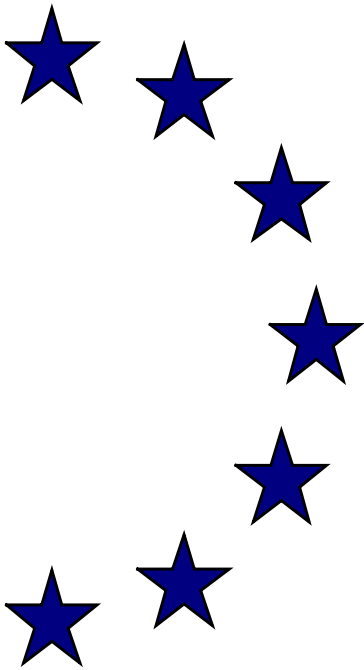


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**Germany's growth performance  
in the 1990's**

by

Directorate General for Economic and  
Financial Affairs

## **Germany's growth performance in the 1990's**

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## Editorial

The European Commission's Directorate-General for Economic and Financial Affairs regularly monitors economic developments in all Member States as part of its general duties. Out of this work, occasionally a more in-depth analysis of an individual country is published. The study on Germany presented here takes the form of a Working Paper. This means that it does not reflect the official position of the European Commission. Rather it mirrors exclusively the views of DG ECFIN, and should be interpreted as a contribution to the ongoing academic and political discussion in Germany and Europe about how the economic growth potential could be increased.

The study is subdivided into three chapters. A first chapter presents stylised facts about growth in the German economy. This chapter contains two sections. One on Germany's business cycles in the 1990s was written by H. Jansen. P. Weiss contributed the section on longer-term trends. The study does not contain a separate section on eastern Germany, because the problem of reunification is pervasive throughout the study. However, partial aspects are presented in separate boxes. Two of them, one on the economic performance of the New Länder and one on economic policies in the New Länder were written by M. Hallet; a box on the construction sector was contributed by S. Webers.

The chapter on the macro-economic policy mix also contains two sections. Monetary policy was analysed by O. Dieckmann, public finances by U. Jochheim. A final chapter analyses structural factors impacting on output growth. The first section on competitiveness, trade and FDI was co-authored by O. Dieckmann and H. Jansen. B. Döhring contributed a section on the German labour market. H. Jansen provided the brief section on product markets.

The overall supervision of the study lay with P. Mills and P. Weiss who also wrote the executive summary. They are grateful to H. Jansen for editorial assistance and to K. Gradinger and C. Hallberg for technical assistance. Special thanks are also owed to W. Roeger for various simulations with the QUEST II model.

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## 0. Executive summary

*Economic growth in Germany has been lacklustre since the mid-1990s ...*

Since the mid-1990s, output growth in Germany has been lacklustre: between 1995 and 2001 growth averaged 1.6% per year. This is almost 1 percentage point below that of its partner countries in the EMU/EU area, even if the faster growing cohesion countries (i.e. Spain, Ireland, Portugal and Greece) are excluded from the comparison. The only year where this gap was notably smaller was 2000 when an unprecedented export boom propelled output expansion close to the European average. But the growth momentum faltered again in 2001 as the international economy slowed. With the German economy relapsing into slow motion the growth gap re-emerged and there are little signs that this would change in 2002.

*... and the economy has proven highly vulnerable to external shocks.*

Subdued economic activity has been accompanied by a strong volatility of output growth. The most recent downturn in 2001-02 completes already the third full cycle since the recession of 1993. For each of these three cycles the downward movement was triggered by an international crises, in particular the Mexican crisis in 1994, the Asian crisis in 1997/98 and the oil price hike in 1999/2000. Although Germany's European partners were also adversely affected by these shocks to the world economy, output growth of these economies proved much more resilient. Evidently, compared to its European partners in Germany these adverse shocks were propagated much more directly and unmitigated.

*This is due partly to long-lasting effects of re-unification, ...*

Slow growth of domestic demand, essentially of private consumption and construction investment, is the key factor behind the weakness of GDP growth in Germany. On the supply side, this weakness is reflected by a very low contribution from employment to output growth. Long-lasting effects of re-unification seem to play a pivotal role in the twin phenomenon of sluggish domestic demand and anaemic job growth. Indeed, re-unification brought together one of the most advanced economic areas of the world with an area of low productivity, state-protected companies, artificial exchange rates and an almost obsolete capital stock. The clash this implied for East German production was enhanced by a 1:1 conversion rate of the East German mark into the DEM, while the exchange rate applicable for East German exports had been at 1 to 4.3. In addition, in the initial years eastern wages rose far beyond productivity gains. This was due partly to the specific wage bargaining situation, where labour unions and employers' associations from the West oversaw the negotiations in the New Länder, but also to political reasons such as equality consideration and the attempt to prevent a massive outward migration. The consequence was a near collapse of those sectors of the economy that were exposed to West-German and international competition, particularly the manufacturing sector, with a dramatic labour shake-out and skyrocketing unemployment as a result.

*... with the construction sector in the East particularly affected, ...*

In spite of this, in the initial years after re-unification output growth in the New Länder was higher than in the West. In part this is explained by a catching-up effect following the drastic fall in output at the start of re-unification. But even more so it was the result of a composition effect, with the building sector giving a disproportional contribution to growth in the New Länder in the first half of the 1990s. This was partly due to reconstruction needs related in particular to the area of infrastructure, but it also resulted from very generous fiscal incentives for both business and housing construction. When in the mid-1990s infrastructure investment levelled off and fiscal incentives were reduced, construction investment in the New Länder

imploded, imparting very negative contributions to growth ever since. As a consequence, growth rates in the East have fallen short of those in the West from the mid-1990s onwards.

*... although construction also took a plunge in the West.*

At least one third of the total difference in the growth performance between Germany and its European partners since the mid-1990s can be attributed exclusively to the shrinking German construction sector. However, this huge impact did not stem solely from developments in the East, but coincided with the cyclical evolution of the building sector in the West. Specifically, strong immigration in the late 1980 and early 1990s boosted residential construction in West Germany. By the mid-1990s, when the inflow of immigrants tailed off, demand for residential construction stalled. At the same time, the public sector reduced drastically its subsidies for low-cost housing, while public investment was cut substantially, reflecting mainly budgetary consolidation efforts. Moreover, the demand for business premises declined in a general environment of low growth expectations. Therefore, while the boom-bust cycle of the construction sector in the New Länder was much more eye-catching, the parallel decline in the West was just as important in pulling down overall output growth.

*Sharp tax increases to finance huge transfers to the East ...*

Economic growth has also been affected by the large financial burden re-unification imposed on the country. These transfers have been used to finance the reconstruction of the eastern economy and, even more importantly, to pay for the large deficits in the social security systems of the New Länder which resulted mainly, but not exclusively, from very high unemployment levels. These transfers have amounted to some 4% of GDP per year in net terms ever since re-unification. Initially, they were mostly financed by allowing budget deficits to increase, but when the budgetary situation risked to become unsustainable taxes and social security contributions were raised sharply. Although most other European countries also witnessed a rise in the tax burden in the early 1990s, in Germany this increase was particularly strong.

*... impacted adversely on growth throughout the second half of the 1990s.*

Economic theory suggests that a fiscal expansion financed by distortionary taxation could potentially generate substantial adverse growth effects after the initial positive demand stimulus dies down. Two transmission channels of this second-round negative impact can be identified: crowding out of private investment as higher taxes reduce expected net profits, and adverse labour market developments arising from higher wage and non-wage costs. According to simulations undertaken with the Commission services' QUEST II model, this could have led to a negative growth impact of around 0.3% per year from the mid-1990s onwards. This negative impact may, therefore, explain up to one third of the growth gap between Germany and its European partners.

*Cost-competitiveness suffered in the first half of the 1990s ...*

Re-unification also contributed to the deterioration of Germany's external competitiveness in the first half of the 1990s. Although the overall competitiveness of a country is a complex notion, which is difficult to measure, it is evident that the cost competitiveness of Germany as measured by relative unit labour costs declined strongly in the first half of the 1990s. This was due to wage increases much above productivity increases, especially but not exclusively in the East, coupled with a strong appreciation of the D-Mark. The decline in Germany's competitiveness can be detected, for instance, in the relative loss of export market shares witnessed since re-unification. In particular, East German firms are virtually absent from world markets, causing the New Länder to run a de facto trade deficit of enormous

proportions. Other indicators, such as a relatively low inflow of foreign direct investment also point to a comparatively low attractiveness of Germany as a business location.

*...but most of these effects have run their course since the late 1990s.*

Although wage moderation since the mid 1990s and a fall in the exchange rate of the euro in the late 1990 have helped recapture most of the initial losses, vis-à-vis the Euro-area countries various indicators of cost-competitiveness are still somewhat worse than the levels observed before re-unification. This may continue to exert a certain drag on growth, but the overall impact of this is likely to be very small. According to econometric simulations the negative growth impact of the appreciation of the real effective exchange rate in the first half of the 1990s reached its maximum around the middle of the decade, but since then its effects have gradually dissipated. However, given that available indicators might not fully capture the impact of the re-unification shock on the overall level of competitiveness of Germany it cannot be excluded that quantitative evaluations underestimate these effects. More specifically, while, thanks to wage restraint and the weak euro, external competitiveness in the West seems to have been largely restored, this can hardly be claimed for the New Länder which continue to be hampered by high unit labour cost.

*Macro-economic policies can hardly explain the remaining growth gap ...*

Adding up, a significant part – up to two thirds - of the growth gap between Germany and its European partners since the mid-1990s must be ascribed to direct or indirect effects of re-unification in combination with developments of the West-German construction sector. Can the remainder be explained by macro-economic policies that were tighter in Germany than in other European countries?

*...as monetary conditions have been broadly supportive since the mid-1990s ...*

On the other monetary side, with the DM being the anchor currency in the EMS, Germany could not benefit to the same extent as other countries from falling interest rates after 1994. The monetary relaxation was therefore less marked for Germany than for its partners. However, most of this differential impact of monetary policy occurred in the run-up to EMU, while in later years a divergence in real interest rates was due to different inflation rates. As a consequence, in light of generally supportive monetary conditions during the second half of the 1990s, monetary policy can hardly be blamed as a main factor behind sluggish output growth. Quite evidently, the German economy had made a strong showing during phases of clearly tighter monetary conditions, such as the late 1980s.

*... while budgetary consolidation proceeded in step with Germany's European partners.*

On the fiscal side, Germany had to follow a rather restrictive budgetary stance in order to qualify for EMU and comply with the provisions of the Stability and Growth Pact. According to DG ECFIN estimates, the cyclically adjusted general government balance excluding interest payments improved by somewhat less than 2% of GDP between 1995 and 2000. This improvement is smaller than that registered for the average of its EMU/EU partners. Hence, differences in the overall budgetary stance cannot account for the difference in output growth. However, the budgetary strategy chosen in Germany might have been more harmful to growth than in other Member States as, in order to make up for the sharp rise in social transfers, expenditure was drastically cut at the level of government employment and investment. In conclusion, in the second half of the 1990s the German policy-mix followed a path similar to the one followed by its European partners. If macro-economic policies were to be held responsible for a differential impact on growth, it was probably through the specific composition of the budgetary consolidation process rather than the overall macro-economic policy stance.



*Structural factors may explain a significant part of the growth gap ...*

A significant part of the growth gap between Germany and its partners is, therefore, left unexplained. A decomposition of the growth path of potential output shows that labour market behaviour is an important factor behind a lower than average growth rate in Germany after the mid-1990s. According to DG ECFIN estimates, German potential growth during the second half of the 1990s could have been around 0.5 percentage points higher per year if Germany had developed like the Euro-area average. Most of this difference can be explained by developments in the labour market. Two factors, in particular, stand out, each explaining about one half of the overall difference in potential growth. First, the labour market participation rate has seen a more subdued development in Germany than in other countries. On the other hand, the estimated equilibrium unemployment rate as measured by the NAIRU has remained rather stable in Germany, while it has trended down in most other EMU/EU countries.

*... with rigidities in the labour market standing out as a key factor, ...*

It is a difficult task to pinpoint the exact underlying factors, which account for the different labour market experience of Germany in comparison with other European countries. Nevertheless, it seems likely that a lack in labour market reform in Germany lies at the root of these differences. Several impediments in the German labour market could be identified which might have a dampening effect on labour market participation and the equilibrium unemployment rate: (i) wages out of line with productivity due to the nature of the wage bargaining process in Germany, especially for the unskilled segment of the labour market, with the East-West wage differentiation remaining a particular problem; (ii) high marginal tax rates which, in combination with a long benefit duration and high benefit rates for certain groups, lead to significant unemployment traps; and (iii) a general lack of flexibility and mobility.

*... which interacted with factors related to re-unification.*

In general, however, labour market regulations in Germany are not much higher than in most other continental European countries. Differences in outcomes are, therefore, most likely due to differences in the evolution of structural labour market impediments during recent years rather than their level. In particular, while many European countries made efforts to render their labour markets more flexible, similar effort have been largely missing in Germany. On the contrary, in addition to reversing some of the timid measures adopted by the previous government with a view to increasing labour market flexibility, the present government implemented regulations which were widely seen as adding further constraints. Although the direct effects of these measures on employment creation were probably small, in view of a broad consensus that Germany needs to lower labour market rigidities, the political orientation of these actions might have generated harmful signalling effects in the longer term. It needs to be emphasised, in this context, that in many respects re-unification has made the country more heterogeneous than it had been before. The appropriate response to such an increase in heterogeneity would have been a decisive move to make labour markets more flexible. In this sense, existing rigidities were made worse through their interaction with re-unification-related factors. For instance, a significant share of the East German labour force was priced out of the market because wage rises much above productivity increases concurred with Germany's general compression of wages at the lower end of the wage scale.

*While continuous reforms of product and capital markets will be important...*

Although, in general, the growth potential of an economy may be seriously constrained by product and capital market rigidities, in comparative terms they seem to be of lesser importance in explaining the specific growth performance of Germany. Indeed, Germany has made substantial progress during the 1990s in liberalising its network industries. While state aid, which is mostly geared towards large industrial companies and based on subsidising capital inputs, continues to act in a distortionary way in various markets its scale does not seem to differ significantly from that observed in other European countries. On the other hand, outdated regulations tend to limit the creation of jobs in new types of activities, thereby reducing potential employment. Overall, however, imperfections in product and capital markets do not seem to go beyond those of Germany's EMU/EU partner countries. These considerations are also corroborated by the above-mentioned simulation exercise which shows that neither equipment investment nor total factor productivity can account for the gap in potential growth between Germany and its European partners. Indeed, this gap is exclusively explained by the labour contribution to potential growth.

*... labour market reform will be key to bring Germany back onto a robust growth path.*

Looking ahead, according to DG ECFIN estimates, Germany is likely to have a medium-term growth path of some 2% which compares with a potential growth rate of close to 2½ % for Germany's EMU/EU partners. This reflects first of all a demographic differential between Germany and other European countries, but also insufficient labour market flexibility to cope with change in comparison with other European countries. Notwithstanding some recent measures in this field, Germany would need to undertake labour market reforms to lower the NAIRU and increase the participation rate if it wants to catch up with the other Euro-area countries and face enlargement and the consequences of its ageing population. Without a new round of labour market reforms the German medium term growth outlook is likely to remain bleak.

# 1. Growth of the German economy in the 1990s: stylised facts

## 1.1 After the re-unification boom: Germany's business cycles in the 1990s

### 1.1.1 Output growth

Economic activity in Germany in 2002 continues to be disappointing. With an estimated growth rate of  $\frac{3}{4}\%$ , barely higher than the 0.6% in 2001, Germany will yet again carry the red lantern among EU countries. This worrisome pattern for the largest EU economy persisted throughout the 1990s. In understanding this pattern, two questions will have to be addressed separately. First, it needs to be explained what ended the present business cycle and what general role short-term factors play in the German economy. Second, as the long-term growth potential of Germany is very low, it needs to be analysed what holds back potential growth factors. This sub-section starts with the short-term factors.

Since 1992 economic forecasters have been projecting a longer lasting recovery in Germany, sparked off by strong export growth. Up to now, however, so-called external shocks impede an acceleration of growth. This leads to a pattern of very short and flat economic waves. In 1994/5, the incipient recovery was stifled by a sharp appreciation in the nominal exchange rate and high wage increases. In 1997/98 Germany was sucked into the turbulence caused by the Asian crisis. In 2000, the sharp increase in oil prices and a sharp downturn in the stock markets choked off demand.

As Figure 1.1 shows, 2001 clearly marks the end of what is already the third full business cycle after German re-unification. With troughs in 1992/3, 1995/6 and 1998, the average length of a business cycle in the 1990s is a mere three years long<sup>1</sup>. This distinguishes the German growth pattern clearly from the business cycle in the USA, which lasted longer than the full three German cycles combined. The German cycle is also substantially shorter than those of most other European countries, with the exception of Italy, the other European country that shows particularly weak growth in recent years. France, for instance, basically skipped the 1998 recession experiencing only a mild slowdown in growth. This means that in France the time from 1995 until 2001 forms part of a single cycle. Before 1998, growth in Germany, France and Italy went in parallel. Since then, France set itself apart from the two other countries. The pattern of 1998 might repeat itself in the present downturn: Germany already practically stopped growing since the third quarter of 2000. Quarterly growth in the six months from the third quarter of 2000 until the fourth quarter of 2001 averages 0.05%. By contrast, average quarterly growth in France during this period, even though also levelling off recently, remained at 0.4%. It is therefore of particular interest to analyse the present and previous cycle and take a look as to how France avoided the sharp cyclical downturn.

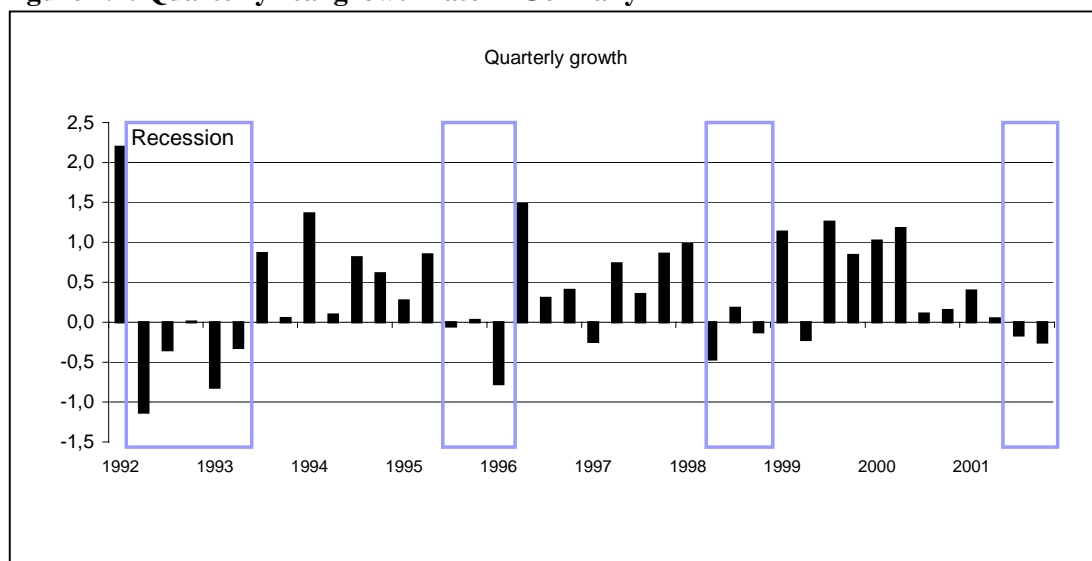
### 1.1.2 The recovery of 1995/98

The starting point of the previous cycle in Germany was the 1995 recession, when export growth was choked off as a result of a sharp increase in German wages and the Mexican peso crisis, which was accompanied by a significant appreciation of the DEM. The end point is marked by the slowdown in 1997/8. Again an external shock set off the end of the period; this time it was the Asian crisis. The 1995/98 cycle appears to be highly typical for the German situation in the 1990s, as both its beginning and its end are triggered by external events, with domestic policies, notably in the labour market, contributing their share to aggravating the situation.

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<sup>1</sup> A recession is most frequently defined as two consecutive quarters with negative growth. As over the long run a market economy usually grows, this definition is generally not useful in defining a growth cycle, as it would only apply to the 1992 recession. As a pragmatic definition, we use here two consecutive quarters with less than 0.2% quarterly growth.

**Figure 1.1: Quarterly real growth rate in Germany**



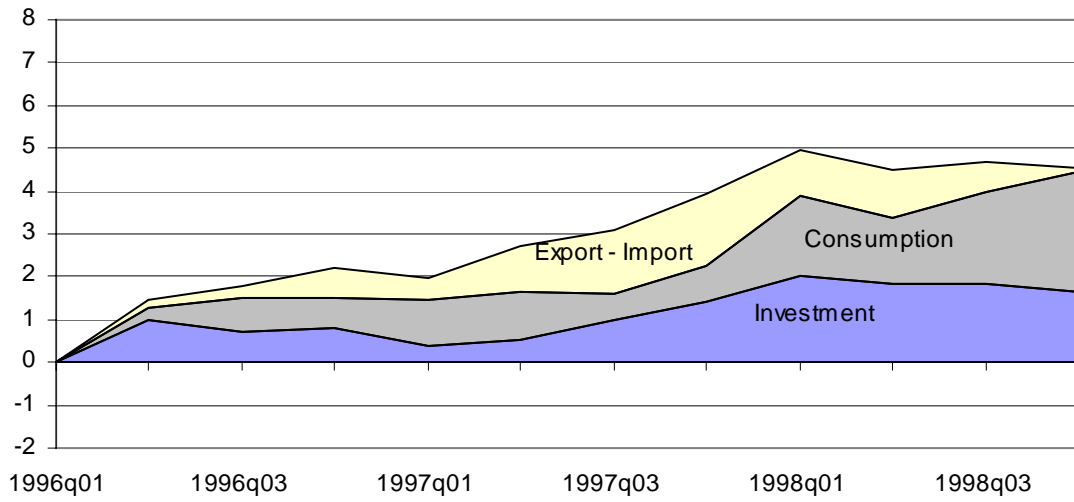
A look at the data shows a fairly clear pattern (Figure 1.2a): Exports contributed to kick-starting the economy. For about two years, the brunt of the growth was borne by the foreign contribution, while domestic demand played only a relatively weak role in the early years of the cycle. The growth contribution of the external balance until the end of 1997 is over 40 percent. This means that instead of growing with an average rate of 2% over the two year period, Germany would have grown only at a rate of 1.2%, which hardly constitutes a boom. In fact, the significant impulse coming from the external contribution never really translated into domestic demand. As soon as the unsustainable external contribution of annually 0.8% subsided, respectively turned negative, the mini-recovery collapsed and quarterly GDP declined by 0.5% in the second quarter of 1998. Put in extreme terms, the Asian crisis did not halt a recovery. As far as domestic demand is concerned, a recovery never took place.

A disaggregation of domestic demand into its components reveals that the problem of weak demand is not so much found in equipment investment, which grew over the same period by about 6% annually. Rather, private consumption remained very slack throughout the period. It only grew at an annual rate of 1.2% over the two-year period. More importantly, most of that impact only came in the last two quarters of the cycle—not enough to lift Germany onto a sustainable growth path. The underlying reason is that, during the period under consideration, real disposable income barely rose by 1%. One important aspect is that despite rising wages, a rise in the wage sum was held back by a reduction in employment by 0.5% during the cycle, because the growth rate during 1996/7 was not enough to generate employment growth. This situation was aggravated by a rising tax burden.

The same period in France presents itself completely differently (Figure 1.2b). Just as in Germany, the upswing was triggered by a strong contribution of net exports. Here, however, the similarities end. Right from the beginning, private consumption bore a significant share of the upswing, while investment initially provided no impulse to growth or was even negative. After six quarters the boom in France became self-sustained with both consumption and investment picking up speed. At this point France had entered the virtuous cycle of rising employment, rising income and higher domestic demand. While the Asian crisis affected also the French economy from 1998 onwards, the country benefited from the fact that it had reached a self-sustaining growth path by that time. Consequently, the crisis is visible only as a blip in an otherwise much more resilient growth process.

**Figure 1.2 : Cumulative growth contribution of consumption, investment and external balance (percentage growth of GDP since base period)**

**a) Germany: Period 1996/1998**



**b) France: Period 1996/1998**

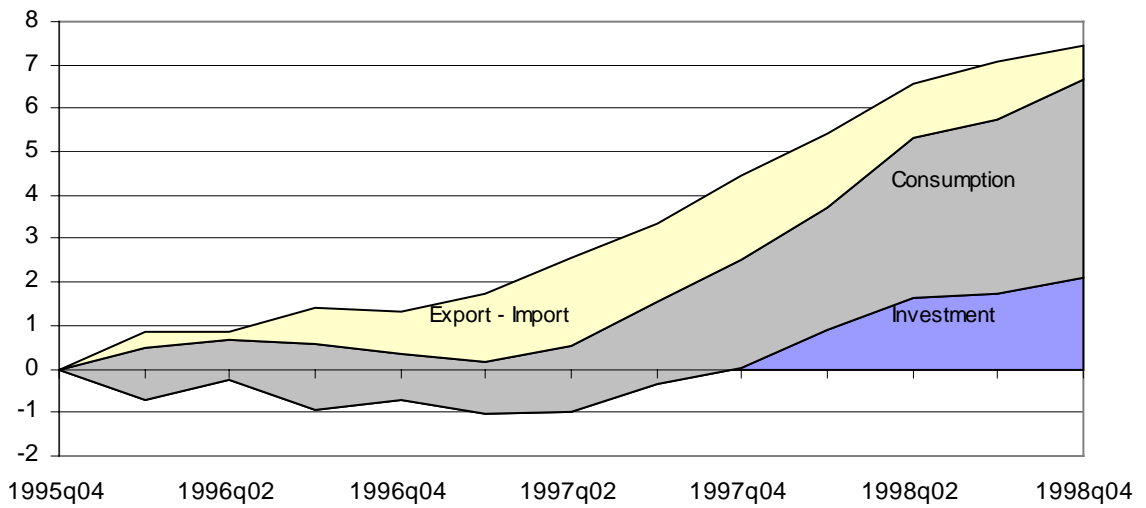
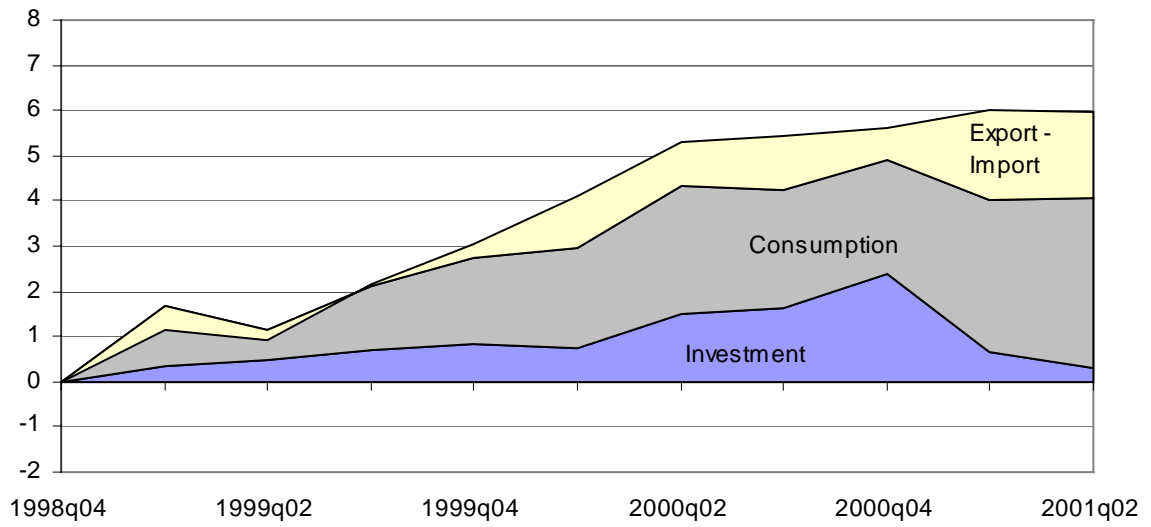
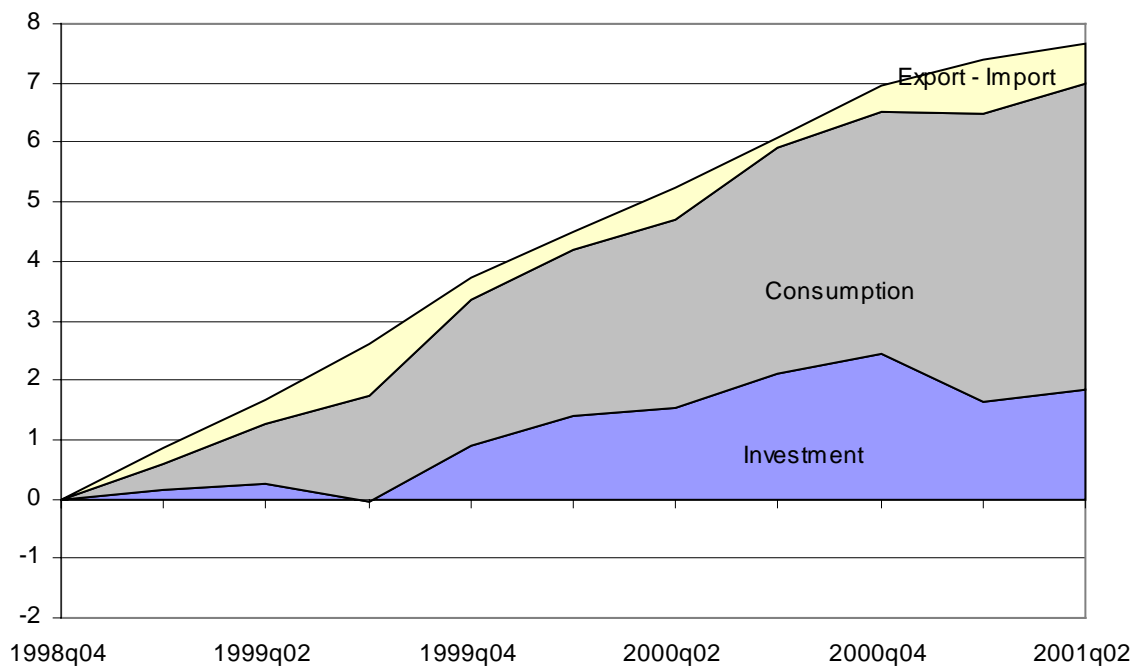


Figure 1.2 (continued)

c) Germany: Period 1999/2001



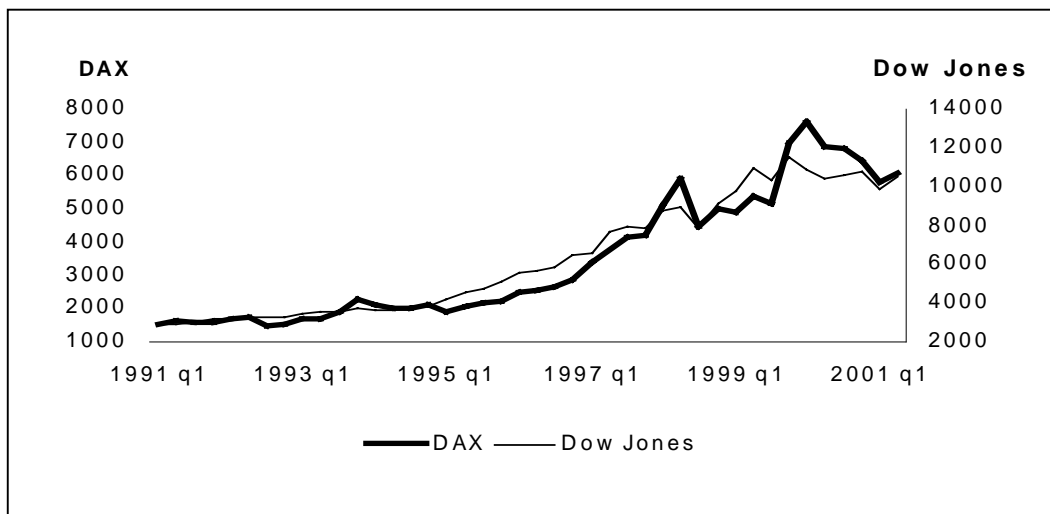
d) France: Period 1999/2001



### 1.1.3 The recovery of 1999/2001

The recovery after the 1998 downturn in Germany shows some of the features of the previous recovery (Figure 1.2c). In particular, it is also very short-lived. The period with high growth lasted no longer than from the first quarter of 1999 until the second quarter of 2000, and even here a brief spell of negative growth is interspersed (in the second quarter of 1999). However, the role of trade is not quite as prominent as in the previous upswing. The initial spark instead is provided by the 1999 tax reduction and transfer package of the incoming government, which led consumption to increase by 2% in one quarter. At the same time investment rose rapidly. A backlash in these factors in the second quarter of 1999 is partly compensated by a rising external contribution. Throughout the cycle, equipment investment plays an important role in sustaining growth. Also, and in contrast to the previous cycle, private consumption growth is gathering momentum in the period between 1999Q3 and 2000 Q4. It all but appeared that Germany finally reached the stage of sustainable growth. Growth was both higher than in the previous recovery and most importantly it was internally generated. The higher pace of growth led to rising employment - also in contrast to the previous cycle - which sustained higher private consumption and higher investment. In addition, the general upswing was reinforced by a stock market boom, which combined with large scale privatisations (e.g. of Deutsche Telekom and Deutsche Post), plenty of IPOs and the creation of the New Market. This latter factor probably also contributed to the rapid downswing in the third quarter of 2000, as starting in Spring 2000 stocks began to slide and the impact of rising interest rates began to be felt (Figure 1.3).

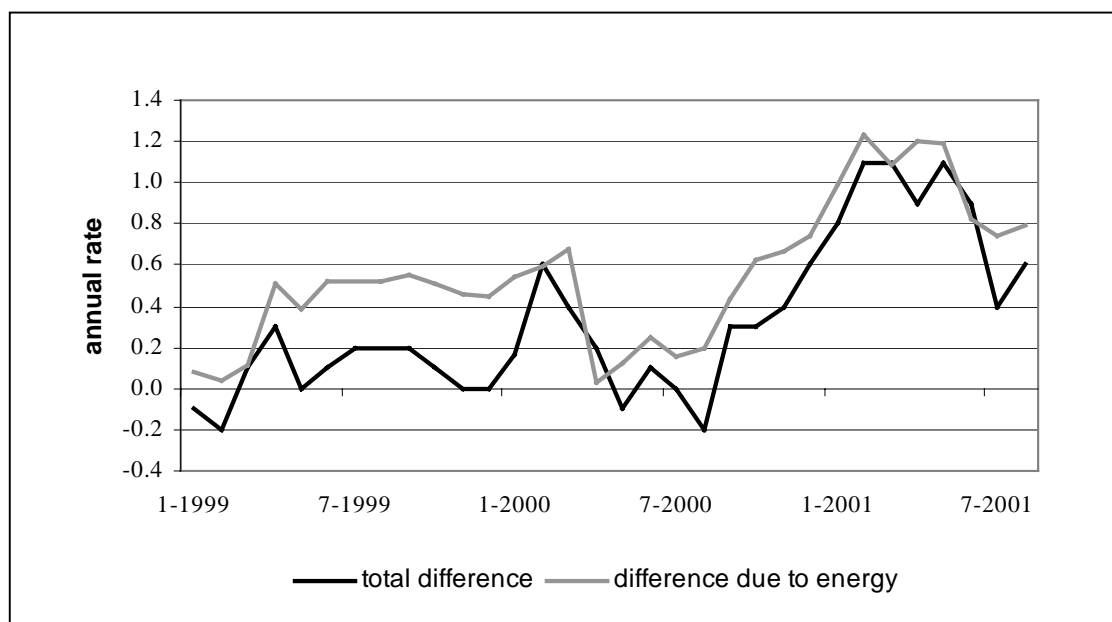
**Figure 1.3: DAX and Dow Jones**



The rapidity of the break in German growth is, however, mainly explained by the high loss of purchasing power, which set in as a result of the fall in the Euro exchange rate and the rising oil prices. How substantial this loss in real disposable income is can be seen when the GDP growth for 2000 of 3% is compared with a terms-of-trade adjusted real value of GDP growth of only 1.5%. Most of this terms of trade loss is concentrated in the final half of the year, leading real disposable income growth and with it consumption to stagnate. In addition, in the first quarter of 2001, equipment investment and construction activity shrank substantially. Only a rise in the external contribution kept Germany from negative growth during the first half of the year. The impact of the US slowdown provided the final straw that kept the downswing from being only temporary. Even though the impact was not felt much on the export side before the end of 2001, the transfer of declining confidence via the stock market appeared to have a more immediate impact. The events in the context of the terrorist attacks in the US have contributed to a deepening of the recession, but cannot be considered the root of the 2001 recession.

Again, the situation for France presents itself more favourably (Figure 1.2d). On the one hand, the momentum of rising employment, rising consumption and investment persisted already since 1996, making the situation in France less fragile. On the other hand, France appears to have been much less hit by the impact of rising oil prices than Germany. As an indicator, Figure 1.4 presents the difference in the harmonised index of consumer prices (HICP) between France and Germany and compares this value to the component that can be attributed exclusively to the development in energy prices. As the Figure shows, the two curves practically overlap and the deviations between France and Germany are substantial. In January 2001, German HICP inflation was around 1.2 percentage points higher exclusively because of the higher weight of fossil fuels in the French consumption basket. This is due to the greater reliance of France on nuclear electricity and the more privileged climate of the country. In this situation, it appears to be a fortunate mix of a more favourable policy environment and good luck that kept France growing at a faster pace than Germany.

**Figure 1.4: Weighted HICP differences Germany-France explained by energy**



#### 1.1.4 An econometric analysis of the short-term response of growth to exports

In order to deepen the analysis of the 1990s business cycles, some interesting information on the short term interaction between exports and GDP can be gleaned from an analysis of quarterly data. In particular, this sub-section assesses whether the sensitivity of Germany to changing export performances differs systematically from that of the other two big Euro-area economies, France and Italy. To allow a meaningful statistical analysis, the German data set was extended backwards by using West German data for the pre-unification period. Furthermore, quarterly growth figures were smoothed by using a weighted moving average<sup>2</sup>.

<sup>2</sup> Data used are seasonally adjusted quarterly real figures from 1978 Q1 until 2001 Q2 (Q1 for France; 2000 Q4 for Italy). To achieve stationarity of data the econometric analysis looks only at first differences, i.e. quarterly growth figures. These figures are, however, relatively volatile. Therefore a smoothing function has been used applying the formula:  $X(\text{smooth})_t = 0.25 * X_{t-1} + 0.5 X_t + 0.25 X_{t+1}$ . A sensitivity run does not show any qualitative differences between smoothed and original data. However, graphs based on estimates with the original data result in curves with a number of abrupt kinks that make a smoothing more realistic looking. It also has the intuitive advantage that temporary blips have less influence than more permanent shocks. West German data series were adjusted so as to fit smoothly with data of unified Germany. The point in time at which the chaining takes place yields no noticeable differences.



Table 1.1 presents stylised information on the quarterly export and GDP figures. It can be seen that export shares per unit of GDP are practically the same for all three countries. While Germany's exports of goods and services make up more than 30% of GDP, with 28% the export share of France is not significantly lower, with Italy taking an intermediate position. The relative importance of exports alone therefore does not explain any possible difference in the sensitivity of growth to export performance.

**Table 1.1: Exports and GDP growth**

	Exports as % of GDP (average for 1999/2000)	Exports (standard deviation of quarterly growth rate)	GDP (standard deviation of quarterly growth rate)	Cumulative growth response due to one-time export growth increase (by 1 standard deviation)*
Germany	30.6%	1.57%	0.58%	0.41%
France	28.0%	1.28%	0.37%	0.42%
Italy	29.1%	2.02%	0.42%	0.25%

\* *Own Estimation*

A more significant aspect is the degree to which exports fluctuate. Here it can be seen that France apparently benefits from a relatively stable situation in its export markets. The standard deviation of quarterly export growth lies at 1.3%, while that of Germany is noticeably higher with some 1.6%, with Italy suffering from even higher export volatility (2%). France also benefits from a very constant degree of GDP growth, with a standard deviation of 0.37% in quarterly growth rates. With a value of 0.42%, growth volatility of Italy is only slightly higher than that of France. By contrast, the growth volatility in Germany is 1½ times higher than that of France with a value of 0.58%. *Ceteris paribus*, a high volatility of GDP growth should lower the potential medium term growth path, because it increases the risk of sub-optimal factor allocation in an economy. Noticeably, volatility renders investment decisions more difficult.

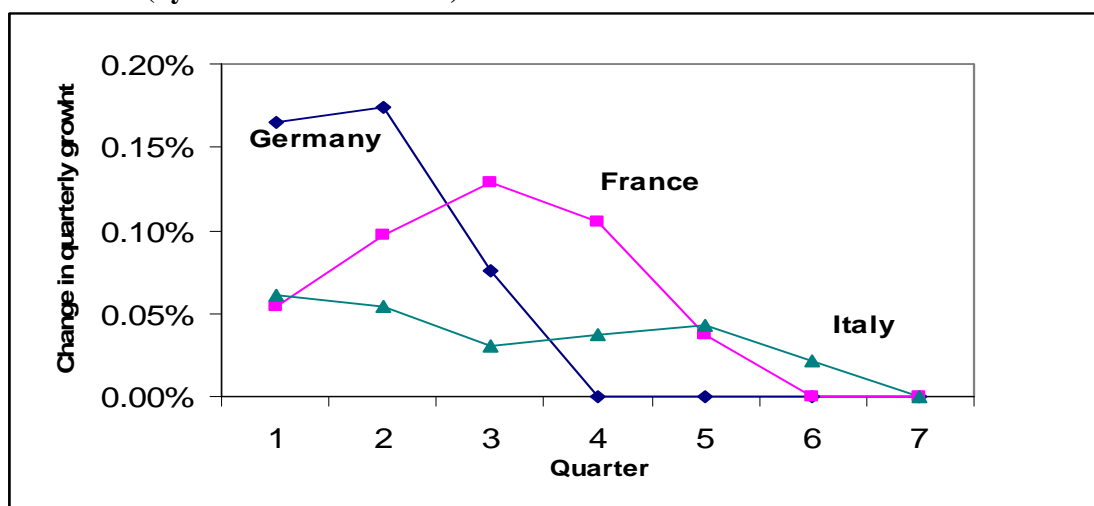
An econometric analysis should pick up three potential links between exports and GDP growth. First, the two are directly linked, because exports by definition are a component of GDP. Second, export growth can induce additional GDP growth via economic multipliers, notably investment. Third, any correlation could simply reflect joint influences. In particular, exports are a strong indicator of global economic growth, which should also go in parallel with rising stock markets. Insofar as stock markets are increasingly linked and, therefore, economic sentiment moves increasingly parallel across the world, an econometric analysis might therefore pick up a spurious correlation. Nevertheless, it indicates the impact of the global economy on the domestic market.

