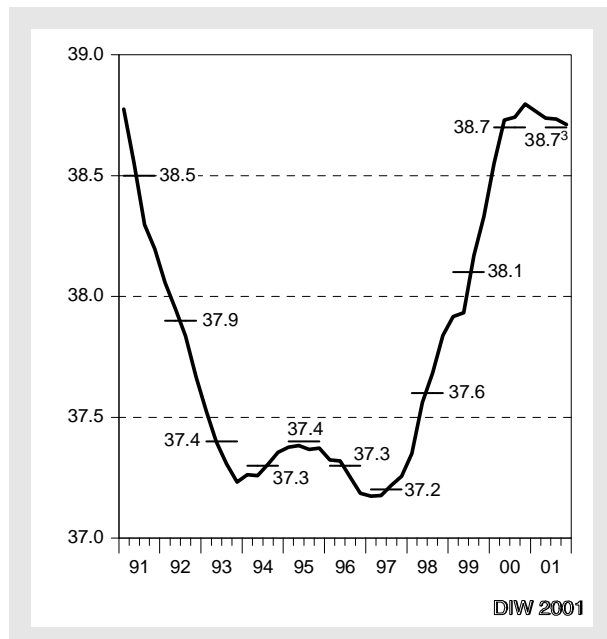
<sup>6</sup> The volume of work is derived from the product of the number of those in employment and average working time. DIW calculations have been used for both concepts.

## Employment threshold becoming lower

The interplay of economic growth and labour market structures can be expressed in the employment threshold. The employment threshold is that GDP growth rate at which employment rises; it is measured here on the basis of an econometric estimate (cf. box for results). It must be noted that the result represents an average value over a certain period of time. The employment threshold varies under different conditions; it is thus not a rigid value but can change from one period of time to the next. During periods of long sustained growth, as in the United States in the 1990s, companies, anticipating positive economic development, will initially hire relatively large numbers of people – resulting in a low employment threshold. The longer an economic upturn lasts, however, the more scarce labour can become – and, in the course of greater rationalisation efforts, the employment threshold will rise. If, on the other hand, these shortages are alleviated by, for example, immigration or adequate training policies, the employment threshold will be correspondingly lower. The level of the employment threshold is therefore also an expression of the degree of flexibility with which the labour market reacts to both growth and economic cycles.

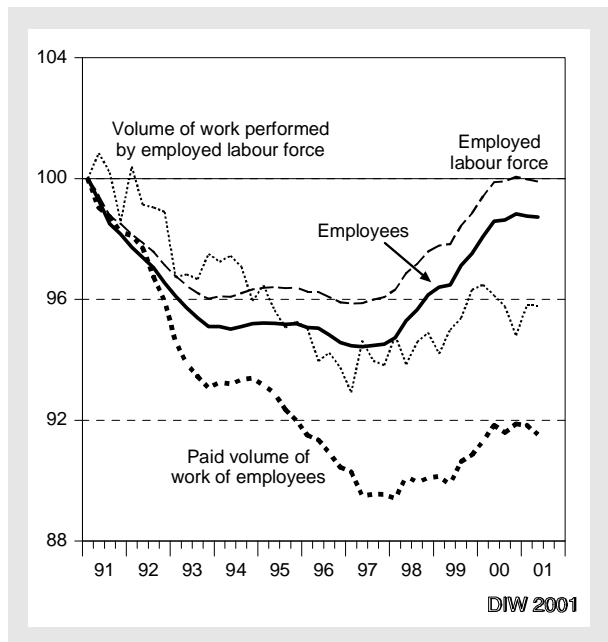
Different measuring concepts will lead to different employment thresholds. Usually, companies will ini-

Figure 1  
Employed Labour Force in Germany<sup>1</sup>  
In mill. persons<sup>2</sup>



<sup>1</sup> Domestic concept. — <sup>2</sup> Seasonally adjusted by the Berlin Method (BV4). — <sup>3</sup> Estimate of the Joint Analysis of the Economic Research Institutes, Autumn 2001. Sources: Federal Statistical Office; DIW Berlin calculations.

