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**THE IMPACT OF EASTERN ENLARGEMENT  
ON EMPLOYMENT AND LABOUR MARKETS  
IN THE EU MEMBER STATES**

**FINAL REPORT**

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## **Introduction**

The challenges and the opportunities arising from the Eastern Enlargement of the European Union (EU) have no historical precedent. The candidates for accession from Central and Eastern Europe are, due to transition and opening, still exposed to a severe process of structural change, which is not comparable in magnitude and speed to that of well-established market economies. The income differential is in case of the Central and Eastern European Countries (CEECs) markedly larger than those of past accession rounds. Moreover, European integration has gained momentum since the last enlargement rounds. The single market principles are much less of a mirage than even just a decade ago, and there is now a common currency shared by a core group of EU Members. Thus, the scope of integration involved by accession and the pressures imposed by enlargement on both the present EU Members and the CEECs are unprecedented.

Due to the uncertainties related to Eastern Enlargement, there are mounting concerns within the present EU Members that accession may have a number of undesirable effects on labour markets and income distribution. In particular, a deterioration of living standards of the unskilled, associated with job displacement and wage losses triggered by the accession of low-income countries is feared. Moreover, it is suspected that mass migration from the East will create further pressures on labour markets and social cohesion. Indeed, although economic theory predicts that the integration of economies which differ in incomes will provide gains for all countries involved, it also states that the benefits and losses will be distributed unevenly within each country. Needless to say, many qualifications apply to this general result and a detailed analysis is needed for an evaluation of the distributional implications of integration.

The purpose of this report is to analyse the likely impact of Eastern Enlargement on employment and wages and to evaluate those policy options which could enhance net job creation and mitigate any undesirable distributional effects of accession. The analysis in this report is focused on three main dimensions of economic integration: i) trade in goods and services, ii) migration of labour and iii) movement of capital. We are aware that accession of the CEECs to the EU has numerous other political, institutional and fiscal implications which may, in one way or another, affect wages and employment in both the present EU Members and the candidate countries. This is true in particular for the Common Agricultural Policy (CAP) and the reform of structural and regional policies in the EU. However, an assessment of these issues

would require much more attention than could be possibly offered in this report, which is devoted to the implications of integrating the CEECs in the EU markets for wages and income distribution and the evaluation of labour market policy options.

The report is structured in two parts: The first part analyses the likely impact of Eastern Enlargement on trade, migration and capital movements and their implications for employment and wages in the present EU member countries. The integration of the CEECs is understood to be an ongoing process, which has started with the step-wise removal of trade barriers in the course of the implementation of the Europe Agreements (EAs) and is proceeding with the adjustment of the institutional framework of the CEECs to EU standards. It is a process that will not be finalised at the date of accession. The analysis therefore focuses on the development of the patterns of trade, migration and capital movements before and after the accession as well as in the case where access does not matter. Since the size of trade, migration and capital movements between the EU and the CEECs is at present too small to make an economy-wide impact on relative wages and employment, even in the most severely-affected Member states, the possible effects of trade and factor movements are addressed mainly at branch and regional levels. Beyond a qualitative assessment of the implications of trade, migration and capital movements on employment and wages in specific branches and regions, a quantitative evaluation is provided, based on longitudinal data sets in selected countries (i.e. Austria, Germany and Sweden). An accession of the CEECs to the EU will not induce a substantial change of the conditions for trade and capital movements vis-à-vis the status quo. In contrast, the immigration of labour from the CEECs is largely restricted by the EU Member states. The conditions for the migration of labour is therefore that dimension of economic integration, which will most markedly change in case of accession. Special attention is therefore devoted to assessing the migration potential of the CEECs.

The second part of the report addresses the options for labour market policies in the course of Eastern Enlargement and assesses the scope for a harmonisation of labour market institutions in the candidate countries and the EU Members. Based on the findings of the first part the likely profile of winners and losers is discussed and the relevant trade-offs involved by Eastern Enlargement are outlined. Drawing on the historical experience of other integration episodes, i.e. Southern Enlargement of the EU, German unification and the North American Free Trade Area (NAFTA) agreement, inferences are made as to the proper set of institutions likely to minimise undesirable effects of accession on employment, income distribution and social cohesion. As the social costs of Eastern Enlargement are crucially related to the speed of con-

vergence of the CEECs to EU income levels, the likely impediments to growth in the candidate countries and, hence, structural policies to accompany accession are discussed. Finally, on basis of this analysis, policies to foster worker mobility across industries and regions and to cope with the immigration of labour from the East are discussed.

Tito Boeri and Herbert Brücker

## **Executive Summary**

The purpose of this study is to analyse the impact of Eastern Enlargement on employment, wages and income distribution in the present EU Member States and to evaluate policy options which could enhance both the potential for net job creation and mitigate any undesirable distributional effects of accession. The analysis is focused on three main dimensions of economic integration: (i) trade in goods and services, (ii) migration of labour and (iii) capital movements.

Although the distinct gap in per capita income levels and factor endowments between the EU and the Central and Eastern European (CEE) countries is bound to persist for decades, it is unlikely that the removal of the remaining barriers to trade and factor mobility will create severe tensions in the EU labour markets. In economic terms the CEE countries are rather small, which means that trade and capital flows originating from these countries or directed to them are unlikely to affect prices in the goods markets, and hence wages and employment, at the aggregate level in the EU. As the convergence of per capita incomes in the CEE countries to levels prevailing in the EU will be a fairly long process, migration will certainly increase once free movement will be introduced. The estimation results suggest a net immigration of some 335,000 residents following an assumed removal of barriers to migration in 2002. According to past experience around 35% of these will be employees. Concerns that EU labour markets will be swamped by migrants from the CEECs therefore seem to be ill-founded. Although Eastern Enlargement will not affect wages and employment at the aggregate level, trade and factor movements may well have a non-negligible impact on the regions immediately bordering the CEE countries and on specific sectors that are more exposed to import penetration from the East. These distributional effects of accession can be magnified because Western European social welfare institutions are often not supportive of labour mobility across sectors and regions.

The report contains two parts: In the first part the likely impact of Eastern Enlargement on trade, migration and capital movements as well as the implications for employment and wages in the present EU Members are analysed. The second part evaluates the set of policies which could reduce undesirable effects of enlargement and at the same time enhance its potential for job creation. The scope for a harmonisation of labour market institutions in the candidate countries and the EU Members is also discussed.

## Part A

The key findings of the first part of the report concern:

- the initial difference between the EU and the CEE countries in terms of incomes and factor endowments and the prospects for convergence;
- the impact of the removal of trade barriers on wages, employment and income distribution in the West;
- the impact of integrating capital markets in the East and the West;
- the impact of opening EU labour markets to migration from the CEE countries.

### 1. The income differential and prospects for convergence

The economic conditions at the outset of Eastern Enlargement are characterised by a distinct gap in per capita incomes between the present EU Members and the accession candidates, which can be traced back to differences in factor endowments and factor productivities. With per capita incomes in the CEE countries between one-tenth, at current exchange rates, and one-third, at purchasing power parities, of the respective levels of the present EU member states, the gap is considerably wider than in past accession rounds. However, the variance of income levels across individual CEE countries is large: Per capita GNP levels at current exchange rates vary between 5 per cent and 40 per cent, and at purchasing power parities between 20 per cent and 60 per cent, of respective figures in the present EU.

The income gap corresponds to a distinct difference in endowments with physical and human capital. Physical capital stock levels in the CEE countries are, at around one-tenth, significantly below the EU-average. Human capital endowments, measured by formal indicators such as school enrolment rates and average years of schooling, are below those of most EU Members, too. Moreover, there is evidence that the quality of education falls short of average standards in the EU. Nevertheless, human capital endowments of the CEE countries are high relative to those of countries with comparable income levels. Although the CEE countries are small in terms of output and capital stocks, their labour force amounts to around 30 per cent of that in the present EU. Average wage levels amount, at current exchange rates, to around one-tenth, and at purchasing power parities, to one-fourth of respective levels in the EU. The

available information on factor endowments and factor prices indicates that the CEE countries are richly endowed with labour relative to the EU, while the EU is richly endowed with physical capital relative to the CEE countries. Nevertheless, the large gap in per capita incomes cannot be solely attributed to differences in factor endowments. Total factor productivity is substantially lower in the CEE countries than in the EU. This can be traced back to technological differences the institutional framework and endowments with public infrastructure.

Although economic theory provides no clear-cut answers as to whether incomes of rich and poor economies tend to converge, empirical measures of convergence indicate that per capita incomes of the present EU Members have actually converged throughout the post-war period. However, convergence is a long-term process. On the basis of the convergence rates observed in the EU in the post-war period, the half-life of the CEE-EU income gap would amount to more than 30 years. The growth record of the CEE countries following the trough of the transitional recession does not suggest that convergence can be faster in this case. Thus, any realistic policy scenario has to acknowledge that large income differentials will most likely persist for decades rather than for years. Hence, it is all the more important that policies to promote growth in CEE be set high on the agenda in order to mitigate pressures on EU labour markets as a result of economic integration.

## **2. The impact of trade**

Trade in goods is the single dimension of economic integration which has proceeded farthest. With the notable exception of agriculture, tariffs and quantitative barriers to trade between the EU and the candidate countries have been almost abolished. An accession of the CEE countries to the EU will change the conditions for trade vis-à-vis the status quo, mainly by integrating the CEE countries into the Common Agricultural Policy (CAP), by harmonising product quality standards and liability rules. In the course of transition and integration, trade between the EU and the CEE countries has boomed: between 1988 and 1998, exports from EU countries to the CEE countries have grown by a factor of 6.5, and imports from CEE countries into the EU by a factor of 4.5. However, potential trade between the EU and CEE countries is not yet exhausted; this applies in particular to countries which have been less involved so far in trade flows (i.e. Portugal, France, UK). Actual exports of the EU to the CEE countries in 1998 have been at 50 per cent of 'normal' export volumes among EU countries of the same characteristics, and at 40 per cent of 'normal' import volumes. The trade surplus of the EU vis-à-vis the CEE countries is expected to double in the wake of increasing EU investments in

the CEE countries. Although empirical evidence indicates that trade volumes of EU countries with other Member States are between 20 and 60 per cent higher than those with non-EU countries, it is worth noting that the conditions of trade with CEE countries already resemble those of trade with other EU Members. Thus, the further impact of accession on the trade potential is likely to be fairly moderate. Trade theory predicts that the integration of economies with large differences in factor endowments yield large benefits in terms of income and consumer surplus at the aggregate level, but that the gains and losses are unevenly distributed among the individual factors of production. More specifically, the integration of the CEE countries into the EU markets for goods and services could affect wages and employment through increasing imports of labour-intensive goods and exports of physical capital and human capital intensive goods, which would in turn increase the relative price for physical capital and human capital, and decrease wages for unskilled labour. Indeed, actual trade flows between the EU and the CEE countries clearly reflect differences in factor endowments and technological know-how. The EU exports goods produced with a high intensity of physical capital and high-skilled labour to the CEE countries, and imports goods with high labour intensity from there.

However, two arguments suggest that these trade flows have no economy-wide impact on relative wages and employment in the present EU, even in the most affected countries:

- 1) despite its notable dynamics, trade volumes are too small to affect prices in open economies. The shares of EU-exports to, and EU-imports from, the CEE countries in GDP is, at around 1 per cent, comparatively modest. Even in the most affected countries, exports and imports do not exceed 4 per cent of GDP. To affect relative wages in open economies, the CEE countries must become marginal suppliers for labour intensive goods. This is not likely in view of those dimensions. An analysis of the impact of trade on wages, employment and labour mobility based on micro data of individual labour market performance in selected countries (i.e. Austria, Germany and Sweden) confirms the hypothesis.
- 2) a huge gap in unit-values between EU-exports to and -imports from the CEE countries indicates that the CEE countries are not specialised in the same quality segments of markets as are producers in the EU. But if the EU and the CEE countries are completely specialised in different kinds of goods, all factors of production would benefit from increased trade and relative wages are unaffected.

The fact that trade between the EU and the CEE countries is too small to change relative wages and employment at the aggregate level does not rule out that specific sectors and regions are affected - providing that transport costs are high and factor mobility is limited. Geographical proximity plays a key role in trade between the EU and the CEE countries. Three-quarters of all EU trade with the CEE countries is carried out by countries immediately bordering them, i.e. by Austria, Germany, Greece, Italy and Finland. In these countries the share of trade with CEE countries in total trade and GDP is markedly higher than in other EU countries. Moreover, some regional trade data from Austria and Germany indicate that, within these countries, exporters to and importers from CEE countries are concentrated in the border regions. If the impact of trade on wages and employment can be felt at all in the present EU, then it is in those regions.

At the sectoral level, rather high trade shares of the CEE countries in sectors such as clothing and footwear indicate that wages and employment of the unskilled might be negatively affected there, while the more capital-intensive textile sector experiences a large trade-surplus vis-à-vis the CEE countries. Furthermore, construction workers in some German regions might be negatively affected by imports of the respective services from the CEE countries. Conversely, large export-surpluses can be observed on side of the EU in physical and human capital intensive industries such as communication equipment, measuring instruments, computers and motor vehicles. It is worth noting that these surpluses are accompanied by rising shares of intra-industry trade. Large differences in unit-values indicate that this intra-industry trade is of the vertical type, i.e. that physical and human capital intensive activities are located in the EU and labour-intensive activities in the CEE countries. An increasing segmentation of production processes between the EU and the CEE countries may affect wages and employment of the unskilled. But, trade volumes are too small to expect significant effects beyond some specific regions.

It is often supposed that the large surplus in EU-trade with the CEE countries is a job-generating machine. Indeed, a combined trade-surplus of some US-\$ 25 billions vis-à-vis the CEE countries has been reached in 1998. The trade surplus has continually increased since opening and economic reform. Moreover, increasing capital transfers in the wake of accession to the EU will be mirrored by mounting surpluses of the trade balance. The deficit in the trade balance may double in the course of accession. Analyses of the labour services incorporated in traded goods indicate that, on a net basis, several ten-thousand jobs are secured by trade with the CEE countries. However, it has to be taken into account that the trade surplus is fi-

nanced by a deficit in the capital balance, i.e. that income is transferred from the EU to the CEE countries.

Another concern is raised by the Southern EU countries, who fear that they may be indirectly affected by enlargement, since other EU countries could replace trade with them by trade with CEE countries. Three findings suggest that these concerns are ill-founded: first, no evidence has been found that exports of low-income EU Members to the major CEE trading partners in the EU have fallen in the course of the trade surge with the CEE countries. Second, the pattern of EU-imports from CEE countries and EU-imports from Southern EU Members is only slightly more similar than at EU-imports from the CEE countries and from other industrialised countries. Third, distinct differences between unit-values of EU-imports from CEE countries and EU-imports from Southern EU Members indicate that producers from the accession countries do not compete with producers from the Southern EU members in the same market segments. Overall, the impact of trade with the CEE Countries is likely to be confined to bordering countries, and within these countries, will be concentrated on bordering regions.

### **3. The impact of capital movements**

The barriers to foreign direct investment and other capital movements have been largely removed. However, certain shortcomings in the regulation and supervision of capital markets and the banking systems are still present. From the perspective of the present EU Members, capital flows to CEE countries are negligible: an annual net capital flow of around USD 15 billion corresponds to a share of 0.15 per cent of GDP and 0.8 per cent of gross fixed investment in the EU in 1998. This is too small to expect any impact on interest rates and factor incomes in economies with open capital markets such as the EU Members. However, from the standpoint of the candidate countries, those annual capital inflows amount to 5 per cent of GDP and more than 20 per cent of gross fixed investment and thus have contributed significantly to capital formation, relieving domestic capital markets in the CEE countries and having a substantial impact on growth, interest rates and wages.

Foreign capital flows to CEE largely take the form of foreign direct investments. Cumulative net inflows of foreign direct investment (FDI) into the CEE countries amount to around USD 50 billion between 1991 and 1997, while cumulative net inflows of portfolio capital were at around USD 16 billion during the same time period. Portfolio capital inflows in particular are well below those into other countries with comparable income. This suggests that equity and security markets of the CEE countries are still in their infancy.

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In general, capital flows vary widely across countries and over time, so that future capital flows to CEE are hard to forecast. Experience from past enlargement episodes demonstrates that accession to the EU can considerably increase capital inflows, at least for a transitional period. Furthermore, our projections for the trade potentials imply that capital flows to CEE are significantly less than 'normal', since trade and current account deficits are usually matched by capital inflows. Capital flows to the CEE countries may double in the wake of accession and the inflow of portfolio capital will likely pick-up as the harmonisation of the regulation of financial markets gains momentum. Although such an increase in capital movements from the EU to CEE is still too small to affect interest rates and relative factor incomes in the EU, it may nevertheless contribute significantly to growth in the CEE countries and income convergence.

It is often feared that labour intensive production is relocated from the EU to CEE through foreign direct investment (FDI). However, a detailed analysis of the structure of foreign direct investment does not confirm these concerns. Nearly half of the foreign direct investment from the EU to CEE is directed at non-tradable sectors (i.e. public utilities and communication, financial intermediation, other services). The branch structure of investment, as well as enterprise polls, indicate that market access is the primary investment motive. Around one-fifth of foreign investment is allocated to industries where low labour costs play a significant role and the share of unskilled labour is relatively high. This holds true for clothing and footwear, electrical machinery, rubber and plastic products. In these branches a distinct gap in the capital intensity of production between the parent companies and their foreign affiliates can be observed. Furthermore, the respective FDI is highly correlated to increasing shares of intra-industry trade, which is an indication that production processes are increasingly segmented in human capital intensive activities on the side of the EU and labour-intensive activities in the CEE countries.

Overall, only a minor part of FDI is driven by low-wage costs in CEE and replaces home production. The major part of FDI is aimed at market access. These investments are either neutral for employment and wages in the home countries or complement trade, thus having a positive impact on employment and wages in the affected enterprises and branches. However, some FDI tend to foster the specialisation of production in human capital intensive processes in the EU and labour intensive production in the CEE, which may hurt wages and employment of unskilled workers in specific enterprises and branches. It is worth noting that in these branches large trade surpluses vis-à-vis the CEE countries can be observed, so that undesir-

able effects of FDI on wages and employment of unskilled workers could be compensated by increasing exports.

#### **4. The impact of migration**

Ten years after the fall of the Berlin wall, the migration flows from CEE countries are still heavily restricted by the EU Members. The Europe Agreements (EAs) do not impair the authority of individual EU Members to regulate the immigration of labour and persons from CEE. The removal of the barriers to labour migration is therefore that dimension of economic integration, which will see the most marked change as a consequence of the Eastern enlargement of the EU. Present stocks of employees and residents from CEE in the EU clearly reflect the restrictions to labour mobility and are, in view of the large gap in per capita incomes, rather negligible. The stock of foreign residents immigrated from CEE to the EU is estimated at some 850,000, while the stock of foreign employees amounts to about 300,000. The latter figure includes the full-time equivalent of temporary and seasonal workers. Such figures accounts for 0.2 per cent of the EU population and 0.3 per cent of the EU workforce, respectively. Around 80 per cent of the migrants from CEE reside in Austria and Germany. The majority of these migrants immigrated before 1993. Since 1993 net immigration from CEE to the EU has been negligible as a result of increasing restrictions in the countries of destination.

The findings presented above do not suggest that trade and capital movements can lead to an equalisation of factor prices, such that a large gap in wages is likely to persist and monetary incentives to migration remain high in the accession process. However, international migration is hindered by high transaction costs and by the absorption capacity of labour markets in the countries of destination. The estimation of migration potential in this study is based on a time series model of immigration to Germany between 1967 and 1998, which explicitly takes into account the formation of expectations. This model allows to estimate the long-term potential of foreign inhabitants from central and eastern European countries, as well as the speed at which adjustment to this potential takes place. The most important variables are

- the differences in *per capita* income,
- the employment rate in the destination countries and
- the employment rate in the countries of origin.

Beyond this, institutional restrictions on migration and variables which characterise long-term differences in country characteristics such as common language and indicators for the standard of living proved to have a significant impact on migration. After all, the results of our study show that the propensity to migrate decreases with the increased proportion of the population which has already emigrated. Network effects, which are created by a core group of migrants, influence the distribution of migrants between the countries, but do not lead to a permanent increase in migration.

However, our estimates cannot take into account all the factors which affect migration. Moreover, the future development of key variables like GDP growth and employment are uncertain. The projections should therefore only be seen as a clue to the magnitudes of future migration from the CEECs, in particular not as a point-forecast.

In view of the results of the study, the number of foreign residents from the CEE-10 in the EU-15 increases by around 335,000 people p.a., immediately after the introduction of freedom of movement. Within a decade this figure will have fallen to below 150,000 people. The peak in the foreign population originating from the CEECs is expected to be reached 30 years later, with a 1.1% share of the population in the EU-15. Germany is expected to receive 220,000 people immediately after freedom of movement is introduced. The peak in the foreign population originating from the CEE-10 is expected to be reached 30 years later with a share of 3.5% of the population. These projections are based on the assumptions that per capita incomes between the EU and the CEECs converge at a rate of 2% annually and that the unemployment rates in Germany and the CEECs remain constant. Altogether, our estimates show that, in view of the large income gap, the foreign population will increase markedly in the most affected countries of the EU-15. However this increase will be spread over a number of decades. This can be traced back to the high transaction costs of migration and limited absorptive capacity of the labour markets in the destination countries. Of course, these projections rely on the proviso that the experiences of migratory movements in post-war Europe can be applied to the CEECs and that the determinants of migration are adequately depicted. However, fears that the EU will be swamped by immigrants from the CEECs as a result of free movement of labour seem to be ill-founded.

Economic theory predicts that migration enhances aggregate welfare in both, the home and the host countries. However, the gains and losses are not distributed equally across the factors of production: while factors complementary to migrant labour are supposed to gain from migration, factors which can be substituted by immigrant labour may lose out. In particular, it is

feared that unskilled labour may lose out from migration in terms of wages and employment in host countries. The findings of this report, as well as the findings of a number of other studies, suggest that undesirable effects of migration are concentrated on blue-collar workers in manufacturing industries and on unskilled labour in services. Nevertheless, the impact of migration on the labour market performance of natives is much smaller than widely believed. The reason is that migrants move into prosperous branches and regions and that furthermore output and investment adjust according to the increase in the labour supply. Our study has found that an increase in the migrant share, in a given branch, by one percentage point decreases average wages there by 0.25 per cent in the Austrian and 0.6 per cent in the German regressions. At the same time, the individual risk of dismissal increases by 0.8 percentage points in the Austrian and by 0.2 percentage points in the German sample. The impact of migration on white collar workers is slightly positive or neutral. Thus, since the increase in the share of foreigners from the CEE countries is expected to last for rather long time periods, the impact of migration on wages and employment is likely to be rather moderate even in the two most affected countries, Austria and Germany.

Moreover, the impact of migration might be more dispersed across skill groups in case of immigration from CEE than in case of traditional immigration. Formal education levels of migrants from CEE are surprisingly high. Nevertheless, the branch structure of employment shows that nationals from CEE are employed in the same branches as other foreigners and most probably, at the same qualification levels. Furthermore, additional information on the labour market performance of ethnic Germans who have immigrated from CEE suggests that the returns on human capital attained are extremely low even when migrants possess good language skills. Although immigrants from CEE compete at present for jobs in manufacturing and construction sectors with blue-collar workers and unskilled workers, they may become over time more able to adapt to the skill profile of demand of EU labour markets, and hence increasingly compete with high-skilled workers.

## **Part B**

The main recommendations developed in the second part of the report concern the following four policy areas:

- policies to mitigate the impact of structural change;
- policies to foster worker mobility across regions;
- the political economy of regulating migration from the candidate countries;
- policies to promote the convergence of incomes.

### **5. Policies to mitigate the impact of structural adjustment**

The first part of the report concludes that CEE countries integration into the goods, capital and labour markets of the European Union will significantly affect only labour markets of the EU bordering regions. Eastern Enlargement, however, will deeply affect goods and factor prices in the CEE countries, where a marked shift in production and employment away from resource intensive to labour intensive industries should be expected, accompanied with the furthering of the ongoing shift of employment from the primary and secondary sectors to services.

In order to mitigate potential adverse effects of Eastern Enlargement on employment and income distribution, economic policies should accommodate, rather than oppose, structural change both in CEE and in the current EU Members. Sectoral shifts caused by changing specialisation patterns can be better accommodated by flexible labour market institutions and income support schemes. This is one of the main lessons that can be learned from other enlargement episodes. The striking contrast between post-accession unemployment dynamics in Portugal and Spain, in particular, provides a good illustration of the advantages of having in the acceding countries institutions providing income support and employment protection without hindering labour mobility. High employment protection in Spain in combination with rather generous unemployment benefits made it more difficult the reabsorption of unemployment (significantly, strong obstacles to dismissals did not prevent mass labour shedding to

occur). Flexibility in wage determination in Portugal was a major factor behind the low post-accession unemployment rate experienced by this country (and such a wage moderation did not translate into high out-migration flows!). The NAFTA experience points to the benefits of having flexible labour markets also in the West. Free trade with countries like Mexico, at GDP per capita levels, relative to the US, comparable to those of Central and Eastern European countries vis-à-vis the EU, led to significant reallocation of workers. Yet, this did not involve net employment losses as North-American labour markets accommodated such shocks without large and persistent flows into inactivity.

Hence, it seems better to develop institutions coping with (rather than opposing) structural change. Non-statutory firing costs agreed in collective bargaining and putting more emphasis on the advance notification of dismissals rather than on procedural obstacles to layoffs, unemployment benefits of rather short duration and allowing for in-work benefits, minimum wages differentiated by age, are good examples of the kind of institutions which could provide sufficient insurance to workers without precluding structural reforms and without yielding high unemployment rates. Many current labour market institutional arrangements in the West have proven to be ill-suited to cope with structural reallocation and should not be imposed on the Central and Eastern European countries. The German unification episodes is particularly revealing as to the adverse effects of exporting to countries undergoing major structural change collective bargaining institutions which do not allow sufficient wage dispersion, notably precluding wage differentials from reflecting underlying differentials in labour productivity.

Greater investment in education will in the long-term also payoff in terms of reducing the social costs of sectoral change. In particular, the rather narrow base of qualifications attained by vocational training schemes in the CEE countries hinders the transferability of human capital across jobs and occupations. Emphasis should therefore be put on general skills mainly in the field of secondary education. Needless to say, these are long-term investment. EU conditionality can play an important role in extending the time-horizon of decision-makers in the accession countries.

## **6. Policies coping with regional unemployment differentials**

Candidate countries are characterised by marked regional disparities, to a large extent replicating the rural/urban divide, in the allocation of unemployment and job opportunities. Unemployment, notably long-term unemployment, has a marked regional dimension also among

current EU Members, which may suggest that shocks associated with the enlargement may also be concentrated in specific regions.

The accession process will offer new opportunities to the Central and Eastern European countries to reduce regional imbalances, notably in terms of enhanced flows of foreign direct investment (FDI). However, the Southern enlargement episode suggests that FDI tend to be concentrated in urban areas and indeed EU Structural Funds played in that case a very important role in contributing to capital accumulation, mainly in terms of large infrastructures, in the poorest regions of Spain. Empirical evidence suggests that positive externalities arising from improvements in the stock of public capital are limited and can be felt only over the long run. Thus, capital inflows are in the short term quite unlikely to reduce labour market imbalances, while they can at early stages of the enlargement process even contribute to their widening.

Against this background, regional labour mobility will initially play a very important role as a regional re-equilibrating factor. In particular, responsiveness of wages to interregional productivity differentials and some degree of mobility of workers across regions will be required.

This part of the report argues in favour of measures promoting the regional mobility of workers, such as mobility-enhancing wage subsidies to firms and workers (e.g., mobility loans and grants or tax deductions offered to workers changing residence). It also suggests that improvements in the transportation network have the potential to reduce significantly unemployment differentials. Given the small scale of many countries in the region, inter-regional labour mobility can indeed be to a large extent accommodated via commuting flows, rather than changes in residence. Finally, another key recommendation developed in the report is not to force the centralisation in the East of the de-centralised bargaining structures which have prevailed so far. This does not preclude the achievement of greater co-ordination in collective bargaining, which can be valuable in reducing the inflationary pressures associated with the accession and signs of over-heating in some local (e.g., some of the country capitals) labour markets.

## **7. Regulating migration flows from the candidate countries**

As stressed above, convergence of Central and Eastern Europe to the income per capita levels prevailing in the EU will be a fairly long process. Thus, the enlargement process will be associated with some East-West migration, particularly taking account of the fact that some

East-West borders involve the richest regions of the EU. Given the large differences in factor endowments, trade will exert only moderate pressures for East-West wage convergence in the interim period. Albeit relatively small in terms of the Western populations and workforces, such migration flows, if regionally concentrated, may create problems of social cohesion in some local labour markets.

As documented in the report, transitional restrictions to labour mobility were adopted in the case of the Southern enlargement of the EU. In particular, in the case of the Portuguese and Spanish accession to the EU, restrictions to labour mobility from the acceding countries remained for several years until the completion of the Single Market in 1991. These restrictions turned out to have a rather small effect on migration flows, since during the transition period the acceding countries were experiencing an economic expansion with booming labour markets. When the restrictions were lifted in 1991, migration flows did not increase significantly. However, income differentials were not as large as those existing between EU countries and the current candidates for accession.

## **8. Policies promoting income convergence**

Differences in incomes per capita are the driving force behind potential labour market tensions associated with Eastern Enlargement. Short-term policies to mitigate adverse implications of sectoral and regional adjustment should therefore be complemented by measures promoting a faster income convergence between the EU and the CEE countries.

Post-war experience in Europe shows, that the integration of the markets for goods, capital and labour enhances growth and the convergence of per capita incomes across countries. Different measures of convergence found more significant trends for convergence and higher convergence rates within EU Members than across the whole spectrum of European countries (including also countries not belonging to the EU). Moreover, there is evidence that the density of trade links is positively correlated with income convergence. As discussed above, the potential for trade and capital mobility between the EU and the CEE countries has not been fully exploited yet. Both, the EU and the CEE countries should therefore pursue stronger market integration in order to promote the convergence of per capita incomes.

A credible agenda for accession is indispensable to promote foreign and domestic investment, and hence convergence of per capita incomes. If credibility is questioned economic agents in both the CEECs and the EU may refrain from adjusting completely to the current state of in-

tegration, because the costs of investments in production and restructuring would not be recovered if integration failed to progress apace. In particular, foreign direct investment is affected by uncertainty on the timing and occurrence of accession.

National economic policies can also play an important role in the convergence process. Analyses of the growth experience across countries in this report (and in a number of studies reviewed in the report) point out, that (i) the quality of institutions and the enforcement of the rule of law, (ii) macroeconomic stability in terms of inflation and fiscal balance, (iii) the structure of public expenditure, and (iv) the development of human capital are - beyond the openness to trade and factor movements - the main strategic factors affecting long-term growth. Indeed, the different growth record of the CEE countries in the post-transition period can itself be attributed to a large extent to differences in institution building, law enforcement and macroeconomic stability. In particular, the size of the informal sector and corruption indicators negatively affect growth in the CEE countries.

While the size of government consumption in general has a negative impact, public infrastructure investments as well as social expenditures foster growth rates significantly. The necessary control of budget balance in the CEE countries should therefore not jeopardise investments in public infrastructure and social expenditure. Social expenditures can play an important role in easing structural adjustment, and hence promoting growth and convergence. As compulsory contributions rates are already too high, a broader coverage of safety nets in these countries can only be achieved by increasing their efficiency in targeting low-income groups and in reducing inequality without discouraging labour market attachment.

Although, indicators of education attainments of the workforce in the CEE countries suggest that their human capital endowments are high relatively to their income levels, too much emphasis has been put in the past to narrowly based vocational education. Thus human capital endowments developed under central planning have been significantly devalued in the course of transition and need to be adapted to the new economic environment in order to promote growth and convergence. The simulations produced in the second part of the report suggests that larger enrolments in general secondary education have the potential to significantly speed up the income convergence process.

## Synthèse

Le but de cette étude est d'une part l'analyse de l'impact de l'élargissement à l'est sur l'emploi, les salaires et la distribution des revenus dans l'UE actuelle, et d'autre part l'évaluation des options politiques qui pourraient augmenter le potentiel de création nette d'emplois et modérer les effets indésirables de l'intégration en matière de distribution. L'analyse se concentre sur trois principales dimensions de l'intégration économique: i) le commerce de biens et de services, ii) les migrations de travailleurs et iii) les mouvements de capitaux.

Bien que les écarts de revenus par habitant et la disparité de dotations en facteurs entre l'UE et les PECO (Pays d'Europe Centrale et Orientale) persisteront pendant des dizaines d'années, il est peu probable que la disparition des obstacles aux échanges commerciaux et à la mobilité des facteurs crée de graves tensions sur les marchés du travail de l'UE. Les PECO sont des économies de taille modeste caractérisées par un commerce extérieur et des flux de capitaux trop faibles pour affecter les prix sur le marché communautaire des biens et, par conséquent, les salaires relatifs et l'emploi dans l'UE. Comme le processus de convergence des revenus par habitant dans les PECO vers les niveaux dominants dans l'UE sera relativement lent, les flux migratoires augmenteront certainement après l'introduction de la libre circulation de travailleurs. Les résultats pointent vers une immigration nette attendue de 335 000 personnes, dont 35% travailleurs selon l'expérience antérieure. On peut en conclure que les craintes d'un afflux massif d'immigrés en provenance des PECO dans l'Union après l'introduction de la libre mobilité des travailleurs ne semblent pas fondées. Bien que l'élargissement à l'Est n'affectera pas les salaires et l'emploi au niveau agrégé, le commerce et les mouvements de facteurs pourraient avoir un impact non négligeable dans les régions frontalières des PECO et dans des secteurs spécifiques plus exposés à la pénétration d'importations en provenance d'Europe centrale et orientale. Ces effets distributifs de l'adhésion pourront être d'autant plus sensibles que, souvent, les institutions d'aide sociale d'Europe de l'Ouest ne facilitent pas la mobilité des travailleurs entre secteurs et entre régions.

Le rapport comporte deux parties. La première analyse l'impact attendu de l'élargissement à l'Est sur les échanges commerciaux, les migrations et les mouvements de capitaux, et leurs implications sur l'emploi et les salaires dans les membres actuels de l'UE. La seconde partie du rapport évalue l'ensemble des politiques qui pourraient réduire les effets indésirables de l'élargissement et simultanément augmenter le potentiel de création d'emplois. La possibilité

d'une harmonisation des institutions des marchés du travail des PECO et des membres de l'UE est également discutée.

## Première Partie

Les principales conclusions de la première partie concernent :

- les disparités initiales de revenus et de dotations en facteurs entre l'UE et les PECO, et les perspectives de convergence ;
- l'impact de la disparition des barrières commerciales sur les salaire, l'emploi et la distribution des revenus à l'Ouest ;
- l'impact de l'intégration des marchés de capitaux à l'Est et à l'Ouest;
- l'impact de l'ouverture des marchés du travail de l'UE aux migrations en provenance des PECO.

### 1. Écarts de revenus et perspectives de convergence

Les conditions économiques à la veille de l'élargissement à l'Est sont caractérisées par de fortes disparités de revenus par habitant entre les membres actuels de l'UE et les pays candidats, phénomène qui s'explique par les différences de dotation en facteurs de production et les écarts de productivité des facteurs. Avec des revenus par habitant dans les PECO atteignant un dixième, mesuré en taux de changes courants, et un tiers, mesuré en parité de pouvoir d'achat (PPP), des niveaux respectifs des membres actuels de l'UE, l'écart est beaucoup plus prononcé que lors des précédents élargissements : Cependant, la variance des niveaux de revenus au sein des PECO est élevée : les niveaux de PNB par habitant varient entre 5% et 40% selon les taux de changes courants, et entre 20% et 60% en PPP, par rapport aux niveaux de l'UE actuelle.

L'écart de revenu correspond à une différence importante de dotation en capital physique et humain. Les stocks de capital physique n'atteignent que 10% des niveaux moyens de l'UE. La dotation en capital humain, mesurée au moyen d'indices formels tels que le taux de scolarisation et le nombre moyen d'années de scolarisation, est également moins élevée que pour la plupart des membres de l'UE. En outre, il est prouvé que la qualité de l'enseignement est infé-

rieure aux standards moyens de l'UE. Toutefois, la dotation en capital humain des PECO est élevée en comparaison à d'autres pays aux niveaux de revenu comparable.

Bien que les PECO soient de petites économies en termes de production et de stocks de capital, leur population active correspond à 30% de celle de l'UE actuelle. Les niveaux de salaires moyens atteignent environ un dixième en taux de changes courants et un quart en PPP des niveaux de l'UE. Ainsi, les informations disponibles sur la dotation et les prix des facteurs de production indiquent que les PECO sont relativement riches en facteur travail par rapport à l'UE, tandis que l'UE est relativement riche en capital physique par rapport aux PECO. Toutefois, l'écart important de revenu par habitant ne peut être seulement attribué à des différences en dotation de facteurs. La productivité des facteurs de production est beaucoup plus basse que celle de l'UE, ce qui s'explique par des différences de technologies, le système institutionnel et d'équipement en infrastructures publiques.

Bien que la théorie économique ne fournisse pas de réponse définitive à la question de la convergence des revenus et des dotations en capital des pays pauvres avec ceux des pays riches, différentes mesures de convergence soulignent que les revenus par habitant des membres actuels de l'UE ont convergé tout au long de la période d'après-guerre. Cependant, la convergence est un processus lent. Une extrapolation des taux de convergence observés dans l'UE indique que l'écart de revenus diminue de moitié sur environ 30 ans. Les performances de croissance des PECO après le point bas de la récession causée par la transition ne laissent pas supposer que la convergence sera plus rapide dans ce cas. Ainsi, tout scénario politique réaliste doit admettre que le différentiel de revenus persistera des décennies d'années plutôt que seulement quelques années. Toutefois, il est primordial d'accorder la priorité aux politiques favorisant la croissance dans les PECO afin de limiter les pressions sur le marché du travail de l'UE consécutives à l'intégration économique.

## **2. L'impact des échanges commerciaux**

Le commerce des biens et des services est actuellement la dimension la plus achevée de l'intégration économique. Exception faite de l'agriculture, les droits de douanes et les contingents en matière de commerce entre l'UE et les pays candidats ont quasiment disparu. L'adhésion des PECO à l'UE modifiera les conditions commerciales actuelles, principalement par l'intégration de leurs économies à la Politique Agricole Commune, l'harmonisation des standards de qualité des produits et les règles de responsabilité, et en ouvrant les marchés publics de l'UE aux PECO. Pendant la transition et l'intégration, le commerce entre l'UE et les

PECO a connu une croissance importante : entre 1988 et 1998, les exportations des pays de l'UE vers les PECO ont été multipliées par 6,5 et les importations de l'UE en provenance des PECO par 4,5. Cependant, le potentiel commercial entre l'UE et les PECO n'est pas encore totalement exploité, en particulier par les pays jusqu'alors moins concernés, à savoir le Portugal, la France, et le Royaume-Uni. Les exportations de l'UE vers les PECO n'atteignaient en 1998 que 50% des volumes d'exportations naturels entre les membres de l'UE dotés de caractéristiques similaires. Ce rapport s'élevait à 40% pour les importations. On prévoit un doublement de l'excédent commercial de l'UE avec les PECO suite à l'augmentation des flux de capitaux dirigés vers ces pays. Bien que les études empiriques montrent que les volumes commerciaux des pays de l'UE avec d'autres Etats Membres sont entre 20% et 30% plus élevés qu'avec les autres pays n'appartenant pas à l'Union, il est important de noter que les conditions actuelles de commerce avec les PECO sont aujourd'hui déjà quasi identiques à celles du commerce intra-zone. Ainsi, l'impact futur de l'adhésion sur le potentiel commercial sera probablement assez modéré.

Selon les théories du commerce, l'intégration d'économies caractérisées par de fortes différences en dotations de facteurs engendre des bénéfices importants en terme de revenus et de rente pour le consommateur au niveau agrégé, mais les gains et les pertes sont répartis de manière inégale entre les différents facteurs de production. Plus précisément, l'intégration des PECO dans les marchés de biens et services de l'UE pourrait affecter les salaires et l'emploi par l'intermédiaire de l'augmentation des importations de biens riches en capital travail et des exportations de biens riches en capital physique et humain, ce qui augmenterait le prix relatif du capital physique et du capital humain et entraînerait une diminution des salaires des travailleurs non qualifiés. En effet, les échanges commerciaux actuels entre l'UE et les PECO traduisent nettement les différences de dotation de facteurs et de savoir-faire technologique. L'UE exporte vers ces pays des biens produits avec une forte intensité de capital physique et de main d'oeuvre qualifiée et importe des biens riches en facteur travail. Cependant, deux arguments soulignent que ces échanges n'ont pas d'impact macro-économique sur les salaires relatifs et l'emploi dans l'UE actuelle, même dans les pays ayant les échanges les plus importants avec les PECO :

- 1) en dépit de sa dynamique réelle, le volume des échanges commerciaux est trop faible pour affecter les prix dans des économies ouvertes. La part des exportations de l'UE vers les PECO et des importations de l'UE en provenance de ces pays est relativement modeste, puisqu'elle n'atteint que 1% du PNB. Même dans les pays les plus touchés, ce rapport

n'excède pas 4% du PNB. Pour avoir un effet sur les salaires relatifs dans des économies ouvertes, les PECO devraient devenir des fournisseurs marginaux sur le segment des biens au fort contenu en facteur travail, ce qui n'est pas probable au vu des chiffres actuels. Une analyse de l'impact du commerce sur les salaires, l'emploi et la mobilité des travailleurs fondée sur des performances individuelles sur le marché du travail de quelques pays (Autriche, Allemagne et Suède) confirme cette thèse.

- 2) un immense écart en termes de valeur unitaire entre les exportations de l'UE vers les PECO et les importations de l'UE en provenance de ces pays indique que les PECO ne sont pas spécialisés sur les mêmes gammes de produits que les producteurs de l'UE. Mais si l'Union et les PECO se spécialisent sur des biens totalement différents, alors tous les facteurs de production bénéficient de l'augmentation du commerce et les salaires relatifs ne sont pas affectés.

Le fait que le commerce entre l'UE et les PECO soit trop faible pour engendrer des évolutions macro-économiques en matière de salaires relatifs et d'emploi n'exclue pas la possibilité que des secteurs et des régions spécifiques soient touchés si les coûts de transport sont élevés et la mobilité du travail faible. La proximité géographique joue un rôle primordial pour le commerce entre l'UE et les PECO. Les trois quarts du commerce de l'UE avec les PECO sont réalisés par les pays frontaliers, à savoir l'Autriche, l'Allemagne, la Grèce, l'Italie et la Finlande. Dans ces pays, la part du commerce avec les PECO au sein du commerce total et du PNB est beaucoup plus élevée que dans les autres pays de l'UE. De plus, des données concernant le commerce régional de l'Autriche et l'Allemagne indiquent qu'au sein de ces pays les importations et les exportations avec les PECO sont concentrées dans les régions frontalières. Si le commerce avec les PECO a un quelconque impact sur les salaires et l'emploi dans l'UE actuelle, c'est avant tout dans ces régions qu'il se fera sentir.

Au niveau sectoriel, la part relativement élevée du commerce avec les PECO dans des secteurs tels que l'habillement et l'industrie de la chaussure laisse à penser que les salaires et l'emploi des travailleurs non qualifiés pourraient dans ce cas être affectés négativement, tandis que le secteur du textile à plus haute valeur capitalistique bénéficie d'un important excédent commercial vis-à-vis des PECO. En outre, les ouvriers du bâtiment de certaines régions d'Allemagne pourraient souffrir des importations de services en provenance des PECO. A l'inverse, on peut observer d'importants excédents commerciaux du côté de l'UE dans les industries à haute valeur capitalistique et à haute valeur en capital physique telles que les équipements de communication, les instruments de mesure, les ordinateurs et l'automobile. Il

est important de souligner que ces excédents sont combinés à une part croissante de commerce intra-branche. D'importantes différences de valeur unitaire indiquent que le commerce intra-branche est de type vertical, à savoir, que les activités à haute valeur capitaliste et humaine sont situées dans l'UE et les activités à forte intensité de travail dans les PECO. Une division croissante des processus de production entre l'UE et les PECO pourrait affecter les salaires et l'emploi des non qualifiés. Mais, les volumes commerciaux sont trop faibles pour engendrer des effets au-delà de quelques régions spécifiques.

On suppose souvent que l'excédent commercial vis-à-vis des PECO créera des emplois dans l'UE. En effet, les dix pays candidats avaient un déficit commercial total d'environ USD 25 Milliards avec l'UE en 1998. Le déficit commercial a augmenté de manière continue depuis l'ouverture de ces pays au commerce international et le lancement des réformes économiques. En outre, l'augmentation des transferts de capitaux consécutive à l'adhésion de ces pays à l'UE se reflétera dans des déficits croissants de la balance commerciale. Le déficit de la balance commerciale des PECO pourrait doubler suite à l'adhésion et à l'ajustement des échanges commerciaux. L'analyse du travail incorporé dans les biens échangés indique qu'un gain net de plusieurs dizaines de milliers d'emplois est à attendre du commerce avec les PECO. Toutefois, il ne faut pas oublier que l'excédent commercial est financé par un déficit de la balance des capitaux, à savoir un transfert de revenu de l'UE vers les PECO.

Les pays du Sud de l'Union émettent une crainte supplémentaire, craignant de n'être indirectement touchés par l'élargissement, puisque les autres pays de l'UE pourraient substituer en partie le commerce avec les PECO aux échanges avec les pays du Sud. Trois résultats soulignent que ces craintes ne sont pas fondées : premièrement, le niveau et le taux de croissance des exportations des membres de l'Union à niveau de revenus relativement bas vers les principaux partenaires commerciaux de l'UE n'ont pas diminué au cours de la transition et de l'intégration. Deuxièmement, la similitude des importations de l'UE en provenance des PECO avec celles en provenance des pays du sud de l'UE n'est que légèrement supérieure à celles en provenance d'autres pays industrialisés. Troisièmement, d'importantes différences de valeur unitaire entre les importations de l'UE en provenance des PECO et les importations de l'UE en provenance des pays du sud de l'UE indiquent que les producteurs des pays candidats ne sont pas en compétition avec les Etats-Membres du sud de l'UE sur des segments de marché identiques.

Tout bien considéré, l'impact du commerce avec les PECO sera probablement circonscrit aux pays frontaliers, et se concentre au sein de ces pays sur les régions frontalières.

### 3. L'impact des mouvements de capitaux

Les barrières restreignant les investissements directs étrangers et les autres mouvements de capitaux ont pour la plupart déjà disparu. Cependant, certaines failles subsistent dans la régulation et la supervision des marchés de capitaux et de systèmes bancaires de ces pays. Du point de vue des membres actuels de l'UE, les flux de capitaux vers les PECO sont négligeables : le flux annuel de capital d'environ USD 15 Milliards vers les PECO correspond à 0,15% du PIB et 0,8% de l'investissement fixe total dans l'Union en 1998. Cette part est trop faible pour influencer les taux d'intérêt et les revenus de facteurs dans des économies de marchés de capitaux ouverts. Toutefois, du point de vue des pays candidats, les flux annuels de capitaux contribuent de manière significative à la formation du capital, puisqu'ils représentent 5% du PNB et plus de 20% de l'investissement fixe total. Les entrées de capitaux étrangers contribuent considérablement à la liquidité des marchés de capitaux nationaux des PECO et ont par conséquent un impact substantiel sur la croissance, les taux d'intérêt et les salaires.

Les flux de capitaux étrangers vers les PECO se font surtout sous la forme d'investissements directs (IDE). L'apport net cumulé d'IDE dans les PECO s'est élevé à environ USD 50 Milliards entre 1991 et 1997, tandis que l'apport cumulé des investissements de portefeuilles a atteint USD 16 Milliards sur la même période. En particulier, les flux d'investissements de portefeuilles sont bien en-dessous de ceux d'autres pays aux niveaux de revenu comparables, ce qui témoigne du manque actuel de maturité des marchés boursiers des PECO.

Les flux de capitaux varient énormément selon les pays et selon les années, si bien que les flux de capitaux futurs vers les PECO sont difficilement estimables. L'expérience des élargissements précédents a montré que l'adhésion à l'UE peut augmenter de manière notable les flux de capitaux au moins pendant une période transitoire. En outre, nos projections pour les potentiels de commerce indiquent que les flux de capitaux vers les PECO sont actuellement bien en-dessous du niveau normal des pays à revenu comparable, puisque les flux de commerce et de capitaux sont normalement d'un montant similaire. Les flux de capitaux pourraient doubler à la suite de l'adhésion à l'UE et surtout de l'harmonisation des règles de régulation des marchés financiers. Même si une telle augmentation des flux en provenance de l'UE vers les PECO est trop faible pour affecter les taux d'intérêt et les revenus relatifs des facteurs dans l'UE, elle pourrait contribuer fortement à la croissance et à la convergence des PECO.

On craint souvent que la production riche en facteur travail ne soit délocalisée de l'UE vers les PECO par l'intermédiaire d'investissements directs étrangers. Toutefois, une analyse détaillée de la structure de l'investissement étranger direct ne confirme pas ces craintes. Presque la moitié des IDE de l'UE dans les PECO sont réalisés dans les secteurs non exposés (à savoir services publics, moyens de communication, intermédiation financière et autres services). En dépit de quelques effets mineurs sur les maisons mères en raison du besoin accru de gestion, ces investissements n'affecteront pas l'emploi ou les salaires dans les branches respectives des pays d'origine. Dans les secteurs exposés, la structure des investissements ainsi que les sondages d'entreprises montrent que l'accès au marché est la raison principale des investissements. Cependant, environ un cinquième de l'investissement étranger est réalisé dans les industries pour lesquelles le faible coût du travail joue un rôle important et la part du travail non qualifié est relativement élevée. C'est le cas pour l'habillement, l'industrie de la chaussure, les machines électriques, les produits en caoutchouc et en plastique. Dans ces branches, il existe un écart important d'intensité capitalistique de la production entre la maison mère et leurs filiales à l'étranger. En outre, on note une forte corrélation entre les IDE dans ces branches et la part croissance du commerce intra-branche, ce qui témoigne de la division croissante des processus de production en activités riches en capital humain du côté de l'UE et en activités riches en facteur travail du côté des PECO.

De manière générale, seule une faible partie des IDE est motivée par les bas salaires des PECO et se fait au détriment de la production nationale mais la majorité des IDE a pour but la pénétration des marchés locaux. Soit ces investissements sont neutres pour l'emploi et les salaires dans les pays d'origine ou alors sont complémentaires du commerce et ont en général un impact positif sur l'emploi et les salaires dans les entreprises et les branches concernées. Cependant, certains IDE qui favorisent la division des processus de production en activités riches en capital humain du côté de l'UE et en activités riches en facteur travail du côté des PECO affectent les salaires et l'emploi des travailleurs non qualifiés dans les entreprises et les branches concernées. Notons que ces branches connaissent de larges excédents commerciaux avec les PECO, de telle sorte que les effets indésirables des IDE sur les salaires et l'emploi des travailleurs non qualifiés pourraient être compensés par l'augmentation des exportations.

#### **4. L'impact des flux migratoires**

Dix ans après la chute du mur, l'immigration des travailleurs reste en grande partie soumise à des restrictions du côté de l'UE. Les Accords de l'Europe (AE) ne remettent pas en cause la compétence de chaque membre de l'UE en matière de régulation des mouvements migratoires

de personnes et de travailleurs en provenance des PECO. Au-delà d'une certaine immigration saisonnière et temporaire, l'immigration de travailleurs de ces pays reste très limitée. La disparition des obstacles à l'immigration des travailleurs est par conséquent la dimension économique qui provoquera les changements les plus drastiques, si les PECO adhèrent à l'UE. Les stocks actuels de travailleurs et de résidents en provenance des PECO dans l'UE reflètent clairement les restrictions à la mobilité du travail et sont presque négligeables au regard du large écart de revenu par habitant. Le stock de résidents étrangers qui ont immigré des PECO vers l'UE est estimé à environ 850 000 personnes, le stock de travailleurs étrangers à environ 300 000. Ce dernier chiffre inclut l'équivalent temps-plein des travailleurs temporaires et saisonniers. Les stocks de résidents et de travailleurs en provenance des PECO représentent respectivement 0,3% de la population de l'Union et 0,2% de sa main-d'œuvre. Environ 80% des immigrés des PECO résident en Autriche ou en Allemagne. En Autriche, le stock de travailleurs en provenance de ces pays s'élève à 1,1%, et en Allemagne à 0,5% de la main-d'œuvre. La majorité de ceux-ci s'ont entrés dans l'Union avant 1993. Depuis 1993, l'immigration nette en provenance des PECO vers l'UE a été négligeable.

Les conclusions précédemment évoquées ne permettent pas de conclure que le commerce et les mouvements de capitaux puissent contribuer à l'égalisation des prix des facteurs, de telle sorte qu'un écart important entre les salaires persistera probablement, les motivations monétaires à l'immigration restant par conséquent élevées après l'adhésion. Cependant, les migrations internationales sont limitées par des coûts de transaction élevés et les capacités d'absorption du marché du travail des pays d'accueil. Dans cette étude, l'estimation du potentiel migratoire se fonde sur un modèle appliqué à l'Allemagne entre 1967 et 1998, qui prend explicitement en considération la formation des attentes individuelles. Ce modèle permet d'estimer le potentiel de long-terme de personnes originaires des PECO, ainsi que la vitesse d'ajustement du potentiel. Les variables les plus importantes sont :

- les différences de revenu par habitant
- le taux d'emploi dans les pays d'accueil
- le taux d'emploi dans les pays d'origine

En outre, les restrictions institutionnelles sur les mouvements migratoires et les variables qui expliquent les différences de long terme caractérisant l'origine nationale des mouvements migratoires, telles qu'une langue commune et les indicateurs de niveau de vie, se sont avéré

avoir un impact significatif dans la région. Enfin, notre étude montre que la propension à émigrer d'une population diminue à mesure que s'élève la proportion de ses individus qui ont déjà émigré. Les effets de réseaux créés par le noyau des immigrants, influencent certes la distribution des nouveaux immigrants entre les pays, mais ne conduit pas à une augmentation permanente des flux.

Toutefois, nos estimations ne peuvent pas prendre en compte tous les facteurs qui influencent les flux migratoires. De plus, l'évolution future de variables clés comme la croissance du PIB et l'emploi est incertaine. C'est pourquoi ces estimations doivent être considérées comme donnant un ordre de grandeur des flux migratoires futurs, et ne doivent pas être comprises comme des prévisions exactes.

Selon les résultats de notre étude, on estime que le nombre de résidents étrangers en provenance des PECO dans l'UE-15 augmentera d'environ 335 000 personnes par an, suite à l'introduction de la libre circulation des travailleurs. Ce chiffre devrait retomber sous les 150000 personnes en une dizaine d'années. La part maximale de la population originaire des PECO résidant en UE-15 sera atteinte au bout de 30 ans, et représentera 3,5% de la population totale de l'UE-15. Ces projections sont basées sur l'hypothèse d'une convergence du PIB par habitant de l'ordre de 2% par an, et un taux de chômage inchangé en Allemagne et dans les PECO. Ces estimations soulignent que, compte-tenu de l'important écart de revenus, la population étrangère augmentera de façon importante dans la plupart des pays concernés de l'UE-15. Toutefois, cette augmentation sera répartie sur plusieurs dizaines d'années, en raison de coûts de transaction élevés des mouvements migratoires ainsi que d'une capacité limitée d'absorption des marchés du travail dans les pays d'accueil. Naturellement, ces estimations se fondent sur le fait que les expériences des mouvements migratoires de l'Europe d'après-guerre peuvent être appliquées aux PECO et que les déterminants des mouvements migratoires ont été correctement analysés. Toutefois, les craintes d'un afflux massif dans l'UE d'étrangers venant des PECO semblent infondées.

La théorie économique prévoit que les migrations augmentent le bien-être agrégé, à la fois dans les pays d'origine et les pays d'accueil. Tandis que les facteurs complémentaires à la main d'œuvre immigrée sont supposés bénéficier des migrations, les facteurs qui peuvent être remplacés par la main d'œuvre immigrée peuvent être négativement affectés par la situation. En particulier, les non qualifiés pourraient être les grands perdants de ces flux migratoires en termes de salaires et d'emploi. Les résultats de ce rapport ainsi que ceux de nombreuses autres études soulignent que les effets indésirables des migrations se concentrent sur les ouvriers.