Clearly, therefore, exports should exert a positive influence on growth and investment. By contrast, as the three countries are small compared to the rest of the world, they are largely unable to pull the global growth rates. Export growth should therefore lead GDP growth, but not the other way round. This is confirmed by a Granger causality test undertaken for the three countries.

A dynamic means of testing the impact exports have on GDP consists in a vector autoregression (VAR). This econometric technique implies regressing each variable of the studied system on lagged values of itself and the other variables. Here we present only the findings of a bivariate VAR that includes quarterly GDP and export growth. The presented results are very robust. This means neither the inclusion of other variables, variation of the time lag or even the inclusion of a dummy variable to distinguish the pre- and post-unification situation alter the result in a qualitative way. The estimated parameters of the VAR allow a dynamic analysis of what happens to each variable if export growth is changed.

Figure 1.5 shows the impulse response of GDP over time to a one-time increase in the export growth rate by one standard deviation. The response differs clearly among the three countries. Despite Italy's higher export volatility, and hence relatively large initial export increase, its GDP response is rather flat and peters out after 7 quarters. The cumulative impact on GDP is 0.25% (Table 1). By contrast, France's response is bell shaped with additional growth rates of over 0.10% in the second to fourth quarter, after which it drops to zero in the sixth quarter. The cumulative impact is accordingly higher than the Italian one with 0.42 %.

**Figure 1.5: Response of quarterly GDP growth to a one time increase in export growth (by 1 standard deviation)**



Germany's response is clearly front-loaded. While its cumulative GDP response is the same as that of France (0.41%), practically all of the impact is noticeable in the immediate first two quarters, after which it quickly dissipates. The inability of Germany to attain self-sustained growth was described further up. The figures clearly reflect the otherwise anecdotal observation that Germany is relatively more dependent than other countries on the global business cycle. As Figure 1.5 shows, Germany's reaction to export changes tends to be large and direct. A separate analysis of pre- and post- unification data supported the view that this characteristic is not a recent phenomenon.

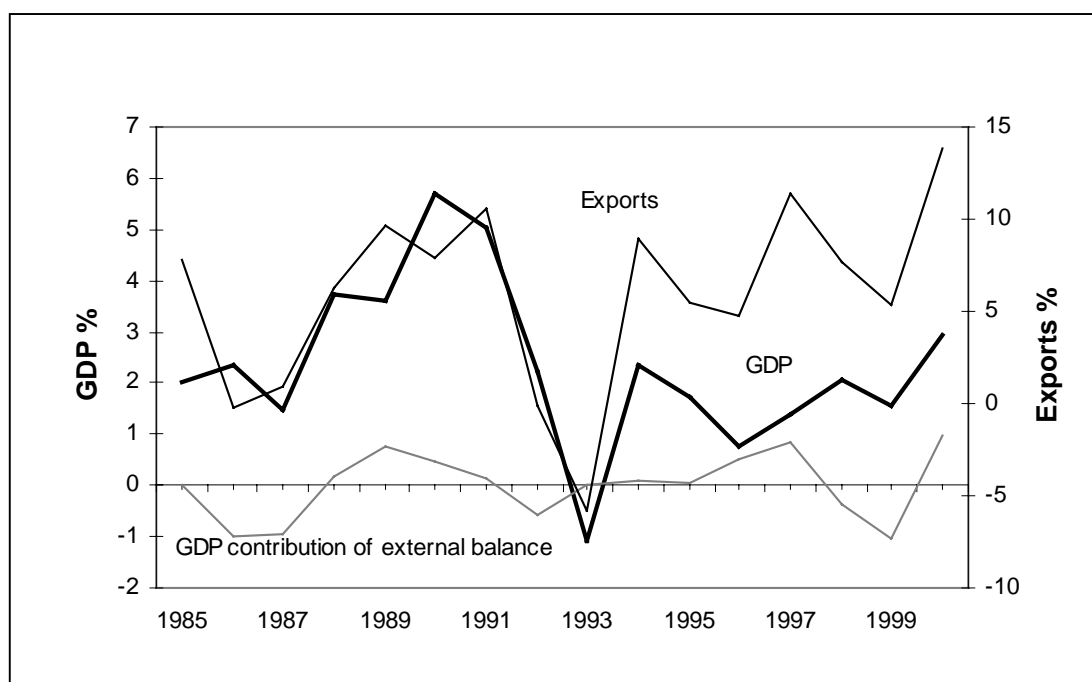
While the vector autoregression presented here provides some evidence on the dynamic aspects of the trade-growth nexus, it cannot provide much guidance on the transmission mechanism between export performance and growth. Given the very immediate impact exports have on growth, it appears, however, that relatively slowly and indirectly working factors are weak in Germany compared to other countries, while direct factors such as the instantaneous transmission of economic sentiment from abroad carries relatively large weight, as can be seen, for instance, from the close correlation of the German and American stock market in Figure 1.3.

### 1.1.5 The dependence of the business cycle on trade

The previous sub-section established that one of the defining features of the German economy is - despite its large size - its strong dependency on external developments. As shown by Figure 1.6, the degree to which export expansion and GDP growth move in parallel is indeed remarkable. All turning points in the growth cycle trace contemporaneous changes in the rate of exports. A positive correlation of exports to GDP is certainly no surprise, because exports are included in the calculation of GDP itself. However, the contribution of net exports to growth is relatively small and less correlated with growth than exports alone. Insofar as other EU economies, and hence German exports, are subject to similar monetary policy shocks as Germany via EMS and EMU, it is remarkable that in Germany the correlation between

exports and GDP growth is stronger than what can be observed, for instance, in France and the UK. It is especially weak in the cases of Italy and Spain.

**Figure 1.6: Real GDP and export growth**



The primary reason for the very tight correlation of exports to GDP growth in Germany appears to be that the impact of exports on business confidence is a more important transmission mechanism than in other countries, as was described in the previous sub-section. The data in the figure reflect those of West Germany until 1991 and of unified Germany thereafter. This means that up to this point in time, which includes most of the re-unification boom in the early 1990s, West German sales to East Germany are shown as exports. As a consequence unification does not interrupt the trade-growth nexus and even underscores the high dependence of the German economy on external influences.

### 1.1.6 Conclusions

An analysis of the short term economic situation identifies external factors as the outstanding features in generating business upturns and downturns in Germany. At first glance this is astonishing, given the size of the economy. It appears, however, that a significant part of the attention to the external side in Germany is given by the fact that since 1991 average quarterly growth in Germany amounted to a pale 0.4%. With such a low underlying growth rate, fluctuations in the external contribution can easily turn a mildly positive growth rate into a negative one and thus make the difference between a boom and a recession. While it appears that Germany also had a streak of bad luck in the timing of the external shocks, clearly the fundamental problem is that the country does not succeed in generating a sustainable domestically-driven growth path. Consequently, it is not able to take full advantage of the impulse of an export boom. Apparently, France succeeded much better in this respect in past years, allowing the country to ride out negative external shocks without losing much economic momentum.

## 1.2 The growth performance in the 1990s in a longer-term perspective

### 1.2.1 Output and employment growth

The previous sub-section has shown that, despite its large size, the German economy reacted very sensitively to external developments during the 1990s. Partially owing to this strong response to adverse external shocks, annual average growth of the German economy has been particularly sluggish after the mid-1990s. However, output growth in Germany has been relatively modest for most of the past three decades. In a comparison with the larger industrialised countries Germany holds the last position in terms of average annual output growth over the period 1971-2000 (Table 1.2)<sup>3</sup>. Only the UK experienced similarly low output growth but, in the case of this country, the poor performance was due to its slow growth at the beginning of this period, whereas for most of the 1990s economic growth in the UK was rather dynamic and well above the EU average. Moreover, slow output growth in Germany went along with anaemic job creation, with the annual average rise in employment being clearly below that of the EU and Euro-area partner countries.

**Table 1.2: Output and Employment (annual average growth)**

	D <sup>(1)</sup>	F	I	UK	EUR <sup>(2)</sup>	EU <sup>(3)</sup>	US	JP
<b>GDP</b>								
1971-2000	2.3	2.5	2.5	2.3	2.6	2.5	3.2	3.3
1991-2000	1.9	1.8	1.6	2.3	1.9	2.0	3.3	1.4
1991-1995	2.1	1.1	1.3	1.8	1.3	1.4	2.4	1.4
1996-2000	1.8	2.5	1.9	2.8	2.6	2.7	4.1	1.4
<b>Employment</b>								
1971-2000	0.3	0.5	0.6	0.4	0.6	0.5	1.7	0.7
1991-2000	0.2	0.5	0.1	0.2	0.5	0.4	1.2	0.3
1991-1995	-0.3	-0.2	-0.7	-0.9	-0.3	-0.6	0.9	0.8
1996-2000	0.7	1.2	1.0	1.3	1.3	1.3	1.6	-0.1

<sup>(1)</sup> Data up to 1991 West Germany.

<sup>(2)</sup> Euro-area excluding Germany, Greece, Ireland, Portugal and Spain

<sup>(3)</sup> EU excluding Germany, Greece, Ireland, Portugal and Spain

Source : Commission services

In recent years, the apparent lack of dynamism of the German economy has become more accentuated. Indeed, in the second half of the 1990s annual average output growth of Germany was almost 1 percentage point below that of the EMU/EU partner countries and around 2¼ percentage points below that of the US. Likewise, during this period the annual average increase in employment in Germany fell short by more than ½ percentage point of that of the EMU/EU comparison group and by almost 1 percentage point of that in the US. Partly, the meagre economic performance can be blamed on the fact that in the aftermath of re-unification German real GDP growth rose significantly above its longer-term trend. Specifically, real GDP growth between 1990 and 1992 averaged almost 4½ %, i.e. more than 2 percentage points above Germany's longer-term average. The ensuing period of weakness could thus be viewed as an adjustment process towards the longer-term growth potential of the German economy. However, this argument stops short of explaining why Germany's potential growth has been so low and, more importantly, why the period of adjustment has lasted for so long.

### 1.2.2 Population growth

A slowly growing population has clearly contributed to weak overall economic growth in Germany. Over the last three decades the differential in annual average population growth between Germany and the US amounted to no less than -¾ percentage points and there is also a negative albeit much smaller differential vis-à-vis France (Table 1.3). However, other

<sup>3</sup> For the years up to and including 1991, growth rates underlying Table 1.2 and all following tables in this sub-section are based on West-German data only, while growth rates for the years from 1992 onwards are based on data for unified Germany.

countries like Italy and the UK exhibit even slower population growth than Germany and the overall difference with the EMU/EU average is negligible.

**Table 1.3: Population (annual average growth)**

	D <sup>(1)</sup>	F	I	UK	EUR <sup>(2)</sup>	EU <sup>(3)</sup>	US	JP
1971-2000	0.3	0.5	0.2	0.2	0.4	0.3	1.0	0.7
1991-2000	0.4	0.4	0.2	0.4	0.3	0.4	1.0	0.3
1991-1995	0.7	0.4	0.2	0.4	0.4	0.4	1.0	0.3
1996-2000	0.1	0.4	0.1	0.4	0.3	0.3	0.9	0.2

<sup>(1)</sup> Data up to 1991 West Germany.

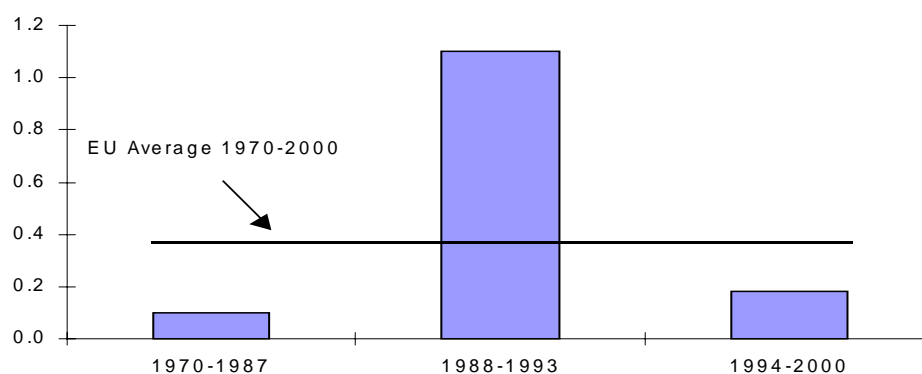
<sup>(2)</sup> Euro-area excluding Germany, Greece, Ireland, Portugal and Spain

<sup>(3)</sup> EU excluding Germany, Greece, Ireland, Portugal and Spain

Source : Commission services

Only during a couple of years before and after re-unification German population growth was unusually high as a result of special factors. Particularly, a wave of so-called “ethnic Germans” reached Germany in the wake of the opening-up of the Central and East European countries. As a result, population growth in Germany was significantly higher between 1988 and 1993 than in any other of the large OECD countries<sup>4</sup>. By contrast, in the years preceding and following that period German population expanded much more slowly and in line with its longer-term trend (Figure 1.7).

**Figure 1.7 German Population Growth (annual average)**



Therefore, moving from total output to output per capita clearly reduces the longer-term growth gap of Germany vis-à-vis its EMU/EU partners but also the US (Table 1.4). However, the situation is different for the period between 1996 and 2000, for which a significant gap in the growth rate of per capita income remains, particularly vis-à-vis the US but also in comparison with the EMU/EU partner countries. Hence, while population accounts for much of the growth differences between Germany and the other larger industrialised countries over the longer term, apparently in the second half of the 1990s economic activity in Germany was held back also by other factors.

**Table 1.4: Output per capita (annual average growth)**

	D <sup>(1)</sup>	F	I	UK	EUR <sup>(2)</sup>	EU <sup>(3)</sup>	US	JP
1971-2000	2.0	2.0	2.3	2.1	2.2	2.1	2.1	2.6
1991-2000	1.5	1.3	1.4	1.9	1.6	1.7	2.0	1.2
1991-1995	1.4	0.6	1.1	1.4	0.9	1.0	1.1	1.1
1996-2000	1.7	2.1	1.7	2.4	2.3	2.3	2.9	1.2

<sup>(1)</sup> Data up to 1991 West Germany.

<sup>(2)</sup> Euro-area excluding Germany, Greece, Ireland, Portugal and Spain

<sup>(3)</sup> EU excluding Germany, Greece, Ireland, Portugal and Spain

Source : Commission services

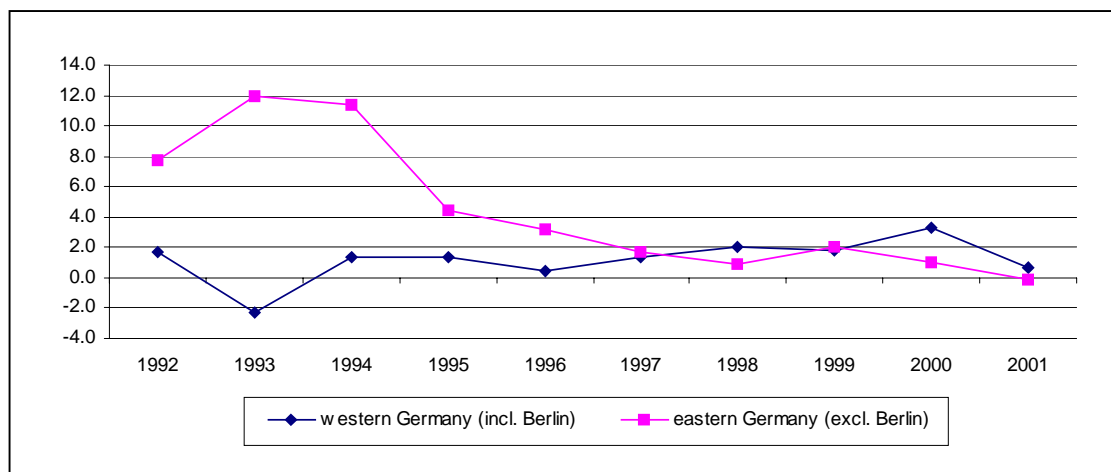
<sup>4</sup> In addition, re-unification triggered strong intra-German migration from the New Länder to the West. This is reflected in the West-German population growth rate for the years 1990-91 (see previous footnote).

## Box 1: The economic performance of the New Länder<sup>5</sup>

### B1.1 Output growth and production structure

GDP growth in East Germany was higher than in West Germany until 1996, but has been slightly lower thereafter (Figure B1.1). As a consequence, GDP per capita relative to the West increased from 40% in 1991 to somewhat above 60% in 1996, remaining more or less steady since then.<sup>6</sup>

**Figure B1.1: Annual change in real GDP in East and West Germany, 1992-2001**  
(1995 prices)



Source: Arbeitskreis "Volkswirtschaftliche Gesamtrechnung der Länder"; own calculations

Economic growth in East Germany was dominated by developments in the construction sector. A very rapid expansion of construction investment in the first half of the 1990s was followed by a sharp decline when fiscal incentives for housing investment were phased out (Table B1.1 and Figure B1.2). Despite this sharp decline, in 2000 the share of gross value added (GVA) of the construction sector in the East was still more than double that of the West. By contrast, the manufacturing sector exhibited rather high growth rates throughout the 1990s, although due to its almost complete collapse after exposure to external competition from a tiny base. Despite this catching-up process, in 2001 the share of manufacturing GVA in total East German output was still more than 7 percentage points below the equivalent share in West Germany. East German growth rates in the services sector were generally below those of the West and, with the exception of public services, the share of the service sector in the economy remains clearly below the comparable share in the West.

A further dimension of growth in East Germany is its regional pattern, which is becoming increasingly differentiated. A cluster analysis carried out by the German Council of Economic Experts in 1999 identified Leipzig, Dresden, Halle/Saale, Jena, Erfurt, Chemnitz and Berlin (including Potsdam) as the main growth clusters in East Germany.<sup>7</sup> These regions are well equipped with the growth determinants taken into account in the analysis, i.e. a high productivity based on a favourable sectoral structure with many high value-added, technology-intensive activities; a low share of agriculture; a high share of qualified workers;

<sup>5</sup> This box mainly draws from section II of Davies/Hallet 2001.

<sup>6</sup> Note that there are different statistical concepts of East Germany due to the specific situation of Berlin. In labour market statistics West Berlin is attributed to West Germany and East Berlin to East Germany. In economic accounts, however, following the revision of the methodology (to "ESA95" by the *Arbeitskreis "Volkswirtschaftliche Gesamtrechnung der Länder"*), there is no longer a division of Berlin so that a choice is to be made as to which part of Germany Berlin is statistically attributed to. Here, given the dominance of the West Berlin economy for Berlin as a whole, Berlin is attributed to West Germany.

<sup>7</sup> Sachverständigenrat 1999, pp. 116 ff. See also Blien et al. 2001.

### Box 1 (continued)

a high degree of industrial diversification; a high population density; as well as a low distance to other agglomerations. The explanation provided is that the proximity of firms, universities and research institutes allowed to exploit knowledge spillovers and to draw from a pool of qualified employees.

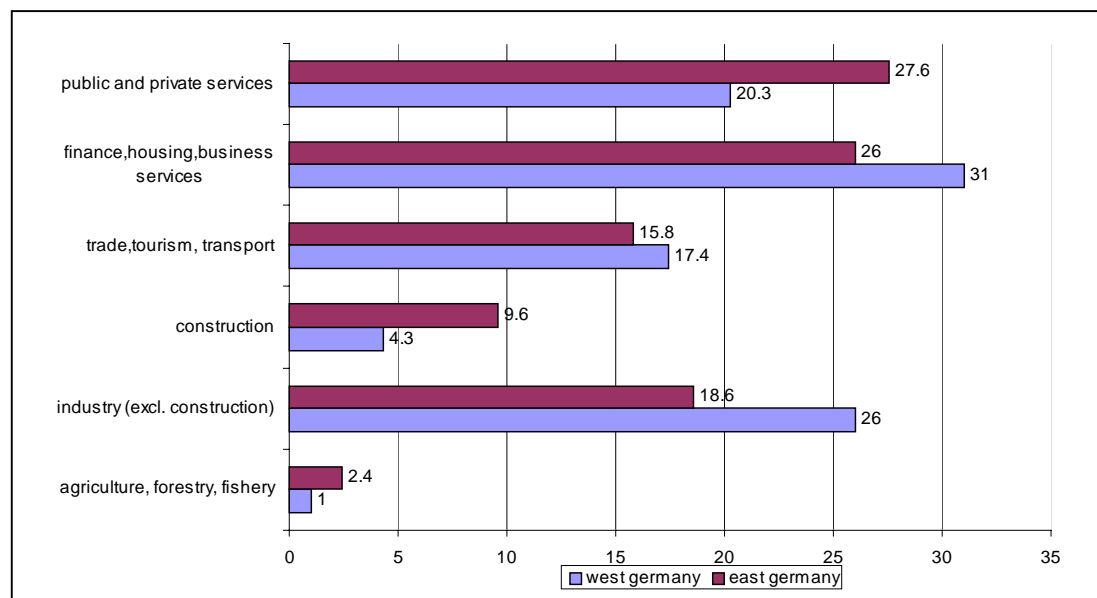
**Table B1.1 : Change in GVA in % (constant 1995 prices) in the New Länder (excl. Berlin), 1992-1999**

	1992	1993	1994	1995	1996	1997	1998	1999
Agriculture, forestry, fish.	-8.8	16.9	-3.7	6.7	3.4	-0.1	6.6	2.1
Industry (excl. constr.)	-5.8	14.6	12.3	6.4	10.6	3.6	6.4	3.5
- of which : manufacturing	1.3	19.6	20.8	8.5	8.7	9.0	9.2	4.4
Construction	31.6	17.2	22.4	2.6	-1.3	-0.2	-9.0	-3.2
Trade, tourism, transport	16.8	13.1	10.8	2.5	1.3	1.9	1.9	2.7
Finance, business services	9.7	17.1	13.6	10.8	6.3	6.2	4.8	4.0
Public and private services	14.1	0.1	5.0	4.5	-0.1	-2.5	0.0	1.0
All sectors	11.8	10.3	11.2	5.4	2.9	1.5	1.2	1.8

Source: Arbeitskreis "Volkswirtschaftliche Gesamtrechnung der Länder", Bundesministerium für Wirtschaft

Three industries had a rather strong, spatially concentrated development in East Germany: microelectronics, chemicals, automobiles. In all three cases there is a certain tradition from the pre-war and GDR periods which is important with regard to the availability of skilled labour. At the same time, many of them strongly depend on input and output linkages so that clustering is a useful strategy for being close to suppliers, customers and skilled labour. These industries are all very capital-intensive which reduces the importance of labour costs and is a consequence of the generous subsidisation of productive investment in East Germany.

**Figure B1.2: Share of sectoral GVA in total GVA in East and West Germany in 2000 (in per cent)**



Source: Arbeitskreis "Volkswirtschaftliche Gesamtrechnung der Länder"

The electronics industry is among the industries with the strongest growth of production in East Germany and doubled from 1995 to 1999. In 1998, about 34,000 were employed in this industry, or 6% of all employees in the manufacturing sector. A particular specialisation is in microelectronics which had already been developed in the GDR with about 120,000 employees, including a research centre for microelectronics in Dresden and semiconductor

### **Box 1 (continued)**

production plants in four locations (Erfurt, Dresden, Frankfurt/Oder and Neuhaus/Thüringen). Following the closing down or privatisation of these plants during the 1990s, Dresden (capital of Sachsen) developed a cluster of microelectronics with currently around 500 companies with more than 20,000 employees working directly in microelectronics or indirectly in related branches. Production plants of major companies include Infineon, AMD (Advanced Micro Devices) and ZMD (Dresden Centre for Microelectronics). Furthermore, there are 15 independent research institutes and more than 150 software offices active in this sector.

The East German chemical industry underwent the most intense restructuring after re-unification. Only in 1997 did employment increase again for the first time and has remained since then at a level of 32,000. The so-called “chemicals triangle” has a number of locations, most of which are in Sachsen-Anhalt and in basic materials including hydrogenation (Rodeleben), nitrogen products (Piesteritz), chlorine, phosphorus and silicon chemistry (Bitterfeld/Wolfen), olefins (Buna), refinery and petrochemicals (Leuna). The most important location is the “ChemiePark Bitterfeld/Wolfen” where there are 3,600 direct jobs in the chemical industry and another 7,000 indirect jobs. The production there is rather capital-intensive with an investment per job of about €500,000. It is a traditional chemical industry location which was founded at the end of the 19<sup>th</sup> century on the basis of exploitation of brown coal which however no longer exists today. The advantages of this cluster in Bitterfeld/Wolfen are best illustrated by the common utilities for energy and waste as well as a closed product flow cycle for synthetic quartz glass production on the basis of co-operation between different plants.

The production of automobiles was one of the most dynamic industries in East Germany after re-unification. This dynamism was supported by rather early decisions to stop the production of the GDR brands “Trabant” and “Wartburg”, which were not competitive in terms of quality, and the investment decisions for highly productive production plants by Volkswagen (in Mosel and Chemnitz in Sachsen) and Opel (in Eisenach in Thüringen). This allowed them to make use of the available resources at these locations whose tradition goes back to the predecessors of Audi and BMW at the beginning of the 20th century. At present there are about 30,000 employees producing more than 400,000 cars per year in East Germany, which is about 8% of the domestic production of German car producers. Further investments which have recently started or will soon start production are DaimlerChrysler in Ludwigsfelde (Brandenburg), Porsche in Leipzig (Sachsen) and a transparent factory for assembling a Volkswagen luxury model in the centre of Dresden. In July 2001, BMW decided to build a new production site in Leipzig, creating 5,000 direct jobs in the medium term and an estimated 5,000 indirect jobs. Leipzig had been chosen after a long selection process among applications from more than 250 cities and regions. The main arguments in favour of Leipzig had been the proximity to the BMW plants in Bavaria, the good infrastructure, the subsidies to be expected (28% of the investment), the availability of skilled labour, and a flexible working time scheme. The latter was agreed with BMW’s workers council so that machines will be running between 60 and 140 hours per week while individual workers’ time will be accounted on a medium-term basis.

### **B1.2 Competitiveness and the labour market**

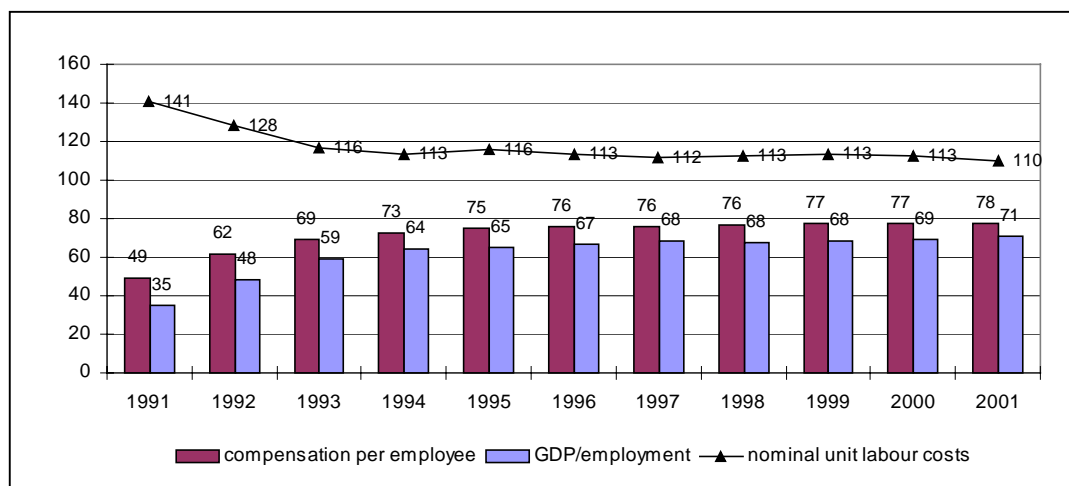
One of the main handicaps for growth and employment in East Germany has been the rise of wages above increases in productivity. Wage convergence in collective agreements had the consequence of high unit labour costs caused by wages that have been about 13% above productivity on average since 1996 (Figure B1.3). In 2001, compensation per employee was at 78% of the West German level, while output per employee was at 71% of that in the West. This holds in spite of an average weekly working time of 38.9 hours in 1999, compared to 36.8 hours in West Germany. Among the reasons for the low labour productivity in the new Länder are a low capital intensity due to different relative factor prices, a low utilisation rate



### Box 1 (continued)

of production capacities and the need for many East German firms to compete through lower prices.<sup>8</sup>

**Figure B1.3: Compensation, productivity and unit labour costs in East Germany, 1991-2001** (current prices, West Germany = 100)



Source: Arbeitskreis "Volkswirtschaftliche Gesamtrechnung der Länder"; own calculations

Wage developments in East Germany are the outcome of many forces, preventing wages from developing in line with productivity. The initial situation of the German monetary union and unification is crucial to understanding the process in the 1990s. While the 1:1 conversion rate of the GDR Mark to the D-Mark is often said to have been the main problem, this does not seem to be the case given that wages in the East were only about one third of those in the West. At the time this corresponded largely to differences in productivity. More important was the situation of wage bargaining in 1991 when wage convergence within five years was agreed in many sectors. These negotiations were mainly led by employers' associations and trade unions from the West due to the fact that most East German firms were not yet privatised by the *Treuhandanstalt* and not sufficiently represented to raise the issue of competitiveness. Whether this was done with the intention "to bind future East German firms and to effectively prevent them from threatening their markets"<sup>9</sup> is arguable. However, three factors have certainly contributed to this situation: first, the federal government's initial optimism on the time path of catching-up of East Germany ("flourishing landscapes"); second, the objective of avoiding major out-migration from East Germany that was presumed to take place if considerably lower wage prevailed for a longer time; and third, equity considerations ("equal pay for equal work"). These factors created an environment in which rapid wage convergence was the most popular strategy to take. However, the five-year-agreements on full wage convergence proved to be unfeasible and were basically abandoned in 1993, but high rates of wage increases continued throughout the 1990s.

While one may conclude that unit labour costs have already fallen considerably towards the end of the 1990s, it is to be recognised that a major share of the adjustment has taken place through the reduction of employment and other channels. In manufacturing, which is the sector that is most exposed to external competition, firms are forced to adjust immediately by either closing down, increasing their capital-intensity (by higher investment and/or reduction of employment), or by leaving employers' associations, which allows them to pay wages below those of industry-wide agreements between employers' associations and trade unions.

<sup>8</sup> Cf. Sachverständigenrat 2000, p.186f.

<sup>9</sup> Sinn/Westermann 2001, p.17.

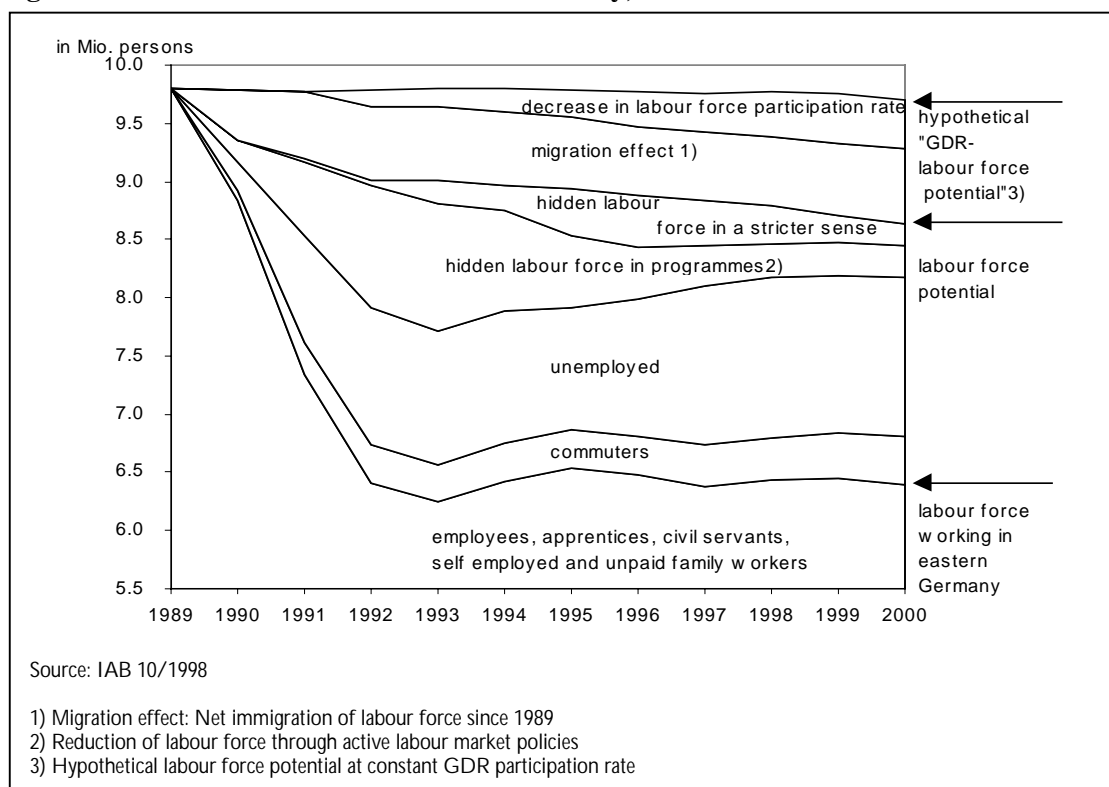
### Box 1 (continued)

In manufacturing alone, half of employment - or almost 1 million jobs - were lost in net terms between 1991 and 2000. This employment effect cannot be attributed exclusively to the closing down of old companies, but is also due to the failure to attract sufficient new investment. Although 4% higher unit labour costs in manufacturing in the East compared to the West may be within the range of statistical inaccuracy, a region attempting to catch up in terms of income, productivity and employment should rather have lower unit labour costs than other regions in order to compete for more investment and jobs.

High and only slowly falling relative unit labour costs took a severe toll in the labour market. In 2000, there were on average 1.36 million unemployed people in East Germany. Furthermore, there were about 800,000 people in "hidden" unemployment in East Germany, so that the total number of registered and hidden unemployed in East Germany amounted to 2.16 million (cf. Figure B1.4). At the end of 2001, the official unemployment rate stood at 16.9%, compared with 7.4% in West Germany. These averages conceal variations in unemployment rates in labour office districts of between 2.7% in Freising/Bayern (West Germany) and 22.6% in Neubrandenburg/Mecklenburg-Vorpommern (East Germany). Thus, within the same country there are regions with extreme labour shortages and others with almost a quarter of the labour force without job.

However, in spite of higher unemployment and lower wages East German workers seem to migrate insufficiently to West German regions offering jobs and higher wages. The main flows of out-migration from East to West took place in the years 1989 and 1990. Since then, net migration from East Germany has been only slightly negative although due to the improved labour market situation in West Germany in 1999 and 2000 net out-migration from the East increased again slightly. There is some evidence that the migration propensity is higher among young and qualified people, although this is still hardly visible in the demographic structure of East Germany relative to West Germany.

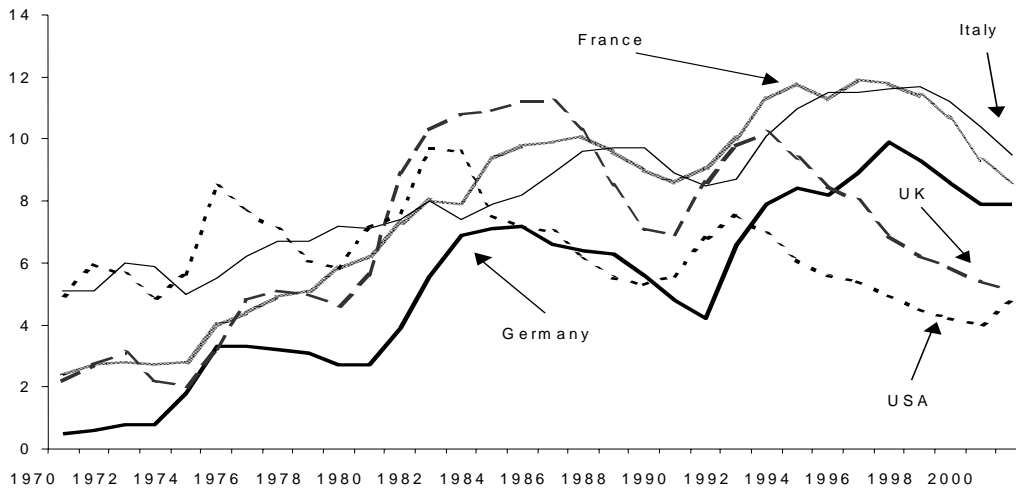
**Figure B1.4: Labour force trend in East Germany, 1989-2000**



### 1.2.3 Labour market developments

Unemployment has been on a rising trend in Germany over the last three decades (Figure 1.8). The labour market issue became particularly virulent after re-unification. In particular, open unemployment of more than 20% of the labour force in the New Länder brought the German labour market into the limelight. Box 1 deals in more detail with labour market developments, and economic developments more generally, in the New Länder.

**Figure 1.8: Unemployment in per cent of the labour force (1970-2001)**



The question arises whether Germany was exposed to labour supply shocks which, by virtue of a limited absorptive capacity of the labour market, could explain high and rising unemployment in the 1990s. As shown by Table 1.5, in the longer term labour supply in Germany has, like in other countries, grown at a faster pace than population, reflecting mostly the increasing activity rate of women. However, for a number of years following re-unification labour force<sup>10</sup> growth fell short of population growth. Labour force growth during this period was depressed by (1) the deep economic recession in 1992-93 and (2) a decrease in the activity rate of women in the New Länder, which at the time of re-unification was comparatively high but started to converge to the lower Western level thereafter. After 1993, the longer-term trend of labour force growth outpacing population growth resumed.

**Table 1.5: Labour Force (annual average growth)**

	D <sup>(1)</sup>	F	I	UK	EUR <sup>(2)</sup>	EU <sup>(3)</sup>	US	JP
1971-2000	0.5	0.7	0.7	0.5	0.7	0.6	1.7	0.8
1991-2000	0.4	0.6	0.3	0.1	0.5	0.4	1.1	0.6
1991-1995	0.1	0.4	-0.2	-0.5	0.2	0.0	0.9	1.0
1996-2000	0.6	0.8	0.8	0.6	0.9	0.8	1.2	0.3

<sup>(1)</sup> Data up to 1991 West Germany.

<sup>(2)</sup> Euro-area excluding Germany, Greece, Ireland, Portugal and Spain

<sup>(3)</sup> EU excluding Germany, Greece, Ireland, Portugal and Spain

Source : Commission services

On average, therefore, labour force growth during the 1990s was broadly in line with longer-term trends in Germany. In other words, country-specific shocks to labour supply can hardly account for the observed increase in unemployment in the 1990s. The increase in unemployment during this period seems to reflect rather the continuation of a longer-term trend characterised by a rate of employment creation which was too low to fully absorb the (unspectacular) expansion in the labour force. More specifically, over the last three decades the rate of job creation during cyclical upswings was insufficient to make up for the rate of job destruction during cyclical downswings. This contrasts with the experience in the US and,

<sup>10</sup> Labour force is defined here as the sum of the total number of employed and unemployed persons.

for the latter part of the period, the UK where job creation accelerated much above its trend during upswing periods. The data suggests, however, that for the larger continental European countries the situation improved in the second half of the 1990s, when the economic upswing was also accompanied by an impressive expansion in the number of persons employed.

The specific behaviour of job-growth is mirrored by the development of unemployment. In particular, the large continental European countries witnessed a sharp rise in their unemployment rates during cyclical downturns which was not reversed symmetrically during upturns (see Figure 1.8 above). This so-called “hysteresis” phenomenon of unemployment in continental Europe stands in stark contrast with developments in the US and the UK where labour redundancies built up during economic downswings were mostly (or even fully) reabsorbed during ensuing upswings. Again, for France and Italy the situation appears to have improved since the mid-1990, with the unemployment rate at the end of the period in these countries roughly at the level observed at the beginning. Apparently no such improvement occurred in Germany, where unemployment at the end of the period was almost twice as high as that at the beginning.

#### 1.2.4 Labour input and labour productivity

Table 1.2 used the average number of persons employed per year to derive growth rates for employment. If the intention is to measure total annual labour input in an economy it would be preferable to use instead the total number of hours worked per year. In the absence of comparable data for total hours worked a second best solution is to use employment on a full-time equivalents basis. The latter data are derived from the “raw” employment figures by using the ratio between the actual hours worked by an average worker and the standard (e.g. statutory) working hours as an adjustment factor.

Table 1.6 shows the evolution of labour input in full-time equivalents<sup>11</sup>. Comparison with Table 1.2 suggests that the growth rate of labour input in Germany during the 1990s was much below the growth rate of the number of persons employed. This contrasts with the other countries where the transition to full-time equivalents reduces labour input growth only slightly (France and Italy) or even increases it (USA)<sup>12</sup>. Several factors are behind the significant downward correction in measured labour input for Germany: first, the “raw” employment figures hide a rapid increase in part-time employment in the 1990s; second, the most dynamic element in overall part-time employment were jobs with a very low working time content (so-called “630 DEM jobs“), resulting in a decline in the hours worked for an average part-time worker; third, overtime hours were reduced as a result of subdued output growth and an increase in the working-time flexibility included in tariff agreements. As a result, moving from employed persons to full-time equivalents reduces the annual average labour input growth by 0.9 percentage points for the 1990s. While labour input as measured by persons employed shows positive - albeit in comparison with other countries still rather subdued - growth, full-time equivalents indicate that labour input growth was negative to the tune of 0.7% per year, revealing the actual scale of the German labour market slack in this period.