Figure 2  
Employed Labour Force,  
Employees and Volume of Work<sup>1</sup>  
1st quarter 1991 = 100



<sup>1</sup> Seasonally adjusted by the Berlin Method (BV4). Sources: Federal Statistical Office; DIW Berlin calculations.

tially react to fluctuations in economic activity by adjusting the number of working hours – with increased overtime during periods of upswing and with reduced working hours, e.g., short-time working, during periods of downturn. Only when economic up- or downturn tendencies become more entrenched will companies also adjust the size of the work force. This suggests that the cyclical dependency should therefore be more pronounced with regard to the number of working hours than the number of those employed. Indeed, the estimates confirm this, as the coefficients for the dependency on GDP of the number of those employed and also volume of work show (cf. box for results). Against the background of a reduction in average working time it should be expected, however, that the employment threshold is lower for the employed labour force than for working hours. And this is indeed the case for the period studied. From early 1994 until mid-2001, the difference between the two employment thresholds was almost one percentage point: the number of those in employment rose even with growth of 1.1%,<sup>7</sup> while the volume of

<sup>7</sup> These and subsequent statements in this section always refer to a situation of average cyclical development within the studied time period.

### Estimating the Employment Threshold

The theory underlying the calculation of the employment threshold is the Okun Law. This states that fluctuations of GDP are linked with corresponding fluctuations in unemployment. While, in the long term the growth of GDP depends on the combination of capital, labour and technological progress, in the short term companies react to demand fluctuations by reducing – or increasing – employment. A positive development of demand would therefore raise employment (number of hours and/or employees) and reduce unemployment. The employment threshold shows how strong the positive development of demand would have to be to lead to an expansion of employment.

The estimates put forward here are based on Federal Statistical Office data, as well as on calculations published by the

DIW (regarding the volume of work). The pre-1991 data applies to west Germany only. It is also important to note that the August 2000 revision goes back only as far as 1991; this means that a precise comparison of pre- and post-1991 values is possible only to a limited extent.

The number of those in employment (domestic concept), the performed volume of work (of those in employment) and the paid volume of work (of employees), respectively, are used as the endogenous variable. Real GDP serves as the exogenous variable. The employment threshold is derived from the quotient of the constant and the coefficient of GDP, multiplied by minus one.

### Estimated Results of the Calculations on the Employment Thresholds<sup>1</sup>

Employment	Constant	Delayed endogenous variable		GDP			Employment threshold <sup>1</sup>
		t-1	t-2	t	t-1	t-2	
1st quarter 1980 to 4th quarter 1990							
Employed labour force	-0.133	1.342	-0.440	0.100	-	-	1.3
adj. R <sup>2</sup> = 0.986, DW = 1.978	(-3.441)	(12.708)	(-4.334)	(5.670)	-	-	
Performed volume of work	-0.612	0.415	-	0.241	-	-	2.5
adj. R <sup>2</sup> = 0.390, DW = 2.017	(-3.112)	(3.502)	-	(3.517)	-	-	
Paid volume of work	-0.952	-	0.357	-	-	0.472	2.0
adj. R <sup>2</sup> = 0.711, DW = 2.336	(-4.813)	-	(3.695)	-	-	(5.775)	
1st quarter 1994 to 2nd quarter 2001							
Employed labour force	-0.185	0.813	-	0.172	-	-	1.1
adj. R <sup>2</sup> = 0.874, DW = 1.693	(-1.711)	(12.850)	-	(3.154)	-	-	
Performed volume of work	-1.960	-	-	0.990	-	-	2.0
adj. R <sup>2</sup> = 0.454, DW = 1.229	(-4.911)	-	-	(5.007)	-	-	
Paid volume of work	-0.787	0.568	-	-	0.405	-	1.9
adj. R <sup>2</sup> = 0.732, DW = 1.611	(-2.846)	(5.408)	-	-	(3.095)	-	

t-values in brackets.

<sup>1</sup> Required annual growth rate of GDP (in %) at which employment rises.