Toutefois, l'impact des migrations sur les performances des ouvriers nationaux est beaucoup plus faible qu'on ne le croit souvent. L'explication réside dans le fait que les immigrés se dirigent vers les branches et les régions prospères et que la production et l'investissement s'ajustent en outre à l'augmentation de l'offre de travail. Selon les résultats de notre étude, une augmentation de la part des étrangers d'1% dans une branche diminue les salaires de 0,25% dans les régressions autrichiennes et de 0,6% dans les régressions allemandes par rapport à une situation d'absence de migration. En outre, l'augmentation de la part des immigrés augmente de façon significative les risques de licenciements et de mobilité du travail. Cependant, il est prouvé qu'une immigration de cette envergure n'a pas d'effet ou des effets négligeables sur l'emploi agrégé au niveau des branches et des économies dans leur ensemble. L'impact sur les cadres est légèrement positif ou neutre.

Cependant, l'impact des migrations pourrait être plus dispersé à travers les groupes de qualifications dans le cas d'une immigration en provenance des PECO que dans les cas traditionnels. Les niveaux formels d'éducation des immigrés venant des PECO sont étonnamment élevés. Toutefois, la structure de leur emploi montre que les étrangers venant des PECO sont employés dans les mêmes branches que les autres étrangers et très probablement, pour le même niveau de qualifications. De plus, des informations supplémentaires sur les performances sur le marché du travail des « Allemandes ethniques » venant des PECO (personnes possédant la nationalité allemande et résidant dans les PECO à la suite de modifications de frontières liées aux différentes guerres) montre que l'utilisation du capital humain acquis dans ces pays est extrêmement faible, même quand les immigrés possèdent de bonnes connaissances linguistiques. Ainsi, alors que les immigrés en provenance des PECO sont actuellement clairement en concurrence avec les ouvriers et les travailleurs non qualifiés pour les emplois dans les secteurs de production et de construction, ils pourraient devenir plus aptes à adapter leur qualifications à la demande des marchés du travail de l'UE à la suite de l'adhésion et ainsi, exercer une concurrence croissante aux travailleurs très qualifiés.

## Seconde Partie

Les principales recommandations faites dans le rapport concernent les quatre champs politiques suivants :

- politiques visant à modérer l'impact des transformations structurelles ;
- politiques favorisant la mobilité des travailleurs entre les régions ;
- disparition des obstacles aux migrations ;
- politiques favorisant la convergence des revenus.

### 5. Politiques visant à modérer l'impact sur l'ajustement sectoriel

La première partie du rapport conclut que l'intégration des PECO dans les marchés de biens, de capitaux et du travail de l'UE ne créera des tensions importantes sur les marchés du travail des membres actuels de l'UE que dans le cas des régions frontalières. Cependant, l'élargissement à l'Est affectera profondément le prix des biens et des facteurs dans les PECO, dans lesquels on prévoit une modification dans la structure de la production et de l'emploi des activités riches en ressources vers les activités riches en travail, ainsi que l'intensification du transfert d'emploi des secteurs primaire et secondaire vers le secteur tertiaire.

Afin de modérer les effets négatifs éventuels de l'élargissement à l'Est sur l'emploi et la distribution des revenus, les politiques économiques devront accompagner (plutôt que lutter contre) les transformations structurelles à la fois dans les PECO et dans les membres actuels de l'UE. Ces transformations sectorielles causées par le changement des modèles de spécialisation peuvent être accompagnées efficacement par des institutions de marché du travail et des systèmes de soutien au revenu flexibles. C'est l'une des leçons majeures à retenir des précédents épisodes d'élargissement. La différence frappante entre les dynamiques de chômage d'après adhésion de l'Espagne et du Portugal illustre bien, en particulier, les avantages, pour des nouveaux Membres de l'UE, d'institutions permettant le soutien au revenu et la protection de l'emploi, sans toutefois empêcher la mobilité du travail. Une protection du travail poussée en Espagne combinée à des allocations chômage relativement généreuses ont rendu la réabsorption du chômage plus difficile (de manière significative, de forts obstacles aux licenciements n'ont pas empêché qu'un nombre important de salariés se voient donner leur congé). La flexibilité dans les accords salariaux au Portugal a été un facteur clé du faible taux de chô-

mage dans ce pays suite à son adhésion à l'UE (et une telle modération salariale ne s'est pas reportée sur des flux massifs d'émigration !). L'expérience de la mise en place de l'ALENA (Accord de Libre-Echange Nord-Américain) montre également les avantages de marchés du travail flexibles, même à l'Ouest. Le libre-échange avec des pays comme le Mexique, dont le niveau de PNB par habitant par rapport à celui des Etats-Unis est comparable à celui des PECO par rapport à l'UE, a donné lieu à de fortes réallocations de travailleurs. Toutefois, elles n'ont pas impliqué une perte nette d'emplois, le marché du travail américain accompagnant ces chocs sans flux massifs et persistants de travailleurs vers l'inactivité.

C'est pourquoi il apparaît plus adapté de développer des institutions gérant les transformations structurelles, plutôt que s'y opposant totalement. L'accord, dans le cadre des négociations collectives, sur des coûts de licenciements non statutaires, des préavis de licenciement plutôt que obstacles procéduraux aux licenciements, ainsi que des allocations chômage de courte durée et permettant de cumuler temporairement une partie des prestations avec un salaire, sont de bons exemples du genre d'institutions qui pourraient accorder des droits suffisants aux travailleurs sans remettre en cause les transformations structurelles, ni provoquer des taux de chômage trop élevés. De nombreux arrangements institutionnels dans les marchés du travail occidentaux se sont avérés inadaptés pour la gestion des réallocations structurelles et ne doivent pas, par conséquent, être imposés aux PECO. L'expérience de la réunification allemande a tout particulièrement mis en évidence les effets négatifs de l'exportation, vers des pays soumis à des transformations structurelles importantes, de systèmes de négociation collective ne permettant pas une assez grande dispersion des salaires, empêchant ainsi les différences de salaires de refléter les différences de productivité du travail.

Enfin, un investissement plus important dans l'enseignement permettra à long terme de réduire les coûts sociaux du changement sectoriel. En particulier, le niveau assez bas des qualifications obtenues dans l'enseignement professionnel dans les PECO constitue un obstacle à la transférabilité du capital humain entre les emplois et les métiers. Il est par conséquent important d'accorder la priorité aux qualifications générales, surtout dans l'enseignement secondaire. Il s'agit bien évidemment d'investissements à long terme. La conditionnalité de l'UE peut jouer un rôle important dans l'élargissement de l'horizon des décideurs dans les pays candidats.

## **6. Politiques luttant contre les différentiels régionaux de chômage**

Les pays candidats sont caractérisés par de fortes disparités régionales, reproduisant en grande partie la division ville/campagne, dans l'allocation du chômage et des opportunités d'emploi. Le chômage, en particulier le chômage de longue durée, a également une dimension régionale dans les Membres actuels de l'UE, qui laisse à penser que les chocs nés de l'élargissement seront probablement eux aussi concentrés dans des régions spécifiques.

Le processus d'adhésion va offrir de nouvelles opportunités aux PECO de réduire les déséquilibres régionaux, notamment grâce à l'augmentation des investissements directs étrangers. Cependant, l'expérience de l'élargissement au Sud laisse supposer que les investissements directs étrangers ont tendance à se concentrer dans les zones urbaines et en effet les Fonds Structurels de l'UE ont joué, dans ce cas, un rôle très important contribuant à l'accumulation de capitaux, surtout en termes d'infrastructures, dans les régions les plus pauvres de l'Espagne. Cependant, les études empiriques montrent que les externalités positives nées de l'amélioration du stock de capital public sont limitées et ne peuvent être ressenties qu'à long terme. Ainsi, les entrées de capitaux ne réduiront probablement pas à court terme les déséquilibres régionaux du marché du travail, ils pourront même contribuer à leur renforcement dans les premières années du processus d'élargissement.

Dans ce contexte, la mobilité régionale du travail jouera initialement un rôle clé de rééquilibrage régional. Il est en particulier important de promouvoir une adaptation des salaires aux différentiels de productivités régionaux et de mettre en place des mesures d'encouragement à la mobilité des travailleurs entre les régions.

Cette partie du rapport plaide en faveur de mesures de promotion de la mobilité régionale des travailleurs, telles que des subventions à la mobilité pour les entreprises et les employés (par exemple des prêts de mobilité, des subventions ou des exemptions fiscales pour les employés changeant de lieu de résidence). Elle suggère également que l'amélioration des réseaux de transport pourrait également réduire les différences de taux de chômage de manière significative. Vu la taille relativement modeste des pays de la région, la mobilité interrégionale du travail pourrait être facilitée dans une large mesure par des flux de travailleurs pendulaires, plutôt que par des changements de lieux de résidence. Enfin, le rapport met en garde contre les dangers d'une centralisation forcée des structures de négociation dominant jusqu'à maintenant. Cela ne remet pas en cause d'arriver à une plus grande coordination des négociations collectives, qui peut être efficace pour réduire les pressions inflationnistes associées à

l'adhésion et à la surchauffe de certains marchés du travail locaux (en particulier dans les capitales).

## **7. Régulation des flux migratoires des candidates à l'adhésion**

Comme souligné précédemment, la convergence de l'Europe centrale et orientale avec les niveaux de revenus dominants dans l'UE va constituer un processus lent. Ainsi, l'élargissement sera associé à des pressions migratoires d'est en ouest, d'autant plus que certaines des régions frontalières de l'UE comptent parmi les plus riches de l'UE. Compte tenu de l'importance des différences de dotations en facteurs de production, le commerce n'exercera que des pressions modérées sur la convergence des salaires Est-Ouest pendant la période intermédiaire. Même s'ils sont faibles par rapport aux populations et aux mains-d'oeuvre occidentales, ces flux migratoires, s'ils se concentrent dans certaines régions, pourraient créer des problèmes de cohésion sociale sur certains marchés locaux.

Comme le rapport le rappelle, des restrictions transitoires à la mobilité du travail ont été adoptées dans le cas de l'élargissement au Sud de l'UE. Ces mesures ont été conservées pendant plusieurs années, en particulier pour le Portugal et l'Espagne, avant la mise en place du marché unique en 1991. Ces restrictions ont finalement eu un effet modéré sur les flux migratoires, puisque pendant la période transitoire, ces pays ont connu une expansion de leurs économies avec des marchés du travail en plein essor. Lorsque les restrictions ont été supprimées en 1991, les flux migratoires n'ont pas augmenté de façon significative. Toutefois, les différentiels de revenus n'étaient pas aussi importants que ceux qui existent actuellement entre les pays de l'UE et les candidats à l'adhésion.

## **8. Politiques favorisant la convergence des revenus**

Les différences de revenus par habitant constituent l'explication essentielle des tensions sur le marché du travail associées à l'élargissement à l'Est. Des politiques de court terme visant à amortir les effets négatifs de l'ajustement sectoriel et régional doivent donc être complétées par des politiques favorisant la convergence des revenus par habitant entre l'UE et les PECO.

L'expérience d'après-guerre en Europe montre qu'en soi l'intégration des marchés de biens, de capitaux et du travail favorise la croissance et la convergence des revenus par habitant entre les pays. Différentes mesures de convergence ont mis en évidence des trends de convergence plus accentués et des taux de convergence plus élevés parmi les membres de l'UE que parmi d'autres Etats européens. En outre, il est prouvé que la densité des liens commerciaux

est corrélée positivement avec la convergence des revenus par habitant. Comme précédemment mis en évidence, le potentiel des échanges commerciaux et des facteurs de production entre l'UE et les PECO n'est pas encore totalement exploité. L'Union et les PECO devraient donc chercher à renforcer l'intégration de leurs marchés pour promouvoir la convergence des revenus par habitant.

Un agenda crédible pour l'adhésion est un facteur primordial pour promouvoir l'investissement national et étranger, et par conséquent la convergence des revenus par habitant. Si la crédibilité est mise en doute, les agents économiques à la fois dans les PECO et l'UE peuvent ne pas s'adapter totalement à l'état actuel de l'intégration, puisque les coûts d'investissements dans l'appareil productif et la restructuration ne seraient pas amortis si l'intégration n'évoluait pas au rythme prévu. Les investissements directs étrangers sont particulièrement sensibles à l'incertitude entourant l'adhésion.

Les politiques économiques nationales peuvent également jouer un rôle important dans le processus de convergence. Les analyses des épisodes de croissance dans différents pays contenues dans notre étude (ainsi que d'autres) soulignent que (i) la structure et l'application des règles institutionnelles, (ii) la stabilité macro-économique en termes d'inflation et d'équilibre budgétaire, (iii) la structure des dépenses publiques, et (iv) le développement du capital humain sont - outre l'ouverture du commerce et la mobilité des facteurs de production - les principaux facteurs stratégiques ayant un impact sur l'investissement et la croissance. Ainsi, les différences de taux de croissance des PECO dans la période suivant la transition peuvent en grande partie s'expliquer par des différences dans la mise en place d'institutions, l'application des lois et la stabilité macro-économique. La taille du secteur informel et les indicateurs de corruption en particulier sont négativement corrélés à la croissance dans les PECO.

Alors que l'importance de la consommation publique a en général un impact négatif, les investissements en infrastructures publiques tout comme les dépenses sociales favorisent la croissance de manière significative. Le nécessaire contrôle de l'équilibre budgétaire ne doit donc pas mettre en danger les investissements en infrastructures publiques et les dépenses sociales. Les dépenses sociales peuvent en effet jouer un rôle important pour faciliter les ajustements structurels et ainsi favoriser la croissance et la convergence. Le taux de contributions obligatoires étant déjà trop élevé dans ces pays, une couverture plus large des filets de sécurité ne peut être obtenue qu'en renforçant leur efficacité, par leur réorientation vers les plus démunis pour diminuer les inégalités sans décourager l'attachement au marché du travail.

Même si les indicateurs formels de niveaux d'éducation dans les PECO témoignent de leur dotation élevée en capital humain vu leur niveau de revenus, une importance trop grande a été accordée, dans le passé, à un enseignement professionnel de base trop étroite. Ainsi les dotations en capital humain développées pendant la période de planification centralisée se sont dégradées au cours de la transition et doivent être adaptées au nouvel environnement économique, afin de promouvoir la croissance et la convergence. Les simulations réalisées dans le seconde partie du rapport laissent à penser qu'une scolarisation plus élevées dans le système d'enseignement secondaire général pourrait accélérer le processus de convergence des revenus.

## Zusammenfassung

In dieser Studie werden die Effekte der Osterweiterung für Beschäftigung, Löhne und Einkommensverteilung in den gegenwärtigen Mitgliedsstaaten der Europäischen Union (EU) analysiert sowie die politischen Optionen für eine Erweiterung des Beschäftigungspotentials und die Verringerung unerwünschter Verteilungswirkungen eines Beitritts der Mittel- und Osteuropäischen Länder evaluiert. Gegenstand der Analyse sind drei zentrale Dimensionen der ökonomischen Integration: (i) der Handel von Gütern und Dienstleistungen, (ii) die Migration von Arbeit und (iii) die Mobilität von Kapital.

Obwohl ein hohes Gefälle in den Pro-Kopf-Einkommen und den Faktorausstattungen zwischen der EU und den Mittel- und Osteuropäischen Ländern (MOEs) auf Jahrzehnte anhalten wird, ist es nicht wahrscheinlich, dass die Beseitigung der verbleibenden Barrieren für Handel und Faktormobilität starke Spannungen auf den Arbeitsmärkten der EU hervorrufen wird. Aus ökonomischer Perspektive sind die MOEs eher kleine Länder, d.h. Handel und Kapitalverkehr zwischen der EU und den Beitrittskandidaten werden voraussichtlich keinen Einfluss auf die Güter- und Faktorpreise in der EU haben und folglich dort auch keine Effekte für die Beschäftigung und die Einkommensverteilung auf aggregierter Ebene nach sich ziehen. Da die Konvergenz der Pro-Kopf-Einkommen in den MOEs zu dem Einkommensniveau in der EU sich über lange Zeiträume erstrecken wird, dürfte die Migration nach Einführung der Freizügigkeit zunehmen. Die Nettoimmigration wird in dieser Studie auf rund 335.000 Personen nach einer angenommenen Einführung der Freizügigkeit im Jahre 2002 geschätzt. Nach Erfahrungen aus der Vergangenheit werden rund 35% dieser Personen Arbeitnehmer sein. Befürchtungen, dass die Arbeitsmärkte der EU nach Einführung der Freizügigkeit mit Einwanderern aus den MOEs überschwemmt werden, erweisen sich deshalb als unbegründet. Auch wenn sich die Osterweiterung der EU auf Löhne und Beschäftigung nicht auf aggregierter Ebene auswirken wird, so können Handel und Faktormobilität doch einen spürbaren Einfluss auf die Regionen an der unmittelbaren Grenze zu den MOEs sowie auf spezifische Sektoren, die mehr als andere der Importkonkurrenz aus den MOEs ausgesetzt sind, haben. Diese Verteilungseffekte des Beitritts können sich dadurch vergrößern, dass die Institutionen des Wohlfahrtsstaates in Westeuropa die Arbeitsmobilität zwischen den Sektoren und Regionen häufig nicht unterstützen.

Diese Studie setzt sich aus zwei Teilen zusammen: Im ersten Teil werden der mögliche Einfluss der Osterweiterung auf Handel, Migration und Kapitalmobilität sowie ihre Effekte für

## B

Beschäftigung und Löhne in den gegenwärtigen EU Mitgliedsländern analysiert. Im zweiten Teil wird untersucht, durch welche politischen Maßnahmen unerwünschte Verteilungseffekte der Osterweiterung reduziert und gleichzeitig ihr Beschäftigungspotential erhöht werden kann. Der Bedarf für eine Harmonisierung der Arbeitsmarktinstitutionen zwischen den Beitrittsländern und den EU Mitgliedern wird ebenfalls diskutiert.

## Teil A

Die wichtigsten Ergebnisse des ersten Teils der Studie beziehen sich auf folgende Aspekte:

- das anfängliche Gefälle zwischen der EU und den MOEs im Hinblick auf Einkommen und Faktorausstattungen sowie die Aussichten auf eine Konvergenz der Einkommen;
- die Effekte der Beseitigung von Handelsbarrieren für Löhne, Beschäftigung und die Einkommensverteilung;
- die Effekte einer Integration der Kapitalmärkte im Osten und im Westen,
- die Effekte der Öffnung der Arbeitsmärkte in der EU für die Migration aus den MOEs.

### 1. Das Einkommensgefälle und Aussichten auf Konvergenz

Die ökonomischen Bedingungen am Ausgangspunkt der Osterweiterung sind durch ein erhebliches Gefälle in den Pro-Kopf-Einkommen zwischen der EU und den Beitrittskandidaten charakterisiert, das auf Unterschiede in den Faktorausstattungen und den Faktorproduktivitäten zurückgeführt werden kann. Mit einem Pro-Kopf-Einkommen in den MOEs von rund einem Zehntel zu laufenden Wechselkursen und rund einem Drittel zu Kaufkraftparitäten des durchschnittlichen Niveaus der gegenwärtigen EU Mitglieder ist dieses Einkommensgefälle deutlich höher als in vergangenen Erweiterungsrunden. Allerdings ist die Varianz der Pro-Kopf-Einkommen hoch: Zu laufenden Wechselkursen variierte das Brutto sozialprodukt (BSP) pro Kopf zwischen den einzelnen Beitrittsländern von 5 bis 40 %, und zu Kaufkraftparitäten von 20 bis 60 % des durchschnittlichen Einkommensniveaus in der gegenwärtigen EU im Jahr 1997.

Dem Einkommensgefälle entsprechen deutliche Unterschiede in den Ausstattungen mit Kapital und Humankapital. Das Anlagevermögen der MOEs beträgt rund 10 % des Niveaus in

der EU. Die Ausstattung mit Humankapital, gemessen durch formale Indikatoren wie die durchschnittlichen Schuljahre der Arbeitskräfte, ist ebenfalls geringer als im Durchschnitt der EU. Auch die Qualität der Ausbildung ist niedriger als im Durchschnitt der EU. Allerdings ist die Humankapitalausstattung der MOEs im Vergleich zu anderen Ländern mit ähnlichem Einkommensniveaus hoch. Auch wenn die MOEs im Hinblick auf Produktion und Kapitalausstattung kleine Länder sind, so verfügen sie mit rund 30 % des Niveaus in der EU über ein erhebliches Arbeitskräftepotential. Das durchschnittliche Lohnniveau beträgt, gemessen zu laufenden Wechselkursen, rund ein Zehntel, und gemessen zu Kaufkraftparitäten rund ein Fünftel des durchschnittlichen Niveaus in der EU. Alle verfügbaren Information über Faktorausstattungen und Faktorpreise deuten also darauf hin, dass die MOEs im Vergleich zur EU reichlich mit Arbeit ausgestattet sind, während die EU im Vergleich zu den MOEs reichlich mit Kapital ausgestattet ist. Allerdings kann das große Einkommensgefälle nicht allein auf Unterschiede in den Faktorausstattungen zurückgeführt werden. Die allgemeine Faktorproduktivität ist in den MOEs deutlich geringer als in der EU. Dies ist die Folge von Unterschieden in den Technologien, den institutionellen Rahmenbedingungen und der öffentlichen Infrastruktur.

Obwohl die Frage, ob die Pro-Kopf-Einkommen von armen Volkswirtschaften zu denen von reichen konvergieren, aus theoretischer Perspektive noch nicht eindeutig beantwortet werden kann, so sprechen verschiedene empirische Indikatoren dafür, dass die Pro-Kopf-Einkommen der gegenwärtigen EU Mitglieder über die gesamte Nachkriegszeit konvergiert haben. Allerdings ist die Konvergenz der Einkommen ein langwieriger Prozess. Auf der Grundlage der Konvergenzraten, die in der EU während der Nachkriegszeit beobachtet wurden, beträgt die Halbwertszeit des Einkommensabstandes zwischen der EU und den MOEs mehr als 30 Jahre. Die Wachstumsraten in den MOEs nach dem Ende der Transformationsrezession sprechen nicht dafür, dass die Konvergenz der Einkommen in ihrem Fall schneller voranschreiten wird. Folglich muss jedes realistische PolitikszENARIO davon ausgehen, dass die großen Einkommensunterschiede eher über Jahrzehnte als über Jahre anhalten werden. Umso mehr sollten wirtschaftspolitische Maßnahmen, die das Wachstum in den MOEs fördern, in den Mittelpunkt der Agenda gestellt werden. Dies wird auch den Druck der ökonomischen Integration auf die Arbeitsmärkte in der gegenwärtigen EU verringern.

## **2. Die Effekte des Handels**

Der Handel von Gütern ist jene Dimension der wirtschaftlichen Integration, die bereits am weitesten vorangeschritten ist. Zölle und quantitative Handelsbarrieren sind, mit der wichti-

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gen Ausnahme der Landwirtschaft, zwischen der EU und den Beitrittskandidaten fast vollständig aufgehoben worden. Ein Beitritt der MOEs zur EU wird die Handelsbedingungen im Wesentlichen durch die Integration der MOEs in die Agrarpolitik der Gemeinschaft, die Harmonisierung von Qualitätsstandards und Regeln für die Produkthaftung verändern.

Der Handel zwischen der EU und den MOEs ist im Zuge von Transformation und Integration in die Märkte der EU dramatisch gewachsen: Die Exporte der EU in die MOEs sind von 1988 bis 1998 um das 6,5fache, die Importe der EU aus den MOEs um das 4,5fache gestiegen. Allerdings ist das Handelspotential zwischen der EU und den MOEs noch nicht erschöpft; insbesondere in jenen Ländern, die bislang noch wenig mit den MOEs handeln, bestehen noch große Potentiale (d.h. in Portugal, Frankreich, Großbritannien). Die Exporte der EU in die MOEs erreichten 1998 rund 50 %, die Importe aus den MOEs rund 60 % des ‚normalen‘ Volumens im Handel mit Marktwirtschaften der gleichen Ländercharakteristika außerhalb der EU. Der Überschuss der EU in der Handelsbilanz gegenüber den MOEs wird sich im Zuge steigender Investitionen und Kapitaltransfers vermutlich verdoppeln. Obwohl das Handelsvolumen von EU Mitgliedern mit Partnern aus der EU zwischen 20 % bis 60 % höher ist als das mit Handelspartnern außerhalb der EU, sollte bei einer Prognose des Einflusses der Osterweiterung berücksichtigt werden, dass die Handelsbedingungen zwischen der EU und den MOEs bereits weitgehend denen von EU Mitgliedern entsprechen. Gegenüber dem Status quo ist der zusätzliche Einfluss des Beitritts für das Handelspotential deshalb voraussichtlich eher gering.

Aus Sicht der Handelstheorie ergeben sich durch die Integration von Volkswirtschaften mit großen Unterschieden in den Faktorausstattungen auch hohe Erträge im Hinblick auf Einkommen und Konsumentenrenten, allerdings sind die Erträge und Verluste nicht gleichmäßig über die einzelnen Produktionsfaktoren verteilt. Die Integration der MOEs in die Gütermärkte der EU könnte deshalb Löhne und Beschäftigung durch steigende Importe von arbeitsintensiven Gütern und durch Exporte von kapital- und humankapitalintensiven Gütern beeinflussen, wodurch wiederum die Löhne für ungelernete Arbeit sinken und die für qualifizierte Arbeit steigen würden. Tatsächlich spiegeln sich in den laufenden Handelsströmen die großen Unterschiede in den Faktorausstattungen zwischen der EU und den MOEs. Die EU exportiert Güter kapital- und humankapitalintensive Güter in die MOEs und importiert arbeitsintensive Güter von dort.

Allerdings sprechen zwei Argumente dagegen, dass der Handel der EU mit den MOEs die relativen Löhne und die Beschäftigung auf volkswirtschaftlicher Ebene selbst in den am stärksten betroffenen Ländern beeinflussen wird:

- 1) Das Handelsvolumen ist, auch unter Berücksichtigung seiner künftigen Dynamik, zu gering um Preise in offenen Volkswirtschaften zu beeinflussen. Der Anteil der Exporte in die MOEs und der Importe aus ihnen beläuft sich auf rund ein Prozent am BIP der EU. Selbst in den am stärksten betroffenen Ländern erreichen die Exporte und die Importe keine Anteile, die über 4 % des BIP hinausgehen. Um die relativen Löhne in offenen Volkswirtschaften zu verändern, müssen die MOEs jedoch das marginale Angebot für arbeitsintensive Güter beeinflussen. Das ist angesichts dieser Dimensionen nicht wahrscheinlich. Eine Analyse des Einflusses des Handels auf Löhne, Beschäftigung und Arbeitsmobilität auf der Grundlage von Mikrodaten über die individuelle Entwicklung von Löhnen und Beschäftigung in ausgewählten Ländern (Österreich, Deutschland und Schweden) bestätigt diese Hypothese;
- 2) ein großes Gefälle in den Stückpreisen zwischen Exporten der EU in die MOEs und Importen aus den MOEs in die EU deuten darauf hin, dass die Produzenten aus den MOEs nicht in den gleichen Preis- und Qualitätssegmenten von Märkten wie die Produzenten in der EU spezialisiert sind. Sofern die EU und die MOEs aber auf vollständig unterschiedliche Güter spezialisiert sind, würden alle Produktionsfaktoren von der Zunahme des Handels profitieren und die Einkommensverteilung bliebe unberührt.

Der Umstand, dass der Handel zwischen der EU und MOEs zu gering ist, um die relativen Löhne und die Beschäftigung auf der aggregierten Ebene zu beeinflussen, schließt nicht aus, dass spezifische Sektoren und Regionen betroffen sind. Die geographische Nähe spielt eine zentrale Rolle im Handel zwischen der EU und den MOEs: Drei Viertel des Handels der EU mit den MOEs entfallen auf Länder an der Grenze zu den MOEs (Österreich, Deutschland, Griechenland, Italien und Finnland). In diesen Ländern sind die Anteile der MOEs am Handel und am BIP deutlich höher als in andern EU Ländern. Darüber hinaus zeigen regionale Handelsdaten aus Österreich und Deutschland, dass innerhalb dieser Länder die Exporteure und Importeure in den grenznahen Regionen konzentriert sind. Wenn der Handel mit den MOEs einen Einfluss auf Löhne und Beschäftigung hat, dann in diesen Regionen.

Auf der sektoralen Ebene zeigen die vergleichsweise hohen Handelsanteile der MOEs in Branchen wie Bekleidung und Schuhe, dass sich hier negative Effekte für Löhne und Be-

schäftigung ergeben können. Insbesondere ungelernete Arbeitskräfte können davon betroffen sein. Allerdings erzielt die EU hohe Exportüberschüsse in dem kapitalintensiveren Textilsektor. Darüber hinaus können Beschäftigte auf dem Bau durch den Import von Bauleistungen negativ betroffen sein. Umgekehrt sind hohe Exportüberschüsse auf der Seite der EU in kapital- und humankapitalintensiven Industrien, z. B. bei der Herstellung von Kommunikationsgeräten, Messinstrumenten und Computern sowie bei der Automobilwirtschaft, zu beobachten. Allerdings werden die Exportüberschüsse von einer starken Zunahme des intra-industriellen Handels begleitet. Große Unterschiede in den Stückpreisen sprechen dafür, dass der intra-industrielle Handel vom vertikalen Typ ist, d. h. es werden zunehmend kapital- und humankapitalintensive in die EU und arbeitsintensive Aktivitäten in die MOEs verlagert. Diese zunehmende Segmentierung der Produktionsprozesse kann insbesondere die Löhne und die Beschäftigungschancen von ungelerten Arbeitnehmern in diesen Branchen betreffen. Allerdings ist das Handelsvolumen gegenwärtig noch zu gering, um Effekte außerhalb einiger grenznaher Regionen zu erwarten.

Es wird häufig angenommen, dass der große Handelsbilanzüberschuss zwischen der EU und den MOEs Arbeitsplätze schafft. Tatsächlich wurde 1998 von der EU ein gemeinsamer Handelsbilanzüberschuss in Höhe von etwa 25 Mrd. US-\$ gegenüber den MOEs erreicht. Dieser ist kontinuierlich im Zuge von Öffnung und Transformation gestiegen. Zunehmende Kapitaltransfers im Zuge des Beitritts zur EU dürften sich künftig in weiter wachsenden Handelsbilanzüberschüssen spiegeln. Im Zuge des Beitritts der MOEs zur EU könnte sich der Handelsbilanzüberschuss verdoppeln. Verschiedene Analysen des Arbeitsgehaltes der gehandelten Güter sprechen dafür, dass mehre zehntausend Arbeitsplätze durch den Handel mit den MOEs gesichert werden. Allerdings muss bei derartigen Rechnungen berücksichtigt werden, dass der Handelsbilanzüberschuss durch Defizite in der Kapitalbilanz, d.h. durch Einkommenstransfers von der EU in die MOEs, finanziert wird.

Insbesondere die südeuropäischen EU Länder befürchten, dass sie indirekt von der Osterweiterung betroffen sein werden, weil ihr Handel mit anderen EU Ländern durch den Handel mit den MOEs ersetzt wird. Drei Untersuchungsergebnisse sprechen jedoch dafür, dass diese Befürchtungen nicht begründet sind: Erstens wurde kein Beleg dafür gefunden, dass sich das Niveau und die Wachstumsraten des Handels dieser Länder mit anderen EU Mitgliedern im Zuge des zunehmenden Handels mit den MOEs seit 1989 verringert haben. Zweitens weist die Struktur der Exporte aus den südeuropäischen Mitgliedsstaaten in die EU nur eine geringfügig größere Ähnlichkeit mit der Struktur der Exporte aus den MOEs im Vergleich zu den

Exporten aus anderen Industrieländern auf. Drittens sprechen hohe Unterschiede in den Stückkosten zwischen den Exporten aus den südeuropäischen Mitgliedern der EU und den Exporten aus den MOEs in die EU dafür, dass die Produzenten dieser Länder nicht in den gleichen Marktsegmenten konkurrieren. Insgesamt sind die Effekte des Handels mit den MOEs auf wenige Länder an der Grenze zu den MOEs und dort wiederum auf die grenznahen Regionen konzentriert.

### **3. Die Effekte der Kapitalmobilität**

Die Barrieren für die ausländische Direktinvestitionen (FDI) und andere Formen des Kapitalverkehrs sind weitgehend beseitigt worden. Allerdings bestehen noch Schwächen in der Regulation und Überwachung der Kapitalmärkte und des Bankensystems. Aus der Perspektive der EU Mitglieder waren die Kapitalflüsse in die MOEs mit rund 15 Mrd. US-\$ und einem Anteil von 0,15 % am Bruttoinlandsprodukt (BIP) und 0,8 % an den Bruttoanlageinvestitionen 1998 noch vernachlässigbar. Kapitalabflüsse in diesen Größenordnungen können in Volkswirtschaften mit offenen Kapitalmärkten, wie wir sie in der EU vorfinden, keine Effekte für die Zinssätze und folglich auch keine für die relativen Einkommen nach sich ziehen. Allerdings tragen diese Kapitalflüsse aus der Perspektive der MOEs mit 5 % vom BIP und mehr als 20 % an den Bruttoanlageinvestitionen erheblich zur Kapitalbildung bei und entlasten die nationalen Kapitalmärkte. Sie zeigen in den MOEs spürbare Auswirkungen auf das Wachstum des BIP, die Zinssätze und die Löhne.

Ausländische Kapitalflüsse in die MOEs nehmen weitgehend die Form von ausländischen Direktinvestitionen an. Die kumulativen Nettokapitalzuflüsse durch ausländische Direktinvestitionen beliefen sich in den MOEs von 1991 bis 1997 auf rund 50 Mrd. US-\$, und der Zufluss von Portfoliokapital auf 16 Mrd. US-\$ im selben Zeitraum. Insbesondere die Zuflüsse von Portfoliokapital sind deutlich unter dem ‚normalen‘ Niveau von Ländern mit vergleichbarem Einkommensniveau. Dies ist u.a. auf die unterentwickelten Wertpapiermärkte in den MOEs zurückzuführen.

Im Allgemeinen variieren die Kapitalzuflüsse stark zwischen den Ländern und über die Zeit, so dass künftige Kapitalbewegungen schwer zu prognostizieren sind. Die Erfahrung vergangener Erweiterungsrounden zeigt, dass der Beitritt zur EU zumindest für einen Übergangszeitraum erheblich zum Anstieg von Kapitalzuflüssen beitragen kann. Darüber hinaus sprechen unsere Projektionen des künftigen Handels dafür, dass die Kapitalflüsse deutlich unter ihrem ‚normalen‘ Potential liegen, weil die erwarteten Defizite in der Handels- und Leistungsbilanz

durch Überschüsse in der Kapitalbilanz ausgeglichen werden müssen. Die Kapitalzuflüsse in die MOEs können sich deshalb im Zuge des Beitritts verdoppeln. Insbesondere die Zuflüsse von Portfoliakapital dürften sich im Zuge der Harmonisierung der Regulation der Finanzmärkte vergrößern. Obwohl eine Zunahme des Kapitalverkehrs zwischen der EU und den MOEs in diesen Größenordnungen keinen Einfluss auf die Zinssätze und die relativen Faktoreinkommen in der EU haben werden, können sie jedoch erheblich zum Wachstum und zur Konvergenz der Pro-Kopf-Einkommen in den MOEs beitragen.

Es wird oft befürchtet, dass ausländische Direktinvestitionen zur Verlagerung der Produktion von der EU in die MOEs beitragen können. Eine detaillierte Analyse der Struktur der Direktinvestitionen bestätigt diese Befürchtungen nicht. Etwa die Hälfte der Direktinvestitionen fließt in Sektoren, die nicht-handelbare Güter herstellen (öffentliche Infrastruktur, Banken und andere Dienstleistungen). Sowohl die Branchenstruktur der Direktinvestitionen in den Sektoren, die handelbare Güter herstellen, als auch Unternehmensbefragungen zeigen, dass der Zugang zu den Märkten in den MOEs das primäre Investitionsmotiv ist. Nur rund ein Fünftel der Direktinvestitionen fließt in Industrien, in denen die Lohnkosten eine wichtige Rolle spielen und der Anteil ungelernter Arbeit relativ hoch ist. Dies gilt u.a. für Bekleidung und Schuhe, elektrische Maschinen, Gummi und Plastikprodukte. In diesen Branchen ist ein deutlicher Unterschied in der Arbeitsintensität der Produktion zwischen den Mutterunternehmen und ihren Niederlassungen in den MOEs zu beobachten. Darüber hinaus ergibt sich eine hohe Korrelation zwischen Direktinvestitionen und intra-industriellem Handel, was dafür spricht, dass durch Direktinvestitionen die zunehmende Segmentierung von Produktionsprozessen in kapital- und arbeitsintensive Aktivitäten zwischen der EU und den MOEs gefördert wird.

Insgesamt zeigt sich, dass nur ein kleiner Teil der Direktinvestitionen in die MOEs durch die geringen Lohnkosten motiviert und die Produktion in die Zielländer verlagert wird. Der größere Teil der Direktinvestitionen richtet sich auf den Marktzugang. Diese Direktinvestitionen sind für die Beschäftigung und die Löhne in den jeweiligen Branchen neutral oder ziehen positive Effekte nach sich. Allerdings wird durch einen Teil der Direktinvestitionen die bereits beim Handel beobachtete Segmentierung der Produktionsprozesse vorangetrieben, wodurch Löhne und Beschäftigung insbesondere von ungelerten Arbeitnehmern negativ betroffen sein können. Allerdings sind gerade in diesen Branchen außergewöhnlich hohe Überschüsse im Handel mit den MOEs zu beobachten, so dass auch hier unerwünschte Auswirkungen auf Löhne und Beschäftigung häufig durch steigende Exporte kompensiert werden.

#### 4. Die Effekte der Migration

Zehn Jahre nach dem Fall der Berliner Mauer unterliegt die Immigration aus den MOEs in die EU noch weitgehenden Beschränkungen. Die Europaabkommen berühren nicht die Kompetenz der einzelnen EU Mitglieder, die Immigration von Arbeitskräften und Personen aus den MOEs zu regulieren. Die Freizügigkeit für Personen und Arbeitskräfte ist deshalb diejenige Dimension der ökonomischen Integration, die sich am stärksten im Zuge eines Beitritts der MOEs verändern wird. Die gegenwärtigen Bestände an Einwohnern und Arbeitskräften aus den MOEs in der EU reflektieren eindeutig die Migrationsbeschränkungen und sind, im Hinblick auf das hohe Einkommensgefälle, recht gering: Die ausländische Wohnbevölkerung kann auf rund 850.000 Einwohner, die ausländischen Arbeitnehmer aus den MOEs auf rund 300.000 geschätzt werden. Die Zahl der ausländischen Arbeitnehmer schließt das Vollzeit-äquivalent von Saisonarbeitern und anderen Formen der temporären Migration ein. Der Anteil von Bürgern aus den MOEs an der Bevölkerung in der EU beläuft sich auf 0,2 % und der Anteil an den Arbeitskräften auf rund 0,3 %. Rund 80 % der Migranten aus den MOEs leben in Österreich und Deutschland. Die Mehrzahl der Migranten aus den MOEs ist vor 1993 immigriert. Seit 1993 ist die Nettoimmigration aus den MOEs aufgrund der zunehmenden Beschränkungen der Zuwanderung vernachlässigbar.

Nach den Ergebnissen der Studie werden Handel und Kapitalverkehr nicht zu einer schnellen Angleichung der Faktorpreise führen, so daß die Lohnunterschiede im Beitrittsprozess und folglich die pekuniären Anreize für die Migration anhaltend hoch bleiben werden. Allerdings wird die Migration durch hohe Transaktionskosten und die beschränkte Kapazität der Arbeitsmärkte zur Absorption von Zuwanderern beschränkt. Die Schätzung des Migrationspotentials in dieser Studie stützt sich auf eine Zeitreihenanalyse der Migration nach Deutschland von 1967 bis 1998. Das verwendete Modell berücksichtigt explizit die Bildung von Erwartungen und ermöglicht sowohl eine Schätzung des langfristigen Potentials der ausländischen Einwohner aus den MOEs als auch der Geschwindigkeit der Anpassung an dieses Potential. Die wichtigsten Variablen sind

- die Unterschiede in den Pro-Kopf-Einkommen,
- die Beschäftigungsrate in den Zielländern und
- die Beschäftigungsrate in den Herkunftsländern.

Darüber hinaus haben sich institutionelle Beschränkungen der Migration und Variablen, die die langfristigen Unterschiede der Migration zwischen Deutschland und verschiedenen Herkunftsländern etwa durch die gemeinsame Sprache und Unterschiede in der Lebensqualität erklären als signifikant erwiesen. Schließlich zeigen die Ergebnisse der Studie, dass die Neigung zur Migration nicht gleich über die Bevölkerung verteilt ist. Mit einem zunehmenden Anteil der bereits Ausgewanderten an der Bevölkerung der Herkunftsländer nimmt die Bereitschaft der im Heimatland Verbliebenen zu Migration ab. Netzwerkeffekte, die sich durch eine Kerngruppe von Migranten im Ausland ergeben, beeinflussen zwar die Verteilung der Auswanderer über verschiedene Länder, sie bewirken aber keine dauerhafte Zunahme der Migration.

Unsere Schätzungen können allerdings nicht alle Faktoren, von denen die Migration beeinflusst wird, berücksichtigen. Darüber hinaus ist die künftige Entwicklung von Schlüsselvariablen wie das Wachstum des BIP und die Beschäftigung ungewiß. Unsere Schätzungen sind deshalb als Anhaltspunkt für die Größenordnungen künftiger Migration, nicht aber als exakte Prognose zu verstehen.

Nach den Ergebnissen der Studie ist unmittelbar nach Einführung der Freizügigkeit im Jahr 2002 eine anfängliche Zunahme der ausländischen Bevölkerung aus den MOE-10 in der EU-15 von 335.000 Personen p.a. zu erwarten. Diese Zahl fällt innerhalb eines Jahrzehntes auf unter 150.000 Personen. Das Maximum der ausländischen Wohnbevölkerung aus den MOEs wird nach dieser Schätzung rund 30 Jahre später mit einem Anteil von 1,1 % an der Bevölkerung in der EU-15 erreicht. In Deutschland ist unmittelbar nach Einführung der Freizügigkeit eine Zunahme der Bevölkerung von rund 220.000 Personen und rund 30 Jahre später ein Anteil der ausländischen Wohnbevölkerung aus den MOE-10 von 3,5 Prozent zu erwarten. Diese Projektionen beruhen auf der Annahme, dass die Pro-Kopf-Einkommen zwischen der EU und den Beitrittskandidaten mit einer Rate von 2% p.a. konvergieren und die Arbeitslosenraten in Deutschland und den Beitrittsländern konstant bleiben werden. Insgesamt zeigen diese Schätzungen, dass angesichts des hohen und nur langsam sinkenden Einkommensgefälles die Bevölkerung aus den MOEs in der EU langfristig deutlich zunehmen wird. Allerdings wird sich diese Zunahme auf Jahrzehnte verteilen. Dies kann auf die hohen Transaktionskosten der Migration und die beschränkte Aufnahmekapazität der Arbeitsmärkte in den Zielländern zurückgeführt werden. Natürlich stehen alle diese Projektionen unter dem Vorbehalt, dass sich die Erfahrungen der europäischen Wanderungsbewegungen in der Nachkriegszeit auf die MOEs übertragen lassen und dass die Determinanten der Migration adäquat in unserem Mo-

dell abgebildet werden können. Ängste, dass die EU nach der Freizügigkeit von Migranten aus den MOEs überschwemmt werden wird, erscheinen allerdings vor dem Hintergrund dieser Schätzergebnisse als unbegründet.

Nach Aussagen der ökonomischen Theorie wird durch die Migration von Arbeitskräften die Wohlfahrt sowohl in den Ziel- als auch in den Herkunftsländern erhöht. Allerdings sind die Gewinne und die Verluste nicht gleich verteilt: Während diejenigen Faktoren, die komplementär zu dem Arbeitsangebot der Migranten sind, gewinnen, verlieren jene, die durch das Arbeitsangebot von Migranten substituiert werden können. Insbesondere wird befürchtet, dass ungelernete Arbeitskräfte in den Zielländern durch die Migration in Form von verringerten Löhnen und erhöhten Beschäftigungsrisiken verlieren werden. Nach den Ergebnisse dieser, wie auch einer Reihe weiterer Studien konzentrieren sich die negativen Effekte der Migration auf Industriearbeiter und gering qualifizierte Arbeitskräfte im Dienstleistungssektor. Allerdings sind die Arbeitsmarkteffekte für einheimische Arbeitskräfte sehr viel geringer als häufig angenommen wird. Dies hängt u.a. damit zusammen, dass sich Migranten in prosperierenden Regionen und Branchen ansiedeln. Darüber hinaus passen sich Produktion und Investitionen an das steigende Arbeitsangebot an. Nach den Ergebnissen unserer Untersuchung auf der Grundlage von Mikrodatensätzen in Österreich und Deutschland bewirkt der Anstieg des Ausländeranteils in einer Branche um einen Prozentpunkt einen Rückgang der Löhne in dieser Branche um 0,26 % in der österreichischen und um 0,6 % in der deutschen Stichprobe. Zugleich steigt das individuelle Entlassungsrisiko um 0,8 Prozentpunkte in der österreichischen und um 0,2 Prozentpunkte in der deutschen Stichprobe. Die Auswirkungen der Migration auf Angestellte sind leicht positiv oder neutral. Da sich der Anstieg des Ausländeranteils aus den MOEs nach unseren Projektionen über lange Zeiträume erstreckt, sind selbst in den beiden am stärksten betroffenen Ländern, Österreich und Deutschland, angesichts dieser Größenordnungen nur moderate Effekte durch die Immigration aus den MOEs zu erwarten.

Darüber hinaus könnten die Arbeitsmarkteffekte der Zuwanderung aus den MOEs sehr viel breiter über Gruppen mit unterschiedlichen Qualifikationen verstreut sein als im Falle traditioneller Zuwanderung. Das formale Ausbildungsniveau der Immigranten aus den MOEs ist überraschend hoch. Allerdings sind die Immigranten aus den MOEs gegenwärtig in den gleichen Branchen und vermutlich auch auf dem gleichen Qualifikationsniveau wie andere Ausländer beschäftigt. Dafür sprechen auch zusätzliche Informationen über das Beschäftigungsverhalten von Aussiedlern aus den MOEs in Deutschland. Die Erträge für Humankapital, das in den MOEs erworben wurde, sind in dieser Gruppe trotz ihrer besseren sprachlichen Vor-

aussetzungen außergewöhnlich gering. Obwohl die Zuwanderer aus den MOEs gegenwärtig noch mit Facharbeitern und gering qualifizierten Beschäftigten in der Industrie und in der Bauwirtschaft konkurrieren, könnten sie künftig ihr Qualifikationsprofil stärker an die Nachfrage in den Arbeitsmärkten der EU anpassen und folglich auch zunehmend mit hochqualifizierten Beschäftigten konkurrieren.

## Teil B

Die zentralen Politikempfehlungen, die im zweiten Teil der Studie entwickelt werden, beziehen sich auf die folgenden vier Gebiete:

- politische Maßnahmen, die die Effekte des Strukturwandels mildern,
- politische Maßnahmen, die die Arbeitsmobilität zwischen den Regionen unterstützen,
- die Regulation der Zuwanderung,
- politische Maßnahmen, die die Konvergenz der Einkommen fördern.

### 5. Politische Maßnahmen zur Milderung des Strukturwandels

Aus dem ersten Teil der Studie ergibt sich die Schlussfolgerung, dass die Integration der MOEs in die Güter-, Kapital- und Arbeitsmärkte der Europäischen Union auf der Seite der gegenwärtigen Mitgliedsländer nur in den Grenzregionen zu den MOEs spürbare Effekte nach sich ziehen wird. Allerdings wird die Osterweiterung sehr viel stärker die Güter- und Faktorpreise in den MOEs beeinflussen. Dort ist in der Industrie eine deutliche Verschiebung der Produktion und Beschäftigung von den ressourcenintensiven auf die arbeitsintensiven Branchen zu erwarten, die von einer weiteren Verlagerung der Beschäftigung von den primären und sekundären Sektoren auf die Dienstleistungssektoren begleitet wird.

Um die potentiell negativen Auswirkungen der Osterweiterung auf die Beschäftigung und die Einkommensverteilung zu verringern, sollte sich die Wirtschaftspolitik in der EU und in den MOEs dem Strukturwandel anpassen, anstatt ihn zu behindern. Strukturverschiebungen, die sich aus veränderten Spezialisierungsmustern ergeben, können besser durch flexible Arbeitsmarktinstitutionen und Formen der sozialen Transferleistungen bewältigt werden. Dies ist eine der wichtigsten Lehren aus anderen Erweiterungsepisoden. Der deutliche Unterschied in der Arbeitslosendynamik zwischen Portugal und Spanien nach dem Beitritt zur EU illustriert die Vorteile von Institutionen, die soziale Transfers leisten und die Beschäftigung schützen,

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ohne die Arbeitsmobilität zu behindern. In Spanien hat es der hohe Beschäftigungsschutz verbunden mit einer großzügigen Arbeitslosenunterstützung schwieriger gemacht, Arbeitslose in den Arbeitsmarkt zu reintegrieren, ohne Massenfreisetzungen verhindern zu können. In Portugal war die Flexibilität der Lohnfindung ein zentraler Faktor für die geringe Arbeitslosigkeit nach dem Beitritt zur EU. Die moderate Lohnentwicklung bewirkte in Portugal auch keinen Anstieg in der Emigration von Arbeitskräften. Die Erfahrungen im Zuge der Gründung der NAFTA können als Beleg für die Vorteile flexibler Arbeitsmärkte im Westen interpretiert werden. Freihandel mit Ländern wie Mexiko, dessen Abstand in den Pro-Kopf-Einkommen zu den USA mit dem Abstand der Pro-Kopf-Einkommen der MOEs zur EU vergleichbar ist, bewirkte eine spürbare Reallokation von Arbeitskräften. Dies zog jedoch keine Nettobeschäftigungsverluste nach sich, weil die nordamerikanischen Arbeitsmärkte derartige Schocks ohne eine anhaltende Zunahme der Arbeitslosigkeit bewältigen konnten.

Es ist folglich besser Institutionen zu entwickeln, die den Arbeitsmärkten eine Anpassung an den Strukturwandel ermöglichen, anstatt ihn zu verzögern. Beispiele für Institutionen, die sowohl eine ausreichende soziale Absicherung von Arbeitnehmern erlauben, ohne hohe Arbeitslosenraten zu bewirken, sind die Vereinbarung nichtgesetzlicher Kosten von Entlassungen in Tarifverträgen anstelle ihrer Verhinderung durch gesetzliche Regeln, die verstärkte Vereinbarung von Vorabmeldungen bei Entlassungen, kurze Laufzeiten der Arbeitslosenunterstützung und die Zahlung von Leistungen auch im Falle einer Wiederbeschäftigung sowie die altersspezifische Differenzierung von Minimallöhnen. Viele Arbeitsmarktinstitutionen der gegenwärtigen EU Mitglieder haben sich als ungeeignet erwiesen, die Reallokation von Arbeitskräften im Strukturwandel zu bewältigen und sollten deshalb nicht auf die MOEs übertragen werden. Die Erfahrung mit der deutschen Vereinigung illustriert anschaulich die negativen Arbeitsmarkteffekte eines Exports von Tarifvertragsinstitutionen, die keine Differenzierung der Löhne im Hinblick auf regionale Unterschiede der Arbeitsproduktivität zulassen.

Höhere Investitionen in die Ausbildung dürften sich durch die Reduzierung der sozialen Kosten des Strukturwandels langfristig ebenfalls auszahlen. Die Mobilität der Arbeitskräfte zwischen Arbeitsplätzen und Berufen wird in den MOEs durch ein enges Qualifikationsprofil, das im Rahmen der beruflichen Bildung angeeignet wurde, behindert. Gefördert werden sollten daher allgemeine Qualifikationen, insbesondere im Bereich der sekundären Bildung. Dies sind selbstverständlich langfristige Investitionen. Die Konditionalität der EU könnte eine wichtige Rolle spielen, um hier die Zeithorizonte der politischen Entscheidungsträger in den Beitrittsländern zu erweitern.

## **6. Politische Maßnahmen, um regionale Unterschiede in der Arbeitslosigkeit zu mindern**

Die Beitrittskandidaten sind durch deutliche regionale Unterschiede im Hinblick auf die Arbeitslosigkeit und die Beschäftigungschancen charakterisiert, die in weitem Ausmaß das Gefälle zwischen Stadt und Land wiedergeben. Arbeitslosigkeit, insbesondere die Langzeitarbeitslosigkeit, hat ebenfalls eine deutlich regionale Dimension unter den gegenwärtigen EU Mitgliedern. Potentielle Schocks in Verbindung mit der Osterweiterung der EU werden voraussichtlich ebenfalls auf spezifische Regionen konzentriert sein.

Der Beitrittsprozess bietet den MOEs, insbesondere durch eine Zunahme der ausländischen Direktinvestitionen, neue Möglichkeiten regionale Entwicklungsunterschiede zu verringern. Allerdings hat die Erfahrung der Süderweiterung der EU gezeigt, dass ausländische Direktinvestitionen in den städtischen Regionen konzentriert sind. Die Strukturfonds der EU leisteten zwar in den armen Regionen Spaniens durch große Infrastrukturinvestitionen einen wichtigen Beitrag zur Kapitalakkumulation. Allerdings deuten empirische Erkenntnisse darauf hin, dass die externen Effekte, die sich aus der Verbesserung der öffentlichen Infrastruktur ergeben, begrenzt sind. Spürbare Wirkungen entfalten sich nur auf lange Sicht. Kurzfristig ist es folglich eher unwahrscheinlich, dass Kapitalzuflüsse die regionalen Entwicklungsunterschiede in den MOEs verringern werden. In den frühen Stadien des Erweiterungsprozesses können sie im Gegenteil auch zu ihrer Vertiefung beitragen.

Vor diesem Hintergrund spielt die regionale Arbeitsmobilität eine wichtige Rolle als ausgleichender Faktor. Hierfür werden die Anpassung der Löhne an Produktivitätsunterschiede zwischen den Regionen und die interregionale Mobilität von Arbeitskräften in einem gewissen Umfang erforderlich sein.

Zur Erhöhung der regionalen Arbeitsmobilität werden in diesem Teil der Studie Maßnahmen wie mobilitätsfördernde Lohnsubventionen an Unternehmen und Arbeitskräfte (z.B. Umzugskredite, Steuerabschreibungen für den Wechsel des Wohnortes) vorgeschlagen. Es wird auch gezeigt, dass sich durch die Verbesserung der Transportinfrastruktur ein erhebliches Potential zur Verringerung von regionalen Arbeitslosenunterschieden ergibt. Angesichts der eher kleinen Größe der meisten Beitrittskandidaten können regionale Unterschiede in den Arbeitslosenraten in erheblichem Umfang durch Pendeln und nicht durch einen Wechsel des Wohnortes reduziert werden. Schließlich lautet eine der wichtigsten Empfehlungen der Studie, dezentrale Tarifverträge, wie wir sie in den meisten Beitrittsländern vorfinden, nicht durch eine

stärkere Zentralisierung der Lohnverhandlungen zu ersetzen. Dies schließt allerdings nicht aus, dass eine verbesserte Koordination der Tarifverhandlungen dazu beitragen kann, einen möglichen Inflationsdruck im Falle des Beitritts sowie eine Überhitzung in einigen lokalen Arbeitsmärkten (z.B. in den Hauptstädten) zu verringern.

## **7. Regulation der Migration aus den Beitrittsländern**

Die Konvergenz der Pro-Kopf-Einkommen in den MOEs zu dem Einkommensniveau der gegenwärtigen EU Mitglieder wird sich, wie bereits oben hervorgehoben wurde, über einen langen Zeitraum erstrecken. Der Erweiterungsprozeß wird deshalb von einer gewissen Zunahme der Ost-West Migration begleitet werden. Es ist insbesondere zu berücksichtigen, dass an den Grenzen zu den MOEs an den reichsten Regionen der EU angesiedelt sind. Auch bei hohen Unterschieden in den Faktorausstattungen wird der Handel in der Übergangszeit nur einen moderaten Druck auf die Konvergenz der Löhne zwischen Ost und West ausüben. Auch wenn die zu erwartenden Migrationsströme gering im Vergleich zur Bevölkerung und den Arbeitskräften in der EU sind, so können sie bei einer regionalen Konzentration dennoch Probleme des sozialen Zusammenhaltes in einigen lokalen Arbeitsmärkten bewirken.