**Table 1.6: Labour input in full-time equivalents (annual average growth)**

	D <sup>(1)</sup>	F	I	US
1991-2000	-0.7	0.2	0.0	1.6
1991-1995	-1.4	-0.5	-0.8	1.2
1996-2000	-0.2	1.0	0.8	2.1

<sup>(1)</sup> Due to missing data on full-time equivalents for 1991 averages for Germany are 1992-2000, 1992-1995 and 1996-2000.  
Source : Commission services

<sup>11</sup> No official data for full-time equivalents exists for Germany. The data series used here has been gratefully provided by the German “Institut für Arbeitsmark- und Berufsforschung” on the basis of its database on working time data.

<sup>12</sup> For the UK and Japan no data for full-time equivalents were available.

The difference between labour input in terms of persons employed and labour input in full-time equivalents needs to be kept in mind also when looking at the development of labour productivity. As suggested by the data in the upper panel of Table 1.7, which uses the number of persons employed as the labour input measure, in the longer term labour productivity growth in Germany differs little from that observed in the other large continental EU countries. In other words, the employment intensity of output growth in Germany has developed similarly to that of France and Italy. Particularly, a distinct slowdown in productivity growth is witnessed in the 1990s, although as a consequence of the re-unification boom in Germany this occurred only with a lag.

However, the picture changes considerably if full-time equivalents are used as a labour input measure. In this case, as shown by the lower panel of Table 1.7, labour productivity growth in Germany in the second half of the 1990s continues to lie at some 2%, i.e. around its longer-term value and much higher than in the other large continental countries. This suggests that, in contrast to France or Italy, there are little indications that during the 1990s a significant change in the longer-term relationship between employment and output growth had taken place in Germany.

**Table 1.7: Labour Productivity (annual average growth)**

	D <sup>(1)</sup>	F	I	UK	EUR <sup>(2)</sup>	EU <sup>(3)</sup>	US	JP
<b>Based on Persons Employed</b>								
1971-2000	2.0	2.0	1.9	2.0	2.0	2.0	1.5	2.6
1991-2000	1.7	1.2	1.4	2.1	1.4	1.7	2.0	1.1
1991-1995	2.3	1.2	2.0	2.7	1.6	2.0	1.5	0.6
1996-2000	1.1	1.3	0.9	1.5	1.3	1.4	2.5	1.5
<b>Based on Full-time Equivalents</b>								
1991-2000	2.3	1.5	1.6	n.a.	n.a.	n.a.	1.8	n.a.
1991-1995	2.7	1.5	2.0	n.a.	n.a.	n.a.	1.2	n.a.
1996-2000	2.0	1.5	1.1	n.a.	n.a.	n.a.	2.4	n.a.

<sup>(1)</sup> Data up to 1991 West Germany. For Germany, due to missing data period averages in the lower part of the table are 1992-2000, 1992-1995 and 1996-2000.

<sup>(2)</sup> Euro-area excluding Germany, Greece, Ireland, Portugal and Spain

<sup>(3)</sup> EU excluding Germany, Greece, Ireland, Portugal and Spain

Source : Commission services

Since, tautologically, labour input growth is the product of output growth and the labour intensity of output growth, these results demonstrate quite clearly the German employment problem. Employment growth has remained depressed ever since the re-unification boom because of a sharp slowdown in output growth combined with a low and basically unchanged labour intensity of output growth. This differs from the experience of other countries like France where the significant improvement in the employment situation in the second half of the 1990s was due to the rise in output growth coupled with an increase in the employment intensity of growth.

### 1.2.5 Growth accounting

The previous sub-sections point to the fact that weak employment growth has been one of the salient features of the German economy in recent years. To get a somewhat fuller picture about the factors behind the slowdown in German output growth in the period after the re-unification boom this sub-section uses a traditional growth accounting framework to quantify the contributions from labour input, capital input and technological progress to overall output growth. However, due to the lack of comparable cross-country data for employment in full-time equivalents in the period under consideration the labour input indicator used in this exercise is the number of employed persons. As shown above, in the case of Germany this introduces a significant upward bias in the contribution from labour input to growth during the 1990s which has to be borne in mind when interpreting the results.

Table 1.8 shows that, in conformity with the results above, in Germany the growth contribution from labour input has been weak throughout the past three decades. Despite an apparent improvement since the mid-1990s in relation to the longer-term average, in comparative terms this tendency has become even more accentuated in recent years. More specifically, during the period 1996-2000 the labour input contribution to output growth rose by around ½ percentage point for the EMU/EU partner countries whereas in Germany the increase amounted to only about one half of this value. Moreover, as mentioned before the contribution from labour input to output growth in the 1990s would be further weakened if as a measure of labour input full-time equivalents were used instead of persons employed. This would result in a *negative* growth contribution from labour input of around 0.8% for the first half of the decade and of some 0.1% of GDP for the second half.

**Table 1.8: Contributions of Labour Input, Capital Input and TFP to Output Growth**

	D <sup>(1)</sup>	F	I	UK	EUR <sup>(2)</sup>	EU <sup>(3)</sup>	US	JP
<b>Labour Input (annual averages)</b>								
1971-2000	0.2	0.3	0.4	0.2	0.4	0.3	1.1	0.5
1991-2000	0.1	0.3	0.1	0.1	0.3	0.2	0.8	0.2
1991-1995	-0.2	-0.1	-0.4	-0.6	-0.2	-0.4	0.6	0.5
1996-2000	0.4	0.7	0.6	0.8	0.8	0.8	1.0	0.0
<b>Capital Input (annual averages)</b>								
1971-2000	0.9	1.0	1.0	0.7	1.0	0.9	1.0	1.6
1991-2000	0.9	0.7	0.8	0.7	0.8	0.7	1.0	1.1
1991-1995	1.0	0.8	0.7	0.5	0.7	0.6	0.8	1.3
1996-2000	0.8	0.7	0.8	0.8	0.8	0.8	1.3	0.9
<b>TFP Growth (annual averages)</b>								
1971-2000	1.2	1.2	1.1	1.4	1.3	1.3	1.1	1.3
1991-2000	0.9	0.7	0.7	1.5	0.9	1.1	1.5	0.1
1991-1995	1.3	0.4	1.0	1.9	0.7	1.1	1.1	-0.4
1996-2000	0.6	1.1	0.5	1.2	1.1	1.1	1.9	0.6

<sup>(1)</sup> Data up to 1991 West Germany.

<sup>(2)</sup> Euro-area excluding Germany, Greece, Ireland, Portugal and Spain

<sup>(3)</sup> EU excluding Germany, Greece, Ireland, Portugal and Spain

Source : Commission services

The differences in the growth contribution from capital for the larger European countries are not very significant, neither *across* countries nor *over time*. More specifically, the results for Germany do not differ much from those of other European countries. In general terms, following the first oil price shock, the growth contribution from capital has declined for most of the European countries. Germany eschewed this tendency in the first half of the 1990s due to the huge amount of capital input necessary for the reconstruction of the New Länder, but the second half of the decade bears again witness to this general trend. A noteworthy result of Table 1.8 is the increase in the growth contribution of capital in the US in the second half of the 1990s, a development which is not replicated in any of the large European countries.

A similar story holds for the contribution of total factor productivity (TFP) growth to output growth. A slowdown of TFP growth can be observed over the past three decades for the large European countries. Once again the experience of the US was different as TFP growth accelerated over the past three decades, particularly in the second half of the 1990s. With the exception of France, a rise in TFP growth in the second half of the 1990s did not occur in the larger European countries. Clearly, the German development must be seen against the background of the strong economic acceleration in the aftermath of re-unification, which was accompanied by strong TFP growth. The fall of TFP growth in the second half of the 1990s could, therefore, be seen as an adjustment to the longer-term trend. Moreover, with TFP growth measured as the unexplained (Solow) residual after accounting for contributions from labour and capital input, a downward revision in the contribution from labour input leads *uno actu* to an upward revision of TFP growth. Revising downward the contribution of labour input by the order of magnitude indicated above would, in fact, result in TFP growth for the 1990s much above the EMU/EU average.

In conclusion, the results from this growth accounting exercise indicate that in comparison with other European countries Germany reveals a particularly low growth contribution from labour input. This largely confirm the results of previous sub-sections where the insufficient capacity of generating employment was identified as a key problem of the German economy. Conversely, the results presented here are difficult to reconcile with the notion of a lack of capital formation as a major source of the German growth slowdown. Similarly, TFP growth does not seem to be a decisive factor in the explanation of low output growth in Germany since the mid-1990s.

### 1.2.6 Demand components of output growth

While the previous sub-sections looked at the supply structure of the economy this sub-section will focus on the demand components of output growth. One of the central issues in this context is whether with re-unification the demand composition of growth has changed or, more precisely, whether there was a break in the pattern of growth that characterised the West German economy during the post-war period. Such a break could be expected primarily in the growth contribution of net exports. Indeed, during most of the 1970s and 1980s, Germany had a large current account surplus, but following re-unification this surplus turned into a deficit as the positive external trade balance of West Germany was not sufficient to compensate for the huge excess absorption the New Länder.

Interestingly, at 0.1 percentage points the annual average growth contribution of net exports declined only marginally in the 1990s in comparison with the longer-term trend (Table 1.9). In addition, while the growth contribution of net exports fell to zero in the first half of the 1990s, it bounced back to 0.3 percentage points in the second half. Figure 1.9 shows that, in fact, after being dented by re-unification the growth contribution of net exports improved quickly after 1992, dipping only with the onset of the Asian crisis in 1997/98. This contrasts with developments in other countries where the contribution of net exports fluctuated strongly and, with the exception of Japan, remained rather low, often turning negative. It should be noted in this context that the improvement in the volume of German net exports was not due to developments of relative export prices. In fact, during the 1990s the terms of trade even showed a slight improvement up to the year 2000 when they deteriorated due to the surge in oil prices (see Figure 1.9).

**Table 1.9: Contributions of Net Exports and Domestic Demand to GDP growth**

	D <sup>(1)</sup>	F	I	UK	EUR <sup>(2)</sup>	EU <sup>(3)</sup>	US	JP
<b>Net Exports (annual averages)</b>								
1971-2000	0.2	0.1	0.1	-0.2	0.2	0.1	-0.1	0.2
1991-2000	0.1	0.3	0.3	-0.3	0.3	0.2	-0.4	0.1
1991-1995	0.0	0.4	1.0	0.5	0.7	0.6	-0.1	0.0
1996-2000	0.3	0.2	-0.4	-1.1	0.0	-0.2	-0.8	0.2
<b>Domestic Demand (annual averages)</b>								
1971-2000	2.1	2.4	2.4	2.5	2.4	2.4	3.3	3.2
1991-2000	1.8	1.5	1.3	2.6	1.6	1.8	3.6	1.3
1991-1995	2.0	0.7	0.3	1.3	0.6	0.8	2.4	1.4
1996-2000	1.5	2.3	2.3	3.9	2.5	2.8	4.8	1.2

<sup>(1)</sup> Data up to 1991 West Germany.

<sup>(2)</sup> Euro-area excluding Germany, Greece, Ireland, Portugal and Spain

<sup>(3)</sup> EU excluding Germany, Greece, Ireland, Portugal and Spain

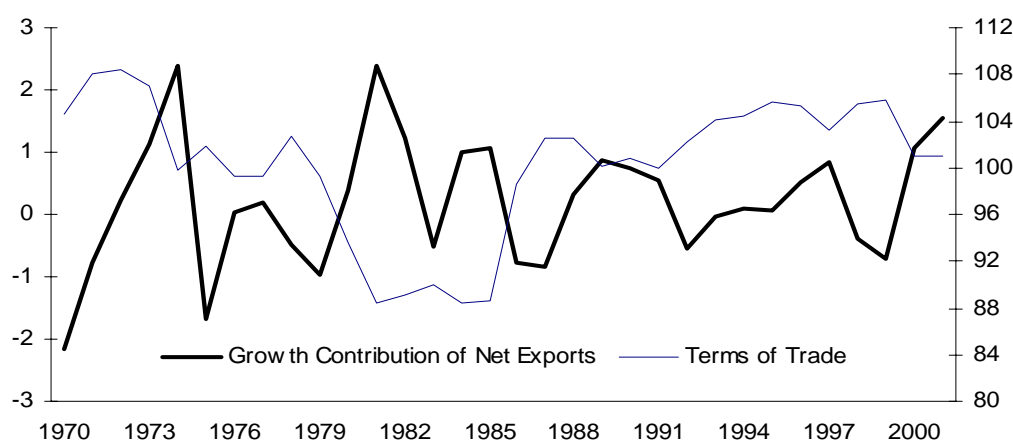
Source : Commission services

These findings corroborate the notion, derived previously, that external trade has a comparatively high importance for the overall development of the German economy. Apparently this pattern has not changed with re-unification. Furthermore, it appears that the popular hypothesis that the German growth slowdown in the 1990s was caused by a sustained loss in external competitiveness in the aftermath of re-unification needs further qualification. Obviously, the German export sector was able to retain its competitiveness in the longer run

despite generally unfavourable exchange rate developments and a sharp rise in unit labour costs in the first half of the 1990s<sup>13</sup>. As a corollary these results suggest that the slowdown in output growth in Germany in the second half of the 1990s was predominantly the result of a deceleration in domestic demand rather than in net exports (see also the lower panel of Table 1.9).

To see more clearly which demand components were particularly affected, Table 1.10 gives a further breakdown of domestic demand. The table shows that in Germany the contribution of private consumption to output growth was weak in comparison with most other EU countries and even more so in comparison with the US. However, such a difference should not be over-emphasised as it reflects also institutional features of the provision of certain goods and services such as education and health care (i.e. public or private provision). More important is the development over time. In this regard it is noteworthy that during the period from 1996 to 2000 the contribution of private consumption to growth in Germany fell significantly below its long-term average. Such a drop did not occur in the EMU/EU partners countries, nor in the US. As a consequence, more than one half of the output growth differential between Germany and its EMU/EU partners in the second half of the 1990s is explained by this demand category alone.

**Figure 1.9: Growth Contribution of Net Exports and Terms of Trade**



To a large extent the sluggish development of private consumption can be attributed to the weak growth of household disposable income (Table 1.11). This emerges clearly from a comparison with the US and the UK but seems to be true also to some extent for France. The softness of household disposable income growth in Germany seems, in turn, to be related to weak employment growth and a subdued development of real wages combined with a substantial increase in the tax burden.

Regarding government consumption it should be noted that its contribution to growth has declined in almost all countries, particularly in the more recent past, as can be gathered from a comparison of the long-term average with the annual average contribution in the period 1996-2000. Although the growth contribution of government consumption is lowest in Germany, together with Italy, in relative terms the decline was not more pronounced than for the EMU/EU partner countries on average. Thus, as far as government consumption is concerned

<sup>13</sup> The strong correlation between exports and imports in Germany in combination with the development of the terms of trade indicates that one of the strategies used by the German export sector in order to cope with the loss in competitiveness was an increased reliance on cheap imported intermediate products.



budgetary restraint in the second half of the 1990 did not have a differential impact on growth in comparison with the EMU/EU area as a whole.

**Table 1.10: Growth Contributions of Demand Components**

	D <sup>(1)</sup>	F	I	UK	EUR <sup>(2)</sup>	EU <sup>(3)</sup>	US	JP
<b>Private Consumption (annual averages)</b>								
1971-2000	1.3	1.3	1.6	1.8	1.5	1.5	2.3	1.9
1991-2000	1.1	0.8	1.0	1.8	1.0	1.2	2.3	0.9
1991-1995	1.3	0.4	0.5	1.0	0.5	0.6	1.7	1.2
1996-2000	0.9	1.1	1.5	2.6	1.4	1.7	2.9	0.5
<b>Government Consumption (annual averages)</b>								
1971-2000	0.4	0.6	0.4	0.3	0.5	0.5	0.3	0.5
1991-2000	0.3	0.5	0.1	0.3	0.3	0.3	0.1	0.5
1991-1995	0.4	0.5	0.0	0.2	0.3	0.3	0.0	0.5
1996-2000	0.2	0.4	0.2	0.3	0.3	0.3	0.3	0.5
<b>Investment (annual averages)</b>								
1971-2000	0.3	0.5	0.4	0.4	0.4	0.4	0.7	0.9
1991-2000	0.4	0.2	0.3	0.5	0.3	0.4	1.2	0.0
1991-1995	0.4	-0.2	-0.2	-0.1	-0.2	-0.2	0.7	-0.3
1996-2000	0.4	0.7	0.8	1.1	0.8	0.9	1.6	0.3
<b>of which: Equipment (annual averages)</b>								
1971-2000	0.2	0.3	0.3	0.3	n.a.	n.a.	0.5	0.5
1991-2000	0.1	0.2	0.3	0.5	n.a.	n.a.	1.0	0.3
1991-1995	-0.2	0.0	0.0	0.1	n.a.	n.a.	0.6	0.0
1996-2000	0.5	0.5	0.6	0.9	n.a.	n.a.	1.3	0.5
<b>of which: Construction (annual averages)</b>								
1971-2000	0.1	0.1	0.0	0.1	n.a.	n.a.	0.2	0.4
1991-2000	0.2	-0.1	0.0	0.0	n.a.	n.a.	0.2	-0.2
1991-1995	0.5	-0.2	-0.2	-0.2	n.a.	n.a.	0.1	-0.3
1996-2000	-0.2	0.1	0.2	0.2	n.a.	n.a.	0.4	-0.2

<sup>(1)</sup> Data up to 1991 West Germany.

<sup>(2)</sup> Euro-area excluding Germany, Greece, Ireland, Portugal and Spain

<sup>(3)</sup> EU excluding Germany, Greece, Ireland, Portugal and Spain

Source : Commission services

As for investment, it can be seen that the average growth contribution of this demand category over the longer term is not significantly different for the larger European countries. What distinguishes Germany from the other countries, however, is that the sharp revival of investment spending in the second half of the 1990s did not take place. Differentiation between the two investment categories equipment and construction reveals that it is predominantly construction investment which is at the root of comparatively sluggish growth of capital formation. Indeed, compared to its longer-term average the average growth contribution from equipment investment in Germany increased in the second half of the 1990s by roughly the same amount as in the other large continental European countries, although the increase fell considerably short of that in the US and the UK. By contrast, the growth contribution from construction investment, which for the other large European countries increased slightly in the second half of the 1990s in comparison with its longer term average, saw a distinct drop in Germany. As a consequence, construction investment accounts for a good one third of the growth difference between Germany and its EMU/EU partner countries during the second half of the 1990s. Developments in the construction sector are dealt with in more detail in Box 2.

**Table 1.11: Real Gross Disposable Income of Households**

	D <sup>(1)</sup>	F	I	UK	US	JP
<b>Gross Disposable Income of Households</b>						
1971-2000	3.0	2.3	2.0	2.8	3.1	3.1
1996-2000	1.3	2.1	0.9	2.8	3.4	0.7

<sup>(1)</sup> Data up to 1991 West Germany.

Source : OECD Statistical databases

### **1.2.7 Conclusions**

Weakness in domestic demand has been the principal factor explaining the growth gap between Germany and its European partners since the mid-1990s. In particular, private consumption has been dragged down by sluggish growth of households' disposable income as employment growth was anaemic and the purchasing power of households was dented by an increasing tax burden. Construction is the other factor behind the growth gap. The performance of the construction sector in the second half of the 1990s was severely affected by the onset of saturation effects in the New Länder, the phasing out of generous public subsidies for construction investment, especially in the New Länder, and a slow rate population growth.

Over-capacity together with budgetary restraint will continue to put a drag on construction investment for some years to come, particularly in the Eastern part of the country. In the West, on the other hand, construction investment could revert to positive growth rates in the medium term as low vacancy rates are starting to kick in for some regions and the demand for new business premises revives. As serious as the consequences of the ailing construction sector in Germany on output and employment growth may be, in some sense they appear inevitable. By contrast weak employment growth, which has in the more recent past constituted a serious obstacle to a more pronounced rise in economic welfare, is an area which needs to be tackled through economic reforms. Therefore, there seems to be a need for a wider-ranging analysis of the system influencing the development of the labour market (e.g. macro-economic policy mix, competitiveness tax benefit system, wage formation processes, employment protection regulation etc.). Finally, the hypothesis of a sustained loss in competitiveness as a major factor in the growth slowdown of the 1990s is difficult to confirm on the basis of the evolution of the external sector and needs analysed in more detail.

## Box 2: Developments in the German construction sector

### B2.1 Large differences between West and East Germany

The Eastern part of Germany saw its construction investment more than double in real terms between 1991 and 1994 only to fall back by more than 30% in the period up to the year 2001 (Table B2.1). Nevertheless, in 2001 construction in the East remains 40% higher than in 1991. In the West, both the rise in construction investment in the early 1990s and the decline in the period since 1994 have been much more moderate than in the East. In 2001, construction investment in the West was 2.5% lower than in 1991, with the decline accelerating recently.

**Table B2.1: Construction Investment (in 1995 prices)**

In bn. €	1991	1992	1993	1994	1995	1997	1999	2001
Total	218.85	242.16	246.53	263.58	258.76	247.63	248.84	228.45
<b>Residential versus Non-residential</b>								
Residential	109.77	121.32	126.78	141.56	141.98	142.31	144.91	131.20
Non-Resid.	109.08	120.84	119.75	122.02	116.78	105.32	103.93	97.25
<b>Regional Distribution</b>								
West Germany	184.22	192.61	187.22	189.85	183.26	176.34	186.89	179.60
East Germany	34.63	49.55	59.31	73.73	75.5	71.29	61.95	48.85
<b>By Government</b>								
Total	38.45	42.07	40.80	40.35	35.11	31.17	32.48	30.28
- residential	1.55	1.44	1.27	0.98	0.83	0.93	0.77	0.88
- non-resid.	36.90	40.63	39.53	39.37	34.28	30.24	31.71	29.40

Source : Statistisches Bundesamt

Due to the strong rise in the East, construction investment in Germany as a whole was still 4.5% higher in 2001 than in 1991 (but down by 13% if compared to its peak in 1994). As is evident from Table B2.2, this rise, however, does not affect all components equally: residential construction is still up by almost one fifth, although 7.5% down from its 1995 peak. Non-residential construction performed clearly worse, being down by more than 10% compared to 1991 and by more than 20% compared to the 1994 peak.

Nearly 30% of the decline observed in construction since 1994 is due to falling public investment, practically all of it in non-residential construction. Falling investment by enterprises makes up the remainder. In the industry sector alone, real construction investment fell from €22.57 billion in 1993 to €16.46 billion in 2000<sup>14</sup>.

Government policy had a very strong indirect impact on construction, especially but not exclusively via fiscal and other budgetary incentives. Important indirect influences on construction stem from changes in rental legislation and immigration laws.

### B2.2 Residential construction

Residential building accounts for almost 60% of total construction investment. As shown by Table B2.2, activities in residential construction were mainly supported by a strong demand for owner occupied houses, with the number of newly built owner occupied houses in 2000 clearly higher than in 1994. The construction of rental apartments on the other hand went down from 284,309 in 1994 to 136,445 in 2000. Given the overall importance of this sector, it appears that this decline is the most important factor in explaining the very specific developments of the construction sector in Germany since re-unification.

<sup>14</sup> Cf. Statistisches Bundesamt, Fachserie 18, Reihe 1.3 Hauptbericht 1999, S. 110 ; Fachserie 18, Reihe 1.2 Vorbericht 2001, S. 113

**Box 2 (continued)**

This development is partially due to the introduction of the very generous special depreciation for rental construction in the New Länder and its subsequent drastic reduction. The number of completed apartment buildings actually declined from a peak of 99,201 in 1997 to 21,042 in the year 2000, with available indicators showing another deceleration in 2001.

**Table B2.2: Completed Dwelling in Germany, 1994-2000**

In bn. €	1994	1995	1996	1997	1998	1999	2000
<b>Germany</b>							
One- or two family houses	212,354	205,165	188,802	211,056	220,611	237,331	229,715
Apartment houses	284,309	312,481	292,173	285,586	208,400	167,314	136,445
Others	76,220	85,111	78,513	81,537	71,679	67,993	56,884
Total	572,883	602,757	559,488	578,179	500,690	472,638	423,044
<b>West Germany</b>							
One- or two family houses	181,633	164,101	141,864	156,130	167,322	185,257	182,907
Apartment houses	255,966	263,439	213,958	186,385	155,387	139,282	115,403
Others	67,580	71,003	60,300	57,835	49,534	45,234	38,450
Total	505,179	498,543	416,122	400,350	372,243	369,773	336,760
<b>East Germany</b>							
One- or two family houses	30,721	41,064	46,938	54,926	53,289	52,074	46,808
Apartment houses	28,343	49,042	78,215	99,201	53,013	28,032	21,042
Others	8,640	14,108	18,213	23,702	22,145	22,759	18,434
Total	67,704	104,214	143,366	177,829	128,447	102,865	86,284

Source : Statistisches Bundesamt

However, Table B2.2 also indicates that in nominal terms the decline in the West between its 1995 peak and the year 2000 (115,403) was more important. Up to 1995, the strong rise in population in West Germany from 1987 on evidently had a huge impact on demand for rental apartments. Furthermore, since the mid-1990s the federal government has drastically cut back public subsidies to low-cost housing and has at the same time changed its strategy in this area from 'object-oriented subsidisation' to 'subject-oriented subsidisation'. While the overall effect might not have been very important in financial terms, it appears that the marginal effect on the yields of apartments may have affect investment decision more strongly. This holds true the more for high income earners, as investment in newly constructed apartments for rent heavily depend on depreciation allowances. But a falling marginal tax-rate as introduced by the latest German tax reform package reduces the profitability of investment in property.

## **2. The macro-economic policy mix**

### **2.1 Monetary policy in the 1990s**

In order to assess monetary policy one has to take into account its framework, in particular regime shifts that have taken place in recent years as both the geographical entity and responsibilities changed. Monetary policy has to be related to the overall situation of Germany or, from 1999 onward, to its relative position in the Euro-area. The monetary policy stance could be looked at using Taylor rates and a Monetary Condition Index. Results from these different analyses could help in assessing monetary conditions in Germany.

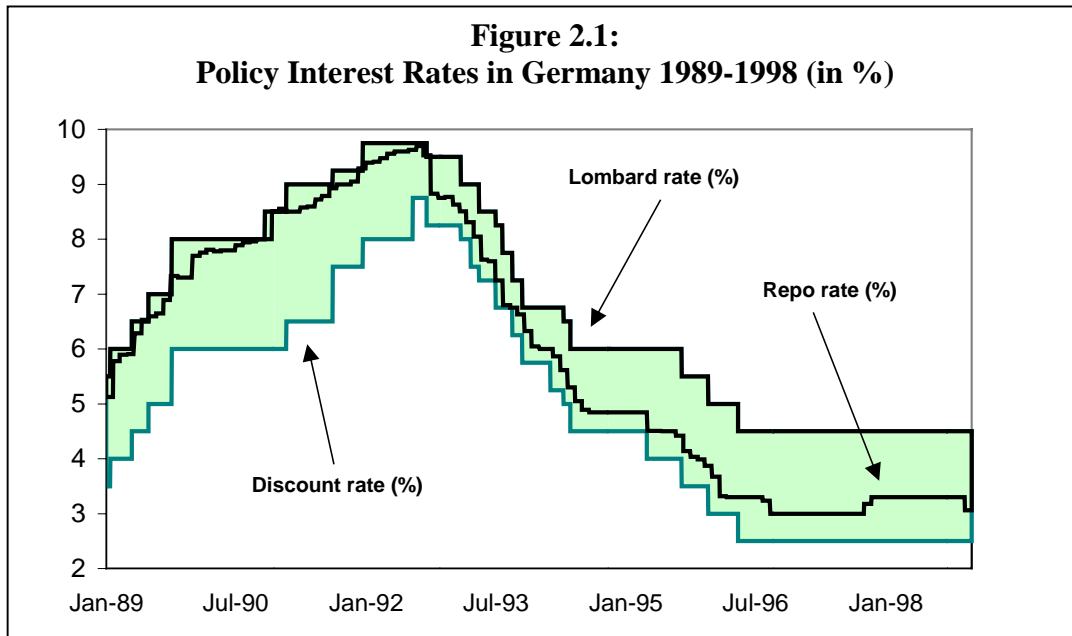
#### **2.1.1 Developments in the 1990s**

In 1990, inflation was pushed by excessive wage increases and in response official interest rates were raised on two occasions (Figure 2.1). But the economic performance in 1991 was stronger than in neighbouring countries and despite the effects of the 1991 tax increases the inflation outlook had become the main cause for concern. It was this concern that led to a further tightening of monetary conditions in late 1991. But as monetary growth was approaching the ceiling of the targeted growth range and inflation exceeded 4%, economic growth came to a halt. The tightening of monetary conditions in Germany initially increased tensions within the Exchange Rate Mechanism (ERM) of the European Monetary System (EMS) and had spill-over effects on monetary conditions in other countries. From the viewpoint of economies where inflation was lower and unemployment was higher the increase in interest rates did not seem to be warranted.

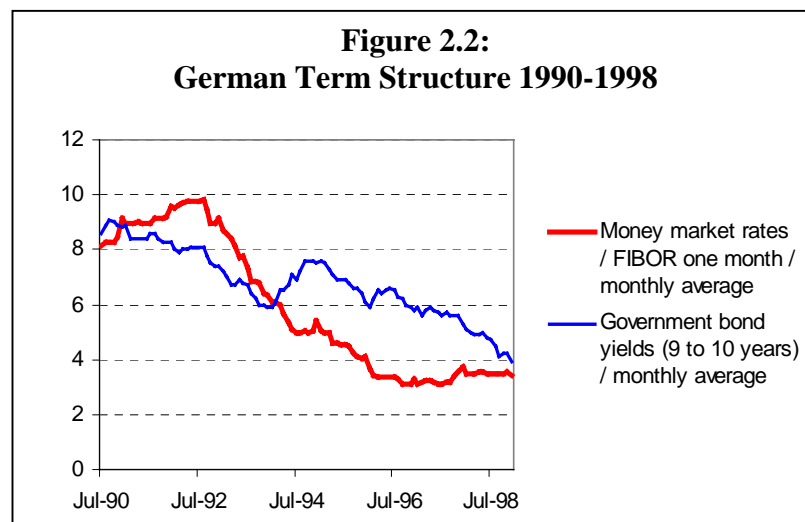
In 1992, German short-term rates rose relative to long-term rates (just the opposite of the USA and Japan). Pressures on prices and wages remained strong as unification strained resources and led to demands for compensation for tax increases. When it came to addressing internal and external (ERM) needs, monetary policy concentrated on domestic needs. To fight inflation and to slow the growth in monetary aggregates the Bundesbank tightened monetary conditions again. Tight German monetary policy continued to put upward premia on other ERM economies.

In autumn 1992 the German economy entered recession, i.e. with a certain delay with respect to neighbouring economies and just a few months after the Bundesbank had raised policy interest rates again (July 17). On 15 September 1992, one day after the revaluation of the DEM in the EMS, the Bundesbank started to cut policy interest rates (see Figure 2.1). After the revaluation of the DEM, monetary policy in Germany continued to ease as the Bundesbank responded to a weakening economy, the improved inflation outlook and an agreement on the fiscal consolidation programme. The widening of the ERM bands in August 1993 marked the beginning of a period of a high degree of interest rate and exchange rate stability due to the absence of further tensions. Also as a result of the strong DEM, inflation rates came down. The Bundesbank responded to the decline in inflation rates by lowering the discount rate by 3 percentage points (to 5.25%). This process found support from progress toward fiscal consolidation putting downward pressure on capital market interest rates and by low wage increases creating a more favourable inflation environment.

The phase of declining interest rates continued into the recovery of the German economy up to mid-1994 although monetary growth was already clearly exceeding targets. However, judged by real short-term interest rates, which were near historical average levels, a relatively strong DEM, and a yield curve, which - following the global increase in bond yields - had returned to its more normal slope only shortly before (see Figures 2.2 and 2.3), monetary policy was not excessively easy. Nevertheless, the stance of monetary policy helped the recovery to become established and was widely regarded as being broadly appropriate: the output gap closed only gradually, labour costs were falling due also to labour shedding, fiscal consolidation proceeded and inflation rates declined firming real interest rates.

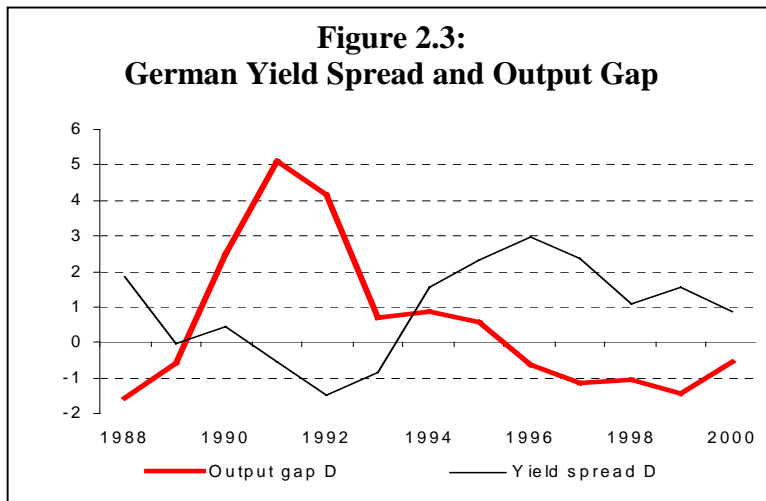


A further decline was prepared in March 1995 when the Bundesbank cut the discount rate in view of a much slower M3 growth and a sharp increase in the external value of the DEM. At that time the DEM appreciated significantly against the USD and against several



European currencies. This appreciation came on top of earlier rises in the effective value of the DEM, particularly in 1992, which had to a large extent been consistent with the determination in Germany's external position necessary to finance the high level of investment. The disappointing outcome of the 1995 wage round provided reasons for an end of interest rate cuts even though subdued inflation and slack in the economy suggested room for manoeuvre to reduce short-term interest rates further.

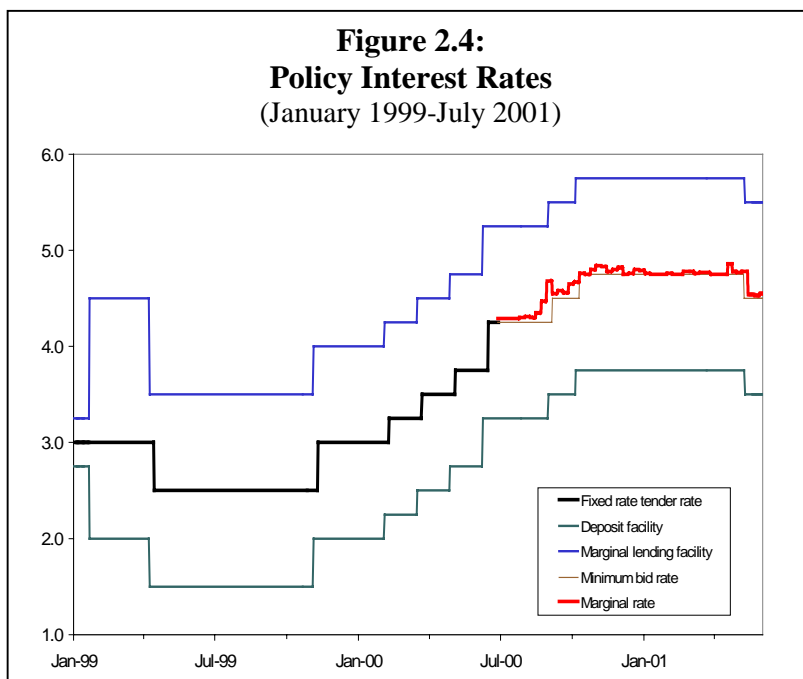
In 1996, economic growth slowed further and the outlook worsened. Short-term interest rates were reduced considerably to help offset recession forces. The repo rate was allowed to fall below 3.5% in early 1996 and in April the lower ceiling, the discount rate, was reduced to the historically low level of 2.5%. The absence of inflationary pressures and the depreciation of the DEM vis-à-vis the USD implied an easier monetary stance in Germany. As a result, nominal long-term interest rates remained relatively low while those in the US rose.



The final two years of monetary policy conducted by the Bundesbank were characterised by more or less stable interest rates. By the summer of 1998 expectations of an interest rate increase in the Euro-area over the next year disappeared and markets anticipated interest rates would converge downward to the level prevailing in the ERM core countries like Germany. Moreover,

bond yields declined to record low levels due to the low-inflation environment and to the "flight to quality" following the crises in Southeast Asia and Russia in 1997 and 1998 respectively.

With the ECB's policy set according to the needs of the Euro-area as a whole, the monetary component in the national policy mix cannot be expected to fit well the circumstances of all economies at all times.



In fact, while the initial repo rate of 3% in the Euro-area implied a decline as compared to the average of policy rates in the Euro-area in mid-1998, for Germany there was no change. In early 1999 monetary conditions were eased by the depreciation of the euro. With inflation falling and weak

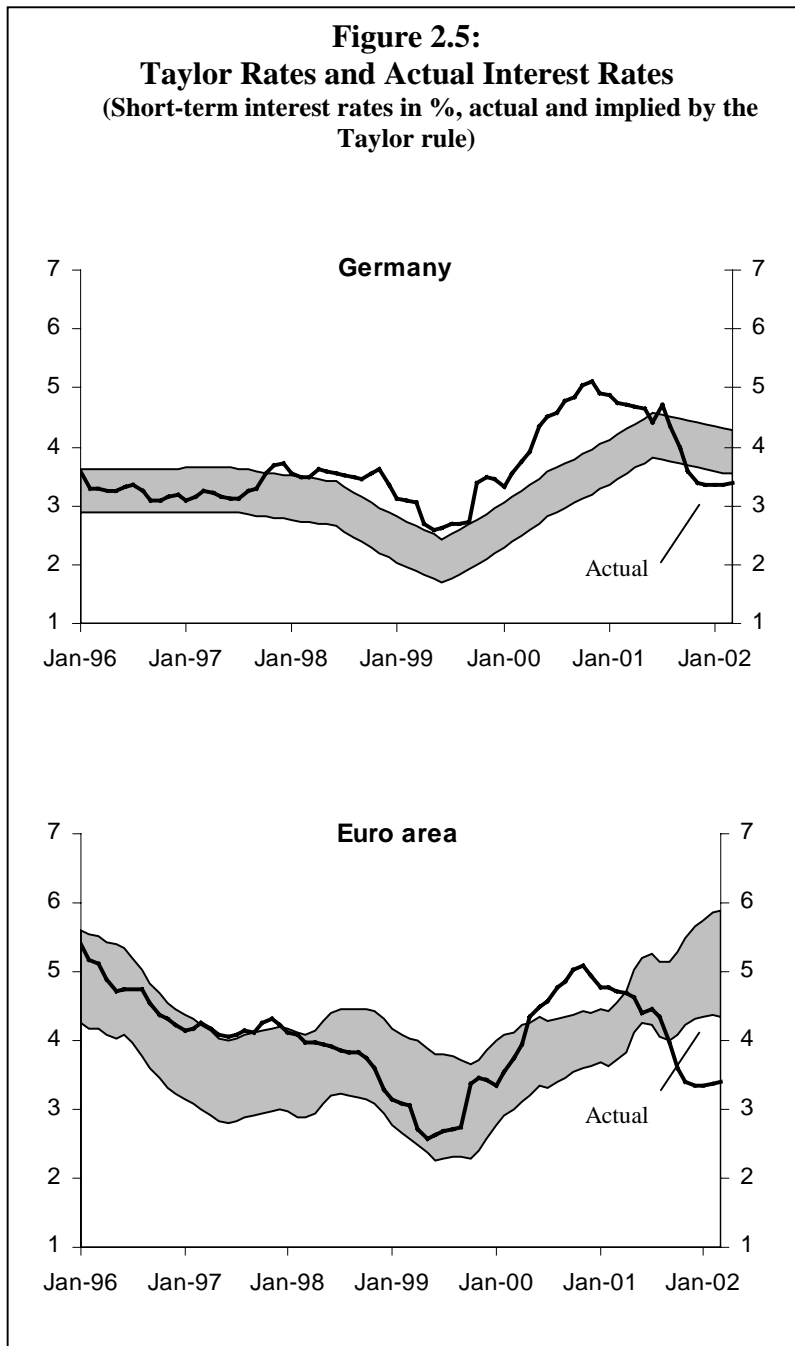
growth prospects the ECB lowered the repo rate in early April 1999 to 2.5 percent.

Throughout the year 2000 the ECB continued raising the official short-term interest rates. Between November 1999 and October 2000 interest rates were increased by 1¾ percentage points in six steps, raising the minimum bid rate of the ECB's main refinancing operations up to 4.75%. This tightening, however, did not mean a turn to restrictive monetary policy as it mainly responded to higher risks to price stability (economic upswing, oil price increases, decline in the USD-EUR exchange rate).

### 2.1.2 Measuring monetary policy

An analysis could be based on two monetary policy indicators: (1) The Taylor rule, which makes the short-term interest rate dependent on current cyclical and inflation developments. (2)

The Monetary Conditions Index (MCI), which combines changes in the real short-term interest rate and in the effective exchange rate in one variable.



Taylor rates assume that a central bank sets its policy interest rates depending on the current situation with regard to the business cycle and inflation. The cyclical situation is assessed using the output gap measure while inflation is measured by the difference between targeted and observed inflation. Thus an excessive increase in prices and an over-utilisation of productive capacities would trigger an increase in short-term interest rates.