Source: DIW Berlin calculations.

work expanded only with growth of at least 1.9% (paid volume) or 2% (performed volume). Compared with the 1980s (west Germany only from the first quarter 1980 to the fourth quarter 1990), the employment thresholds have fallen slightly.

### Unemployment once again on the increase

With its customary delay, the development of unemployment has mirrored that of employment (cf. figure 3).

The number of unemployed rose from 2.6 million in 1991 to almost 4.4 million in 1997. The more favourable economy between 1998 and 2000 led to a fall in unemployment to almost 3.9 million last year. Since the beginning of this year, however, unemployment is once again on the rise, a result of the cyclical setback that started in mid-2000. The annual average for 2001 could be slightly lower than that for 2000, but with seasonally adjusted deviations the numbers continue to rise.

The dynamism on the labour market has to be attributed exclusively to the development in west Ger-

many. In the new *Länder*, labour market policy measures and demographic changes – but not economic cycles – continue to be decisive. Thus, according to estimates by the Institute for Employment Research (IAB), the labour force potential in east Germany is falling.<sup>8</sup> During the past five years, demographic effects (on average, 68 000 fewer persons per year), the drop in the employment tendency (–18 000), and emigration (–15 000), have served to ease the strain on the east German labour market. For this reason, the shortage of labour market policy measures (cf. figure 4) has, with the exception of 1998, not been reflected in corresponding unemployment figures. The same could be the case this year.

### German structural unemployment on the rise

The causes of unemployment can be differentiated schematically into two main categories. One category includes factors that can be defined as structural, such as a lack of geographical or professional mobility. The demand for qualified labour rose in the 1990s,<sup>9</sup> the simultaneous increase in unemployment, especially among the low-skilled, therefore points to structural problems.<sup>10</sup> These can be defined as 'mismatch' problems. The second category includes cyclical factors; here, there is a direct negative link between growth and unemployment. However, the limits between the two categories are fluid. Thus, cyclically caused unemployment can become structural unemployment if, over time, those in unemployment lose their skills.

Table 1  
**Employment Thresholds<sup>1</sup>**  
 According to Different Measuring Concepts

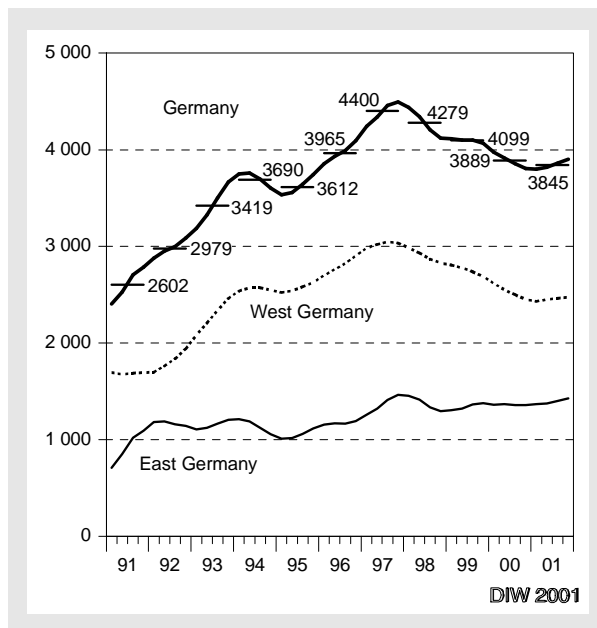
	Employed labour force	Performed volume of work	Paid volume of work
1st qu. 1980 to 4th qu. 1990	1.3	2.5	2.0
1st qu. 1994 to 2nd qu. 2001	1.1	2.0	1.9

<sup>1</sup> Required annual growth rate of GDP (in %), at which employment rises.  
 Source: DIW Berlin calculations.

<sup>8</sup> Cf. Institute for Employment Research, *IAB-Kurzbericht*, no. 1/2001, p. 9.