Übergangsregelungen für die Mobilität von Arbeitskräften wurden bereits im Falle der Süderweiterung eingeführt. Insbesondere im Falle des Beitritts von Portugal und Spanien ist die Arbeitsmobilität aus den Beitrittsländern für einige Jahre bis zur Vollendung des Binnenmarktes 1991 beschränkt worden. Diese Beschränkungen hatten jedoch nur einen geringe Effekte auf die Migration, weil die Beitrittsländer während der Übergangsperiode einen wirtschaftlichen Aufschwung mit prosperierenden Arbeitsmärkten erlebten. Bei der Aufhebung der Restriktionen im Jahr 1991 nahmen die Migrationsströme nicht signifikant zu. Allerdings waren die Einkommensunterschiede damals nicht so hoch wie gegenwärtig zwischen der EU und den Beitrittskandidaten aus den MOEs.

## **8. Maßnahmen zur Förderung der Konvergenz der Pro-Kopf-Einkommen**

Die Unterschiede in den Pro-Kopf-Einkommen sind die treibende Kraft hinter potentiellen Spannungen auf den Arbeitsmärkten im Zuge der Osterweiterung. Kurzfristige Maßnahmen zur Verminderung der negative Effekte des sektoralen und regionalen Strukturwandels sollten deshalb durch langfristige Maßnahmen ergänzt werden, die die Konvergenz der Pro-Kopf-Einkommen zwischen der EU und den MOEs fördern.

Aus den Erfahrungen während der Nachkriegszeit in Europa kann die Schlussfolgerung gezogen werden, dass durch die Integration der Märkte für Güter, Kapital und Arbeit die Wachstumsraten und die Konvergenz der Pro-Kopf-Einkommen erhöht werden. Unter den Mitgliedern der EU sind in der Nachkriegszeit sowohl signifikantere Trends zur Konvergenz der Pro-Kopf-Einkommen als auch eine höhere Geschwindigkeit der Konvergenz zu beobachten als innerhalb des gesamten Spektrums der Europäischen Länder (d.h. inklusive derjenigen Länder, die nicht zur EU gehören). Darüber hinaus sind enge Handelsverbindungen positiv mit einer Konvergenz der Pro-Kopf-Einkommen korreliert. Wie bereits oben diskutiert wurde, ist das Potential für Handel und Kapitalmobilität zwischen der EU und MOEs noch nicht ausgeschöpft. Beide Seiten, die EU und die MOEs, sollten deshalb die stärkere Integration der Märkte verfolgen, um eine Konvergenz der Pro-Kopf-Einkommen zu fördern.

Eine glaubwürdige Agenda für den Beitritt ist unverzichtbar, um Investitionen aus dem Ausland und im Inland zu fördern und die Konvergenz der Pro-Kopf-Einkommen zu beschleunigen. Wenn die Glaubwürdigkeit des Beitritts in Frage gestellt wird, ist es für die wirtschaftlichen Akteure sowohl in den MOEs wie auch in der EU rational, sich nicht völlig an den gegenwärtigen Stand der Integration anzupassen. Schließlich werden die Kosten von Investitionen in Produktion und Restrukturierung nicht ersetzt, falls die Integration nicht oder nicht zum erwarteten Zeitpunkt stattfindet. Ausländische Direktinvestitionen sind von dieser Ungewissheit besonders betroffen.

Die nationale Wirtschaftspolitik spielt ebenfalls eine wichtige Rolle im Konvergenzprozess. Eine Analyse der Quellen wirtschaftlichen Wachstums in dieser (wie auch einer Reihe weiterer) Studien zeigt, dass (i) die Qualität der Institutionen und die Durchsetzung gesetzlicher Regeln, (ii) die makroökonomische Stabilität im Hinblick auf Inflation und ausgeglichene Staatshaushalte, (iii) die Struktur öffentlicher Ausgaben und (iv) die Entwicklung des Humankapitals - neben der Öffnung für Handel und Faktormobilität - die wichtigsten strategischen Faktoren für das langfristige Wachstum von Volkswirtschaften sind. Tatsächlich können die unterschiedlichen Wachstumsraten in den MOEs seit Beginn der Transformation in erheblichem Umfang auf Unterschiede in dem Aufbau der Institutionensysteme, der Durchsetzung von Gesetzen sowie der makroökonomischer Stabilität zurückgeführt werden. Insbesondere hatten die Größe des informellen Sektors und der Umfang der Korruption einen negativen Einfluss auf das Wachstum in den MOEs.

Obwohl der Umfang des Staatskonsums im allgemeinen einen negativen Einfluss auf das Wirtschaftswachstum hat, können durch Infrastrukturinvestitionen und soziale Ausgaben die

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Wachstumsraten deutlich erhöht werden. Die notwendige Kontrolle ausgeglichener Staatshaushalte in den MOEs sollte deshalb Investitionen in die öffentliche Infrastruktur und in das soziale Netz nicht gefährden. Soziale Ausgaben können einen wichtigen Beitrag zur Anpassung an den Strukturwandel spielen und folglich das Wachstum und die Konvergenz der Einkommen unterstützen. Da die verpflichtenden Sozialabgaben in den MOEs bereits zu hoch sind, kann eine breitere Abdeckung der sozialen Risiken in diesen Ländern nur durch eine höhere Zielgenauigkeit des sozialen Netzes im Hinblick auf Gruppen mit niedrigem Einkommen und die Verringerung der Ungleichheit erreicht werden. Allerdings sollten durch soziale Einkommenstransfers die Anreize zur Integration in den Arbeitsmarkt nicht gesenkt werden.

Obwohl verschiedene Indikatoren nahe legen, dass die Humankapitalausstattung der Arbeitskräfte in den MOEs im Vergleich zu Ländern mit ähnlichem Pro-Kopf-Einkommen hoch ist, wurde die berufliche Ausbildung mit engen Qualifikationsprofilen in der Vergangenheit ein zu starkes Gewicht beigemessen. Humankapital, das unter planwirtschaftlichen Bedingungen erworben wurde, ist deshalb im Zuge der Transformation erheblich entwertet worden. Durch eine Anpassung der Ausbildungssysteme an die neuen ökonomischen Bedingungen können Wachstum und Konvergenz gefördert werden. Simulationsergebnisse aus dem zweiten Teil der Studie haben ergeben, dass eine Erhöhung des Anteils der sekundären Bildungsabschlüsse unter den Arbeitskräften den Konvergenzprozess deutlich beschleunigen kann.

## **PART A**

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# **ANALYSIS**

*This part of the report is drafted by Herbert Brücker and is based on contributions by Heike Belitz, Fabian Bornhorst, Per-Anders Edin, Michael Fertig, Peter Fredriksson, Helmut Hofer, Elmar Hönekopp, Peter Huber, Michaela Kreyenfeld, Per Lundborg, Uta Möbius, Daniel Roulstone, Wolfram Schrettl, Jörg Schräpler, Dieter Schumacher and Parvati Trübswetter*

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## 1 Introduction

This part of the study is concerned with the likely impact of Eastern Enlargement on employment and wages in present Member States of the European Union (EU). The analysis focuses on three main dimensions of economic integration: (i) trade in goods and services, (ii) migration of labour and (iii) movement of capital. A natural starting point for the analysis of the impact of trade and factor movements on labour markets is the observation that per capita incomes and wages differ considerably between the present EU and the ten CEECs. Although the existence of a gap in per capita incomes between EU members and candidates for accession is not a novel phenomenon, the income differential is larger in the case of the CEECs than in past accession rounds. The integration of economies which differ in incomes and in the endowment with factors of production will provide gains for all countries involved. However, economic theory predicts that benefits and losses from integration will be distributed unevenly among the individual factors. In particular, concerns have been raised that Eastern Enlargement may have negative effects upon unskilled labour in the present EU Member States through increasing imports of labour intensive goods, the immigration of labour and the relocation of production to the CEECs. At present, the volume of trade, migration and capital movements between the EU and the CEECs is small, making an economy-wide impact on relative wages and employment unlikely even in the most severely-affected Member States. It is likely that to whatever extent Eastern Enlargement affects the present EU, the results will be seen mainly at the structural level. The emphasis of this study is therefore on assessing Eastern Enlargement's impact on structural change and its implications for employment and wages.

The integration of the CEECs into the EU's markets for goods, labour and capital is an ongoing process, which has started with the step-by-step removal of trade barriers in the course of the implementation of the Europe Agreements (EAs) and is proceeding with the adjustment of the institutional framework of the CEECs to EU standards. As experience from other enlargement episodes has demonstrated, it will not be finalised on the day of accession. Trade and factor mobility between the EU and the candidate countries has grown markedly as a result of integration and opening of the CEECs. Nevertheless, trade and factor flows have yet not completely adjusted to the new environment. The study addresses both the impact of trade and factor mobility which has already occurred, as well as the likely future impact after an accession to the EU. Since integration has already progressed far, it is not always possible to

quantify the further impact of accession vis-à-vis the current state of integration. However, the implications of a removal of the restrictions to labour mobility deserves special attention, since this is that dimension of enlargement which will see the most marked change in the current state of integration vis-à-vis the status quo, as a result of an accession of the CEECs to the EU.

In this part of the report, the main findings on the impact of trade, migration and capital movements from various research teams are summarised. The results are presented along the following lines of investigation: first, the basic predictions from trade theory regarding the implications of integrating economies with different per capita incomes and factor endowments are discussed in order to outline the central questions of the study. Second, a brief digression on the initial conditions of economic integration with regard to incomes and factor endowments is given. Third, the progress made thus far in the removal of barriers to trade, the migration of labour and the mobility of capital is evaluated and the further impact of Eastern Enlargement on these three dimensions of integration is assessed. Fourth, the present patterns of trade, migration and factor movements between the EU and the CEECs are analysed in order to evaluate which countries, sectors and factors of production are affected most by Eastern Enlargement. Fifth, the quantitative impact of trade and migration on wages, employment and labour mobility is estimated based on large longitudinal data sets in Austria, Germany and Sweden. Sixth, a scenario of trade and migration is presented in order to give a clue for the future development of trade and factor mobility and the implications thereof upon labour markets following accession of the CEECs to the EU.

This part of the report is drafted by Herbert Brücker and is based on a series of background reports and other contributions to the project provided by Heike Belitz, Fabian Bornhorst, Per-Anders Edin, Michael Fertig, Peter Fredriksson, Helmut Hofer, Elmar Hönekopp, Peter Huber, Michaela Kreyenfeld, Per Lundborg, Uta Möbius, Manfred Profazi, Wolfram Schrettl, Jörg Schräpler, Dieter Schumacher and Parvati Trübswetter. However, the author alone is responsible for possible errors or mistakes. The participants in the project workshop in September 1998 and in a presentation of preliminary results at the European Commission in November 1998 provided valuable comments and constructive suggestions. In particular, we wish to thank Tito Boeri, Juan Dolado, Martina Lubyova and Daniel Munich for very helpful comments.

## **2 How can trade, migration and capital movements between the EU and the CEECs affect wages and employment?**

This study focuses on three main channels by which Eastern Enlargement can affect wages and employment in the present Member States of the EU and in the candidate countries: trade in goods and services, migration of labour and the movement of capital. Per capita incomes, factor endowments and the state of technology differ considerably between the present EU Members and the CEECs (see Section 3). Moreover, the gap in factor endowments and per capita incomes is expected to last for a long period of time. The standard models of trade theory predict that gains from trade, migration and capital movements between countries that differ largely in their factor endowments will be especially high. These gains will not necessarily be shared equally by all factors of production. Individual factors may win or lose from integration if either trade or factor mobility results in a change in their net supplies. More specifically, trade theory predicts that the integration of relatively labour-abundant countries will effect a decline in wages relative to the price for capital in relatively capital-abundant countries. Eventually, factor prices will equalise across countries. However, these results are built on a set of restrictive assumptions, such that factor price equalisation is a limiting theoretical case and not an empirically relevant proposition (see Box 1).

Against the background of economic theory, trade, labour migration, and the movement of capital may affect wages and employment in the present EU Member and candidate countries in the following ways: first, the removal of barriers to trade between of the EU and the CEECs can affect wages and employment, if relative prices for capital intensive and labour intensive goods change. Changes in relative prices for goods induce more than proportional changes in relative wages<sup>1</sup>. Furthermore, the fragmentation of production processes into geographically separate units can reduce the demand for unskilled labour within firms at unchanged prices on the goods markets (Feenstra and Hanson 1996, Krugman 1995b).

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<sup>1</sup> This so-called “magnification effect” was noted by Jones (1965).

**Box 1: The impact of trade and factor mobility on wages: predictions from conventional trade theory**

In the basic Heckscher-Ohlin-Samuelson (HOS) model with two goods, two factors of production and two countries, each country will export the good whose production relies intensively on its factor of abundance. If we suppose that the EU is abundant in capital and the CEECs are abundant in labour, then the removal of barriers to trade will effect in the EU

- a fall in the price of the labour intensive good relative to the price of the capital intensive good,
- an increase in the production of the capital intensive good and a decrease in the production of the labour intensive good,
- a decline in wages relative to the price of capital, which will continue until factor prices in both countries have equalised,
- a movement of labour from the labour intensive sector to the capital intensive sector, and a rise in labour intensity in both sectors, since the price for labour has fallen,
- a constant total employment of labour, since the effects of declining production of the labour intensive good and the increasing ratio of labour to capital in both sectors cancel one another out completely.

Trade and factor mobility are substitutes in the HOS-model: the movement of capital into the labour abundant country and the migration of labour into the capital abundant country will raise the price for capital and reduce wages in the capital abundant country until factor prices have equalised, and thus undermine the basis for trade in labour intensive and capital intensive commodities. Notice that in open economies, the movement of capital and the migration of labour have no further impact on relative wages when factor price equalisation has already been achieved.

These cogent results of the HOS-model are based on a set of restrictive assumptions. These presume that all countries have access to the same technologies, that returns to scale are constant, that factor mobility across sectors is perfect, that factor markets are clearing and that countries are not completely specialised, i.e. both countries produce labour intensive as well as capital intensive goods. If we relax these assumptions, some propositions of the HOS-model are mitigated or even reversed. Thus we can perceive factor price equalisation as a "theoretical curiosum" rather than an "inescapable destiny" (Bhagwati and Dehija 1995).

The relaxation of three assumptions may be conceived as particularly relevant for trade and factor mobility between the EU and the CEECs:

Technologies are not identical between the EU and the CEECs. In the case of an exogenous technology gap which is neutral in regard to the productivity of sectors and factors it is expected that relative, not-absolute factor incomes will converge through trade. Thus, the integration of CEECs into the markets for goods and services between the EU and the CEECs is compatible with continuing differences in wages and per capita incomes. Furthermore, if the EU possesses a technological advantage over the CEECs in the human capital intensive sector, trade will not substitute for, but rather complement factor mobility (Markusen 1983). Integration of the CEECs, then, increases production and exports of the human capital intensive good, which in turn raises the relative price of human capital in the EU and of unskilled labour in the CEECs. Therefore, incentives for skilled labour in the CEECs to migrate to the EU increase.

Complete specialisation might be more than a limiting case for the division of labour between the EU and the CEECs. Large differences in factor endowments and technologies can be associated with the specialisation in non-competing commodities. In this case, declining prices for goods produced in the CEECs would lift all boats in the EU and with declining prices for EU goods, the same would occur in the CEECs.

Beyond differences in factor endowments and technologies, increasing returns to scale provide an incentive for intra-industry trade, i.e. two-way trade within the same industries. Under increasing returns to scale, economic integration yields an utility gain to the consumers through higher product diversity and an efficiency gain through the increase in competition. These effects of integration raise the income and welfare of all factors. Such gains may have an only minor impact on the present EU Members, since CEEC markets are rather small, but may at the same time contribute to income and welfare in the CEECs significantly. Notice that the basic propositions of the HOS-model remain unchanged if we conceive a synthetic framework of *inter-* and *intra-*industry trade: while *intra-*industry trade does not affect the supply and demand of factors, the net trade of factor services through *inter-*industry trade preserves the predictions of the standard HOS-model (Helpman and Krugman 1985).

In the standard models of trade theory with perfect factor mobility across sectors and clearing labour markets, a declining price of labour intensive goods reduces the overall level of wages and increases the labour intensity of production, but leaves employment constant. However, neither is the mobility of capital and labour perfect, nor do wages adjust instantaneously to changing prices on the goods markets. If factor mobility is not perfect, a change in international prices may be expected to increase inter-industry differentials in wages and other factor incomes. Furthermore, a decline in the price of labour intensive goods translates into unemployment and reduced aggregate incomes, if relative wages do not adjust instantaneously (Krugman 1995a).

However, there are several reasons to assume that CEEC integration into EU goods markets will have a rather limited impact on wages and employment of present EU Members: First, in economic terms, the CEECs are relatively small countries. Integration of the CEECs can impair wages and employment only if prices on the goods markets are affected. In most markets, the small size of the CEECs makes an effect on marginal supply or demand unlikely. Thus, integration of the CEECs is more likely to divert trade from other countries than to affect relative prices on the goods and factor markets of the present EU Members.<sup>2</sup> As for the CEECs, the opening of and integration into the EU will probably bring a large shift in relative prices. Here, a considerable impact of trade on relative wages, inter-industry wage differentials and employment is to be expected. Second, the large gap in factor endowments makes it likely that competition between imports from the CEECs and local production in the EU will not take place on many markets. In such cases, all factors of production would benefit from a decline in prices in these commodities. The main reason for concern within the EU is the geographical fragmentation of production processes, since a large gap in wages between EU Members and CEECs is associated with a only a small geographical distance. Outsourcing may affect wages and employment in certain sectors and regions of the EU.

The second channel which may affect wages and employment within the present EU is the immigration of labour. In view of the large gap in wages and rather small geographical distances, the economic incentives for migration are high. However, beyond the existing legal restrictions for labour mobility between the CEECs and present EU Members, a set of economic, social and cultural barriers underlie labour migration. As past experience has shown, only a relatively small fraction of the workforce may be expected to migrate, even given large

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<sup>2</sup> See e.g. Leamer (1993).

differences in incomes and wages (see Sections 5.3 and 7.3). In open economies, the additional supply of labour through migration is not necessarily associated with a shift in relative wages: an increasing supply of a factor through immigration leaves its relative wages unaffected if its marginal demand is determined by a tradable sector that faces an elastic demand on world markets. Suppose, for example, that the marginal demand for unskilled labour in a country or region is determined by the textile industry, which exports to world markets at a given price. The immigration of unskilled labour would, in this case, increase production and exports of textiles, while wages would remain unchanged. Conversely, if the marginal demand for unskilled labour were determined by non-tradable service sectors, an increasing supply of unskilled labour through immigration would be likely to effect a decline in relative wages.<sup>3</sup> Notice that empirical research on the impact of migration upon inter-regional and inter-industry wage differentials has found only very moderate effects on wages and employment.<sup>4</sup>

Finally, the integration of capital markets can affect wages and employment in the present EU and CEECs. Economic theory provides no unequivocal results on the impact of foreign investment upon factor incomes and employment.<sup>5</sup> In the standard HOS-framework with identical technologies, constant returns to scale and absence of transport costs, capital movements and trade are substitutes. Exports of capital from a capital-abundant country reduce, analogous to trade, the relative price of labour until factor price equalisation has been achieved (Mundell 1957). However, if we relax the assumption of identical technologies, capital movements and trade may be complements, i.e. the export of capital may trigger additional exports and imports. In this case, factor mobility does not affect relative factor incomes until complete specialisation has been attained (Markusen 1983). Furthermore, with regard to transport costs and increasing returns to scale, market proximity is a key incentive for foreign investment. Instead of differences in factor endowments, the volume of investment is determined in models which consider increasing returns to scale and transport costs according to the size of foreign markets and the distance to the home countries<sup>6</sup>. Depending on market size and transport costs, foreign investments can complement trade in these models and, hence, be

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<sup>3</sup> For a detailed discussion see Leamer (1996).

<sup>4</sup> For a review see Friedberg and Hunt (1995) and Section 5.

<sup>5</sup> For a review see Baldwin (1994) and the contributions in OECD (1995).

<sup>6</sup> See for the explanation of foreign investment by increasing returns to scale, product differentiation, imperfect competition and transport costs among others Brainard (1993b), Helpman and Krugman (1985), Horstman and Markusen (1992), Markusen and Venables (1995).

neutral or increase incomes of factors employed in the investing sectors. Empirical research on investment patterns indicates that foreign investments motivated by market proximity by far surpass the volume of foreign investments determined according to differences in factor endowments.<sup>7</sup> In view of the considerable gap in factor endowments between the EU and the CEECs, capital movements may be motivated by both market access and differences in factor endowments. In certain sectors, foreign direct investments may contribute to the outsourcing of labour intensive production processes and may hence impair employment and wages of unskilled labour in the EU.

From this brief discussion of the predictions of economic theory with regard to the impact of trade and factor mobility on wages and employment, we can draw the following conclusions for an empirical investigation of the effects of Eastern Enlargement. First, in view of the technology gap between the EU and the CEECs and the rather small size of the candidate countries, the removal of trade barriers will probably have only limited effects on relative factor prices and employment at the economy-wide level of the present EU Members. However, since the factors of production are specific and factor mobility across sectors is limited, the opening and integration of the CEECs may affect wages and employment in certain branches and regions of the present EU Members either positively or negatively. Thus, a careful analysis of specialisation patterns between the EU and the CEECs along with an estimation of the impact of trade on inter-industry differentials in wages, labour-mobility and employment is necessary in order to evaluate the labour market consequences of removing the barriers to trade. Second, since factor endowments are dissimilar between the EU and the CEECs, complete specialisation may be more than just a limiting case in theory. An assessment of whether or not labour intensive imports from the CEECs compete with domestic production in the EU is therefore needed to assess the detrimental or beneficial effects of trade on real incomes of workers in the EU. Third, since trade will not bring about factor price equalisation at least in the short and medium term, incentives for the migration of labour as well as for the movement of capital remain high. On the other hand, the migration of labour and capital movements would for certain economic, institutional, social and cultural reasons be rather costly even after an accession of the CEECs to the EU. An assessment of the future development of trade and factor mobility between the EU and the CEECs is therefore needed in order to evaluate the possible implications of Eastern Enlargement on wages and employ-

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<sup>7</sup> Brainard (1993a, 1993b), Döhrn (1996); Graham and Krugman (1992); Markusen (1995).

ment. Fourth, the migration of labour as well as foreign investment can only affect the relative income and employment of domestic factors when production does not expand elastically. The immigration of labour can, hence, be neutral for wages and employment of nationals. An analysis of branch patterns of migrant employment as well as an estimation of the actual wage and employment response is therefore necessary in order to assess the impact of migration. The same holds true for capital movements. Finally, there is no unequivocal answer from the angle of economic theory whether trade, the migration of labour and the movement of capital are complements or substitutes for each other. Thus, as an example, capital movements to the CEECs can increase trade and, thus, be neutral or beneficial for wages and employment in the affected sector. An assessment of whether or not trade, migration and capital movements between the EU and the CEECs are substitutes or complements would therefore shed further light on the labour market implications of Eastern Enlargement. However, time series of trade, migration and capital flows between the EU and the CEECs are too short to expect deeper insights from empirical research beyond some suggestive evidence from the descriptive analysis of patterns of trade and factor mobility.

The interaction of trade and factor mobility calls, at first glance, for an empirical approach which analyses the integration of the CEECs into the EU markets for goods, labour and capital simultaneously in a common framework. Indeed, a number of studies have analysed the impact of Eastern Enlargement in computable general equilibrium (CGE) models, which simulate the response of goods and factor markets as well as individual sectors to a long-lasting change in the economic environment. These studies have in common that they found very small effects of Eastern Enlargement both on GDP growth and on relative wages in the present EU Members.<sup>8</sup> These findings confirm our expectation that the volumes of present trade, migration and capital movements between the EU and the CEECs are too small to effect an economy-wide impact on wages and employment in the present Member States. An accession of the CEECs to the EU will further accelerate trade and factor mobility, but will probably not change the picture as a whole (see Section 7). We therefore place emphasis on analysing the impact of integration at branch levels and on inter-industry differentials in wages and employment rather than at the economy-wide level. For this purpose we have followed the more traditional approach of combining the descriptive analysis of the patterns of trade and factor mobility with a quantitative assessment of its possible implications for wages and employment.

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<sup>8</sup> See Baldwin, Francois and Portes (1997), Gasiorek, Smith and Venables (1995), Keuschnigg and Kohler (1996, 1997).

### **3 The EU and the CEECs at the outset of accession: differences in income, factor endowment and factor prices**

The income differential between the present EU Members and the CEECs is - with a GNP per capita at purchasing power parity in the candidate countries of roughly one-third of the respective levels in the present EU on average - larger than in past accession rounds. This large gap in per capita incomes can be traced back to differences in factor endowments as well as in technologies and institutions. Not surprisingly, the available information on factor endowments and factor prices indicates that the gap in per capita incomes corresponds to low endowments with physical assets and an abundance of labour in the CEECs relative to the present EU Members. The picture with regard to human capital is more ambiguous. While we can observe distinct gap in formal educational levels like school enrolment rates between the EU and the candidate countries, educational levels of the CEECs are high relative to countries with similar per capita incomes. The high shares of primary sectors in employment and GDP reflect differences in development rather than particularly rich endowments of the CEECs in natural resources. An exemption is the rather high endowment of some CEECs with agricultural floor space. Thus, we cannot conclude that the CEECs have a general comparative advantage in natural resource endowments. In order for per capita incomes in the CEECs to catch up to EU levels, a convergence of capital endowments is needed. Current investment rates in the CEECs and the post-war growth experience among the EU and other Western European countries indicate that the converging of capital stocks and per capita incomes is a time-consuming process. Thus, any realistic policy scenario has to acknowledge the fact that large differences in per capita incomes and factor endowments between the EU and the CEECs will persist not just for years, but for decades. However, the large gap in per capita incomes between the EU and the CEECs cannot be attributed solely to differences in factor endowments, but are also due to differences in technologies and institutions. Note that differences in technologies and institutions have other implications for employment and wages than differences in factor endowments: If the wage gap can be traced back chiefly to differences in technologies and institutions, trade has only a minor impact on wages and other factor prices.

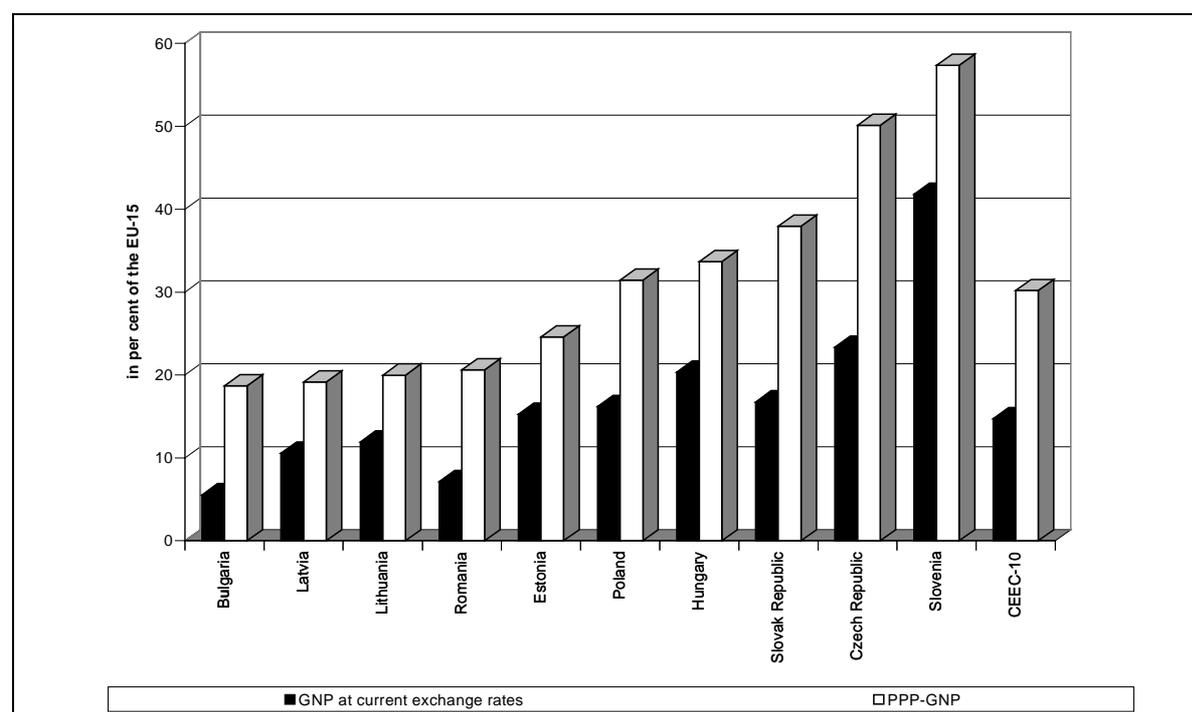
#### **3.1 The income differential**

Per capita GNPs in purchasing power parities of the ten EU candidates in Central and Eastern Europe amounted in 1997 to approximately one-third of the respective levels in the present

EU countries<sup>9</sup>. Note that the variance of income levels across the CEECs is high: per capita GNPs in purchasing power parities varied from 19 per cent (Bulgaria and Latvia) to 57 per cent (Slovenia) of the average level in the EU (cf. Figure 3.1, Tables 3.1, A.1, A.3). At current exchange rates, the gap in per capita incomes is even larger: the nominal GDP per capita of the ten candidate countries was 15 per cent of average levels in the EU in 1997<sup>10</sup> and varied between 6 per cent in Bulgaria and 42 per cent in Slovenia (cf. Tables A.1 and A.2).

Figure 3.1

### GNP Per Capita at Current Exchange Rates and Purchasing Power Parities 1997



Sources: OECD, World Development Indicators 1999, authors' calculations.

Although a considerable gap in per capita incomes between EU Members and candidates for accession as such is nothing new, the income differential in the case of the CEECs is extraordinarily high. The PPP-GDP per capita of Greece amounted to as much as 69 per cent, and the PPP-GDPs of Portugal and Spain to 62 per cent and 71 per cent, respectively, of the average level of the EU Members in 1981 and 1986.

<sup>9</sup> For reasons of coherence and consistency we use the purchasing power parity estimates of the World Bank (1999). The World Bank PPP-GNP estimates for 1997 have been in line with those of UNDP (1999), but considerably lower than the estimates from EUROSTAT (cf. Table A.3). Note that all purchasing power parity estimates suffer from methodological problems and, therefore, have to be interpreted with caution.

<sup>10</sup> In 1998 the average GDP per capita of the CEEC-10 has fallen to 11 per cent of respective levels in the EU in the course of exchange rate crises in several candidate countries (cf. Table A.2)

In 1997 the purchasing power of one US dollar in the CEECs was, according to World Bank estimates, more than twice that of the EU in 1997. Low-income countries usually have a higher income in purchasing power parities than at current exchange rates, since the productivity gap to high-income countries is lower in non-tradable sectors (e.g. services) than in tradable sectors (e.g. agriculture, manufacturing industries). Nevertheless, it is a striking fact that, in the case of the CEECs, the difference between incomes in purchasing power parities and at current exchange rates is high relative to other countries with the same level of per capita incomes. Real exchange rates of the currencies in the CEECs have appreciated since the start of transition and will probably appreciate further along with the converging per capita incomes. Thus the difference in nominal and real wages will decline in the course of converging incomes.<sup>11</sup>

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<sup>11</sup> For a scenario see Havlik (1996).

Table 3.1

**GDP and GNP Per Capita in Purchasing Power Parities (PPP)**

	GDP per capita 1938 <sup>1)</sup>		GDP per capita 1990 <sup>1)</sup>		GNP per capita 1997 <sup>2)</sup>	
	in 1990 USD	in % of EU-15	in 1990 USD	in % of EU-15	in 1997 USD	in % of EU-15
Bulgaria	1,595	37	5,764	36	3,870	19
Czech Republic	"	"	"	"	10,380	51
Estonia	"	"	"	"	5,090	25
Hungary	2,655	62	6,348	39	6,970	34
Latvia	"	"	"	"	3,970	19
Lithuania	"	"	"	"	4,140	20
Poland	2,182	51	5,113	32	6,510	32
Romania	1,242	29	3,460	21	4,270	21
Slovak Republic	"	"	"	"	7,860	38
Slovenia	"	"	"	"	11,880	58
<b>CEEC-10</b>	"	"	"	"	6,253	30
Austria	3,583	84	16,792	104	22,010	107
Belgium	4,730	111	16,807	104	23,090	113
Denmark	5,544	130	17,953	111	23,450	114
Finland	3,486	82	17,777	110	19,660	96
France	4,424	104	16,604	103	22,210	108
Germany	5,126	120	18,685	116	21,170	103
Greece	2,727	64	10,051	62	12,540	61
Ireland	3,116	73	11,123	69	17,420	85
Italy	2,727	64	15,951	99	20,100	98
Luxembourg	"	"	"	"	34,460	168
Netherlands	5,122	120	16,569	103	21,300	104
Portugal	1,707	40	10,685	66	14,180	69
Spain	2,022	47	12,170	75	15,690	76
Sweden	4,725	111	17,695	109	19,010	93
United Kingdom	5,983	140	16,302	101	20,710	101
<b>EU-15</b>	4,274	100	16,161	100	20,520	100
<i>memo items:</i>						
CEEC-6	2,131	50	5,454	34	6,350	31
(former) Czechoslovakia	2,882	67	8,464	52	10,166	50

1) PPP-GDP estimate by Maddison in 1990 Geary-Khamis Dollars. - 2) PPP-GNP by the World Bank in 1997 US-Dollars.

Sources: Maddison (1995), World Development Indicators, CD-Rom, Washington, D.C. 1999, authors' calculations.

Per capita incomes between the present EU Members and the CEECs have strongly diverged in the post-war period. According to the historical data collected by Angus Maddison (1995), the then-existing CEECs<sup>12</sup> achieved a PPP-GDP per capita of some 50 per cent of the present EU Members before World War II, but around 35 per cent in 1989 when the system of central planning collapsed. The abolishment of central planning, the opening of the CEECs to trade, capital flows and migration, and their integration into the EU will probably promote the catching-up of per capita incomes in the candidate countries to income levels of the present

<sup>12</sup> I.e. Bulgaria, Czechoslovakia, Hungary, Poland and Romania.

EU Members. However, under the assumption that the per capita incomes in an enlarged EU will converge at the same pace as those of the present EU Members in the post-war period on average, the half-life of an initial gap in per capita is still around 35 years. Thus, the high gap in per capita incomes between the present EU Members and the CEECs will persist for decades rather than only for years (see Section 7.1).

### **3.2 Labour endowment and wages**

Data on wages, employment and capital endowments indicate that the ten candidate countries are labour-abundant relative to the EU. Employment in the CEEC-10 in 1995 amounted to 38.4 million and the population in working age<sup>13</sup> to 72.2 million, that is, approximately, 30 per cent of the employees and the working-age population in the present EU (cf. Table 3.2). The ratio of working age to total population is now about the same in the EU as in the CEECs. While birth rates have fallen dramatically since the start of transition, the age structure of the workforce will remain low for decades in comparison to EU standards (Coleman 1993). The ratios of employment to working age population have declined sharply in all CEECs: starting from extremely high levels, they now remain on average at a level of 53 per cent, which is similar to countries with comparable incomes and to the EU average (see Boeri, Burda and Köllö 1998). With unemployment rates of around 10 per cent of the labour force, a veritable 'reserve army' of the jobless has been created in the course of transition. While the decline in employment affected women more than proportionally, gender differences remain smaller than in many EU countries. National unemployment rates vary between 5 per cent in the Czech Republic and 15 per cent in Poland. Furthermore, the regional distribution of unemployment within the candidate countries is heavily unbalanced (see Boeri, Burda and Köllö 1998, Boeri and Scarpetta 1996, Kertesi and Köllö 1995, 1997).

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<sup>13</sup> Working age is defined here as 15-59 for men, and 15-54 for women, respectively.

Table 3.2

## Selected Labour Market and Wage Indicators

	population in working age	labour force <sup>1)</sup>	employees	employment to population in working age rate in per cent	gross annually wages and salaries <sup>2)</sup>
		in thousand persons			per employee in US Dollars
	<i>all figures refer to 1995 unless otherwise indicated</i>				
<b>CEEC-10</b>	72 182	48 207	37,788	52	3 101
Bulgaria <sup>3)</sup>	4 745	3 603	3,286	69	1361
Czech Republic	6 308	5 301	3,123	50	3694
Estonia	1 062	727	n.a.	n.a.	2478
Hungary	6 145	4 565	3,648	59	3708
Latvia	1 436	1 276	1,189	83	2000
Lithuania	2 854	1 784	1,659	58	1437
Poland	29 106	17 004	15,842	54	3429
Romania	15 316	10 419	6,160	40	2268
Slovak Republic	3 585	2 586	2,138	60	2883
Slovenia	1 624	871	743	46	11341
<b>EU-15</b>	249 027	165 495	122 931	49	34 885
Austria	5 433	3 655	3 068	56	38 624
Belgium	6 709	4 248	2 992	45	45 333
Denmark	3 523	2 809	2 264	64	39 079
Finland	3 410	2 497	1 705	50	37 992
France	38 021	25 374	19 894	52	41 854
Germany	55 714	38 483	31 248	56	40 999
Greece	7 064	4 249	2 060	29	38 624
Ireland	2 304	1 459	1 004	44	n.a.
Italy	38 935	22 733	15 304	39	31 577
Luxembourg	278	172	198	71	39 004
Netherlands	10 569	6 527	4 710	45	34 542
Portugal	6 705	4 521	3 010	45	12 224
Spain	26 704	15 814	9 162	34	28 653
Sweden	5 640	4 323	3 728	66	36 004
United Kingdom	38 019	28 631	22 586	59	26 587
<i>memo item:</i>					
CEEC-10 in per cent of EU-15	29	29	31	-	9

1) Total employed and unemployed persons. - 2) Total compensation of employees divided by employees. - 3) Gross wages for public sector of the economy only.

Sources: OECD, Economic Indicators on Discette, Paris, 1998; Statistická Rocenka České Republiky '96, Praha; EESTI Statistika Aastaraamat 1996, Magyar Statisztikai Évköny 1996, Budapest 1997; Maly rocznik statystyczny 1997, Warszawa 1997; Statisticni Letopis 1996, Ljubljana; Slovenian Economic Mirror, various editions, Ljubljana; Republika Bulgarija, Statisticeski Ezegodnik 1996, Sofia; Latvijas Statistikas Maly rocznik statystyczny 1997, Gadagramata 1996, Riga; Lietuvos statistikos metraštis 1997, Vilnius; Anuarul Statistic Al României 1996, Bucarest; Statistická Rocenka Slovenskej republiky 1996, Bratislava; Eurostat, National Accounts ESA 1980-1995, Luxembourg 1997; Statistisches Bundesamt, Statistisches Jahrbuch für das Ausland, Wiesbaden 1997; authors' calculations.

Nominal wage levels at current exchange rates of the CEEC-10 are slightly below one-tenth of the EU average. However, the relative levels vary from 4 per cent in Bulgaria to 33 per cent in Slovenia. The large difference between nominal wages in the CEECs and EU does not only reflect differences in labour productivity but is also due to exchange rates. Real wages in the ten candidate countries average around one-fifth of the respective levels in the EU according to the purchasing power parity estimates of the World Bank.

### 3.3 Human capital endowment

Formal educational levels in the CEECs are below average standards of the present EU Members. Expected years of schooling are in most CEECs two or three years below the levels of most EU countries. The exception are some southern Members of the EU, whose population is expected to attain average years of schooling similar to or below the respective levels in the candidate countries. While enrolment rates in the CEECs are similar to EU levels in primary education, a distinct gap in enrolment rates exists in secondary and tertiary education (cf. Table 3.3). Furthermore, the share of vocational training in secondary education is extraordinarily high. However, formal education levels in the CEECs are rather high relative to other countries with similar per capita income.

It is questionable whether enrolment rates and average years of schooling are reliable indicators for human capital endowments. Internationally comparable studies on the quality of education such as the Third International Math and Science Survey (TIMSS) and the Second Adult Literacy Survey (SIALS) found that the capabilities of current pupils and students in the CEECs fall short of the skills of their counterparts in the OECD. Furthermore, outdated curricula and a rather narrow base of skill training provided by vocational schools raises concerns that human capital attained through vocational training has been largely devalued in the course of transition (Boeri and Keese 1992).<sup>14</sup>

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<sup>14</sup> For further information on the human capital endowment in the CEECs see the Report on Task #4 of this study, Section 3.3.4.

Table 3.3

## Selected Human Capital Indicators

	Gross school enrollment as a per cent of age group						Expected years of schooling			
	Primary		Secondary		Tertiary		Males		Females	
	1980	1996	1980	1996	1980	1996	1980	1995	1980	1995
<b>CEEC-10</b>										
Bulgaria	98	99	85	77	16	41	11	12	11	13
Czech Republic	96	104	114	99	18	23	..	13	..	13
Estonia	103	94	127	104	25	42	..	12	..	13
Hungary	96	103	70	98	14	25	9	12	10	13
Latvia	102	96	99	84	24	33	..	11	..	12
Lithuania	79	98	114	86	35	31	..	..	..	..
Poland	100	96	77	98	18	24	12	13	12	13
Romania	104	104	94	78	12	23	..	12	..	11
Slovak Republic	..	102	..	94	18	22	..	..	..	..
Slovenia	98	98	38	92	20	36	..	..	..	..
<b>EU-15</b>										
Austria	115	106	95	77	24	18	11	14	11	14
Belgium	104	103	91	146 <sup>1)</sup>	26	57	14	16	13	15
Denmark	96	102	105	121	28	46	14	15	14	15
Finland	96	99	100	116	32	71	..	15	..	16
France	111	106	85	111	25	52	13	15	13	16
Germany	..	102	..	104	27	45	..	15	..	15
Greece	103	94	81	95	17	43	12	14	12	14
Ireland	100	104	90	116	18	40	11	14	11	14
Italy	100	101	72	94	27	43	..	11	..	11
Netherlands	100	107	93	137 <sup>1)</sup>	29	50	14	16	13	15
Portugal	123	128	37	106 <sup>1)</sup>	11	38	12	13	12	13
Spain	109	109	87	122	23	51	13	15	12	16
Sweden	97	106	88	137 <sup>1)</sup>	31	49	14	15	13	14
United Kingdom	103	115	84	133 <sup>1)</sup>	19	50	13	16	13	17
<i>memo items</i>										
high income countries	103	103	86	106	34	58	..	..	..	..
middle income countries	106	114	51	70	11	15	..	..	..	..
low income countries	78	93	25	42	4	5	..	..	..	..

1) Incl. training for unemployed.

Source: World Bank, World Development Indicators, CD-ROM, Washington, D.C. 1999.

The returns to investment in human capital have increased in the course of transition: in all of the CEECs, the relative wages of workers with secondary and higher education levels have improved considerably. While open unemployment in the CEECs has affected all social groups, unemployment probabilities decline considerably with increasing skill levels (Boeri, Burda and Köllö 1998). The supply of human capital has responded to this change in incentives: enrolment rates in secondary and tertiary education have increased considerably in all CEECs since 1989. Furthermore, a shift of enrolment rates from vocational and technical schools to general secondary schools has occurred in most CEECs. The main exceptions are the Czech Republic and the Slovak Republic which, in contrast to most other CEECs, use an enterprise-supported vocational scheme similar to that of Germany. On the whole, while hu-

man capital endowments in the CEECs are gradually converging to the standards of the EU and other OECD countries, the gap is still marked in secondary and higher education levels.

### **3.4 Physical capital endowment**

The gap in per capita incomes between the ten candidate countries and the present EU Members corresponds to a large gap in physical capital endowments. Despite relatively high investment rates, the system of central planning left an outdated capital stock to the transition countries in Central and Eastern Europe. Furthermore, the shift in relative prices following transition and opening devalued a significant part of specific assets invested under the regime of central planning in the CEECs. The book value of the CEECs' capital stock per employee reported in the national statistics amounts to around one-tenth of the respective value for present EU Members at current exchange rates.

Low initial endowments with machinery and technology along with imbalances between physical and human capital endowments and new investment opportunities created by the transition and opening led most observers to predict high returns to investment in physical assets. Since reliable information on the value of capital stocks and returns to capital are not available, we calculated the incremental capital output ratio (ICOR) for the CEECs and the EU as an indicator for the real returns to investments in physical assets. Extremely low values of the ICOR indeed suggest that returns to investments in physical assets are substantially higher in the CEECs than those in the present EU Members (cf. Table 3.4).

Table 3.4

## Incremental Capital Output Ratio (ICOR)

	1994	1995	1996	1997
<b>EU-15</b>				
Austria	4.45	5.72	6.29	5.63
Belgium/Luxembourg	4.11	4.65	6.07	-
Denmark	3.08	3.97	3.80	3.85
Finland	2.69	2.13	3.81	2.18
France	4.26	5.04	6.56	5.23
Germany	4.41	5.39	9.22	6.89
Greece	1.56	1.72	2.04	2.15
Ireland	2.10	1.65	2.19	1.78
Italy	3.09	2.30	3.16	4.16
Netherlands	3.99	4.74	4.86	3.43
Portugal	2.94	3.14	4.05	4.07
Spain	3.33	2.92	3.78	3.86
Sweden	2.46	2.02	6.52	4.69
United Kingdom	2.63	3.10	3.01	2.73
<b>CEEC-10</b>				
Bulgaria	0.32	0.38	..	..
Czech Republic	2.32	2.21	2.75	4.34
Estonia	..	1.01	1.19	..
Hungary	1.08	0.89	1.15	..
Lativa	..	..	..	..
Lithuania	..	..	..	..
Poland	0.62	0.62	0.93	1.15
Romania	3.40	0.69	..	..
Slovak Republic	1.81	1.85	3.61	3.23
Slovenia	0.89	1.29	1.73	1.93

*Low values of the ICOR are an indication for a high marginal productivity of the capital stock and vice versa.  
Note that the ICOR can only be calculated for positive growth rates of the GDP.*

Sources: IMF: International Financial Statistics, various editions, Washington, D.C., World Bank: World Development Indicators, CD-ROM, Washington, D.C. 1998.

Given that in the CEECs human capital endowments are high relative to endowments with fixed assets, investment in physical capital is the key for per capita incomes to catch up to respective EU levels. However, the transition period began in all CEECs with a sharp decline in gross fixed investment. Meanwhile, investment rates have recovered in most of the CEECs. Note that in these countries, the ratio of gross fixed investment to GDP is not significantly higher than respective investment rates in the present EU, and that in some candidate countries (e.g. Poland), it even falls short of EU standards. In view of the extremely low initial levels of capital stock, the growth rates of capital stock in the CEECs are probably higher than those in the present EU Members, even if current investment ratios fall short of respective levels in the EU. Nevertheless, in the long run, the convergence of per capita incomes demands investment rates which are at least similar to EU levels. Increasing investment rates indicate that most of the CEECs will achieve investment rates similar to or higher than those

of the present EU Members at least for a transitional period. Policies promoting investment in physical assets are the main catalysts for accelerating the convergence of per capita incomes (see Chapter 3 of Part B). However, current investment rates demonstrate that the convergence of capital stocks between the present EU Members and the CEECs will take a long time. Even if viewed optimistically, the convergence of capital stocks and per capita incomes will require decades rather than years.

### **3.5 Natural resource endowment**

At first glance, the CEECs seem to be relatively richly endowed with natural resources: the shares of agriculture and mining in GDP are high relative to the respective shares of the present EU Members. Furthermore, the endowment with agriculturally cultivated ground space per 1,000 persons is notably higher than respective levels in the EU. However, the high shares of the primary sectors correspond to a notable gap in productivity between the EU and the CEECs. Thus the high shares of the primary sectors in employment reflect differences in development rather than rich endowments of the CEECs in natural resources. Along with converging per capita incomes, the shares of the primary sectors in employment and GDP of the CEECs will decline.

## 4 The removal of barriers to trade and factor mobility

Accession of the CEECs to the EU will affect impediments to and incentives for trade, migration of labour and movement of capital. The principles of the Single Market Programme guarantee the freedom of trade and factor mobility to all Members of the EU. Furthermore, with the *acquis communautaire*, the EU provides a complex regulatory framework pertaining to each of these elements of integration. However, as the experience gathered in previous accession rounds has demonstrated, integration into the EU is a lengthy process which begins long before accession and, due to transitional provisions, is not necessarily complete when accession takes place. The economic integration of the CEECs into the EU markets for goods, labour and capital has so far proceeded at a different pace: until now, trade of goods has been liberalised farthest, and most legal and administrative obstacles to capital flows have been removed. In contrast to trade and capital movements, movements of labour between the EU and the CEECs remain restricted to a large extent. Opening of labour markets for the movement of labour between the EU and the CEECs is that dimension of Eastern Enlargement which, in view of the existing restrictions, would most markedly change, *vis-à-vis* the *status quo*, the conditions of economic integration.

### 4.1 The removal of barriers to trade<sup>15</sup>

Before 1990 EU imports from the members of the former Council of Mutual Economic Assistance (CMEA) were subject to “most favoured nation” (MFN) tariff duties in the EU, and were thus burdened with the highest tariffs it applied. In the initial phase following the political and economic transition, the EU granted the CEECs the preferential tariff treatment of the Generalised System of Preferences (GSP),<sup>16</sup> and later consented in the Europe Agreements (EA) to an asymmetrical removal of tariff barriers. The gradual dismantling of tariffs culminated in the total elimination of tariffs on manufacturing imports on the side of the EU on 1 January 1997.

Measured against MFN levels, tariffs on manufacturing imports from the CEECs were reduced on average by around 7 percentage points, given the import structure of 1996. Romania

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<sup>15</sup> This Section is based on the background report “Trade Policy between the EU and the ten CEECs” by Uta Möbius (1999).

<sup>16</sup> Romania participated in the GSP already since 1971.

benefited most, with a tariff reduction of some 9 per cent, while the Baltic countries faced a rather moderate relief of around 5 per cent (cf. Table 4.1).

Table 4.1

	Average tariffs %			Year of total elimination of all duties
	MFN <sup>1)</sup>	GSP <sup>2)</sup>	EA <sup>3)</sup>	
Bulgaria	7.2	5.2	3.0	1997
CSFR <sup>4)</sup>	6.8	4.4	2.1	1997
Hungary	7.5	4.5	2.5	1997
Poland	6.4	4.0	2.4	1997
Romania	8.9	6.2	4.8	1997
Estonia	4.8	3.1	0.0	1995
Latvia	4.2	3.6	0.0 <sup>5)</sup>	1995 <sup>5)</sup>
Lithuania	5.5	4.3	0.0 <sup>5)</sup>	1995 <sup>5)</sup>
Slovenia	7.7	-	0.0 <sup>6)</sup>	1997 <sup>6)</sup>

1) Weighted with imports in 1992, Baltic countries and Slovenia 1993.- 2) Weighted with imports in 1991, Baltic countries 1993. These are MFN duties taking into account the duty relief of the GSP.- 3) In their first year of operation, that is: 1992 for CSFR, Hungary, Poland, 1993 for Bulgaria and Romania, 1995 for the Baltic countries and 1997 for Slovenia. Weighted with imports in 1992, Baltic countries and Slovenia 1993.- 4) Since 1993, Czech Republic and Slovakia.- 5) For many textiles, with tariff ceilings until 1 January 1998. If the ceilings are exceeded, the EU may reintroduce duties.- 6) With tariff ceilings for textiles until 1998 and some other sensitive products until the year 2000.

Source: Weise et al. (1997), pp. 43-45.

Differences in tariff rates between the candidate countries reflect the commodity structure of EU import protection: in general, the level of import protection is high in goods produced in labour intensive industries as well as in scale and capital intensive industries with a low level of technological sophistication (cf. Table 4.2).

Parallel to the dismantling of tariffs, the EU gradually removed quantitative restrictions (QR) on manufacturing imports. Before 1989, imports of many industrial products from the CMEA countries were restricted at the bilateral level of individual EU Members as well as at the Community level (textiles and products falling under the regime of the European Coal and Steel Community (ECSC)).<sup>17</sup> The EU eliminated these QR for the individual CEECs successively.<sup>18</sup> Analogous to the elimination of tariffs, the removal of quantitative barriers affects labour-intensive industries and capital and scale-intensive industries with a low level of technological sophistication.

<sup>17</sup> The EU Members mainly restricted imports of footwear, other leather products, wood, furniture, glassware, fertiliser, certain machinery, cars, motors, pneumatic rubber tyres and iron and steel products. For details see Möbius/Schumacher 1994, pp. 128 ff.

<sup>18</sup> Common quotas for ECSC products were liberalised when the Interim Agreements took effect; bilateral QRs had been lifted successively prior to that.

Table 4.2

### Hypothetical MFN Tariff Burden of EU-Imports from the CEECs

classification	CEEC-6 <sup>1)</sup>				CEEC-1 <sup>2)</sup>			
	1990		1996		1993		1996	
	import share in %	MFN tariff rate	import share in %	MFN tariff rate	import share in %	MFN tariff rate	import share in %	MFN tariff rate
manufacturing sectors								
labour intensive	20.79	10.31	28.05	8.99	30.81	10.04	27.74	8.97
scale and capital intensive	20.47	6.72	25.96	7.26	21.00	7.40	25.34	7.39
specialised suppliers	8.21	5.49	17.17	4.65	11.38	4.87	16.71	4.63
R&D intensive	0.98	5.87	2.52	4.86	2.23	4.89	2.58	4.78
resource intensive	22.58	4.55	15.01	3.67	18.38	4.97	16.55	3.93
other sectors	26.96	7.99	11.28	6.13	16.20	6.41	11.08	5.49
mining and quarrying	6.55	3.70	2.89	4.13	3.15	2.59	2.75	3.63
agriculture I (basic food)	7.77	8.13	2.40	4.25	3.29	7.06	2.11	4.28
Agriculture II (non-food)	0.52	0.07	0.67	0.14	0.69	0.12	1.00	0.08
food products	9.21	13.76	4.16	11.19	5.19	13.78	3.77	10.95
scrap	2.20	0.59	1.16	0.36	2.51	0.29	1.45	0.30
others	0.71	0.00	0.00	0.00	1.36	0.00	0.00	0.00
total	100.00	7.21	100.00	6.57	100.00	7.26	100.00	6.52

1) CEEC-6: Bulgaria, Czech Republic, Slovakia, Hungary, Polen and Romania. – CEEC-10: CEEC-6, Estonia, Latvia, Lithuania and Slovenia.

Sources: Eurostat Trade Databank, Eurostat Tariff Data Bank, author's calculations.

Agricultural goods have not been included in the free trade area. The average MFN tariff rates of the EU on agricultural imports from the CEECs are at around 24 per cent.<sup>19</sup> Concessions granted by the EU on the basis of the EAs are rather narrow: they do not cover all products and are often restricted to limited amounts. Nevertheless, the average tariff reduction on agricultural imports from the CEECs was around two-thirds relative to MFN levels in 1996. But notice that many preferential deliveries are limited by tariff quotas. In general, the market for agricultural goods is far from being completely liberalised.

The agreement on an asymmetrical removal of tariff and non-tariff barriers between the EU and the accession candidates leaves the CEECs more time for adjustment. The dismantling of tariffs on manufacturing imports from the EU will be completed in the CEECs by the year 2002. At the beginning of 1999 most CEECs lifted tariffs for about 80 per cent of their manufacturing imports from the EU. On average, remaining import duties on manufacturing imports are now less than half of the MFN level, with a further gradual decrease to zero by 2002

<sup>19</sup> Peaks of 87 per cent for dairy products and 35 per cent for meat and prepared vegetables were achieved. Our calculations are based on import data and estimated tariff amounts (in contrast to Table 4.2 variable components are included here) of EUROSTAT for the hypothetical MFN treatment as well as the preferential treatment of the regime agreed upon in the EAs.

at the latest. It is important to note that MFN tariff levels in most CEECs are higher than respective levels in the EU (cf. Table 4.3). Motor vehicles are among the most sensitive goods in the CEECs. Most quantitative restrictions on manufacturing imports from the EU were abolished in the CEECs when the EAs came into force<sup>20</sup>.

Table 4.3

**MFN Tariff Rates of the CEECs**<sup>1)</sup>

Weighted average in %

Country	Year	All products	Manufactured products	Year of total elimination of duties <sup>2)</sup>
Czech Republic	1996	5.9	6.2	2001
Hungary	1995	10.9	10.3	2001
Poland	1996	15.2	14.8	2002
Romania	1998	11.7	.	2002
Estonia	1995	0.4	0.5	1995
Latvia	1997	3.2	2.9	1999
Lithuania	1997	2.6	2.2	2001
Slovenia	1996	10.7	.	2001

1) Data for Bulgaria and Slovakia have not been available.- 2) On industrial products from the EU.