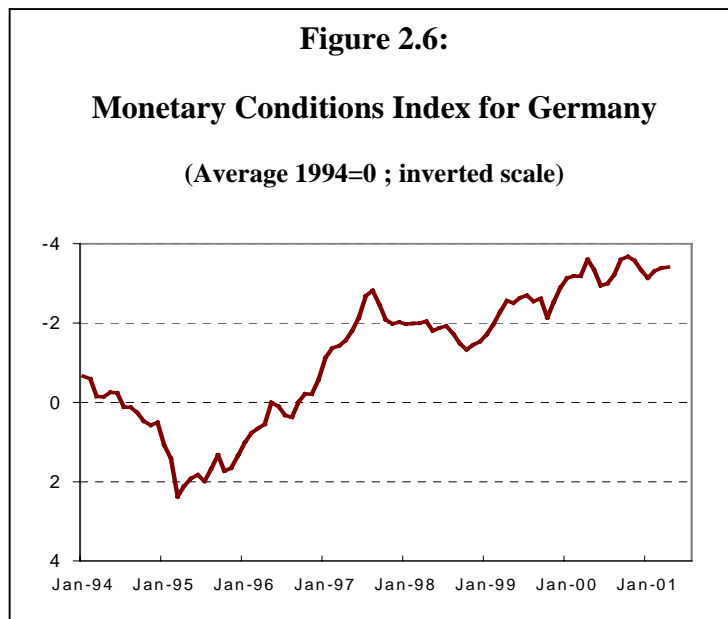
Calculations of Taylor rates for Germany have produced different results. While the academic literature provided evidence that the approach can explain German monetary policy, the Bundesbank itself published a less positive assessment in retrospect.<sup>15</sup>

Calculations by the Commission services indicate that the actual interest rate was within the band derived from calculations under alternative assumptions

up to late 1998 (Figure 2.5). As the Stage III of EMU was approaching the actual interest rate exceeded the Taylor rate, i.e. the interest rate chosen with respect to the whole Euro-area was too high by German needs. However, in early 2000 the acceleration in economic growth in the Euro-area triggered an interest rate that was above the one that would have been appropriate according to Taylor-rate estimates, while it was mainly appropriate for the Euro-area as a whole in early 2000 (see lower part in Figure 2.5). The decline in interest rates in 2001 changed the assessment again as the interest rate appears now almost appropriate for Germany, but too low for the Euro-area as a whole.

<sup>15</sup> See Clarida, R. and M. Gertler 1996.





The MCI is constructed as a weighted average of changes in short-term interest rates and the effective exchange rate. The weights are intended to represent the relative impact of interest rates and exchange rates on aggregate demand. They should be regarded as indicative rather than precise estimates. Movements in the index are equivalent to percentage point changes in real interest rates. No meaning is to be attached to the absolute value of the index; rather the index is intended to show the degree

of tightening or easing in the MCI from the (arbitrarily chosen) base period.

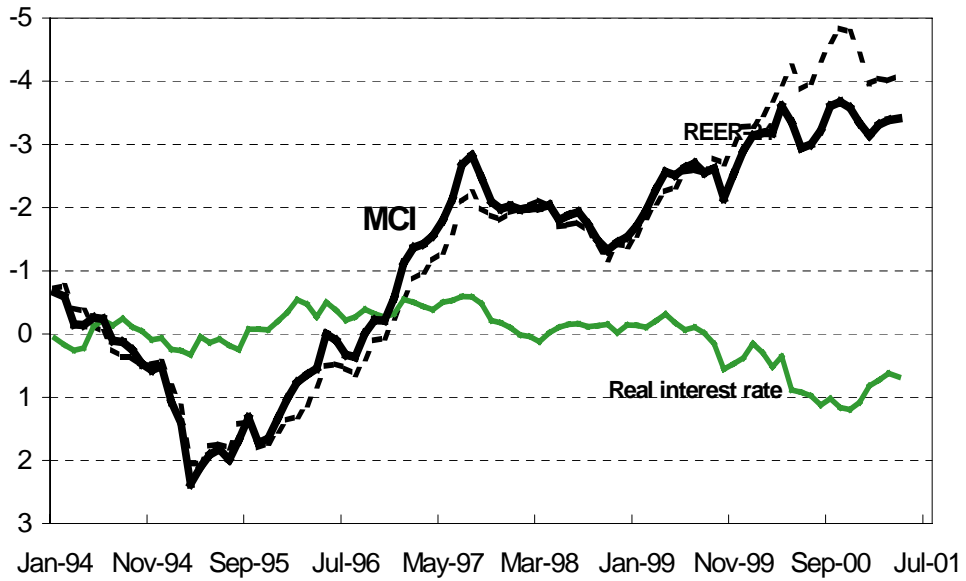
The calculation of MCIs has led to the same mixed results as Taylor rates. Again the Bundesbank has subscribed to a more sceptical view, while others, most notably private banks, use MCIs as a standard tool of economic analysis. The Commission services use MCIs as a supplementary device in analysis. The results obtained by the MCI suggest a tightening stance in Germany since the mid-1990s and a marked easing in the most recent period (Figure 2.6).

Looking at the components of the MCI a marked easing in 1999/2000 can be identified, which can be attributed to a fall in the short-term real interest rate (Figure 2.7). In 1994-95 and towards the end of 1997 the interest-rate induced easing was obscured by a real depreciation of the DEM. By contrast, in 1999 the decline in the external value of the euro came along with a decline in the real interest rate resulting in an easing of monetary conditions. The significant effects on the German real effective exchange rate and the contribution to the MCI indicate the great importance of USD denominated foreign trade for the German economy. This view is supported by the relatively small contribution of the real interest rate.

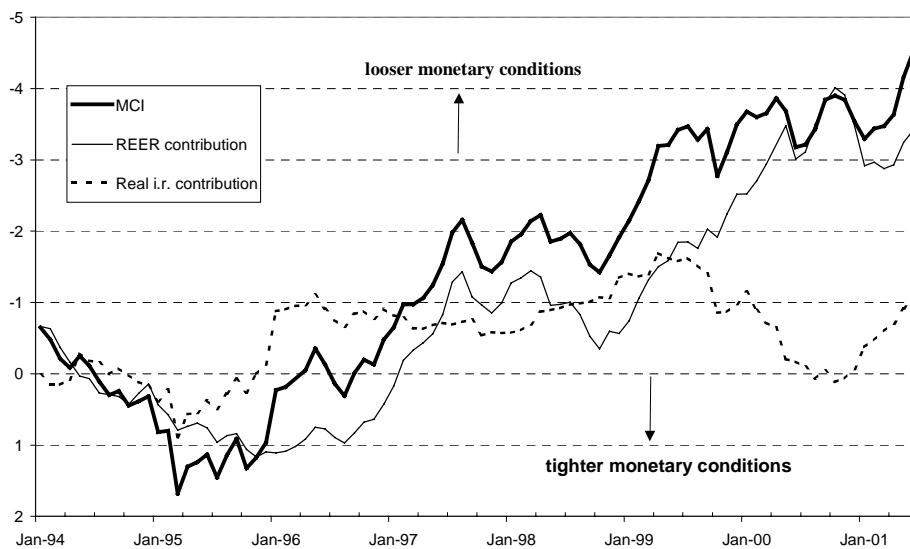
### 2.1.3 Assessment

The description of the monetary policy framework has shown that there was a continuation in style between the approach chosen by the Bundesbank and that of the ECB. The Bundesbank has always given clear priority to "safeguarding the currency" and understood this as achieving price stability targets of the domestic economy. This has often resulted in appreciation pressure on the DEM as other economies participating in the ERM of the EMS had somewhat higher inflation rates. This attitude also contributes to the question whether monetary policy has created a growth supportive framework. On the one hand, the strength of the currency vis-à-vis other EMS countries helped to achieve price stability while weighing on export volumes. On the other hand, the appreciation expectations and the de-synchronisation of macroeconomic developments in the follow-up of re-unification created tensions in the EMS which can hardly be regarded as growth supportive. In that regard one can have doubts whether monetary policy has been growth supportive at all times. As regards the first years of Stage III of EMU monetary conditions have not been an obstacle to economic growth, but it has to be acknowledged that the one-size-fits-all monetary policy produced greater stimuli to those economies which had much higher real interest rates before 1998.

**Figure 2.7a:**  
**Contributions to the German MCI**  
 (Average 1994=0 ; inverted scale)



**Figure 2.7b:**  
**Contributions to the Euro Area MCI**  
 (Average 1994=0 ; inverted scale ; fictitious Euro-area up to 1998)



## 2.2 Budgetary policy in Germany in the 1990s

### 2.2.1 Immediate impact of re-unification

Following the two oil price shocks, the period from 1982 onwards was characterised by the absence of major international turbulence in the economic field. Not least as a consequence of the more favourable environment, general government finances improved from a deficit of 3.7% of GDP in 1981 to a surplus of 0.1% in 1989; at the same time, the debt level fell to a value of close to 40% of GDP<sup>16</sup>. The relatively favourable situation allowed for a reduction in income taxes by DEM 50 billion implemented in three steps (1986, 1988 and 1990). The third and most important step, which brought a net tax relief of DEM 25 billion was implemented on 1 January 1990. Following as it did the downfall of the Berlin wall by less than two months, the timing of this third step was unfortunate because it coincided with the sharp rise in demand for West German products and was therefore clearly pro-cyclical in nature.

The fast and unexpected re-unification, preceded by the introduction of the Deutsche Mark in the GDR on 1 July 1990, put a huge strain on public finances due to three factors: First, the rise in Eastern salaries was much faster than the rise in productivity, driving unit labour costs to unsustainable levels, especially in the tradable sectors, which were immediately exposed to international competition. With unemployment rising as a consequence, the complete introduction of the West German social security system meant that social security payments surged, putting a huge burden both on the social security systems and on government budgets.

Secondly, the exchange rate of 1:1 implied that the debt of East Germany (including its public housing sector and the debt of East German companies) was at least partially converted at this high rate. It was ultimately the federal budget which had to shoulder most of the bill, because the privatisation of East German enterprises via the Treuhand-Anstalt required large subsidies to be paid in order to make the now overly indebted enterprises economically viable; the cumulated losses of the Treuhand reached DEM 210.4 billion in 1995, when they were integrated into the overall government debt<sup>17</sup>. At the same time, the debt of the East German public sector (DEM 102.6 bn. including Ausgleichsfonds Währungsumstellung) and part of the debt of the housing sector (DEM 29.1 bn.) were directly added to the public debt. The overall level of government debt, which had been slightly lower than 40% of GDP in 1989, and which independent of the debt of the Treuhandanstalt had already risen to 49.4% in 1994, jumped to a value close to the reference value of the Maastricht Treaty, i.e. 60% of GDP (Table 2.1).

Thirdly, the appalling state of infrastructure in the East meant that huge public investments were necessary to allow the East to catch up with the West. In addition, the federal government granted important tax breaks for the construction of rental apartments and houses to bring housing standards up to those prevailing in the West. However, these fiscal allowances turned out to be a major burden on government revenues, because the reaction of income tax payers was substantially stronger than anticipated by the legislator. Box 3 deals in more detail with financial transfers to the New Länder.

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<sup>16</sup> In the following, no direct comparisons of public finance data of the 1980s with those for the 1990s will be undertaken as the change from ESA 79 to ESA 95 has rendered many ratios not comparable (cf. also SVR, 1999/2000, p. 104)

<sup>17</sup> As these losses were not part of the annual burden, they were not incorporated into the deficit figures of the corresponding years. If these subsidies were integrated into the official deficit figure of the respective accrual years, the deficit would have reached figures above 7% of GDP in the early 1990s.

**Table 2.1: Deficit and Debt (in % of GDP)**

	91	92	93	94	95	96	97	98	99	00
Actual deficit	-2.9	-2.6	-3.1	-2.4	-3.5	-3.4	-2.7	-2.2	-1.6	-1.3*
Real GDP growth	-	2.2	-1.1	2.3	1.7	0.8	1.4	2.0	1.8	3.0
Cyclically adjusted balance	-4.9	-4.4	-3.4	-2.8	-3.7	-3.2	-2.3	-1.9	-1.3	1.6
Debt	40.4	43.1	47.2	49.4	57.1*	59.8	61	60.9	61.3	60.3

\*: without one-off UMTS receipts corresponding to 2.5% of GDP,

\*\* : 'jump' in the debt level due to assumption of several funds directly linked to re-unification

Source: Commission sources (AMECO)

To meet the unexpectedly high financial burden of re-unification<sup>18</sup> the federal government in 1991 first introduced a strategy aimed at increasing revenues (e.g. through the so-called solidarity charge on top of income tax). This drove the cyclically-adjusted ratio of total receipts to GDP up from 42.3% in 1991 to 45.8% in 1993. However, these measures were insufficient to solve the rising budgetary problems while contributing to the deepest recession observed in Germany in the post-war area. Still, the government had no choice but to adapt a pro-cyclical stance, reducing the cyclically-adjusted deficit by close to 1 percentage point in 1993 alone.

While 1994 showed a clear improvement in public finances and economic growth, the years from 1995 onwards were characterised by a combination of weak economic growth and ongoing efforts to put public finances back on a sustainable path, not least to comply with the criteria on European Monetary Union. As a consequence, both the revenue and the expenditure ratio to GDP rose further, reaching 46.5% and 49.2% of GDP in 1997, the reference year for the decision on membership in EMU.

In order to gauge the impact of budgetary policy during the 1990s on the economy at large, Table 2.2 presents figures for the cyclically adjusted government balance excluding interest payments, as estimated by DG ECFIN. The table shows that, judging by this indicator, budgetary policy during the first half of the 1990s was more restrictive in Germany than in the Euro-area/EU on average. But between 1995 and 2000 budgetary consolidation efforts in Germany were smaller than in the EMU/EU partner countries on average. Including the year 2001 even reinforces this argument. As a consequence, on the basis of this indicator the hypothesis that a restrictive global budgetary policy stance after the mid-1990s was an important factor in comparatively slow growth in Germany cannot be confirmed.

**Table 2.2: Cyclically adjusted primary balance (in % of GDP)**

	D	F	I	UK	EUR <sup>(1)</sup>	EU <sup>(2)</sup>
1991	-2.0	-0.2	-0.5	0.6	0.2	0.4
1995	-0.1	-1.4	4.0	-1.9	1.4	0.7
2000	1.7	1.6	4.6	4.0	3.3	3.7
2001	0.7	1.5	4.9	3.0	3.4	3.6

<sup>(1)</sup> Euro-area excluding Germany, Greece, Ireland, Portugal and Spain

<sup>(2)</sup> EU excluding Germany, Greece, Ireland, Portugal, Spain and Sweden

Source : Commission services

### 2.2.2 Composition of revenues

On the revenue side, there has been a clear increase in all components since 1991, as shown in Table 2.3. The ratio of indirect taxes to GDP went up from 11.1% in 1991 to reach a peak of 12.2% in 1999 (owed mostly but not exclusively to the introduction of the 'ecological tax'). The rise in direct taxes was as important as that of indirect taxes, due not only to the introduction of the solidarity tax, but also to the absence of a major income tax reform, which lead to a significant bracket creeping effect. The financial impact of re-unification, weak economic

<sup>18</sup> While difficult to calculate, the annual net transfers from West Germany to East Germany are estimated at around 4% of GDP per year in the 1990s.

growth and a rise in the number of pensioners was clearly strongest on social security contributions, which saw their share in GDP rise from 17.2% in 1991 to a peak of 19.7% in 1997. At the same time social security contributions rates increased from 35.5% in 1990 to 42% by 1997, falling back gently since then to around 41% by 2001 (see Table 2.4).

**Table 2.3: Development of General Government Revenues (in % of GDP)**

	91	92	93	94	95	95	97	98	99	00
Revenues (in % of GDP)	44.1	45.5	46.2	46.6	46.1	46.1	46.6	46.6	47.4	47.1
Of which:										
-Taxes on products & imports	11.1	11.1	11.5	11.8	11.4	11.4	11.4	11.6	12.2	12.1
-Taxes on income & wealth	11.4	11.7	11.5	11.0	11.1	11.5	11.2	11.5	12.0	12.5
-Soc. Sec. Contribution	17.2	17.6	18.2	18.6	18.8	19.4	19.7	19.3	19	18.7
<i>p.m. Tax burden</i>	<i>40.7</i>	<i>41.5</i>	<i>42.1</i>	<i>42.5</i>	<i>42.3</i>	<i>43.2</i>	<i>43.2</i>	<i>43.2</i>	<i>44.0</i>	<i>44.0</i>

Source: Commission sources (AMECO)

**Table 2.4: Social Security Contribution Rates (West Germany only)**

	Total	Pension	Unemployment	Sickness	Old age
1990	35.6	18.7	4.3	12.6	-
1993	37.4	17.5	6.5	13.4	-
1996	40.9	19.2	6.5	13.5	1.7
1997	42.0	20.3	6.5	13.5	1.7
1999	41.4	19.7	6.5	13.5	1.7
2001	40.9	19.1	6.5	13.6	1.7

Source: Deutsche Bundesbank and Federal Ministry for Labour and Social Affairs

### 2.2.3 Composition of expenditure

The rise in the overall expenditure ratio masks some interesting developments. Notably, social benefits and interest payments rose strongly (Table 2.5). While the latter is due to the huge rise in public debt resulting from the way re-unification was handled economically, the rise in social benefits is the more interesting development. It is clearly larger than the rise in social security contributions described above. At first glance, such a development appears to contradict the basic principle of the German social security system, which stipulates that in case of higher than expected expenditure the contribution rates would have to rise in the short-term. This did not occur because the divergence between the expenditure and revenue side in the social security system was balanced by increased transfers from the general budget. In the early 1990s, this was justified by the fact that especially the pension system had to shoulder burdens linked to re-unification and the integration of so-called 'ethnic Germans', who were entitled to pension payments but had never paid contributions. In 1999, the introduction of the so-called 'ecological tax' to finance the decrease in pension contribution rates has further increased the tendency to finance the social security system out of the general budget.

**Table 2.5: Development of General Government Expenditures (in % of GDP)**

	91	92	93	94	95	96	97	98	99	00
Expenditures (in % of GDP)	47.1	48.1	49.3	49.0	49.6	50.3	49.3	48.8	48.9	45.9
Of which:										
-Social benefits (total)	26.2	27.3	28.5	28.9	29.5	30.9	30.6	30.2	30.1	29.7
-Compensation of employees	9.0	9.2	9.3	9.0	9.0	8.9	8.7	8.5	8.4	8.1
-Gross fixed capital formation	2.7	2.9	2.8	2.7	2.3	2.1	1.9	1.8	1.9	1.9

Source: Commission sources (AMECO)

At the same time, the sustainability of public finances had to be guaranteed and the Maastricht criteria to be fulfilled. The strategy pursued by the federal, regional and local governments relied on a reduction in public investment and a policy aimed at reducing public employment and at achieving moderate wage increases in the public sector.

As a consequence the structure of expenditure changed significantly over the decade between 1991 and 2000, with outlays for the compensation of employees and investment considerably scaled back in terms of GDP while social transfers rose rapidly. As shown by Table 2.6 Budgetary consolidation in Europe in the 1990s made for a decline in the GDP ratios of the government wage bill and of investment outlays in most European countries. On the other hand, the rise in social transfers was particularly dynamic in Germany. While the EMU/EU average for this category of expenditure remained unchanged, respectively decline slightly, in Germany it went up by 3.7 percentage points, an amount which is unatched by any of the other larger EU countries. In the light of the need to reduce the deficit, this resulted in a strong upward pressure on the tax burden.

**Table 2.6: Individual government expenditure items (in % of GDP)**

% of GDP	D	F	I	UK	EUR <sup>(1)</sup>	EU <sup>(2)</sup>	US	JP
<b>Final consumption expenditure</b>								
1991	19.20	22.54	20.28	20.71	21.63	21.54	17.24	13.31
2000	18.98	23.29	18.22	18.82	21.07	20.54	14.39	16.67
<b>of which: compensation of employees</b>								
1991	9.00	12.69	12.56	11.67	12.53	12.49	10.78	..
2000	8.12	13.57	10.54	7.31	11.85	10.68	9.11	..
<b>Social transfers</b>								
1991	26.19	30.24	28.03	25.61	29.46	28.75	..	14.5
2000	29.87	32.24	28.04	24.64	29.42	28.18	..	19.3
<b>Investment</b>								
1991	2.74	3.63	3.23	2.40	3.29	3.03	2.65	4.88
2000	1.86	3.01	2.41	1.15	2.65	2.18	2.70	5.02

<sup>(1)</sup> Euro-area excluding Germany, Greece, Ireland, Portugal and Spain

<sup>(2)</sup> EU excluding Germany, Greece, Ireland, Portugal, Spain and Sweden

Source : Commission services

#### 2.2.4 The year 1996 as a turning point?

The year 1996 constituted a turning point in the sense that many of the ratios analysed above reached their peak in that year and have declined during most of the following years. This is true for the revenue and expenditure to GDP ratio, the overall tax burden, social security contributions (1997) and total social security benefits, interest ratio and final public consumption.

The budgetary problems Germany faced again in 1995 (the deficit rose from 2.4% of GDP in 1994 to 3.5% in 1995), clearly showed that a more courageous approach was necessary in order to comply with the criteria on EMU and that this would also require a tighter control of social transfers than observed in the preceding years (cf. Table 2.4 for social benefits).

The fact that 1996 constituted a turning point is even more visible in the cyclically adjusted revenue and expenditure ratios (Table 2.7). On the revenue side, there was a stabilisation (in % of GDP) between 1996 and 1998, while the expenditure ratio could be cut back by 1.6 percentage points. Developments in 1999 were less favourable: While revenues expanded strongly, expenditure stagnated in terms of GDP.

**Table 2.7: Cyclically Adjusted Ratios (in % of GDP)**

	91	92	93	94	95	96	97	98	99	00
Revenues	42.4	43.8	45.9	46.2	45.8	47.1	47.0	46.9	47.7	46.8
Expenditure	47.3	48.2	49.3	49.0	49.6	50.3	49.3	48.8	48.9	48.4
Deficit	-4.9	-4.4	-3.4	-2.8	-3.8	-3.2	-2.3	-2.9	-1.2	-1.6

Source: Commission sources (AMECO)

The deficit went strongly down at the Länder level, but rose at the level of municipalities and decreased clearly less at the federal level (Table 2.8). This last development is all the more

regrettable as revenues had been expanding very strongly also at the federal level, even after deducting the revenue from the newly introduced 'ecological tax'.

The positive trend towards a lower expenditure ratio, however, returned in the year 2000. The change in strategy clearly visible in 2000 is constituted by the simultaneous decrease in revenue due to the implementation of income tax reform (first step already taken in 1999); as Table 2.8 shows, revenues as percentage of GDP decreased by almost 1 percentage point in cyclically adjusted terms in the year 2000 only.

**Table 2.8: Deficit in bn. DEM/€ for Different Levels of Government**

	<b>Bund</b>	<b>Länder</b>	<b>Local</b>	<b>Soc. Sec.</b>	<b>Total</b>
1991	94.3	17.5	-3.6	-21.2	87.0
1992	48.1	21.6	7.2	3.3	80.3
1993	69.4	33.2	4.0	-5.7	100.9
1994	37.9	41.8	5.8	-3.5	82.0
1995	46.6	41.7	8.6	14.9	111.7
1996	67.3	40.6	1.6	13.1	122.5
1997	58.5	43.1	-0.3	-1.9	99.3
1998	65.1	28.3	-10.5	-5.1	77.8
1999*	20.8	9.7	-2.3	-6.0	22.2
2000*,**	25.6	10.4	-1.9	-1.9	32.2

Source: Statistisches Bundesamt; Finanzstatistik

\*: in bn. € \*\*: excluding UMTS receipts

### 2.2.5 Conclusions

The strong rise in salaries following monetary union in Germany, the impact of the chosen exchange rate on East German debt and the appalling state of infrastructure all combined in the aftermath of re-unification to drive up social security contributions, the deficit and the debt level.

What is worse, the tax allowances for housing construction in the East did not only induce a shortfall in revenues, but provoked a boom in the early 1990s and a bust ever since. Furthermore, with a million apartments now estimated to be empty in the East, these allowances led to a clear misallocation of scarce resources.

With developments in deficit and debt threatening the sustainability of public finances, the federal government slowly embarked on a policy of reducing expenditures, mostly in the public service and in public investment. This policy not only limited the growth contribution of public consumption, but also might already have started to constitute a burden on the growth potential of the German economy. In addition, the growth potential has also suffered due to the unfortunate combination of a rise in the tax (and social security) burden and only minor changes in the generosity of social transfers. Since 1996, however, the consolidation strategy pursued appears more positive in qualitative terms, i.e. more conducive to economic growth in the medium-term.

In 1999, when expenditure restraint was interrupted at the federal level, a new element, however, was added to the strategy pursued: While expenditure was to continue its decline, the burden of social security and taxes was to be lightened at the same time. While this strategy promises to improve further on the medium-term growth potential, there is, however, an evident danger that expenditure overruns occur (as happened in the health sector and at the lower levels of government in the year 2001), putting into question the credibility of envisaged consolidation process.

### Box 3: Economic policies in the new Länder<sup>19</sup>

#### B3.1 The size of fiscal transfers

There is a major gap between production income and disposable income in East Germany which is financed by transfers from the West. These transfers mean that there is a significant difference between regional demand (measured in terms of the aggregate absorption of households, firms and the government) and regional production (measured in terms of GDP). This disparity between demand and production gives rise to an important deficit (equal to public transfers and capital flows), estimated at 46% of regional GDP in 1999 (which compares to an estimated 12% of regional GDP in southern Italy)<sup>20</sup>. As can be seen in Table B3.1, West German (and EU) net transfers of about 4% of the West German GDP accounted for roughly half of East Germany's GDP in the early 1990s and about a third towards the end of the 1990s. Out of the total gross transfers of about DEM 180 billion per year in the second half of the 1990s, DEM 80 billion were social security benefits while only about DEM 30 billion were investment and about DEM 15 million were subsidies.<sup>21</sup> While this imbalance has often been criticised, it was hardly to be avoided since it was the consequence of fully adopting the West German institutional and legal framework, including the welfare system.

**Table B3.1: Fiscal transfers to the New Länder in DEM billion, 1991-1999**

	1991	1992	1993	1994	1995	1996	1997	1998	1999 (Plan)
<b>Gross transfers to the new Länder</b>									
Federal government budget <sup>1)</sup>	75	88	114	114	135	138	131	134	145
German Unity Fund <sup>2)</sup>	31	24	15	5					
Statutory pension insurance funds <sup>3)</sup>		5	9	12	17	19	18	19	18
Federal Labour Office <sup>4)</sup>	25	38	38	28	23	26	26	27	27
West Länder/ municipalities <sup>5)</sup>	5	5	10	14	10	11	11	11	12
<b>Total gross transfers <sup>6)</sup></b>	<b>135</b>	<b>146</b>	<b>162</b>	<b>164</b>	<b>178</b>	<b>180</b>	<b>176</b>	<b>183</b>	<b>191</b>
<b>Return flows</b>									
Additional tax revenue <sup>7)</sup>	31	35	37	41	43	45	45	45	48
Additional administrative revenue	2	2	2	2	2	2	2	2	2
<b>Total</b>	<b>33</b>	<b>37</b>	<b>39</b>	<b>43</b>	<b>45</b>	<b>47</b>	<b>47</b>	<b>47</b>	<b>50</b>
<b>Total intra-German net transfers</b>	<b>102</b>	<b>109</b>	<b>123</b>	<b>120</b>	<b>133</b>	<b>133</b>	<b>129</b>	<b>136</b>	<b>141</b>
in % of West German GDP <sup>9)</sup>	3.7	3.8	4.2	4.0	4.2	4.2	4.0	4.0	4.1
European Union budget <sup>8)</sup>	4	5	5	6	7	7	7	7	7
<b>Total net transfers</b>	<b>106</b>	<b>114</b>	<b>128</b>	<b>126</b>	<b>140</b>	<b>140</b>	<b>136</b>	<b>143</b>	<b>148</b>
in % of East German GDP <sup>9)</sup>	52.3	43.8	40.2	34.2	35.6	34.2	32.6	33.6	34.1

1) As of 1995 also tax renouncements of the federal government on the basis of the reorganisation of the fiscal equalisation scheme

2) Debt redemption, excluding the subsidies of federal government and the Länder

3) Net balance East excluding federal government transfers

4) Net balance East including federal government transfers to the Federal Labour Office

5) As of 1995 essentially revenues within the framework of the new fiscal equalisation scheme

6) Excluding double counting of federal government transfers to the Federal Labour Office (see footnote 4)

7) Estimate; as of 1996 including the impact of the annual tax law

8) Estimate

9) Berlin included in West German GDP

Source: *Bundesministerium der Finanzen*; no data after 1999

The immediate adoption of the West German welfare system – irrespective of the huge differences in economic situation - has not only proved to be expensive in fiscal terms, but also in terms of persistently high unemployment. In general, the decision to take up a job depends mainly on the expected difference in real disposable income minus the transaction

<sup>19</sup> This box mainly draws from section II of Davies/Hallet 2001.

<sup>20</sup> Cf. Sinn/ Westermann 2001.

<sup>21</sup> Deutsche Bundesbank 1998



### Box 3 (continued)

(and social) costs. Hence, people take up a job only if they expect an increase in purchasing power taking into account the costs of moving, local prices, taxation, social transfers etc. The social security system, while indispensable for those who cannot provide for their own income, takes away much of the pressure on unemployed people to move to areas where they could find employment or to take on a lower-paying job. While certain elements have been reinforced in recent years to condition unemployment benefits on the preparedness to move, these have been applied rather reluctantly. Particular problems at the lower end of the wage scale arise from the tax-benefit system which reduces incentives to create or take up jobs in that it introduces wage floors and sometimes makes employment financially less attractive than remaining unemployed.

#### B3.2 The efficiency of regional policy

Since 1996, the new German *Länder* fully participate in the sophisticated (and therefore complicated) scheme of fiscal equalisation (*Finanzausgleich*) between the different administrative levels of *Bund* (federal government), *Länder* (states) and *Gemeinden* (local communities). In June 2001, an agreement modifying certain elements of the *Finanzausgleich* was reached between the federal government and the *Länder* governments. It was facilitated by the federal government's commitment to take over some public debt from the *Länder* and to finance a second "Solidarity Pact" for East Germany from 2005 to 2019 totalling about €156 billion. The latter will have a decreasing path (from €10.4 billion in 2005 to €2.1 billion in 2019) of which €51 billion is ring-fenced for business and infrastructure development while the remaining €105 billion will be unconditional. In addition, a whole range of programmes is specifically targeting East Germany.<sup>22</sup>

Several innovation and technology schemes, although most of them are also applied to West German regions, are a particular focus of government programmes targeting the innovation capacity of small and medium-sized firms in East Germany. These schemes concentrate on directly strengthening corporate innovation, promoting co-operation between firms and universities and research centres. They support regional innovation competence centres and promote universities and technical colleges as well as expanding the scientific and research centres.

Economic development policy is composed of different elements. First, the *Bund-Länder* "Joint Task for Improving the Regional Economic Structure", to which all new *Länder* are eligible, gives assistance to private investment and local infrastructure related to private investment. Maximum rates of assistance which vary according to sector, firm size and structural problems of a region can reach 50% for investment grants and 80% for local infrastructure. Second, East Germany has been eligible for EU Structural Funds assistance under Objective 1 since 1991. The Community Support Framework for the period 2000-2006 has been adopted in June 2000 and has a financial volume of EU funds of €20.7 billion, which are co-financed by national public (€12.4 billion) and private money (€17.2 billion). Third, a tax investment grant is given for initial investment at a rate of up to 12.5% for large firms and up to 25% for SMEs, increased by 2.5 percentage points in border regions (INTERREG III regions). Fourth, several specific SME schemes are channelled through state-owned banks (*Deutsche Ausgleichsbank* and *Kreditanstalt für Wiederaufbau* which have been merged recently) with various financial instruments such as support to start-ups with equity capital, loans or guarantees.

Infrastructure investment has been a focus of public investment in East Germany. In the transport sector, about 50% of the federal investment programme 1999-2002, (which totals

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<sup>22</sup> Cf. Bundesministerium der Finanzen 2001, pp.53ff.

### Box 3 (continued)

€ 34.5 billion), are earmarked for railways, roads and waterways in East Germany. This is complemented by an Operational Programme of the European Regional Development Fund (ERDF) on transport infrastructure with a total volume of €3.2 billion until 2006. In the context of the Solidarity Pact, €3.4 billion per year are foreseen for investment projects of the East *Länder* and *Gemeinden*. Additional measures receiving public finance are on urban development and the housing sector.

Active labour market policy (ALMP) measures are being undertaken by both national and EU programmes by a range of programmes on training, job creation, wage subsidies, financing of reduced working time and early retirement. ALMP in the new *Länder* had a financial volume of about € 11 billion in the years 1999 and 2000 respectively. Most measures target problem groups such as long-term, old and young unemployed. On annual average in 2000, there were about 233,000 participants in training schemes, 192,000 in job creation schemes, 120,000 in jobs with subsidised labour costs, 90,000 in early retirement schemes, 35,000 in youth unemployment and 48,000 in other schemes, totalling 717,000 participants.

A joint evaluation of these different policies is not available, while there are many indicators, studies and evaluations of single programmes. Regarding innovation and technology, most R&D indicators show that existing firms and universities devote resources to R&D equalling between 75% and 100% of the level in West Germany (Table B3.2). However, given the weak economic structure in East Germany, there is a major gap when indicators are related to total population.

**Table B3. 2 : Indicators on R&D in eastern and western Germany**

	East	West	West = 100
R&D employees in % of all employed (1997)	3.49	4.24	82
R&D expenditure in % of total revenue (1997)	1.86	2.44	76
Patent registrations per 100,000 inhabitants (1995-98)	70	249	28
Private R&D expenditure in DEM per inhabitant (1995-97)	215	792	27
Expenditure of universities in DEM per inhabitant (1995-97)	1631	1724	95
Academic and artistic employed per 100,000 inhabitants (average 1995-98)	214	248	86

Source : DIW/IWH/IfW 2000, p.15 ; Pohl 2000, p. 228

In the context of the Joint Task, ECU 8.7 billion of a volume of ECU 30 billion were spent between 1996 and 1998 to promote private investment. They were to create 108,000 new jobs and to secure 300,000 existing jobs. ECU 3 billion were spent on local infrastructure projects.<sup>23</sup> The Joint Task foresees a regional differentiation of maximum rates of assistance to private investment with a bias against better-performing regions, i.e. rates of assistance to private investment are lower in those areas with higher growth.<sup>24</sup> The argumentation is that other instruments such as R&D or urban policy measures will strengthen these growth clusters anyway.

The volume of subsidies peaked in 1995 at more than ECU 18 billion and decreased to € 13 billion by 1999 (Figure B3.1). While the volume of state aid has remained fairly stable at above €8 billion, the decline is mostly due to a special depreciation scheme for investment in the new *Länder*, which came to an end in 1998. An additional factor is the abolition of the wealth tax

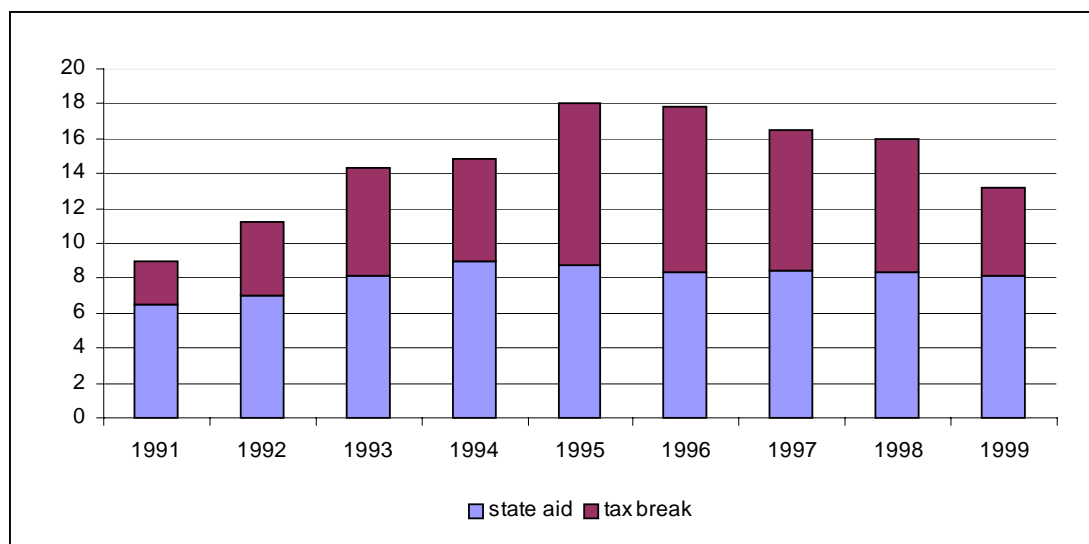
<sup>23</sup> Cf. Bundesregierung 1999; job estimates based on approved applications.

<sup>24</sup> The so-called "A-areas of assistance" have maximum rates of 50% for SMEs and 35% for other firms whereas the so-called "B-areas of assistance" have rates of 43% and 28% respectively, the latter being, as of 1 January 2000, the labour-market regions of Berlin, Dresden, Leipzig, Jena, Schwerin, Halle/Saale, Chemnitz, Magdeburg, Eisenach, Sonneberg, Grimma and Belzig as well as parts of the labour-market regions of Erfurt, Weimar, Pirna, Zwickau, Bautzen and Gotha

### Box 3 (continued)

and the business capital tax in the West that had never been introduced in the East so that they were no longer accounted as tax breaks. Per DEM 1000 of GDP, there were DEM 182 of subsidies in 1991 and DEM 97 in 1999 in the East, while the value was rather stable at about DEM 30 in West Germany.<sup>25</sup>

**Figure B3.1: State aid and tax breaks in the new Länder in billion ECU/€ 1991-1999**



Source: Deutsche Bundesbank 2000 (based on data from Federal Ministry of Finance)

The number of start-ups and liquidations in East Germany can be seen as a further indicator for the success of these various measures (Figure B3.2). The number of start-ups halved from 140,000 in 1991 to 74,000 in 1994, and increased again to 96,000 in 1998.<sup>26</sup> However, at the same time the number of liquidations increased steadily from 11,000 in 1991 to 87,000 in 1998, leading to a total addition of only 9,000 in 1998. Nevertheless, adding up the total balance from 1991-1998, a net 328,000 enterprises have been created and survived.

A further indicator for the success of policies in the new Länder is the volume of investment which, in order to converge towards the West German economy, needs to be higher for a considerable period of time. In per capita terms, gross fixed capital formation in constant prices has indeed been higher than in West Germany since 1993, by more than 50% in 1995 but then declining to 24% in 1998 (Figure B3.3). However, it must be taken into account that the figures also include public investment which have a considerable share of total investment in East Germany. In most years, about two thirds of fixed investment have been in buildings, while only one third went into equipment. This is a problem with regard to private housing where over-capacities have built up so that an estimated 1 million apartments are now deserted. Most of them are low-quality standard GDR houses – leading to calls for public funding to tear down those buildings. The capital stock per person employed, excluding renting and agriculture, is estimated to have only increased from 46% of the West German level in 1991 to a level of 76% in 1998.<sup>27</sup>

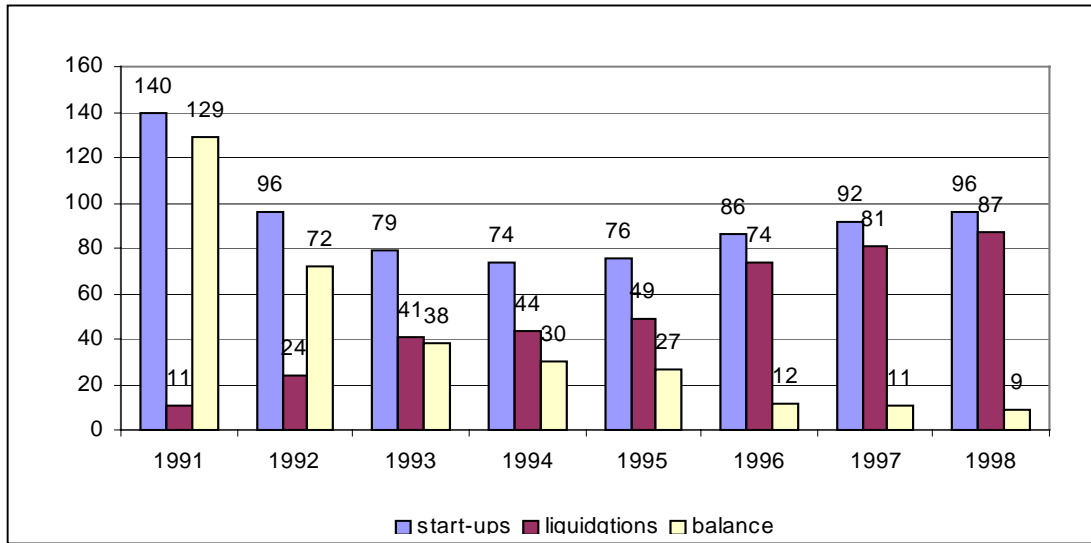
<sup>25</sup> Cf. Pohl 2000, p.233 based on data from Federal Ministry of Finance.

<sup>26</sup> Actual market entries, estimated on the basis of commercial business registrations, applications for the Federal financial support programme ERP and on empirical inquiries. It must be taken into account though, that the high number of start-ups in East Germany in the early 1990s was partially the outcome of the restructuring and privatisation of GDR socialist firms (“Kombinate”) with a very high vertical integration and social policy functions.