<sup>9</sup> Cf. Emil Magvas: Gesamtwirtschaftliches Stellenangebot in West- und Ostdeutschland 1998, 1999, 2000. In: *IAB-Werkstattbericht*, no. 12/2001, pp. 3-4.

Figure 3  
**Unemployment in Germany<sup>1</sup>**  
 In thousand persons



<sup>1</sup> Seasonally adjusted by the Berlin Method (BV4); 4th quarter 2001 = estimate.  
 Sources: Federal Labour Office; DIW Berlin calculations.

The Beveridge Curve is a tool used to separate the two causes.<sup>11</sup> It presents a relationship between the ratio of job vacancies (the vacancy ratio) and the unemployment rate. The theoretical curve runs convex around the 45-degree line.<sup>12</sup> A healthy economy should be as close to this line (appropriate level of growth) and source (small mismatch) as possible. In the first case, all those who are unemployed theoretically have an opportunity to find employment; in the second case, these opportunities are also taken up for the most part. Figure 5 shows the Beveridge Curve for Germany and the United States.

Two things must be considered when interpreting it. First, companies are not obliged to advertise openings, which means that the vacancy ratio is underestimated.<sup>13</sup> Secondly, for the USA only the help wanted index is

<sup>10</sup> A study of the German Labour Office for the period 1970-1998 has also shown that the gap of employment opportunities between the lower and upper qualification levels is increasing further. Cf. Mitteilungen aus der Arbeitsmarkt- und Berufsforschung, No. 4/4 1999, p. 434 ff. For Germany, a rough estimate for the year 2000 has calculated an unemployment rate of about 38% among those with no skills, as opposed to 6% among those who have left school with a qualification.

<sup>11</sup> Named after the English economist W.H. Beveridge (1897-1963). Cf. Wolfgang Franz: Arbeitsmarktökonomik. Berlin 1999, p. 196 ff.

<sup>12</sup> On this line both ratios are equal.

<sup>13</sup> Concerning this problem and estimates on the registration ratio, see Institute for Employment Research, *IAB-Kurzbericht*, no. 5/1999, and *IAB-Werkstattbericht*, no. 12/2001.

available, so that only a vacancy ratio that behaves proportionally to the 'real' ratio can be calculated. The scale of the axis of ordinates for the United States is therefore without significance. However, one is able to approximate the 45-degree line by assuming that the U.S. labour market was cleared on average; the average values of both variables (the help wanted index and the unemployment rate) have not changed.

Table 2

**Economic Growth in Germany and the USA<sup>1</sup>**

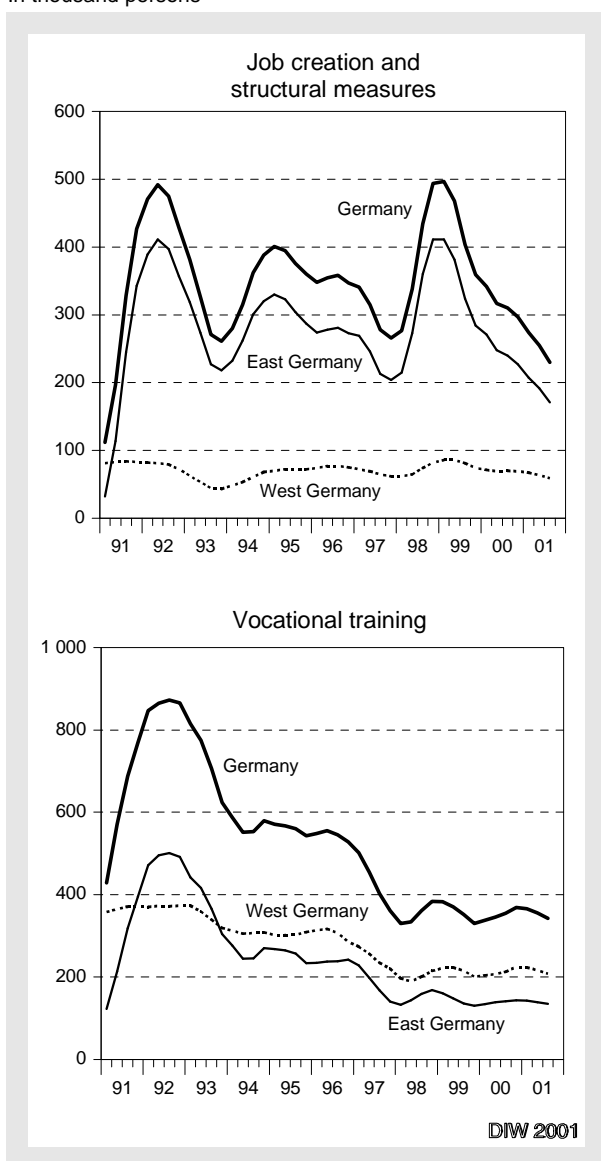
	Germany <sup>2</sup>	USA
1960 to 1972	4.3	4.2
1973 to 1982	1.6	2.0
1983 to 1990	3.1	3.9
1991 to 2000	1.6	3.8