Sources: World Bank, World Development Indicators, CD-Rom, Washington, D.C. 1998. EU, Market Access Databank, internet, <http://mkacddb.eu.int/>. Europe Agreements.

In the CEECs the extent of protection of the agricultural sector by tariffs and quantitative restrictions as well as export subsidies is significantly below EU levels. The CEECs have, in view of the requirements of the World Trade Organisation (WTO), remodelled their trade regimes and, in preparation for accession, adjusted to EU standards. Generally, there are provisions for the phasing out of non-agricultural components in tariff rates on processed agricultural goods. According to the EAs, the CEECs grant preferential treatment to selected agricultural goods from the EU and have lifted most quantitative restrictions. Thus the trade surplus of the EU in agricultural goods was supported by the liberalisation of trade on the side of the CEECs.

EU exporters with high R&D intensity (e.g. aircraft, computers) and a high level of product differentiation (e.g. machinery) benefited from the removal of tariffs and non-tariff barriers to trade in the CEECs. At the same time, producers of labour intensive goods (e.g. textiles<sup>21</sup>, footwear, leather products) and of capital and scale intensive goods with a low level of technological sophistication (printing, chemicals other than pharmaceuticals, plastics and rubber

<sup>20</sup> Exceptions are petroleum oil and gas in Poland, various products in Hungary and uranium and paper by-products or paperboard in the Czech Republic and the Slovak Republic. Furthermore, most CEECs have special restrictions on imports for used cars which are legitimated with ecological arguments.

<sup>21</sup> Including clothing, as defined in the protocols of the EA.

products) lost by increasing import competition (cf. Section 5.2). For the CEECs, the converse holds true. In particular, sectors with a high R&D intensity which substituted for imports from the world market were affected most by the removal of trade barriers. Protection of the motor vehicle industry is high on both sides. However, the motor vehicle industry in EU countries benefits more from the removal of trade barriers than does the motor vehicle industry in the CEECs. In agriculture, producers in the EU benefit more from the opening of the CEECs than they lose from the reduction of tariffs on the side of the EU.

The present state of integration of the CEECs into the EU markets for goods is comparable to that of the EFTA countries or, with the exemption of agriculture, of the EU before the implementation of the Single Market Programme. Accession of the CEECs to the EU will have two main effects. First, the dismantling of remaining barriers to trade and the gradual integration of the CEECs in the Common Agricultural Policy (CAP) will improve the competitiveness of the CEECs' agricultural sector vis-à-vis the present EU members. Second, the (gradual) adoption of the *acquis communautaire* of the EU will continue to reduce transaction costs for trade in goods and services, with the adoption of standardisation, certification and product liability rules particularly affecting transaction costs. While these developments will further increase trade links between the EU and the CEECs, they will have - beyond the agricultural sector - a minor impact in comparison to those changes which have already been induced by both the opening of the CEECs and the gradual removal of trade barriers following the conclusion of the Europe Agreements.

## **4.2 The removal of barriers to labour mobility**

The fall of the Berlin wall marked a turning point in the conditions for migration: since then, all CEECs grant their nationals the right to move in and out of their home countries.<sup>22</sup> EU members, too, have lifted visa requirements vis-à-vis the candidate countries for the most part. However, even after 1989, the present EU Members maintained most legal and administrative barriers to the immigration of labour from the CEECs. Bilateral agreements between EU Members and candidate countries permit the temporary immigration of labour within tight limitations in only a few countries. Thus the introduction of the principle of the free move-

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<sup>22</sup> New migration laws were adopted in Poland in 1988, in Hungary, Czechoslovakia and Bulgaria in 1989, in Romania in 1990 and in the former USSR in 1991. These laws guarantee the right to free movement and largely conform to international standards (see Salt 1996).

ment of labour would change the conditions for labour mobility considerably vis-à-vis the *status quo*.

The Europe Agreements (EAs) do not impair the authority of the individual EU Members with regard to the entry and stay of workers and their family members from the CEECs. The provisions of the EAs grant workers who are already employed in EU Member States the right of "non-discrimination." Beyond this, enterprises from the CEECs are entitled to employ citizens of their countries as key personnel, provided that these persons are employed exclusively by companies that are allowed to establish themselves in the EU. The same holds true for companies from the EU that are active in the CEECs. In principle the EAs grant nationals from the CEECs the right to establish companies, including those supplying services, in EU Member States. However, the EAs do not guarantee CEEC nationals the right to self-employment in the EU.<sup>23</sup>

Thus, the regulation of the immigration of labour remains mainly under the authority of the EU Member States. In the initial years of transition, most immigrants from the CEECs were affected by rules which were not designed for labour immigration, such as asylum and refugee laws. These rules were tightened in the wake of the large inflow of immigrants into EU Member countries at the beginning of the 1990s and during the 1993 recession. In view of the political reforms in the CEECs and the changes in asylum legislation, it became nearly impossible for nationals from the candidate countries to apply for asylum in EU Member States. Several EU Members do, however, grant nationals from the CEECs the right of temporary labour immigration either unilaterally or in bilateral agreements. Temporary labour immigration includes the categories of guest workers, seasonal workers, project-tied workers and border commuters. It is generally characterised by a fixed-term contract, entitling the worker neither the right to seek new occupations in host countries nor the right to family reunification. Temporary labour immigration is usually restricted to less than one year. These regulations, along with the tightening of asylum practices, increase temporary relative to permanent immigration from the candidate countries into the EU (see Garson et al. 1997).

Bilateral agreements with candidate countries have been concluded by Belgium, Finland, France, Germany and Sweden (cf. Table 4.4). In Belgium, Finland and Sweden the number of temporary immigrants from the CEECs is limited to a few hundred, in France to several thou-

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<sup>23</sup> See for further details on the implications of the EAs on labour mobility Weber (1997) and Handoll (1995).

sand workers. In Germany temporary labour immigrants from the CEECs amounted in 1996 to around 260,000 workers. However, the annual employment volume of these temporary labour contracts is estimated at around one-fourth or one-fifth of this figure (Hönekopp 1997a). In Austria immigration is regulated by a general quota system on a yearly basis. A quota of 8,660 persons was applied down in 1998. These quotas do not distinguish among different nationalities.<sup>24</sup>

Table 4.4

**Bilateral Migration Agreements**

	Belgium	Finland	France	Germany	Sweden
Czech Republic				A,B,C,D	
Estonia		A,C		A	E
Hungary				A,B,C	
Poland	A		A,B	A,B,C,D	
Slovenia				B,C	
Bulgaria				A,B,C	
Latvia		A		A,C	E
Lithuania				A	E
Romania				A,B,C	
Slovak Republic				A,B,C	

A: guest-worker agreement; B: seasonal worker agreement; C: project-tied worker agreement, D: border-commuter agreement; E: Exchange of trainee agreement.

Notice that Austria regulates immigration through a general immigration quota system.

In general, the present regulations of the EU Member countries channel current immigration flows from the CEECs to sectors characterised by a high degree of seasonal work (agriculture, tourism) and occupations with low qualifications. Furthermore, the rather generous immigration policies of Austria and Germany affected the geographical distribution of immigrants from the CEECs within the EU.

In view of the present regulation of immigration by single EU members, an accession of the CEECs to the EU will fundamentally change the conditions of migration. The free movement of persons and workers is an integral constituent of the EU Single Market, which has been fully established since the beginning of 1993. Article 39 of the EC Treaty guarantees the equal treatment of all EU citizens with regard to employment, occupation, remuneration, dismissal and other conditions of work. Nationals from EU Members have the right to stay in another Member State for three months in order to look for work and accept employment. Citizens from other EU Member countries are entitled to a five year residence permit. Na-

<sup>24</sup> See Werner (1996) for details on bilateral agreements between the EU and candidate countries.

tional legislation and practices favouring domestic workers have to be abolished. Although considerable progress has been achieved in the mutual recognition of professional qualifications and university degrees, in certain professions some obstacles to the transfer of qualifications remain. Furthermore, although in principle the civil sectors have been opened for nationals of other EU Members, some regulations preventing nationals of other EU Members from entering the civil service sector remain in the domain of national authorities. Finally, persons who are subjects of the social regime of one country and of the fiscal regime of another might be discriminated against. It is worth noting that the regulation of the access of EU foreigners to social benefits is in the domain of national authorities and is restricted in most Member States. Fears that free movement of labour in case of accession will create huge opportunities for 'welfare shopping' are therefore ill-founded. Accession of the CEECs to the EU will, however, significantly ease labour mobility and open up new possibilities for the transfer of human capital. It should be noted that the unrestricted right to supply services may also have a considerable impact on the labour supply in the Member States.

### **4.3 Opening and integration of capital markets**

The conditions for foreign direct investment have been liberalised almost completely since the opening of and transformation in most CEECs. The legal systems in all CEECs protect foreign ownership and for the most part permit the repatriation of profits and capital. As part of their accession to the OECD, the Czech Republic, Hungary and Poland agreed to meet the OECD standards for equal treatment of foreign and domestic investors. In Estonia, Latvia, Poland, and Slovenia, some limitations on foreign ownership still exist in certain sectors (e.g. communications, insurance, public utilities). Several countries restrict foreign ownership in real estate (Bulgaria, Estonia, Poland). All countries established current account convertibility of their currencies and most of them adhere to the IMF's Article VIII status. However, short- and medium-term capital transactions are restricted in one way or another in all candidate countries. All CEECs have established financial markets, but shortcomings in the supervision and regulation of the banking systems as well as the stock exchange and security markets exist in most countries. The liquidity of the stock exchanges and security markets remains low even if we consider the rather low level of income in the CEECs. In the majority of CEECs, however, much progress has been made in the opening of capital markets.

Accession of the CEECs to the EU demands the implementation of complete and effective capital account convertibility and will thus have the most marked impact on the conditions for portfolio investments and other short-term capital flows. Furthermore, accession of the CEECs to the EU will affect the regulation of the financial systems, the principles of taxation and the rules of business accounting. The harmonisation of these rules and the reduction of uncertainty with regard to the stability of institutions may have a considerable impact on portfolio and foreign direct investment as the experience of other enlargement rounds has demonstrated. Thus, a gain in credibility of the CEECs' institutional and economic stability will be the main effect of Eastern Enlargement on capital mobility.

#### **4.4 What will accession change?**

The integration of the CEECs in the European markets for goods and factors is still under way. An accession of the candidate countries to the EU will further promote the integration of goods and factor markets, but not completely change the picture: on the EU's side, tariff barriers and quantitative restrictions for the trade of manufacturing goods are already completely dismantled. On side of the CEECs, tariff and non-tariff barriers for the trade of manufacturing goods have been almost removed too. Tariffs and tariff quotas from the EU for the imports of agricultural goods from the CEECs remain, but have been reduced significantly. All candidate countries have opened their capital markets, but shortcomings in the regulation and supervision of the banking system and financial markets lead to impairment, especially for the inflow of portfolio capital and credits. The Europe Agreements do not affect the authority of EU Members to regulate the immigration of labour from the CEECs. Beyond some bilateral agreements on temporary migration, the immigration of labour from the CEECs remains largely restricted in the Member states.

An accession of the CEECs to the EU will, vis-à-vis the status quo, have the following main effects for trade of goods and factors:

- It will further reduce transaction costs for the trade of goods and services through the adoption of the *acquis communautaire* and the harmonisation of quality standards, certification and product liability rules.

- The (gradual) integration of the CEECs in the Common Agricultural Policy (CAP) and the dismantling of remaining barriers to trade of agricultural goods will improve the competitiveness of the agricultural sector in the CEECs relative to the EU.
- The harmonisation of capital market regulation and the rules of taxing and business accounting will, along with the higher credibility of economic reform certainly improve the conditions for foreign investments. Portfolio investments are probably more than proportional affected by the improvement of investment conditions.
- Since entry to the EU labour market is at the present largely restricted for migrants from the CEECs, an accession to the EU will most markedly change the conditions for the migration of labour.

## **5 Trade, migration and capital movements: which sectors, factors and countries have been affected?**

### **5.1 Basic trends in trade, migration and capital movements**

Transformation, opening and the gradual integration of the CEECs into the markets of the EU have led to an expansion of trade and factor movements in all markets involved:

- EU trade with the CEECs developed more dynamically than trade with any other group of countries since the fall of the Berlin wall: the EU's exports to the CEECs grew by a factor of 6.5 from 1988 to 1998, while the EU's imports from the CEECs grew by a factor of 4.5 over the same time period. The share of the EU in total trade of the ten candidate countries has reached around 60 per cent, almost as high as in mutual trade of EU members themselves. The share of the EU in total trade of the first-round candidate countries is slightly higher than the share of the EU in trade of the other candidate countries. The reorientation of trade toward the EU has been associated with a distinct decline in the CEECs' trade with other transition countries. Despite high growth rates of trade, the share of the CEECs in total EU trade has remained comparatively modest, with 5 per cent of total EU exports in 1998, and 4 per cent of total imports of EU Members. The CEECs' shares in trade of Austria, Germany, Greece and Finland considerably exceed those of other EU countries. For the EU as a whole, however, the economic weight of exports to the CEECs, measured as a percentage to GDP, was in 1998, with a figure of 1.2 percent, still rather low. This also applies to imports, with a corresponding share of 0.9 per cent. The rather moderate role of the CEECs in EU trade reflects the large difference in per capita GDPs. In contrast, for the candidate countries, imports from and exports to the EU have reached, with 24 and 19 per cent respectively, considerable shares in their GDPs. It is also worth noting that the transition and opening process in the CEECs has been accompanied by continuously growing trade deficits vis-à-vis the EU.
- Net immigration from the CEECs into the EU accelerated in the immediate aftermath of transition, but declined sharply after 1993. In the wake of tightened asylum laws and bilateral agreements between EU Members and single CEECs, temporary migration increased at the expense of permanent migration. From 1990 to 1997, cumulative registered net immigration from the ten CEECs into the eight EU member countries, which publish annual

migration flows<sup>25</sup>, amounted to some 640 thousand persons, which is with 12 per cent only a fraction of the total net immigration of some 4.8 million foreigners into the EU during the same time period. The inclusion of the other six EU members would raise cumulative net immigration by approximately 140 thousand persons. The number of nationals from the CEECs residing in the EU can be estimated at around 850,000 persons in 1998. With shares of 0.2 to 0.3 per cent in the EU population and in EU employment respectively, the number of registered immigrants from the CEECs is - in view of the large gap in per capita incomes - surprisingly low at the present stage. Around 80 per cent of the immigrants from the CEECs reside in Austria and Germany. Still, even in these countries the share of immigrants from the CEECs in the workforce is, at 1.1 and 0.5 per cent, rather modest.

- Net annual capital inflows into the ten CEECs fluctuated between USD 14 billion and USD 28 billion in the years 1995 to 1998, more than half of that originating from EU members. Stocks of total foreign direct investment in the CEECs reached approximately USD 49 billion by the end of 1997. The USD 17.5 billion net capital inflows into the CEECs assumed significant proportions, with 5 percent relative to GDP and with 25 percent relative to gross fixed investment in 1997. However, from the perspective of the present EU Members, the magnitude of capital flows to the CEECs is, at around 0.15 per cent of GDP and 0.8 per cent of gross fixed investments, too small to generate significant economy-wide effects on interest rates and factor incomes. The total number of employees in foreign affiliates of EU firms in the CEECs is estimated at around 750,000.<sup>26</sup>

## 5.2 The impact of trade

Integration of the CEECs into the EU can affect wages via the supply of and the demand for factor services embodied in traded goods.<sup>27</sup> While economic theory predicts an overall gain in welfare from the integration of economies with different factor endowments, individual factors may lose from an additional supply of their services due to economic integration. Not surprisingly, the analysis of inter-industry trade patterns shows a revealed comparative ad-

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<sup>25</sup> Belgium, Denmark, Finland, Germany, Luxembourg, Netherlands, Sweden and United Kingdom.

<sup>26</sup> This figure has been inferred from information on employment in affiliates of German and Austrian firms in the CEECs.

<sup>27</sup> More precisely, wages are affected if changes in the supply of and the demand for goods effect a change in commodity prices. There is no unequivocal relation between the supply of and demand for traded goods and wages, but under reasonable assumptions the change of the supply of and demand for certain goods is correlated

vantage of the present EU Members in human capital intensive industries and of the CEECs in labour intensive branches. These differences in inter-industry specialisation show a declining tendency over time, while the share of intra-industry trade increases. However, this increase of intra-industry trade between the EU and the CEECs does not by any means amount to an equalisation of the factor content of traded goods. Extremely high differences in the unit values of goods exported to and imported from the CEECs indicate that declining differences in inter-industry specialisation patterns go hand in hand with an increasing specialisation in different quality and price segments of specific markets. Thus, behind the increase in intra-industry trade, one can identify a specialisation in human capital intensive production processes on the part of the EU and in labour intensive production processes on part of the CEECs. However, the trade shares of the CEECs are too low to expect an impact on wages and employment even in the most strongly affected countries. If the impact of an increasing specialisation in human capital intensive and labour intensive goods between the West and the East can be felt at all in the present EU, this is in the regions immediately bordering on the CEECs. On the part of the CEECs, transition and opening along with the integration into European markets has without doubt triggered huge structural changes, which have affected employment and wages in the candidate countries. In particular, resource and human capital intensive industries have felt the change in relative prices. Taking account of the large differences in factor productivity and technology, the increase in trade between the present EU Members and the CEECs may foster the convergence of relative factor prices, but large differences in the absolute levels of wages and other factor prices will remain. Hence, the increasing integration of the CEECs into the European markets for goods will mitigate incentives to migrate only to a limited extent.

The emerging patterns of trade between the EU and the CEECs have been the subject of several studies since the beginning of transition, most notably CEPR (1990), Collins and Rodrik (1991) and the contributions in Faini and Portes (1994), as well as those printed in the 1994 (6th) volume of *European Economy*. Furthermore, some recent studies emphasise the role of intra-industry trade and vertical differentiation of products in trade between the EU and the CEECs.<sup>28</sup> In our analysis of trade patterns we build on this previous research, but focus more

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with the change of wages of factors employed intensively in the production of the affected goods. For a discussion see Deardorff and Staiger (1988).

<sup>28</sup> See e.g. Atupurane, Djankov and Hoekman (1998), Berke and Trabold (1996), Fidrmuc et al. (1998), Landesmann (1996), Landesmann and Burgstaller (1997).

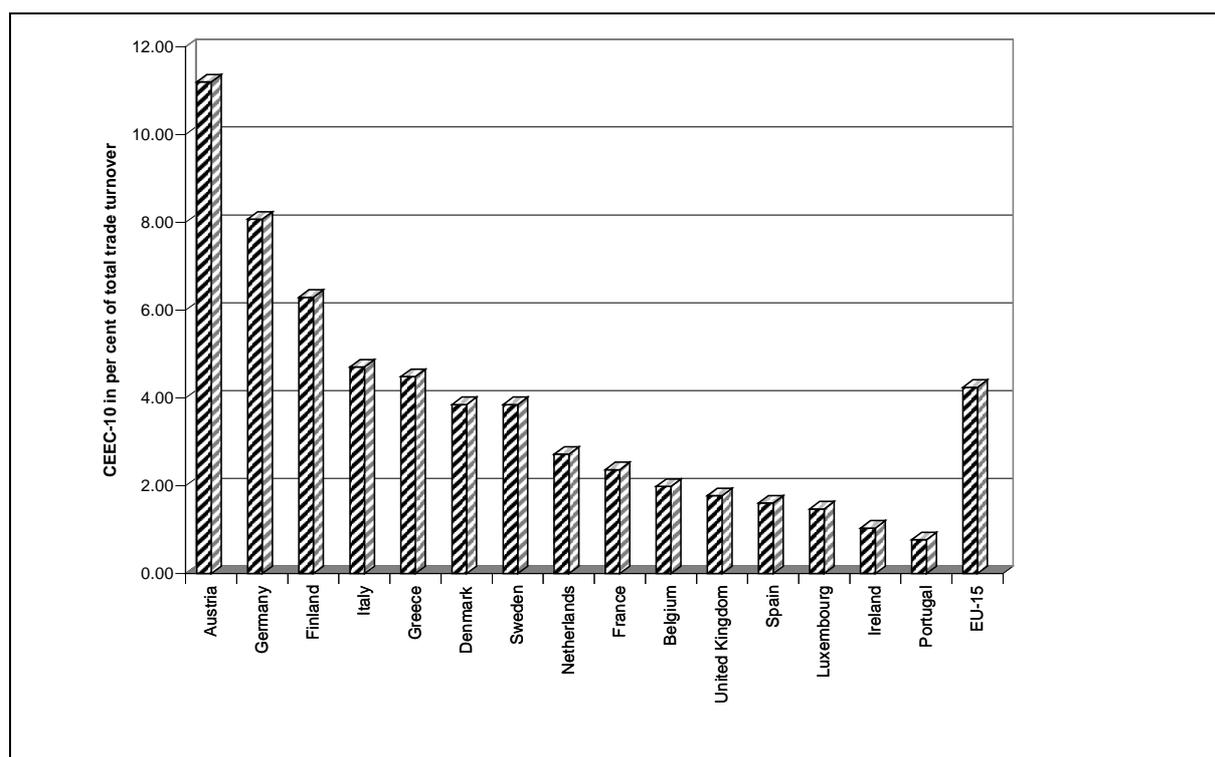
explicitly on the possible impact on relative wages and employment. A detailed analysis is provided in the background report to this study by Brücker (1998).

### 5.2.1 Which countries and regions are affected?

Geographical proximity plays a key role in trade between the EU and the CEECs. Three-quarters of all EU trade with the CEECs is conducted by countries bordering them, i.e. Austria, Germany, Greece, Italy and Finland. In these countries the share of CEEC trade in total trade is considerably higher than in other EU Members (cf. Figure 5.1, Tables A.4-A.7). Moreover, the share of exports to and imports from the CEECs is in these countries considerably higher than the EU average (cf. Tables A.8 and A.9).

Figure 5.1

Share of CEEC-10 in Foreign Trade Turnover of EU-Members 1998



Source: OECD, Direction of Trade Statistics, authors' calculations.

The role of geographical proximity in trade between EU Members and the CEECs is extraordinarily high: estimates based on gravity models, which project 'normal' patterns of bilateral trade on the basis of distance, GDP and population variables, show that Austria, Germany and other countries bordering the CEECs have already reached or surpassed the 'normal' volume of trade with the CEECs in 1997, while the trade volume between the EU and the CEECs

amounted on average only to 60 per cent of the expected volume (see Section 7.2). There are no indications that the trade dynamics between the bordering countries of the EU and the CEECs are slowing down. Furthermore, trade patterns change with geographical proximity: the shares of intra-industry trade and outward-processing of the bordering countries are significantly higher than those of other EU Members in trade with the CEECs.

*Are other countries affected by trade diversion?*

Eastern Enlargement may affect countries outside the EU through the diversion of trade in favour of the CEECs, as well as countries within the EU through the displacement of exports and imports of EU Members by trade with the candidate countries. In particular, there are concerns that imports from the southern EU Members will be displaced by imports from the CEECs.<sup>29</sup> Trade theory suggests that a trade-creating customs union is welfare-improving, while a trade-diverting customs union, i.e. one where integration triggers a shift of imports from a lower-cost to a higher-cost source of supply, may be welfare-reducing.<sup>30</sup> The displacement of trade among present EU Members through the integration of the CEECs is expected to be welfare-improving, but may nevertheless have a detrimental impact on incomes of certain factors. Neither trade diversion nor the displacement of EU trade in favour of the CEECs can be completely excluded. However, descriptive evidence suggests that the trade-creating effects of Eastern Enlargement rule out trade-diverting and trade-displacing effects by far:

First, the calculation of similarity indices indicates that the similarity of the structure of EU imports from the CEECs with EU imports from the southern EU Members as well as with imports from developing countries is only slightly higher than with other industrial countries.<sup>31</sup> In 1989, the similarity of the structure of EU imports from the CEECs to that of im-

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<sup>29</sup> Some earlier studies presumed that southern EU Members, i.e. Greece, Spain and Portugal, would be affected by the displacement of trade through trade with the CEECs, since their factor endowments are more similar to the CEECs than those of other EU Members (see Gual and Martin 1995, Corado 1995).

<sup>30</sup> For the exact conditions under which a trade-diverting customs union tends to be welfare-reducing, see the seminal contributions of Viner (1950) and Meade (1956) as well as the debate by Lipsey (1960), Bhagwati (1971). An excellent survey is provided by Baldwin and Venables (1995). An application of customs union theory to Eastern Enlargement is given in Baldwin (1994).

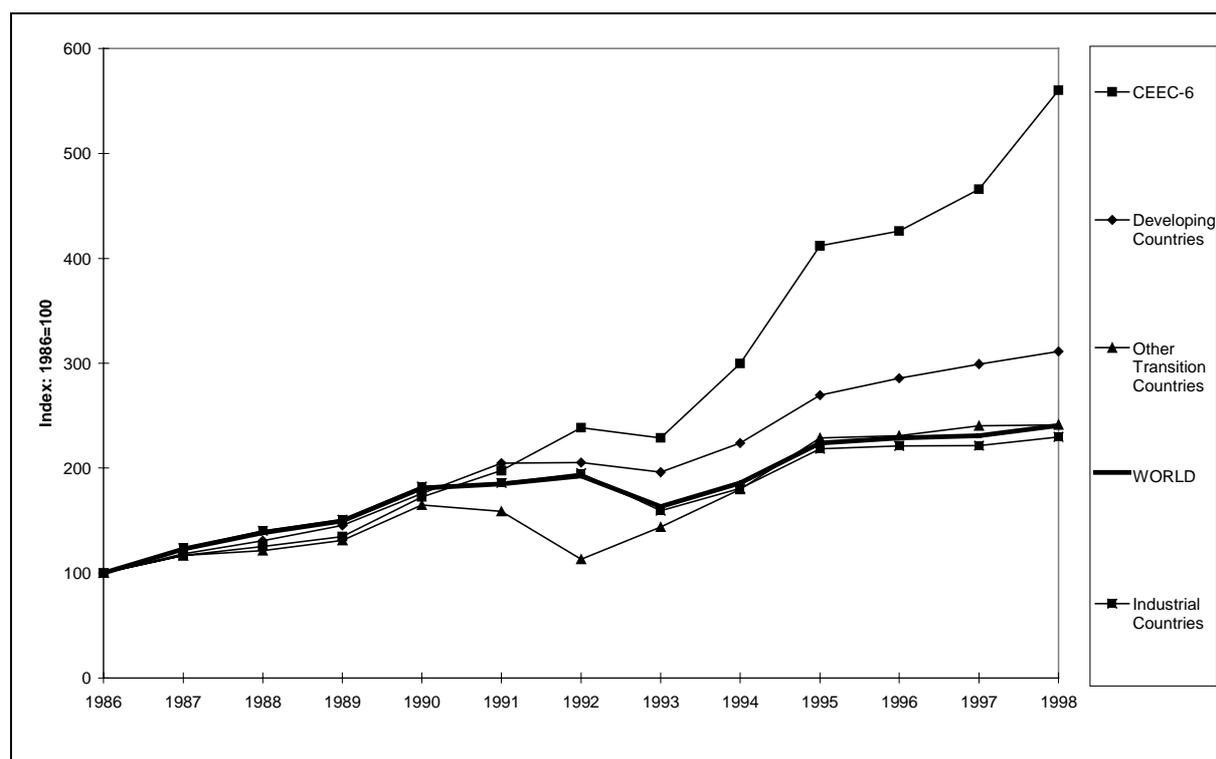
<sup>31</sup> We used two measures of the similarity of imports between countries and country groups: first, the standard Finger/Kreinin (1979) index, which calculates the similarity between imports from country  $i$  with imports from country  $j$  by  $S_{ij} = \sum_{k=1}^n \min(s_{ki}, s_{kj}) \cdot 100$ , where  $s_{ki}$  and  $s_{kj}$  denote the shares of good  $k$  in total imports from country  $i$  and country  $j$ , respectively,  $n$  the total number of commodity groups, and  $S_{ij}$  the similarity index. (See

ports from other transition countries was relatively high, but had declined to normal levels by 1996 (cf. Tables A.10 and A.11). Furthermore, large differences in unit values indicate that the CEECs do not compete with southern EU Members in the same price and quality segments of markets.

Second, since the opening and transition of the CEECs we have not observed a decline either in the levels or in the dynamics of EU imports from developing countries. However, EU imports from other transition countries performed only at the average of the dynamics of EU imports. This tendency may be attributed chiefly to the poor growth performance of these economies and falling prices for natural resources, but trade diversion in favour of the candidates for accession may also have contributed to this tendency (cf. Figure 5.2).

Figure 5.2

#### EU-15: Imports by Country Groups



Source: OECD, Direction of Trade Statistics, authors' calculations.

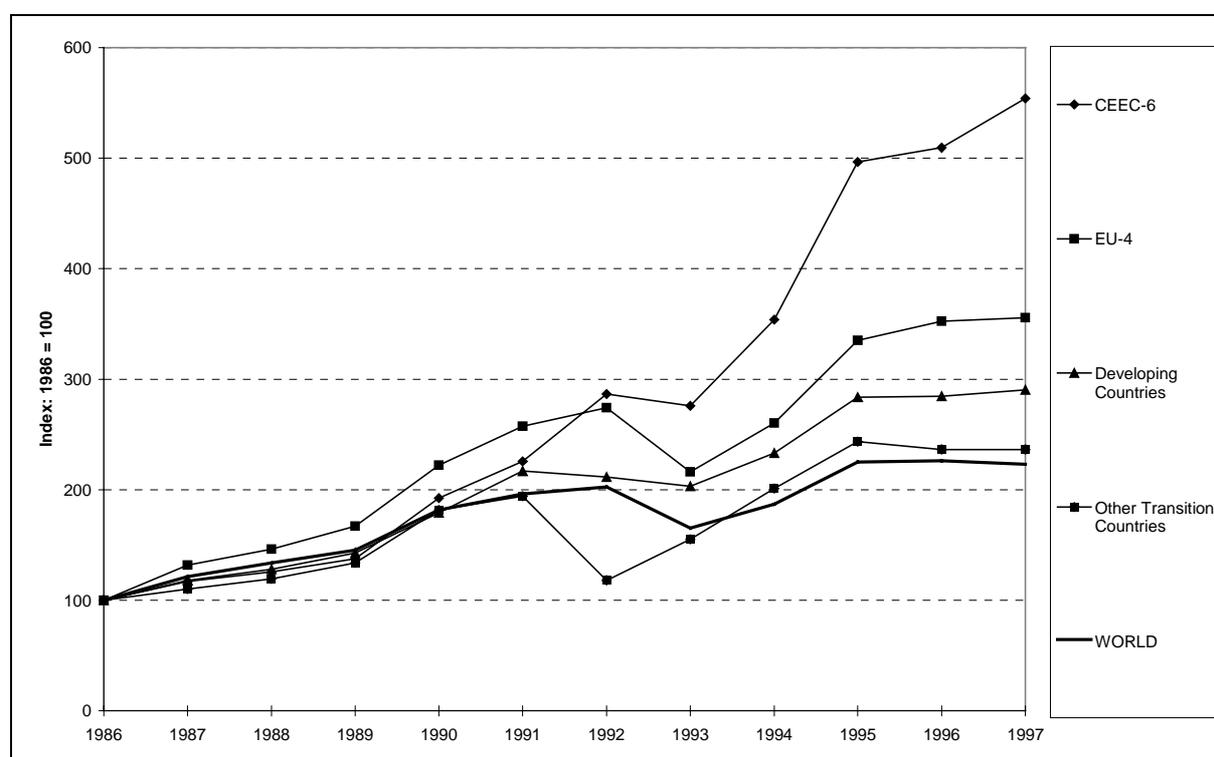
also Brenton et al. 1997.) Second, since trade diversion will affect trade in goods which underlie tariffs, we calculated a tariff-weighted similarity index of the form

$$S_{ij} = \sum_{k=1}^n \min \left( m_{ki} \cdot t_k / \sum_{k=1}^n m_{ki} \cdot t_k, m_{kj} \cdot t_k / \sum_{k=1}^n m_{kj} \cdot t_k \right) \cdot 100, \text{ where } t_k \text{ is the MFN ad valorem tariff rate on imports of item } k.$$

Finally, the export dynamics of the southern EU-Members with the three major trading partners of the CEECs (e.g. Austria, Germany, Italy) remains rather high after opening and integration (cf. Figure 5.3). Thus we found no evidence for the widely held belief that the cohesion countries may suffer indirectly from Eastern Enlargement through the displacement of their exports into the rest of EU. Furthermore, trade diversion seems to be limited to EU trade with other transition countries.

Figure 5.3

### Austria, Germany, Italy: Imports by Country Groups

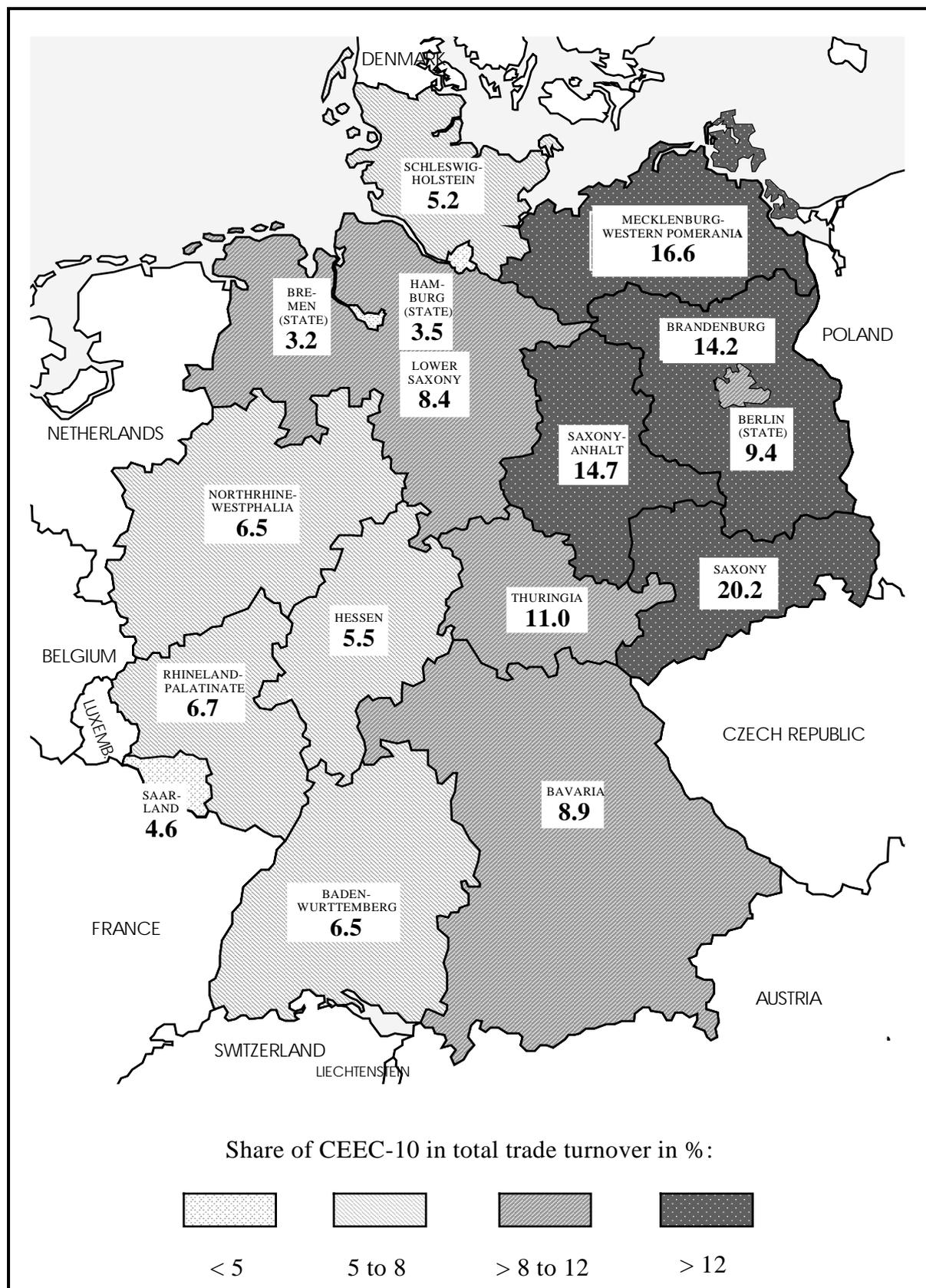


Source: OECD, Directions of Trade Statistics, authors' calculations.

#### *The impact on bordering regions*

The key role of geographical proximity in the national distribution of trade between the EU and the CEECs suggests that EU regions bordering on the CEECs should trade at more than proportional levels. This view is supported by evidence from Austria and Germany: trade shares of the CEECs in federal states (*Bundesländer*) adjacent to the candidate countries are twice as high as those of federal states in the west of Germany (cf. Figure 5.4, Table A.12). In particular, in eastern Germany we observe not only high levels, but also strong dynamics in trade with the candidate countries.

Figure 5.4 Germany: Regional Structure of Trade with the CEECs 1997



Source: Unpublished data of the German Federal Statistical Office, authors' calculations.

Thus countries as well as regions in geographical proximity to the CEECs are particularly affected by trade - i.e. employees in these regions benefit and lose most from structural changes triggered by the increasing integration of the CEECs into the EU. Notice that trade data are usually not collected at regional levels. In particular, data on trade structures by regions and trading partners are not available from national statistical sources. Further research on the bordering regions of Austria, Finland, Germany, Greece and Italy that relies on non-standard data sources is therefore needed to provide deeper insights into the impact of trade at regional levels.

### **5.2.2 Which sectors benefit or lose from the trade increase?**

The development of trade between the EU and the CEECs is characterised by marked, but declining differences in the inter-industry specialisation in terms of commodity groups, and a strong increase of intra-industry trade, i.e. two-way trade within the same product categories. Most studies on the impact of trade on wages and employment are based on differences in factor proportions across sectors or industries, and treat intra-industry trade as neutral for relative wages and employment. This interpretation corresponds to the models of new trade theory, where intra-industry trade in horizontally differentiated goods provides a utility gain to consumers and an efficiency gain, since international trade under increasing returns to scale has pro-competitive effects, but is neutral for relative factor prices.<sup>32</sup> Empirically, however, the factor content of traded goods can differ considerably even within the same commodity groups or industries. Indeed, the major finding of the analysis of trade patterns between the EU and the CEECs is that declining differences in inter-industry specialisation patterns go hand in hand with a vertical specialisation in different quality and price segments of specific markets. These differences in the product quality correspond to differences in the factor content of trade and, hence, have the same impact on relative wages and employment as inter-industry trade between human capital intensive and labour intensive sectors.<sup>33</sup>

The analysis of trade patterns between the EU and the CEECs is depicted here in three steps: First, we examine the inter-industry patterns of trade between the EU and the CEECs with regard to the sources of comparative advantage which underlie trade in these sectors. For this

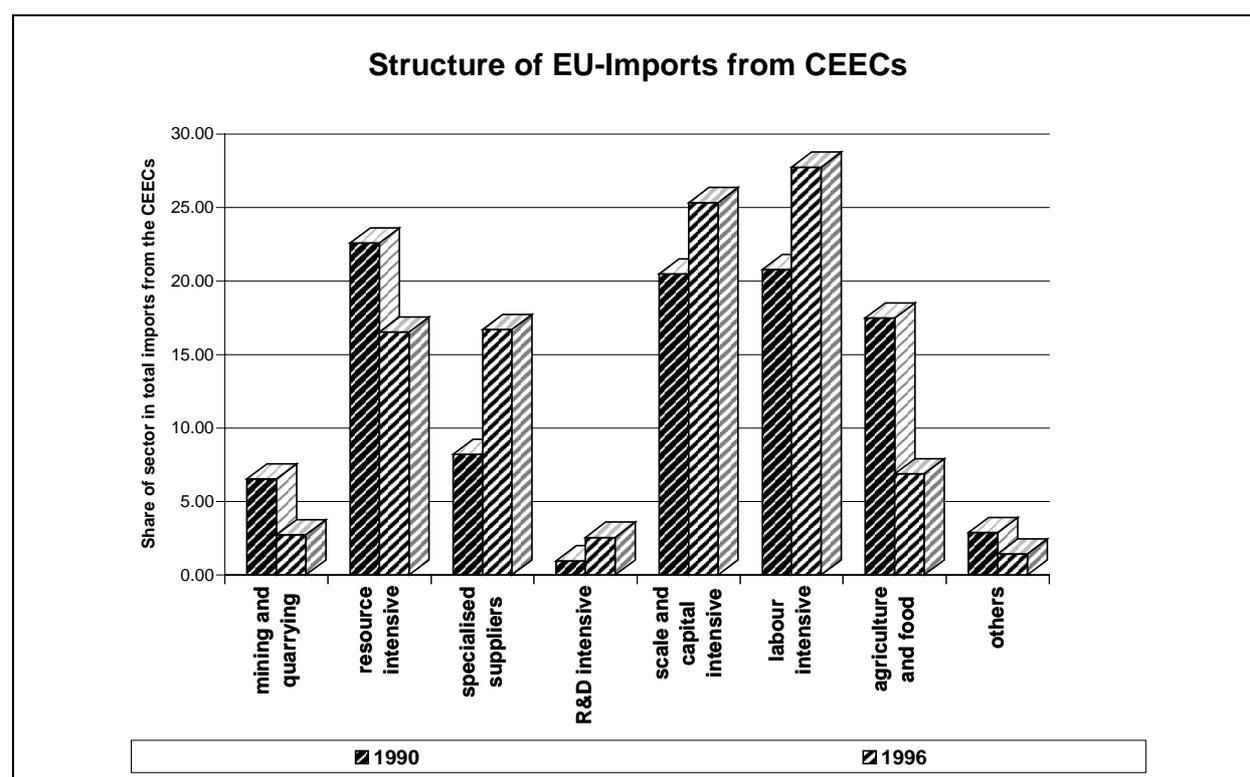
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<sup>32</sup>As Helpman and Krugman (1985) have demonstrated, the net-factor content of intra-industry trade in horizontally differentiated goods is zero, and the net trade in factor services of inter- and intra-industry trade follows the predictions of the standard Heckscher-Ohlin-Samuelson-model.

<sup>33</sup> See Falvey (1981), Falvey and Kierzkowski (1985), Fontagné and Freudenberg (1997), Shaked and Sutton (1984) for the impact of trade in vertically differentiated goods on factor prices.

purpose, we rely on the OECD classification of sectors with regard to the factors which determine their comparative advantage (OECD 1992, 1994, Pavitt 1984)<sup>34</sup>. Notice that this classification is based on production functions in OECD countries, which may not necessarily hold for the CEECs. Second, we analyse the patterns of intra-industry trade. Finally, patterns of vertical and horizontal product differentiation are examined based on the computation of unit values.

Figure 5.5



Source: EUROSTAT trade data, authors' calculations.

### *Patterns of inter-industry trade*

The patterns of inter-industry trade are characterised by a high but declining revealed comparative advantage of the EU vis-à-vis the CEECs in sectors marked by a high R&D intensity (e.g. pharmaceuticals, computers) and with a high degree of product differentiation (e.g. measuring instruments, machinery), and a low and decreasing revealed comparative advantage in scale and capital intensive industries (e.g. chemicals, rubber and plastic, motor vehicles).<sup>35</sup>

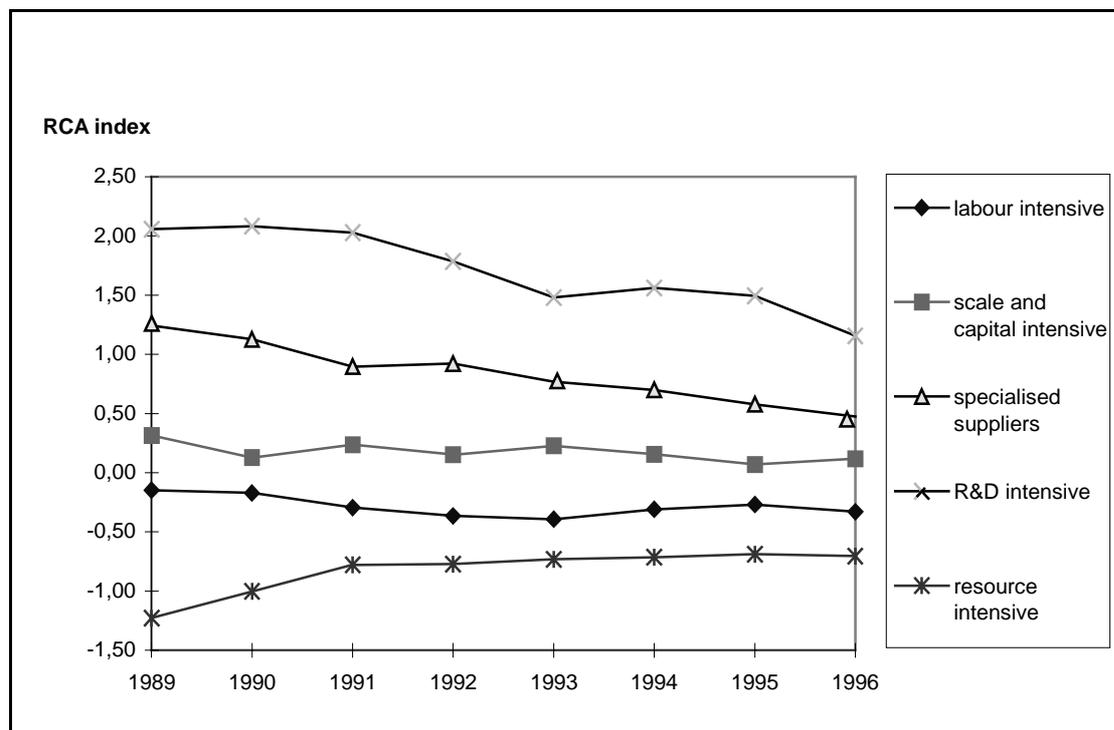
<sup>34</sup> A presentation of the classification and a brief discussion is given in the background report on trade by Brücker (1998).

<sup>35</sup> Our analysis of inter-industry trade patterns follow the concept of 'revealed comparative advantage' which can be traced back to Balassa (1965), and is founded on a model by Deardorff (1980). For a discussion of the concept and its shortcomings see Ballance, Forster and Murray (1986), Ballance (1988). For the computation of the

At the same time, high but decreasing levels of revealed comparative advantage for the CEECs can be observed in natural resources and resource intensive industries. Revealed comparative advantage of the CEECs in labour intensive goods (clothing, footwear and textiles) increased slightly (cf. Figures 5.5 and 5.6). However, the decline in net exports of natural resources have been more than compensated by increasing net exports of labour intensive goods due to the high share of labour intensive goods in total trade of the CEECs.

Figure 5.6

**Revealed Comparative Advantage of the EU vis-à-vis the CEECs  
by Factors of Competitiveness**



Source: EUROSTAT trade data, authors' calculations.

The CEECs' shift from resource intensive to labour intensive exports reflects a shift in relative prices after the dissolution of the CMEA, i.e. an increase in prices for imports of natural resources from the former USSR and a fall in the relative price of labour. Interestingly enough, revealed comparative advantages of the EU in capital and scale intensive industries vis-à-vis the CEECs are low in comparison to trading partners both in other industrial countries and in

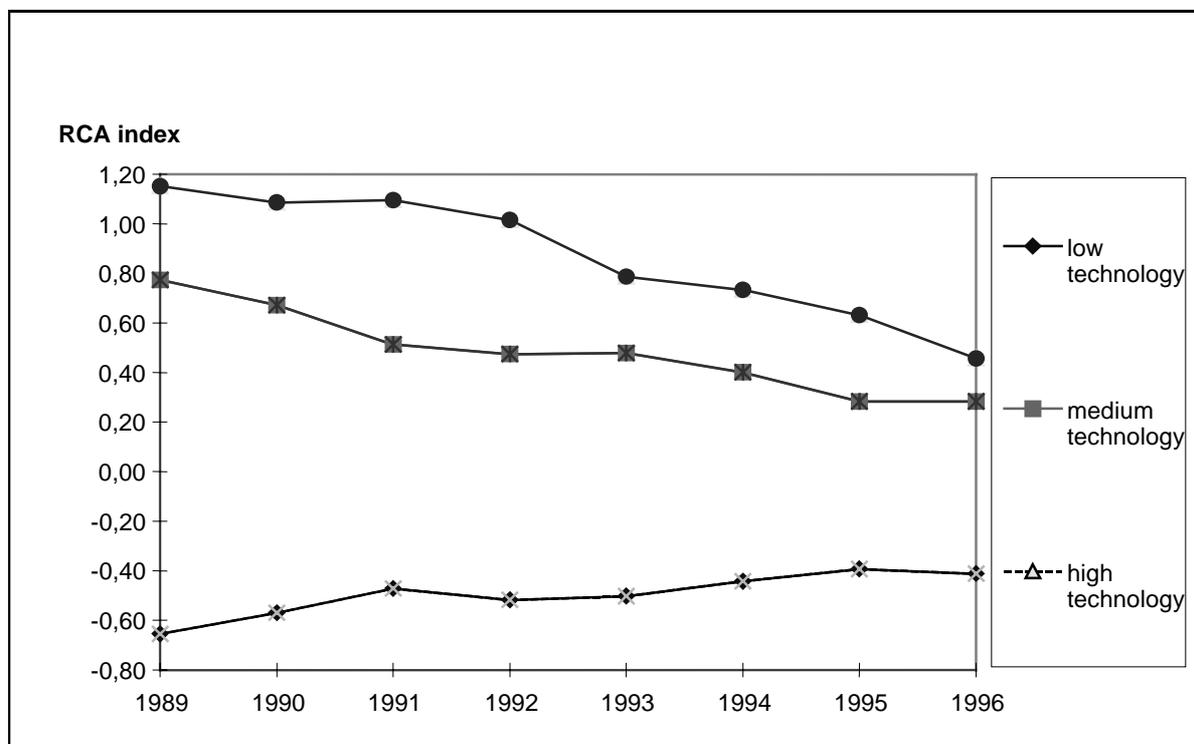
RCA-index, we used the formula  $RCA_{iB}^A = \ln(x_{iB}^A / m_{iB}^A / X_B^A / M_B^A)$ , where  $x_{iB}^A$  and  $m_{iB}^A$  denote country A's exports and imports of commodity  $i$  to and from country B, respectively, and  $X_B^A \equiv \sum_{i=1}^n x_{iB}^A$  and

$M_B^A \equiv \sum_{i=1}^n m_{iB}^A$  denote total exports and total imports of country A to and from country B, respectively.

developing countries. This can be traced back to the specialisation of planned economies in traditional industries such as iron and steel and shipyards.

Figure 5.7

#### Revealed Comparative Advantage of the EU vis-à-vis the CEECs by Technology Levels



Source: EUROSTAT trade data, authors' calculations.

These fundamental trends are even more pronounced if commodities are classified by technological levels: The EU possesses, vis-à-vis the CEECs, clear but declining revealed comparative advantages in goods with high and average technological levels, and significant disadvantages in trade with commodities with a low technological standard (cf. Figure 5.7). Analogous to this, revealed comparative advantages of the EU in sectors with high wage levels are considerable, but declined after an initial adjustment in the years immediately following transition.

In 'sensitive' sectors<sup>36</sup> the CEECs have high and increasing levels of revealed comparative advantage vis-à-vis the EU in shipbuilding, basic iron and steel, and to a lesser extent in textiles, clothing and footwear. Conversely, the EU has a revealed comparative advantage vis-à-vis the CEECs in food and agriculture and has furthermore improved its export performance

<sup>36</sup> Sectors were classified as 'sensitive' if they enjoyed a high level of protection by tariff and non-tariff barriers of the EU.

in these sectors significantly since 1989. Note that trade patterns in food and agriculture reflect a high level of policy intervention (e.g. subsidies, trade protection) rather than a ‘true’ comparative advantage.

*Patterns of intra-industry trade and vertical product differentiation*

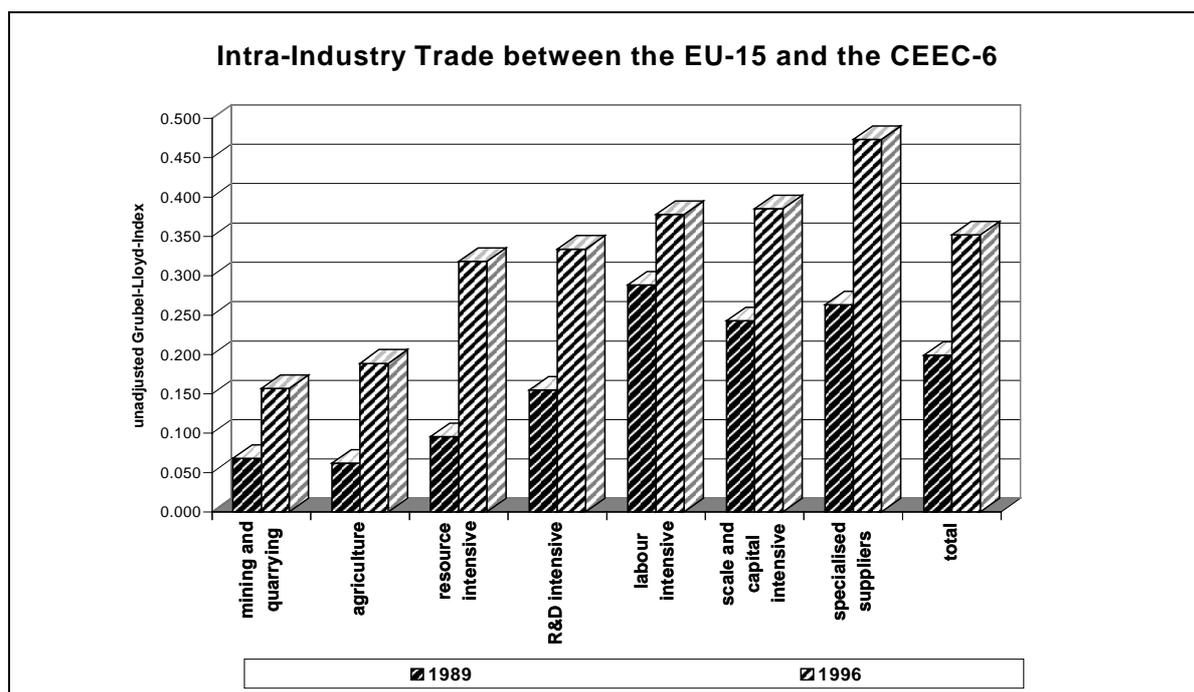
These findings roughly confirm the results from previous studies<sup>37</sup>: the EU exports goods produced with high human capital intensity to the CEECs and imports goods produced with a high resource and labour intensity from them. However, the advantages of the EU in human capital intensive goods can be seen to decline over time. This decline corresponds to a nearly twofold increase in the share of intra-industry trade<sup>38</sup> between the EU and the CEECs (cf. Figure 5.8). The shares of intra-industry trade are particularly high in computers, semiconductors, communication equipment, electrical machinery, motor vehicles and other metal products. The share of intra-industry trade in trade with the CEECs is at the same time significantly higher than in trade with developing countries and other transition countries, but still below the shares in EU from them trade with other industrial countries.

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<sup>37</sup> see e.g. Berke and Trabold 1996; Fidrmuc et al. 1998.

<sup>38</sup> Intra-industry trade is defined here as two-way trade within the same commodity groups. As a measure for intra-industry trade, the adjusted Grubel-Lloyd index at the 6-digit level of the HS-nomenclature was used; calculations at sectoral levels are based on the unadjusted Grubel-Lloyd index.

Figure 5.8



Source: EUROSTAT trade data, authors' calculations.

The notable increase in intra-industry trade and declining comparative advantages in human capital intensive commodity groups seems to indicate at first glance that the factor content of EU trade with the CEECs approaches the factor content of trade with other industrialised countries, and, hence, mitigates pressures on wages and structural change. However, our analysis of the unit values does not confirm this view: Unit values of goods produced in the EU and goods produced in the CEECs differ strongly within the same commodity groups. The CEECs specialise, as do developing countries, in the lower price and quality segments of markets. Thus the overwhelming share of intra-industry trade between the EU and the CEECs is trade in vertically differentiated goods. With the exception of Hungary and Slovenia we found no evidence of a movement into the higher market segments; in case of the Baltic countries and Bulgaria, unit values declined notably.<sup>39</sup> The absolute levels of unit values in EU imports from the CEECs are comparable to those of developing countries. Within the EU, differences in unit values are much lower.