<sup>27</sup> Cf. Ragnitz 1999, p. 173

**Box 3 (continued)**

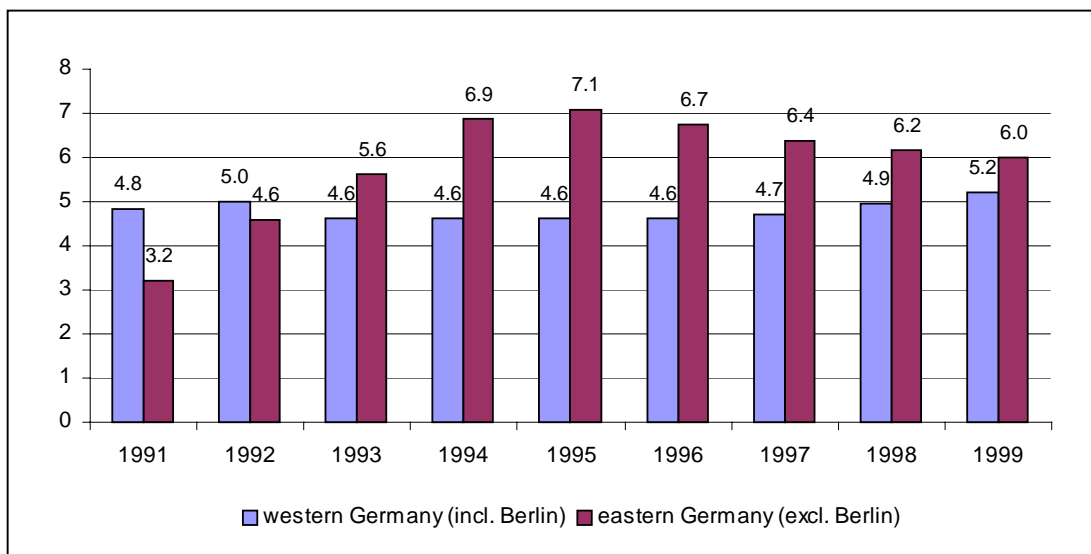
**Figure B3.2: Start-ups and liquidations in East Germany in 1000, 1991-1998**



Source: Hauser 2000

The impact of the EU Structural Funds programme in East Germany since 1994 has been simulated by a sectoral macroeconomic model (“HERMIN”).<sup>28</sup> In spite of the limited size of Structural Funds (and national public co-financing), declining from an initial 2% of GDP to around 1.2% in the year 2006, the combined demand-side and supply-side effects have increased from 3% in 1994 to above 4% in the period 2000-2006. After 2006, when for methodological reasons the simulation assumes Structural Funds payments to stop, the effects level off to supply-side effects of about 1.5% in 2010. Similarly, the unemployment rate is more than 2 percentage points lower than without the Structural Funds programme throughout most of the years of the period 1994 to 2006. However, after 2006 the effect on unemployment diminishes due to the model’s feature that the continuing supply-side effects mainly have an effect on productivity rather than on employment.

**Figure B3.3: Gross fixed capital formation per capita 1991-1999 (1995 prices)\***



\*) in 1000 ECU/€

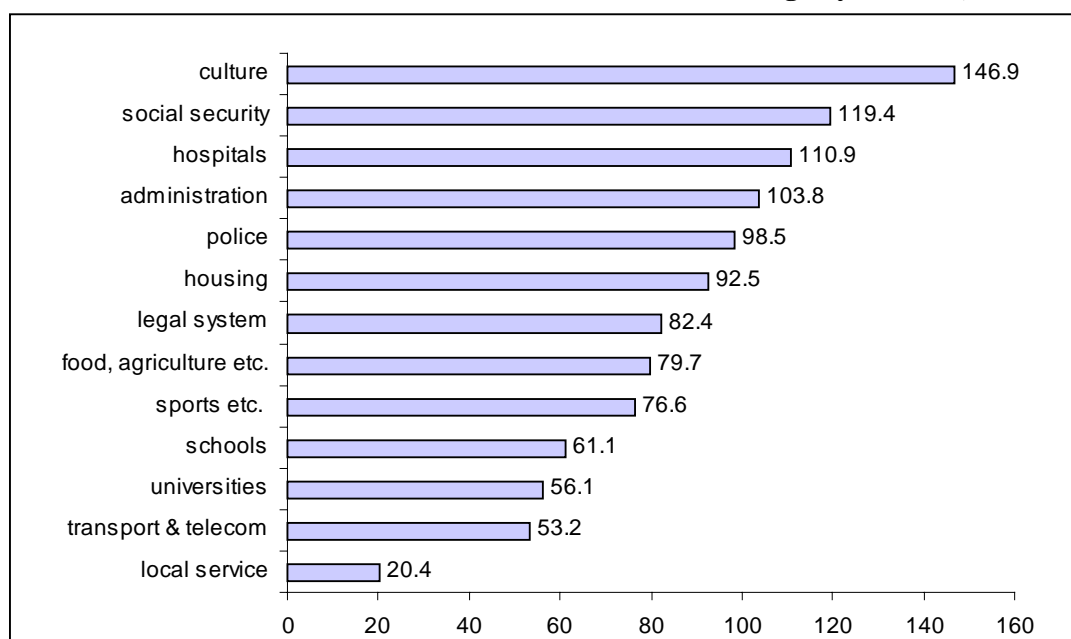
Source: Arbeitskreis “Volkswirtschaftliche Gesamtrechnung der Länder”

<sup>28</sup> Cf. Bradley/Morgenroth/Untiedt 2001

### Box 3 (continued)

Regarding public infrastructure, a study by two economic research institutes (DIW and RWI) estimated that in 2005 East Germany will still have a deficit in infrastructure relative to West Germany of a value of between €135 and 140 billion.<sup>29</sup> And this in spite of major achievements in adding, modernising and upgrading infrastructure over the last decade. A new calculation by DIW arrives at a lower value of €80 billion.<sup>30</sup> Figure B3.4 illustrates that the public capital stock per inhabitant is already higher than in the West in several public functions, in particular in social institutions, while there are major deficits in waste water treatment, roads, universities and schools. Notably, the first are usually labelled as “soft” factors of location whereas many of the latter tend to be the “hard” factors which are indispensable for attracting investment.

**Figure B3.4: Public gross fixed capital stock of East German Länder and Gemeinden by functions in % of West German Länder (excluding city Länder), 1999**



Source: DIW/IWH/IfW 2000

A review of existing evaluation studies on the impact of active labour market policies in East Germany arrives at the following main conclusions:<sup>31</sup>

First, regarding measures on further training, some studies show positive results which are however not consistent over different specifications regarding time and target groups. Most microeconomic studies find no significant impact of further training although macroeconomic analyses on Germany as a whole find a reduction of regional long-term unemployment.

Second, for work provision schemes (*Arbeitsbeschaffungsmaßnahmen*, “ABM”), only one study arrives at positive effects while three other studies find significantly negative effects. Macroeconomic analyses of Germany as a whole find a positive impact of ABM.

Given the available data and the methodological heterogeneity of the studies, the authors conclude that the impact of training measures and ABM is at best low, although not

<sup>29</sup> DIW/IWH/IfW 2000, p.24, based on DIW/ifo/RWI/ILS: Solidarpakt II – Infrastrukturelle Nachholbedarfe Ostdeutschlands, March 2000, unpublished.

<sup>30</sup> Cf. Vesper 2001

<sup>31</sup> Fitzenberger/Speckesser 2000

**Box 3 (continued)**

necessarily negligible. Two studies recently carried out for the Federal Ministry of Finance criticise the consistently negative effects of ABM in reducing the incentives to look for a regular job for two reasons.<sup>32</sup> First, the wage is paid at 20% less than those in collective agreements and is therefore often higher than for many regular jobs paid outside collective agreements. Second, participation in ABM renews the right to unemployment benefits that are higher than unemployment assistance to which long-term unemployed are entitled; this has already been abolished for training measures in 1998. The overall conclusion is that ALMP need to be better targeted to specific problem groups and the requirements of the labour market, but should not serve merely as a means of reducing unemployment temporarily by creating a second labour market.

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<sup>32</sup> Zentrum für Europäische Wirtschaftsforschung 2000 and Schneider et al. 2000

## 2.2.A Annex: The effects of German fiscal policy in the 1990s:

It is likely that the German growth potential has been strongly influenced by the effects re-unification had on public finances. Changes in income taxes and strongly rising social security contributions have driven the tax wedge up (Table 2A.1). In combination with moderate wage increases and only minor changes to social security benefits, these developments have at least not increased incentives to take up a job<sup>33</sup>.

**Table 2A.1: Total Tax Wedge on Labour**

	80	90	91	92	93	94	95	96	97	98	99	00
D	48.9	49.1	49.2	50.1	51.0	52.0	52.0	52.7	53.0	53.3	53.8	53.7
F	49.9	53.2	53.5	53.1	53.4	54.3	54.5	55.7	55.7	55.4	56.1	56.0
EUR-11	45.0	48.5	48.9	49.3	50.4	50.7	50.7	51.2	51.5	51.5	51.9	51.8

Source: Commission services; for the method of calculation cf. Martinez-Mongay (2000)

What are the short and medium-run growth and employment effects of the increase in government expenditure and the strategy adopted to finance these additional expenditures by the German government? More precisely to what extent can the lower growth in Germany in the second half of the 90 be explained by the long run consequences of these fiscal developments documented above?

Standard macroeconomic models predict that a permanent fiscal expansion - if financed by distortionary taxation - could potentially generate substantial “hangover effects”, after the positive demand stimulus has petered out. An important transmission channel from a fiscal expansion to lower growth operates via crowding out of private investment. The crowding-out effect arises from a loss of competitiveness, higher expected wage costs and lower expected net profits from higher taxes. In the case of distortionary tax financing a second transmission channel emerges. The negative investment response is reinforced by adverse labour market developments. These arise from attempts of workers/trade unions of shifting part of the increased labour tax burden onto firms, which react by reducing labour demand.

Both transmission channels are operative in DG ECFINs macroeconomic model QUEST II, which is used for the quantitative assessment of German fiscal policy in the 1990s. The results reported below show the evolution of important German macroeconomic variables relative to a baseline path where the share of government spending as well as the effective tax rates for labour, capital and consumption are kept at their 1991 levels. Both the permanent nature of the fiscal shock and its magnitude is likely to have a non trivial macroeconomic impact.

The results reported in Table 2A.2 clearly show an unfavourable trade-off between the short-term expansionary effects and the long-term output losses inflicted by a tax financed expenditure of government consumption. While GDP increases initially, though with a multiplier smaller than one, GDP falls below the baseline already in the fourth year. Already after the second year, the growth rate is about 0.3% points below baseline growth. The economy continues to grow by about 0.3% less in the following years and eventually reaches a lower level of GDP. Similarly, the unemployment rate rises by about 3% points after 10 years. In QUEST this effect arises from the fact that an increase in labour and indirect taxation lowers the wedge between the take home market wage and the reservation wage. According to these results, fiscal policy may have contributed significantly to the growth slowdown in Germany over the 1990s.

<sup>33</sup> On the negative impact of high taxes and a generous social transfer system on labour supply in Germany see also IMF Art. 4 (Selected issues) ,1999, p. 96 and Ifo, 2001, p. 31

**Table 2A.2: German Fiscal Shock (Standard QUEST wage equation)**

	91	92	93	94	95	96	97	98	99	00
GDP	0.54	0.77	0.39	-0.30	-0.78	-1.34	-1.99	-2.45	-2.87	-3.05
Private Consumption	-0.61	-0.44	-0.65	-1.13	-1.44	-1.82	-2.26	-2.60	-2.88	-2.93
Private Investment	2.39	0.95	-1.28	-2.75	-3.95	-4.69	-4.62	-4.11	-3.34	-2.66
Employment	0.03	-0.18	-0.57	-1.06	-1.48	-1.80	-2.15	-2.51	-2.88	-3.21
Rear wage costs	0.54	1.46	1.60	1.39	1.12	0.74	0.42	0.29	0.21	0.23
Real net wages	0.53	0.19	-1.26	-3.04	-4.27	-5.57	-6.93	-8.1	-9.10	-9.58
CPI	0.15	0.55	0.96	1.18	1.39	1.67	1.99	2.26	2.62	3.04
Capital stock	0.09	0.19	0.15	-0.01	-0.24	-0.53	-0.81	-1.05	-1.23	-1.34
Labour productivity	0.55	0.96	0.89	0.60	0.49	0.17	-0.21	-0.38	-0.50	-0.39
Inflation	0.15	0.40	0.40	0.22	0.21	0.27	0.32	0.26	0.36	0.41
Unemployment rate	-0.03	0.17	0.53	0.99	1.39	1.68	2.01	2.34	2.69	2.99
Trade balance (% of GDP)	0.31	-0.64	-0.76	-0.70	-0.63	-0.48	-0.20	0.07	0.35	0.54

Results are % deviations from baseline levels.

An important feature of these results is the strong negative labour market response to the German fiscal shock. To a large part, this can be attributed to the increase in both the effective labour and indirect taxes in Germany. Both in order to separate the effect from the first and the second channel on output growth and to show the sensitivity of the results to alternative assumptions on the employment elasticity of taxation, Table 2A.3 contains results, where it is assumed that unemployment and other social benefits are fully indexed to the net wage. In this scenario labour taxes are less distortionary. As can be seen the negative employment effect is much smaller and consequently the long run effects of fiscal policy turn out to be less severe. Nevertheless, even in this scenario, a two year increase in the growth rate is followed by a period of slower growth until 1999.

**Table 2A.3: German Fiscal Shock (wage behaviour with less tax shifting)**

	91	92	93	94	95	96	97	98	99	00
GDP	0.68	0.83	0.46	-0.05	-0.26	-0.57	-0.98	-1.22	-1.43	-1.42
Private Consumption	0.53	0.92	0.63	0.18	-0.02	-0.29	-0.62	-0.87	-1.05	-1.00
Private Investment	1.05	-0.78	-2.74	-3.63	-4.19	-4.33	-3.71	-2.68	-1.41	-0.33
Employment	0.09	0.05	0.01	-0.03	-0.04	-0.05	-0.14	-0.28	-0.48	-0.73
Rear wage costs	0.50	0.96	0.53	0.02	-0.25	-0.53	-0.77	-0.84	-0.78	-0.50
Real net wages	0.53	-0.26	-2.28	-4.38	-5.63	-6.86	-8.18	-9.32	10.20	-10.48
CPI	0.20	0.64	0.99	1.10	1.17	1.32	1.52	1.67	1.91	2.23
Capital stock	0.04	0.04	-0.10	-0.31	-0.56	-0.81	-1.03	-1.17	-1.22	-1.19
Labour productivity	0.66	0.84	0.48	-0.03	-0.25	-0.58	-0.94	-1.08	-1.13	-0.90
Inflation	0.20	0.43	0.35	0.11	0.07	0.15	0.20	0.15	0.24	0.31
Unemployment rate	-0.08	-0.05	-0.01	0.03	0.04	0.04	0.13	0.26	0.45	0.68

Results are % deviations from baseline levels

These calculations show that due to longer-lasting effects of a tax financed increase in expenditure GDP growth could be subdued for an extended period of time. Clearly the simulations should serve only for illustrative purposes. The increase in taxation might not be the only channel through which the financial burden of re-unification might have affected growth. Another channel might be via the loss of competitiveness as a result of the strong wage increases in the first half of the 1990s and the sharp increase in the effective exchange which were at least partially and indirectly consequences of re-unification. Separate simulations have been carried out to gauge the growth effect of these factors and will be presented in a later section. Moreover, it cannot be excluded that the strong decline in government investment since the start of the 1990s, which was partly due to efforts to compensate for the increase in current expenditure, might have adverse effects on potential GDP growth in the longer term<sup>34</sup>.

<sup>34</sup> Although studies on the productivity impact of public investment in Germany are not fully conclusive, at least some of these studies established a slightly positive contribution (cf. Ifo, 2001, p. 73f.)



### 3. Structural issues

#### 3.1 Competitiveness, trade and FDI

##### 3.1.1 Development of competitiveness indicators in the 1990s

Competitiveness is a complex notion that could be analysed for the economy as a whole but also for different sectors and industries and individual companies. Whether the measurement of competitiveness at the level of nations is appropriate has been at the centre of academic discussions in the 1990s.<sup>35</sup> In the case of Germany, an additional dimension comes into focus: the competitiveness of two groups of states (Länder), notably the ten West German Länder and the five new East German Länder plus Berlin (West and East). This sub-section deals with competitiveness of the German economy as a whole and with the impact of re-unification on Germany's longer-term competitive position.

The competitiveness of German companies depends on a mix of price and cost determinants and of other factors like product quality, ancillary services or the degree of flexibility. As the latter factors are difficult to measure quantitatively, prices and costs indicators attract most of the attention. Among these, the real effective exchange rate (REER) is one of the most widely used indicators. The real exchange rate between two countries is calculated by multiplying the nominal exchange rate with an index of relative prices or costs. For a group of countries, weighing the bilateral real exchange rate by trade shares and summing up yields the REER. Depending on the group of reference countries and/or on the choice of the price/cost measure these REERS may differ. However, variations in the price/cost indicator should not fundamentally change the picture at least as far as the trend is concerned.<sup>36</sup>

##### *Developments vis-à-vis a group of 24 industrialised countries*

Figure 3.1 shows REERs for Germany vis-à-vis 24 industrial countries for the period 1988-2000 using the following price and cost indices: the deflator of private consumption, the GDP deflator, the price deflator of goods and services exports and two nominal unit labour cost series (for the whole economy and for the manufacturing sector).<sup>37</sup> As expected, the resulting REERs show a high degree of correlation. Peaks and troughs are most accentuated when unit labour costs are used as a price/cost measure.

The development over time allows to distinguish five sub-periods:

- the **pre-unification period** in the late 1980s during which competitiveness indicators showed only minor variation,
- the **early post-unification period** (1990-1993) marked by a significant deterioration in price and cost competitiveness for Germany,
- the **exchange-rate-turbulence period** in the mid-1990s (1994-1996) during which all series peaked (i.e. reach their turning point), starting to indicate improvements thereafter,

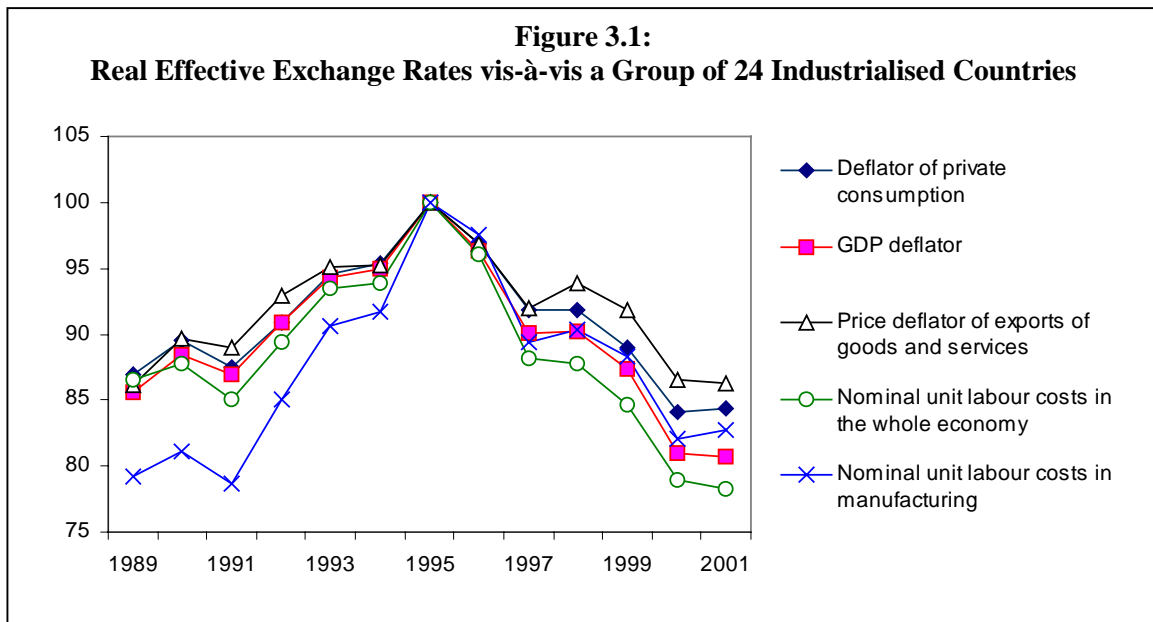
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<sup>35</sup> Much of this discussion was stimulated by Krugman (1994) who noted that it is an illusion that countries compete with each in the same way as companies do. His point of view is that if competitiveness means anything, it means that the standard of living depends on productivity relative to that of other countries, implying that if other countries become more productive then, other things equal, the home country may be considered worse off. In that sense he called competitiveness a very primitive, actually mercantilist notion dressed up in modernist garb.

<sup>36</sup> Due to the introduction of the single currency in 1999 the term "exchange rate" has to be replaced by the term "indicator". However, as most of the period analysed in this sub-section are years with national currencies in place the term exchange rate will be used with the understanding that for the years 1999-2001 this should be understood as a synonym for "indicators".

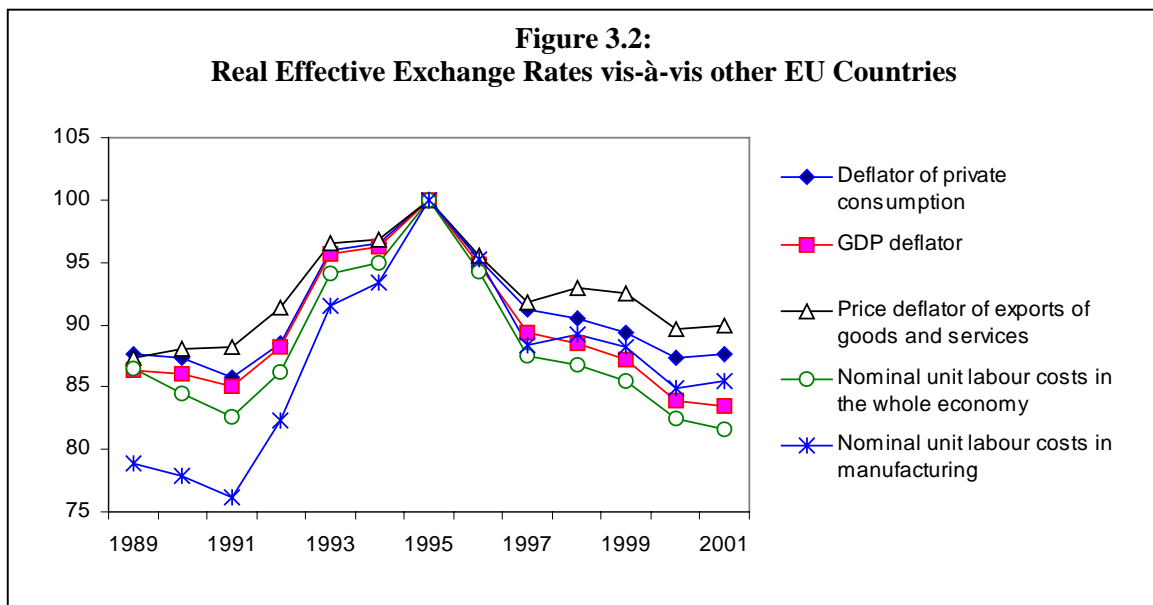
<sup>37</sup> For a discussion of the benefits of using a set of price and cost series see e.g. Turner and Golub (1997) and Bundesbank (1998).

- the **pre-euro years** (1997-1998) during which competitiveness indicators stabilise somewhat at least to some extent reflecting the sharp fall in the exchange rates of some Asian countries, and finally
- the **first euro years** (1999-2001), which were characterised by improving price and cost competitiveness driven by the depreciation of the euro vis-à-vis the US dollar and the currencies of other trading partners. The weakening of the euro partially offset the effects of the fall in the DEM/USD exchange rate towards the end of 1998.

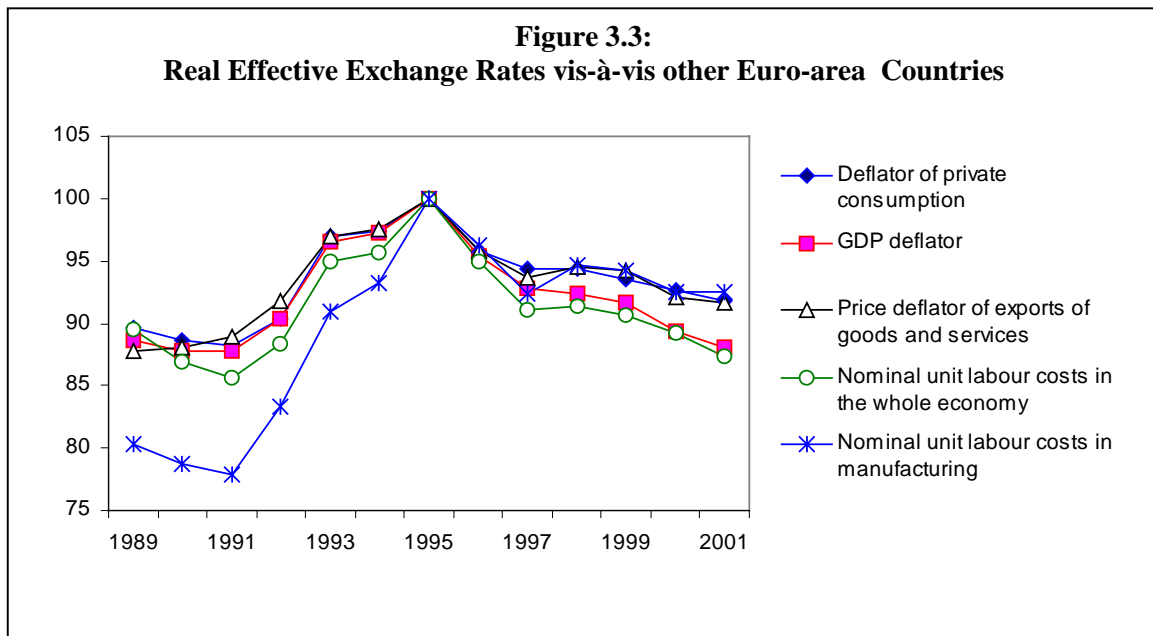


*Developments within the Euro Area*

Figure 3.2 shows the same REERs limited to the countries of the Euro-area. While in the first half the 1990s developments were in parallel with those for the larger reference group, the picture has changed thereafter. Changes in the Euro-area based indicators have become smaller than those based on the larger group of countries, in particular if measured in terms of relative unit labour costs for the manufacturing sector.



This is suggestive of the fact that fluctuations in nominal exchange rates have played a major role in the development of the REER of Germany. Indeed, although exchange rate fluctuations between Euro-area countries have been constrained within the EMS system, a substantial part of the rise in the REER vis-à-vis these countries during the first half of the 1990s was due to the nominal appreciation of the DEM (Figure 3.3).



However, the DEM also rose in previous periods without causing serious problems for German competitiveness. But, in the past, a nominal exchange rate appreciation was generally balanced by a slower increase in nominal unit labour costs, which over the long run kept the real effective exchange rate down; relative wage moderation thus kept the export sector afloat.

By contrast, in the first half of the 1990s, on top of a substantial rise in the nominal exchange rate vis-à-vis the other Euro-area countries currencies, Germany's trade unions gave up their customary restraint with the effect that during this period nominal unit labour costs rose faster than those of other European countries. This contributed decisively to the severity of the recession, which the German economy experienced in 1993, and worsened the price competitiveness of the German economy leading to a loss in export shares, which the country has not recovered since.

The low external value of the euro in recent years has eased the competitiveness problem vis-à-vis non-Euro-area countries and allowed to regain to some extent previously lost export market shares. In addition, since the mid-1990s, not least due to the record unemployment levels, Germany witnessed a significant degree of wage moderation. However, as nominal unit labour costs in other Euro-area countries were also rising only relatively slowly, the gain in cost competitiveness has been painfully slow. The high costs have kept Germany from recovering the market share it once had. Much less could the country increase its market share in accordance to its larger economic weight due to re-unification. In fact, as will be seen below, it is exactly the East German enterprises that suffered the most from the high effective exchange rate, because only very few East German products were able to compete based on quality. The rest needed to compete on the basis of lower cost, which due to high wages and despite massive subsidies from the West, many enterprises have found next to impossible.

### *Issues related to German re-unification*

German re-unification brought together one of the most advanced economic areas of the world with an area of low productivity, state-protected companies, artificial exchange rates and an almost obsolete capital stock. The clash this implied for East German production was enhanced by a 1:1 conversion rate of the East German mark into the DEM, while the exchange rate applicable for East German exports had been at 1:4.3.<sup>38</sup> Moreover, wage negotiations that started in East Germany very soon after re-unification raised cost pressures. Led by West German trade unions, most attention was given to the convergence of wage rates in West and East Germany, arguing that many workers would leave East Germany if wage differences would be sustained. By setting East German wages for subsequent years as a percentage of West German wage rates all future increases in West Germany had already been implemented.

From the analysis in the previous sub-sections one might conclude that the deterioration in external price and cost competitiveness weighed heavily on German growth prospects in the first half of the 1990s, but that in the second half of the 1990s improvements have helped to regain initial positions. However, one has to acknowledge that this reasoning is mainly based on observed changes, whereas it is essential to assess also the levels of the indicators. Here Figures 3.1 and 3.2 tell different stories: while thanks to the exchange rate movements in recent years indicators versus 24 industrial countries have already reached levels below those observed in the pre-unification period, the indicators vis-à-vis the Euro-area economies have not done the same. In the year 2001, some Euro-area indicators were still by about 10-15% above the levels observed before the fall of the Berlin Wall.

An analysis of the competitiveness of the German economy is made difficult by the fact that re-unification introduces a statistical break in the country data series. Price and cost competitiveness indicators in the figures depict data for unified Germany from 1991 onwards and for West Germany in the years before. When merging the two series it is assumed that the index value for West Germany and unified Germany are identical in 1991. The choice of that particular year is justified by the fact that re-unification took place in late 1990 and that initial estimates of national accounts data for the Eastern part suffered from several shortcomings, most notably from the absence of market prices. In using this chaining point, however, the rise in East German unit labour costs during the years 1990 and 1991 are not reflected in the data. A way to cope with this shortcoming would be to choose an earlier year for merging West German and pan-German data. One can expect that due to the rapid changes in the East at that time, pan-German levels went up by a substantially higher percentage than is reflected in the West German index figures. This is shown in the calculations underlying Figure 3.4 based on data from the Federal Statistical Office.

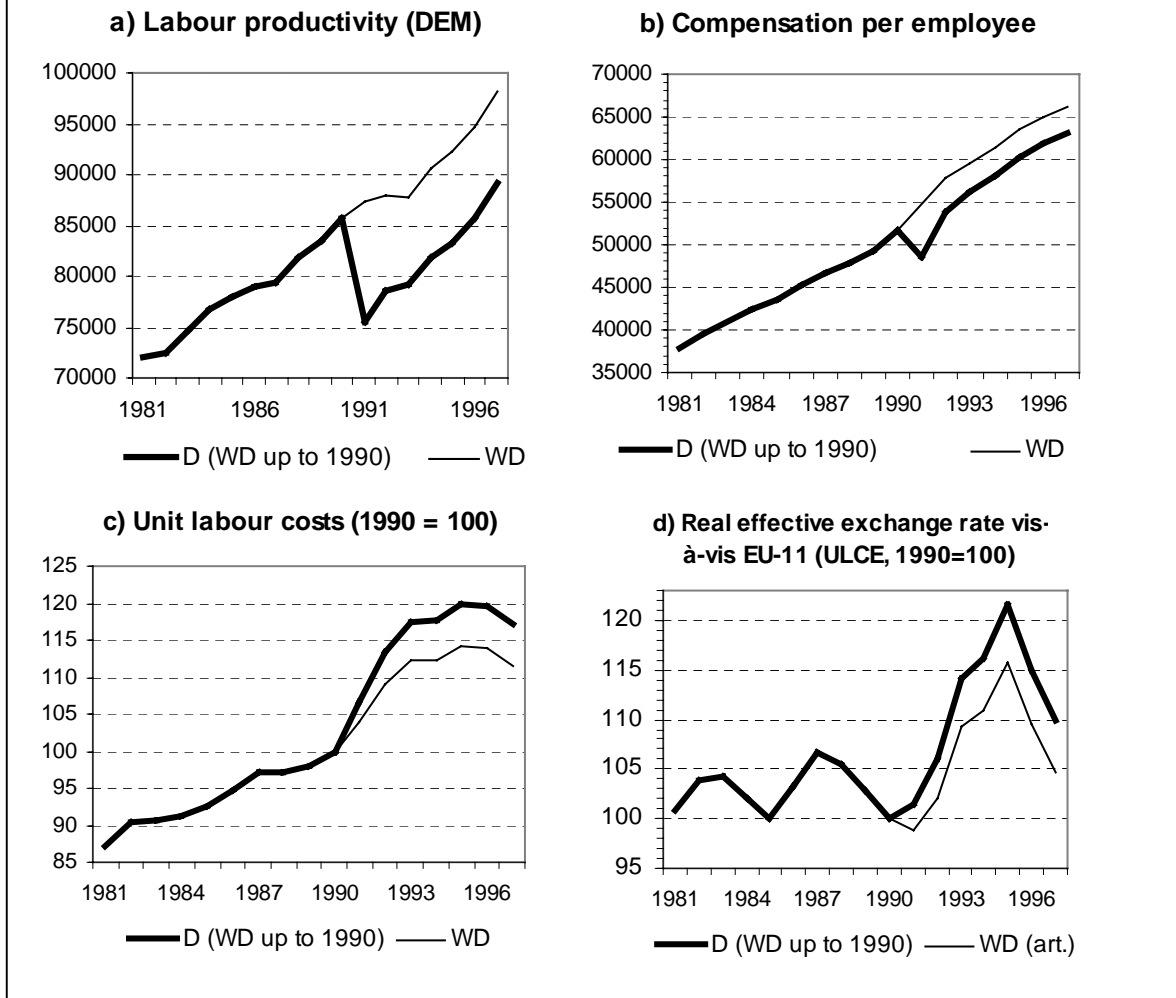
In 1991, East German average *labour productivity* was only one third of the West German counterpart. This resulted in a sharp drop of pan-German labour productivity compared to 1990 West German figures (Figure 3.4a). As plants were closed down and new capital stock became available, labour productivity surged in East Germany displaying double-digit growth rates. However, by 1997 the East German per capita output level had only reached half of the West German level.

The *compensation of employees* in East Germany was at 42% in 1991 and started to converge towards the West German level, reaching 68% of it in 1997 (Figure 3.4b).

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<sup>38</sup> This means that East German companies, which produced shirts for 10 East German Marks sold them for 2.3 DEM to West German retailers (before GEMSU started). At this price East German producers were competitive vis-à-vis West German producers. Applying the conversion rate of 1:1 in GEMSU they immediately had to charge 10 DEM which made them lose price competitiveness and thus almost all of their market shares. See also Sinn and Sinn (1994).

**Figure 3.4:**  
**German re-unification and External Competitiveness**



The sharp increase in *unit labour costs* in Germany from 1991 onwards indicates that the fall in average labour productivity was not fully matched by the decline in compensation per employee (Figure 3.4c). Between 1990 and 1993 average German unit labour costs rose by more than 17%. The extraordinary increase in unit labour costs came mainly from East Germany, where labour costs rose sharply from a level that was already well above that of West Germany. In addition, the costs of re-unification weighed also on West German labour costs as direct taxes (e.g. "solidarity surcharge") and social security contribution rates went up in response to East German financing needs. However, the amount by which average German unit labour costs exceeded those in West Germany indicates the extraordinary huge mismatch in the five new Länder and East Berlin. Moreover, one has to take into account that the observed unit labour costs in East Germany do not fully reflect the full pressure of wage increases in the East, as they only partly reflect genuine productivity improvements. Unit labour costs were dampened, because output per capita in the East rose when a very large number of firms with low productivity were simply pushed out of the market, leaving only the most productive companies as survivors.

The *real effective exchange rate* of the DEM vis-à-vis the other Euro-area economies (based on unit labour costs) displays a sharp increase following re-unification (Figure 3.4.d).<sup>39</sup> Although this trend has been reverted since the mid-1990s, the level of the real effective exchange rate has remained high. Clearly, therefore, indicators that are based on a late chaining point of West German and pan-German data risk to underestimate the impact of re-unification on external competitiveness.

### 3.1.2 Trade developments

The decline in competitiveness indicators as a result of re-unification is clearly visible in Germany's trade performances. This is of particular significance, because despite its large size, Germany's economy appears surprisingly dependent on external trade.

#### *Evolution of external demand*

Unification brought about a substantial structural break in former West Germany's external balance. In 1980, at the height of the second oil crisis, West Germany had a current account deficit of about 1½ % of GDP. During the first half of the 1980s this deficit was reversed into a large surplus of over 4% of GDP, a level which was attained throughout the second half of the decade (Figure 3.5). While a surplus of this magnitude was certainly not sustainable over the long run, it put West Germany into an extremely favourable position to accommodate the large import demand of the re-unification boom without endangering the pan-German external position. Within two years, the large West German current account surplus of nearly 5% in 1989 was more than wiped out and turned into a pan-German deficit of 1% in 1991.

A deterioration of the external balance by 6% of GDP would have caused much greater difficulties, had there not been such a large current account surplus. However, it may have been exactly the ease with which the economic impact of re-unification could be managed in the early years that led to the surprisingly careless treatment of economic re-unification. Arguably then, the advantageous external balance in West Germany was a hidden curse, if otherwise the costly economic mistakes of re-unification would have been avoided out of immediate necessity.

The substantial fall in the current account is not necessarily a worrisome sign, because a large inflow of goods could be expected in light of the large pent-up demand in the New Länder. Partly, it may have simply accelerated a reduction of the unsustainable large West-German current account surplus to attain a more balanced external position. However, as the boom subsided in 1993, the current account deficit remained stuck permanently at a level of around – 1%. A deficit of this order is not dramatic, but it is astonishing that it persists even though domestic demand during the second half of the 1990s grow significantly slower than that in the rest of the world.

A disaggregation of the current account into its constituent components shows that re-unification affected most severely and immediately the balance of trade. The trade balance fell substantially by around 5 percentage points from a pre-unification surplus of 6% of GDP to 1% in 1991. It took about five years for the trade balance to attain a new plateau of a surplus of around 3% of GDP, as the real exchange rates began to fall.

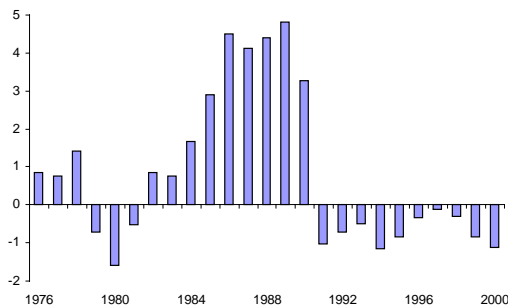
However, this recovery of the net trade balance was cancelled out by developments in the primary income and services balance. The decline in balance of primary income simply magnified the effect of a long-run current account deficit. As Germany's net external capital

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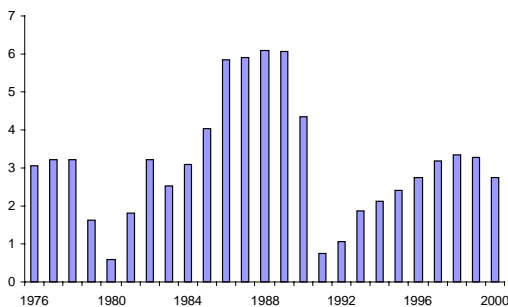
<sup>39</sup> Due to a lack of national accounts data for the two parts of Germany results are available only up to 1997. Moreover, it has to be noted that the calculations in sub-section 3 are based on ESA79 data, while the series displayed in sub-sections 1 and 2 are based on ESA95 data.

**Figure 3.5: Germany's current account balance**

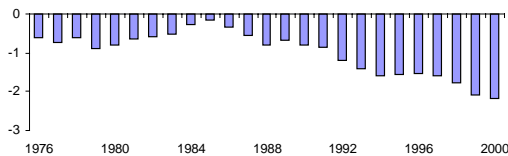
a) Current Account in % of GDP



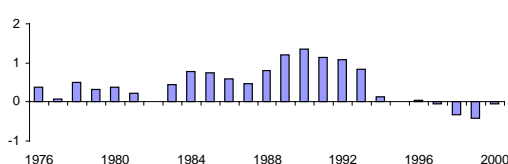
b) Trade balance



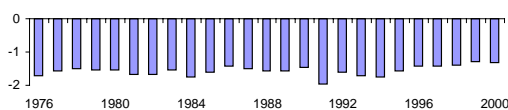
c) Services balance



d) Balance of primary income



e) Net current transfers



Source : Deutsche Bundesbank;

Note : West Germany until 1990

position fell, so did the primary income account, declining steadily from a peak of about 1% of GDP in 1990 to around  $-\frac{1}{2}$  % in 2000.

In parallel, the services balance declined progressively. In contrast to trade, however, the service balance does not show any dramatic shift during re-unification. Instead, net exports in services remained on a secular decline, which had started already in the mid-1980s when the service account was nearly balanced. From then it fell to the present deficit of around 2% of GDP. Much of this is explained by the ever more negative tourism balance but also by an increasing deficit in business services.

#### East Germany

Clearly re-unification is at the heart of the sharp decline in the external balance. Part of the drop in the trade balance reflects that the efforts of West German enterprises were redirected from global markets to East Germany. However, the speed of the decline and the fact that Germany never recovered its export share points to a more substantial problem, which is to be found in the sharp increase in the real effective exchange rate. Notably, compared to the pre-unification levels, Germany has not increased its export share in line with the statistical GDP growth of about 12% that the integration of East Germany brought about. Much less is export growth in line with the increase in population by about one quarter.

The relative under-performance of German exports can be nearly exclusively attributed to the performance of East Germany, while the performance of the West is at least not worse than that of the other European Union countries. Even though in 1995 the German statistical office stopped producing

separate trade figures for East and West Germany, the figures until 1994 give a clear indication of the order of magnitude to which the New Länder run a trade deficit. Table 3.1 shows the net external balance of goods and services for unified Germany, the West and the East. For the latter two cases, the bilateral regional trade deficit is treated like external trade. The table shows very clearly the cause for the very sharp decline in the external balance as a result of re-

unification. While in 1990, West Germany alone ran a trade and services surplus of 142 billion DEM, the figure for unified Germany a year later shows a deficit of 6.9 billion. The separate figures show that this drop does not find any counterpart in the West figures. To the contrary, its nominal net position actually increased slightly. The New Länder, by contrast, started their first year as part of the Federal Republic with a deficit of 169 billion DEM. This is equivalent to nearly 80% of their GDP. In other words, consumption and investment in the East were nearly twice as high as actual production.