<sup>1</sup> Average annual rate of increase of real GDP in %. — <sup>2</sup> Before 1991: west Germany only.

Sources: OECD; Federal Statistical Office.

Figure 4  
**Employed Labour Force Benefiting from German Labour Office Re-integration Schemes<sup>1</sup>**

In thousand persons



<sup>1</sup> Seasonally adjusted by the Berlin Method (BV4); 4th quarter 2001 = estimate. Sources: Federal Labour Office; DIW Berlin calculations.

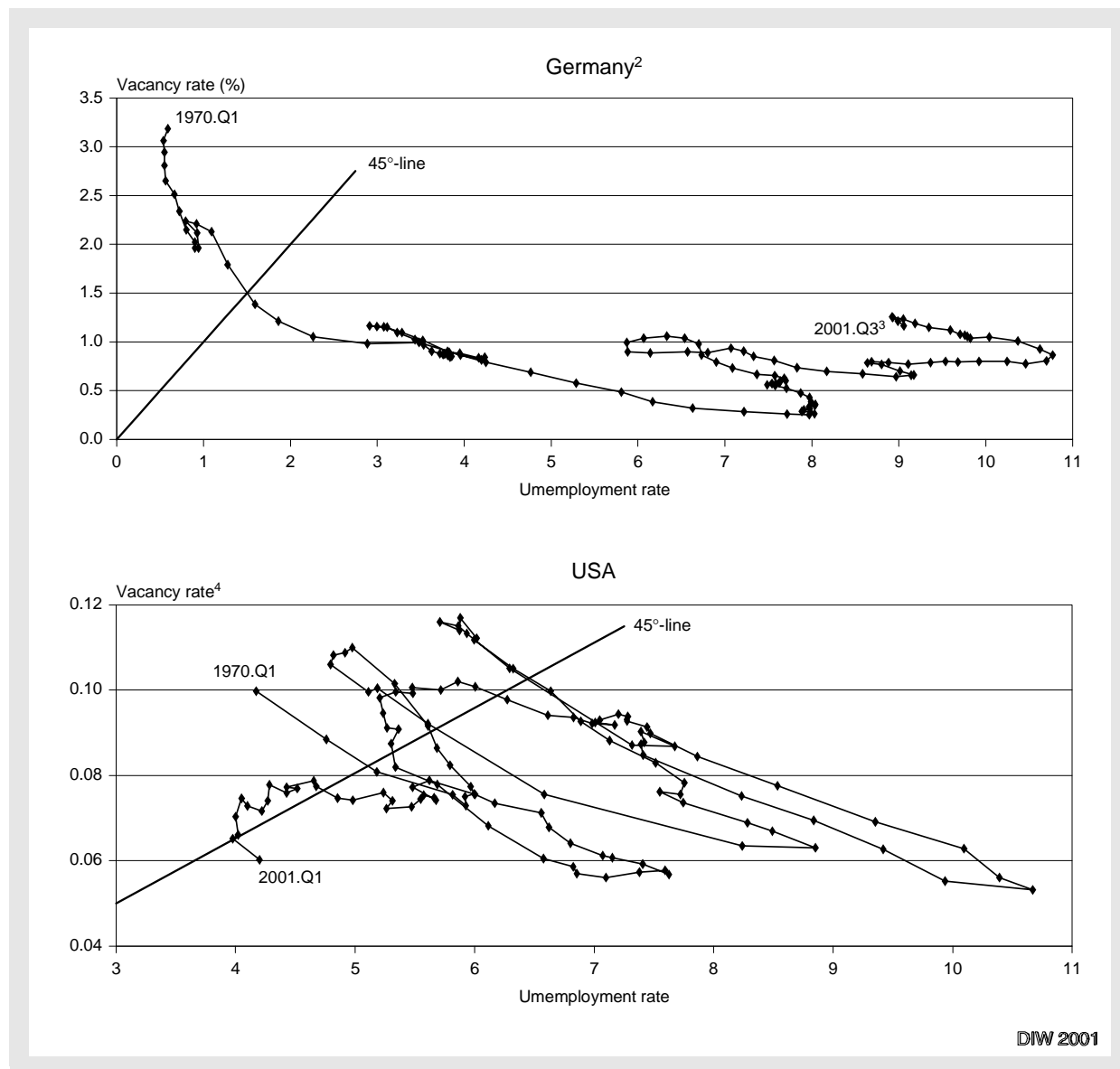
Two main findings can be deduced from this diagrammatic illustration. Both in the United States and in Germany, unemployment and job vacancies always occurred at the same time. This implies the continuous existence of a certain level of mismatch. In Germany, the Beveridge Curve shifted outwards at least once following reunification; the mismatch has thus become greater. This can be explained in particular by the transformation process in east Germany. It is not yet possible to ascertain, given the currently available data, whether there have been several shifts. In the United States, too, the curve could have shifted; however, not only outwards but, since the 1990s, also inwards. After increasing in the 1970s and 1980s, the mismatch has again become smaller; in fact, in the 1990s it was even smaller than two decades earlier.