Price and quality differences of commodities reflect differences in their factor content. Thus, the notable increase in intra-industry trade is an indication of an increasing division of human

capital intensive and labour intensive activities within the same industries. The extraordinarily high share of outward-processing in imports from the CEECs is further evidence of the segmentation of production processes in human capital and labour intensive activities. The increase in intra-industry trade as well as declining differences in the inter-industry composition of trade between the EU and CEECs is associated with an increasing supply of human capital intensive goods and intermediates on the side of the EU and an increasing supply of labour intensive goods and intermediates from the CEECs. Thus, companies increasingly exploit differences in labour costs between the West and the East. However, as we will see below, the size of this trade in wage differences is rather moderate on the side of the present EU Members. The impact of trade expansion on demand and supply of production factors can be felt much more strongly in the CEECs than in the EU.

### *Heterogeneous Trade Patterns*

Trade patterns among individual CEECs as well as among individual EU Members are of course heterogeneous: among the CEECs, Romania, Poland and the Slovak Republic have a distinct revealed comparative advantage in labour intensive goods, while a revealed comparative advantage in resource intensive goods is most pronounced in the Baltic countries and Bulgaria. Slovenia, Hungary and the Czech Republic have a significantly higher share of intra-industry trade with the EU relative to the other CEECs, which corresponds to a much lower comparative disadvantage in human capital intensive goods vis-à-vis the EU. On the part of the EU, the southern members, Greece, Spain and Portugal, possess a distinct comparative advantage in labour intensive industries vis-à-vis the CEECs, while the CEECs possess a comparative advantage in scale and capital intensive industries vis-à-vis the southern European countries, quite in contrast to their position to central and northern EU Members. However, a large gap in the unit values between imports from the southern EU Members and from the CEECs indicates that these countries do not compete in the same quality and price segments of the markets. A detailed analysis can be found in the background report on the impact of trade.

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<sup>39</sup> A study by Landesmann and Burgstaller (1997) reports, based on another unit value indicator, a slight upgrading in the quality of EU imports from the Czech Republic and Poland, while a study by Aturupane et al. (1997) confirms our results.

### 5.2.3 Complete specialisation

Complete specialisation, i.e. the specialisation of a country in the production of commodities which are not produced by its trading partner and vice versa is usually treated as a limiting case of low empirical relevance. However, in the case of trade between the EU and CEECs, large differences in factor endowments and factor prices may trigger the specialisation of EU Members and CEECs in different price and quality segments of markets. Strong differences in unit values of imports from the CEECs and other European countries support this view. In the case of complete specialisation, an expansion of trade increases real incomes of all factors in the EU as well as in the CEECs. Thus even unskilled labour in the EU may benefit from the high share of labour intensive goods imported from the CEECs. However, little is known about the substitutionality of goods produced in the CEECs and in the EU. Furthermore, in the course of 'catching up' complete specialisation will diminish in importance and competitive pressure on commodities produced in the EU will increase.

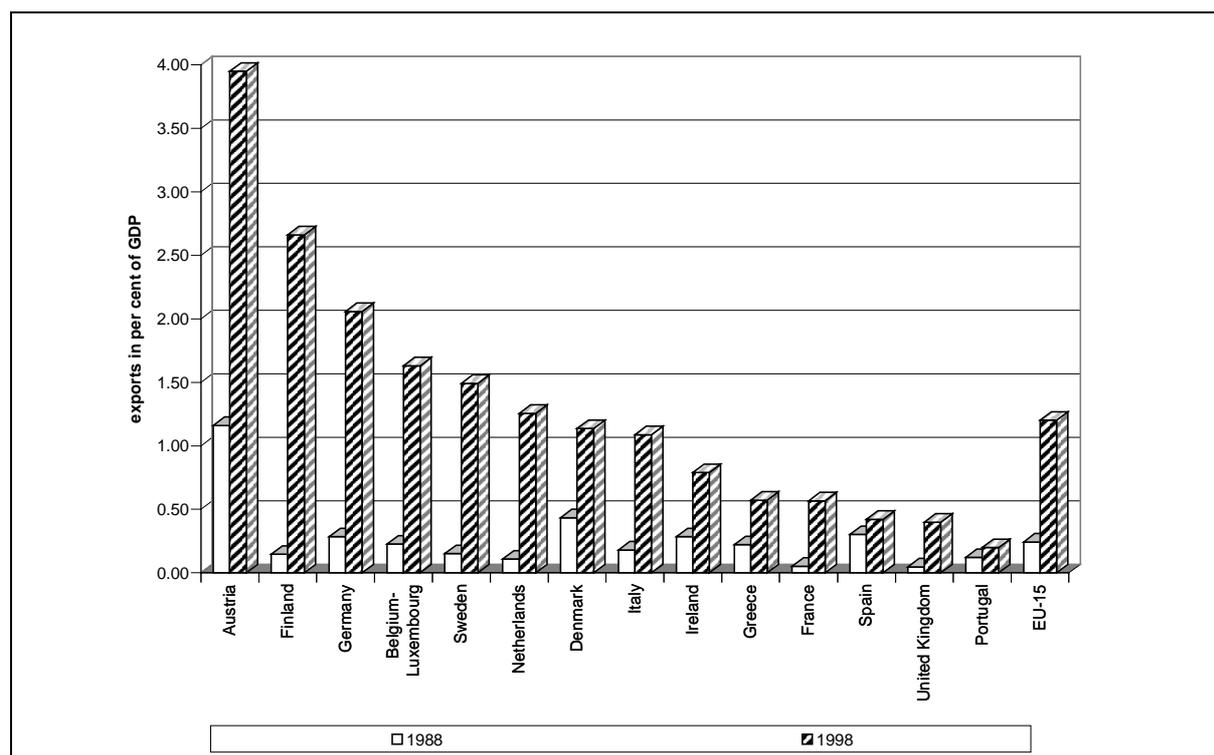
### 5.2.4 Too small to matter?

As the CEECs are economically rather small countries, a noticeable impact of their integration on goods prices and, hence, on wages and employment is limited to only a few sectors in a few regions. Despite the considerable increase of trade between the EU and the CEECs, the shares of the CEECs in EU markets are rather low: The share of exports to the CEEC-6 in GDP of the present EU Members has increased from 0.2 per cent in 1988 to 1 per cent in 1998, while the share of exports to all candidate countries amounted to 1.2 per cent in the GDP of the present EU Members in 1998. The share of imports from the CEEC-6 in GDP of the present EU has increased from 0.3 per cent to 0.8 per cent in the same time period, the share of imports from all ten candidate countries amounted to 0.9 per cent in 1998 (cf. Tables A.8 and A.9, Figures 5.9 and 5.10). Among the most-affected countries, the share of exports to the CEECs in GDP has achieved 4 per cent in Austria, 2.6 per cent in Finland and 2 per cent in Germany, while the share in imports in GDP amounted to 3 per cent in Austria, 1.7 percent in Germany and around 1 per cent in Belgium, Finland, Sweden and Greece. In regions immediately bordering the CEECs, the ratio of exports and imports to GDP is around twice these figures. Notice that the ratio of trade to GDP overemphasises the impact of trade since trade figures are turnover volumes, and GDP figures value-added volumes. Thus the comparison of the shares of imports and exports to gross output amount to smaller figures:

imports from the CEECs in gross output<sup>40</sup> of the tradable sectors of the EU members varies between 0.2 per cent (Portugal) and 2.3 per cent (Austria), while the share of exports to the CEECs in gross output of the EU members varies between 0.3 per cent (Portugal) and 3.3 per cent (Austria) (cf. Table A.13).

Figure 5.9

### EU-15: Share of Exports to the CEEC-10 in GDP



Source: IMF, Direction of Trade Statistics Yearbook, 1991 and 1998 editions, Washington, D.C., author's calculations.

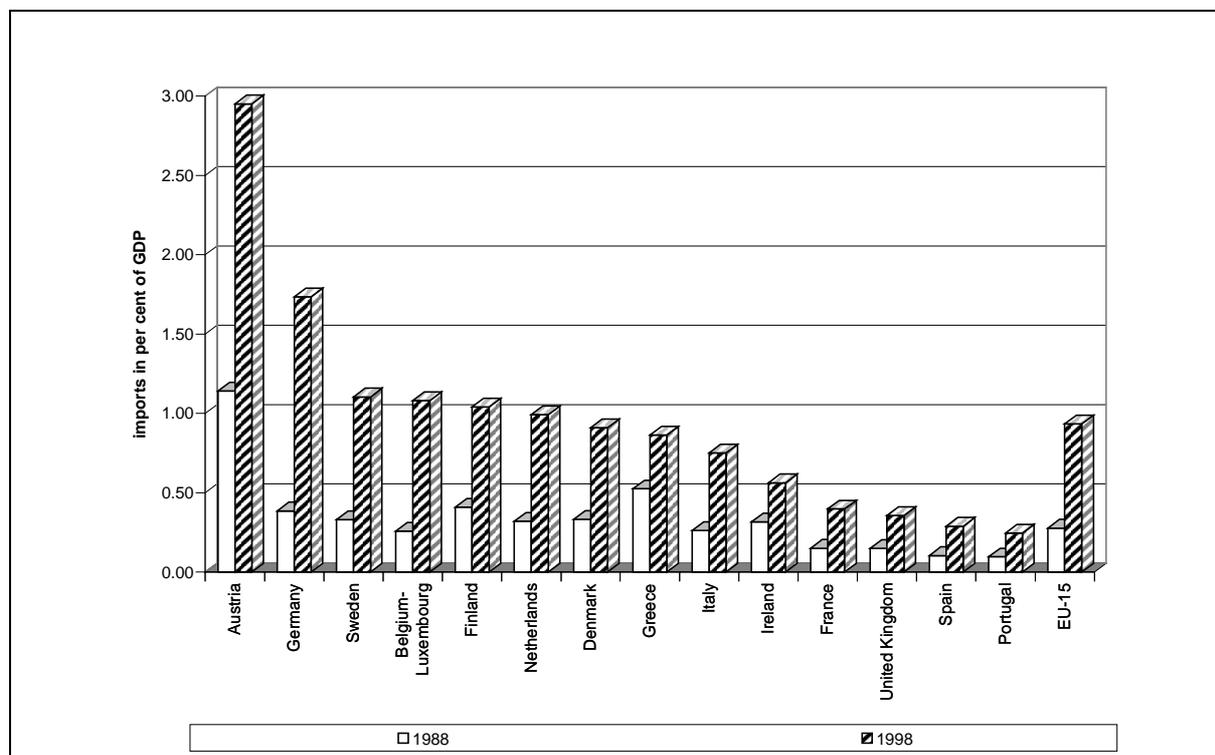
For integration to matter, size is critical: while even small changes in the marginal supply of certain goods can be felt on factor markets, integration of the CEECs has no impact on wages and employment if other countries outside the EU remain marginal suppliers in the respective markets. In that event, additional exports of labour intensive goods from the CEECs to the EU partially divert trade away from other countries, but product prices remain at the same level as prior to protection. Conversely, if the CEECs are large enough to completely divert EU imports of some products away from other countries outside the EU, they become the

<sup>40</sup> Gross output as well as exports and imports measure turnover instead of value-added.

marginal suppliers and the protective effect of EU tariffs is at least partly undone.<sup>41</sup> This is likely to be the case in labour intensive goods with high transport costs.

Figure 5.10

**EU-15: Share of Imports from the CEECs in GDP**



Source: IMF, Direction of Trade Statistics, authors' calculations.

In most sectors, the import shares of the CEECs are too low to expect such a complete diversion of trade. Imports from the CEECs achieve notable market shares only in the clothing, footwear and textiles sector in the Netherlands (9.1 per cent), Germany (8.5 per cent) and Austria (4.9 per cent). It is reasonable to assume that at least in some goods produced in these sectors, the additional supply from the CEECs affects relative prices. Conversely, in some EU countries the shares of the CEECs in exports of communication equipment, measuring instruments, computers and motor vehicles are notable. To the extent that significant wage and employment effects of trade occur at all, we expect them to be confined to these sectors. Notice again that in regions immediately bordering the CEECs, various forms of arm's-length enterprise co-operation develop, which may effect wages and employment of unskilled labour negatively. However, the volume of these effects is not sufficiently large that one could rea-

<sup>41</sup> See Leamer (1993).

sonably expect an impact on the marginal supply of unskilled labour in the respective countries, and, hence, on national wages and employment. This is confirmed by the quantitative analysis in Section 6.

Table 5.1

<b>CEEC-10: Trade Balance vis-à-vis the European Union (EU-15) 1990-1998</b>									
	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
<i>trade balance in millions of US-Dollars <sup>1)</sup></i>									
Bulgaria	- 1 009	- 585	- 465	- 818	- 815	- 85	133	315	- 6
Czech Republic	..	..	..	- 62	- 532	- 2 406	- 3 453	- 465	- 1 369
Estonia	..	..	..	- 152	- 428	- 675	- 1 011	- 1 174	- 1 051
Hungary	134	78	337	- 1 782	- 2 073	- 1 438	- 1 451	363	- 5 678
Latvia	..	..	..	75	- 116	- 254	- 403	- 498	- 577
Lithuania	..	..	..	81	- 149	- 372	- 782	- 1 224	- 1 327
Poland	2 852	- 505	- 827	- 2 410	- 2 158	- 2 743	- 7 491	- 10 467	- 11 745
Romania	- 54	- 60	- 795	- 631	- 147	- 423	- 461	- 568	- 891
Slovak Republic	..	..	..	- 151	130	159	- 385	- 1 294	- 827
Slovenia	..	..	..	- 419	- 601	- 1 037	- 999	- 987	- 1 077
<b>CEEC-10</b>	..	..	..	<b>- 6 269</b>	<b>- 6 889</b>	<b>- 9 274</b>	<b>- 16 303</b>	<b>- 15 999</b>	<b>- 24 548</b>
<i>memo items:</i>									
Czechoslovakia	- 1 515	1 007	440	- 213	- 402	- 2 247	- 3 838	- 1 759	- 2 079
CEEC-6 <sup>2)</sup>	408	- 65	- 1 310	- 5 854	- 5 595	- 6 936	- 13 108	- 12 116	- 20 399

1) + = surplus, - = deficit. - 2) Bulgaria, Czechoslovakia (or Czech Republic and Slovak Republic), Hungary, Poland, Romania.

Sources: IMF, Direction of Trade Statistics, Yearbook 1991, Yearbook 1995, Yearbook 1998, Washington, D.C.; authors' calculations.

### 5.2.5 The Impact of the Trade Surplus

The present EU Members experience high and growing surpluses in the trade of goods with the CEECs. According to balance of payments statistics, the ten candidate countries ran a combined trade deficit of USD 38 billion in 1998, of which around two-thirds, or USD 25 billion, resulted from trade with the EU (cf. Tables 5.1, A.14). The current account deficits turned out to be about half those amounts due to a large surplus of the CEECs on the service account. Furthermore, due to non-registered current account transactions (i.e. shuttle trade, worker remittances in border regions) actual trade and current account deficits could be markedly lower than indicated by the balance of payments statistics. Although the exact size of the CEECs' trade and current account deficits may be uncertain, they are an important feature of present trade between the EU and the CEECs. Accession to the EU will probably increase the

current account deficit significantly, due both to lower risk premiums for foreign investment and to public transfers from the EU.

The trade and current account surplus of the EU vis-à-vis the CEECs is unevenly distributed among the individual EU Member States. On the part of the CEECs, Poland ran a trade deficit of USD 12 billion, followed by Hungary with 5.7 billion and the Czech Republic with USD 1.4 billion vis-à-vis the EU in 1998. Notice that the overwhelming share of the trade deficit of the CEECs vis-à-vis the EU with USD 21 billion out of USD 25 billion is allocated to the first-round candidate countries.

The large trade surplus of the EU vis-à-vis the CEECs is often interpreted as evidence for the job-generating potential of Eastern Enlargement. Indeed, the difference in the labour content of exports and imports from the CEECs has been estimated at some 90,000 working hours or 60,000 jobs for Germany in 1993 (Weise et al. 1996). However, the surplus of the current account is matched by a deficit in the capital balance of the EU vis-à-vis the CEECs and, hence, a transfer of purchasing power. In the short run, the transfer of purchasing power and a surplus in the current account may affect EU employment positively in a Keynesian situation with sticky nominal wages. However, in the case of the CEECs, large parts of the current account deficits have a permanent rather than a temporary character. In this case, we would expect, from a theoretical perspective, that goods and factor prices eventually adjust and that the permanent trade deficit has a structural impact on relative wages and employment rather than an aggregate impact on employment. A permanent surplus in the current account on the part of the EU would raise employment and wages in the tradable sectors relative to non-tradable sectors above levels in a situation with a balanced current account. For a permanent deficit in the current account on part of the CEECs, however, the converse holds true. Thus, the notable current account deficits of the CEECs are likely to raise employment and wages of employees in the service sectors relative to manufacturing and other tradable sectors.<sup>42</sup> However, the magnitude of the trade surplus of the present EU Members seems too small for a measurable impact to be expected on relative wages and employment between tradable and non-tradable sectors in the present EU members. Therefore, the overall outcome may be am-

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<sup>42</sup> More precisely, if we assume that factors are specific and their mobility across sectors is limited, the increasing relative demand for non-tradables induced by a trade deficit raises relative incomes of specific factors employed in non-tradable sectors, while the impact on mobile factors is ambiguous. If factors are unspecific and mobile across sectors, a trade deficit increases the relative income of those factors whose marginal demand is determined by the non-tradable sector.

ambiguous: we expect a structural change in relative wages and employment in the CEECs and a minor gain of aggregate employment in the EU.

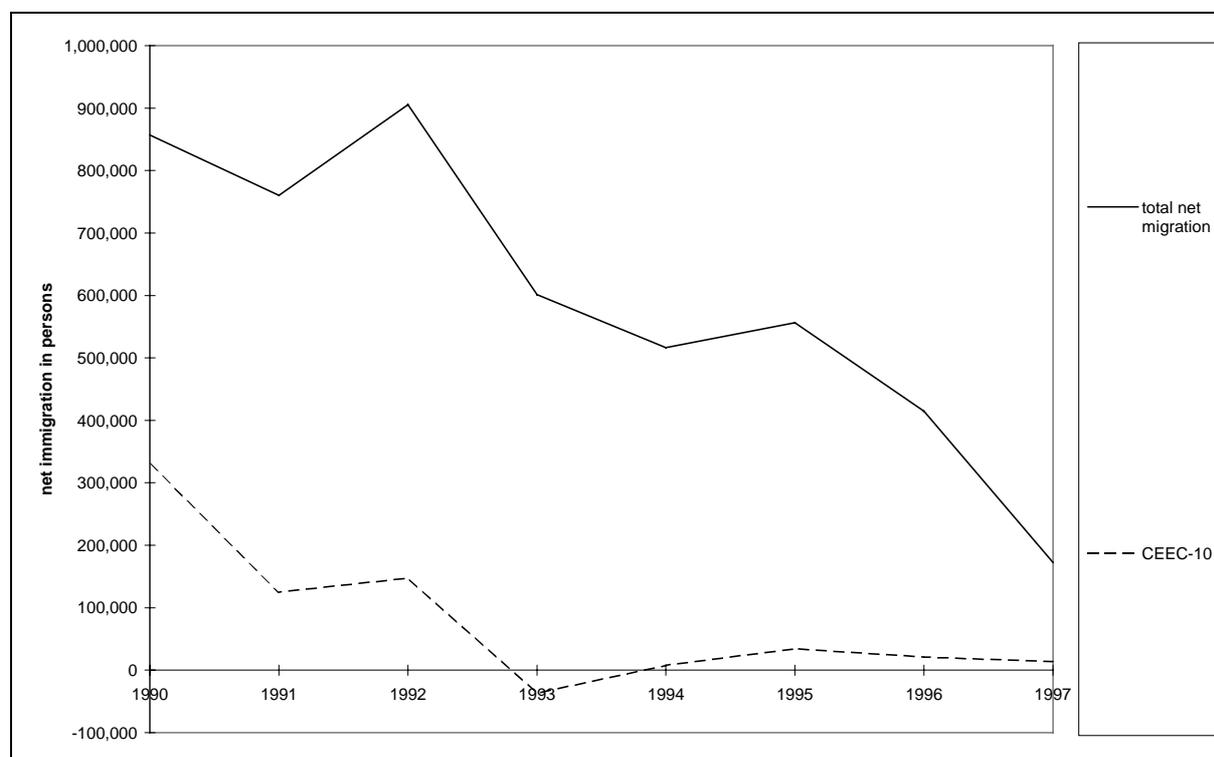
### **5.3 The impact of migration**

Since the fall of the Berlin wall, immigration of nationals from the ten candidate countries has accelerated, but is still too small to suggest that an impact on wages and employment in the present Member States of the EU should be expected. Annual net immigration from the CEEC-10 into the EU reached a peak in 1990 with more than 300 thousand people, but declined sharply in the wake of increasing unemployment and tightened immigration regulations after 1993. The recovery from the transition recession and growth prospects in the CEECs may have further mitigated migration pressures (cf. Figure 5.11). The number of residents from the CEEC-10 in the EU-15 can be estimated at some 850 thousand. According to the EUROSTAT Labour force survey, around 250 thousand workers from the CEEC-10 are employed in the present EU Member States. Labour force survey data may underreport in particular temporary workers from the CEECs. However, even under consideration that temporary migrants are incompletely covered, the number of employees from the CEEC-10 in the EU will most probably not exceed 300,000 workers. This is hardly a significant contribution to labour supply in the present EU. This holds true even for the two most-affected countries, Austria and Germany. However, these surprisingly low immigration figures can, to a considerable extent, be traced back to restrictive immigration policies of the present EU Member States (see Section 4.2). It may therefore accelerate in the case of Eastern Enlargement (see Section 7.3). Preliminary findings from labour force surveys suggest that formal education levels of immigrants from the CEECs are significantly higher than those of other foreigners and even natives. However, immigrants from the CEECs select the same branches as other foreigners. They are therefore likely to compete - like other foreigners - chiefly for blue-collar jobs in manufacturing and low-skilled jobs in service sectors. An analysis of the labour market performance of ethnic Germans who immigrated to Germany in the early 1990s indicates that the ability to transfer human capital acquired in Central and Eastern Europe to EU labour markets is rather poor - at least at the present stage. However, high formal education levels of immigrants from the CEECs may, in the medium and long-run, mitigate wage and employ-

ment pressures on low-skilled labour and open up room to manoeuvre for immigration policies.<sup>43</sup>

Figure 5.11

### Net Immigration from the CEECs into the EU<sup>44</sup> 1990-1997



Sources: EUROSTAT, national sources, authors' calculations.

### 5.3.1 Which countries and regions are affected?

In view of the large gap in per capita income and wages between the EU and the CEECs, recent immigration from the CEECs into the EU is surprisingly low. National and international data sources report 727,228 residents from the CEEC-10 in the present EU (without Austria, France, Greece, Italy, Ireland and Portugal) in 1998, and a cumulative immigration from the CEECs in the present EU between 1990 and 1997 of 642 thousand people (cf. Tables 5.2, A.15-A.17). Notice that migration statistics are always incomplete and that reporting methodologies differ across countries. An extrapolation from employment figures yields some 850

<sup>43</sup> This Section is based largely on the background report by Elmar Hönekopp (1999), see also Hönekopp (1997a, 1997c). A second background report on the labour market performance of ethnic Germans by Michaela Kreyenfeld (1999) provides insights on the ability of migrants to transfer human capital acquired in the CEECs on EU labour markets (see Section 5.3.2).

<sup>44</sup> Without Austria, France, Greece, Italy, Ireland and Portugal.

thousand residents in the EU-15 in 1998. Figures collected by the Eurostat Labour Force Survey counted around 240 thousand workers from the CEEC-6 (i.e. without Slovenia and the Baltic countries) in the present EU (without Ireland, Portugal and Sweden) in 1995, equivalent to a share of 0.2 per cent of total employment of the EU. An inclusion of Portugal and Sweden would increase this figure to almost 250 workers (cf. Table 5.2).

Table 5.2

### Cumulative Net Migration, Residents and Employees from the CEECs

	cumulative net migration from the CEEC-10 <sup>1)</sup>		stock of residents from the CEEC-10 <sup>1)</sup>		stock of employees from the CEEC-6 <sup>2)</sup>	
	Σ 1990-1997		January 1, 1998		1995	
	in persons	in % of population	in persons	in % of population	in persons	in % of employees
Austria	n.a.	n.a.	103,000 <sup>6)</sup>	1.27	37,989	1.14
Belgium	4,225	0.04	10,773	0.11	1,584	0.04
Denmark	5,918	0.11	8,863	0.17	1,571	0.06
Finland	10,931	0.21	11,985	0.23	487	0.02
France	n.a.	n.a.	22,000 <sup>6)</sup>	0.04	7,965	0.04
Germany	585,417	0.71	554,869	0.68	160,852	0.49
Greece	n.a.	n.a.	20,131	0.19	8,324	0.22
Ireland	n.a.	n.a.	200 <sup>6)</sup>	n.a.	n.a.	n.a.
Italy	n.a.	n.a.	34,490 <sup>4)</sup>	0.06	1,595	0.01
Luxembourg	1,224	0.36	700 <sup>6)</sup>	0.21	212	0.21
Netherlands	14,410	0.09	9,606 <sup>5)</sup>	0.06	2,579	0.04
Portugal	n.a.	n.a.	781	0.01	200	0.00
Spain	n.a.	n.a.	10,539	0.03	2,256	0.02
Sweden	18,723	0.21	26,191	0.30	7,271	0.17
United Kingdom	1,257	0.00	39,000 <sup>4)</sup>	0.07	15,146	0.06
<b>total<sup>3)</sup></b>	<b>642,105</b>	<b>0.25</b>	<b>727,228</b>	<b>0.24</b>	<b>240,558</b>	<b>0.18</b>
<b>EU-15 (estimate)</b>	<b>..</b>	<b>..</b>	<b>853,128</b>	<b>0.23</b>	<b>248,029</b>	<b>0.18</b>

*Figures in italics are estimated.*

- 1) Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Slovenia. - 2) Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic. - 3) Non-estimated countries only. - 4) 1996. - 5) 1997. - 6) Figure for Austria is estimated on basis of national records of labour participation of foreigners.

Sources: Background report by Hönekopp (2000), EUROSTAT, authors' calculations.

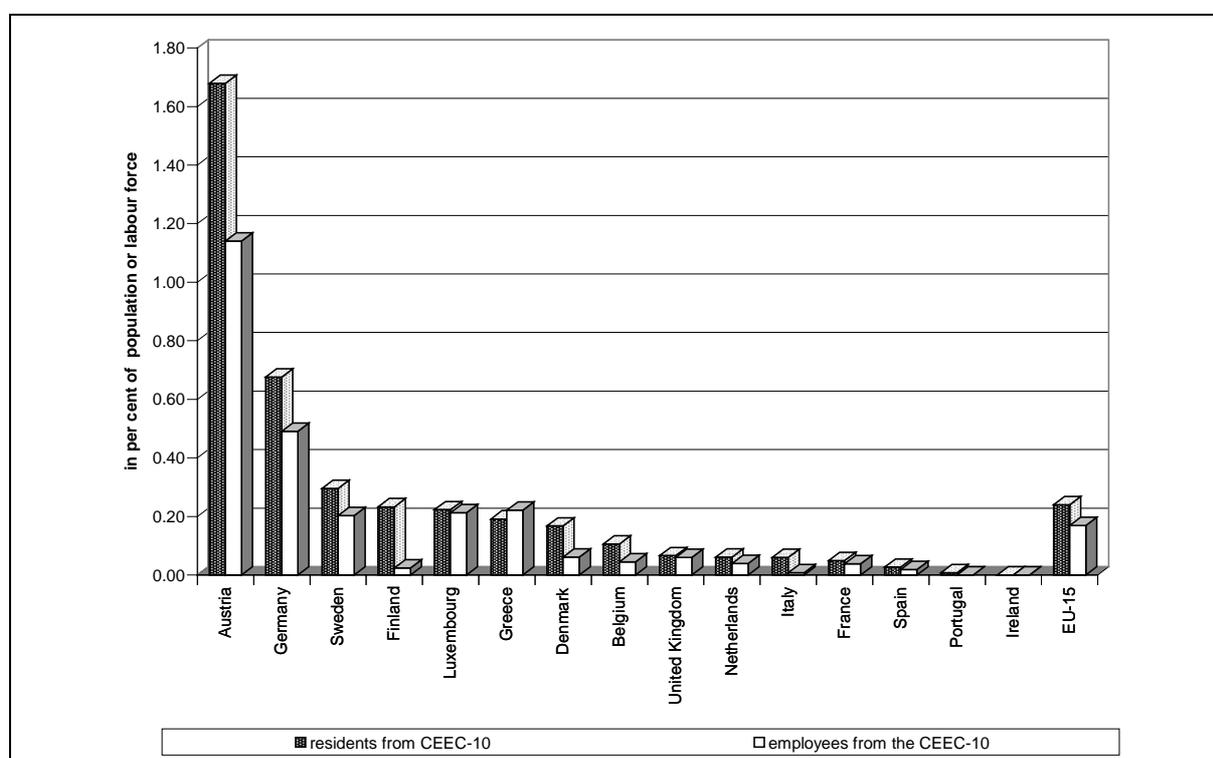
Temporary migration from the CEECs has increased considerably at the expense of permanent migration. Temporary migrants from the CEECs number some 250 thousand workers p.a. in Germany alone. The annual employment volume of these temporary migrants equals around one-fourth of this figure (see Section 5.3.2). Since temporary migration can hardly be recorded completely by household surveys, the figures from the Eurostat Labour Force Survey tend to underreport actual employment of immigrants from the CEECs in the EU (Hönekopp

1999). However, it is rather unlikely that total employees from the CEECs exceed a figure of 300,000 workers.

The main countries receiving immigration from the CEECs are Austria and Germany: 73 per cent of the working-age population and some 80 per cent of the employees who immigrated from the CEECs into the EU reside in Austria and Germany. The share of nationals from the CEECs in total employment was 1.1 per cent in Austria, 0.5 per cent in Germany, 0.2 per cent in Sweden and Greece in 1995. In all other EU countries, the share of nationals from the CEEC-6 in total employment is negligible (cf. Figure 5.12).

Figure 5.12

#### Share of Residents and Employees from the CEEC-10 in Total Population and Employment<sup>45</sup>



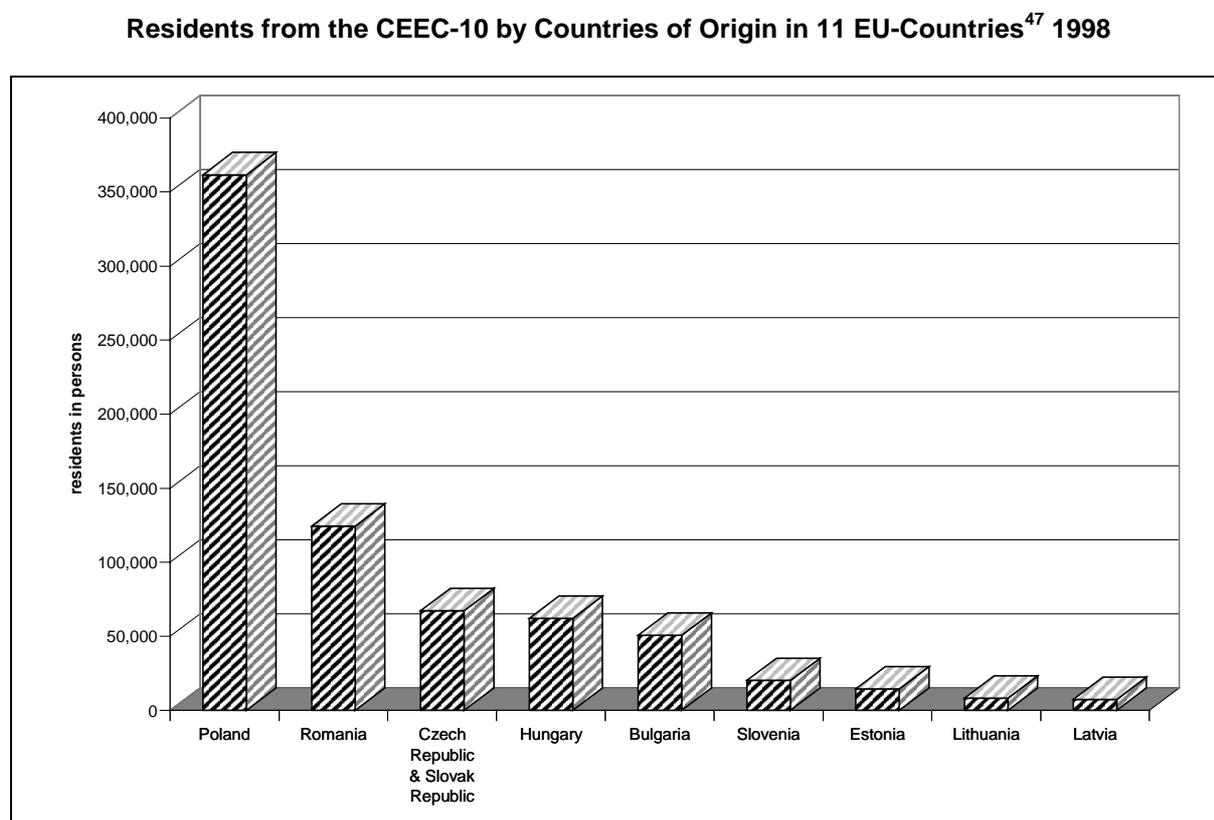
Source: EUROSTAT, national sources, authors' calculations and estimates.

Candidate countries bordering present EU Members have a high share of migrants: the ratio of employees working in EU Member countries to the working-age population is as high as 0.6 per cent in Hungary, 0.4 per cent in former Czechoslovakia and Poland and 0.3 per cent in

<sup>45</sup> Share of residents are estimated for Austria, France, Ireland and Luxembourg on basis of employment figures. Share of employees is estimated for Sweden on basis of resident figures.

Bulgaria and Romania. However, nearly half of the foreign employees from the CEEC-6<sup>46</sup> originate from Poland, followed by Romania (17 per cent), Hungary (16 per cent), Czech Republic and Slovakia (11 per cent) and Bulgaria (9 per cent) (cf. Figure 5.13).

Figure 5.13



Sources: Eurostat, Council of Europe, authors' calculations.

The high share of residents and employees from the CEEC-10 in Austria and Germany relative to other EU Member countries indicates that geography plays a key role in migration decisions. In contrast to south-north migration, the conditions of east-west migration are characterised by a relatively high gap in per capita incomes over a short geographical distance. This opens further options for temporary migration and border commuting. Thus, regions bordering the CEECs may be expected to be affected mainly by migration from the CEECs. Not surprisingly, the regional distribution of migration from the CEECs is, in Austria, concentrated in the Eastern regions. In the eastern parts of Austria, i.e. in the Burgenland, Vienna

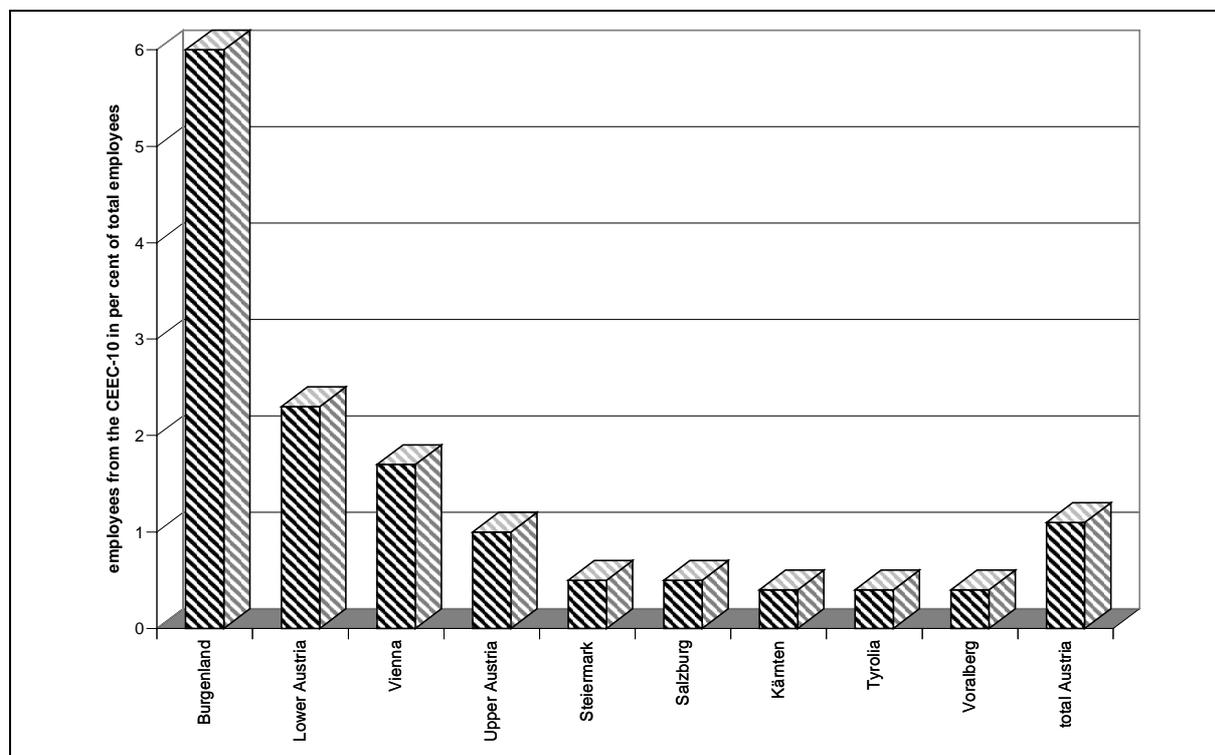
<sup>46</sup> Bulgaria, Czech Republic, Hungary, Poland, Slovak Republic and Romania. The three Baltic countries and Slovenia are not covered separately from the other countries of the former USSR and former Yugoslavia by most national and international statistics.

<sup>47</sup> Belgium, Denmark, Finland, Germany, Greece, Italy, Netherlands, Portugal, Spain, Sweden, United Kingdom.

and lower Austria, employment shares of foreigners from the CEEC-10 are significantly higher than average (cf. Figure 5.14).<sup>48</sup>

Figure 5.14

**Regional Distribution of Employees from the CEEC-10 in Austria 1998**



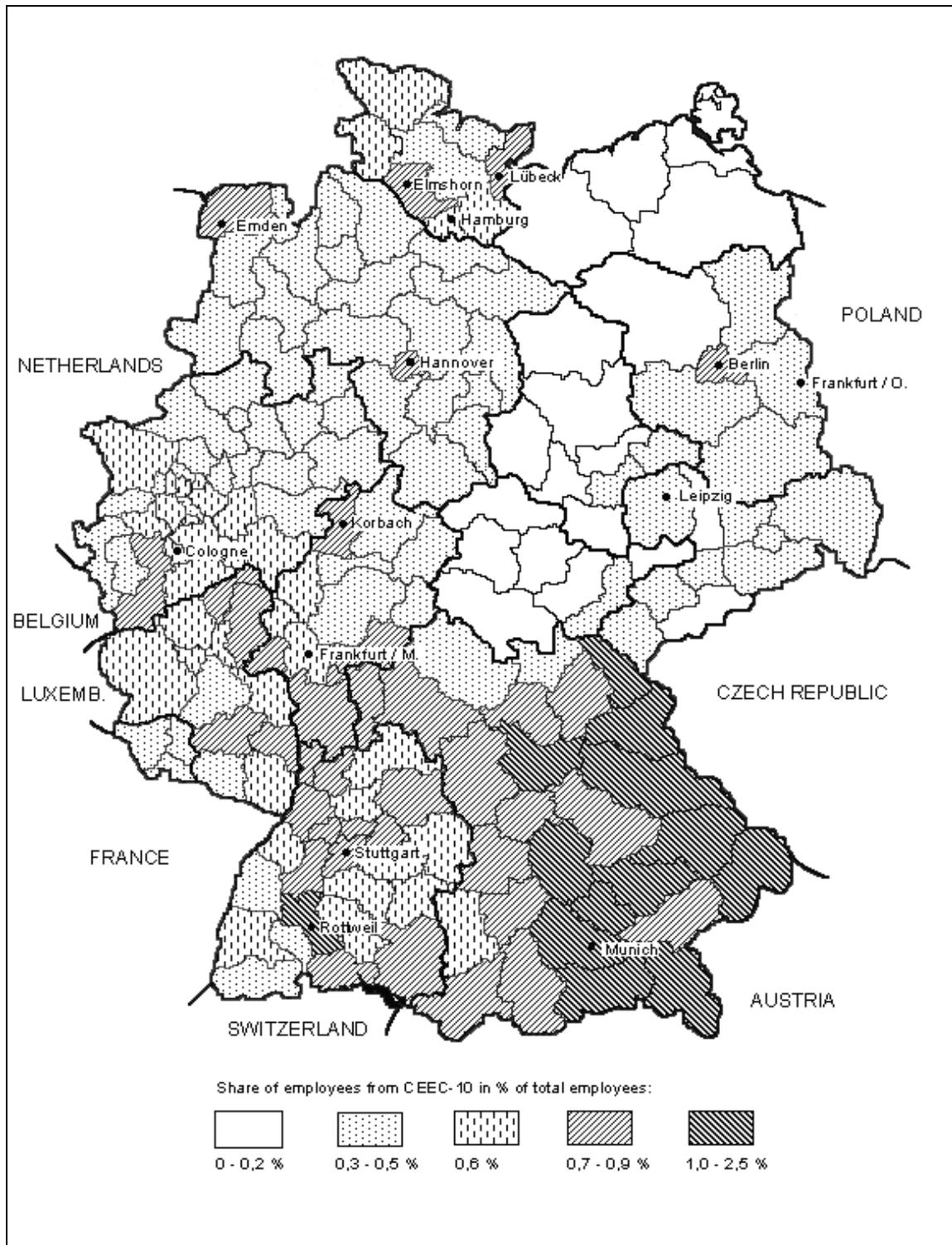
Source: Background report by Hönekopp (1999).

In Germany, the picture is more complex: the share of migrants from the CEECs in eastern Germany is well below average. This holds true even for the bordering regions. Thus, at the German border to Poland, the share of migrant employees in total employment is negligible. In contrast, the regions of Bavaria bordering the Czech Republic are among the most-affected regions. In the rest of Germany, migration from the CEECs is concentrated mainly in the industrialised centres of Bavaria and Baden-Wurtemberg. Thus, migration from the CEECs to Germany follows - beyond geography - mainly the agglomeration of prosperous industries. However, with a share of 1.0 to 2.5 per cent, the present share of employees from the CEECs is, even in the regions affected most, rather moderate (cf. Figure 5.15).

<sup>48</sup> A detailed analysis of the regional implications of migration from the CEECs and a forecast of regional migration flows in Austria can be found in Birner, Huber and Winkler (1998).

Figure 5.15

## Germany: Regional Distribution of Employees from the CEECs



Source: Federal employment services, authors' calculations.

### 5.3.2 Which human capital endowments and sectors are affected?

The implications of migration for employment and wages depend on individual and human capital characteristics of the migrants: migrant labour can substitute or complement native and other foreign labour and can thus have either a beneficial or an adverse impact on wages and employment. The available information on migrants from the CEECs allows the following conclusions to be drawn with regard to their personal and human capital characteristics and their employment behaviour:

- Formal education levels of immigrants from the CEECs are significantly higher than those of other foreigners and natives. This is suggested by labour force survey data. However, the low response rate of the CEECs may distort the picture and may therefore have to be taken with a grain of salt. Thus, the human capital endowment of immigrants from the CEECs seems to differ sharply from other immigration (cf. Table 5.3).

Table 5.3

#### Formal Education Levels of Employees in the EU (without Sweden)

highest completed level of education	employees from the CEEC-6 <sup>1)</sup>	total foreign employees	total employees
	<i>in per cent of total</i>		
primary schooling and no schooling degree	4.6	22.8	18.6
secondary education (1st stage)	55.1	51.1	45.4
secondary education (2nd stage)	16.9	10.3	15.5
tertiary education	23.4	15.9	20.5

1) Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovak Republic.

Source: Eurostat Labour Force Survey, background report by Hönekopp (1999).

- Employees from the CEECs are, on average, significantly younger than native and other foreign workers in the EU. Almost 70 per cent of the workers from the CEECs are aged 25 to 44 years, while in the EU on average only 55 per cent of all workers belong to this age group.
- The labour market participation of immigrants from the CEECs declined over time and was below the average of the EU in 1998. The ratio of the labour force to the working age population (activity rate) and the ratio of employees to working age population (participation rate) have been at 63 per cent and 53 per cent, respectively, in 1998. At the same time,

average activity rates of the EU have been at 68 per cent and average participation rates at 61 per cent. Unemployment rates of immigrants from the CEECs have been with 16.5 significantly higher than average unemployment rates in the EU (10.3 per cent) in 1998. However, this figures from the European Labour Force Survey may be biased since temporary migration is not completely covered (Hönekopp 2000).

- Immigrants from the CEECs achieve employment shares well above average in private households, tourism, construction, electricity and manufacturing, while their shares in public administration, agriculture, financial intermediation, mining and quarrying and education fall well below average. The distribution of immigrants from the CEECs across sectors is largely similar to the distribution of foreigners from other countries.

Thus, while migrants from the CEECs are highly skilled, they select themselves into the same branches as other foreigners, i.e. in labour intensive services with a high share of unskilled workers, as well as the construction and manufacturing sectors (cf. Table 5.4).

Table 5.4

#### Branch Structure of Employment in the European Union

Branch (NACE 1D)	total employees		total foreigners		CEE-6 <sup>1)</sup>		CEE-3 <sup>2)</sup>	
	1995	1998	1995	1998	1995	1995	1998	
agriculture, hunting, forestry	5.2	4.6	1.7	2.1	1.8	2.2	3.3	
fishing	0.2	0.1	n.a.	n.a.	0	0	0	
mining and quarrying	0.4	0.4	0.8	0.5	n.a.	n.a.	n.a.	
manufacturing	21.1	20.6	28.0	25.6	26.6	29.1	19.2	
electricity, gas, water supply	0.9	0.8	0.3	0.2	n.a.	n.a.	n.a.	
construction	7.9	7.7	11.4	10.1	12.4	14.0	15.2	
wholesale and retail trade etc.	15.2	14.9	12.9	12.7	11.1	11.4	12.9	
hotels and restaurants	4.0	4.0	9.3	9.4	8.8	9.7	8.1	
transport, storage, communication	6.0	5.9	4.8	4.9	6.2	5.9	5.3	
financial intermediation	3.6	3.4	1.7	1.9	n.a.	n.a.	n.a.	
real estate, renting, business activities	6.9	7.8	7.9	9.7	5.2	4.4	8.5	
public administration and defense etc.	7.8	7.5	2.2	2.1	n.a.	n.a.	n.a.	
education	6.6	6.8	3.8	4.0	3.8	2.9	4.2	
health and social work	8.7	9.4	7.7	7.7	10.2	8.4	9.9	
other social service activities etc.	4.5	4.5	4.6	5.1	5.7	4.0	6.8	
private households	1.0	1.1	2.2	2.9	4.5	4.1	4.5	
extra-territorial organizations	0.1	0.1	0.8	0.8	n.a.	n.a.	n.a.	
total	100	100	100	100	100	100	100	

EU 1995 without Sweden, 1998 without Ireland.

1) CEEC-6: Czech Republic, Bulgaria, Hungary, Poland, Romania, Slovak Republic. - 2) CEEC-3: Hungary, Poland, R

Source: Background report by Hönekopp (1999), Eurostat Labour Force Survey, author's calculation.

*The impact of temporary migration*

Immigration policies of the EU Member states have channelled migration from the CEECs into temporary migration programs at the expense of permanent migration (see Section 4.2). Since the middle of the 1990s, temporary employment of migrants from the CEECs has reached numbers of some 250 thousand workers p.a. in Germany (cf. Table 5.5). The annual employment volume of these temporary migrants is, on average, at around one-fourth of that of full-time employees in Germany. Thus, the number of temporary labour migrants from the CEECs equals around 50,000 full-time employed workers. Some 80 per cent of temporary migrants are seasonal workers. The employment of seasonal workers is limited to a maximum of three months a year. In 1996, 90 per cent of seasonal workers were employed in agriculture, and 4 per cent in the hotel and restaurant sector. The approximately 32,000 project-tied workers from the CEECs were employed mainly in the construction sector of Germany in 1998. The project-tied programme permits German firms to subcontract parts of a project to foreign firms that employ workers according to their national wage and social security standards. It is worth noting that the number of workers in the project-tied programme was reduced substantially in the second half of the nineties in order to meet lower labour demand in the construction sector. The number of border commuters, guest workers and other temporary workers from the CEECs was negligible in Germany. Thus, temporary migration from the CEECs was largely confined to agriculture and the construction sector. While the employment of seasonal workers in agriculture had by and large complementary effects on the incomes of native farm workers, in the construction sector, wages and employment of native workers were in some cases negatively affected through the subcontracting of firms from the CEECs. However, the number of project-tied workers was rather moderate and, furthermore, adjusted to labour demand in the construction sector.

Table 5.5

**Temporary Migrants from the CEECs in Germany <sup>1)</sup> 1991 - 1998**

program	1991	1992	1993	1994	1995	1996	1997	1998 <sup>6)</sup>
project tied workers <sup>2)</sup>	51,770	93,592	67,270	39,070	47,565	44,020	37,021	31,772
seasonal workers <sup>3) 4)</sup>	118,393	195,446	164,377	140,656	175,627	203,856	210,098	207,927
border commuters <sup>5)</sup>	7,000	12,400	11,200	8,000	8,500	7,500	5,900	5,700
new guest workers <sup>3)</sup>	2,234	5,057	5,771	5,529	5,478	4,341	3,165	3,083
nurses <sup>3)</sup>		1,455	506	412	367	398	289	125
total	179,397	307,950	249,124	193,667	237,537	260,115	256,473	248,607

1) Including program workers from former Yugoslavia. - 2) Persons employed; yearly average on monthly basis. - 3) Job placements. - 4) Annual employment volume is equivalent to a fourth or a fifth of the indicated figures. - 5) Persons employed, adjustments by placement figures. - 6) 1998 estimated.

Source: Background report by Hönekopp (1999), Federal Employment Services, authors' calculations.

*Are migrants from the CEECs able to transfer their human capital to EU labour markets?*

The branch structure of employment indicates that immigrants from the CEECs compete mainly with other foreigners for blue-collar jobs in construction and manufacturing and for low-skilled jobs in the service sectors and agriculture irrespective of their education levels. The transfer of human capital acquired in the CEECs seems to be limited due to a lack of language abilities and to limited access to labour markets as well. This hypothesis is confirmed by an analysis of the labour market performance of ethnic Germans immigrating

### Box 2: Returns to Human Capital and Labour Market Performance of Ethnic Germans

More than two million ethnic Germans migrated to Germany from 1988 to 1995. Ethnic Germans were, in general, born and brought up in the ten candidate countries and the former USSR, and acquired most of their human capital there. They may therefore serve as the most suitable reference group for the labour market performance of migrants from the CEECs. However, some restrictions have to be mentioned: first, ethnic Germans are more likely to speak German. Around 58 per cent of ethnic Germans in our sample self-rate their German-speaking abilities as good or very good. Second, ethnic Germans receive special treatment (e.g. language courses) and are eligible to receive support from the German social security system. The abilities and incentives of ethnic Germans to transfer their human capital is therefore not completely comparable to those of nationals from the CEECs. In particular, their prerequisites to transfer their human capital are better than those of migrants from the CEECs.

The so-called immigrant sample of the German Socio-Economic Panel (GSOEP) provides information on individual characteristics and labour market performance of ethnic Germans. The labour market performance of Ethnic Germans is compared with the characteristics of foreigners (individuals of Turkish, Yugoslavian, Italian, Greek, and Spanish origin) and of western German 'natives' (i.e. German nationals already living in West Germany in 1984).

Formal educational levels of ethnic Germans are below educational levels of western German natives, but are well above those of foreigners: 69 per cent of ethnic German males and 59 per cent of ethnic German females possess a vocational school or college degree, while 87 per cent of western German males and 75 per cent of western German females hold such a degree. However, only 43 per cent of foreign males and 30 per cent of foreign females have attained this level of higher education. The share of ethnic German males and females with a degree is significantly below the share of western Germans.

Assuming that human capital characteristics largely determine wages, one would expect a labour market performance of ethnic Germans somewhere midway between foreigners and western Germans. However, this is not the case: despite their better human capital endowment, ethnic Germans resemble other foreigners in their labour market performance. Hourly earnings of ethnic German males and females are, at around 76 per cent and 78 per cent of those of eastern German males and females respectively, significantly below the respective levels of natives. Male foreigners earn on average 78 per cent and thus slightly more than an ethnic German male. Average unemployment rates are, at 18 per cent of ethnic Germans and 22 per cent of foreigners, almost double those of western Germans (10 per cent).

The estimation of a standard earning equation explaining the logarithm of hourly wages through educational levels, work experience and language abilities points to the fact that the returns to human capital acquired in Central and Eastern Europe are extremely low. While a vocational school degree increases the hourly wages of western German males by 8 per cent and of females by 14 per cent on average relative to those without such education, vocational school degrees turned out to have no statistically significant impact on hourly earnings of ethnic Germans<sup>49</sup>. In the western German sample, a college degree increases the hourly wages of males by 44 per cent and of females by 53 per cent, while a college degree increases wages of ethnic German males by 20 per cent and of ethnic German females by 11 per cent. It is interesting to note that the returns to human capital of ethnic Germans fall short of even those of foreigners: A vocational degree and a college degree acquired in a foreign country increase the hourly wage of a foreign male by 5 and 25 per cent respectively, and of a foreign female by 3 and 49 per cent respectively. Not surprisingly, the returns to age, which serve as a proxy for firm experience, are for ethnic Germans rather low and thus insignificant. Ethnic Germans have a high return to their firm experience in Germany, which might be interpreted as an indication of a positive impact of the duration of their stay upon average wages. However, this result is statistically not significant.

An estimation of the impact of human capital acquired in Central and Eastern Europe upon the employment probabilities confirm the results of the earnings equations: while the employment probabilities of western Germans increase with vocational and college degrees, schooling has no impact on the employment probabilities of ethnic Germans. Language abilities increase the employment probabilities of ethnic Germans, but have no significant impact on wages. Thus we can conclude that ethnic Germans, although they possess a high level of schooling and vocational training, do not perform better than foreigners on the German labour market. These findings cast some doubt on the transferability of human capital of migrants from the CEECs. For further details, see the background report by Kreyenfeld (1999).

<sup>49</sup> These figures refer to vocational and college degrees of ethnic Germans acquired in Central and Eastern Europe.

from the CEECs into Germany in the early 1990s. Since ethnic Germans are assumed to have better language skills than natives from the CEECs, their prerequisites to transfer their human capital should be better. However, although formal education levels of ethnic Germans are well above those of foreigners, their labour market performance resembles that of foreign workers. In particular, there have been no findings of an impact of vocational degrees on the wage levels of ethnic Germans. Furthermore, schooling and vocational degrees do not increase the employment probabilities of ethnic Germans. Thus, the available evidence point out that the returns to human capital acquired in the CEECs are rather low (see Box 2, background report by Kreyenfeld 1999).

#### *Conclusions for EU labour markets*

The findings in Section 6 and those of other studies indicate that blue-collar workers are negatively affected by migration due to a decline in wage growth and increasing displacement risks, while white collar workers are neither affected by nor benefit from immigration. At the present stage, labour immigration from the CEECs is expected to have the same effects. The findings from the labour market performance of ethnic Germans indicate that even an acknowledgement of degrees from higher education may not necessarily increase the ability of migrants to transfer human capital acquired in the CEECs to EU labour markets in the short-term. However, this picture may change over time. Under the assumption that skill structures of immigrants from these countries remain constant and that the ability to transfer human capital increases over time, the wage and employment effects of immigration from the CEECs may be spread more evenly across skill groups than in previous migration. Thus, policies which address the transfer of human capital will mitigate the wage and employment pressures on low-skilled labour caused by migration from the CEECs.