**Table 3.1: Net external balance of goods and services**

	Billion DEM			% of GDP		
	Germany	West	East	Germany	West	East
1990	..	141.95	..	..	5.9%	..
1991	-6.88	152.16	-159.04	-0.2%	5.6%	-78.5%
1992	-7.78	187.07	-194.85	-0.2%	6.5%	-74.9%
1993	5.69	210.22	-204.53	0.2%	7.2%	-64.2%
1994	10.78	224.27	-213.49	0.3%	7.4%	-58.0%
1995	22.70	..	..	0.6%	..	..
1996	37.27	..	..	1.0%	..	..
1997	50.13	..	..	1.4%	..	..
1998	57.54	..	..	1.5%	..	..
1999	37.62	..	..	1.0%	..	..
2000	15.33	..	..	0.4%	..	..

Source : Own calculation based on European Commission (Ameco data)

In the following three years, the excess absorption fell as a percentage of GDP to below 60% due to the high growth rates of the area in these years. However, in absolute terms, the external deficit of East Germany increased to well above 200 billion DEM in 1994. Most of this deficit if balanced by transfers from the West, which in turn ran an very large trade and service surplus in 1994 of 224 billion DEM or 7.4% of GDP.

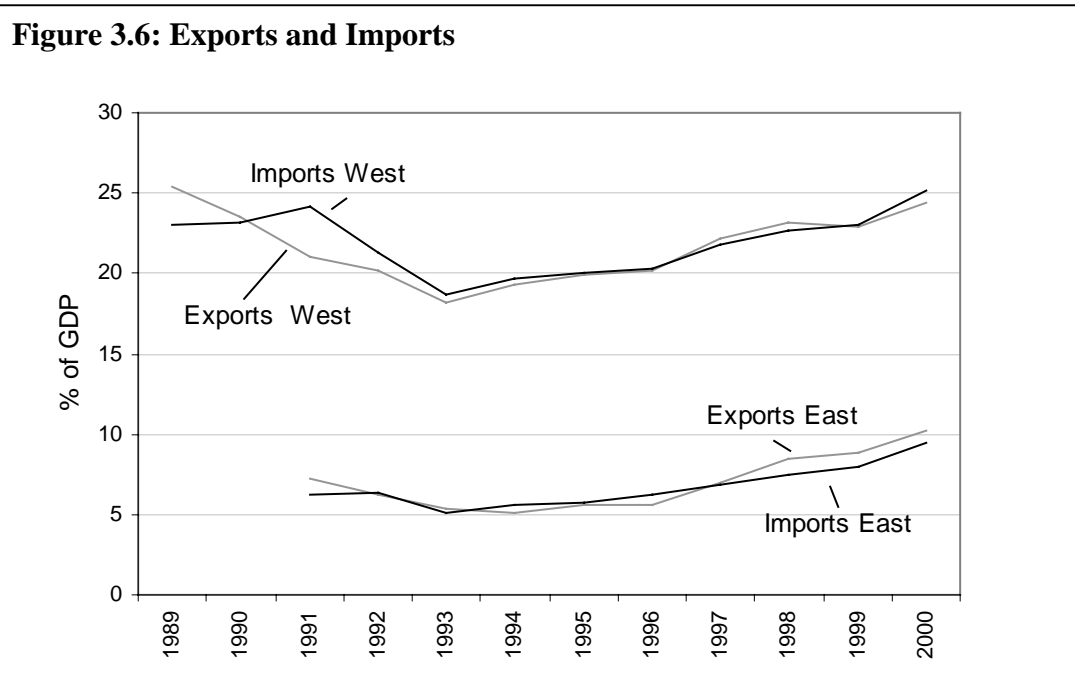
Even though these statistics are no longer produced, there is little indication that the situation changed much in qualitative terms in the second half of the 1990s. It is estimated that net transfers, and hence the East net trade deficit of goods and services continue to be around 50% of GDP and that the West is burdened to the rate of over 4% of GDP which is transferred to the East (cf. Sinn 2000).

The weakness of East Germany's export sector can also be seen from the relative trade shares of the region. In 1991, barely 6% of East output was exported outside of Germany. From this low level it even fell further to around 5% of GDP in 1993 and 1994. It has since doubled to reach an unimpressive 10% in 2000 (Figure 3.6). While this marks relatively high export growth rates, it has to be contrasted with a much higher West export rate of 25% of GDP in 1989, which dropped to around 18% in 1993 and returned to about 25% in 2000. East Germany's exports per capita remain at a level of less than 30% of the West. Even when these figures are corrected for the lower share of manufacturing in East German GDP and also taking out the German port cities from the calculations, the export share of East German manufacturing barely attains 60% of that of the West.

To be fair, the statistics might overstate the problem somewhat. As figures derive from customs documentation, they do not always correctly register the place of manufacturing. Instead, they reflect the place of shipment, often the company headquarters. This is distorting due to The fact that East Germany often functions at extended workbench of the West, e.g. most West car producers have put up factories in the East. This would imply that a share of East production would not leave the country directly, but embodied in West products.

Source: Own calculation, Statistisches Bundesamt





Nevertheless, even taking this factor into consideration, clearly East Germany has a severe dearth of viable exports, even though they are catching up. With a few exceptions, East German producers have not established themselves in international markets and often serve only a local or regional market.

Furthermore, the statistical underestimation of East German exports also implies that imports are higher than what the graph suggests. More importantly, the graph is misleading as it does not show the large current account deficit discussed earlier. This is because the former GDR appears to have almost balanced trade account vis-à-vis Germany's trading partners. Not shown is the huge trade deficit that East Germany has with West Germany.

As a consequence, one cannot talk of a German competitiveness problem. West Germany evidently continues to run very large external surpluses, just as in the late 1980s. Instead, the favourable competitive situation of the West hides the extremely uncompetitive situation of the East. The trade results therefore mirror the development of West German and pan-German competitiveness indicators discussed earlier. The high level of taxes associated with transfers to the former GDR might have contributed to some fall in West German trade to other countries (as opposed to "exports" to the East). However, external competitiveness is not the area most negatively affected by the transfer costs. As described elsewhere, the cost of these transfers lies rather in subdued domestic demand and slow growth, because much of the transfers are used for East consumption rather than investment. In addition those funds that are invested are at least not directly productive for West German companies.

Clearly, therefore, a solution to both the West and East economic problems have to be found in reducing the East German balance of transactions to a manageable figure. To achieve this, the long-run condition is that the East succeeds in building a strong export industry. This, however, cannot happen overnight. In particular, it takes money and time to develop brands that can gain a premium price in the international markets. In the short and medium run, however, the development focus should be simply to produce more tradable goods and services, for instance, to use its underdeveloped tourism potential. Even if these are only sold on the regional or national markets, its import substitution effect should allow a reduction in transfers. By contrast, in the present political set-up, growth in the West that is not matched by growth in the East will

simply lead to higher transfers to the East, which on the one hand would act as an obstacle to further improvements in the West, and on the other hand act as a sweet poison that holds back the East.

#### *Analysis of manufacturing trade*

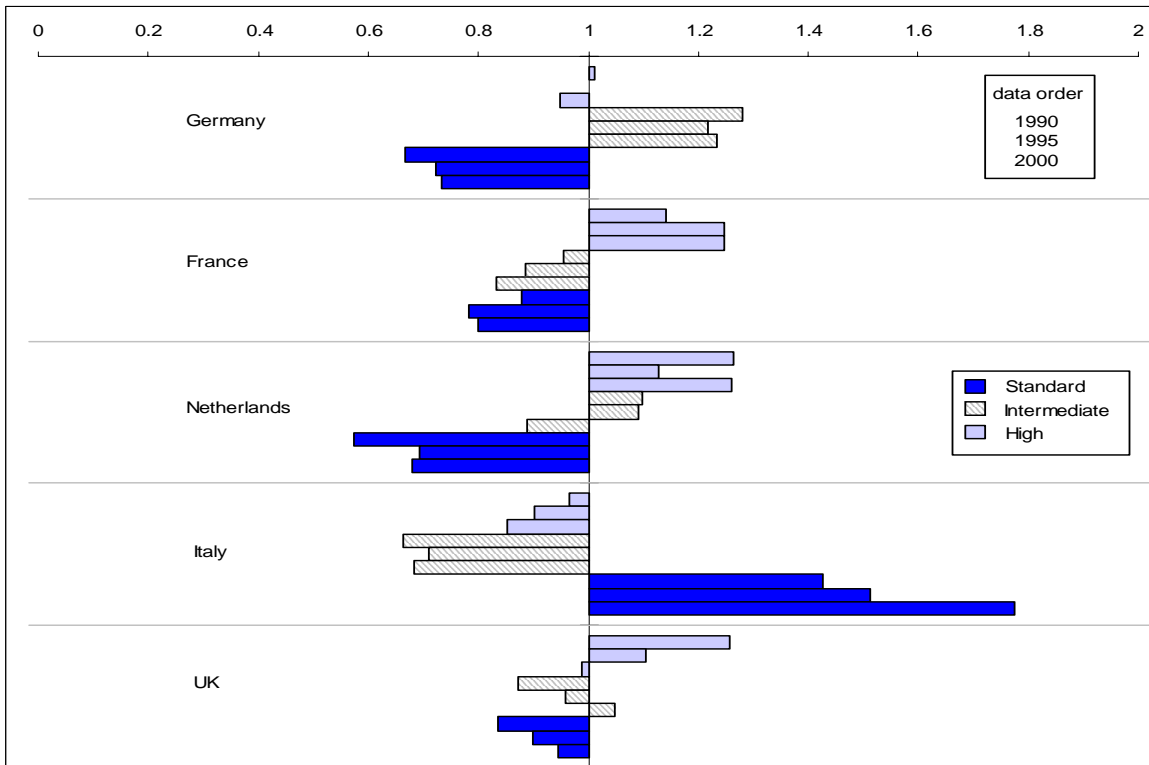
Germany's future competitiveness also hinges on the question of whether the country is strong in market segments with a high growth potential. This can be analysed by looking at the relative specialisation profile of Germany. Due to the small share of East German manufacturing, the following statements reflect only West German companies. A priori, one would assume that the biggest potential for growth lies in the sectors producing high technology products and using skilled labour. By contrast, due to its high wages, Germany is unlikely to be competitive in the world market in low technology sectors and sectors using mainly unskilled labour as their input.

Figure 3.7 shows the relative technology content of Germany's exports, compared to the average content of EU exports, which is set to a value of 1. As one would expect, Germany has a strong comparative disadvantage in the low-technology sectors vis-à-vis other European countries. This disadvantage is, however, not balanced by a comparative advantage in the high technology sector, where Germany perhaps surprisingly shows a slight and slowly growing comparative disadvantage. Germany's export strengths compared with other EU countries lies rather in the intermediate technology sector, such as vehicles and parts, chemicals, machine tools and appliances.

The trend of losing in the high technology sector is certainly worrisome for a high wage country such as Germany. Other countries, such as France and the Netherlands appear much better positioned, while the UK and Italy appear increasingly to lose out on high tech products. However, it must be kept in mind that the term intermediate technology only applies to the product itself. It does not necessarily apply to the production process. For instance, car production can involve extremely complex machinery and production processes. It is therefore useful also to take a look at the predominant input factors. An analysis shows that Germany's exports are relatively capital intensive and use high skilled labour (Figure 3.8). By contrast, goods that use low skill labour are underrepresented. Here too, France and the Netherlands appear to have a superior profile insofar as their exports are concentrated in high skill labour, while the UK and Italy show no comparative advantage in skilled labour products.

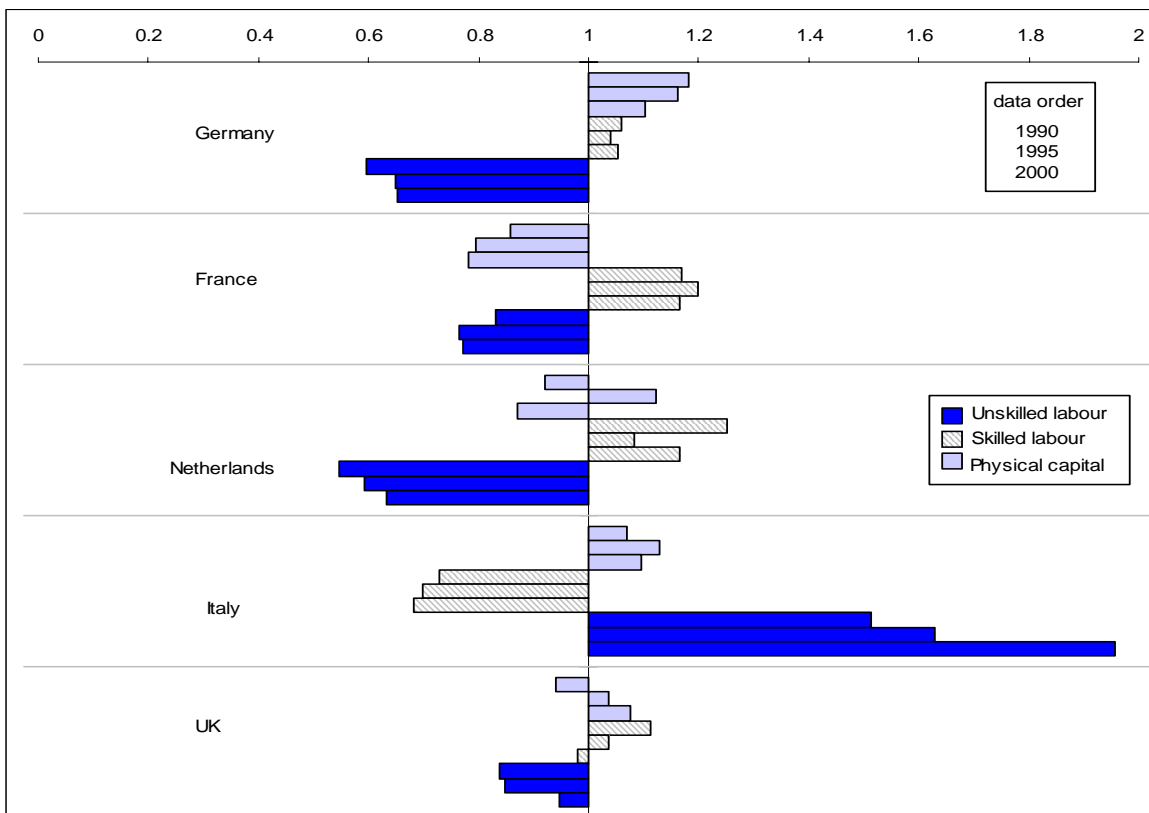
It is not possible to draw direct conclusions on the future competitiveness of German industry from this simple snapshot. However, a priori one would assume that the best potential for Germany to maintain a global market share would lie in the capital intensive high-skill high-tech sectors, because only these sectors can afford the country's high wage level. It is then a potentially worrisome fact that Germany appears to be losing slightly its comparative advantage in these areas compared to other European countries. The changes in Figures 3.7 and 3.8 maybe small but could point to a potential long-run decline of the German trade position. This is compounded by the fact that the analysis does not include the service sector, where Germany is particularly weak. In addition, by normalising the figures on an EU average, the data neglect the fact that Europe as a whole is losing high tech market share, notably to the United States.

**Figure 3.7: Revealed comparative advantage of technology content**



Source: Comext data base, own calculations EU

**Figure 3.8: Revealed comparative advantage of factor content**



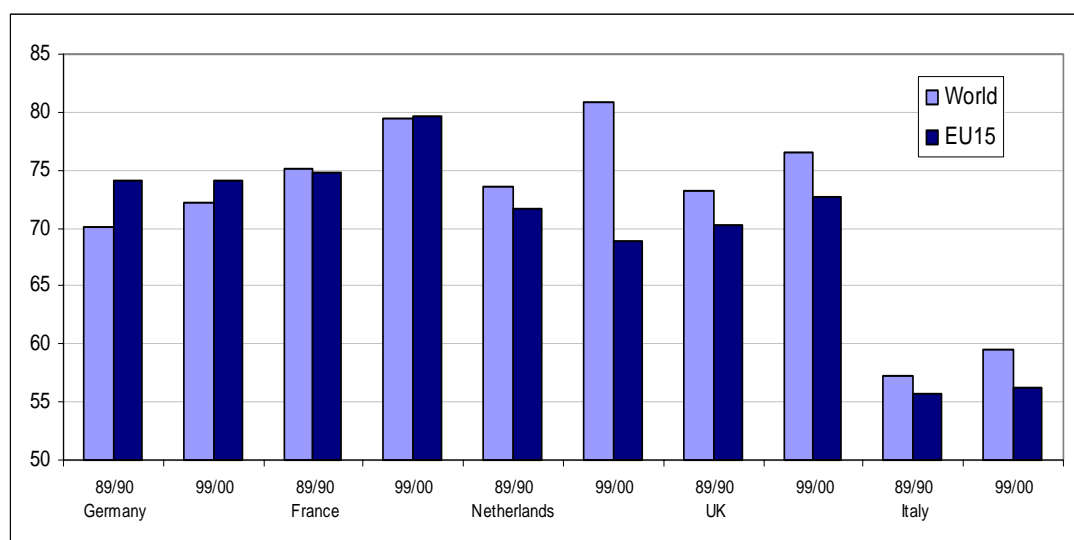
Source: Comext data base, own calculations

### *Intra-industry trade*

Beyond looking at the specialisation profile of Germany the question arises to what extent Germany is fully taking advantage of the growth possibilities offered by international trade. One way to look at this issue is the analysis of the relative share of intra-industry trade. Intra-industry trade is defined as the mutual exchange of products within the same sector and is distinguished from inter-industry trade, in which countries trade the products of different sectors. Intra-industry trade makes up most of the trade-flows between advanced economies and cannot be explained by standard trade theory of comparative advantage. Instead, it indicates the presence of economies of scale. If all countries specialise in a narrow range of products that are then traded they can reduce production costs per unit and offer a larger variety of products to their consumers. Empirical evidence suggests that there is a positive relationship between growth rates and measures of intra-industry trade.<sup>40</sup> Next to economies of scale, intra-industry trade has been linked also to the transfer of technology and greater technological innovation, the key ingredients of modern growth theory.

Figure 3.9 shows for some European countries the Grubel-Lloyd index, which measures the relative share of intra-industry trade as a share of total trade (with a theoretical maximum value of 1).<sup>41</sup> The figure reveals that intra-industry trade is increasing in all countries. It also reveals that Germany is lagging behind other countries in intra-industry participation except Italy. Other countries that had relatively higher growth rates during the last decade, such as the Netherlands, France, and the UK both had higher starting levels of intra-industry trade and, potentially more important, higher relative increases, which *à priori* would mean a higher additional exploitation of scale economies.

**Figure 3.9: Grubel-Lloyd Index of Intra-Industry Trade**



Source : Comext data base; own calculations.

It is interesting in this context also that the Grubel-Lloyd index for all other countries is larger for trade with the rest of the world than for trade with other EU 15 countries. Only for Germany and, to a lesser extent France, the reverse holds true. This appears to indicate a larger openness of the faster growing economies to business outside of the EU, and here mostly with the US, while Germany's intra-industry trade is more directed towards other EU countries. The lower openness then would explain why Germany has missed out on much of the international

<sup>40</sup> See for example, Backus, D., Kehoe, P and Kehoe, T. (1992).

<sup>41</sup> Grubel, H. and Lloyd, P. (1975).

economic boom that characterised the 1990s. Another aspect is that the lower level of intra-industry trade of the slow-growing economies reflects a lower attractiveness of these countries for foreign direct investment, as much foreign trade takes place between subsidiaries of international companies. This aspect will be analysed next.

### 3.1.3 Developments of foreign direct investment

Global flows of foreign direct investment (FDI) have increased substantially throughout the last decade reflecting ongoing globalisation of economic activity. Also the flow of German direct investment to foreign countries has been on an increasing trend since the mid-1980s. By contrast FDI flows into Germany have remained at much lower levels and started a steady increase not before the second half of the 1990s. This obvious discrepancy in developments of inbound and outbound flows has raised the question whether it can be attributed to a lack of attractiveness of the German economy, i.e. to the question whether there is a *Standortproblem*.

The question whether the size of foreign direct investment flows to and from Germany contains information about the quality of the country as a location of business has attracted a lot of attention of policymakers, economists and the public. It is difficult to find a clear-cut answer as to whether FDI flows contain such type of information. Moreover, critical statements on FDI inflows induced by the hostile take-over of a German company in 2000 suggest that not all FDI flows are welcomed any longer. But from an economic standpoint it is difficult, if not impossible to distinguish between FDI as the good, the bad and the ugly. However, one can describe flows and review some of the arguments in the light of facts. This task will be in the centre of this sub-section.

#### *German direct investment abroad*

German direct investment in foreign countries has been relatively flat in the first half of the 1990s and then started to increase in the second half of the decade. In the 1990 to 1999 period it always exceeded inbound direct investment flows. Most of the direct investment flows were in the form of equities, less in the form of credit transactions (see also Table 3.2 and Figure 3.10).

**Table 3.2: Direct Investment Flows From and To Germany**

Flows from and to Germany (bill. DEM)								
Outflows				Inflows				
	Equity capital	Other capital	reinvested earnings	total capital	Equity capital	Other capital	reinvested earnings	total capital
1994	24.800	3.534	2.767	31.104	6.708	6.405	-1.350	11.766
1995	48.194	6.992	3.227	58.413	13.085	8.578	-3.675	17.988
1996	43.539	25.387	9.376	78.302	4.007	13.106	-6.982	10.129
1997	51.071	14.921	6.173	72.166	9.439	12.498	-0.796	21.141
1998	110.780	34.006	10.031	154.820	10.640	32.784	-0.994	42.432
1999	177.548	13.257	10.757	201.532	48.415	63.081	-8.801	102.695
2000	99.444	-7.119	10.757	103.082	205.611	176.930	-8.801	373.740
FDI income								
	Credit		Debit		Net			
1996	22.371		7.174		-15.197			
1997	26.273		15.913		-10.360			
1998	27.080		22.453		-4.627			
1999	28.831		16.687		-12.146			
2000	35.530		20.796		-14.735			

Source : Eurostat., New Cronos

In line with these developments income from FDI has been increasing. Exceptionally high outbound flows were observed in the years 1988 and 1999. These increases can be attributed to a wave of cross-border mergers and acquisitions that drove FDI flows among OECD economies in the late 1990s.

The geographical distribution of German outbound flows has been a very broad one (see Table 3.3), but since the mid-1990s much has been directed towards the U.S. economy, in particular in the year 1988 due to a single transaction, Daimler-Benz's USD 38 billion acquisition of Chrysler (USA). Among the Member States of the EU the UK has been a key recipient of German direct investment, but the rankings of recipients have changed a lot from year to year. Other major flows went to France, Belgium-Luxembourg, and to the Netherlands. The size of flows to neighbouring countries, most notable to the Netherlands, Austria and Switzerland, suggests that vicinity played a major role in decisions about FDI.

**Table 3.3: German Direct Investment Abroad: Outflows by Country (Billion DEM)**

Outflows to:	90+91	92+93	1994	1995	1996	1997	1998	1999	2000
B-L	9.93	11.63	1.38	2.84	0.46	2.83	5.25	9.83	26.83
DK	0.28	0.41	0.02	1.09	-0.21	0.82	0.20	0.80	0.92
EL	0.28	0.24	0.15	-0.03	-0.12	0.80	0.67	0.37	0.95
E	4.29	2.03	1.08	0.58	0.45	3.19	4.36	3.43	5.07
F	7.59	4.97	2.09	4.89	3.30	4.58	15.15	9.18	7.20
IRL	10.92	2.38	1.06	-0.22	-1.22	4.93	0.97	-1.74	-2.97
I	2.87	2.30	0.78	3.46	4.15	2.90	5.54	2.46	-5.76
NL	6.01	6.38	1.78	8.21	2.89	-0.59	4.28	7.99	-17.80
A	1.99	2.03	0.90	2.59	5.59	2.85	4.40	1.60	18.07
P	0.48	0.71	0.67	0.12	0.49	0.94	0.67	0.10	1.87
FIN	0.07	0.16	0.01	0.21	0.35	-0.09	0.87	0.57	0.28
S	0.62	1.29	0.71	0.25	0.28	0.42	2.93	11.92	3.17
UK	9.10	5.62	3.95	10.62	19.75	5.18	1.75	78.57	-21.71
CA	2.33	-0.58	0.31	0.14	-0.37	1.21	0.51	2.38	0.32
CH	3.72	2.27	1.46	1.81	0.71	7.11	4.43	0.06	-0.78
JP	1.20	0.40	0.65	0.51	2.59	0.04	0.97	1.23	6.39
NO	0.11	0.19	-0.06	0.01	-0.12	0.15	0.70	0.25	0.30
US	10.40	4.72	2.79	4.25	22.73	18.60	79.01	48.07	47.24
EU	54.53	40.16	14.56	34.61	36.15	28.77	47.01	125.09	16.11
<i>OECD total</i>	74.12	51.79	22.83	45.78	68.14	63.79	146.14	187.88	80.98
Total	77.92	55.82	27.88	55.59	76.48	72.48	155.87	201.56	103.08

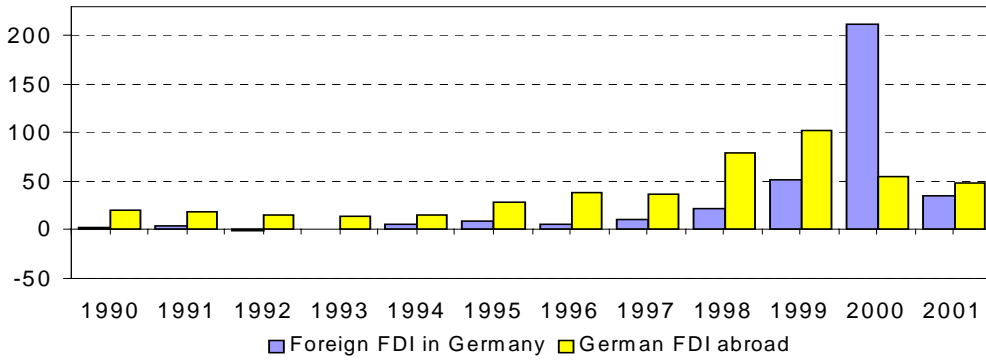
Source : OECD Statistical Databases (2002).

Table 3.4 displays the destination of flows in selected years based on Bundesbank data. They confirm the exceptional role of the UK and Belgium-Luxembourg as recipients, but they also show the substantial change in relative importance from year to year. The latter can be seen in the cases of Ireland and the Netherlands, where substantial changes in shares were observed.

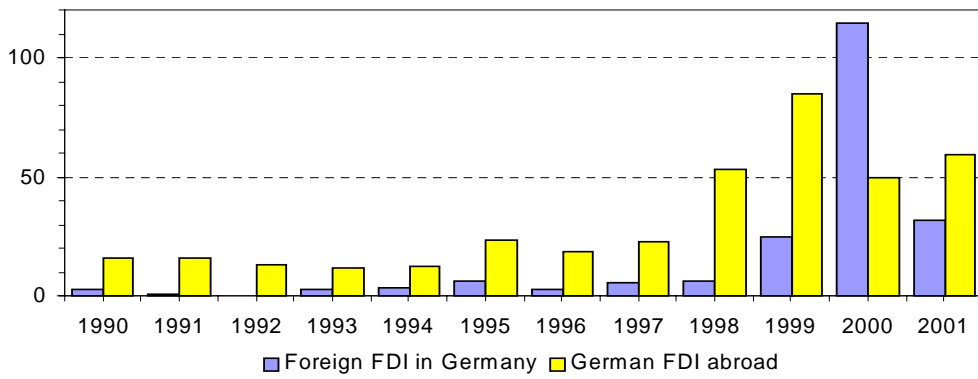
In terms of sectors the lion's share of direct investment has usually been taken by services, except in the year 1998 due to a single transaction in manufacturing (see Table 3.5). Among the service direct investment flows those related to financial activities and to real estate and business were more or less the same in size whereas other services were negligible. The share of manufacturing was at around 40% in most years with major flows recorded in the sector petroleum, chemical, rubber and plastic products and in the sector vehicles and other transport equipment. The strong investment of these sectors could suggest that large multinational companies, which are dominating these two sectors in Germany (Bayer, Aventis, BASF in the former, Daimler-Chrysler, BMW, Volkswagen in the latter), and their efforts to participate in ongoing globalisation of business activity played a major role. Contrary the sectors for metal and mechanic products and for office machines recorded only small outbound flows.

**Figure 3.10: Foreign Direct Investment Flows (€bill.)**

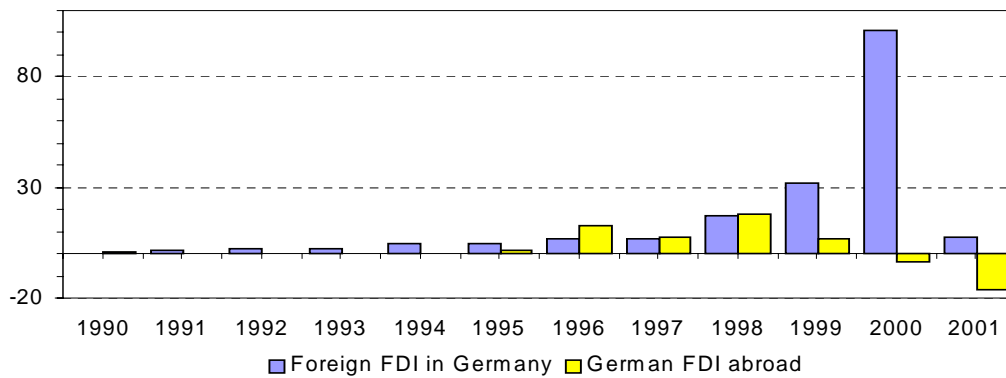
a) Total



b) Equity Capital



c) Credit transactions of German and foreign direct investors



Source: Deutsche Bundesbank database, own calculations.

**Table 3.4: Direct investment with other Member states as the origin or destination (DEM billion)**

Outflow	1997	1998	1999	2000
A	2.850	4.396	1.600	18.066
BL	2.834	5.252	9.826	26.826
E	3.194	4.360	3.434	5.066
F	4.583	15.147	9.185	7.195
NL	-0.587	4.277	7.984	-17.796
UK	5.179	1.745	78.568	-21.706
Others	10.712	11.836	14.493	-1.541
EU	28.765	47.013	125.089	16.110
Inflow	1997	1998	1999	2000
A	2.061	0.465	0.976	-0.947
BL	4.012	2.296	22.257	61.523
E	0.939	0.349	-8.490	-6.065
F	-0.819	1.693	38.368	-2.093
NL	2.754	6.520	6.912	64.982
UK	3.903	15.185	16.505	249.087
Others	1.268	11.199	5.302	8.144
EU	14.118	37.707	81.830	374.631

Source : Deutsche Bundesbank, international capital links, May 2001.

**Table 3.5: German Direct Investment Abroad by Industrial Sector (DEM billion)**

Sector:	90+91	92+93	1994	1995	1996	1997	1998	1999	2000
Primary	1.69	-0.15	-0.36	-0.07	-1.66	-0.20	-0.16	-0.55	0.58
Manufacturing	31.75	22.01	10.55	20.08	16.52	28.08	86.06	90.97	36.43
- petroleum, chemical, rubber and plastic products	10.20	6.61	0.08	10.05	4.56	10.23	14.07	1.50	14.49
- vehicles and other transport equipment	6.29	4.28	5.70	4.81	4.02	1.80	62.33	2.07	14.62
- metal and mechanical products	5.18	4.17	1.20	1.54	2.06	7.42	3.75	57.73	4.06
Services	30.05	29.57	16.44	31.61	45.73	37.56	57.95	98.98	53.28
- financial activities	26.35	10.59	6.82	11.21	26.02	15.52	25.03	57.07	59.65
- real estate and business activities	..	11.36	6.06	11.54	11.86	13.71	28.09	4.71	-17.10
- other services	1.69	1.85	2.15	3.51	2.94	2.82	3.73	3.56	8.67
Unallocated	14.43	4.39	1.26	4.34	15.87	7.04	12.03	12.17	12.80
Total	77.92	55.82	27.88	55.96	76.45	72.48	155.87	201.56	103.08

Source : OECD Statistical Databases (2002).

In order to assess the size of inflows and outflows one has to compare German data with that of other Member States taking into account special circumstances that might be reflected by outliers. In that regard Table 3.6 indicates that as a percentage of GDP outflows have been in a similar range with those of France and Japan, but considerably below those from the UK and substantially above those of the US economy. However, as a percentage of exports outflows have been relatively low indicating that German companies have a certain preference for serving foreign markets by products from Germany instead of producing abroad.

#### *Foreign direct investment in Germany*

Foreign direct investment in Germany was relatively small in volume up to the late 1990s, but it has grown significantly since, in particular recording an exceptional increase in the year 2000 due to a single transaction in the telecom sector, the USD 200 billion acquisition of Mannesmann by Vodafone AirTouch (United Kingdom). The latter made Germany last year the second largest seller in cross-border M&As worldwide, and it made the year 2000 the only one in which flows to Germany exceeded flows from Germany. Contrary to outbound flows from



Germany credit transactions played a substantial role in investment flows while equity capital was less important than it was for German direct investment abroad.

**Table 3.6: The importance of FDI of major industrial countries**

	Direct investment abroad					
	USD Billion		% of exports		% of GDP	
	1984-89	1990-95	1984-89	1990-95	1984-89	1990-95
France	52.5	101.8	4.9	5.5	1.1	1.3
Germany	56.9	138.1	3.2	4.6	1.0	1.2
Japan	192.6	262.2	13.0	11.0	1.5	1.1
UK	145.2	149.7	15.1	9.7	3.8	2.4
USA	126.5	330.1	5.9	8.5	0.5	0.9

Source : Deutsche Bundesbank (1997b), p.67.

The geographical distribution of the origins of flows to Germany has been broad, but only a handful of countries hosted investors making significant direct investment in Germany (see Table 3.7). Among these origins were the UK, France, the Netherlands and Belgium-Luxembourg in Europe and the US in the rest of the world. Important flows in a number of consecutive years were reported especially from France in the first half of the 1990s and from the UK in the second half. Flows from the US were subject to major shifts in size with positive inflows of more than 1 billion euro only displayed in three years (1995-6, 1998) in the 1990-98 period covered by the OECD data.

A look at Table 3.7 of the countries of origin in selected years highlights the importance of flows from the UK, Belgium-Luxembourg and the Netherlands in the chosen years. While the latter could suggest that vicinity matters a lot, the rather tiny flows from Austria and Switzerland provide counter-evidence.

Among the countries outside the EU it is mainly the U.S. economy from which FDI flows originated. As Table 3.8 indicates substantially more than half of the direct investments received by the EU from the rest of the world came from the USA. However, the German share in these inflows has been relatively small with regard to the sheer size of the German economy. Although the sharp shifts in shares displayed in the table advises not to put too much emphasis on the figures, it appears astonishing that Germany attracted such a small share in the total, but such a large share in flows from neighbouring Switzerland. Again, this could suggest that apart from other motivation vicinity plays a key role in direct investment decisions.

In terms of sectors services related investment dominated the flows, accounting for the major part of the allocated flows (see Table 3.9). While flows from abroad to the primary sector were negligible, manufacturing reports only modest inflows, but strong changes in sectors displaying positive inbound flows. Within the service sector real estate and business activities have recorded the largest inflows, whereas financial institutions report substantial inflows only in few selected years suggesting that single transactions matter a lot for these time series.

**Table 3.7: German Direct Investment: Inflows by Country (Billion DEM)<sup>(a)</sup>**

Inflows from:	90+91	92+93	1994	1995	1996	1997	1998	1999	2000
B-L	-0.27	<b>2.76</b>	0.92	0.70	-3.57	<b>4.01</b>	2.30	<b>22.26</b>	<b>61.52</b>
DK	0.40	-0.09	0.08	0.06	0.31	-0.49	0.00	1.61	1.84
EL	0.03	-0.03	0.00	-0.01	0.01	0.01	-0.08	0.04	0.04
E	0.26	-0.07	-0.02	-0.10	0.27	0.94	0.35	-8.49	-6.07
F	<b>3.11</b>	<b>2.71</b>	<b>1.19</b>	0.82	1.18	-0.82	1.69	<b>38.37</b>	-2.09
IRL	0.42	0.19	0.45	-0.09	0.38	-0.08	0.83	0.90	0.21
I	0.99	-1.34	-1.90	0.40	0.22	0.25	4.68	3.64	0.60
NL	<b>1.47</b>	-1.55	<b>2.87</b>	<b>3.87</b>	<b>3.92</b>	<b>2.75</b>	<b>6.52</b>	6.91	<b>64.98</b>
A	0.25	0.55	0.27	0.73	0.12	2.06	0.47	0.98	-0.95
P	0.00	-0.01	0.02	-0.04	0.07	0.17	0.18	0.50	0.13
FIN	0.13	0.53	-0.33	0.12	0.19	0.52	2.44	-0.45	0.55
S	0.99	-0.34	-1.04	0.37	0.16	0.89	3.16	-0.94	4.78
UK	-0.15	<b>2.47</b>	<b>2.53</b>	<b>2.93</b>	<b>2.41</b>	<b>3.90</b>	<b>15.19</b>	<b>16.51</b>	<b>249.09</b>
CA	1.18	0.13	-0.23	0.17	-1.87	-0.18	-0.94	0.02	0.51
CH	-1.67	-1.09	0.69	2.46	1.24	2.22	-5.86	1.59	-3.65
JP	<b>2.21</b>	1.14	-0.46	0.84	-1.29	1.01	-0.19	1.10	1.34
NO	0.09	0.03	-0.01	0.01	-0.13	-0.05	0.26	0.07	1.66
US	-1.37	0.43	-1.89	<b>3.52</b>	<b>4.15</b>	2.28	<b>6.66</b>	14.00	-6.34
EU	7.62	5.79	5.04	9.77	5.66	14.12	37.71	81.83	374.63
OECD total	8.14	6.65	3.17	16.86	8.07	19.26	38.14	99.46	368.48
Total	10.81	7.32	2.91	19.75	8.48	21.23	42.72	102.69	373.74

<sup>(a)</sup> Top three in bold figures

Source : OECD Statistical Databases (2002).

**Table 3.8: Extra-EU FDI inflows excl. reinvested earnings with major partners**

	From	US	CH	JP	Others	Total
EU Total	1992-96	78.2	18.5	6.9	31.5	135.1
(Ecu. Bn.)	1997	20.0	2.5	2.7	12.5	37.8
	1998	52.7	19.9	1.5	10.0	95.0
	1999	67.2	4.3	3.2	15.4	90.1
Germany	1992-96	11	14	12	8	11
(% of EU)	1997	4	44	26	8	10
	1998	7	-15	7	26	3
	1999	13	45	16	5	13

Source : Eurostat (2001), p.37.

**Table 3.9: Foreign Direct Investment in Germany by Industrial Sector (Billion DEM)**

Sector:	90+91	92+93	1994	1995	1996	1997	1998	1999	2000
Primary	0.03	0.03	0.28	-0.02	-0.39	-0.66	-0.65	-0.73	0.22
Manufacturing	-4.88	0.00	-1.55	1.72	-2.80	1.65	-5.05	51.94	6.01
- petroleum, chemical, rubber and plastic products	-3.35	-0.51	-1.74	-0.50	-1.10	0.81	-0.89	28.98	..
- vehicles and other transport equipment	0.48	-0.75	-0.24	0.34	1.52	-1.55	-5.43	-1.27	14.01
- metal and mechanical products	0.07	0.71	-0.01	0.08	-0.26	0.98	-0.56	15.84	-0.02
Services	15.70	10.48	14.42	19.17	19.16	20.83	49.76	60.42	376.52
- financial activities	12.45	-3.32	-0.64	-0.46	5.66	-1.61	13.69	13.59	8.32
- real estate and business activities	..	12.19	10.90	18.82	16.77	14.56	33.48	43.91	326.83
- other services	0.71	0.21	0.62	0.14	0.39	-0.04	-0.30	0.03	2.35
Unallocated	-0.04	-3.19	-10.24	-1.12	-7.48	-0.59	-1.34	-8.94	-9.01
Total	10.81	7.32	2.91	19.75	8.48	21.23	42.72	102.69	373.74

Source : OECD Statistical Databases (2002).

### *An Assessment of FDI flows and Germany as a business location*

There is no doubt that motives of direct investment are manifold. Many of them have been in the centre of theoretical and empirical analysis of direct investment, in particular in the 1990s accompanying the surge of interest in economic growth theory. Any full analysis has at least to take into account developments in foreign trade, in wages and costs and in world economic activity. Several studies of direct investment in Germany have gone into this direction. Among them is a study published by the Bundesbank (1997b) based on data from 1975 up to the first quarter of 1977. Concerning the inbound and outbound direct investment flows the study emphasised the important role that cost factors play in addition to sales motives by stating that: *"the worsening of international competitiveness brought about by the relatively sharp rise in unit labour costs (calculated in a uniform currency) has caused some German enterprises to shift part of their production abroad in the past few years; at the same time it has deterred foreign firms from investing more heavily in Germany"* (Bundesbank, 1997b, p. 68).