One other important difference between the two countries is that Germany has found itself almost continually to the right of the curve. This points to low growth. In the U.S., on the other hand, the curve always moves from the lower right to the upper left and vice versa. Therefore, and in contrast to Germany, the individual upturns have always been strong enough to make up for the downturns. This finding suggests that, in addition to structural problems that have arisen as a result of the adjustment process in east Germany, weak economic growth during the 1990s was also an important cause of increased structural unemployment. This is confirmed by the results in table 2, which illustrates the average growth rates in the two countries.

**Conclusion**

The upturn in the German labour market has ended. Since the beginning of this year, employment has fallen and unemployment risen. The cyclical weakness, which will probably persist through the beginning of next year, leads to the assumption that the unfavourable development on the labour market will prevail until mid-2002. After that, given the forecast upturn, gradual change should set in. As the calculations for the employment threshold show, at this point only a slight expan-

Figure 5  
 Beveridge Curves, 1970 to 2001<sup>1</sup>  
 Seasonally adjusted quarterly data



1 Seasonally adjusted by the Berlin Method (BV4). — 2 Before 1991: west Germany only. — 3 Estimate. — 4 Calculated using an index.  
 Sources: Federal Labour Office; DIW Berlin calculations.

sion of production (about 1%) is required to increase at least the number of those in part-time employment. If employment is to increase also in terms of the volume of work, the upturn will need to be stronger – almost twice as strong, in fact. It is very uncertain whether this will happen, since the economic dynamism is assumed to be generated primarily by foreign demand. Such an upturn would be beneficial only to the west German labour market, since this is where a large part of the export-oriented sectors are located. In east Germany, the situation would remain as unfavourable as before, since relief

from the declining labour force potential and the comparably favourable development of industry would be offset by negative impulses emanating from the construction sector and fewer labour market policy measures. There is therefore the danger of a continued rise in structural unemployment in Germany. Given weak growth and the unsolved adjustment problems in east Germany, there is no prospect of a sustained turnaround in the unfavourable labour market situation.

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