#### **5.4 The impact of foreign direct investment and other capital movements**

Foreign direct investment and other capital movements contribute significantly to capital formation in the CEECs, but are too small to have an impact on interest rates and investment in the EU. Total capital flows to the CEECs have increased notably in the second half of the 1990s, but the volatility of capital flows is rather high. Huge differences in the allocation of capital flows between individual candidate countries demonstrate that the credibility of institutional and economic reforms plays a key role for the location of foreign capital flows. The concentration of around 90 per cent of net capital flows into the CEECs in the first-round can-

didate countries in 1998 may be interpreted as an indication that the prospects for accession contribute considerably to the credibility of the CEECs. Between half and two-thirds of total foreign capital flows into the CEECs fall to foreign direct investment, the share of portfolio investment in total capital flows is around one-fifth. We have therefore largely confined the focus of the analysis of capital movements to the sectoral structure of foreign direct investment in order to identify those branches and sectors at home which might be affected by increasing capital flows to the CEECs. The results of our analysis do not confirm the widely-held belief that foreign direct investments to the CEECs are motivated mainly by low labour costs. Nearly half of foreign direct investments to the CEECs are made in non-tradable sectors such as public utilities and service sectors. Market-seeking seems to be an important investment motive even for investments in tradable sectors. However, the high labour intensity of foreign direct investment in the CEECs is an indication that the exploitation of the wage differential may be an important investment motive for at least some of the foreign direct investments in the tradable sectors. This could be true in the labour intensive textile and clothing sector and, to a lesser extent, in electrical machinery, rubber and plastic products, motor vehicles and other transport equipment. Notice that in some of these branches, the present EU Members run notable trade surpluses vis-à-vis the CEECs. If a negative impact of foreign direct investment on employment and wages can be felt at all in the present EU, then on unskilled labour in the above-mentioned sectors in countries and regions immediately bordering the CEECs.<sup>50</sup>

#### **5.4.1 Capital exports to the CEECs: Is the glass half full or half empty?**

Net capital flows into the CEECs produced a high volatility in the post-transition period: the capital balance of the ten candidate countries varied between minus USD 2.4 billion in 1991 and a peak of USD 28.0 billion in 1995. About two-thirds of the capital flows into the CEECs originate in the present EU. Beyond this volatility, we can observe a significant increase of net capital flows into the CEECs in the second half of the nineties. The variance of the capital flows can be traced back to various factors such as debt rescheduling and repayment, business cycles in both recipient and donor countries, exchange rate fluctuations, uncertainty regarding institutional and economic stability, financial sector reforms, etc. Not surprisingly, countries with a stable institutional and economic environment benefit more significantly from capital inflows than do other countries. The conclusion of the Europe Agreements coincided with

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<sup>50</sup> This Section is based on the background report by Belitz and Roulstone (1999).

increasing net capital flows to the CEECs. Between 80 and 90 per cent of the net capital flows to the CEECs have been directed to the first-round candidate countries. Notice that causality works in both directions: the higher credibility of institutional and economic reforms may have contributed to the inclusion of countries in the first-round accession negotiations, while the inclusion of countries in the first-round accession negotiations may have contributed to the credibility of economic and institutional reforms and hence triggered foreign capital inflows. However, the huge gap in foreign capital flows between the first-round candidate countries and the other candidates for accession underlines the high economic impact of integration policies on the accession candidates (cf. Table 5.6).

Table 5.6

**CEEC-10: Capital Balance 1991-1998**

	1991	1992	1993	1994	1995	1996	1997	1998
	<i>millions of US Dollars</i>							
Bulgaria	-429	614	759	-1,019	327	-715	462	188
Czech Republic	..	..	3,043	4,504	8,225	4,317	1,222	n.a.
Estonia	..	-1	189	167	233	541	803	508
Hungary	1,474	416	6,083	3,370	6,577	-1,575	388	2,814
Latvia	..	-110	67	363	633	537	347	568
Lithuania	..	..	302	241	534	646	1,006	1,444
Poland	-4,183	-1,045	2,341	-9,065	9,260	6,486	7,957	n.a.
Romania	320	1,380	640	535	812	1,486	2,458	2,042
Slovak Republic	..	..	-153	4	1,158	2,197	1,719	1,816
Slovenia	..	-13	-81	131	425	548	1,190	-5
<b>CEEC-10</b>	<b>-2,818</b>	<b>1,240</b>	<b>13,190</b>	<b>-769</b>	<b>28,185</b>	<b>14,468</b>	<b>17,552</b>	<b>n.a.</b>

*Capital Balance according to the definition of the IMF.*

Source: IMF, International Financial Statistics, Yearbook 1999, Washington, D.C., authors' calculations.

The share of foreign direct investment in total capital flows to the CEECs is relatively high, while the share of portfolio investment is rather low: according to the balance of payments statistics of the IMF, the net inflow of foreign direct investment into the CEECs was around USD 47 billion, while cumulative net inflows of portfolio investment were USD 16 billion from 1991 to 1997 (cf. Tables 5.7 and 5.8). The rather low share of portfolio investment is an expression of the fact that financial and security markets of most CEECs are still in their infancy.

Table 5.7

**CEEC-10: Portfolio Investment 1992-1997**

	1992	1993	1994	1995	1996	1997
	<i>millions of US Dollars</i>					
Bulgaria	..	..	-232	-65	-129	133
Czech Republic	..	1,608	846	1,370	721	993
Estonia	..	0	-14	-22	145	263
Hungary	..	3,919	2,448	2,212	-869	-1,040
Latvia	..	..	-22	-37	-141	-571
Lithuania	..	0	4	16	63	188
Poland	..	..	-624	1,177	301	2,098
Romania	..	-73	75	32	193	534
Slovak Republic	..	-309	278	210	17	13
Slovenia	-9	3	-33	-13	637	236
<b>CEEC-10</b>	..	<b>5,148</b>	<b>2,727</b>	<b>4,880</b>	<b>938</b>	<b>2,846</b>

*Source:* IMF, International Financial Statistics, May 1999, Washington, D.C., authors' calculations.

From the perspective of the present EU Members, net capital flows to the CEECs are still low: they amount to around 0.15 per cent of GDP and around 0.8 per cent of gross fixed investment of the present EU Members. In view of open capital markets, this is too small for significant economy-wide effects on interest rates and factor incomes to be expected in the present EU. In contrast, from the perspective of the candidate countries, an annual inflow of USD 15-25 billion amounts to between 5 and 7.5 per cent of nominal GDP, and to between 22 and 37 per cent of gross fixed capital formation.<sup>51</sup> In view of the outdated capital stock and the huge gap in capital endowment between the EU and the CEECs, this may be acknowledged as a minor contribution relative to capital demand. Nevertheless, if we conceive closed capital markets in the CEECs as the relevant counterfactual, then foreign capital inflows into the CEECs relieve domestic capital markets considerably and therefore have a significant impact on interest rates and wages at macroeconomic levels of the CEECs.

<sup>51</sup> Notice that not all foreign capital inflows contribute to capital formation. A non-negligible part is spent on government consumption.

Table 5.8

**CEEC-10: Foreign Direct Investment (FDI) 1991-1997**

	1991	1992	1993	1994	1995	1996	1997
	<i>millions of US Dollars</i>						
Bulgaria	56	42	40	105	98	138	507
Czech Republic	..	..	564	762	2,531	1,394	1,258
Estonia	..	80	156	212	199	110	130
Hungary	1,462	1,479	2,339	1,095	4,476	1,986	1,646
Latvia	..	27	50	279	245	379	515
Lithuania	..	..	30	31	72	151	328
Poland	298	665	1,697	1,846	3,617	4,445	4,863
Romania	37	73	87	341	417	263	1,224
Slovak Republic	..	..	138	189	173	233	75
Slovenia	..	113	111	131	170	178	295
<b>CEEC-10</b>	<b>1,853</b>	<b>2,479</b>	<b>5,213</b>	<b>4,991</b>	<b>11,998</b>	<b>9,277</b>	<b>10,841</b>

Source: IMF, International Financial Statistics, May 1999, Washington, D.C.

### 5.4.2 The impact of FDI: which countries are affected?

If capital movements to the CEECs can make themselves felt at all in the present EU, then few sectors in few countries and regions may be affected by foreign direct investment (FDI). The main investing countries of the EU are Germany, the Netherlands, Austria and France. The share of the CEECs in outward foreign direct investment flows of the EU Members from 1992-1996 to European countries was 8.6 per cent. The shares exceed the EU average significantly in the cases of Austria (39 per cent), Italy (17 per cent), Germany (13 per cent), Denmark (12 per cent) and Sweden (12 per cent) (cf. Table 5.9). Notice that the share of the CEECs in outward foreign direct investment of EU countries is twice that of the CEECs' share in trade. This reflects the rather low capital endowment of the CEECs.

Analogous to trade and migration, geographical proximity plays a key role in the allocation of foreign direct investment: The majority of FDI flows from the present EU Members is directed toward countries immediately bordering the investing countries. This evidence suggests that bordering regions are affected by foreign direct investment much more strongly than the average. Unfortunately, FDI figures are not reported at the regional level. Further research based on non-standard data sources may bring additional insights here.

Table 5.9

## EU-15: Cumulative outward FDI flows 1992-1996

	FDI to CEEC-10		total FDI to Europe		ratio of FDI to CEEC-10 to FDI to Europe
	millions of of ECU	in per cent of EU	millions of of ECU	in per cent of EU	in per cent
EU	16 467	100.00	191 316	100.00	8.60
Austria	1 866	11.30	4 819	2.52	38.70
Belgium/Luxembourg	611	3.70	13 566	7.09	4.50
Denmark	484	2.90	4 026	2.10	12.00
Finland	221	1.30	7 596	3.97	2.90
France	2 063	12.50	39 017	20.39	5.30
Germany	7 643	46.40	59 194	30.94	12.90
Greece		0.00		0.00	0.00
Italy	604	3.70	3 592	1.88	16.80
Ireland		0.00		0.00	0.00
Netherlands	2 108	12.80	31 378	16.40	6.70
Portugal	5	0.00	716	0.37	0.70
Spain	52	0.30	4 827	2.52	1.10
Sweden	484	2.90	4 026	2.10	12.00
UK <sup>1)</sup>	483	2.90	18 559	9.70	2.60

1) 1992-1995.

Sources: Eurostat 1998; own calculations.

The main countries receiving FDI among the CEEC-10 are Poland (33 per cent of total FDI stocks in 1997), Hungary (32 per cent) and the Czech Republic (14 per cent); 86 per cent of total FDI stocks in the CEECs are located in the five first-round candidate countries. The highest shares of inward FDI stocks relative to GDP were reached in Hungary (33 per cent of GDP) and Estonia (20 per cent) (cf. Table 5.10). Analogous to the trend in total capital flows, differences in the distribution of FDI stocks reflect differences in the credibility of institutional and economic reforms among the recipient countries. Furthermore, countries with sales strategies in privatisation (e.g. Hungary, Estonia) reached significantly higher shares of FDI than countries with voucher strategies. In particular, the sale of public utilities and telecommunications had an important impact on the size of FDI inflows.

Table 5.10

**CEECs: Inward FDI Stocks and Flows 1997**

	inward FDI stocks			inward FDI flows		
	millions of USD	USD per capita	per cent of GDP	millions of USD	USD per capita	per cent of GDP
Bulgaria	943	147	4.5	497	77	4.8
Czech Republic	6,763	823	13.6	1,301	158	2.4
Estonia	1,148	695	20.4	262	159	2.7
Hungary	15,882	1,667	33.2	2,085	219	4.6
Latvia	901	543	13.5	418	252	6.3
Lithuania	1,041	344	8.3	355	117	2.3
Poland	16,463	321	9.7	5,000	97	2.2
Romania	2,467	149	4.1	1,224	74	3.5
Slovak Republic	1,293	227	5.8	170	30	0.3
Slovenia	2,349	639	10.8	321	87	1.8
<b>CEEC-10</b>	<b>48,307</b>			<b>11,136</b>		

Source: UNCTAD 1998; EBRD 1998.

### 5.4.3 Which sectors and branches are affected?

Around two-fifths of the inward FDI stock in the CEECs is directed into tradable sectors, i.e. manufacturing and the primary sectors, around 45 per cent to non-tradable sectors such as electricity, transport and communication, construction and services, and the allocation of the rest is unknown<sup>52</sup>. Financial intermediation as well as the trade and repairs sector attracted around one-tenth each, while the public utilities in energy, transport and communication received 16 per cent of total FDI stock. The share of primary sectors in foreign direct investment is negligible. In the manufacturing sector, foreign direct investment is concentrated in motor vehicles, food products, and petroleum, chemicals, rubber and plastics (cf. Table 5.11, A.20).

The bulk of FDI originating from EU members is concentrated in other industrialised countries. In view of the difference in factor endowments between the CEECs and these countries it is not surprising that foreign direct investment patterns deviate considerably from those in other countries: the calculation of specialisation indices demonstrate that within the tradable sectors, the shares of the food, textile and clothing and motor vehicle sectors exceed and the shares of chemicals and of mechanical and electrical machinery fall significantly short of the respective shares in other foreign direct investment of EU countries. Electricity, transport and

<sup>52</sup>Data on FDI stocks are not reported in comparable branch structures between countries. Furthermore, they vary considerably depending on data sources. We rely here on data from the EBRD and the OECD on the branch structure of FDI in Czech Republic, Hungary and Poland, which are largely comparable. These three countries comprise 81 per cent of total FDI stocks in the CEECs.

communication and construction take significantly higher shares in the non-tradable sectors than usual (cf. Tables A.19-A.21).

Table 5.11

**Sector Structure of FDI-Stock  
in the Czech Republic, Hungary and Poland 1996**

	FDI stock million USD	sector in per cent of total	average growth rate of FDI stock 1992-96
<b>Primary sector</b>	<b>411</b>	<b>1.4</b>	<b>46</b>
Agriculture and fishing	150	0.5	24
Mining and quarrying	261	0.9	67
<b>Manufacturing</b>	<b>10915</b>	<b>38.1</b>	<b>28</b>
Food products	3094	10.8	25
Textiles and wood	1440	5.0	44
Petroleum, chemical, rubber and plastic products	2358	8.2	40
Metal and mechanical products	1262	4.4	37
Office machinery, computers, radio, TV and communication equipment	626	2.2	6
Vehicles and other transport equipment	2135	7.5	34
<b>Construction</b>	<b>1157</b>	<b>4.0</b>	<b>16</b>
<b>Public utilities and communications</b>	<b>4595</b>	<b>16.0</b>	<b>..</b>
Electricity, gas & water	1832	6.4	4711
Transport & communication	2763	9.6	111
<b>Services</b>	<b>6952</b>	<b>24.3</b>	<b>489</b>
Trade & repairs	3108	10.8	36
Hotels & restaurants	43	0.2	14
Financial activities	2680	9.4	20
Real estate & business activities	1052	3.7	309
Other services	69	0.2	110
<b>Unallocated</b>	<b>4617</b>	<b>16.1</b>	<b>na</b>
<b>Total</b>	<b>28647</b>	<b>100.0</b>	<b>47</b>

Sources: OECD, International Direct Investment Statistics Yearbook 1998; own calculations.

The branch breakdown of Austrian and German foreign direct investment indicates that the share of resource-intensive industries in total foreign direct investment is significantly higher, while the share of industries with a high level of product differentiation is lower than in other foreign direct investment. With regard to labour intensity and skill and wage levels, the picture is ambiguous. Neither of these countries concentrates its foreign direct investments more on labour intensive industries in the CEECs than it is the case in total foreign investments. On the other hand, the shares of low tech, low wage and unskilled industries in German FDI in the CEECs is higher than in the rest of the world. But this does not hold true for the share of low wage and unskilled industries of Austrian foreign direct investment in the CEECs.

Scale and capital intensive sectors like motor vehicles also take a high share in total Austrian foreign direct investment going into the CEECs (cf. Table A.19-A.21).

Table 5.12

**Labour Intensity of German Outward FDI Stocks in 1996**

	employees per million DM FDI stocks all countries	CEEC-10
Manufacturing	11.4	24.4
chemicals and chemical products, drugs	6.3	12.6
rubber and plastic products	15.1	46.1
non-metallic mineral products	9.4	17.8
basic metals	11.7	37.8
machinery	13.0	31.1
motor vehicles	<b>13.9</b>	<b>11.2</b>
other transport	22.2	86.7
electrical machinery	14.7	57.5
electrical equipment (Radio, TV and Comm.)	<b>18.8</b>	<b>19.4</b>
measuring instruments, watches and clocks	14.3	70.8
fabricated metal products	13.9	24.2
wood	25.8	39.6
paper	8.3	18.9
printing	10.5	26.5
textiles	19.5	41.3
clothing	58.9	113.9
beverages, food	11.8	21.4
furniture, jewellery, musical instruments	34.8	86.6
recycling	13.1	32.0

*Sources:* German Federal Bank; authors' calculations.

#### **5.4.4 Do foreign investors produce in a more labour intensive way in the CEECs than in other host countries?**

The labour intensity of production in affiliates of EU companies in the CEECs is on average considerably higher than that of foreign affiliates in other host countries: German manufacturing enterprises employ 24 workers per DM 1 million of foreign direct investment stock in the CEECs, but only 11 workers on the average of all recipient countries. This is hardly surprising given that the overwhelming share of foreign direct investment of EU countries is located in OECD countries. However, German data show that the labour intensity varies considerably across branches: In clothing, furniture, measuring instruments, other transport equipment, rubber and plastic products the number of employees per DM 1 million of foreign direct investment stock is extremely high in the CEECs, while in motor vehicles and electrical equipment it is similar to that in other host countries (cf. Table 5.12).

### 5.4.5 The impact on labour demand and wages

Foreign direct investment of EU countries in the CEECs is much less motivated by wage differences than sometimes hypothesised. Nearly half of foreign direct investment is directed to the previously underdeveloped non-tradable sector (utilities, transport and communication, trade, financial intermediation, other services) in the CEECs. These investments have no or only negligible effects on wages and employment in the EU: the main investment motive is to supply domestic markets and the exploitation of first-mover advantages in markets with no or limited competition (e.g. utilities). Employment in parent companies can be affected negatively if investment in home countries becomes financially constrained by investment in the CEECs. This is rather unlikely in most cases. Furthermore, in the long run, revenues from foreign direct investment may outstrip initial capital exports and therefore increase financial capabilities of parent companies in the long-run. Employment in parent companies may slightly increase by so-called 'home office effects', i.e. an increase in activities at the headquarters of multinational enterprises. Finally, foreign direct investment in non-tradable sectors may have indirect effects by improving the infrastructure for trade and other business activities.

The branch structure of foreign direct investment as well as all polls among foreign investors indicate that foreign investment in the tradable sectors is to a significant extent also motivated by market access. This is obviously true for food products. The rather low number of employees per unit of foreign direct investment in motor vehicles indicates that the exploitation of wage differentials is not a main motive for investment in these branches. But note that foreign direct investment, which was initially motivated by market access, may displace the production of parent companies in a later phase. Increasing shares of intra-industry trade in these sectors and a high correlation between foreign direct investment and intra-industry trade indicate that the relocation of stages of production into the CEECs by multinational firms increases in importance. In the motor vehicles industry in particular, the exports of foreign affiliates of EU companies have increased notably.

Finally, only around one-fifth of foreign investment of EU countries in the CEECs is allocated to efficiency-seeking sub-sectors. These are scale-intensive industries where low labour costs play a significant role and the share of unskilled workers is relatively high: beyond the labour-intensive textile and clothing sector this could be true in electrical machinery, rubber and plastic products, motor vehicles and other transport equipment. In all these branches with the

exception of motor vehicles, the labour intensity of foreign affiliates in the CEEC-10 deviates sharply from foreign affiliates operating in other countries. The rate of intra-industry trade is high. In these branches production processes may become increasingly segmented in human capital and labour-intensive activities.

Thus we can draw three main conclusions from the analysis of foreign direct investment structures in the CEECs:

- First, the rather small size of foreign direct investment projects in most branches, with the exception of public utilities and motor vehicles<sup>53</sup>, makes it unlikely that foreign investment constrains the financial capabilities of parent companies to finance investment in home countries significantly. Thus, the crowding-out of investment projects in the EU through investments in the CEECs is negligible.
- Second, the high share of market-seeking investment is an indication that foreign direct investment in the CEECs complements rather than substitutes trade, i.e. foreign direct investment raises the value-added of parent companies in home countries relative to a case without foreign investment. Note that the effects of foreign direct investment are not limited to the investing company: An increase in exports of the investing company may induce an increase in imports in other sectors. Thus, while market-seeking investment in tradable sectors may increase value-added and employment in parent companies, it may reduce production and employment in other companies and sectors.
- Third, foreign direct investment enforces the division in human capital intensive and labour intensive activities between the EU and the CEECs. In particular, foreign direct investment and intra-industry trade in vertically differentiated goods are positively correlated. Thus, foreign direct investment increases exports of human capital intensive goods and intermediates and the imports of labour intensive goods and intermediaries within the same companies and industries. However, these effects are concentrated in only a few branches at the present time (electrical and other machinery, measuring instruments, rubber and plastic products and other transport equipment).

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<sup>53</sup> Even in case of the few large-scale investment projects in public utilities and motor vehicles it seems to be rather unlikely that these investments constrain the financial capabilities of parent companies.

Foreign direct investment notably increases the capital endowment of the CEECs and, furthermore, enforces growth through the transfer of technologies, knowledge and human capital. Moreover, foreign direct investment affects relative wages in the CEECs. Evidence from Hungary indicates that skill levels are higher and the age of workers in affiliates of foreign companies is lower relative to workers in other companies. Wage levels in foreign affiliates are 20 to 30 per cent above average wage levels. Thus foreign direct investment may raise relative wages for skilled labour relative to unskilled labour in the CEECs. Foreign direct investment therefore reduces incentives for migration in particular for this group.

## 6 Quantitative results from Austria, Germany and Sweden

### 6.1 The impact of trade on wages, labour mobility and employment

The increase in trade between the present EU Members and the CEECs is too small to make an economy-wide impact on relative wages likely. However, the descriptive analysis of trade structures between the EU and the CEECs has provided evidence that individual sectors and educational levels of labour are affected in non-uniform ways by the increase in trade with the CEECs. In particular, low-skilled employees in labour intensive industries such as clothing might be negatively affected by Eastern enlargement, while medium- and high-skilled labour in high technology sectors may benefit more than proportionally from the trade increase with the CEECs. Since the mobility of labour across sectors is limited, trade with the CEECs is likely to contribute to *inter*-industrial differentials in wages and employment. In order to give an idea of the magnitude of these effects, we have analysed the effects of increased trade on earnings, employment and labour mobility using large longitudinal data sets. For the analysis, we have selected two strongly affected countries, Austria and Germany, and one moderately affected country, Sweden.<sup>54</sup>

#### 6.1.1 Framework of analysis

The coincidence of rising trade with low and middle income countries and increasing wage inequality or unemployment in industrialised countries has spurred a political and academic debate about the labour market consequences of ‘globalisation’ in the 1980s and 1990s.<sup>55</sup> This controversy has motivated voluminous empirical research on the wage and employment effects of trade. These studies can be roughly classified into approaches which rely on changes in international prices and those which are based on changes in trade volumes. The first approach corresponds more closely to basic trade theory, according to which prices on the goods markets effect changes on the factor markets rather than changes in trade volumes. However, information on the impact of trade with the CEECs on goods prices in the EU is not available. Thus, any analysis of the impact of trade with the CEECs has to rely on changes in trade vol-

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<sup>54</sup> This Section is based on the background reports by Brücker, Kreyenfeld and Schräpler (1999), Edin, Fredriksson and Lundborg (1999) and Huber and Hofer (1999).

<sup>55</sup> The controversy is illustrated in the papers by Freeman, Richardson and Wood in the *Journal of Economic Perspectives*, Vol. 9, No. 3, 1995.

umes. Notice that under certain conditions a strong correlation between trade volumes and prices on the goods and factor markets is to be expected.<sup>56</sup>

The analysis proceeds in two steps: first, the impact of trade on inter-industry wage differentials is analysed. In the second step, the effects of trade on the individual probability of becoming unemployed or moving to other industries are estimated in order to capture the impact of trade on employment and labour mobility. The framework for the analysis is outlined in the report on Sweden (see Edin, Fredriksson and Lundborg 1999) and draws heavily on Freeman and Katz (1991). The model assumes that the effect of a change in domestic demand for the products of an industry is equal to the effect of a change in demand due to changed exports or imports. Thus, the shares of imports and exports have been weighted in such a way that a change of demand and supply through trade by one percentage point corresponds to a change in the domestic components of demand and supply by one percentage point. However, we did not impose an equal response of labour markets to changes in the various components of industry demand in the empirical specification of the model. As the descriptive analysis has shown, the factor services embodied in traded goods can vary within the same industry so that wages and employment may respond differently to the various types of industry demand.

In Austria and Germany, the analysis was limited to male employees, since the information on individual characteristics in the data is not sufficient to control for differences in female labour market participation. The German sample is limited to western Germany. Trade with the former GDR has been excluded. However, any investigation of German trade in the 1990s is hampered by the implications of German unification. The huge increase in demand for the output of western German companies following German unification is reported in the statistics as domestic demand. This may distort the analysis of the impact of foreign trade. We therefore included the pre-unification period 1985-1990 in our investigation. The data set for Sweden contains a much deeper structure of branches than that of Austria and Germany.<sup>57</sup> Notice that the wage and employment effects depend on branch size in the regressions, so that we cannot expect an equal response to changes in industry demand and supply across the three country samples.

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<sup>56</sup> See Deardorff and Staiger (1988) for an analysis of the correlation between the factor content of trade and factor prices.

<sup>57</sup> The Swedish sample consists of around 80 branches, the German sample of 34 branches and the Austrian sample of 25 branches.

**Box 3: Methodological background: Estimation of the wage response to trade**

The empirical approach for the estimation of the wage response to shifts in industry demand relies on the basic assumption that a shift in industry demand by domestic sales and by trade has an equal impact on wages and employment (see Freeman and Katz 1991, Edin, Fredriksson and Lundborg 1999). The wage response to a change in industry demand is determined by the elasticities of labour demand and labour supply. The change in the natural logarithm of wages in industry  $i$  is given by

$$(1) \quad \Delta \ln(W_i) = \beta \Delta \ln(S_i),$$

where  $W_i$  denotes wages,  $S_i$  sales,  $\Delta$  the difference operator, and  $\beta$  is a factor determined by the elasticities of labour demand and supply with regard to a change in wages. Notice that the factor  $\beta$  is subject to a simultaneity bias, which is discussed in detail by Edin et al. (1999) and Freeman and Katz (1991). Adding an error term with the usual properties to equation (1),  $\beta$  can be estimated by standard regression techniques. To evaluate the impact of trade on labour demand, the sales of an industry are decomposed in its parts: total sales in the domestic market  $D_i$  [ $D_i = S_i - X_i + M_i$ ], exports  $X_i$ , and the share of imports in total sales of the domestic market  $M_i / D_i$ .  $S_i$  denotes domestic sales of industry  $i$ . Taking the total differential of this decomposition of industry demand, approximating percentage changes with log changes and some rearranging yields

$$(2) \quad \Delta \ln(S_i) = \Delta \ln(D_i) + w_x \Delta(X_i / S_i) + w_m \Delta(M_i / D_i),$$

where the weights on the export and import shares are  $w_x = S_i / (S_i - X_i)$  and  $w_m = D_i / (D_i - M_i)$ , respectively. The weights are calculated at the sample average. Substituting equation (2) into (1) we get the following relationship between a change in wages and a change in the domestic and foreign components of industry demand:

$$(3) \quad \Delta \ln(W_i) = \beta_1 \Delta \ln(D_i) + \beta_2 w_x \Delta(X_i / S_i) + \beta_3 w_m \Delta(M_i / D_i).$$

Equation (3) is applied in the empirical analysis. In the empirical implementation, individual, branch and firm characteristics are added to equation (3) in order to control for other factors which affect wage growth. Notice that we did not impose a restriction on the factor  $\beta$  in the empirical implementation of equation (3) in order to allow for an unequal response of wages to the different components of industry demand.

Theory suggests that wages are endogenous, i.e. wage levels may have an impact on trade, too. In order to control for endogenous effects, national trade variables have been instrumented by trade variables of neighbouring countries in the analysis of Austria and Sweden. Unfortunately, in the German case, suitable instruments are not available, since the branch structure of the sample differs largely from international classifications. However, the results from Austria and Sweden indicate that the instrumented estimations differ only slightly from the non-instrumented estimations.

For further details on this methodology see the background reports of Edin et al. (1999) and Huber and Hofer (1999).

**6.1.2 The impact of trade on wages**

The results of the basic earnings estimations in Austria, Germany and Sweden are summarised in Table 6.1 and the Annex Tables A.22-A.24. The dependent variable is the change in the log wages and the explanatory variables the weighted shares of the log in domestic demand and the log export and log import shares, respectively. The coefficients can therefore be interpreted as an elasticity. As expected, an increase in domestic demand as well as in the foreign component of demand has a positive impact on wages, while an increase in the import

share of the domestic market of an industry reduces wages in that industry. However, in case of Austria the import share and, in the German case, both components of foreign demand and supply are not significant. A one per cent increase in an industry's sales triggered by exports raises gross wages in this industry by 0.18 per cent in Austria and by 0.06 per cent in Sweden, while a one per cent increase of the import share in the domestic market reduces wages in the Swedish case by 0.07 per cent. The results for the import share turned out to be insignificant in Austria; the results for both components of foreign demand and supply turned out to be insignificant in Germany.

Table 6.1

## The Impact of Trade on Wages

	Austria (1991-1994)		Germany (1990-1995)		Sweden <sup>1)</sup> (1985-1990)	
	(1)	(2)	(1)	(2)	(1)	(2)
$\Delta \ln(\text{domestic demand})$	0.0917 ***	0.1057 ***	0.0133 ***	0.0202 ***	0.0851 ***	.0948 ***
<i>t-values</i>	2.72	2.90	8.85	11.1	2.86	3.28
$w_x \Delta \text{ export share}$	0.1842 **	0.0772	0.0040		0.0639 **	.1051 ***
<i>t-values</i>	2.45	0.87	0.93		2.35	2.62
$w_m \Delta \text{ import share}$	-0.0015	0.1017	-0.0012		-0.0687 **	-0.1053 ***
<i>t-values</i>	0.03	1.30	-1.38		2.48	-2.86
$w_x \Delta \text{ export share}^{\text{CEEC}}$		0.1429		0.0999		0.1539
<i>t-values</i>		0.54		4.68 ***		0.65
$w_m \Delta \text{ import share}^{\text{CEEC}}$		0.2895		0.0012		-0.0323
<i>t-values</i>		0.81		0.60		-0.08
$w_x \Delta \text{ export share}^{\text{DEV}}$		0.1334				0.0240
<i>t-values</i>		0.84				0.39
$w_m \Delta \text{ import share}^{\text{DEV}}$		-0.4702 **				-0.0313
<i>t-values</i>		2.05				-1.62
$w_m \Delta \text{ export share}^{\text{REST}}$				0.0219		
<i>t-values</i>				4.68 ***		
$w_m \Delta \text{ import share}^{\text{REST}}$				0.0000		
<i>t-values</i>				0.3		
R <sup>2</sup> adjusted			0.13	0.14	0.08	0.08
observations	8945	8945	77718	37283	23657	23657

Dependent variable: Change of log gross wage ( $\Delta \ln(W_i)$ ).

Method: Ordinary Least Squares (OLS).

\*\*\*, \*\*, \* significant at the 1%, 5%, 10% level, respectively.

Superscripts denote country groups (CEEC = Central and Eastern European countries; DEV = developing countries; REST = rest of world).

Other RHS variables: intercept, individual, firm and branch characteristics (cf. background reports).

1) *t-values* are calculated on basis of Huber-White standard errors allowing for correlations within industry.

Sources: Background reports by Hofer and Huber (1999), Brücker, Kreyenfeld, Schräpler (1999), Edin, Fredriksson and Lundborg (1999).

In the German case, we found much more robust results for the 1985-1990 time period<sup>58</sup>: a one percent increase in the foreign component of industry sales induces an increase of gross wages of 0.006 per cent, while a one per cent increase in the foreign share of domestic sales reduces wages by 0.004 per cent there (cf. Table A.23). Notice again that due to the different branch structures of the sample, the size of wage response is not comparable across countries. The Swedish results for the 1990-1995 time period resemble those of the 1985-1990 period. The wage response to the foreign and the domestic components of industry demand is of similar size in the Swedish case, but differs considerably in Austria and Germany. However, in several regressions it could not be rejected that the absolute magnitude of the trade effects is equal to the effects of domestic demand.

*Does trade with the Central and Eastern Europe have a specific impact on inter-industry wage differentials?*

Even within the same industry, the impact of exports and imports on labour markets may differ across countries and country groups if the factor content of the traded goods varies. In particular, the analysis of intra-industry trade between the EU and the Central and Eastern Europe has demonstrated that the factor content of imports from the CEECs differs from that of exports from the EU. We therefore tested whether the wage response to trade varies by country groups. In most cases, we found no significant differences for individual country groups. This can be traced back to the fact that trade with the Central and Eastern Europe and developing countries accounts only for a small fraction of total demand in the respective countries. Interestingly enough, in Germany we found a significant and strong positive impact of foreign demand from the CEECs on wages, and in Austria a significant negative impact of the import share of developing countries in domestic sales on wages. However, these results are rather spurious and cannot be interpreted as evidence that trade with the CEECs or developing countries has a different impact on earnings growth in a given industry than trade with other country groups.

*The impact of trade on earnings by skill groups and income quartiles*

The wage response to trade differs considerably among skill groups and earnings quartiles: in general, wages of blue-collar workers are much more affected by a change in industry demand

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<sup>58</sup> A prime candidate for the explanation for different results over these time-periods is, of course, German unification.

than wages of white collar workers: in all three countries, one can observe a relatively large and significant positive response of wages of blue-collar workers to an increase in foreign demand, as well as in the share of imports in domestic markets, while the effects for white collar workers are small and insignificant (cf. Tables A.22-A.24, background reports). The Swedish estimates suggest that male earnings are much more affected by trade than the female wages; the results for females, however, turned out to be insignificant. Somewhat surprisingly, the Swedish estimates suggest that wages of the higher income quartiles respond more strongly to trade than the lower income quartiles (cf. Table A.24, Edin, Fredriksson and Lundborg 1999, Tables 6 and 8).

### **6.1.3 The impact of trade on inter-industry labour mobility and employment**

The standard model of trade theory predicts that a decline in foreign demand for a good, and the associated decline in its price, triggers the movement of the factor used intensively in the production of that good to another sector, with its wage falling uniformly across all sectors and total employment remaining constant. Thus, a decline of demand in an industry would translate into increased inter-sectoral labour mobility rather than into inter-industrial wage differentials (see Section 2). Since there exist no techniques to adequately measure an economy-wide wage response to trade, the increase in inter-industrial labour mobility can be interpreted as an indication for the spill-over of the wage effects of trade into other sectors of the economy. Thus, the analysis of inter-industry labour mobility complements the analysis of inter-industrial wage differentials. Finally, we consider the impact of trade on unemployment. As we have seen in Section 2, if domestic wages do not respond to changes in the international supply of factors and goods, an increase in foreign supply translates into increasing imports and unemployment in the affected sector, while goods prices remain constant in correspondence to wages (see Krugman 1995a).

#### *The framework of the analysis*

The impact of trade on labour mobility and employment has been analysed in this study in the framework of a multinomial logit model, which estimates the impact of trade and other variables on individual probabilities to maintain or change the employment status. In the Austrian and German models, three categories of individuals are distinguished: those staying within the same industry, movers into other industries, and movers into non-employment. The Swedish model additionally distinguishes between movers within the manufacturing sector and movers

into employment outside of manufacturing (for the outline see Edin, Fredriksson and Lundborg 1999, Hofer and Huber 1999). The probability of a movement into another state is calculated against the probability to stay within the same industry. Notice that probabilities to move into other branches and into non-employment differ considerably across the three countries. A trade-induced increase in the probability of moving into other industries or into unemployment therefore has a different meaning in each of the three countries.

Table 6.2

**Austria: The Impact of Trade on Labour Mobility and Employment 1991-1994**

	move to other industries				move into unemployment			
	non-instrumented		instrumented		non-instrumented		instrumented	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
In (Domestic Demand)	-0.122	-0.041	-0.375 ***	-0.125	1.024	0.134	1.462 *	0.205
<i>t-value</i>	0.020	1.480	3.920		1.400	1.740		
$\Delta w_x$ Export Share	0.136 ***	0.248	-4.361 **	-0.451	-5.885 ***	-0.771	-9.439 ***	-1.064
<i>t-value</i>	4.220		2.430	5.600	3.790		4.420	
$\Delta w_M$ Import Share	0.731	0.045	-0.522 ***	-0.137	2.384 ***	0.283	3.365 ***	0.440
<i>t-value</i>	1.000		2.830		2.700		2.630	

The probabilities of becoming a mover are calculated against the probability of staying within the same industry.

For the definition of the variables Domestic Demand,  $\Delta w_x$  Export Share,  $\Delta w_M$  Import Share see text.

Other RHS variables: change in age squared, wage premium, change in place of work, change of industry, branch, firm size, region.

Methods: Multinomial Logit; Multinomial Logit with Instrumental Variables (IV).

Trade is instrumented by German trade variables, Austrian trade in 1991, migration share in 1991 and lagged change in migration.

Source: Background report by Hofer and Huber (1999).

### *The impact of trade on labour mobility*

Trade theory predicts that increasing exports of an industry reduce the probability of labour movement into other industries, while rising imports increase the probability of labour moving into other industries. These predictions are confirmed by our findings in the German and the Swedish sample. An increase in the foreign component of industry demand reduces, in the German and the Swedish sample, the probability of moving into another industry significantly, while an increase of the foreign share in domestic sales raises the probability of a move into another industry. Furthermore, labour mobility within an industry declines significantly with an increase in foreign demand in the Swedish sample. In Austria, different signs have been found in the non-instrumented and in the instrumented regressions; therefore, no clear conclusions can be derived (cf. Tables 6.2-6.4).

Table 6.3

**Germany: The Impact of Trade on Labour Mobility and Employment**

	move to other industries				move into unemployment			
	1985-1990		1990-1995		1985-1990		1990-1995	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
$\Delta \ln(\text{Domestic Demand})$	-0.7868 ***	-0.0694	-0.499 ***	-0.013	-0.1268	-0.0044	-1.0414 ***	-0.2064
<i>t-value</i>	-5.43		-4.130		-0.98		-10.8	
$\Delta w_X \text{ Export Share}$	-0.5261 ***	-0.041	-0.099	0.002	-0.405 ***	-0.047	-0.333 ***	-0.068
<i>t-value</i>	-6.02		-0.830		-5.030		-3.480	
$\Delta w_M \text{ Import Share}$	0.5817 ***	0.0445	0.058	-0.002	0.496 ***	0.059	0.204 ***	0.042
<i>t-value</i>	6.81		0.760		6.370		3.300	
Log-Likelihood	-36538		-43374		-36538		-43374	
observations	50358		53306		50358		53306	

The probabilities of becoming a mover are calculated against the probability of staying with the same industry.

Method: Multinomial Logit.

For the definition of the variables  $\Delta w_D$  Domestic Demand,  $\Delta w_X$  Export Share,  $\Delta w_M$  Import Share see text.

Other RHS variables: educational level, age, age squared, marital status, branch, firm size. Dummy for blue collar in first regression.

Source: Background report by Brücker, Kreyenfeld and Schröpfer (1999).

Since the coefficients of a logit model are difficult to interpret, marginal effects are presented.<sup>59</sup> Thus, in Germany, an increase in the foreign component of demand by one percentage point means that the probability of a movement to another industry declines by 0.04 percentage points at the mean, while an increase in the import share by one percentage point results in an increase in mobility to other sectors by 0.045 percentage points. Again, in Germany, the results for the 1985-90 period are more robust than the results for the 1990-95 period. Note that these results point to a rather small impact of trade on labour mobility.

### *The impact of trade on unemployment risks*

Finally, the estimations of the multinomial logit model give an indication of the impact of trade on employment: in all three countries, an increase in export demand for a given industry reduces the individual probability of becoming unemployed, while increasing import shares raise individual unemployment probabilities. The size of the employment effect is slightly larger than the size of the mobility effect: in Austria a one percentage point increase in foreign demand reduces individual probability of moving into non-employment by 1.0 percentage point, while an increase of the import share in domestic sales by one percentage point corresponds to an increase in the risk of becoming non-employed by 0.4 percentage points in the

<sup>59</sup> Marginal effects are evaluated at the mean of the independent variables. For the calculation see Greene (1995).

the instrumented regressions. In Germany, an increase in the export share reduces the risk of becoming non-employed by 0.05 and 0.07 percentage points, while an increase in the import share raises the risk of dismissal by 0.04 and 0.06 percentage points in the periods 1985-1990 and 1990-1995, respectively. It is interesting to note that the impact of trade on employment risks and labour mobility is not confined unambiguously on the lower income quartiles in Germany: While in the 1985-90 period the lower income quartiles are slightly more affected by a change in the foreign components of demand and supply than the higher income quartiles, in the 1990-95 period a higher impact of a change in the trade variables on individual employment risks of the higher income quartiles has been observed (cf. Tables A.25, A.26). However, while employment risk in the upper income quartiles increased significantly in the nineties, the risk of becoming non-employed is still lower than in the lower income quartiles.<sup>60</sup>

Table 6.4

**Sweden: The Impact of Trade on Labour Mobility and Employment 1985-1990**

	moved within manufacturing	moved outside manufacturing	moved into non-employment
$\Delta \ln(\text{Domestic Demand})$	-0.7281 ***	-0.1793 **	-0.3222 ***
<i>t-value</i>	-8.6291	-2.2610	-2.8238
$\Delta w_X \text{ Export Share}$	-0.3693 ***	-0.1417	-0.2139
<i>t-value</i>	-3.5441	-1.5269	-1.5021
$\Delta w_M \text{ Import Share}$	0.4613 ***	0.1696 *	0.2889 **
<i>t-value</i>	4.2051	1.7306	1.9693
Pseudo R <sup>2</sup>	0.098		
observations:	24685		

Method: Multinomial Logit.

The probabilities of becoming a mover are calculated against the probability of staying with the same industry.

The „moved-outside“ category consists of all employed individuals who did not move within manufacturing.

For the definition of the variables  $\Delta$  Domestic Demand,  $\Delta w_X$  Export Share,  $\Delta w_M$  Import Share see text.

Other RHS variables: intercept, log earnings in 1983, dummy for zero earnings in 1983, sex, immigrant status, age, age squared, educational status and change in educational status, marital status and change in marital status, region of residence, housing status (home ownership or rental), number of persons aged 20-59 in the household, log of industry employment in 1985.

*Source*: Background report by Edin, Fredriksson and Lundborg (1999).

<sup>60</sup> See background report by Brücker, Kreyenfeld and Schröpfer (1999). The summary statistics are available from the authors on request.

#### **6.1.4 Did trade with the CEECs have an impact on EU labour markets?**

The major finding of the analysis in the preceding chapter is confirmed by the quantitative estimation of the wage impact of trade: trade with the CEECs is, in most sectors, too small to significantly affect wages, labour mobility and unemployment risks within the present EU. In view of the rather small shares of both exports to the CEECs in domestic production and imports from the CEECs in domestic sales, in most industries the impact of trade with the CEECs cannot be felt at all. Of course, the estimates can only be indicative for the actual response of labour markets to trade with the CEECs. In particular, the results of the trade regressions have not turned out to be robust enough to confirm the hypothesis that trade with the CEECs may affect wages, labour mobility and employment specifically.

In view of the rather small trade shares of the CEECs and the ambiguity of some findings of the regressions, we have chosen not to extrapolate the results on wages and individual employment probabilities. In order to illustrate the implications of the quantitative analysis, we limit the exposition here to a few of the most strongly affected industries.

German trade with the CEECs has a considerable impact only in two sectors: the share of exports to the CEECs in domestic production increased in textiles by 9.5 percentage points from 1990 to 1995, while the share of imports from the CEECs in domestic sales of the clothing and wearing apparel branch increased by 6.8 percentage points. In all other branches, the share of trade with the CEECs has remained below 3 per cent. If we assume that the more robust coefficients of the 1985-1990 holds true for trade with the CEECs, then increasing trade with the CEECs would have increased wages in the textile sector by 0.6 per cent and decreased wages in the clothing and wearing apparel sector by 0.02 per cent. The same holds true for labour mobility and employment: the increase in demand from the CEECs would have reduced the individual probability of moving into non-employment in textiles by around 0.4 percentage points, while in the clothing and wearing apparel sector the probability would have increased by around 0.4 percentage points. It is interesting to note that the strong increase in net exports in the textile sector corresponds to strong increase in the net imports in the clothing and wearing apparel sector in Germany. This is a vivid demonstration for the increasing separation of production processes in capital and human capital intensive activities on part of the EU and labour intensive production process on part of the CEECs.

In Sweden, all sectors benefited from trade with the CEECs through a net increase in total demand. During the period of the early 1990s under investigation, the ratio of exports to industry sales increased between 0.2 percentage points in the scale intensive and 1.9 percentage points in the labour intensive sectors, while import shares increased by 0.1 percentage points in the technology intensive and 1.8 percentage points in the labour intensive sectors. The technology intensive sectors benefited most from trade with the CEECs via an increase of net foreign demand of around 1 percentage point. This would translate into an increase in gross wages of around 0.6 per cent under the assumption that the estimated response of wages to total trade also holds for the CEECs. Conversely, in the labour intensive sectors, the net increase in foreign demand of around 0.1 percentage points is negligible.

## **6.2 The impact of migration**

The influx of foreign labour need not affect native labour negatively: economic theory suggests that in open economies the wage and employment effects of migration can be neutral. However, under realistic assumptions, it is likely that migration affects inter-industrial wage differentials and displacement risks. The wage and employment effects of migration may not be equally distributed across workers: those with substitutional human capital endowments with respect to migrants may suffer from immigration, while those with complementary human capital endowments may benefit. Our estimations focus on the labour market response in Austria and Germany. Notice that around three-fourths of total employees from the CEECs in the EU reside in these two countries (cf. Section 5.3). Our findings from the estimation of the labour market response to migration in Austria and Germany confirm our expectations: an increase in the ratio of foreigners to employment in an industry reduces wages slightly and increases the individual risks of becoming unemployed. A one per cent increase in the share of the foreign workers in an industry reduces wages by 0.25 per cent in the Austrian sample and by 0.6 per cent in the German sample. The risk of dismissal increases by 0.8 percentage points in the Austrian sample and 1.6 percentage points in the German sample. The results with regard to labour mobility are ambiguous. Blue-collar workers are mainly affected by an increase in the share of foreigners, while white-collar workers benefit or are only slightly affected. Generally, the results point to a rather moderate impact of migration. It is important to note that all findings depend heavily on the use of instrumental variable techniques in order to control for exogeneity of the foreigner ratio and to avoid reverse causation. The results can

therefore be affected by the specification of the models and should be interpreted only as one clue to the actual wage and employment response to migration.

### 6.2.1 Framework of analysis

The impact of migration on wages and employment is the subject of a rapidly growing number of empirical studies in the United States and Europe motivated by the increased inequality in the distribution of incomes or by the high and increasing unemployment of unskilled labour. The starting point for most analyses is the hypothesis that immigrant labour can act as either a substitute or a complement to native labour, depending on educational levels and other individual characteristics (see for an overview Borjas 1994, Friedberg and Hunt 1995, and Haisken-DeNew 1996). It is expected that workers whose human capital characteristics are complementary to the characteristics of migrants benefit from migration, while labour with substitutional human capital characteristics lose. The empirical studies on the impact of migration refer to cross-sections from either industries or regions and use variations in the share of immigrants across regions or sectors to examine the impact of migration. This research focuses mainly on inter-industry or inter-regional wage differentials<sup>61</sup>. Moreover, some of the studies examine the effects of immigration on intra- and inter-industrial labour mobility (DeNew and Zimmermann 1995) and on individual lay-off risks (Winter-Ebmer and Zweimüller 1994, 1996a)<sup>62</sup>. Most empirical studies on the impact of migration on wages and employment found moderate effects. This is generally confirmed by various studies on the impact of migration in Austria and Germany<sup>63</sup>. However, the endogeneity of migration flows and the openness of the economies under investigation imply various methodological problems in the measurement of migration effects. Thus, these empirical findings must be interpreted with care (Box 4).

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<sup>61</sup> Notice that different approaches are used for the measurement of wage effects of migration: some researchers use non-reduced form models of production functions with multiple factor inputs (e.g. Gang and Rivera-Batiz 1994; Bauer 1997), while others use simple reduced or semi-reduced form models (e.g. Altonji and Card 1991, Borjas, Freeman and Katz 1997, Pischke and Velling 1997, DeNew and Zimmermann 1994a, 1994b, 1995, Winter-Ebmer and Zweimüller 1994, 1996b).

<sup>62</sup> Notice that some studies confine themselves to the analysis of effects of immigration on employment because they presume that collective wage contracts and effective minimum wages would make an analysis of wage effects futile (Pischke and Velling 1997).

<sup>63</sup> For Austria, the impact of migration on labour markets has been investigated by Winter-Ebmer and Zweimüller 1994, 1996a, 1996b, Aiginger, Winter Ebmer and Zweimüller 1996c). For a review see the background report by Hofer and Huber (1999). For Germany, see among others Bauer (1997), DeNew and Zimmermann (1995), Haisken-DeNew (1996), Pischke and Velling (1994). For an analysis comparing Austria and Germany, see Winter-Ebmer and Zimmermann (1998).

Beyond these general methodological problems, we have to acknowledge the fact that, especially in Germany, the share of foreigners in a sector is not synonymous with the share of migrants (Münz 1998). In West Germany, the majority of immigrants are ethnic Germans or East Germans, who do not show up in official labour statistics. According to estimates based on the German Socio-Economic Panel (GSOEP), about 50 per cent of those residents who immigrated to Western Germany in the time-span between 1985 and 1995 were ethnic Germans and East Germans (Schulz and Seiring 1994). On the other hand, a considerable number of foreign residents were born in Germany. Thus we have to be aware of the fact that an analysis which relies on the category of citizenship is insufficient to cover the immigration of labour.

**Box 4: Some methodological problems in measuring the impact of migration**

The studies on the labour market effects of migration face two basic methodical problems: First, the share of foreigners in an industry or region cannot be treated as an exogenous variable. Migrants are likely to select prosperous industries and regions, which may show up in naive regressions as a positive effect of migration in inter-industry or inter-regional wage differentials. Migration shocks which are determined by exogenous events, such as the famous Mariel Boatlift or the return migration to France after the independence of Algeria, are empirically rather rare. The endogeneity problem can only partially be circumvented by the estimation in differences, i.e. the estimation of the effect of a changing migration rate on wage and employment growth. If the migration decision is determined by expectations on future wages and employment, spurious correlations between immigration and labour market outcomes could appear. Many studies therefore use *instrumental variables* in place of foreigner shares. This is true for estimates of differences as well. The problem with this technique is the acquisition of suitable instruments which are adequately correlated with the changes in the share of foreigners, but at the same time have no influence on the labour market outcomes. Instruments such as the lagged stock of foreigners or lagged changes in the stock of foreigners, which are used in most studies and in this study as well, need not fulfil this condition (Pischke and Velling 1997). The findings of several studies have demonstrated that quantitative results are strongly affected by the use of instrumental variables and their specification. Hence, the quantitative results of this study as well as of other studies should only be interpreted with great care.

Second, in open economies, an increased labour supply through migration to an industry or region may spill over to other sectors of the economy and affect relative wages at the aggregate level rather than inter-industrial wage differentials. Furthermore, in open economies, the immigration of labour need not necessarily affect relative wages at all, if marginal wages are determined by a sector which faces an elastic demand for its output on international markets (see Section 2). Thus we have to consider the fact that our analysis of inter-industrial differentials in wages, labour mobility and employment can apprehend only a part of the actual migration impact.

For the methodological problems of measuring the labour market effects of migration see Borjas 1994, Friedberg and Hunt 1995, Haisken-DeNew 1996.

Analogous to trade, our analysis of the impact of migration on wages, labour mobility and employment proceeds in two steps: first, we estimate the impact of a change in the ratio of foreigners to total employment upon changes in log gross wages in a branch. Thus we use again inter-industry differences in wages for an estimate of the impact of migration. To control for the self-selection of foreigners, we used instrumental variables. In Austria, the change

in the ratio of foreigners between 1991 and 1994 has been instrumented by the migration ratio in 1991 and the change in the migration ratio from 1988 to 1991. In Germany, lagged changes in the migration ratio have been used as instruments.

Second, we estimated the impact of migration on inter-industry labour mobility and employment risks. The immigration of labour may trigger the movement of native or other foreign employees into others sectors, and hence spread the effects of migration into other sectors of the economy. Thus the estimation of the impact of immigration on inter-sectoral labour mobility gives a clue to the effects of migration beyond inter-industrial wage differentials. Of course, labour mobility only partially covers the spill-over effects of migration in open economies.

The major concern associated with the immigration of labour is an increase in unemployment. Trade theory suggests that the immigration of labour is neutral for relative wages if the marginal demand for labour is determined by an elastic demand for labour intensive goods on international markets. Thus immigration need not affect either wages or the employment of native workers. However, the marginal demand for labour may be determined by sectors which face an inelastic demand for their goods and services. Furthermore, labour mobility across sectors is limited and wages may not adjust to changes in the labour supply of an industry. Thus, migration may induce inter-industrial differences in unemployment risks under realistic assumptions.

The impact of migration on inter-industrial differences in labour mobility and employment risks have been analysed analogous to the examination of the trade effects in a multinomial logit model. Again three categories of individuals are distinguished: stayers within the same industry, movers into other industries, and movers into non-employment. The probability of moving into another state is calculated against the probability of staying within the same industry.

### **6.2.2 Estimation results**

The findings from Austria and Germany are generally in line with the prior: an increase in the share of foreigners reduces wage growth of employees in that industry. Mainly blue-collar workers are affected, while the wage growth of white-collar workers decreases only slightly. The individual probability of moving into unemployment increases with the share of foreigners in a branch, while the probability of moving into another industry increases in Germany

and decreases in Austria. However, the effects are generally rather small. All results depend heavily on the use of the instrumental variable technique; in non-instrumented regressions, insignificant or reverse results are produced. Changes in the signs of the coefficients in instrumented regressions have been noted in several studies on the labour market impact of migration. These indicate that the self-selection of migrants in prosperous industries has an important impact on the estimation of the wage and employment response to migration. Notice that the results of instrumented regressions have to be interpreted with care, and that in particular, the magnitude of the measured effects may be spurious.

In Austria, an increase in the share of foreigners of one percentage point reduces wage growth in that industry by 0.26 percentage points if instrumental variables are used. Blue-collar workers are more affected than white-collar workers: a one-percentage point increase in the foreigner ratio reduces wage growth of blue-collar workers by 0.35 percentage points, while for white-collar workers a positive but insignificant coefficient was found. However, in the non-instrumented regressions, a one-percentage point increase in the foreigner ratio increases native wage growth by 0.26 percentage points. As mentioned above, this result may suffer from reversed causality (cf. Table 6.5).

Table 6.5

**Austria: The Impact of Migration on Wage Growth 1991-1994**

	ALL		Blue Collar		White Collar	
	non-instrumented	instrumented	non-instrumented	instrumented	non-instrumented	instrumented
$\Delta$ SALES	0.052 ***	0.058 ***	0.109 ***	0.106 ***	-0.075 *	-0.067
<i>t-value</i>	2.680	2.980	5.070	4.930	1.770	1.610
$\Delta$ MIGRANT SHARE	0.252 ***	-0.256 **	0.294 ***	-0.348 ***	0.263 **	0.118
<i>t-value</i>	4.050	2.370	4.080	2.880	2.310	0.530

Dependent variable: Change of log gross wage ( $\Delta \ln(W_i)$ ).

\*\*\* (\*\*, \*) significant at 1 % (5 %, 10 %) level.

Other RHS variables: change in age squared, dummy for change in place of work, dummy for change of industry.

Methods: non-instrumented: Ordinary Least Squares (OLS); instrumented: Instrumental Variable estimation by Two-Stage-Least-Squares (TSLs). Migration is instrumented by the migration ratio 1991 and change in migration ratio 1988 to 1991.

Source: Background report by Hofer and Huber (1999).

In Germany, the non-instrumented regressions show a negative but insignificant impact of an increase in the share of foreigners on wage growth. Interestingly, for white-collar workers a significant negative effect has been found, while the impact on blue-collar workers turned out to be insignificant. The use of instrumental variables affected the results again considerably: a one-percentage point increase in the share of foreigners reduces wage growth in that industry

by 0.6 percentage points. Blue-collar workers are significantly more affected than white-collar workers: a one-percentage point increase in the foreigner share reduces wage growth of blue-collar workers by 1.6 percentage points, while the wage growth of white-collar workers would fall only slightly by 0.1 percentage points (cf. Table 6.6).