According to the empirical estimates of that study a deterioration of price competitiveness of one percent would, on average over the long term, result in an increase of 2½% in German direct investment abroad. The German tax burden, also often been linked to direct investment flows, though not incorporated explicitly, was identified as triggering a similar impact via its effect on costs. With respect to foreign investment in Germany the Bundesbank stated that "another locational disadvantage of Germany hindering the inflow of foreign corporate capital is probably the specific structure of the enterprises and their financing" (p.73). As this disadvantage is difficult to capture quantitatively the Bundesbank warned that when "it comes to assessing the quality of Germany as a business location on the basis of the trend in inbound and outbound direct investment ... a highly differentiated approach must be taken" (pp. 74-5). Nevertheless, the Bundesbank study not only indicated that the international competitiveness of Germany had hindered foreign investment in Germany and had stimulated direct investment flows from Germany to foreign countries, it also suggested that direct investment flows contain information about the attractiveness of a Germany as a location of business.

The aforementioned Bundesbank study had been based on data from the mid-seventies to early 1997 raising the question as to whether the conclusions are still applicable to the economic situation in the late 1990s and today. Obviously, the determinants identified just a few years ago can be presumed to be still in place and to affect today's decisions on direct investment as well. However, the weights that are attached to these determinants might have changed and such changes might have enhanced the risks of misinterpretations of direct investment flows.

Indeed in the years since the launch of the study the framework has changed and so has the behaviour: (a) direct investment flows have been increasingly affected by mergers and acquisitions in the centre of which are other than short or medium term cost considerations; (b) the more recent composition of flows by industrial sector suggests that mainly large multinational companies are involved in direct investment and for firms of this size strategic motives might have a more important role than economic conditions in Germany; (c) more and more restrictions on the movement of goods, persons and capital have been removed since the mid-seventies, the start year of the Bundesbank's empirical analysis, suggesting that the relationship between exports and production on foreign soil might have changed; (d) the introduction of the euro has removed exchange rate risks from a huge area in Europe bringing about changes in one of the most important determinants of investment location; (e) the transition process in the countries of Central and East Europe has progressed and their accession with the EU has become more likely changing views on investment projects in these parts of Europe (see e.g. Buch, Kokta and Piazzolo, 2001). Obviously, the list of changes that affect decisions about direct investment could be extended. But already the changes named above provide good reason for first doubts whether results obtained a few years ago are still relevant or more generally about the indicator properties of direct investment flows.

#### **Box 4: FDI as an indicator for Germany's attractiveness as a business location**

Recognising the link between FDI and macroeconomic developments, changes in the former have often been interpreted as signalling a certain locational weakness or strength of the economy. While the links are usually confirmed by empirical studies, there are some doubts about the soundness of FDI-based statements, in particular with respect to the indicator properties of FDI.

##### **B4.1 Different FDI definitions in the 1990s**

One drawback to international comparisons stems from the heterogeneity of FDI data due to different definitions followed by data collecting institutions. FDI comprises investment in which a resident of one country obtains a lasting interest in, and a degree of influence over the management of, a business enterprise in another country. According to both the OECD Benchmark Definition and the IMF Balance of Payments Manual the criterion used to distinguish FDI from other types of investment is ownership of at least 10% of the voting securities of an incorporated business enterprise or the equivalent interest in an unincorporated enterprise. FDI comprises three components: new equity parent companies provide to their affiliates, i.e. enterprises in which the parent company or investor owns at least 10 percent, reinvested earnings of the affiliate, and long and short term loans from the parent to the affiliate (inter-company debt). But for instance the Bundesbank has only adopted the definition given above in January 1999 by reducing the threshold from 20 to 10% and by starting to consider short-term credits and trade credits from the parent to the affiliate as DI, but reporting requirements are still based on the 20% threshold.

##### **B4.2 Statistical discrepancies might distort analysis**

In much of the debate in Germany many participants have based assessments on data obtained from German balance of payments statistics. But the main objective of these statistics is to mirror financial transactions. Moreover, one has to acknowledge that the reporting systems and recording practices for direct investment flows have greatly differed from country to country. In order to illustrate the significance of this problem the Bundesbank has compared data based on German balance of payments statistics with those obtained from foreign balance of payments statistics. Some of the results for the first half of the 1990s are displayed in the table below.

**Table B4.1 International discrepancies between reported direct investment flows  
(net investment, in DEM billion)**

	Foreign direct investment in Germany		German direct investment abroad	
	German balance of payments	Foreign balance of payments	German balance of payments	Foreign balance of payments
1990	2.9	26.1	32.1	16.5
1991	4.7	26.0	32.2	16.3
1992	5.6	18.3	25.0	18.3
1993	0.6	13.4	19.8	30.5
1994	0.9	18.9	19.2	23.4

Source : Deutsche Bundesbank (1997a), p.78.

For the 1984-1996 period net foreign investment in Germany were 34.6 billion DEM according to German data, but 137.2 billion DEM according to foreign data. For outbound flows the difference was slightly smaller (226.1 billion DEM according to German data, 166.0 billion DEM according to foreign data (source: Bundesbank (1997a), p.78). Thus, based on German data one has to explain a net outflow of 191.5 billion DEM, while based on foreign data only a net outflow of 28.8 billion DEM has to be explained.

In addition to these very specific aspects of recent developments there is a more general risk of misinterpreting the data on direct investment flows to and from Germany:

- *Inflows could indicate strength.* Net FDI is not necessarily an indicator of relative cost competitiveness, because it also depends on non-cost factors. Empirical studies suggest that the proximity to markets matters more than costs. Thus, net-inflows could reflect a more positive overall macroeconomic development in the area, which attracts most FDI in net terms. However, one has to take into account country-specific structure in the private sector. For instance a broad equity base of company ownership could make acquisitions easier for foreign investors than bank-based financing would do. Obviously the latter is a characteristic of the German economy where equity financing has played a minor role up to the 1990s.
- *Outflows could indicate strength.* FDI and foreign production are a result of firm-specific competitiveness and transaction costs. Thus, high outward FDI could signal an improvement of the competitive situation of domestic companies (e.g. due to scale economies, technological knowledge or progress). Low outward FDI could also signal that firms do not meet the preconditions for FDI (e.g. consumer goods producers have limited resources). Moreover, FDI could come along with an increase in exports and widen the domestic basis of R&D and future economic growth. In that respect FDI outflows would strengthen the domestic economy and create new jobs.
- *Flows could be policy-induced.* In case of political or other trade restrictions FDI might be the only option of foreign engagement. Moreover, domestic authorities or international institutions (e.g. the EBRD) could encourage FDI outflows. Thus it would be misleading to interpret these outflows as a weakness of the domestic economy. In addition one might expect positive effects for the domestic economy.

These considerations suggest that net FDI should not be used as stand-alone indicator of competitiveness and add to the warnings already contained in the Bundesbank report mentioned earlier. However, in the context of the general weakness of the overall economy, the small amount of foreign direct investment flows coming into Germany has been a focal point of the discussion about what might go wrong in the German economy. One reading suggested that the conditions of production and investment were not good enough to attract foreign capital. A closer look to direct investment flows to and from Germany confirmed the discrepancy between both flows. However, the more recent developments were substantially different as mergers and acquisitions and ongoing globalisation have substantially changed the size of flows. Thus, doubts occur as to whether the results obtained in earlier empirical studies still hold, in particular whether the link between the business locations and direct investment is the same as for instance ten years ago. On the other hand, there is no hint that Germany has in any way become a more attractive place for foreign companies to invest in. Despite all the caveats, the analysis therefore gives supplementary information about an economy in need of reforms that would increase its quality as a business location.

#### **3.1.4 Some concluding remarks**

In the discussion on Germany's structural weakness during the 1990s, international trade and FDI take on a very prominent role. This is because much of the economic ups and downs of Germany's growth has been attributed to external developments. More importantly, trade and FDI allow for a direct comparison of Germany's economic strength with that of other countries. This section analysed the international performance with a threefold approach by studying, first, competitiveness indicators, then trade figures, and finally FDI flows.

A look at indicators of cost-competitiveness revealed that Germany lost substantial ground in the early years after unification and only recovered part of this loss in the second half of the 1990s. Underlying the decline in German competitiveness were several sharp exchange rate adjustments, especially vis-à-vis non-EU countries, in the early 1990s that dominated the whole development in the 1990s. In the more recent past the weakening of the euro seems to have

helped restoring cost competitiveness vis-à-vis a broader group of industrial countries. Of equal importance is the development of unit labour costs, which in the aftermath of re-unification rose at a much faster rate than in the trading partners. In particular, the very high unit labour costs of East Germany, drags down the pan-German competitiveness. Here, too, the situation appears to be improving in recent years due to relative wage moderation. The adjustment appears, however, to be very slow because other countries are also practising relative wage moderation.

The economic consequences of the loss in competitiveness are obvious and can also be modelled quantitatively (see Annex). Unification increased real wage costs in 1993 by over 7 percentage points compared to the hypothetical case of a Germany without re-unification. The loss in competitiveness entailed by a real exchange rate increase of over 9%, results in the model in a reduction in cumulative growth by 6½ % in 2000.

This pattern of a sharp loss and slow gain in trade competitiveness finds its reflection also in the actual development of foreign trade. A large current account surplus of West Germany disappeared when Germany was unified. This is accompanied by a relative fall in market share of Germany's exports. Unsurprisingly, the weakest element can be found in East German companies. In fact, the West German export sector remains highly competitive and runs, if taken alone, a *de facto* current account trade surplus of roughly 4% of GDP and an estimated trade surplus of around 7% of GDP. The East, by contrast, runs a huge current account deficit in the order of 50% of its GDP, which is sustainable only as a result of West-East transfer payments in the same order of magnitude.

A sectoral analysis of trade suggests, however, that even the West might have longer-run potential problems insofar as it is loosing its edge in the high-tech high-skill industries. In combination with a relative decline in the capital intensity of exports, a continuation of this trend would make Germany's status as high wage country untenable. An analysis of intra-industry trade flows also indicates that Germany might not take advantage of the economic potential of globalisation to the same extent as the other faster growing countries do.

Finally, the discussion of FDI shows that FDI flows into Germany are smaller than both outflows from Germany and inflows into other countries. As opposed to the situation in trade, an analysis of FDI is not so clear-cut. Nevertheless, it can be taken as a further indication that business climate in Germany is falling behind that of other countries.

The analysis of these various aspects of Germany's competitiveness allows three conclusions. First, Germany's trade performance remained behind that of its trading partners. Second, an analysis of German competitiveness must clearly distinguish between the East, where international competitiveness is still catastrophic and largely maintained by subsidies, and the West, with only relatively mild problems. These might, however, be growing, if companies do not keep up with the latest international developments. Third, clearly the institutional aspects of economic unification are at the heart of Germany's competitiveness problems both in the West and the East. The economic drain the intra-German transfers impose on the West are obviously higher than the economic benefits the East derives from it. Any hope of lifting Germany's competitiveness must take the different needs of East and West as a starting point and set policies accordingly. This requires, on the one hand, a redirection of public funds and tax incentives towards raising productivity rather than consumption. On the other hand, and politically more difficult, it requires lowering unit labour costs to competitive levels. In concrete terms this means in particular for the East that wages need to be set less according to economic realities rather than principles of equal wages across the country.

### 3.1.A Annex: The real exchange rate and economic performance in Germany

In the 1990s we observed a real effective appreciation of the DEM, which peaked in the mid-1990s at around 10%. This sub-section looks at the macroeconomic impact of a competitiveness shock of this order of magnitude on the German economy. Such an analysis is complicated since the real exchange rate is not an exogenous variable but is itself the result of specific shocks. Depending on the type of shock, the macroeconomic outcome of a real appreciation can be very different. It can be associated with an increase as well as with a decrease in economic growth. A positive link between growth and appreciation could emerge, for example, if world demand for domestic goods increases. Another example for a positive link would be expectations about positive future return differentials in the domestic economy versus the rest of the world. The US experience in the 1990s is suggestive of such a link. Alternatively a real exchange rate appreciation could indicate specific demand or cost pressures in the domestic economy. In this case one would expect a negative effect of the real appreciation on economic activity. Therefore, an analysis of the impact of real exchange rate movements on the German economy requires an explicit view on the type of shock that occurred in Germany. In the case of Germany, both a demand and a cost shock can be identified. The demand shock arises from expansionary fiscal policy, driven by the need to finance substantial transfers to the New Länder. The explicit policy of social partners to achieve a rapid convergence of wages in East Germany to West German levels, constitutes a cost shock. Both shocks are quantified as follows:

*Fiscal shock:* This is identical to the shock discussed in sub-section 2.2. The budget deficit increases by 3.5% in 1995, despite an increase in effective labour taxes of 4% and an increase in consumption taxes of 1.5%.

*Wage shock:* Within the first two years after re-unification the accumulated difference between real wage and labour productivity growth in the business sector reached about 4%. This was due to an explicit policy of social partners to equalise living conditions. These post re-unification agreements are not captured in the standard wage bargaining rule of the QUEST model. In order to analyse the impact of these agreements a wage shock is calibrated such that the model generates an increase of real wages over productivity of 4% in 1992<sup>42</sup> and matches the evolution of the wage share in Germany. From 1993 onwards the policy of rapid real wage convergence was pursued less vigorously. This is reflected in the simulations by keeping the level of the wage shock constant from 1993 onwards.

**Table 3A.1: German Fiscal Shock and Wage Shock: (Cumulative Percentage changes)**

	1991	1993	1995	1997	1999	2001	2003	2005
GDP	0.21	-0.96	-3.96	-5.71	-6.38	-6.62	-6.95	-7.79
Employment	-0.56	-4.90	-7.13	-7.80	-8.46	-8.93	-8.96	-8.99
Real wage costs	2.38	7.15	3.58	1.93	1.93	1.96	1.23	0.51
CPI	-0.43	1.94	3.83	4.72	5.53	6.75	7.17	6.30
Real exchange rate	-3.23	-6.28	-9.60	-9.77	-9.44	-9.50	-9.64	-8.56
Wage share	0.77	1.38	0.08	-0.16	-0.16	-0.27	-0.46	-0.39
Trade balance	-0.35	-1.53	-1.57	-1.12	-0.59	-0.39	-0.32	0.64

Source : Simulation with QUEST ; note that the results ignore the partial reversal that occurred since 1997.

As can be seen from the table, demand and cost shocks of the magnitude observed in Germany can explain an appreciation of about 10%. This, together with the underlying source of the real appreciation has persistent macroeconomic effects. Without reversal of the initial wage impulse in later years the economy is moving to a new equilibrium with a permanently lower level of employment and GDP. Though most of the output losses have occurred in the mid-1990s, the simulations indicate that the process of slow growth is likely to continue beyond the year 2000.

<sup>42</sup> This is calculated by comparing the 1992 level of wages and labour productivity to the respective pre-unification levels in 1990. Data source is OECD's Business Sector Data Bank (BSDP).

## 3.2 The functioning of the labour market

### 3.2.1 Overview

An analysis of labour market inertia is an essential part of any attempt to explain Germany's slow growth in the 1990s. The growth scenarios presented in previous sub-sections suggest that a lack of labour market dynamics - in particular in terms of employment growth - is the single most important factor behind Germany's anaemic output growth. However, the look at aggregate data alone does not provide satisfactory insight into the mechanisms that underlie the disappointing labour market performance. The purpose of the present section is to analyse the underlying structural weaknesses of the labour market in order to close that gap. The discussion of micro-evidence confirming shortcomings in specific labour market segments thus complements the macro-oriented earlier sections.

The macroeconomic role of employment is dual by nature. As a production factor it affects the supply side, as a source of private households' income it affects demand. This section focuses mostly on labour as a production factor and is organised as follows: The first sub-section provides an overview of the employment situation and its development during the 1990s. As the corollaries of employment, unemployment and labour market participation are also briefly discussed. The second sub-section deals with wage formation. Given that in the aggregate, wages do not seem to be overly rigid, the analysis concentrates on the compression of the wage structure and on the issue of wage differentiation across skills levels and regions. In sub-section 3, the broad costs of job creation are assessed, introducing both non-wage labour costs and the cost-related issue of labour market flexibility. Sub-section 4 reviews labour supply under the aspects of work incentives in the tax-benefit system, impediments for female labour market participation and mismatch problems. Sub-section 5 concludes on what seem to be the main structural problems for employment growth.

#### *Employment dynamics*

The number of people in employment declined in Germany during most of the past decade (Figure 3.11). Only from 1998 onwards have part of the losses in employment been compensated, and total employment in 2000 was roughly at the same level as in 1991. Even if one excludes the period of very strong employment destruction in the former GDR until 1993, the overall picture of low employment dynamics remains. What is more, the pick-up of employment growth from 1998 onwards was limited to the West Germany. In the East, employment started to decline again after a short period of employment gains in 1994-95.

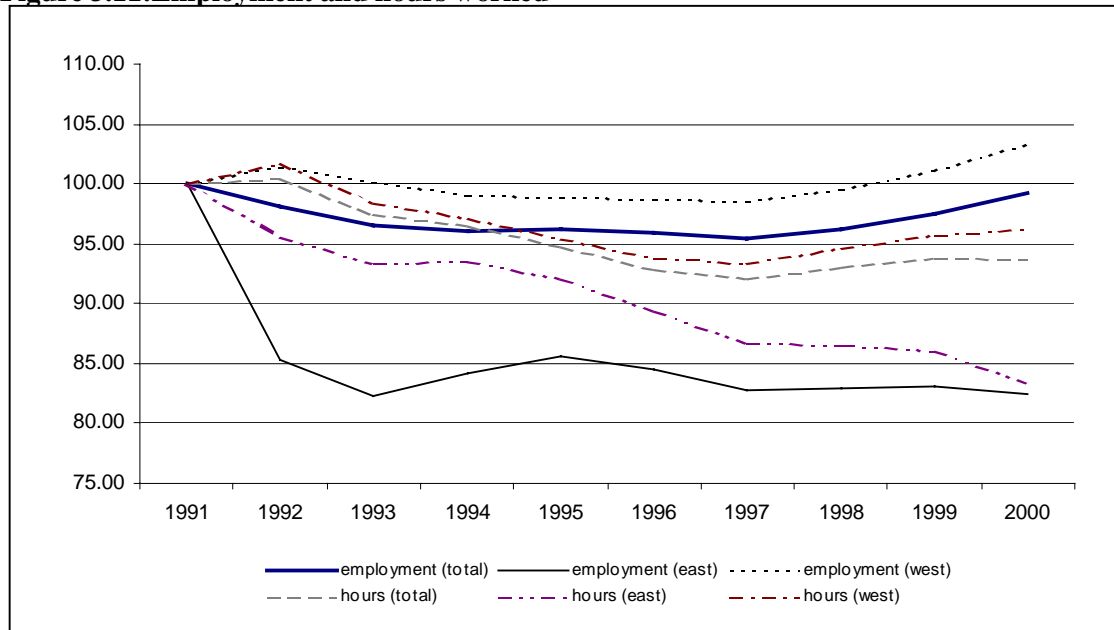
Labour in Germany is a much underused resource, not only due to close to 4 million unemployed people, but also due to a large hidden labour force. With an employment rate of 65%, Germany lies two percentage points above the EU average, but still significantly below the target, set by the European Council at Lisbon, of 70% for the EU as a whole by 2010. The employment rate is also well below that of some northern European countries and the UK (Table 3.10 includes Norway which, as can be seen, is a European benchmark in this respect). It is interesting to see that employment rates for prime age male workers do not differ much between "high employment" and "low employment" countries. The employment rate of men aged 30 to 49 is even higher in Germany and Italy than e.g. in Sweden. The main disparities in the overall employment rate stem from the marked differences in employment of women and older workers.

The picture of low employment dynamics is even more worrying if one looks at employment volume, i.e. the number of hours worked. Whereas the 1994-1997 decline in national employment was rather soft, hours worked declined by 4½ % in the same period. The subsequent increase was substantially weaker in hours worked than in employment, also reflecting a tendency towards more part-time work. Furthermore, the East-West differential



becomes even more evident in the development of hours worked in recent years. The downward trend of labour volume continues in the East; it even accelerated in 2000.

**Figure 3.11: Employment and hours worked**



Source: IAB

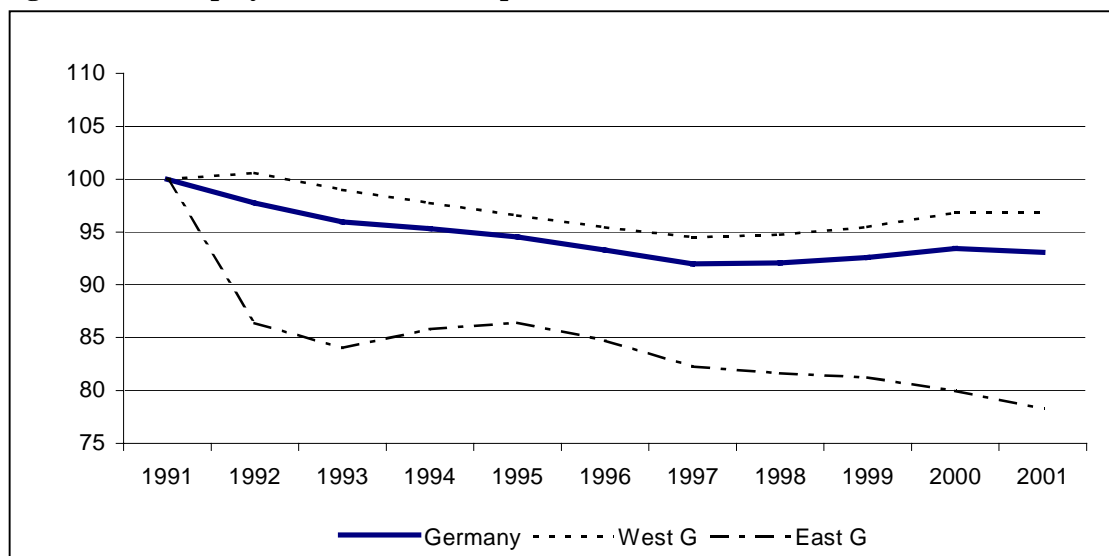
**Table 3.10: Employment rates**

Total	D	E	F	I	NL	S	UK	N
Between 15 and 64 years	65.3	54.7	61.7	53.4	72.9	71.1	71.2	77.9
Between 30 and 34 years	80.1	71.2	78.2	70.9	85.8	82.0	80.7	85.8
Between 35 and 39 years	81.4	70.1	79.8	73.7	83.1	84.1	81.0	87.2
Between 40 and 44 years	81.9	70.3	81.0	73.3	82.6	85.0	82.5	87.5
Between 45 and 49 years	80.6	65.8	79.9	70.5	80.0	84.8	81.6	87.6
Between 50 and 54 years	74.3	58.4	74.9	58.1	71.4	83.8	76.1	82.8
Between 55 and 59 years	56.4	46.0	48.1	36.5	54.1	78.6	63.2	76.7
Between 60 and 64 years	19.6	26.4	10.2	18.0	18.5	46.0	36.1	50.8
<b>Males</b>								
Between 15 and 64 years	72.7	69.6	68.8	67.6	82.1	72.6	77.9	81.8
Between 30 and 34 years	89.4	87.4	88.4	86.6	95.1	84.8	89.8	91.4
Between 35 and 39 years	90.1	88.7	89.3	90.7	93.6	85.6	89.4	90.4
Between 40 and 44 years	89.2	89.2	89.9	92.3	93.4	86.1	89.2	90.5
Between 45 and 49 years	88.0	87.6	88.5	91	90.8	85.9	86.0	90.1
Between 50 and 54 years	83.8	82.1	83.8	78.9	86.7	84.0	81.8	87.0
Between 55 and 59 years	66.1	68.4	53.8	50.8	69.2	80.6	70.8	82.1
Between 60 and 64 years	27.2	39.4	10.6	29.4	26.2	49.0	47.3	57.8
<b>Females</b>								
Between 15 and 64 years	57.8	40.3	54.8	39.3	63.4	69.7	64.5	73.9
Between 30 and 34 years	70.6	55.4	68.0	54.8	76.0	79.0	71.3	80.2
Between 35 and 39 years	72.1	52.3	70.6	56.5	72.3	82.6	72.4	83.9
Between 40 and 44 years	74.5	52.2	72.4	54.3	71.6	83.9	75.8	84.3
Between 45 and 49 years	73.2	45.3	71.5	50.2	68.8	83.7	77.1	85.0
Between 50 and 54 years	64.7	35.5	66.1	37.7	55.5	83.6	70.4	78.4
Between 55 and 59 years	46.6	24.8	42.5	22.9	38.6	76.5	55.9	71.2
Between 60 and 64 years	12.1	14.8	9.8	7.6	10.9	43.2	25.4	44.2

Source: LFS, 2000 data

Figure 3.12 plots employment in full time equivalents. Even in the more favourable years up to 2000, job creation was quite weak in West Germany, let alone East Germany. The absolute employment gains in full time equivalents from 1997 to 2001 were 0.7m in West Germany, while in the East employment continued to decline.

**Figure 3.12 : Employment in full time equivalents (1991=100)**



Source: IAB

The employment share of services is 68%, slightly above the level in Italy, but substantially below that in the UK (Table 3.11). Germany appears to be catching up, however: The share of services has risen by 8½ percentage points since 1991, somewhat more than in other economies with an already high service share. The OECD (2001) has analysed the services employment gap towards the US by level of income. This gap (also visible in the comparison Germany-UK) concerns both low- and high-paid services jobs. In the low paid segment, Germany has significantly fewer jobs in wholesale and retail, hotels and restaurants, education as well as health and social work (Table 3.12). The latter two sectors have also lower employment in the high-paid segment, where financial services, real estate and business activities as well as community, social and personal services have to be added to the list.

The corollary to services employment is a still relatively high share of employment in industry, even though the statistics probably overstate the true discrepancy, since the outsourcing of services seems to have gone further in other countries. Employment in construction was particularly influenced by the effects of re-unification: The construction boom associated with the investment in infrastructure and housing led to an increase in construction employment by 430,000 (or 15%) from 1991-1995. These increases proved unsustainable in the following bust. In the meantime, however, the decline of the construction sector seems to go well beyond the adjustment to post-re-unification over-capacities and concerns West Germany as well.

**Table 3.11: Employment shares (in %)**

		D	F	I	UK
Agriculture	1991	4.0	5.6	7.2	2.3
	1999	2.6	4.4	5.1	1.9
Industry (excl. constr.)	1991	29.4	19.8	25.4	19.0
	1999	22.3	16.7	24.1	16.4
Construction	1991	7.3	7.2	6.8	7.8
	1999	7.5	6.1	6.6	6.4
Services	1991	59.2	66.6	61.9	70.8
	1999	67.8	72.0	66.3	75.2

Source: National accounts

**Table 3.12: Low paid services**

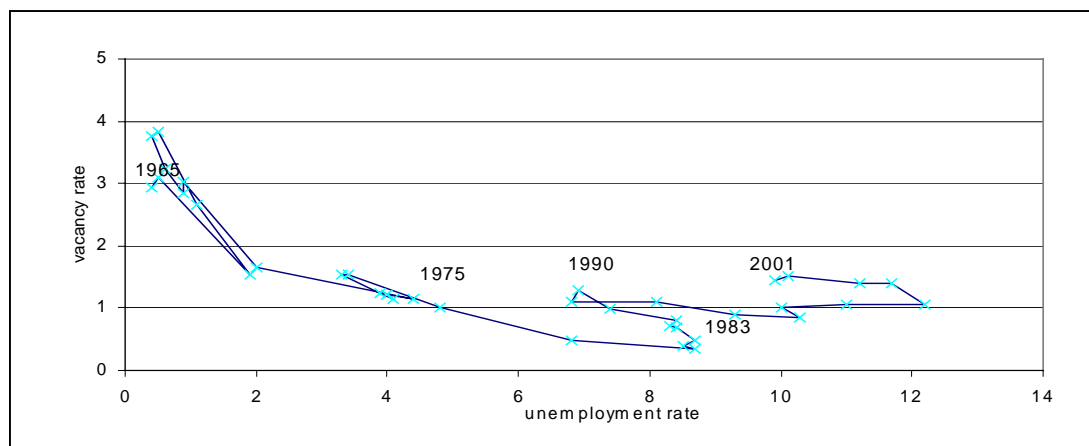
Employment rate gap between the US and...	Germany	France	Italy	United Kingdom
Service sector	8.5	6.7	11.2	4.0
Wholesale and retail	2.2	2.4	3.3	1.6
Hotels and restaurants	2.2	2.4	2.0	1.4
Transport and communications	0.1	0.1	0.1	0.0
Real estate and business activities	0.5	0.1	0.9	0.2
Education	1.4	0.8	1.3	0.1
Health and social work	1.5	0.4	3.0	0.3
Community, social and personal	0.7	0.6	0.6	0.5

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### *Dynamics of unemployment and participation*

As in many European countries, the main feature of unemployment developments in Germany over the last three decades has been the slow reaction to economic upturns which resulted in an increased level of unemployment after each of the adverse shocks that hit the economy. It is a standard argument (cf. the overview in Wyplosz (2000)) that this (quasi) hysteresis is a symptom of too rigid labour market institutions. Rigid structures may have existed well before the unemployment crisis, but became binding only when the economy was hit by adverse shocks. One indicator of structural unemployment is the so-called Beveridge curve, i.e. the relation of vacancies to unemployment. The curve has shifted outward in every decade since the 1970s (Figure 3.13) and points to an increasing mismatch of skills in the labour market. Another indication for a structural problems is the high percentage of long-term unemployment, which accounts for half the total unemployment: Of the 7.9% unemployed in 2000, 3.9 percentage points were due to persons who had been unemployed for more than twelve months.

**Figure 3.13 : Beveridge Curve**



Source: BA; national unemployment concept, "reported" vacancies; figures for June of each year

In the past decade, the strong regional dimension of unemployment has been most remarkable. In February 2002, non-seasonally adjusted unemployment rates ranged from 5.6% in *Baden-Württemberg* to 20.8% in *Sachsen-Anhalt*, or 8.3% in West Germany compared to 19.2% in the East<sup>43</sup>.

The unemployment rate of female workers is, at 8.1% in 2001, relatively close to the total unemployment rate of 7.9%. The unemployment rate of workers under the age of 25 is somewhat higher, at 9.3%, but younger workers are relatively less disadvantaged in the German labour market than in most other EU Countries. Unemployment of older workers, however, is

<sup>43</sup> Unemployment figures in national definition; Bundesanstalt für Arbeit.

significantly above average and older women face particular difficulties (older workers' unemployment rate in 2000 was 12.6%, for women 14.1%)<sup>44</sup>.

The risk of being unemployed is strongly related to the skills level (Table 3.13). Low skilled workers in Germany have a share in active population of 17% but their share of unemployment is 27%. The gross probability for a low skilled worker of being unemployed is therefore increased by a factor of 1.6, compared to the average worker. This factor is slightly higher than in France and well above the value for Italy. The comparative disadvantage is higher in West Germany than in the East (where the incidence of unemployment is higher among all skills groups). Furthermore, unemployment of low skilled workers increased by 7% from 1995 to 2000, whereas that for highly skilled persons decreased by 9%. In the longer run, the education level of working age population is increasing (Hummel /Reinberg (2001)) and employment of low-skilled workers is declining, both in absolute terms and relative to the demand for medium- and high-skilled workers. From 1991 to 1998, more than one in five low-skills jobs was lost, a total of 1.2m. Medium-skills jobs declined by 6% and high-skills jobs increased by as much as 31% (or 1.3m) over the same period (Reinberg (1999)).

**Table 3.13: Unemployment share of skills groups (2000)**

	low (A)	medium	High	no answer	low skilled as % of active pop (B)	increased unemployment risk (A)/(B)
D	27.2%	54.3%	12.7%	5.8%	17%	<b>1.59</b>
F	47.6%	39.3%	13.0%	0.0%	32%	<b>1.50</b>
I	50.2%	41.4%	6.4%	2.0%	45%	<b>1.11</b>
D_E	14.9%	67.2%	14.7%	3.1%	11%	<b>1.40</b>
D_W	35.6%	45.6%	11.2%	7.5%	19%	<b>1.90</b>

Source: Eurostat

The rise in labour market participation experienced in West Germany during the 1980s came to a halt in the 1990s (Figure 3.14). East Germany, where labour market participation had been considerably higher under the socialist regime, witnessed a gradual adaptation to West levels. The participation rate of women in East Germany is, at 71%, still higher than in the West (61%) although it is slowly declining in the East and increasing in the West. Without the flow of workers out of the labour market, unemployment rates in East Germany would look even worse. The same is true with regard to low-skilled workers: less than half of the job losses of this group between 1991 and 1998 actually translated into an increase of unemployment as a large number of low-skilled workers (620,000) left the labour force (Reinberg (1999)). The participation rate of low-skilled workers is very low, at 58% in 1999 (OECD (2001)). Among the larger Member States only Italy has a lower participation of low-skilled workers, namely 53%.

### 3.2.2 Wage formation: how flexible can it be?

At the aggregate level, wages in Germany seem to be rather flexible. The extreme wage increase in the early 1990s related to re-unification was followed by a period of rather sustained wage moderation. However, the wage structure (i.e. the relation of high to low wages) is remarkably stable, given the unemployment differentials across regions and skills levels. This sub-section looks at the structure of wage bargaining to explain the lack of wage differentiation.

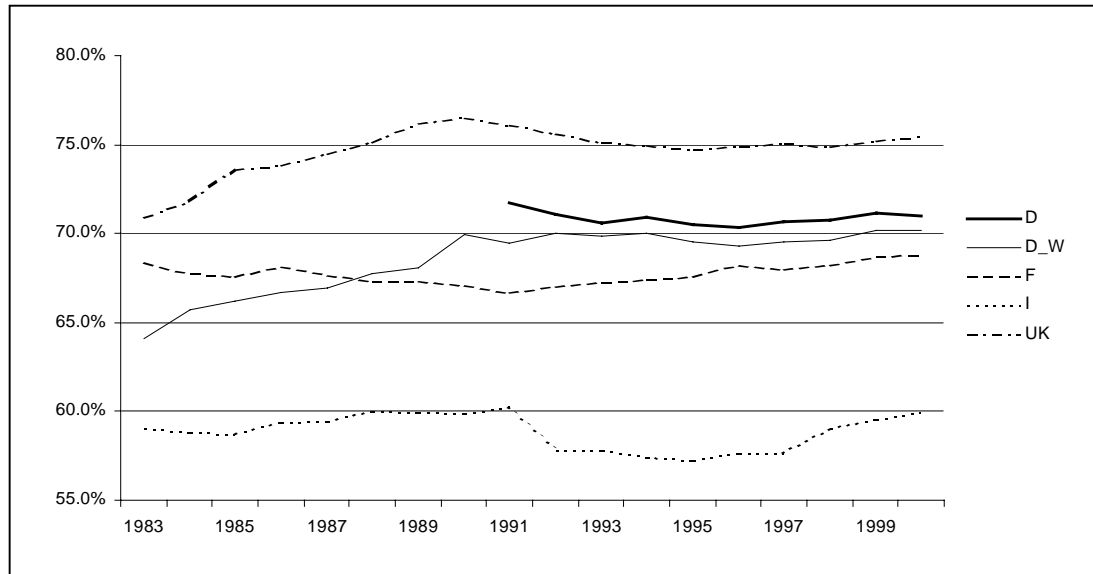
#### *Institutional setting*

In Germany, sectoral wage negotiations prevail (*Industriegewerkschaftsprinzip*), often at a sub-national level (covering *Tarifbezirke*). Negotiations by occupation are the exception. In West

<sup>44</sup> ditto.

(eastern) Germany 45% (23%) of firms participated in a sectoral collective agreement in 2000, covering 63% (46%) of workers. These shares have, however, been declining<sup>45</sup>.

**Figure 3.14 : Participation rates**



Source : Eurostat

With its sectoral collective agreements, wage bargaining in Germany takes place at an intermediate level of centralisation. In France, the bulk of bargaining takes place at the company level but sectoral agreements are also common. Wage negotiations in Italy are more centralised through nation-wide sectoral agreements and they are completely decentralised to the company level in the UK. The discussion of how wage bargaining structures affect wage developments has to a large extent been shaped by the Calmfors and Driffill (1988) hypothesis. It predicts a ‘hump-shaped’ relation of unemployment and the centralisation of wage bargaining. Fully centralised and fully decentralised bargaining produce the most employment-friendly outcomes because, in a nutshell, firm-level bargaining takes the competitiveness of the firm into account and economy-wide bargaining is concerned with its macroeconomic employment effects. In between the two extremes, the externalities of wage increases on employment are not fully taken into account, which leads to inferior outcomes. However, economy-wide co-ordination of wage negotiations can help internalising macroeconomic externalities (cf.) Calmfors (2001)).

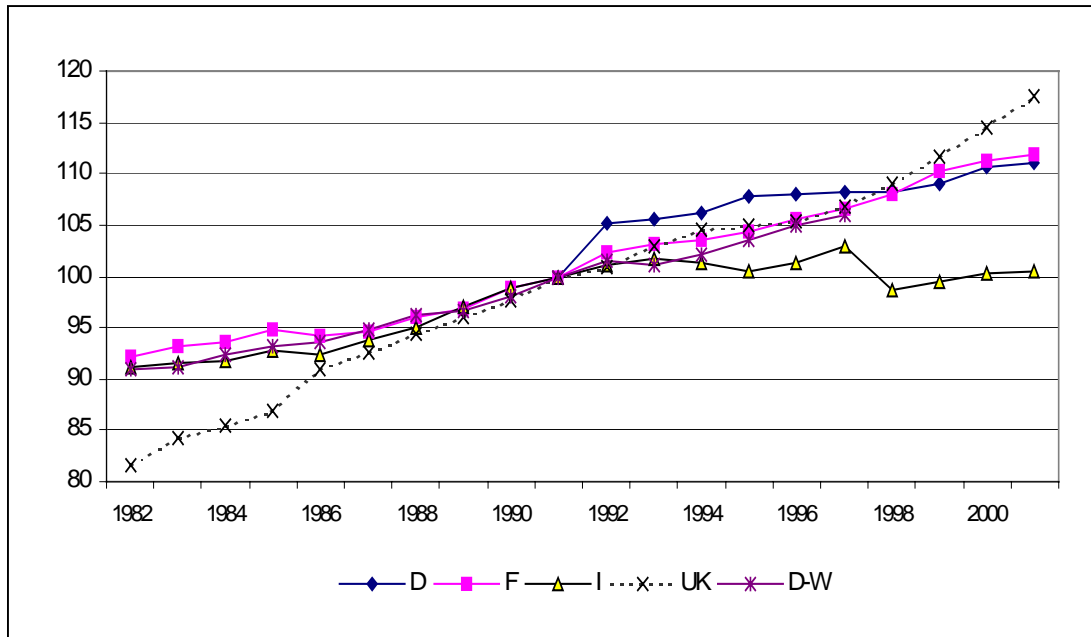
Germany and Italy have a high degree of wage bargaining co-ordination across sectors, which is a persistent feature in Germany over the last two decades (OECD (1997)). De facto co-ordination in Germany stems from pattern bargaining (i.e. the fact that, in a specific year, it is usually up to an influential trade union to conclude the first agreement, which then becomes a benchmark for other sectoral negotiations). Since 1998, tripartite high-level discussions take place between employers’ associations, trade unions and the federal government in the so-called “Bündnis für Arbeit” (Alliance for Jobs). The Alliance has issued a recommendation on wage moderation for the first time in the context of the 2000 wage round. Although not binding for the Social Partners at the sectoral level, this recommendation had indeed a moderating influence.

In practice, aggregate real wages seem to be rather flexible in Germany. Wage equation estimates (e.g. OECD (2000)) show a relatively high elasticity of aggregate wages to aggregate

<sup>45</sup> Firm level collective agreements still play a minor role. They were applied, in 2000, by 3% (4%) of West (East) German firms, and covered 7% (10%) of workers. The remaining firms are not covered by any collective agreement, although some report “using the sectoral agreement as an orientation”.

unemployment. Figure 3.15 shows that real wages moved more or less in line with those of the other big Member States in the 1980s. Then in the early 1990s, strong wage increases followed during the re-unification boom. These developments – in the end political rather than economical – had enormous costs in terms of employment and competitiveness. Only the wage moderation of the second half of the 1990s brought a new convergence towards the developments in partner countries (see section 3.1). Still, the data presented in the first sub-section show that the very strong regional dimension of unemployment remains. Furthermore, the risk of unemployment is substantially higher for low-skilled workers, compared to the average worker.

**Figure 3.15 : Real compensation per employee (index 1991 =100 ; GDP deflator)**



#### *Wage differentiation across skills levels and regions*

The unemployment pattern of low-skilled workers clearly indicates a flaw in the wage formation process, because a lack of differentiation of wages according to skills has priced low-skilled workers out of the market. As in many continental EU countries, wage inequality in Germany is relatively low compared to the US or the UK. An analysis of socio-economic panel data for West Germany (Prasad (2000)) shows that the wage dispersion decreased slightly from the mid-1980s until the mid-1990s; then it started to increase again. Over the whole period 1984-1997, the increase of real wages was slightly stronger at the high tail of the wage distribution.

One explanation for the existence of a wage floor for low-skilled workers is institutional<sup>46</sup>: Typically, sectoral collective agreements fix a factor (e.g. +2.5%) by which wages for all workers of the concerned industry are increased, irrespective of their occupation and skills level. This uniform movement has the effect that within sectors the wage dispersion is very inflexible. The wage structure can become even more compressed, if the agreement foresees a lump sum payment on top of the percentage increase, which is also current practice (cf. Sachverständigenrat (2000)). Then, low wages increase more strongly, in percentage terms, than high wages, thereby exacerbating the risk that the cost of low-skilled labour rises above its productivity. The situation tends to be aggravated when high-skilled workers are in short supply and have the power to exert pressure for strong wage increases. Furthermore, pattern bargaining

<sup>46</sup> For a discussion of wage floors due to reservation wages see below, sub-section 4

tends to strengthen the uniformity of wage developments also across industries. A survey among German firms (Franz/Pfeiffer (2001)) confirms that collective agreements are seen as a major impediment for wage flexibility especially in the low-skills segment.