Table 6.6

**Germany: The Impact of Migration on Wage Growth 1990-1995**

	ALL		Blue Collar		White Collar	
	non-instrumented	instrumented	non-instrumented	instrumented	non-instrumented	instrumented
$\Delta$ SALES	0.0621 ***	0.0523 ***	0.0672 ***	0.22822 ***	0.0459 ***	0.0231
<i>t-value</i>	10.1158	6.3240	9.0672	3.6390	3.9433	1.458
$\Delta$ MIGRANT SHARE	-0.0038	-0.6221 ***	0.0051	-1.6098 ***	-0.0238 ***	-0.1034 **
<i>t-value</i>	-0.8026	-5.2550	0.8622	-2.7390	-2.8180	-2.401

Dependent variable: Change of log gross wage ( $\Delta \ln(W_i)$ ).

Total sample (N=8945)

Other RHS variables: education level, age, age squared, marital status, branch, firm size.

Methods: non-instrumented: Ordinary Least Squares (OLS); instrumented: instrumental variable estimation by Two-Stage-Least-Squares (TSLS). Migration is instrumented by lagged changes in the migration ratio.

*Source:* Background report by Brücker, Kreyenfeld and Schräpler (1999).

The findings with regard to the mobility of labour are ambiguous. In Austria, an increase in the foreigner share significantly decreases the individual probability of moving into another industry, while in the instrumented regressions, the impact on labour mobility is rather small. In contrast, according to the German findings an increase in the foreigner share increases the probability of the movement into another industry (cf. Tables 6.7 and 6.8).

Table 6.7

**Austria: The Impact of Migration on Labour Mobility and Employment 1991-1994**

	move to other industries				move into unemployment			
	non-instrumented		instrumented		non-instrumented		instrumented	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
$\Delta$ SALES	0.474	0.104	-0.468 *	-0.047	-0.5480 *	-0.0930	-1.0600 ***	-0.1200 **
t-value	1.41		1.49		1.48		2.77	2.41
$\Delta$ MIGRANT SHARE	-21.002 ***	-3.41	-0.594 ***	-0.327	-7.7760 ***	-0.2780	5.719 ***	0.7680 ***
t-value	31.56		0.37		10.2300		2.9300	2.9900

The probabilities of becoming a mover are calculated against the probability of staying with the same industry.  
 Methods: Multinomial Logit; Multinomial Logit with Instrumental Variables (IV).  
 Other RHS variables: change in age squared, dummy for change in place of work, dummy for change of industry.  
 Migration ratio is instrumented by migration ratio in 1991 and lagged change in the migration ratio.

Source: Background report by Hofer and Huber (1999).

Finally, the instrumented regressions show a significant impact of migration on displacements. The following effects are all due to a one percentage point increase in the share of foreigners. In Austria, the individual probability of moving into non-employment increases by 0.8 percentage points in the instrumented regression. In Germany, the risk of becoming non-employed increases by 0.18 percentage points in the instrumented estimations.

Table 6.8

**Germany: The Impact of Migration on Labour Mobility and Employment 1990-1995**

	move to other industries				move into unemployment			
	non-instrumented		instrumented		non-instrumented		instrumented	
	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect	coefficient	marginal effect
$\Delta$ SALES	-0.0142	-0.0019	0.3647 **	0.0326 **	0.0194	0.0041	0.1483	0.0177
t-value	-0.0930	-0.14	2.6184	2.375	0.1910	0.2180	1.4270	0.9080
$\Delta$ MIGRANT SHARE	0.2875 **	0.0278 **	5.0106 **	0.4112 **	0.0527	0.0015	1.7906 **	0.1768 **
t-value	2.5282	2.456	15.6888	12.614	0.6180	0.0920	7.6561	4.0300

The probabilities of becoming a mover are calculated against the probability of staying within the same industry.  
 Methods: Multinomial Logit and Instrumented Multinomial Logit.  
 Other RHS variables: education, age, age squared, marital status, 8 dummies for branches and 5 Dummies for firm size.  
 The change in the migrant share is instrumented by the lagged change in the migrant share.

Source: Background report by Brücker, Kreyenfeld and Schröpfer (1999).

Notice that an increase in the share of foreigners by one percentage point is not a minor magnitude. This represents 300.000 workers in Germany. Recall that the share of nationals from the CEECs in total EU employment was 0.2 per cent, and in the two most-affected countries, Austria and Germany, 1.1 per cent and 0.6 per cent, respectively. In few sectors is the share of

nationals from the CEECs higher than 2 per cent. These shares have been accumulated over approximately ten years.

With regard to the political implications of migration, it is interesting that our findings point to the fact that foreigners select themselves in prosperous branches. In addition, the non-instrumented regressions show either a positive or an only minor negative impact of migration. This means that declining wages and increasing dismissals cannot be observed in those branches where the share of foreigners increases. The impact of migration is measured, rather, against the following counterfactual: what would have happened to wages and employment of employees in an industry if the share of foreigners had remained constant?

## **7 The dynamics of integration: potential trade and migration between the EU and the CEECs**

The potential for trade, capital movements and migration between the EU and the CEECs is not yet exhausted. Although the barriers to trade and capital movements have already been largely removed during the course of the implementation of the Europe Agreements (EAs), trade and capital flows have not yet adjusted to the new environment. In particular, current exports of the EU to the CEECs are at one-half, and current imports from the CEECs at three-fifth of 'normal' volumes of EU trade with other market economies of the same country characteristics. The gap between actual and potential trade volumes is even larger if we refer to 'normal' trade volumes among EU countries.

Capital flows vary largely between countries of the same characteristics and are therefore hard to predict. Moreover, expectations on the economic environment play a crucial role for determining capital movements. Net capital inflows to some of the new EU Members have tripled in the course of Southern enlargement, but later returned to pre-enlargement levels. In view of the large variance of capital movements we decided not to include a forecast on potential capital flows here. Nevertheless, the estimated trade potential implicitly suggests that the deficit in the trade balance, and hence capital inflows may double if trade and capital flows adjust to levels 'normal' among EU Members. This gives us a clue about the magnitudes involved.

In contrast to trade and capital mobility, the immigration of labour remains largely restricted on side of the EU countries. After a surge in the immediate aftermath of the fall of the Berlin wall, net migration from the CEECs into the EU is negligible since 1993 as a result of increasing migration restrictions in the course of the recession in some EU countries. In view of the large differential in per capita incomes, the stock of migrants from the CEECs in the present EU is rather low. Although a distinct increase in the stock of residents and employees from the CEECs in the present EU Member countries has to be expected if entry to EU labour markets is liberalised, post-war migration in Europe has also demonstrated that it will take decades rather than years to fill up a long-term migration potential. To provide a clue as to the quantitative impact of opening EU labour market markets, initial migration from the CEECs into the EU is estimated at around 335,000 persons. This figure will be halved in less than a decade in the course of an increasing migration stock and converging per capita incomes. It

needs to be emphasised that these projections are built on a set of restrictive assumptions and should be seen as a hint to possible developments and in particular not as a point forecast.

Any scenario of future trade, capital and labour flows depends critically on the growth of per capita incomes in the CEECs and the EU. Economic integration of the CEECs into the EU markets for goods, capital and labour certainly will have an impact on economic growth, such that trade and factor flows are determined simultaneously. In order to assess the prospects for growth and convergence of the CEECs, reference has been made to the experience in Western Europe and the EU throughout the post-war period, since the conditions for growth and convergence of these open economies with strong trade links resemble the conditions of the CEECs. Although this experience shows that good prospects for the convergence of per capita incomes exist, it also demonstrates that the convergence of per capita incomes in the CEECs to EU levels will take decades rather than just years. In our baseline scenario we assume a convergence rate of per capita incomes in purchasing power parities, which corresponds to a half-life of the initial gap in per capita income of 35 years.

The projections provided here have been conducted separately, ignoring the interaction of trade, migration and capital movements. However, economic theory suggests that trade, capital movements and the migration of labour are endogenous. Under certain circumstances trade and factor mobility are substitutes. The removal of barriers to trade and capital movements can contribute to the equalisation of factor prices, and hence mitigate pressures towards the migration of labour.<sup>64</sup> However, neither economic theory nor empirical evidence provide an unambiguous answer to the question of whether trade and factor mobility are substitutes (Collins et al. 1998). The descriptive findings presented in Chapter 5 suggest that foreign direct investment between the EU and the CEECs promotes the segmentation of production processes in human capital intensive activities on side of the EU and labour intensive activities on side of the CEECs, such that trade and capital flows might be complements. Nevertheless, our findings suggest that trade and capital mobility will, due to differences in technologies, contribute little to the equalisation of factor prices, and hence mitigate the incentives for the migration of labour significantly. Moreover, note that all projections rely on a growth scenario which is based on the experience of open economies, and hence implicitly accounts for the interrelation of trade and factor markets. Although the caveat that the projections on trade and migration have been conducted separately should be kept in mind when interpreting

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<sup>64</sup> This point has been put forward in the study of Layard et al. (1992) on East-West migration in Europe.

the results, we do not expect that this has a large impact on the direction and magnitudes of our projections.

## **7.1 Growth prospects**

The evaluation of the prospects for the convergence of per capita incomes between the EU and the CEECs is based on the experience of EU countries and other Western market economies after World War II. Although neither economic theory nor empirical evidence does provide an unequivocal answer to the question whether per capita incomes of poor economies tend to converge to those of rich ones, there is evidence that per capita GDP levels of the market economies in Western Europe and the EU have in fact converged throughout the post-war period. This is confirmed by different measures of convergence. The significance of convergence has been higher among the present EU Members than in a sample of Western European market economies. Furthermore, the pace of convergence is slightly higher in the sample of EU countries, too. In contrast to samples of EU countries and other European market economies, per capita incomes between EU countries and the CEECs have clearly diverged after World War II. Low initial per capita income and physical capital endowments in the CEECs and spill-over effects of technology and knowledge makes it likely that this trend is reversed in the course of transition and opening. Moreover, trade, capital movements and migration between the EU and the CEECs along with public transfers is likely to promote convergence in case of accession. An extrapolation of the convergence rates found among EU Members yields a half-life for the initial gap in the logarithm of per capita incomes of around 35 years. This implies that it takes more than 30 years for the CEEC-10 to increase average PPP-GDP levels from around one-third to 55 per cent of respective levels in the EU. However, initial levels differ largely across individual CEECs. Furthermore, historical experience tells that convergence rates are not uniform for individual countries. Nevertheless, recent growth rates in the CEECs have not been higher than those implied by convergence rates found among EU Members. Thus, under realistic assumptions, convergence of per capita GDPs in the CEECs to EU levels will need decades rather than years. Although the experience of the EU demonstrates that convergence is possible, convergence of per capita incomes between the EU and the CEECs is not granted. An in-depth discussion of the strategic factors affecting growth and convergence is provided in Part B, Chapter 3.

7.1.1 Growth and convergence of the CEECs: basic facts The division of Europe in market and planned economies was associated with an increasing divergence of per capita incomes: according to the purchasing power parity estimates of Angus Maddison (1995), CEECs achieved a per capita GDP of around 50 per cent of the present EU Members at the outset of World War II, and of 30 per cent at the demise of central planning in 1989.<sup>65</sup> Many observers have expected that transition and economic reform will reverse this trend and that per capita incomes in the CEECs will converge rapidly to standards of the present EU Members. Ten years after the start of economic reform, the growth record of the CEECs is nevertheless ambiguous: all economies experienced a severe drop in output and investment in the wake of internal and external liberalisation. Individual countries were affected differently by the transition crisis: the decline varied between 15 per cent and 50 per cent of initial output. Note that the Baltic countries were more than proportionally affected due to the large shift in relative prices and the dissolution of trade links in the course of the demise of the Soviet Union.

Table 7.1

**GDP-Growth in the CEECs 1989-1998**

	GDP at constant prices									average growth rate of GDP at constant price		
										from	from the end of the	
										1989	transitional recession	
	1990	1991	1992	1993	1994	1995	1996	1997	1998		CEECs	EU-15 at the same period
	<i>index: 1989 = 100</i>									<i>growth rate in per cent</i>		
Bulgaria	90,9	83,3	77,2	76,1	77,5	79,7	71,6	66,6	69,0	-4,0	-	-
Czech Republic	98,8	87,4	84,6	85,0	87,8	93,4	97,0	98,0	95,3	-0,5	2,0	1,9
Estonia	91,9	82,7	71,0	65,0	63,7	66,4	69,0	76,3	79,4	-2,5	5,7	2,4
Hungary	96,5	85,0	82,2	81,9	84,4	85,6	86,8	90,7	95,3	-0,5	2,5	1,9
Latvia	102,9	92,2	60,1	51,0	51,5	51,0	52,7	53,7	59,3	-5,6	3,1	2,4
Lithuania	96,7	91,2	71,8	60,2	54,3	56,1	58,7	63,0	66,2	-4,5	5,1	2,3
Poland	88,4	82,2	84,4	87,6	92,1	98,6	104,5	111,7	117,1	1,8	5,2	1,8
Romania	94,4	82,2	75,0	76,2	79,2	84,8	88,2	82,1	76,1	-3,0	0,2	1,9
Slovakia	97,5	83,3	77,9	75,1	78,7	84,2	89,7	95,6	99,8	0,0	5,9	2,4
Slovenia	91,9	83,7	79,1	81,4	85,7	89,3	92,4	96,6	100,4	0,0	4,1	1,9
<b>EU-15</b>	103,1	105,0	106,1	105,7	108,6	111,3	113,0	115,9	119,0	2,0	-	-

Sources: ECE, Economy Survey of Europe, 1991, No. 2, author's own calculations.

Meanwhile most candidate countries have overcome the transition recession and have experienced growth in per capita incomes and capital stocks. However, the growth record of the individual countries is mixed. At the present stage we can classify the accession candidates

<sup>65</sup> Author's calculations on basis of the Maddison (1995). The figures refers to the PPP-GDP per capita of Bulgaria, Czechoslovakia, Hungary, Poland and Romania.

roughly in three groups: the first group has managed to achieve growth rates of output and investment well above those of the present EU such that per capita GDPs and capital stocks tend to converge to EU levels. Estonia, Poland, Lithuania, Slovakia and Slovenia belong to this group. In the second group, the gap to the EU in per capita incomes has been shortened only slightly, if at all, after the end of the transition recession (Czech Republic, Hungary and Latvia). However, growth rates of investment well above EU levels indicate that at least the capital stocks of these countries have tended to converge as well. Finally, in Bulgaria and Romania the gap in per capita incomes and capital stocks to the EU has increased continually since the beginning of transition. It remains unclear as to whether the transition recession really has been overcome or whether output and investment will decline further (cf. Tables 7.1 and 7.2). The high variance in the growth record across the candidate countries reflects differences in institutional performance, macroeconomic stability and adverse structural shocks in the wake of transition and opening.<sup>66</sup>

Table 7.2

### Growth of Gross Fixed Investment in 1989-1998

	gross fixed investment at constant prices									average growth rate of gross fixed investment at constant prices		
	1990	1991	1992	1993	1994	1995	1996	1997	1998	from	from the end of the transitional recession	
										1989	CEECs	EU-15 at the same period
	<i>index: 1989 or earliest time = 100</i>									<i>growth rate in per cent</i>		
Bulgaria	100.0	80.0	74.1	61.2	61.9	71.8	56.6	44.1	64.0	-5.4	-	-
Czech Republic	97.9	80.5	87.7	81.0	95.0	114.9	124.9	118.8	114.4	1.5	4.5	1.7
Estonia	..	..	..	100.0	106.2	110.5	123.1	144.6	156.3	9.3	10.1	3.5
Hungary	97.3	92.2	92.8	97.9	95.6	89.3	86.6	88.6	..	-1.5	-0.9	1.0
Latvia	100.0	36.1	25.7	21.6	21.8	23.7	29.0	32.3	..	-14.9	10.5	2.8
Lithuania	..	..	..	..	..	100.0	110.9	137.0	..	11.1	17.0	2.5
Poland	75.2	71.9	73.6	75.7	82.6	96.2	115.2	140.1	..	4.3	11.9	0.8
Romania	64.4	44.0	48.9	52.9	63.9	68.3	72.2	70.1	57.4	-6.0	2.7	1.7
Slovakia	100.0	74.8	71.5	68.5	64.7	64.6	90.3	103.3	114.7	1.7	10.9	3.3
Slovenia	100.0	88.5	77.1	85.4	97.1	113.8	124.2	138.3	..	4.7	12.4	1.0
<b>EU-15</b>	104.1	103.8	103.4	97.1	99.6	103.4	105.3	108.6	114.4	1.5	-	-

Sources: ECE, Economy Survey of Europe, 1991, No. 2, author's own calculations.

For an evaluation of the growth prospects of the CEECs it is necessary to distinguish between the growth experience in the wake of the transitional recession and the prospects of income convergence in the medium-term and long-term when the CEECs have managed to adjust

<sup>66</sup> An in-depth analysis is provided in Part B, Section 3.2.5.

their institutional and macroeconomic conditions to the standards of the present EU countries. Countries which are still affected by the transitional recession, policy failures and structural shocks may experience extraordinarily high growth rates in few years, while the high growth rates of output and investment might be exhausted after a recovery to pre-transition levels. Thus, we can hardly base a sound evaluation of future growth prospects on an analysis of recent developments. Instead, an assessment of the long-term prospects for growth and convergence of the CEECs is based here on some theoretical considerations and evidence from the post-war experience of EU and other western European countries.

### **7.1.2 Inferences from growth theory**

The post-transition growth record of the CEECs vividly demonstrates that convergence of their per capita incomes to those of the present EU Members is not granted. It is worth noting that neither economic theory nor empirical evidence provide unequivocal conclusions as to whether per capita incomes of poor economies tend to converge with those of rich ones. In the economic discussion the hypothesis of '*conditional convergence*', i.e. that economies converge to the same level of per capita incomes irrespective of initial endowments with capital or human capital, competes with the hypothesis of '*club convergence*', which states that per capita incomes may be stratified around low- and high income poles in the long-run. Both the hypothesis of conditional convergence and the hypothesis of club convergence can be derived either in the framework of neo-classical growth models, which are based on production functions with constant returns to scale (e.g. Galor 1996), and endogenous growth models, which are based on production functions with increasing returns to scale (e.g. Lucas 1988, Jones and Manuelli 1991). Thus, there is consent that the institutional and macroeconomic framework, as well as saving preferences of households is a necessary condition for the convergence of per capita incomes. The driving force behind convergence is high returns from the accumulation of physical and human capital in economies with low initial endowments of those factors relative to economies with rich endowments. The movement of capital and labour, as well as technological spill-overs enforces convergence in this case. However, the convergence of the institutional and macroeconomic framework need not be a sufficient condition for convergence. Increasing returns to scale and subsistence levels of consumption can, under certain circumstances, result in the polarisation of per capita incomes around different income poles or simply in the continual divergence of per capita incomes. Thus, initial endowments with physical and human capital matter and it is therefore at least theoretically possible that per-

capita incomes between the EU and the CEECs will not converge even if institutional and macro-economic factors have adjusted to EU standards (Brücker 2000). Transfers of capital and knowledge are needed in this case to achieve the convergence of per capita incomes.

### **7.1.3 The empirical evidence**

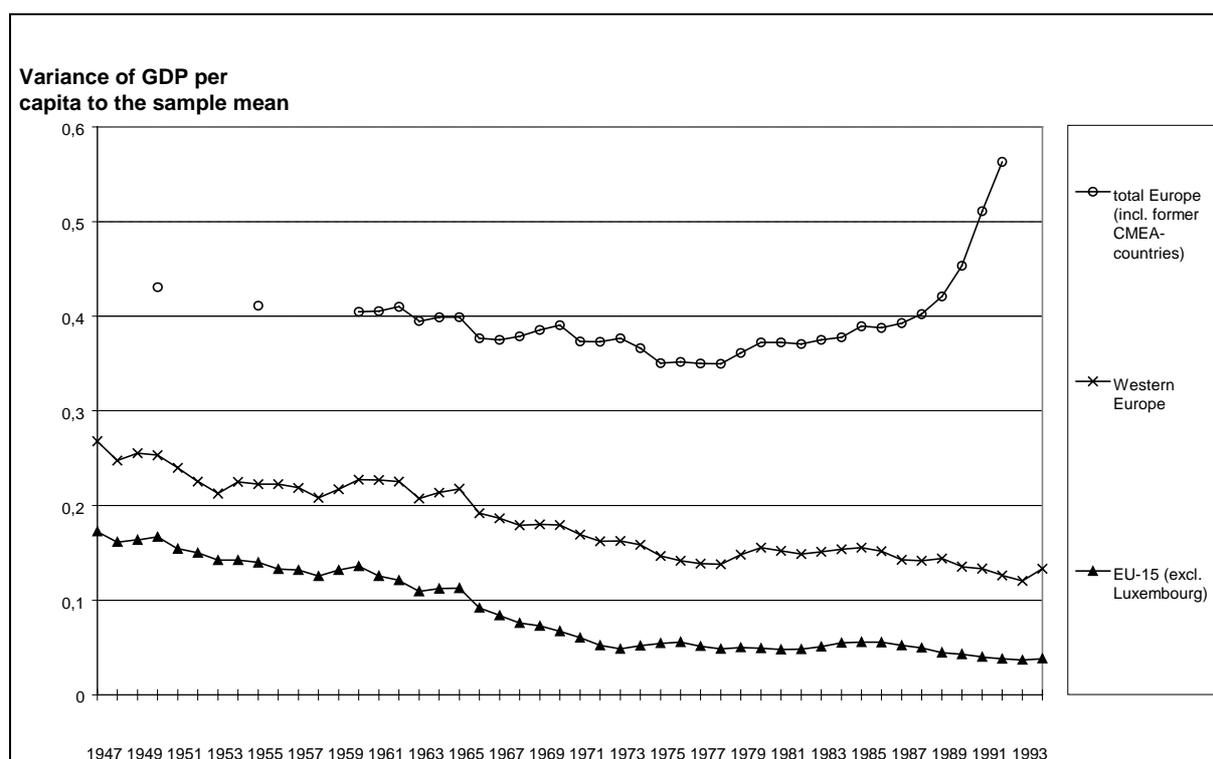
Although the empirical methods used to test the convergence hypothesis are not uncontroversial (cf. Box 5), the empirical evidence from various measures of convergence points to the fact that per capita incomes of open economies such as EU countries tend to converge. In cross-country studies, which regress growth rates against initial income levels, evidence for conditional convergence have been found for OECD-countries (Mankiw et al. 1992, Islam 1994), for EU and EFTA-countries (Henrekson, Torstensson and Torstensson 1997), and for regions of the EU, the USA and Japan (Barro and Sala-i-Martin 1991, Sala-i-Martin 1996). In contrast, in large country samples which include developing countries no significant convergence trends appear. Some studies found evidence that the world incomes tend to become increasingly polarised around the upper and the lower peaks of the income distribution (Quah 1996). Finally, a number of studies found evidence that open economies with strong trade links are more likely converge than others (Ben-David 1993; Ben-David 1996; Sachs and Warner 1995).

The post-war growth and convergence experience from EU and other European countries is of special interest for the growth prospects for the CEECs. We applied different measures of convergence in order to find out whether the European economies have in fact converged throughout the post-war period and at what speed. More specifically, we tested whether (i) the variance of per capita income has declined over time, (ii) the hypothesis of a unit root on the coefficient of the lagged income differential can be rejected, such that the gap in per capita incomes between the respective country and the mean income of the sample tend to decline over time, and (iii) a negative coefficient on initial income in cross-country growth regressions indicates that per capita incomes have converged in the sample. Note that the first two tests are measures of absolute convergence, i.e. it is not controlled for other factors which may affect growth, while the latter test measures conditional convergence, since it is controlled-checked for investment in physical assets. Other explanatory variables may be added to the equation in the cross-country regression to shed further light on the sources of growth and convergence. We limit our exercise here to a baseline regression; for further analysis see Part B, Section 3. We applied all measures of convergence to three samples of countries: the pres-

ent EU Members, a sample of 28 Western European market economies including the EU, and a total European sample including the Western European market economies, the members of the former COMECON (i.e. Bulgaria, former Czechoslovakia, Hungary, Poland, Romania and the former USSR) and the former Yugoslavia. The findings can be summarised as follows: First, there is strong evidence that per capita GDPs of the market economies in the EU and Western Europe have converged, while those of the market economies and centrally planned economies in Europe have diverged. Figure 7.1 displays the variance of the PPP-GDP per capita in the three samples throughout the post-war period: While the variance of per capita incomes continuously declined in the EU and the Western European sample, it has been almost constant in the total European sample until 1990 and increased in the course of the transition recession (Figure 7.1).

Figure 7.1

#### Variance of PPP-GDP Per Capita in Europe 1947-1994



Source: Authors' calculations. The data are depicted from Maddison (1995).

Second, it can be shown that the speed and the significance of convergence has been higher in the sample of the EU economies than in the sample of the Western European economies. At first glance this result indicates that EU membership promotes the convergence of per capita incomes. However, it is worth noting that coincidence need not necessarily mean causality:

countries might become EU Members because they tend to converge. Further research is needed to find out whether EU membership indeed promoted convergence. Third, the results of unit-root tests point to the fact that convergence rates strongly vary across countries even within the EU sample. Fourth, in line with other studies, a convergence rate of around 2 per cent p.a. for the differential in the natural logarithm of per capita GDPs has been found in the cross-country regressions for the EU and the Western European sample. This rate implies that the half-life of an initial gap in log per capita income is around 35 years. The results are shown in detail in Annex A.

**Box 5: Empirical evidence on income convergence across countries**

There exist several empirical measures for the convergence of economies.<sup>67</sup> The most popular measures are cross-country regressions, which regress the rate of growth against initial income and a set of other explanatory variables (e.g. Barro 1991, Mankiw et al. 1992). A negative coefficient on initial income is interpreted as evidence for *conditional convergence*. In many studies, a significant negative coefficient on initial income has been found. However, the rate of convergence is affected by the country samples. While convergence rates of 2 per cent p.a. have been found for samples of OECD, EU and EFTA countries,<sup>68</sup> convergence rates are significantly lower for samples which include developing countries - if evidence for convergence can be found there at all. Among the explanatory variables for growth beyond initial income, investment in physical capital as well as human capital have turned out to be robust, while the evidence on the impact of fiscal and monetary indicators, population growth and most other political and economic indicators on growth are fragile (Levine/Renelt 1992). No robust correlation between growth and various indicators for trade openness have been found, but the empirical evidence points to the fact that a robust correlation between trade and investment exists. Thus, openness to trade may affect economic growth via the channel of capital accumulation rather than via the channel of improved resource allocation.

To measure convergence by cross-country regressions has been heavily criticised, since the reversion of outliers to the mean would show up in cross-country regressions as convergence, while the distribution of income within the sample may remain constant or increase (Galton's fallacy) (Quah 1993, Friedman 1992). To avoid spurious results, several alternative measures to cross-country regressions for the convergence of incomes have been proposed. A simple measure is provided by unit-root tests, which test for a unit-root for the coefficient in the lagged income differential between two countries (or the income average of a group of countries). The rejection of the hypothesis of a unit-root would point to the fact that the gap in per capita incomes between two countries declines over time. It has been demonstrated in unit-root tests that per capita incomes of economies with strong trade links in the EU and EFTA tend to converge (Ben-David 1993, 1996). However, unit-root tests are limited to bilateral relationships and do not control for other explanatory variables. More sophisticated measures, which describe the distribution of per capita incomes over time by the estimation of stochastic kernels, demonstrate that world income has polarised in the post-war period at the lower and higher peaks of the income distribution (Quah 1996). Again, it can be shown that economies with close regional links tend to converge. Note that these convergence tests do not control for explanatory variables and measure therefore absolute convergence rather than conditional convergence.

**7.1.4 Conclusions for convergence in an enlarged EU**

We can conclude that under the assumption that the growth path of the CEECs will resemble the experience of market economies in the EU and Western Europe in the post-war period, per capita incomes between the present EU Members and the candidates for accession will converge. However, convergence takes time: on the assumption that the average convergence rate found in the cross-country regression holds true for the convergence of the CEECs, it will take approximately 35 years for the CEEC-10 to achieve 55 per cent, and for the first-round candidates to achieve 60 per cent of the average per capita income in the present EU. Depending on initial income, growth rates would initially vary between 3.5 and 5.5 per cent

<sup>67</sup> For an in-depth discussion of different measures of convergence see Bernard and Durlauf (1996), Canova and Marcet (1995), de la Fuente (1995).

<sup>68</sup> More specifically, for an initial difference in the natural logarithm of per capita GNP convergence rates of some two per cent p.a. have been found in cross country and panel regressions for OECD-countries (Barro and Sala-i-Martin 1991, Sala-i-Martin 1996, Mankiw, Romer and Weil 1992, Islam 1994). A convergence rate of two per cent p.a. means that the half-life of an initial gap in log per capita incomes is around 35 years.

across the CEECs. Other growth scenarios, which consider present investment and school enrolment rates in the CEECs, produce growth rates of roughly the same magnitude (Easterley/Fischer 1998, Part B, Section 3.3.4). Furthermore, growth rates experienced in the CEECs after the recovery from the transitional recession have been in line with growth rates derived from a convergence rate of 2 per cent. Growth rates of Poland and the Slovak Republic have been above, while growth rates of Bulgaria, Romania, Hungary and the Czech Republic have fallen short of growth rates implied by a convergence rate of 2 per cent.

Based on this evidence, we applied a uniform rate of 2 per cent p.a. for the convergence of the natural logarithm of per capita GDP in the CEECs to average per capita GDP in the EU. This does not mean, however, that we expect that a convergence rate of 2 per cent will hold for all CEECs. To the contrary, our findings suggest that growth and convergence will probably differ considerably. Policies promoting the integration of the CEECs into the EU and their convergence to average income levels of the present Members may increase growth rates. This is discussed in detail in the Part B. However, policy measures as well as future investment in physical and human capital are uncertain. Thus, growth rates may deviate in one or another direction from a uniform convergence rate of 2 per cent. But any realistic policy scenario has to acknowledge the fact that the large gap in per capita incomes between the present EU and most of the CEECs will persist for decades rather than just years.

## **7.2 Trade potential and future patterns of comparative advantage**

The political division of Europe had held trade links between West and East at levels far below 'normal.' The dynamic development of trade since the fall of the Berlin wall indicates that historical trade links between the East and the West of Europe will be re-established: EU-15 exports to the six largest CEECs<sup>69</sup> have grown by a factor of 6.5 and imports by a factor of 4.5 between 1988 and 1998 (cf. Section 5). This dynamic expansion of EU trade with the CEECs has taken place against a background of unfavourable income development of the reform countries. The recovery from the transitional recession has further promoted trade growth between the EU and the CEECs. Double-digit growth rates of exports and imports indicate that the trade potential between the EU and the CEECs is not yet exhausted. Indeed, our estimates point out that exports of the EU to and imports from the CEECs have been at 50

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<sup>69</sup> Bulgaria, Czech Republic, Hungary, Poland, Romania and Slovak Republic. These countries account for around 85 per cent of the EU's trade with the CEEC-10. No figures are available for 1989 on the remaining candidate countries.

per cent and 60 per cent respectively, of those ‘normal’ among market economies and at 30 and 40 per cent, respectively, of those ‘normal’ among EU Members. Thus, EU membership seems to have a strong impact on trade links. However, since trade barriers are almost dismantled, future trade potentials are expected to resemble those of EU Members rather than those of non-EU market economies even if accession is postponed.

In this section the trade potential and future patterns of comparative advantage in EU trade with the CEECs are estimated. The analysis is based on a gravity model approach explaining the trade flows between two countries mainly by their GNP and distance. Furthermore, the impact of income differentials and distance on commodity patterns of trade are analysed in order to evaluate future patterns of comparative advantage and their implications on EU labour markets. For further details see the background report of Schumacher (1999) to this study.

### **7.2.1 The framework of analysis**

The gravity model explains ‘normal’ patterns of bilateral trade by the national product of the supplier country and the country of destination as factors of supply and demand strength in the countries concerned and a range of impediments and incentives to trade. Among the most important impediments to merchandise trade are transport costs, which depend essentially on distance. Incentives for trade may include cultural affinities, a common language, a common historical heritage, and regional preferential trade areas. This gravity approach, first advanced by Linnemann (1966), has proved to be empirically very robust.<sup>70</sup> Gravity models have been, therefore, applied to estimate potential trade between the East and West of Europe. The studies conclude that actual East-West trade has remained far below the level to be expected under ‘normal’ conditions among market economies.<sup>71</sup> In order to assess the impact of future trade between the EU and the CEECs on labour markets, we extended the application of the gravity approach to the analysis of commodity patterns of trade. In the first stage of the analysis the elasticities of bilateral exports and imports with respect to GNP, per capita GNP and distance are estimated at aggregate levels. Dummy variables for membership in the EU and common borders have been included. In this formulation of the gravity model, the GNP variable serves

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<sup>70</sup> For a theoretical foundation see Anderson (1979) and Bergstrand (1985).

<sup>71</sup> The results of major studies indicate that EU exports to the CEEC-6 should have been 5.1 times (Wang and Winters 1994), 3.9 times (Collins and Rodrik 1991) or 2.6 times (Baldwin 1994) the actual volume at the beginning of the transition process. However, some studies argue that the trade potential between the EU and the CEECs is meanwhile exhausted (Brenton and Gros 1997).

as a proxy for the impact of a market's total purchasing power (or a supplier's economic strength), and the GNP per capita variable as an indicator for national endowments with physical and human capital.

At the second stage of the analysis, the same set of variables is applied at the level of individual commodity groups in order to analyse specialisation patterns.<sup>72</sup> These equations can be derived from the traditional Heckscher-Ohlin model which explains inter-industrial trade patterns in terms of differences in factor endowment, and from the Helpman-Krugman-Markusen models which explains intra-industry trade by monopolistic competition and income level.<sup>73</sup> The per capita income variable in the exporting country serves here again as a proxy for endowment with physical and human capital. A positive impact of per capita income on exports of physical capital and human capital intensive goods and a negative impact on the export of labour intensive goods is expected. Per capita income in the importing country can be taken as a proxy for demand conditions, such that the imports of luxury goods increase with the level of per capita income while imports of necessities fall.

The regressions are computed on the basis of bilateral trade flows between the present EU Members<sup>74</sup> and 70 countries, other OECD countries and 48 developing countries. For the analysis of specialisation patterns the commodity structure of trade in manufacturing goods have been broken down in five groups according to the classification of the OECD by factors of competitiveness: resource intensive goods, labour intensive goods, scale and capital intensive goods, specialised suppliers and goods with a high research and development intensity (see Section 5.2).

The estimates are based on GNP figures at purchasing power parities (PPPs) as distinct from other studies using data at actual exchange rates. PPP-GNP reflects productivity and the real income of the whole economy, while GNP levels at current exchange rates reflect the productivity of tradable sectors. Most studies rely on GNP at current exchange rates. However, we observed that trade levels of economies with medium and low income levels such as the CEECs tend to be systematically underestimated, such that we used PPP-GNP data in our re-

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<sup>72</sup> For other applications of the gravity approach to explain bilateral trade flows at the level of commodity groups see Vittas and Mauro (1994, 1997), Festoc (1995), Fidrmuc (1998), Schumacher (1997a, 1997b).

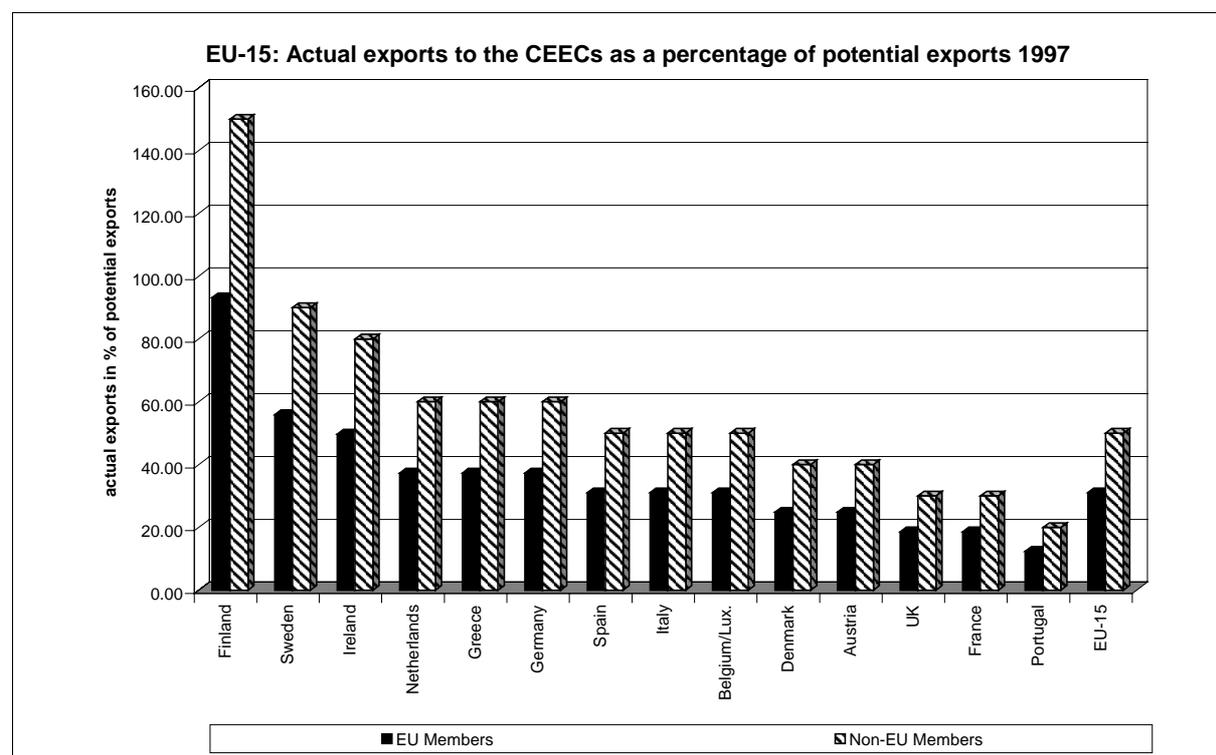
<sup>73</sup> Bergstrand (1989) provides theoretical underpinnings for applying the gravity approach at the level of commodity groups.

<sup>74</sup> Belgium and Luxembourg taken together, i.e. 14 individual countries.

gressions and projections. At PPPs the differences between high and low income countries are reduced because the ratio of PPP to exchange rate tends to be larger the lower the level of income. Correspondingly, the income elasticities of trade are higher. In case of a number of CEECs the ratio of PPP-GNP to GNP at current exchange rates is higher than expected for countries with similar per capita income<sup>75</sup>. Applying current exchange rates to the GNP variables, therefore, most probably underestimates the export and import capacity of the CEECs.

The scenario for future volumes and patterns of trade are based on the assumptions that (i) the GNP of EU Members grows at 2 per cent p.a., (ii) the natural logarithms of per capita PPP-GNP of the CEECs converge with an annual rate of 2 per cent to the average per capita PPP-GNP level in the EU, (iii) the growth of population in the EU and the CEECs follows the World Bank Scenario presented in the World Development Indicators, and (iv) the elasticities of EU exports and imports with respect to EU income are unity. The last assumption is rather conservative, since the ratio of trade to GNP may rise in the course of ‘globalisation.’

Figure 7.2



Source: Background report by Schumacher (1999), author's calculations.

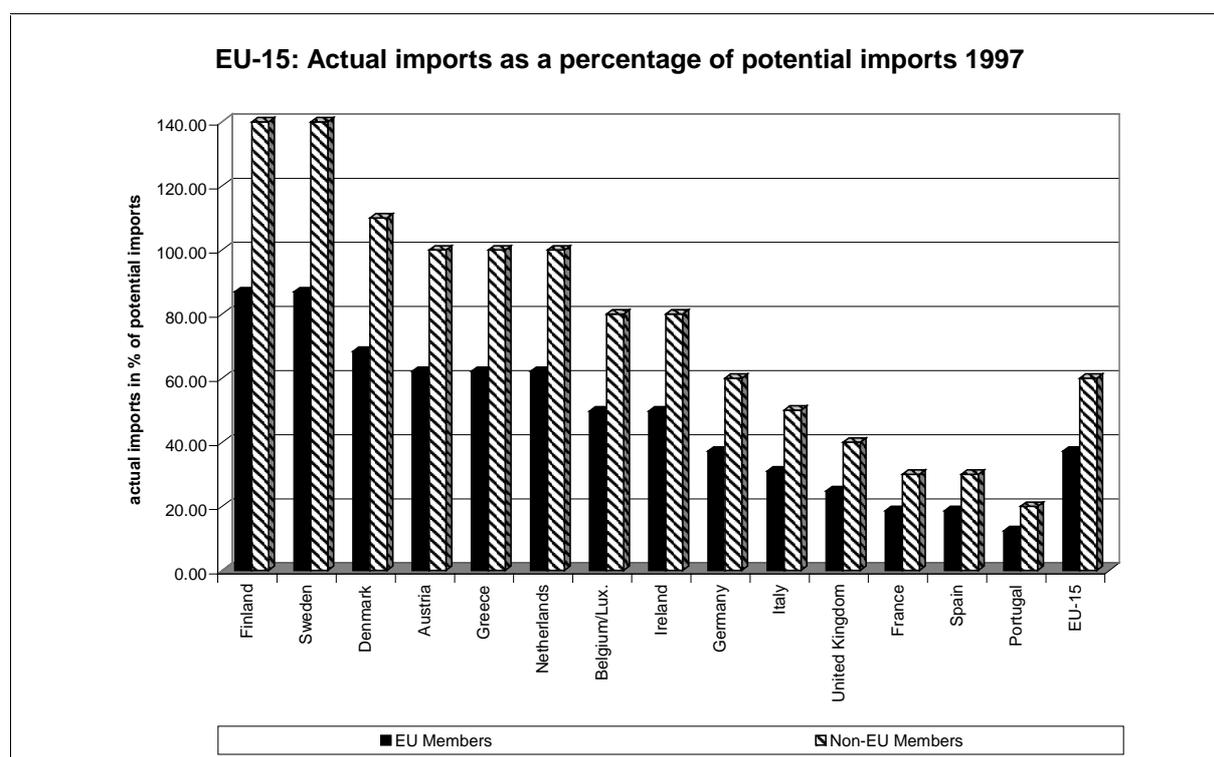
<sup>75</sup> On average the following relationship between the ratio of purchasing power parity to exchange rate and the GNP per capita (at current exchange rates) holds for our sample of 70 countries:

$$PPP/exchange\ rate = 8.0 - 0.72 \ln(Y/P) \quad (R^2 = 0.74),$$

## 7.2.2 Major findings and scenarios

The trade potential between the EU and the CEECs is not yet exhausted: In 1997, actual exports of the EU to the CEECs have been around one-half of 'normal' trade volumes among market economies and one-third of those among EU-Members with similar per capita income and distance. Actual imports have been at almost two-thirds of the trade potential of market economies and two-fifth of the trade potential of EU-Members. The ratios of actual to projected trade volumes (utilisation rates) for individual EU countries, however, differ widely. They indicate that the unexploited potential for trade with the CEEC-10 is highest in Portugal, France and the United Kingdom. The actual trade of Finland as well as imports of Sweden, Denmark, Austria, Greece and the Netherlands have already achieved or exceeded the estimated potential of trade among market economies (cf. Figures 7.2 and 7.3).

Figure 7.3



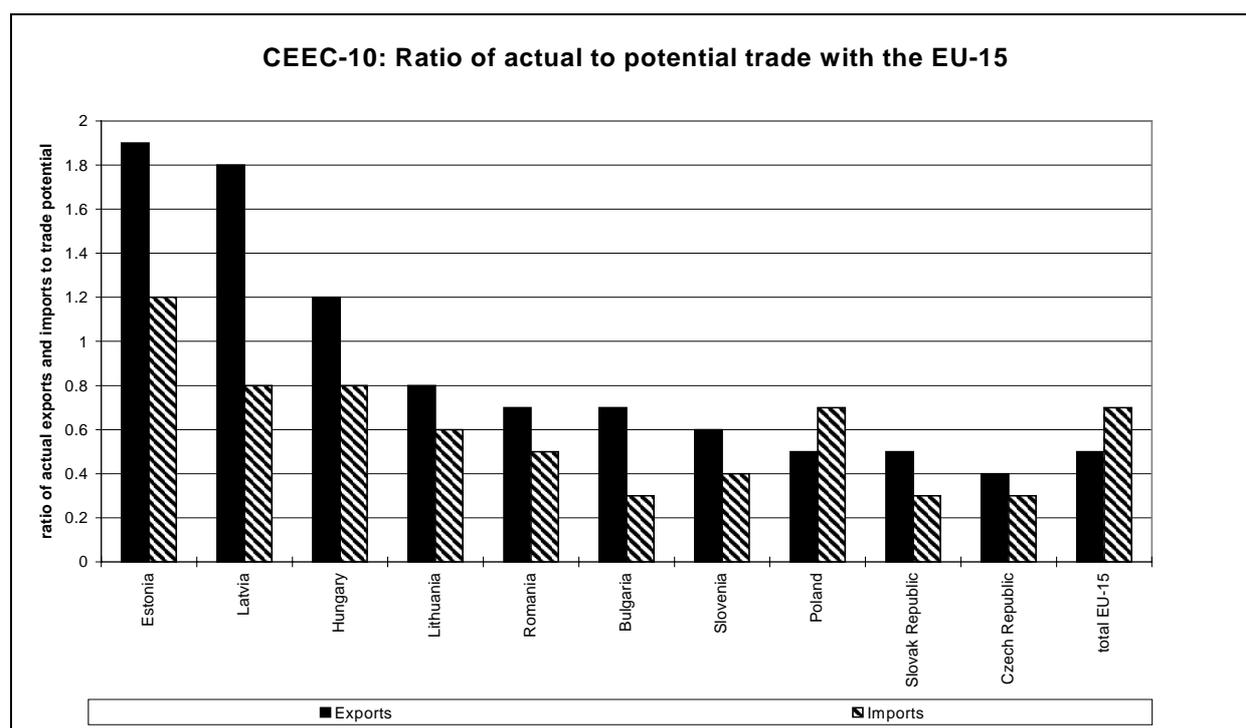
*Source:* Background report by Schumacher (1999), author's calculations.

The utilisation rates differ also from country to country among the CEECs. The Czech Republic is estimated to have the highest unexploited trade potential with the EU, followed by the Slovak Republic, Poland and Slovenia. On the other hand, actual trade of Estonia and actual exports of Latvia and Hungary exceed the estimated potentials (cf. Figure 7.4).<sup>76</sup>

The convergence of per capita incomes and the income growth in the EU will further increase the trade potential between the EU and the CEECs. Under the assumptions that per capita income in the CEECs converge to average income levels in the EU at an annual rate of 2 per cent and that incomes in the EU grow at an annual rate of 2 per cent, the export potential of the EU into the CEECs will increase from USD 180 billion in 1997 to USD 220 billion in 2000 and USD 380 billion in 2010, while the import potential will increase from USD 110 billion in 1997 to USD 140 billion in 2000 and USD 250 billion in 2010. Notice that these figures denote potentials which may be filled only over time (cf. Figure 7.4).

<sup>76</sup> The trade potential of figures 7.4 – 7.6 refer to potential trade volumes among market economies.

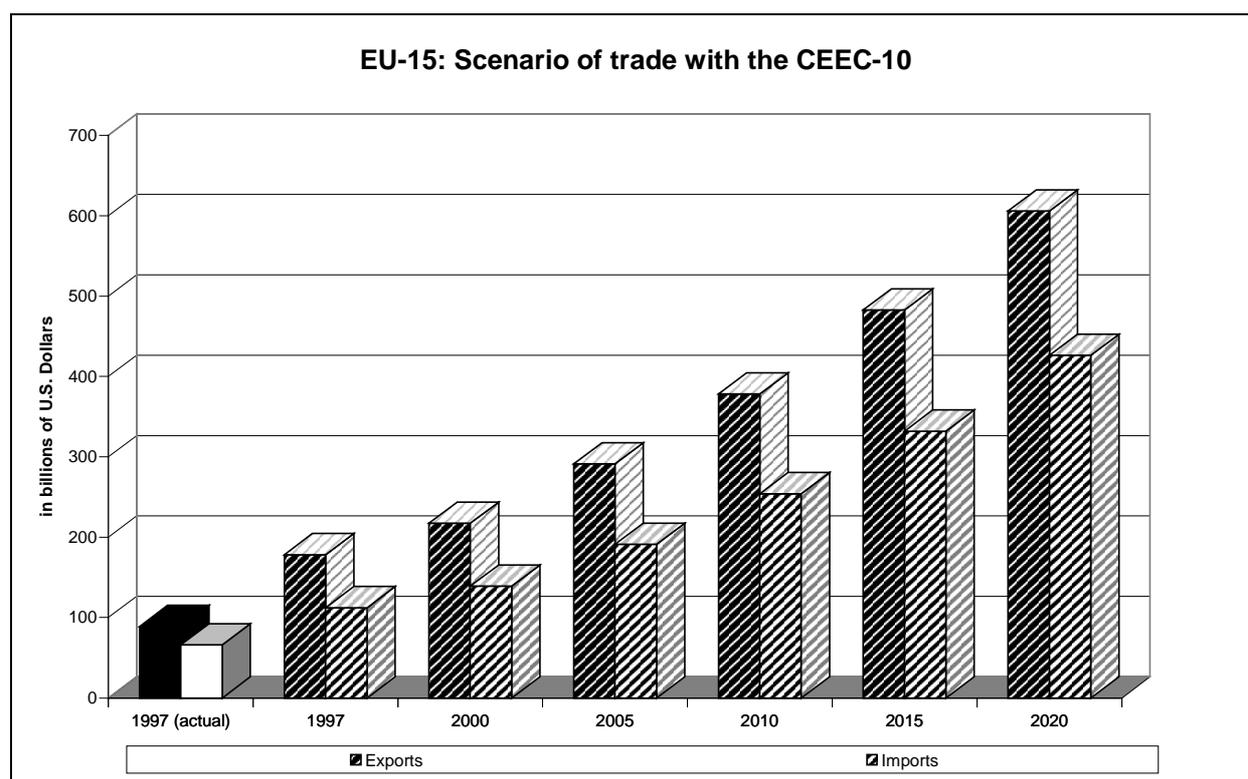
Figure 7.4



Source: Background report by Schumacher (1999).

Our estimations indicate that the trade surplus of the EU vis-à-vis the CEECs is well below 'normal' levels of countries with similar differences in per capita income. Thus, the potential trade surplus of the EU vis-à-vis the CEECs is estimated at USD 66 billions instead of an actual surplus of some USD 23 billion in 1997. The trade surplus will increase to USD 78 billions in 2000 and USD 124 billions in 2010, if the estimated trade potentials are realised. Actual volumes and surpluses of trade will be of course well below these potentials in the next decade. However, the estimates from the gravity model indicate that a considerable room for further trade as well as additional capital flows from the EU to the CEECs exists, which will show up in the trade balance as an increasing surplus of the EU vis-à-vis the CEECs.

Figure 7.5



Source: Background report by Schumacher (1999).

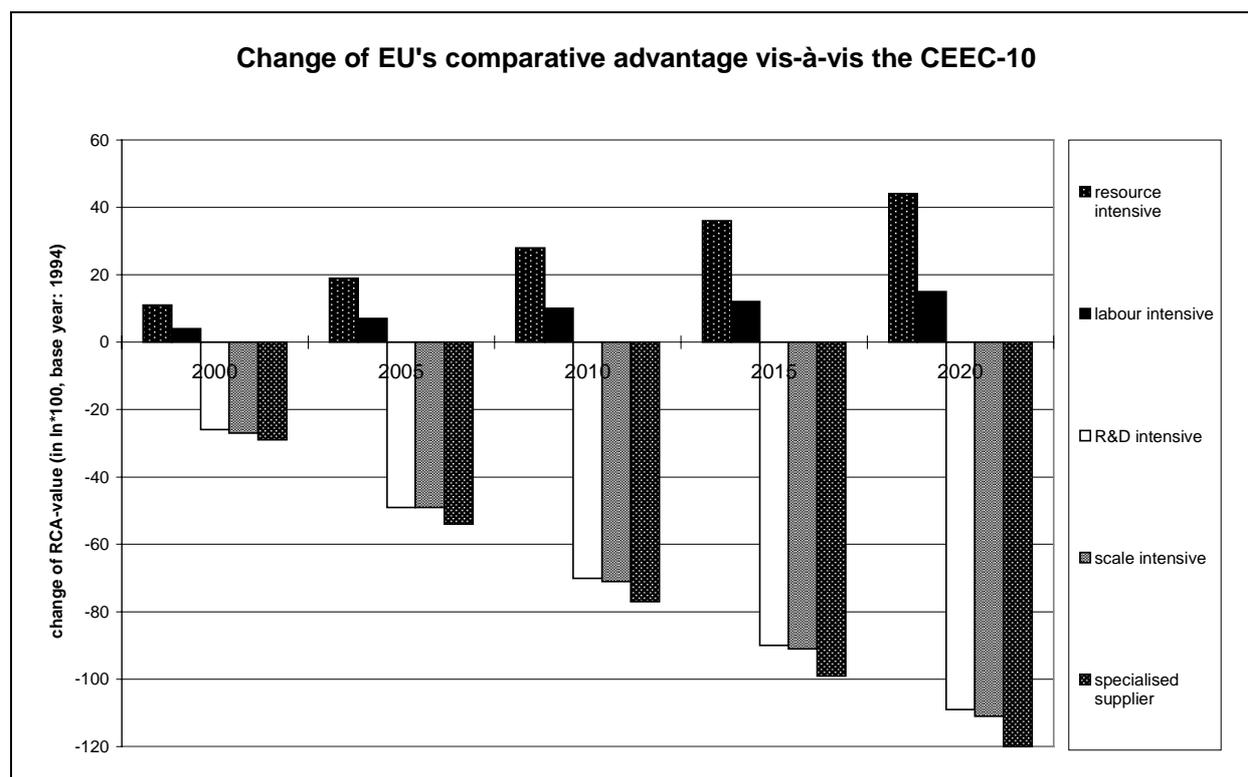
Altogether, a further considerable increase of trade between the EU and the CEECs amount is to be expected. Under the strong assumption that trade patterns between the EU and the CEECs will resemble trade patterns among the present EU Members, we expect that exports from the EU to the CEECs will grow by a factor of three and imports by a factor 2.5 for the given income differential. Trade volumes will grow further in the course of converging per capita incomes. EU membership increases trade in our projections significantly. However, it is worth noting that trade conditions between the EU and the CEECs are already more similar to those of EU Members than those of non-EU Members. We therefore expect that, if the present state of integration is perceived as the relevant counterfactual to EU membership, the further impact of accession will be much less than the difference in trade volumes of EU countries with other EU Members and non-EU countries indicates.

However, it is worth noting that two caveats apply to these results: first, as has been mentioned above, our estimates rely heavily on the use of PPP-GNP levels. This means that the trade potentials in our projections are much higher than those of other studies relying on GNP levels at current exchange rates. We assume that the use of PPP-GNP data provides better

estimates of trade potentials for low-income countries than the use of GNP data at current exchange rates. Nevertheless, it should be noted that the predictive power of gravity models is in any case limited and that our results only give clues to the direction and the magnitude of future developments and not an accurate forecast of magnitudes. Second, the impact of EU membership on trade might be overemphasised since some multi-collinearity between EU and geographical proximity is present in our data. Nevertheless, this does not affect the projected volumes in case of enlargement.

As discussed in the preceding sections, the impact of trade on wages and employment may depend on the factor services embodied in traded goods. The analysis of the commodity structure of trade indicates that actual trade patterns between the EU and the CEECs are roughly in line with 'normal' trade patterns estimated by the gravity model. However, imports of resource intensive goods, especially food products, are considerably lower than the estimated potentials, while actual comparative disadvantages of the EU vis-à-vis the CEECs in labour-intensive goods are much higher than expected. In the wake of converging per capita incomes, trade patterns between the EU and the CEECs are expected to change: The revealed comparative advantage of the EU vis-à-vis the CEECs in goods with high product differentiation, high scale and R&D intensity as well as the comparative disadvantage in resource and labour intensive goods will diminish over time, while intra-industry trade will increase with the convergence of per capita income (cf. Figure 7.6).

Figure 7.6



Source: Background report by Schumacher (1999).

By and large, the further intensification of trade between the EU and the CEECs will not have a negative impact on labour markets in the EU: Increased exports can be expected for all industries. Only resource-intensive goods will face a higher trade deficit than today whereas the other product groups will have an export surplus. According to our model calculations this is also true for labour-intensive products. However, relative to other manufacturing sectors some labour-intensive industries may suffer from a change in relative prices due to increasing import competition from the CEECs.