Wages do not sufficiently reflect the regional labour market situation to reduce the large regional unemployment disparities. The most striking example is the rigidity in East German wages after the strong increases in the early 1990s. What is potentially more relevant for the future growth potential is the striking rigidity of relative wages in the second half of the 1990s, given that the unemployment rate in the New Länder is twice as high as the national level and given that employment is stagnant and the labour volume continues to decrease. In fact, at 113% of the West level, unit labour costs had the same relative disadvantage in 2000 as in 1994. Table 3.14 shows the convergence of unit labour costs across sectors. In construction, the initial misalignment had been absorbed by the mid-1990s. In recent years, however, under-utilisation of capacities drove unit labour costs up again. In manufacturing, the sector where competition is strongest, the differential has disappeared by now, however, this was achieved through enormous labour-shedding: Of the over one million job losses in the East industry in net terms from 1991 to 2000, almost 900,000 occurred in manufacturing. The adjustment of the cost level has led to a stagnation of employment in this sector since 1997, but has not been sufficient to reverse the trend (Table 3.15). Finally, in the service sector unit labour costs adjustment is still rather far from completed and progress mixed. Given that the services sector in East Germany was initially very small, employment has been dynamic anyway, especially in the segment of financial and business services.

**Table 3.14: Nominal unit labour costs\* in East Germany by sectors (west Germany=100)**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
agriculture, forestry, fishery	147	108	73	84	84	93	89	81	81	79
industry (excl. construction)	161	151	120	122	121	109	105	103	101	98
- of which: manufacturing	205	174	136	135	133	124	115	111	107	104
construction	120	112	106	97	96	92	96	105	107	111
trade, tourism, transport	119	109	108	106	115	114	115	115	116	117
finance, housing, business services	209	163	127	117	119	116	113	112	111	106
public and private services	104	105	106	104	107	107	107	110	112	110
<b>total</b>	<b>143</b>	<b>128</b>	<b>116</b>	<b>113</b>	<b>116</b>	<b>113</b>	<b>112</b>	<b>113</b>	<b>114</b>	<b>113</b>

\* compensation per employee/GVA over employment in current prices; Berlin included in West Germany

Source : Statistisches Landesamt Baden-Württemberg

In nominal terms, wages have adjusted rather quickly close to the West levels. Looking only at collective agreements, the level of East nominal wages reaches already 92%. Complete convergence has been reached in a number of sectors in both manufacturing and services and further convergence remains a goal for trade unions in most of the remaining sectors. Upward pressure from the wage bargaining side will therefore probably remain intact as long as West wages are the benchmark for the less productive East.

However, collectively agreed wages show only an incomplete picture, and the average actual compensation per employee in the East remains around 77% of the West level. Firstly, the average working week is still longer in the East, secondly the coverage of collective agreements is declining and thirdly, pay supplements, such as a Christmas or holiday bonus, which are common in the West, are rarely applied in the East. Finally, opening and hardship clauses allow firms to pay lower wages in specific circumstances. The individual impact of these features on wage dynamics is however hard to assess.

**Table 3.15: Employees in East Germany (thousands)**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>All sectors</b>	6438	5557	5377	5482	5583	5535	5443	5439	5454	5358
Agriculture, forestry, fishery	477	284	227	216	215	203	204	205	200	194
industry (excl. construction)	1935	1258	1064	995	967	931	908	911	898	888
- manufacturing	1697	1082	919	868	853	828	814	823	814	813
Construction	661	741	838	940	992	954	903	832	780	709
Trade, restaurants, transport	1248	1129	1132	1153	1172	1182	1185	1205	1228	1214
Financial services, lease, business services	366	402	431	465	494	516	531	563	593	608
Public and personal services	1751	1743	1685	1713	1743	1749	1712	1723	1755	1745
Services	3365	3274	3248	3331	3409	3447	3428	3491	3576	3567

Source: Statistisches Landesamt Baden-Württemberg

Opening clauses: According to the WSI works council survey 1999-2000 (as quoted in eiro-online (2001)), 22% of establishments in Germany use some kind of flexibility clauses provided in collective agreements. Most of these concern, however, working time (Table 3.16). The popularity of opening clauses that led to pay reductions is significantly higher in the East, where also breaches of collective agreements seem to occur more often.

Opting out: Coverage by collective wage agreements in East Germany is down to 46% of workers, because firms are leaving the sectoral employers' organisation or because new firms especially small ones do not join. According to a ZEW survey (see Franz/Pfeiffer (2001)), 11% of firms who had applied a collective agreement in 1998 had by early 2000 taken measures to 'opt out' of it. However, Kohaut/Schnabel (1999) point out that quite often, firms return to applying a sectoral agreement some time after having left the employers' organisation.

**Table 3.16: The use of opening clauses at establishment level**

	Germany	West	East
Establishments which do not use opening clauses	75%	77%	67%
Establishments which use opening clauses	22%	20%	30%
Establishments use opening clauses in following fields (as % of those that use opening clauses)			
Working time extension	44%	48%	28%
Limited working time reduction	25%	27%	19%
"Entrance wages" for newly hired employees	20%	21%	16%
Reduction or postponement of annual bonuses	14%	11%	27%
Postponement of collectively agreed pay increases	12%	10%	21%
General "hardship clauses"	8%	3%	28%
Reduction of collectively agreed pay	6%	4%	11%
Reduction or postponement of holiday pay	6%	2%	22%

Source: eiro-online (2001)

### 3.2.3 Labour demand: Does job creation pay?

While wages are the largest cost component for recruitment other factors such as current costs (e.g. social security contributions) or one-off costs (e.g. expenses associated with hiring and firing) play a role. As aggregate figures are not very revealing, this sub-section illuminates some problems in the institutional detail in Germany.

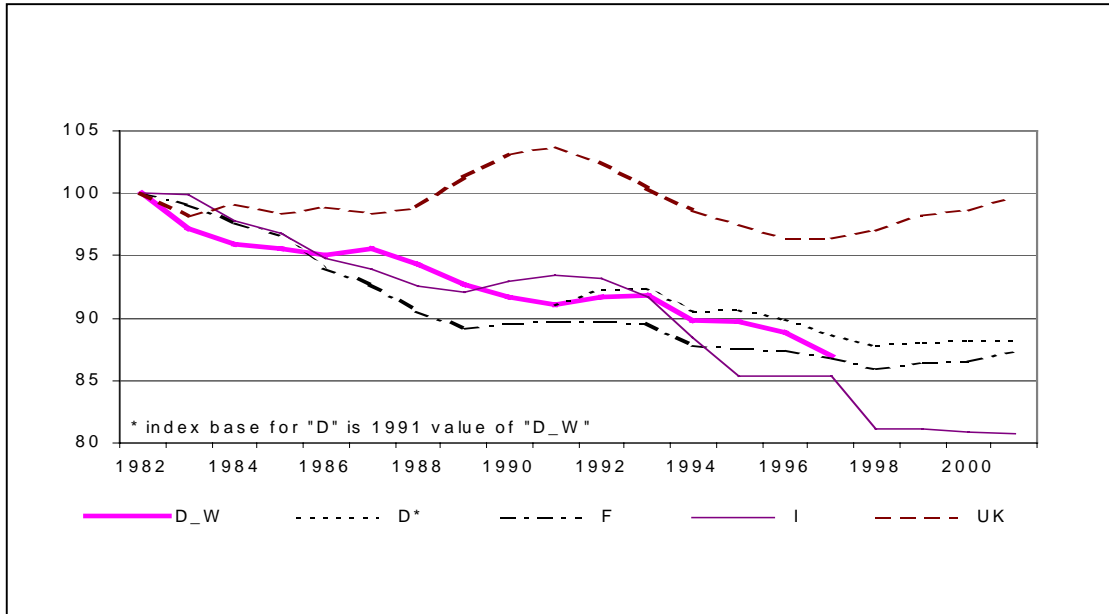
#### *Unit labour costs*

Differences in the long-term growth rate of real labour costs are clearly relevant when explaining the record of employment growth in Europe as compared to the US (for a discussion see e.g. IMF (1999)). The data on the development of real unit labour costs in European countries in the 1980s and 1990s do not allow ad hoc conclusions on employment differentials



in terms of labour costs, however: Real unit labour costs (RULC) in Germany declined broadly in line with those in France or Italy (Figure 3.16), reflecting well-behaved aggregate wages and a rise in labour productivity. By contrast, in the UK the level of RULC was more or less maintained over that period.

**Figure 3.16: Real unit labour costs (index; 1982=100)**



Source : AMECO

However, unit labour costs remain high in absolute terms. As a consequence, firms try to reduce the labour share in output (basically, by substituting labour by capital). In very general terms, shifts towards more capital-intensive production are relevant in large parts of the manufacturing sector. Still, the aggregate growth of labour productivity, which should reflect enhanced capital-intensity of production, was relatively low in Germany compared to other countries, such as France or the UK (Table 3.17). This indicates that the phenomenon has not been specific to Germany.

**Table 3.17: Average yearly productivity growth (in %)**

	1982-1989	1994-2000	1982-2000
D	1.75	1.39	1.74
F	2.40	1.51	1.87
I	1.86	1.64	1.66
UK	2.44	1.73	2.05

Source: National Accounts

In the services sector, the option of substituting labour by capital is not always viable. Here, labour cost are ultimately reflected in the (relative) price of the service provided. The high costs have as a consequence that a service is not provided at all, or that households opt for doing the work themselves. It is those services that are by definition labour-intensive and offer very limited possibilities of productivity-enhancing investment where the employment gap to the US as the service society par excellence is particularly wide. Penalising labour costs thus contribute to the weakness of the low paid services segment. This also fits the anecdotal evidence that a rather high share of this kind of services is provided through the shadow economy. To catch the whole picture, however, restrictions stemming from market regulation and the demand side also need to be taken into account. In fact, “cultural” explanations of low demand are quite popular. For instance, Freeman/Schettkat (2000b) argue that Germans prefer to work shorter hours and produce typical personal services for themselves, instead of working longer and paying for the

same product. After all, it is hard to disentangle the effects of consumer preference from those of services' high prices.

Income taxes and social security contributions add up to a high tax wedge in Germany (Table 3.18). It is the highest among the four largest Member States for single earners and double income couples and in particular well above the tax wedge in the UK. Whereas the income tax scheme is progressive, social security contributions (which are high in France, Italy and Germany alike) are flat-rate and seem to counteract the tax progression (note that income tax is already zero for low income, single earner couples). In competitive labour markets, in the long run, additional labour tax burden will affect mainly the structure and less so the level of labour costs. This is because with rather inelastic labour supply, the tax incidence falls almost exclusively on employees. However, this might not be the case in the short to medium term, and it does not hold true, if labour markets are non-competitive as it is the case in Germany. The employees succeed in shifting part of the additional labour tax burden onto employers, with the result of rising levels of unemployment (see, e.g. Daveri/Tabellini (1997)). Wage floors, in particular, can be a reason why wages do not adjust.

**Table 3.18: Total tax wedge**

		Germany	France	Italy	UK
<b>Couple, no children</b>					
100 - 33	1996	46.5	46.7	48.4	27.0
	2000	46.1	43.7	43.2	25.6
67 - 33	1996	41.5	43.7	45.9	20.9
	2000	41.3	37.5	39.8	20.8
67 - 0	1996	36.0	43.1	45.3	24.4
	2000	35.7	37.8	40.1	25.6
50 - 0	1996	33.6	43.1	42.0	18.3
	2000	34.0	34.0	37.1	20.8
<b>Single, no children</b>					
67	1996	46.5	44.3	48.3	26.7
	2000	46.1	39.2	43.0	25.6
50	1996	41.5	43.1	46.0	21.5
	2000	41.3	34.0	41.0	20.8

Income tax and social security contributions (employer and employee) as % of total labour cost. Earners of 100%, 67% and 33% of the APW respectively (e.g. "100 - 33" stands for the combination where the primary earner gains the APW, while the secondary earner gains 33% of it).

Figures for 2001 are preliminary.

Source: OECD, EC (DG TAXUD)

### *Flexibility*

Labour market turnover indicates a labour market's capacity of adaptation, in particular in the context of structural change. At the same time, it is the outcome of various framework conditions on the demand and the supply side, reflecting regulations (e.g. employment protection legislation, EPL) as well as incentives (e.g. benefit generosity).

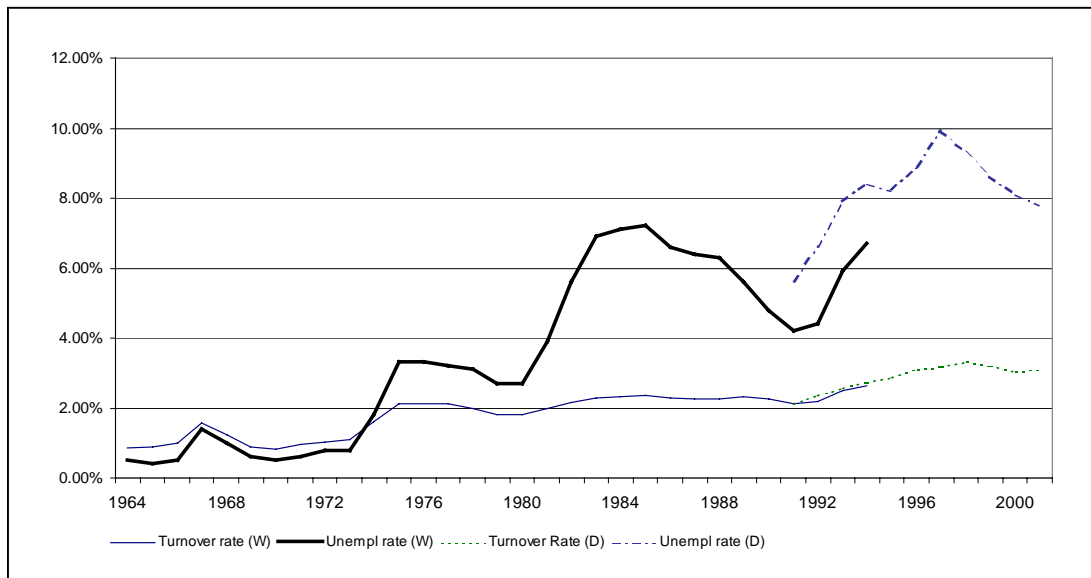
A quite comprehensive analysis of job loss and hiring rates (Schmidt (2000)) for 1989-1991 shows 1½ to 2 times higher overall flows for West Germany as compared to France – while in the US the flow rates are 2-3 times higher than in Germany (*op.cit.*, Tables 6 and 7)<sup>47</sup>. But the German-French gap seems to have closed since. Labour market turnover<sup>48</sup> in 1995-2000 was

<sup>47</sup> Furthermore, in all three countries, for men the risk of being laid off is increased when their level of education is low, whereas the picture is less clear for women. When it comes to the probability of finding a job, men with a low educational attainment face rather large disadvantages in West Germany and France, whereas in the US their chances are much closer to those of the average worker.

<sup>48</sup> In what follows, turnover is defined as monthly flows into and out of registered unemployment relative to the level of employment. Note that this is a narrower concept than the one used by Schmidt. Moreover, job-to job

equal in Germany and France, at 3.1% and 3.0% respectively. Turnover rates for West Germany had only slightly increased from 2.1% in 1975 to 2.3% in 1990 and follows the same cyclical pattern as the unemployment rate (Figure 3.17). After re-unification, turnover has increased somewhat faster, reflecting the higher unemployment rate, but also an increasing trend<sup>49</sup>.

**Figure 3.17 : Labour market turnover and employment**



Source : Bundesanstalt für Arbeit, AMECO

A potentially forceful explanation for the somewhat increased labour market flexibility is the long term shift in the composition of employment, away from manufacturing with very standardised forms of employment and powerful trade unions towards the services sector with a higher share of ‘atypical’ employment. For example, the use of fixed term contracts has become more widespread in Germany over the 1990s: 9% of workers had fixed-term contracts in 2000, compared to 7.5% in 1991. The increase in the use of fixed term contracts was much stronger in France, which could partly explain the catching-up in terms of turnover (cf. Blanchard/Landier (2001)). At the same time, work in temporary work agencies is increasing fast, although the share of workers employed by such agencies remains, at 1.1% of dependent employment, still quite low in an international comparison (Konle-Seidl and Walwei (2001), (2002)).

The regulation of work contracts in Germany, as measured by the OECD indicator of EPL strictness, is less severe than in France or Italy, but much more rigorous than in the UK. For the rules defining permanent contracts (such as procedural requirements, notice and severance pay, standards of and penalties for unfair dismissals) the indicator finds more strictness than for the regulations characterising (renewals and maximum duration of) temporary contracts (Table 3.19). Still, there is a concern that the use of temporary contracts is a substitute for “normal” contracts which offer insufficient flexibility rather than an indicator of increased flexibility by itself. The fact that the ranking of the incidence of temporary contracts among France, Germany and the UK is the same as the ranking of EPL strictness would rather support the latter interpretation.

changes without a spell of registered unemployment are disregarded (lack of suitable data), although certainly very relevant.

<sup>49</sup> Even if the rising unemployment rate is controlled for, a small but significant trend towards higher turnover is discernible for West Germany over the period 1964-1994. For reunified Germany, labour market turnover seems to increase at a rate of around 6% per year (again, the unemployment rate was controlled for).

**Table 3.19: Employment protection legislation (1998)**

	overall index		permanent contract		temporary contract	
	index	rank	Index	rank	index	rank
Italy	3.3	3	3.0	3	3.6	3
France	3.1	5	2.5	6	3.7	2
Germany	2.8	6	3.0	3	2.5	6
United Kingdom	0.5	11	0.7	10	0.3	13

rank refers to the EU Member States ex Lux and US, J.

Source: OECD (2000) EMU One year on

### 3.2.4 Labour supply: Does work pay?

The last sub-section of this section looks at essential features of labour supply, namely the financial incentive to accept a job offer, the possibility to combine work and family care and the match between searched and offered skills.

#### *Reservation wage*

The decision to accept a job offer depends on the generosity of benefits when out of work (i.e. its level, duration and, eligibility; and the enforcement of sanctions), as compared to potential take-home pay, and on the rate of withdrawal of benefits when taking up a job. Concerning the generosity of benefits, again, Germany does not seem to be an outlier. OECD (1999) provides a summary measure of benefit entitlements, by which Germany scores well between the UK and France. Moreover, this overall measure has been remarkably stable for Germany over a long period and the relative positions of the three countries have not changed since 1980. Also when it comes to availability criteria, a measure of the strictness of the administration of unemployment benefits, the differences between the three countries are marginal.

Table 3.20 shows net replacement rates (i.e. benefits in relation to last earnings) for selected levels of last earnings and household types. In the UK, initial replacement rates are higher than in Germany for low-wage earners, but lower for the average worker. Initial replacement rates are higher in France, but income support in the 60<sup>th</sup> month of unemployment is cut more strongly. In fact, for a single, long-term benefit recipient in Germany, the difference between out-of-work and in-work income is particularly low as compared to the other large Member States; the difference for couples with children is less pronounced. The relative high level of income support for the single worker type is almost entirely due to (means-tested) unemployment assistance. It is more than probable that unemployment traps reside here. Confronted with similar problems, the UK and France operate tax credits for those taking up a job<sup>50</sup>. Both schemes are judged to be rather successful.

**Table 3.20: Net replacement rates depending on family type and earnings**

	APW level				66.7% of APW level			
	Single		Couple, 2 children		Single		Couple, 2 children	
	1st month	60th month	1st month	60th month	1st month	60th month	1st month	60th month
France	71	38	74	50	83	55	86	60
Germany	60	54	74	52	69	75	74	61
Italy	36	28	54	62	36	39	52	75
United Kingdom	50	50	64	73	73	73	83	95

Source: OECD, Benefit Systems and Work Incentives, 1999

<sup>50</sup> In the UK, the Working Families Tax Credit and in France, the *Prime pour l'emploi*. These measures differ greatly with respect to the degree of targeting and the maximum amount per capita, but both can be seen as a contribution towards increasing work incentives, in particular for low-wage earners.

Table 3.21 presents the average effective tax rate (AETR) for couples at the average wage level. The AETR indicates the combined effect of taxation and benefit withdrawal on the gross wage when moving from unemployment to employment. Germany has the highest AETR among the four largest Member States for all categories. If, for example, the principal earner whose partner is not employed takes up a full time job, he loses 80% of the change in gross income (column 1). In a situation where even more than the additional income is “taxed away”, there is virtually no economic incentive for the principal earner to take up a part time job, and also the secondary earner finds 50% or more taxed away when taking up a job. The high marginal and average taxation of secondary earners bears, in particular, the risk of discouraging women from participating in the labour market. For part time work, social security contributions are charged from a threshold of €325, creating a poverty trap in the income area above the threshold<sup>51</sup>.

**Table 3.21: Average effective tax rates for taking up a job (principal earner at APW level) in 1997**

Principal earner	From unemployment to full-time employment	From unemployment to part-time employment	Employed	Employed
Secondary earner	Non-employed	Non-employed	From unemployment to full-time employment	From unemployment to part-time employment
France	76	69	28	38
Germany	80	115	51	50
Italy	63	84	33	25
UK	72	93	28	20

Source: OECD, Benefit Systems and Work Incentives, 1999

#### *Family and work*

One out of five workers in Germany work part-time. The incidence of part-time work is highest among women (38%), among whom there is also a strong East-west differential: 42% of West German women in employment work part time and two thirds of them report that they have chosen part-time for personal and/or family reasons, whereas only 6% would rather take a full time job if they found one. In East Germany, the incidence of part time among women in employment is 23%; more than half of them would prefer a full time job. This difference not only reflects the different labour demand. It sharply raises the issue of availability of full-time childcare facilities: In East Germany, where full-time childcare is relatively widespread, only 21% of women in part-time report personal and family reasons. The lack of childcare facilities in West German Länder (available for only 3% of children below the age of 3) is a major impediment for women’s move from part- to full-time, and probably for female labour market participation as a whole (the participation rate of East German women is also higher at 71% compared to 61%).

#### *Skills mismatch and lack of mobility*

As mentioned above, the long-term tendency in labour demand is towards more high-skill and less low-skill jobs. On the supply side, the qualification level of workers has been rising steadily over the past decades. However, the supply of ever more qualified labour seems to have lost its dynamism: The educational level of school leavers has been broadly stable for a decade, and the age group with the highest average qualification are the 35 to 49 year old. Against the backdrop of demographic change with a reduction of the number of new labour market entrants it is worrying that, according to the *Mikrozensus 2000*, the scope of training for the employed actually decreased by 43% from 1991 to 2000.

<sup>51</sup> Those working in short part time jobs and earning less than €325 do not pay social security contributions, but a person earning €326 has to pay the full rate. Therefore, while approx. 4m people have “€325-jobs”, the number of people earning between €325 and €70 is only ¼ of this figure. Put differently, in order to increase his net income by only €3, a worker currently earning €325 would need to have his gross salary increased by €87. Currently, experiments are being carried out in order to find ways of overcoming this poverty trap through subsidised social security contributions.

In the shorter run, in line with the increased number of vacancies, skills shortages have been gradually emerging. The average number of vacancies increased steadily from 279,000 in 1993 to 514,000 in 2000 (in 2001 it fell back to 504,000). Over the same time, the number of unemployed per vacancy roughly halved. Whereas the lack of qualified ICT personnel has found the largest public attention, skills shortages could be felt in several sectors, in 2000. In the 4<sup>th</sup> quarter of 2000, 15% of firms in West Germany reported that a lack of suitable workers impeded their activity. This was particularly acute in agriculture (29%), business services (28%), transport and communication (22%) and consumption related services (21%). Also in East Germany business and consumption related services registered labour shortages (18% and 14% of firms, respectively), while overall only 6% of East firms reported skills shortages. In a recent study for the Euro-area, the ECB (2002) reports that educational mismatch (measured as the variance of the ratio of skills-specific unemployment rates to the total unemployment rate) increased significantly in Germany and France in the period 1992-2000, while it remained stable in Italy.

The persisting regional imbalances in labour supply and demand raise the issue of geographical mobility. Gross internal migration in Germany is much lower than in the UK (and even more so the US, Table 3.22) and also lower than in France, while Italy has a notoriously low regional migration rate. Furthermore, the net flow from East to West Germany in 2000 was a mere 61,000 persons<sup>52</sup>, or 0.35% of the East population – not an order of magnitude of which one could expect a rapid balancing of the unemployment differential. A household's decision to move to another region will mainly depend on the expected net gain in disposable income and the transaction cost of moving. A high level of transfers to equalise the standard of living across regions (including region to region “Finanzausgleich” as well as individual social transfers) is certainly a prominent factor explaining low inter-regional migration in Germany. Germany's low share of families living in owner occupied houses, and large share of private rented housing (at 38% and 36% respectively the lowest and the highest in the EU (cf. Maclennan et al (2000)) point on the other hand at relatively low transaction costs. Table 3.22 also shows the share of employees commuting across regional borders. Commuting partly compensates for the lower migration with respect to France but is only at half the level of the UK<sup>53</sup>.

**Table 3.22: Mobility**

	ratio of gross internal migration to population (%)				commuters as share of the employed (1998)
	1980	1990	1995	1998	
<b>D</b>	1.29	1.34	1.24*	-	8
<b>F</b>	1.52	1.40	1.49	1.58	5
<b>I</b>	0.68	-	0.50	0.53	2
<b>UK</b>	-	-	-	2.30	17
<b>US</b>	2.79	3.32	2.22	2.40	3

Source: OECD Employment Outlook 2000.

\* 1993; prior data is for West Germany.

(migration: level 1 regions for D, UK, US; level 2 regions for F, I.

commuting: level 1 regions for UK, US; level 2 regions for D, F, I.)

### 3.2.5 Concluding remarks

Low employment dynamics contribute a great deal to the overall sluggishness of German growth. In this section, the underlying structural weakness of the German labour market was analysed. It is not possible to pin down a single decisive problem as the root of all evils. Rather, several problem areas have been identified that, taken separately, might have a limited impact

<sup>52</sup> East-West net migration peaked in 1989 at 383,300 persons, already in 1991, it was only half as high. Since 1998 it is slowly increasing again.

<sup>53</sup> The figures should be compared with caution, however, as the size and spatial distribution of regions has a substantial impact on the result.

on overall employment performance. Malfunctioning could be identified for several specific labour market segments, the most problematic areas being:

- wages for the low skilled. The wage bargaining process in Germany favours uniform wage developments within, and to some extent also across industries. Workers' differences in skills and labour productivity are typically not taken into account in sectoral collective agreements that do not differentiate according to occupational groups and that – overall wage moderation notwithstanding – have a tendency towards raising low wages more strongly than average wages. The compression of the German wage structure is thereby maintained. The result is a share of low-skilled workers in unemployment that is far above their share in active population and that is high in a cross-country comparison. More (downward) flexibility has been introduced in collective agreements over the last years, but the use of these possibilities is not yet very widespread.
- reservation wages, in particular at low wage levels. Although replacement rates are, overall, not particularly high in comparison to other Member States, incentives to accept a job offer are weak or non-existent for specific groups of the labour force. The still high level of taxation and linear social security contributions combines with long benefit duration and high rates of benefit withdrawal to significant unemployment traps.
- lack of wage differentiation and mobility. Unit labour costs had exploded in East Germany in the early years after re-unification. The necessary adjustment is hampered by the rigidity of the relative East-west collectively agreed wages. Even the facts that meanwhile the coverage of collective agreements in East Germany is far below West level and that opening clauses exist within collective agreements have not yet brought about the adjustments that would be necessary in order to move on from employment stagnation to renewed employment growth. Wage differentiation and geographical mobility would be expected to be to some extent substitutes when it comes to re-balancing regional labour markets. Yet, mobility is far too low to reduce the large regional unemployment disparity.

Although probably less pressing immediately, two additional issues carry the potential of seriously hampering future employment dynamics, in particular against the backdrop of a shrinking working age population:

- Several impediments for female participation in the labour market have been identified. The tax-benefit system discourages work of second earners in a couple. It is hard to combine (full-time) work and family, due to the lack of childcare facilities in West Germany.
- Emerging skills shortages and the bleak labour market prospects of the low skilled highlight the need to re-dynamise the educational progress of the labour force, both in initial education and job-related further training.

Without the enormous challenge of transforming the East German economy, one may think, the corset of structural inflexibility would not have hurt the German labour market as much as it has in the past decade. In any case, in terms of comparison to the other larger EU Member States, Germany's labour market structures do not always look tremendously bad. But the European experience of the past 30 years also shows that it is precisely in the presence of economic shocks that rigid labour market institutions produce painful and long-lasting effects.

Moreover, interdependence of labour market structures translates partial malfunctioning into a bad overall performance: It is through their interactions that individual problems present a major impediment to employment and ultimately to GDP growth. (for a discussion of labour market institutions' complementarity see e.g. Belot/van Ours (2000), Buti et al. (1998)).

- Wage levels, reservation wages and non-wage labour costs have a combined impact on the low-wage/low-skills segment of the German labour market, that translates *inter alia* into the economy's weakness in providing low-paid services. It is however not straightforward to

assess the relative importance of wage floors, taxes and (high, linear) social security contributions as a deterrent to labour demand and the tax/benefit system as a disincentive to labour supply: Recent studies disagree even on the wage elasticities of labour supply and demand in the low wage segment (see Fels *et al.* (1999) for an overview).

- Interdependence also exists between labour market flexibility and wages. In the reaction to a shock (aggregate) wage flexibility and flexibility of hiring and firing are, to a certain extent, substitutes (cf. McMorrow (1996)). The same argument holds for the cyclical adjustment of individual labour market segments. In the 1992-94 downturn the shake-out was strongest for low-skilled workers. It would probably have taken a much higher amount of flexibility in work contracts in order to swiftly reverse this in the following upturn. Instead, even in the upturn their employment perspectives have not improved. The increased use of 'atypical' contracts could not compensate for rigidity in 'normal' contracts and wages at the same time.



### 3.2.A Annex: Simulation of Germany's potential growth rate

Table 2.A.1 shows the estimated potential average growth for Germany and for the euro-area in the 1990s together with its determinants. As can be seen, potential growth in Germany in the second half of the 1990s fell short by around ½ percentage point of that of the Euro-area countries, even if the cohesion countries are excluded. The difference stems almost exclusively from the labour contribution to potential growth.

**Table 2.A.1: Potential Growth Rates + Contributions to Growth for Germany and the Euro-area**

	1991-1995				1996-2000			
	Potential growth	Labour	Capital	TFP	Potential Growth	Labour	Capital	TFP
Germany	2.4	0.3	0.9	1.2	1.7	0.2	0.7	0.8
Euro-area (excl. DE)	2.1	0.3	0.8	1.0	2.5	0.8	0.8	0.9
Euro-area (excl. DE + Cohesion countries)	1.9	0.2	0.7	1.0	2.2	0.6	0.7	0.9

Table 2.A.2. presents the results of a counterfactual analysis, asking the question what the German growth potential would have been, if the growth determinants had developed similar to those in the other countries of the Euro-area (excluding again the cohesion countries) and compares these values to actually estimated potential growth rates. Unsurprisingly, the result is similar to the one above, with “simulated” potential growth rates about ½ percentage point higher than actual rates. A projection of the underlying growth determinants over the medium-term shows that this growth gap is likely to persist also in the years up to 2005.

**Table 2.A.2 Actual and simulated potential growth rates for Germany 1995-2005**

	95	96	97	98	99	00	01-05*
Observed potential growth	2.0	1.7	1.5	1.7	1.7	1.9	1.9
Potential growth if growth determinants had been similar to those of Euro area countries (excl. cohesion countries)	2.0	1.9	2.1	2.1	2.2	2.4	2.4

Source: Ameco, Commission services calculation, \* projection

The counterfactual analysis of Table 2.A.2 can be used to decompose the overall growth gap into its components. As shown in Table 2.A.3, once again developments in the labour market can be identified as the exclusive growth factor, where Germany fell behind. By contrast, the investment ratio in Germany was even relatively higher than in the other countries. Most important in explaining the growth gap in the 1990s is clearly the development of the NAIRU (which remained fairly stable in Germany, whereas it fell in most other Euro-area countries) and of the labour market participation rate. Combined, these two factors reduced the cumulative growth rate in the 1990s by 1.6 percentage points. For the period from 2001 to 2005, these factors will continue to play a crucial role. However, in the future slow population growth in Germany and a relative decline in investment will become increasingly important.

**Table 2.A.3: Contributions to the Cumulative Growth Differential between Germany and the Euro-area (excluding Germany and the Cohesion Countries)**

	1991-2000	2001-2005
Population of Working Age	0.1	0.5
Participation Rate	0.7	0.7
NAIRU	0.9	0.4
Investment to GDP Ratio	-0.3	0.6
Cumulative Growth Differential	1.4	2.2

### 3.3 Product markets: Obstacles to growth in individual markets

Previous sections showed clearly that the labour market is the area most critically in need of reform. However, obstacles to higher growth in Germany can be found also in a number of other areas that a comprehensive structural reform should not lose sight of. Ample room for regulatory improvements can be found, for instance, in the further liberalisation of product markets, the government sector and the removal of outdated regulations. The modest ambition of this section lies in giving a brief shopping list of reform candidates to lift the German growth potential. It is refrained here from the difficult task of quantifying the benefits of each potential reform or of undertaking comparisons with other countries.

#### 3.3.1 Network industries

Germany made substantial progress during the 1990s in liberalising its network industries. Compared to most European countries, Germany is no laggard in this field (cf. Pryor 2002). Nevertheless, in a number of areas further reform could bring long-term or even immediate economic benefits.

- **Telecommunications:** The telecommunications sector proved to be the most successful example of liberalisation, which resulted in noticeable price reductions, product variety as well as a qualitatively better range of services. Competitors of the former monopolist Deutsche Telekom could increase their share in the fixed-line phone calls to 22% in the year 2000 and the prices for long-distance calls fell by half since liberalisation in 1998. By contrast, competition is underdeveloped concerning local calls so that further measures for the easing of the access to the "last mile" are necessary. In this context, it appears to have been a regulatory mistake to leave the cable TV-infrastructure with Deutsche Telekom, which had no incentive to develop the cable network as alternative to its own local network. Despite Telekom's recent partial sale of the cable networks these are unlikely to be equipped for telecommunication in the near future, as has occurred in other countries. The present structure of the cable network also appears to be a impediment to a greater expansion of electronic media.
- **Postal service:** In the postal sector, progress is much less advanced even though it has to be conceded that Deutsche Post made substantial progress in transforming itself from a sluggish state monopoly to a modern logistics company. However, little of the improvement in its operations is passed on to customers in lower prices, because Deutsche Post remains a monopolist in a large share of the market. Germany has completely liberalised only the market for parcels, courier and express services. However, this segment represents a limited share of the total market. By contrast, the mail market for letters below 200g remains completely closed, with a total share of competitors reaching 2% of the whole mail market. Germany supports verbally a far reaching opening of the European market for mail but prolonged its exclusive licensing of German Mail by end of 2007.
- **Energy markets:** Formally, energy markets are completely privatised and liberalised. Since 1999 electricity networks are opened up by a bargained third party access, which is supervised by competition authorities. Prices for electricity for industrial as well as private consumers showed a strong fall during the last years and now range in an average price bracket in Europe. However, in practice only very few customers actually change suppliers, which indicates that impediments to free market access might still exist. In the gas market, so far competition remained limited, as technical details for access and pricing still have to be solved. A stronger regulator authority and a sharper separation of the fields production, distribution and transmission on the electricity and gas markets should help promote competition further.
- **Transport markets:** In the transport sector, the regulatory developments are mixed. In road freight transport, market entry contingents were abolished in Germany in 1994. By contrast, the success of railways liberalisation was modest, even though it theoretically allows third parties access to railway networks. The main problem remains the incomplete separation of

network and operator. On the other hand, regional public rail transport improved. These services have to be bought now by regional governments and are allocated through a call for tenders, which should lower costs and increase efficiency. In cases where selections are taken based on an open competition, the non-federal railways were able to win 42% of the orders. Nevertheless, in order to guarantee a non-discriminatory access, a separation of network from operator and a stronger regulatory authority appear to be necessary.

- Clearly, in all four networks a better regulatory set-up could lead to increased economic efficiencies implying cost reductions to enterprises and consumers worth billions of euros, which would directly boost Germany's competitiveness. In addition, and possibly more important, the lack of further deregulation obstructs innovation and the creation of new markets with high growth potential, notably in telecommunications and logistics sectors.

### **3.3.2 Inefficiencies in spending public money**

The efficiency with which government money is spent also has a substantial influence on the efficiency of the overall economy. Quite evidently, a shift of public expenditures towards investment rather than consumption would lift the economic growth potential. It is, of course beyond the scope of this study to discuss this aspect in detail. Two particular fields should be pointed out, however.

- **Public procurement:** A potential for lowering costs for public procurement would be to use public tendering instead of awarding contracts directly. However, in 1998, less than 10% of public procurement was published as call for tender. This is below the EU average of 13% and maximum levels of above 20% for some countries. Since the adaptation of the calls for tenders law to EU-legislation in February 2001, public procurement in Germany has been opened up somewhat. Tenders will also be possible via the Internet by the end of 2001, making procedures easier and more transparent even for foreign offers. Some of the savings potential for public tendering might be lost, however, through a new law that makes payment of tariff wages mandatory for all companies bidding for public construction jobs and is likely to push up prices for public investments.
- **State Aid:** From an economic point of view, state aids is generally undesirable, because they tend to distort competition. In particular, they are mostly geared towards large industrial companies. Furthermore, it is often capital inputs that are subsidised. It is due to this aspect that labour-abundant East Germany has a more capital-intensive industry structure than the West. Finally, a substantial part of the money is spent on old industries to slow down industrial change. This is particularly wasteful in the case of coal, which has been receiving annual transfers worth several billion euros (€4.7 billion in 2000) since the 1960s for restructuring without having to show much for it. The mining regions (Ruhr area and Saarland) maintain the highest unemployment rates in the West, apart from the areas with (also subsidised) ship production. In state aid, therefore, less means often more. Despite stricter controls at both the national and Community levels, state aid has been decreasing only slightly in Germany and remains above €20 billion annually (around 0.8% of GDP). An important share of the state aid (nearly 10%) is still in favour of the new Länder whose volume is decreasing and set to be phased out by the end of 2019.

### **3.3.3 Capital markets**

An efficient allocation of capital is an important condition for attaining a high growth potential in an economy. While the capital market in Germany is efficient compared to most other EU countries, it appears to be lagging behind that of Anglo-Saxon economies. Improvement could be made in two areas.

- **Capital market regulation:** For international investors, Germany's capital markets still appears to be relatively closed and lacking in transparency. While the situation has improved in recent years in step with the very dynamic evolution in equity financing in particular in the second half of the 1990s, capital market reform remains still behind that of

other countries. Some momentum might however come from the 4th Financial Market Promotion Act, which should improve security for investors by stronger controls on price manipulation and insider trading and give exchanges and capital investment companies more flexibility to run their business. A recent law enhancing transparency of public security offers and take-over procedures together with the company tax reform is also likely to improve market efficiency by giving incentives to reduce the widespread cross-ownership of German companies.

- Pension funds: The recent pension reform is likely to bring a boost to previously practically non-existent pension funds. However, the new funds will remain legally extremely constrained in the type of investments they are allowed to undertake. In addition, their volume is likely to remain very small in comparison with the UK, US or the Netherlands. Consequently, there remains substantial room for deepening the capital markets. In particular, large pension funds could exert substantial pressure to increase share-holder value and hence the efficiency of stock traded companies and provide a source of financing for companies other than bank credits.

### **3.3.4 Restrictions to market access**

There exist a number of areas where reform in Germany could directly or indirectly improve market access and efficiency.

- Service society: It is meanwhile a well-known cliché that Germany is lagging behind in creating services. While the country mentality (and high taxes) might be one reason (Freeman/Schettkat 2000b), there are also a number of regulatory impediments to providing services. Notably, in many fields the chamber of craft trades (i.e. the insiders) regulate the access of newcomers. The effect is that entry hurdles are set high and competition in the services sector remains limited. This is backed by regulations that demand that unlike almost everywhere else, companies can only be set up by persons having passed a lengthy apprenticeship and a master's certificate. Although recently there has been a minor reform in this field, this requirement limits effectively the creation of a low-wage service sector. Relatively strict shop opening times also act as a factor that might impede setting up a shop in particular in providing retail related services. The fact that petrol stations, which are exempted from the regulation are increasingly developing into convenience stores might be an indication of the lost market potential.
- Education: At the high-wage end, an inefficient university system is to blame for keeping employees off the market. The completion of a masters degree in Germany takes on average one or two years longer than comparable degrees in other countries. This keeps at least a full one year age cohort of young and highly skilled people out of the job market, without leading to a noticeably higher degree of education than in other countries. Furthermore, the bachelor's degree still remains practically unknown, leaving this important educational bracket unused. Slight improvements in the university system have been made, but the necessary radical changes are more discussed than implemented.
- Social infrastructure: The potential labour pool is limited further by the underdeveloped supply of day-care facilities in Germany. It is therefore difficult, mostly for women, to combine the wish for children with a career. The fact that strict shop closing regulations give little time to run errands after work and picking up the children exacerbates this problem. Since part-time jobs are also often lagging, women often have to stay out of the job market, accepting a loss in their human capital and future employability. The alternative choice is to abstain from having children, as the extremely low birth rate in Germany attests, which entails substantial social and economic costs in the longer run.

### **3.3.5 Conclusions**

Taken individually, no single item comes close to the importance of rigidities in the labour market and the costs of re-unification in explaining Germany's under-performance. Put together, however, the remaining liberalisation potential in network industries, inefficient government spending, a relatively low market capitalisation, and outdated restrictions for market access hold back growth in Germany. This alone does not directly clarify why growth in Germany lags behind that of other European countries who often have similar or other regulatory problems. This difference is explained both by the fact that regulatory progress was higher elsewhere and that Germany's structural problem come on top of a rigid labour market and unification-related problems. As a result, the break on growth is exacerbated because rigidities in one area cannot be compensated by flexibility in another. The over-stretched budget in Germany should not be used as an excuse for not reforming, especially in areas with little short-term costs and clear benefits. The lack of progress in liberalising shop opening hours is here highly symbolic for the difficulties Germany has in reforming its economy.



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