### 7.3 The migration potential<sup>77</sup>

The income differential between the EU and the CEECs is large and convergence of per capita incomes in the candidate countries to levels prevailing in the EU is likely to take decades. Trade and capital flows between the EU and the CEECs have only a moderate impact on wages and can hence only partly reduce incentives for migration. Against this background, a distinct increase in migration from the CEECs is expected in the case of the adoption of free

<sup>77</sup> This Section relies on earlier findings by Bornhorst and Schrettl (1998) and Fertig (1999). However, the model estimated here differs from the previous ones.

movement of labour. Indeed, current migration stocks from the CEECs are well below those of other countries with comparable income levels and other country characteristics in the EU. Nevertheless, historical evidence demonstrates that it takes long time periods for migration to adjust to an income differential. This can be traced back to high transaction costs involved by migration and limited capacities of labour markets to absorb immigration. Our estimation of the migration potential from the CEECs tries to capture these effects and is therefore based on an error-correction model, which provides insights on both the long-run migration potential and the length of adjustment periods. The long-run migration potential from the CEEC-10 is estimated at around 1 per cent of the population of the EU-15, which corresponds to 4 per cent of the population in the CEEC-10. Nevertheless, the peak of the migration stock will be achieved in around 30 years and the initial net immigration from the CEEC-10 is expected to number around 335,000 persons in the immediate aftermath of the introduction of free movement of labour. This figure will be halved within one decade in the course of an increasing stock of residents from the CEECs and converging per capita incomes. Thus, fears that the EU will be swamped by immigration from the CEECs in the case of free movement of labour seem to be ill-founded. This estimate of potential migration from the CEECs should be seen as a clue to possible developments and in particular not as a point forecast. Several caveats apply to this result which are discussed in further detail below.

### **7.3.1 The framework of analysis**

The estimation of the migration potential is *inter alia* hampered by a lack of time series data on migration flows and stocks in the European Union. While recent data on foreign employees and residents are available for the majority of the EU Members, long time-series data on migration exist only for few Member states. Against this background, two approaches were applied in the first stage of this study: in the first approach we analysed the national distribution of the stock of foreign labour across EU countries in a gravity model based on Eurostat Labour Force Survey data. An analysis based on the stock of migrants has the obvious disadvantage of ignoring the time needed for migration to adjust to changes in the explanatory variables. Since inertia in migration is high, projections which do not consider adjustment periods may be distorted. More importantly, it turned out that within the sample, the estimated figures on migration deviated from actual figures by up to 50 per cent for some large Member States. This clearly demonstrates the limited forecasting capabilities of the gravity model. We there-

fore abstained from using the respective findings for a projection of potential migration from the accession candidates into the of the EU.

In the second approach, we used long time-series data from Germany in order to analyse the flow and stocks of migrants. Note that in 1998 two-thirds of the migrants from the CEECs settled in Germany. The time-series analysis is based on an error-correction model which allows us to analyse the long-term equilibrium relations between the stock of migrants and the explanatory variables as well as short-run fluctuations. Forecasting capabilities, therefore, are much higher than in the traditional gravity approach. The results have been extrapolated on the basis of the present distribution of migrants from the CEECs across the EU Members. Clearly, the present distribution of migrants from the CEECs across the EU reflects national restrictions to migration and other factors which may change over time, and, hence, affect the future distribution of migrants. However, experience has shown that the country patterns of migration due to network effects are rather stable. Therefore, this projection may provide a reasonable indication of the future migration potential between the EU and the CEECs. The methods of estimation and, hence, the results of the projections have been revised several times during the preparation of this study. After the solution of several technical problems, the recent results have proven to be fairly robust in several specifications. However, it should be noted again that migration decisions are complex and can not be forecasted as easily as other economic variables.

The empirical model we used in this work draws heavily upon the analysis of UK migration by Timothy Hatton (1995). In line with other approaches, it assumes that migration is an investment in human capital, whose returns are determined by expectations regarding future income (Sjaastad 1962). Expectations on income in the country of destination are conditioned by the opportunity to find a job on its labour market. Following Todaro (1969) and Harris and Todaro (1970), the average employment rate serves as a proxy for the individual probability of getting a job. However, two important aspects characterise the Hatton model, which set it apart from other approaches: first, the probability of finding a job in the foreign country is explicitly modelled by assuming a binomial distribution for the employment rate. In this specification of the model, a greater weight is assigned to the unemployment rate in the foreign country than to that in the home country. Second, migration is understood as a decision under uncertainty. The formation of expectations on future income streams based on past experience is explicitly considered. These two features have a direct impact on the dynamic

structure of the model, which allows us to distinguish between the impact of short-run economic fluctuations and long-run determinants of migration flows.

However, there exists one important difference between our specification and the Hatton (1995) model: the Hatton model assumes the existence of a long-run equilibrium relationship between the migration *rate* and the explanatory variables, that is, the income differential and employment rates in host and home countries. In technical terms, it is presumed that the migration rate and the explanatory variables are ‘cointegrated.’ This has not been confirmed by our data. Instead we found a cointegration relationship between the *stock* of migrants and the explanatory variables. This result is not surprising: a long-run equilibrium relation between the migration *rate* and the income differential implies that the whole population of a country will eventually migrate if an income differential to another nation remains constant. It is more reasonable to assume that the propensity to migrate is unevenly distributed across the population such that migration comes to a halt if a long-run equilibrium between the share of migrants in the population and the income differential has been achieved (cf. Faini and Venturini 1994).

The dependent variable in the model is the annual *change* in the ratio of the stock of migrants to the home population. Four sets of variables have been used in the empirical specification of the model:

- The differential of per capita GDP between the home and the host country in purchasing power parity as a proxy for the differential in real wages. In some regressions, the differentials of per capita GDP at current exchange rates have been used to analyse the sensitivity of results to different income variables;
- the employment rate in the home and the foreign country as a proxy for employment opportunities;
- the lagged ratio of the stock of migrants to the home population,
- institutional variables, which capture the removal of institutional barriers to the movement of labour (i.e. a dummy for guest-worker agreements and the freedom to move within the EU).

Furthermore, the model is estimated with country-specific effects which allow us to control for differences across countries in culture, language, policy, geographical distance etc. A description of the variables and the data sources is presented in Annex 1. The income and the employment variables enter the model in levels and in changes, such that the model resembles a simple error correction model (see Box 6).

**Box 6: Description of the migration model**

The model estimated here relies on the assumption that individuals build expectations on future incomes in the host and the home country on the basis of past values of the income differential. More precisely, it is assumed that expectations are formed by a geometric series of past values of the income differential. If this holds true, migration follows a first-order autoregressive process (AR(1)), i.e. present values of the stock of migrants are determined by past values (Hatton 1995). This allows us to specify the model in the form of a simple error-correction model, i.e. as

$$(1) \quad \Delta mst_{h,t} = \beta_1 * \Delta \ln(w_f / w_h)_t + \beta_2 * \Delta \ln(e_f)_t + \beta_3 * \Delta \ln(e_h)_t + \beta_4 * \ln(w_f / w_h)_{t-1} + \beta_5 * \ln(e_f)_{t-1} \\ + \beta_6 * \ln(e_h)_{t-1} + \beta_7 * mst_{h,t-1} + \beta_8 * FREE + \beta_9 * GUEST + \beta_{10} * COUNTRY$$

where  $mst_h$  denotes the ratio of the stock of migrants to the population in the home country,  $w_f$  and  $w_h$  wages,  $e_f$  and  $e_h$  the employment rate in the foreign (host) and the home country, respectively, *FREE* and *GUEST* two dummy variables, which cover the free movement of labour within the EU and guest worker agreements between the foreign and the home country, respectively, and *COUNTRY* dummies for country specific effects. The subscript  $f$  denotes the foreign country and the subscript  $h$  is an index for the home countries. For changes and levels of the wage differential as well as the employment rate in the home country, positive coefficients are expected, while for changes and levels of the employment rate in the host country, a negative coefficient is expected. From the assumption that the development of the migration stock undergoes an autoregressive process, it follows that a negative coefficient can be expected for the lagged migration stock.<sup>78</sup>

Note that the migration stock and the wage and employment variables enter the model in changes as well as in levels. The level variables determine a dynamic equilibrium relation between the migrant stock and the income and wage variables in the long run, while the changes of the variables determine the response of migration to short-term fluctuations of the explanatory variables. The equilibrium stock of migrants can be derived from equation (1), if we set all changes as null: this yields for steady state stock of migrants

$$(2) \quad mst_h^* = (\beta_4 / -\beta_7) * \ln(w_f / w_h) + (\beta_5 / -\beta_7) * \ln(e_f) + (\beta_6 / -\beta_7) * \ln(e_h) \\ + (\beta_8 / -\beta_7) * FREE + (\beta_9 / -\beta_7) * GUEST + (\beta_{10} / -\beta_7) * COUNTRY'$$

where  $mst_h^*$  denotes the ratio of the stock of migrants to the home population in the steady state. The combined value of the coefficients in brackets can be interpreted as semi-elasticities for the long-run equilibrium relation between the migration stock and the explanatory variables.<sup>79</sup>

Thus, the model specified in equation (2) presumes that a dynamic equilibrium relation holds for the stock of migrants and the wage and employment variables. In technical terms, the variables have to be 'co-integrated'. The estimation of the model in equation (2) requires therefore that the variables have to satisfy certain statistical properties. This is proved in Annex B.

<sup>78</sup> If the development of the stock of migrants follows an AR(1) process, i.e. if  $mst_t = \lambda * mst_{t-1}$  and if  $\lambda < 1$ , then it can easily be shown that for  $\Delta mst_t = \beta * mst_{t-1}$   $\beta$  has to be smaller than 0. (Note that  $\Delta mst_t$  is defined as

$mst_t - mst_{t-1}$ .) The assumption that  $\lambda$  is smaller than one follows from the fact, that for  $\lambda > 1$  the whole population will eventually migrate.

<sup>79</sup> Note that for the coefficient  $\beta_7$  a negative coefficient is expected, such that the signs of the coefficients on the explanatory variables are preserved.

### 7.3.2 Major findings

In the first step of the analysis, we tested whether a long-run equilibrium exists between the stock of migrants on the one hand and the income and employment variables on the other. In technical terms, we tested whether the variables of our model form a co-integrated set. Indeed, it can be shown that the individual variables and the combination of variables which are assumed to form a dynamic equilibrium pass the tests for co-integration (Annex B). This allows us to estimate the model described by equation (1) in Box 6.

The pooling of cross-section and time-series data can involve further restrictions which may distort the regression results. In view of the heterogeneity of the countries and the long observation period, the variance of the explanatory variables may be distributed unevenly across the sample and, hence, yield inefficient results (heteroscedasticity). Furthermore, the error terms may be correlated across countries due to common shocks. Our tests suggest that both heteroscedasticity and groupwise correlation are present in the data. We therefore applied the ‘Seemingly Unrelated Regression’ (SUR) technique in the estimations reported here.<sup>80</sup>

To test for the sensitivity of the results to the income variables, we used per capita GDP at purchasing power parities and at current exchange rates in separate regressions as proxies for the wage differential. The results of the estimations are reported in Table 7.3. The coefficients for the stock of migrants in the long-run equilibrium (cf. equation 2 in Box 6) are reported in Table 7.4.

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<sup>80</sup> Note that we imposed the restriction that the coefficients are the same for all countries except the intercepts.

Table 7.3

## Determinants of Migration to Germany: Estimation Results

variable	regression (1) GDP at purchasing power parity		regression (2) GDP at current exchange rate	
	coefficient	t-value	coefficient	t-value
$\Delta \ln(\text{PPP-GDP}_t / \text{PPP-GDP}_n)_t$	0.000831 ***	5.391		
$\Delta \ln(\text{GDP}_t / \text{GDP}_n)_t$			0.000132 ***	2.743
$\Delta \ln(e_t)_t$	0.002082 ***	4.054	0.003137 ***	6.223
$\Delta \ln(e_n)_t$	-0.002007 ***	-5.761	-0.003114 ***	-8.580
$\ln(\text{PPP-GDP}_t / \text{PPP-GDP}_n)_{t-1}$	0.001121 ***	15.461		
$\ln(\text{GDP}_t / \text{GDP}_n)_{t-1}$			0.000365 ***	12.010
$\ln(e_t)_{t-1}$	0.003242 ***	15.031	0.003929 ***	15.159
$\ln(e_n)_{t-1}$	-0.002997 ***	-16.903	-0.003754 ***	-19.059
$mst_{n,t-1}$	-0.083601 ***	-13.664	-0.086807 ***	-13.703
FREE	0.001454 ***	12.253	0.000307 ***	13.982
GUEST	0.001263 ***	16.165	0.001592 ***	17.851
CIVIL WAR	0.007529 ***	15.741	0.006777 ***	12.699
REPATRIATION	-0.003527 ***	-4.910	-0.003486 ***	-4.324
LM-test-statistics ( $H_0$ : homoskedasticity vs. $H_1$ : heteroskedasticity)	770.44		772.64	
LR-test-statistics ( $H_0$ : heteroskedasticity, $H_1$ : heteroskedasticity + groupwise correlation)	499.14		501.01	
Log-likelihood function	4111.10		4108.44	
total panel observations	588		588	
degrees of freedom				
dependent variable: $\Delta mst_{n,t}$				
estimation method: Seemingly Unrelated Regression (SUR)				
period: 1968-1998.				

Notes: The critical value at the 5%-level for the  $\chi^2(17)$ -distribution of the LM-test for the restriction of homoskedasticity is 27.59. The critical value at the 5%-level for the  $\chi^2(153)$ -distribution of the LR-test-statistics for groupwise correlation is 182.22.

\*\*\*, \*\*, \* coefficients are significant at the 99, 95 and 90 percent level, respectively.

The key results can be summarised as follows:

- First, levels as well as first-differences of the income differential have a positive and significant impact on migration. An increase in the income differential measured in purchasing power parities of one percent effects an increase in the stock of migrants of 1.3 percentage points in the long-run. However, elasticities for the income differential at current exchange rates are certainly lower: an increase in the income differential measured at current exchange rates of one per cent effects an increase of the stock of migrants in the long-run equilibrium of 0.4 percentage points. (Note that the long-run coefficients are displayed in Table 7.4.)
- Second, the coefficients for levels and changes of the employment rates are significant and have the expected signs. An increase in the employment rate of the foreign country of one per cent effects an increase of the migration stock of 3.9 percentage points in the first regression (GDP at PPP) and of 4.5 percentage points in the second (GDP at current ex-

change rates) in the long-run. Conversely, the stock of migrants falls by 3.6 percentage points in the first, and by 4.3 percentage points in the second regression if employment rates of home countries increase by one per cent. Thus, the impact of the employment rate of the host country seems to affect migration slightly more than the employment rate in the home country.

- Third, both the guest worker agreements and the free movement of labour in the EU have a significant impact on migration. However, the coefficients for the free movement of labour are well below the coefficients for the guest worker agreements in 1960s and 1970s. Furthermore, the civil war in Yugoslavia had a significant impact on migration. Note that the impact of the war is much higher than the impact of a liberalisation of the legal entry to labour markets for foreigners.

Table 7.4

#### Steady State Coefficients

variable	regression (1)	regression (2)
	GDP at purchasing power parity	GDP at current exchange rate
	coefficient	coefficient
$\ln(\text{PPP-GDR}/\text{PPP-GDR}_h)_{t-1}$	0.0134	
$\ln(\text{GDR}_t/\text{GDR}_h)_{t-1}$		0.0042
$\ln(e_t)_{t-1}$	0.0388	0.0453
$\ln(e_h)_{t-1}$	-0.0358	-0.0432
FREE	0.0034	0.0035
GUEST	0.0174	0.0183
CIVIL WAR	0.0901	0.0781
REPATRIATION	-0.0422	-0.0402

*Notes:* For calculation of steady-state coefficients cf. equation (2) in Box 6.

The positive coefficient for free movement of labour in the EU seems at first glance to be at odds with the observation that the introduction of the free movement of labour in the wake of Southern Enlargement had no impact on migration. Our findings suggest that the Southern EU Members have already been close to an equilibrium stock of migrants relative to the income differential and the other employment variables. Therefore, the introduction of free movement of labour had no large impact on migration. Our findings suggest that the stock of migrant labour in Germany from the Southern European countries would have been somewhat lower in the counterfactual case of no free movement of labour. Nevertheless it is worth noting that before the introduction of free movement, migration from the Southern EU Members

was not totally restricted in Germany. The immigration conditions of the Southern EU Members before the introduction of free movement are therefore not comparable to those of the CEECs at the present.

Several combinations of the sample were used in order to test whether the results are robust. Yugoslavia is clearly an outlier in our sample: on the one hand, the civil war there may distort results; on the other hand, Yugoslavia is, after Turkey, the largest country of origin for migration to Germany. We therefore tested the sensitivity of our results to an exclusion of Yugoslavia. The results are reported in Annex Table A.27. It turns out that the exclusion of Yugoslavia does indeed affect the size of the coefficients notably. However, smaller coefficients on the income variables are compensated by higher coefficients on the fixed effects for relatively poor countries. The results of the projection remain rather unaffected at least for the initial period (cf. Table 7.5). Furthermore, we tested the exclusion of the years 1991-1998, i.e. the period of possible war-induced migration from Yugoslavia. Again, the change of the sample does not affect the projections markedly. Thus, we conclude that our results are largely robust with regard to the selection of the sample.

For the projection of the results from our estimations on potential migration from the CEECs, an explanation of the country-specific effects is needed. Country-specific effects capture all constant factors which may affect migration, such as distance, language, culture or long-term differences in endowments across countries. Since we have only a few observations, we limited the explanation of country-specific effects to two variables, the human development index (HDI) and a dummy for common language. The HDI is a variable which should cover long-term differences in the quality of life across countries. Note that the ranking of the HDI remains rather constant for our sample over time. Both the human development indicator and the language dummy are significant in our regressions. Furthermore, we tested the impact of geographical distance in a previous specification, but it did not turn out to be significant in our sample. An adjusted  $R^2$  between 0.3 and 0.4 points to the fact that we are able to explain between one-third and two-fifths of the variance of the country-specific effects in our regressions (cf. Table 7.5). With regard to the limited number of observations, this is satisfactory. However, the incomplete explanation of the country-specific effects reduces, of course, the forecasting power of our model for countries outside the sample.

Table 7.5

### Explanation of Country-Specific Fixed Effects

dependent variable: country specific fixed effects.  
estimation period: ordinary least squares (OLS).

variable	regression (1) GDP at purchasing power parity		regression (2) GDP at current exchange rates	
	coefficient	t-value	coefficient	t-value
constant	0.00590 **	2.204	0.01018 ***	3.376
HDI	-0.00618 **	-2.094	-0.01070 ***	-3.233
LANGUAGE	0.00122 **	2.425	0.00119 **	2.100
observations	18		18	
degrees of freedom	14		14	
R <sup>2</sup>	0.42		0.47	
adjusted R <sup>2</sup>	0.29		0.39	
F-statistics	3.65		6.54	

*Notes:* The dependent variable comprises in regression (1) the fixed effects of the regression based on GDP at purchasing power parity; the dependent variable in regression (2) the fixed effects of the regression based on GDP at current exchange rates.

### 7.3.3 Potential migration from the CEEC-10 to Germany

In our baseline projection, the number of foreign residents from the CEECs in Germany is estimated to grow at around 220,000 persons initially if free movement of labour is introduced for all ten candidate countries in 2002. This number should fall to 96,000 persons by the end of the decade. The number of residents from the CEECs in Germany is estimated to be at 1.9 million in 2010, 2.4 million in 2020 and 2.5 million in 2030. This implies that the share of migrants from the CEEC-10 in the German population increases from 0.6 percent in 1998 to 3.5 per cent in 2030, and from 0.5 per cent to 2.5 per cent of the home population within the same time period. (cf. Tables 7.6 and 7.7). The number of employees can be estimated at around 35 per cent of these figures in the beginning and is likely to decline over time. The peak of the migration stock is reached around 30 years after the introduction of free movement of labour in our model. After this time return migration will be higher than immigration, so that the net migration reaches negative values.

Table 7.6

**Baseline Projection: Annual Growth of the Number of Residents from the CEECs in Germany**

	2002	2003	2004	2005	2010	2015	2020	2025	2030
	<i>in persons</i>								
Bulgaria	22,812	20,592	18,564	16,711	9,606	5,128	2,337	626	-396
Czech Republic	11,024	9,990	9,044	8,180	4,860	2,755	1,434	614	116
Estonia	3,991	3,614	3,270	2,955	1,746	981	500	202	22
Hungary	16,129	14,520	13,051	11,709	6,573	3,348	1,349	134	-581
Latvia	8,309	7,511	6,782	6,115	3,556	1,940	929	306	-70
Lithuania	12,210	11,084	10,055	9,113	5,490	3,189	1,738	833	277
Poland	66,301	60,146	54,521	49,381	29,639	17,149	9,319	4,479	1,553
Romania	66,516	60,226	54,477	49,223	29,035	16,255	8,238	3,275	265
Slovakia	9,825	8,932	8,116	7,370	4,499	2,676	1,526	808	368
Slovenia	1,313	1,186	1,069	963	556	300	140	43	-15
<b>CEEC-10</b>	218,430	197,801	178,949	161,720	95,560	53,721	27,510	11,320	1,539

Notes: See text for assumptions of the projection.

In the baseline projection, a convergence of per capita incomes to the average per capita PPP-GDP in the EU at a rate of 2 per cent p.a. is assumed. Furthermore, the 1997 unemployment rates of both Germany and the CEECs are assumed to remain unchanged. The population scenario is based on the World Bank scenario presented in the World Development Indicators. Furthermore, complete freedom to move is supposed from 2002 onwards. Note that these results point to an average migration rate over time; annual migration rates are expected to vary widely in the course of the business cycle.

Table 7.7

**Baseline Projection: Number of Residents from the CEEC-10 in Germany**

	start value	2002	2003	2004	2005	2010	2015	2020	2025	2030
<i>in persons</i>										
Bulgaria	38,847	61,659	82,251	100,814	117,526	178,472	212,235	228,967	235,176	235,022
Czech Republic	18,327	29,351	39,341	48,385	56,565	86,905	104,504	114,069	118,619	120,093
Estonia	2,509	6,500	10,114	13,383	16,339	27,269	33,562	36,933	38,482	38,915
Hungary	56,748	72,877	87,398	100,449	112,158	154,353	176,937	187,292	190,146	188,513
Latvia	4,624	12,933	20,444	27,225	33,340	55,774	68,407	74,880	77,531	77,855
Lithuania	4,800	17,010	28,095	38,149	47,262	81,309	101,438	112,760	118,562	120,949
Poland	276,753	343,054	403,200	457,721	507,103	691,207	799,631	860,409	891,538	904,552
Romania	109,256	175,772	235,998	290,474	339,697	521,595	626,079	681,793	707,127	713,857
Slovakia	6,707	16,532	25,464	33,580	40,950	68,672	85,365	95,080	100,418	103,050
Slovenia	17,328	18,641	19,826	20,896	21,859	25,377	27,340	28,330	28,720	28,750
<b>CEEC-10</b>	<b>535,899</b>	<b>754,329</b>	<b>952,131</b>	<b>1,131,076</b>	<b>1,292,799</b>	<b>1,890,933</b>	<b>2,235,498</b>	<b>2,420,513</b>	<b>2,506,319</b>	<b>2,531,556</b>
<i>memo items:</i>										
residents from CEEC-10 in % of home population	0.51	0.72	0.91	1.08	1.25	1.84	2.18	2.37	2.47	2.52
in % of German population	0.65	0.91	1.16	1.39	1.61	2.39	2.89	3.19	3.38	3.51

Notes: See text for assumptions of the projection.

In two other projections, different rates of convergence and of employment have been applied: in order to evaluate the bottom line, we have assumed that per capita GDP of the CEECs will converge at a rate of 3 per cent p.a., that the unemployment rate of Germany will be at 10 per cent and unemployment rates of the CEECs at 5 per cent over the time period. This yields an initial increase of some 175,000 residents from the CEECs p.a. and a stock of 1.9 million residents in 2030. Conversely, a convergence rate of one per cent, an unemployment rate of 5 per cent in Germany and unemployment rates of 15 per cent in the CEECs yield an initial increase in the number of residents of some 240,000 and a stock of nearly 3 million residents from the CEEC-10 in 2030. These assumptions form in our view an upper line for the conditions to migrate (cf. Table 7.8).

Table 7.8

## Germany: Projections of Immigration from the CEEC-10

	2002	2005	2010	2015	2020	2025	2030
<i>in persons</i>							
<b>baseline projection</b>							
increase in the number of residents	218,429	161,722	95,560	53,720	27,509	11,320	1,539
stock of residents	754,328	1,292,798	1,890,932	2,235,498	2,420,512	2,506,321	2,531,556
<b>low projection</b>							
increase in the number of residents	175,189	126,204	68,758	33,444	12,187	-201	-7,039
stock of residents	711,088	1,136,369	1,584,359	1,815,231	1,914,263	1,935,258	1,912,013
<b>high projection</b>							
increase in the number of residents	241,443	183,537	114,117	69,565	41,062	22,912	11,437
stock of residents	777,342	1,383,485	2,080,670	2,509,670	2,766,918	2,914,491	2,992,507

*Assumptions:*

**Baseline projection:** convergence rate of 2 per cent p.a. for the natural logarithm of the differential in per capita PPP-GDP; unemployment rate in Germany of 1988; unemployment rates in home countries of 1998.

**Low projection:** convergence rate of 3 per cent p.a. for the natural logarithm of the differential in per capita PPP-GDP; unemployment rate in Germany of 10 per cent; unemployment rates in home countries 5 per cent.

**High projection:** convergence rate of 1 per cent p.a. for the natural logarithm of the differential in per capita PPP-GDP; unemployment rate in Germany of 5 per cent; unemployment rates in home countries 15 per cent.

All these results apply to the estimates based on GDP in purchasing power parity as an income variable and on the whole sample including Yugoslavia. However, the results reported in Table 7.9 suggest that the migration projections are rather robust with regard to a change of the income variable and the exclusion of Yugoslavia: the choice of GDP at current exchange rates as an income variable in the regressions yields only a small increase in the initial growth of the migrant stock. The impact on the stock of residents in the long run is moderate, too.<sup>81</sup> Thus, the relatively low elasticity between the migrant stock and the income differential in per capita GDP at current exchange rates, which we have found in our regressions, seems to compensate the huge gap between the purchasing power and nominal exchange rates of the currencies in the CEECs. Finally, the exclusion of Yugoslavia has a somewhat larger impact on the results than a change in the income variables, but even in this case, the size of this effect is, nevertheless, rather moderate. Note that the assumptions of the baseline scenario have been applied to all the projections reported in Table 7.9.

<sup>81</sup> The projections are based on the assumption of a convergence rate of 3 per cent for the differential of per capita GDP at current exchange rates. This means that a real appreciation of the exchange rate is assumed for the CEECs in the course of convergence. This is reasonable, since the gap between per capita incomes at purchasing power parities and at current exchange rates is quite wide at the present.

Table 7.9

### Sensitivity of Results With Regard to the Income Variable and Yugoslavia

country sample income variable	incl. Yugoslavia PPP-GDP	without Yugoslavia PPP-GDP	incl. Yugoslavia GDP at current exchange rates
increase of foreign residents from the CEEC-10 2002	218,429	201,157	222,675
foreign residents from the CEEC-10 in 2010	1,890,932	1,832,678	1,912,386
foreign residents from the CEEC-10 in 2020	2,420,512	2,440,486	2,461,298
foreign residents from the CEEC-10 in 2030	2,531,556	2,675,507	2,608,817

*Notes:* See text for assumptions of projections.

However, actual migration flows and stocks may substantially deviate from these projections. It is worth noting that three factors may affect migration flows which cannot be covered sufficiently by our model: First, country-specific factors which rely on largely unobservable variables have an important impact on the magnitude of migration flows. The extrapolation of the coefficients of our regressions to countries out of the sample of the original estimates does therefore affect the quality of the projections. Second, per capita incomes throughout the CEECs are substantially lower than mean per capita incomes in our sample. This may again affect the quality of the forecast. Third, the projections are derived from a sample of countries where large differences in per capita incomes occur only in connection with long distances between home and host countries. Accession of the CEECs to the EU may increase the opportunities for border commuting and temporary migration, which may in turn lead to higher migration of labour than expected in our scenario. However, the number of residents might be somewhat smaller since commuters and temporary migration may substitute for permanent migration.

Table 7.10

**Baseline Scenario: Annual Growth in the Number of Residents from the CEEC-10 in the EU-15**

	residents from the CEEC-10 in persons	share of country in %	increase in the number of residents in persons						
			1998	2002	2005	2010	2015	2020	2025
Austria	103,000	12.07	40,547	30,020	17,739	9,972	5,107	2,101	286
Belgium	10,773	1.26	4,241	3,140	1,855	1,043	534	220	30
Denmark	8,863	1.04	3,489	2,583	1,526	858	439	181	25
Finland	11,985	1.40	4,718	3,493	2,064	1,160	594	245	33
France	22,000	2.58	8,661	6,412	3,789	2,130	1,091	449	61
Germany	554,869	65.04	218,430	161,720	95,560	53,721	27,510	11,320	1,539
Greece	20,131	2.36	7,925	5,867	3,467	1,949	998	411	56
Ireland	200	0	79	58	34	19	10	4	1
Italy	34,490	4.04	13,577	10,052	5,940	3,339	1,710	704	96
Luxembourg	700	0.08	276	204	121	68	35	14	2
Netherlands	9,606	1.13	3,782	2,800	1,654	930	476	196	27
Portugal	781	0.09	307	228	135	76	39	16	2
Spain	10,539	1.24	4,149	3,072	1,815	1,020	523	215	29
Sweden	26,191	3.07	10,310	7,634	4,511	2,536	1,299	534	73
UK	39,000	4.57	15,353	11,367	6,717	3,776	1,934	796	108
<b>total EU-15</b>	<b>853,128</b>	<b>100.00</b>	<b>335,843</b>	<b>248,649</b>	<b>146,926</b>	<b>82,598</b>	<b>42,297</b>	<b>17,405</b>	<b>2,366</b>

*ation of the projection for Germany on the EU-15 countries relies on the assumption that country shares in the number of foreign residents from the CEEC-10 remains constant.*

1) The number of foreign residents is estimated for a number of countries on basis of employment figures.

Source: authors' estimates and calculations.

### 7.3.4 Extrapolation to the EU-15

The results of the projections from Germany have been extrapolated to the EU-15, based on the 1998 distribution of migrants from the CEEC-10 across the Member States. Under the assumptions of the baseline scenario, this yields an initial increase of some 335,000 residents, which declines until the end of the decade to less than 150,000 residents. In 2010 a stock of some 2.9 million residents from the CEECs in 2010 and of 3.7 million residents in 2020 is expected. The peak in the stock of migrants is reached at some 3.9 million persons around 30 years after the introduction of free movement of labour. This implies that the share of residents from the CEECs increases from 0.2 per cent in 1998 to 1.1 of the population of the present EU Members in 2030, and the share in the home population from 0.8 per cent to 4 per cent

in the same time period.<sup>82</sup> The stock of foreign employees from the CEECs in the present EU Member States will number around 1 million in 2010, 1.2 million in 2020 and 1.3 million in 2030. Germany and Austria, with 65 per cent and 12 per cent respectively, are the most-affected countries by assumption (cf. Tables 7.10, 7.11).

Table 7.11

**Baseline Projection: Stock of Residents from the CEEC-10 in the EU-15**

	residents from the CEEC-10 in persons	share of country in %	residents from the CEEC-10						
			1998	2002	2005	2010	2015	2020	2025
<i>in persons</i>									
Austria	103,000	12.07	140,026	239,982	351,013	414,974	449,318	465,246	469,931
Belgium	10,773	1.26	14,646	25,100	36,713	43,403	46,995	48,661	49,151
Denmark	8,863	1.04	12,049	20,650	30,204	35,708	38,663	40,034	40,437
Finland	11,985	1.40	16,293	27,924	40,844	48,286	52,282	54,136	54,681
France	22,000	2.58	29,908	51,258	74,974	88,635	95,971	99,373	100,374
Germany	554,869	65.04	754,329	1,292,799	1,890,933	2,235,498	2,420,513	2506319	2531556
Greece	20,131	2.36	27,368	46,904	68,604	81,105	87,818	90,931	91,846
Ireland	200	0	272	466	682	806	872	903	912
Italy	34,490	4.04	46,888	80,359	117,538	138,956	150,456	155,790	157,359
Luxembourg	700	0.08	952	1,631	2,386	2,820	3,054	3,162	3,194
Netherlands	9,606	1.13	13,059	22,381	32,736	38,701	41,904	43,390	43,827
Portugal	781	0.09	1,062	1,820	2,662	3,147	3,407	3,528	3,563
Spain	10,539	1.24	14,327	24,555	35,916	42,460	45,974	47,604	48,084
Sweden	26,191	3.07	35,606	61,023	89,256	105,520	114,253	118,304	119,495
UK	39,000	4.57	53,019	90,867	132,908	157,126	170,130	176,161	177,935
<b>total EU-15<sup>1)</sup></b>	<b>853,128</b>	<b>100.00</b>	<b>1,159,804</b>	<b>1,987,718</b>	<b>2,907,367</b>	<b>3,437,146</b>	<b>3,721,613</b>	<b>3,853,542</b>	<b>3,892,345</b>
<i>in per cent</i>									
<i>memo items:</i>									
residents from CEEC-10 in % of home population	0.82		1.12	1.93	2.83	3.37	3.67	3.84	3.93
in % of population in the EU-15	0.23		0.31	0.53	0.78	0.93	1.01	1.06	1.08

*polation of the projection for Germany on the EU-15 countries relies on the assumption that country shares in the number of foreign residents from the CEEC-10 remains constant.*

1) The number of foreign residents is estimated for a number of countries on basis of employment figures.

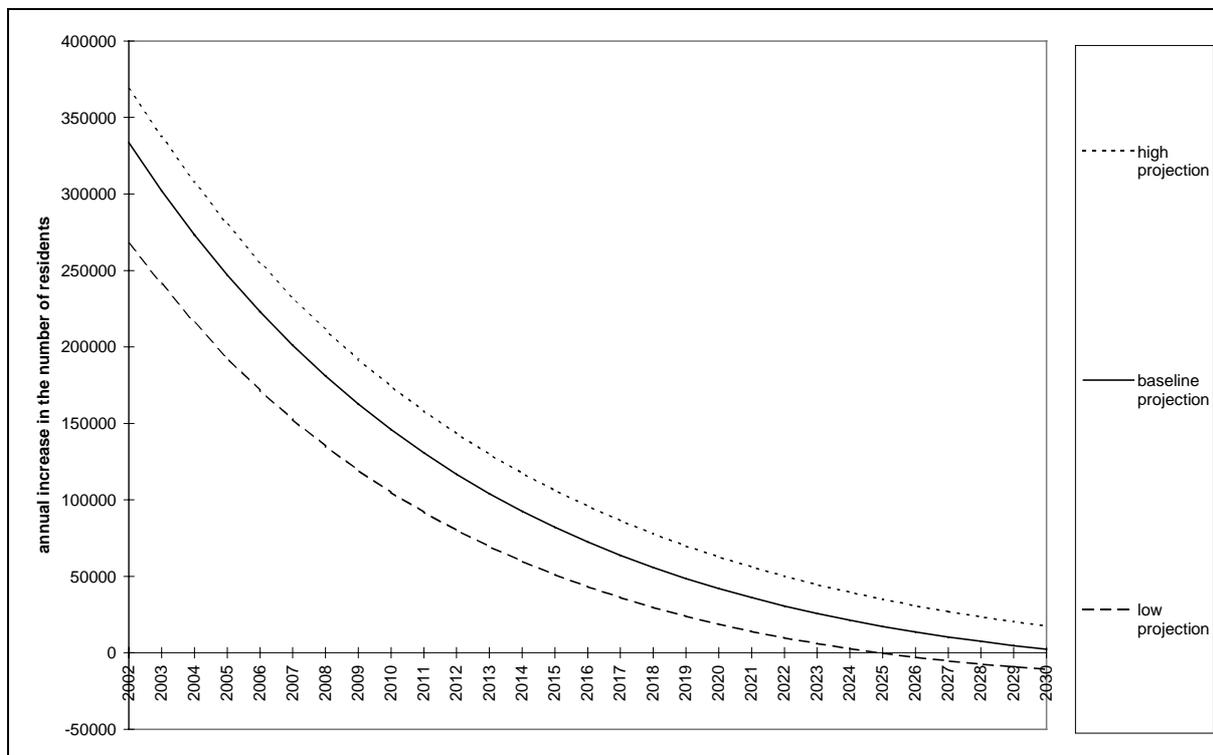
Source: authors' estimates and calculations.

Under the assumptions of the high and the low migration projection, the initial increase of the number of foreign residents would vary between 270,000 and 370,000 persons and the migration stock at the end of the decade between 1.6 and 2.1 million persons. The difference between the stock of residents in the low and high migration projections becomes even more marked in the long run (cf. Figures 7.7 and 7.8).

<sup>82</sup> The migrant shares in the population of the EU and the CEECs respectively, are based on the World Bank population scenario.

Figure 7.7

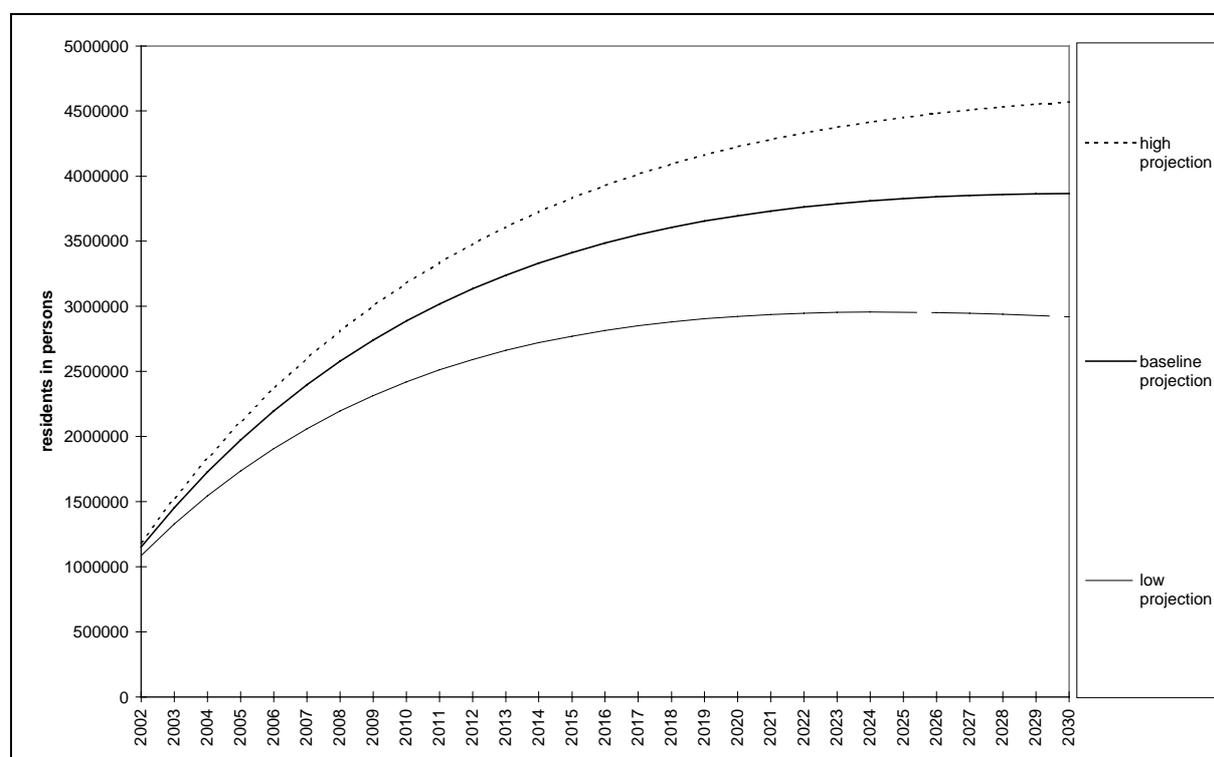
**Annual Growth of the Number of Residents from the CEEC-10 in the EU-15**



Note that this extrapolation is based on the restrictive assumption that the 1998 distribution of migrants across the EU-countries will remain constant over time. Clearly, present migration flows from the CEECs in the EU, as well as the respective stocks, reflect institutional restrictions which are subject to change after accession to the EU. Furthermore, the underlying economic variables may change between countries. However, country-specific patterns of migration have been relatively stable over time in the past. Path-dependence matters for the direction of migration flows. Thus, the extrapolation of the German results to the EU may give a reasonable indication for future developments.

Figure 7.8

### Stock of Residents from the CEEC-10 in the EU-15



It should be emphasised again that these results have a tentative character. The uncertainty with regard to the magnitude of migration between the CEECs and the EU is still high. This scenario of East-West migration is based on an empirical model which estimates the impact of the wage differential, employment rates and some institutional factors on international migration across European countries. However, other methods have also been applied. Some studies base the estimation of potential migration on the income-elasticity of migration flows across European regions (Barro and Sala-i-Martin 1995). Employment rates were not considered in the Barro and Sala-i-Martin estimates. These scenarios came out with considerably higher figures than our projection.<sup>83</sup> The higher estimates of these regressions can be traced back mainly to three reasons: First, employment rates were not considered in the Barro and Sala-i-Martin estimates. However, our results suggest that employment rates affect migration considerably. Second, the Barro and Sala-i-Martin regressions are based on regional data sets which mix regional and international migration. Thus, extrapolations from their results may

<sup>83</sup> For Austria see Walterskirchen and Dietz (1998) and Birner et al. (1998), and for Germany Franzmeyer and Brücker (1997).

be upward biased. Third, cross-sectional regressions do not allow to control for adjustment periods, which play a key role in migration movements.

### **7.3.5 Implications for regulating migration**

According to our findings an introduction of free movement of labour and persons for all ten candidate countries at the beginning of this decade would increase initial migration from the CEEC-10 to figures similar to those of the period immediately following the fall of the iron curtain. These figures decline rapidly in the course of an increasing stock of migrants. Furthermore, converging per capita incomes contribute to the decline in migration. At first glance, long-run figures for the stock of residents seem to be at 1.1 per cent of the population in the EU and almost 4 per cent of the population in the CEECs rather high. However, our estimates suggest that adjustment periods take decades rather than years. Against the background of empirical knowledge on the labour market impact of migration, the projected flows and stocks of migrants will affect neither wages nor employment in the host countries strongly. This holds true even for the two most-affected countries, Austria and Germany. One should recall that an increase of the foreigner share in one branch by one percentage point reduced wages by 0.25 per cent in Austria and 0.65 per cent in Germany, while the risk of unemployment increased by 0.8 per cent in Austria and 0.2 per cent in Germany according to our estimates in Chapter 6. However, the migration scenario is based on a number of restrictive assumptions, so that uncertainty as to the future migration potential remain high.

The relevant counterfactual to a free movement of labour is unclear at the present. Since 1993 net immigration from the CEECs is negligible in the EU. This can be traced back to a large extent to the restrictive immigration conditions in the present EU Member. If these migration conditions will be maintained in the future, net migration from the CEECs will be limited to several thousand persons p.a. Naturally one can think of several other policy scenarios. On the background of the high uncertainty with regard to the actual migration potential, a case for transitional periods can be made. However, it follows from our analysis that transitional periods which absolutely suppress migration would postpone a migration surge, but not prevent it. Note that the half-life of an initial gap in per capita income is at around 35 years. If the freedom to move is postponed by a medium time period, let's say ten years, the income gap and hence potential net immigration is almost the same at the end of the transitional period. Postponing free movement of labour until per capita incomes have almost converged, implies that the equal membership of the CEECs in the EU is postponed for several decades too. In con-

trast, a gradual opening of labour markets e.g. by migration quotas could smooth migration flows and, hence, mitigate undesirable effects on wages and employment in host labour markets.

## 8 Conclusions

At present, trade, migration and capital flows between EU members and the ten CEECs exert, if at all, only a minor impact on employment and wages in the EU. Although the patterns of trade and, to a lesser extent, of foreign direct investment reflect differences in factor endowments and factor prices, they are too small to influence the marginal demand and supply. Therefore, wages and employment in the EU remain, by and large, unaffected. Nevertheless, positive and negative effects of Eastern Enlargement are concentrated in regions immediately bordering to the CEECs. An increasing segmentation of production processes in physical and human capital intensive activities on part of the EU and labour intensive activities on part of the CEECs may affect relative wages and employment there.

Trade patterns reveal differences in factor endowments and technological capabilities between the EU and the CEECs: The EU tends to export goods produced with a high intensity of human capital and R&D to the CEECs. It tends to import goods from the CEECs which are produced with a high resource and labour intensity. Increasing shares of intra-industry trade do by no means amount to an equalisation of the factor content of traded goods. Instead, the persistence of large differences in the unit values is rather an indication that intra-industry trade is of the vertical type and that production processes between the EU and the CEECs have become increasingly segmented.

Geographical distance affects the direction of CEEC-trade more than usual. EU countries immediately adjacent to Central and Eastern Europe trade significantly more with the candidate countries than other EU Members. Moreover, in the border regions of these countries volumes of trade with the CEECs which are three times as high as the country average have been found. Those regions may be mainly affected by the increasing segmentation of production processes in human and physical capital activities on the side of the EU and labour intensive activities on the side of the CEECs which we have observed at the sectoral level.

No evidence has been found that the Southern Members of the EU are indirectly affected by Eastern Enlargement through the displacement of their trade with EU countries by trade with the CEECs. Neither have the dynamics of exports from the cohesion countries to other EU Members declined after opening and integration of the CEECs, nor can we observe a pronounced similarity in the commodity structure of exports from the cohesion countries and

exports from the CEECs. However, other transition countries are likely to be affected by integration and Eastern Enlargement via trade diversion.

Foreign direct investments of EU countries in the CEECs are mainly directed to non-tradable sectors or to market-seeking activities in the tradable sectors. Only in certain sectors are foreign direct investments motivated by the exploitation of low wage costs: textiles, electrical machinery, measuring instruments, and, to a lower extent, the motor vehicles sector. In some of these branches foreign direct investment is correlated with increasing shares of intra-industry trade. In general, foreign direct investment in the tradable sectors tends to complement rather than to substitute trade flows.

Although the barriers to trade between the EU and the CEECs are almost dismantled, the trade potential between the EU and the CEECs is not yet exhausted. Trade volumes between the EU and the CEECs have been estimated at between one-half and two-thirds of those 'normal' between the EU and other markets economies, and at between one-third and two-fifth of those among EU Members. The non-exploited trade potential is highest for the less affected countries, i.e. in Portugal, France and the UK. Furthermore, the comparative advantage of the CEECs in labour-intensive goods is expected to diminish over time in the wake of converging per capita incomes. Thus, transition and opening, as well as implementation of the Europe Agreements has induced a dramatic reorientation of trade flows of the CEECs toward the EU, which has not yet come to an end. It is hard to evaluate the additional impact of accession on trade between the EU and the CEECs. Although EU countries trade between 20 and 60 per cent more with other EU countries than with non-EU countries of the same characteristics, we cannot conclude that accession will increase the trade potential in these dimensions: the conditions to trade between the EU and the CEECs resemble already those of trade among EU Members. Nevertheless, accession will, beyond the removal of the remaining tariff barriers in agriculture and the harmonisation of product standards, contribute to the credibility of economic reform in the CEECs. This may enforce the exploitation of gains from specialisation and as a consequence increase trade volumes. However, even if accession is delayed, trade between the EU and the CEECs is expected to continue to grow at double digit rates p.a.

The magnitude of capital flows from the EU to the CEECs is, at around 0.15 per cent of GDP and 0.7 per cent of gross fixed investment in the EU negligible. Although considerable progress has been achieved in the removal of barriers to capital flows, accession of the CEECs to the EU will certainly contribute to the credibility of economic reform and thereby increase

irreversible investment. The impact of Eastern Enlargement on investment depends largely on expectations and is therefore hard to predict. In case of Southern Enlargement foreign direct investment and other capital flows have increased substantially, but declined later to pre-accession levels. The exploitation of the trade potential between the EU and the CEECs will, according to our estimate, double the trade deficit of the CEECs. Since this will be matched by increasing capital transfers, capital flows from the EU to the CEECs may double too. In particular, portfolio investment is below the level of countries with a comparable income and may therefore increase more than proportional. Thus, we expect that accession will have a higher impact on capital movements vis-à-vis the status quo than on trade, since foreign investors respond more sensitively to the credibility of economic reform than trade flows do. Note that our analysis of investment patterns indicates that FDI in the tradable sectors is likely to complement, rather than substitute trade.

Barriers to the mobility of labour, at least on the EU's side, still remain high. In view of the prevailing restrictions to migration, uncertainty as to the impact of accession to the EU on the mobility of labour is much higher than it is in either the goods or the capital market. At present, the share of nationals from the CEECs in the population and the workforce of the EU-15 is, at 0.2 per cent and 0.3 per cent, respectively, negligible. These rather low figures certainly reflect restrictive immigration regulations in the EU Member States.

Trade and capital movements contribute to the convergence of per capita incomes, but the large income gap between the EU and the CEECs will persist for decades even under optimistic assumptions. Thus, pecuniary incentives for migration will diminish only slowly. However, our time-series analysis drawing on post-war migration to Germany suggests that it will take decades rather than years until migration stocks have adjusted to a given income differential. In case of the CEECs, an initial net immigration of some 335,000 persons is expected immediately after the introduction of free movement of labour for all ten candidate countries. This figure will be halved in less than a decade. Around 35% of the residents from the CEECs are expected to be employees. However, although net migration figures are rather moderate, a considerable stock of migrants from the CEECs evolves over time: in some thirty years an equilibrium is reached with some 3.9 million residents from the CEEC-10 in the EU-15. This figure corresponds to a share of around 1 per cent in the population and the workforce of the EU, and to a share of around 4 per cent in the population of the CEECs. Nevertheless, migration from the CEECs will concentrate on few countries. For Germany the long-run share of

nationals from the CEECs in the population is estimated at some 2.5 percent. Trade and capital flows can certainly contribute to higher wages and economic growth in the CEECs and thus mitigate migration pressures. It is worth noting that these measures have only a long-run impact on the migration potential: simple simulation exercises demonstrate that under extreme optimistic assumptions on growth in the CEECs and pessimistic assumptions on employment in the EU, the long-run migration potential falls by 20 per cent, while under extreme pessimistic assumptions on growth in the CEECs, and optimistic assumptions on employment in the EU, it will increase by 25 per cent relative to the baseline scenario. Nevertheless, those simulations do not capture the impact of growth and economic reforms on expectations which certainly play an important role in migration decisions.

At first glance, the development of trade, capital flows and migration between the EU and the CEECs in the course of economic integration follows the prediction of the standard models of trade theory: the EU exports capital as well as human and physical capital intensive goods to the CEECs, and imports labour and labour intensive good from there. The standard model predicts that in this case human and physical capital gains in the EU and loses in the CEECs, while (unskilled) labour gains in the CEECs and loses in the EU. Nevertheless, on the basis of our findings, two additional qualifications apply to these standard predictions:

- 1) The EU is not an isolated economic area. This implies that scale is important. Integrating the CEECs into the good markets of the EU only has an impact on relative wages, if they become marginal suppliers of labour intensive goods. However, the CEECs are economically rather small countries. The shares of their exports are well below ten percent in almost all markets of EU countries. It is therefore rather unlikely that the removal of barriers to trade will have an economy-wide impact on relative wages even in the most affected countries. The same line of argument applies to capital mobility: present capital flows are certainly too small to affect interest rates and hence relative wages in economies with open capital markets. This holds true even if capital flows double in the course of accession.

Nevertheless, in certain markets where transport costs are high and factor mobility is low, trade and FDI between the EU and the CEECs can affect employment and wages. This may be the case in specific branches of the bordering regions such as clothing, construction, electric machinery, measuring instruments, and, to lesser extent, motor vehicles. In those branches the segmentation of production processes in human capital

intensive and labour intensive activities may have in future an impact on wages. Foreign direct investment plays an important role for those processes. At the present stage those effects are too small for a quantitative evaluation. Nevertheless, if integration gains momentum its labour market impact can be found there.

- 2) Large differences in unit-values between EU-imports from the CEECs and EU-imports from industrialised countries indicate that producers are specialised in different price and quality segments of markets. Thus, most imports from the CEECs do not compete with local producers in the EU. The same holds true for exports of the EU to the CEECs. However, complete specialisation of the EU and the CEECs in different markets creates a win-win situation: the income of all factors of production will increase.

The quantitative analysis conducted in Chapter 6 as well as a number of other empirical studies found a rather small impact of migration on wages and employment. An immigration of labour in the dimensions sketched in our projections would not involve large wage and employment effects even in the two most affected countries, i.e. in Austria and Germany. Nevertheless, in some branches and regions blue-collar workers may be negatively affected if immigration increases by several percentage points there in few years. It is worth noting that skill levels of migrants from the CEECs deviate considerably from other foreigner groups: formal educational levels of migrants are higher than those of EU natives. However, employees from the CEECs work in the same branches as other foreigners and are in the present, most probably, unable to transfer their human capital to host labour markets in the EU. Thus, while at the present stage immigrants from the CEECs compete similarly to other foreigners for blue-collar jobs and low-skilled jobs in the service sectors, in the medium and long term they might affect white-collar workers more than past labour migration. In general, a balanced distribution of skills among immigrants from the CEECs would mitigate labour market tensions.

Thus, we can conclude that immigration from the CEECs after the introduction of free movement of labour is likely to have, analogous to trade and capital mobility, only a minor impact on EU labour markets - if actual migration flows are in line with our projections. Still, given the considerable uncertainty surrounding the results, a case can be made for transitional periods. To avoid labour market tensions, the objective of regulating migration should be to smooth immigration flows rather than to suppress them.

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## **Annex A: Convergence of Per-Capita GDP in Europe**

Three measures of convergence are applied here in order to assess the evidence for the convergence of per capita GDPs, as well as the speed of convergence across different samples of European countries: First, we followed the traditional definition of convergence and analysed the development of the variance of incomes across countries (so-called ‘ $\sigma$ -convergence’). A declining variance of per capita incomes is interpreted as evidence for convergence. Second, we applied unit-root tests in order to analyse whether the per capita income of a country has converged to the per capita income of the sample mean. Finally, we tested for conditional convergence in a cross-country growth regressions which is derived from a simple neo-classical growth model with fixed savings. Note that the first two measures are measures of unconditional convergence, while the last measure is a measure of conditional convergence, since it controls for investment in physical and human capital. All measures are applied to three samples of countries: the present EU Members, a sample of western European countries including the EU, and a total European sample including the western European countries, the members of the former COMECON (i.e. Bulgaria, former Czechoslovakia, Hungary, Poland, Romania and the former USSR) and the former Yugoslavia. For the caveats which apply to the different measures of convergence see Box 5 in Section 7.1 of the text.

### **I. Variance of per capita incomes ( $\sigma$ -convergence)**

The most simple measure for convergence is the development of the variance of per capita incomes across economies over time. A decreasing variance of per capita incomes is an indication that per capita incomes across the sample have in fact converged. The variance of per capita GNP in the EU, the western European and the total European samples<sup>84</sup> are displayed in Figure 7.1, Section 7.1 of the text. While we can observe a tendency towards convergence of per capita incomes in the EU and the Western European sample during the post-war period. Although we can observe a declining variance in per capita incomes over time in both samples, it is worth noting that the variance of per capita incomes is significantly higher in the Western European sample. In contrast to the EU and the Western European country samples the per capita incomes in the total European sample have clearly diverged. This can be traced back to the divergence of per capita incomes between the market economies and the centrally

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<sup>84</sup> The figure relies on annual time-series of per capita GDP in purchasing power parities (1990 Geary-Khamis Dollar) collected by Maddison (1995). The data differ slightly from the Penn World Tables, which do not provide annual figures for the per capita GDP in purchasing power parities.

planned economies in Europe. A simple regression of the change in the variance in per capita incomes against the lagged variance of per capita income confirms this picture: Significant negative coefficients have been found for the lagged variance in the EU and in the Western European sample. However, both the significance and the size of the coefficient is larger in case of the EU sample. In contrast to the EU and the Western European samples, a positive coefficient on the lagged variance indicates that per capita incomes have diverged (cf. Table A.I).

Table A.I

### Sigma-Convergence

dependent variable: $\sigma^2_t - \sigma^2_{t-1}$						
	EU <sup>1)</sup> (1948-1994)		western Europe <sup>2)</sup> (1948-1994)		total Europe <sup>3)</sup> (1961-1990)	
	coefficient	t-statistic	coefficient	t-statistic	coefficient	t-statistic
$\sigma^2_{t-1}$	-0.0326	-4.357	-0.0174	-2.729	0.0149	1.985
$R^2$	0.08		0.04		0.03	

1) Without Luxembourg. - 2) EU, Norway, Switzerland, Turkey. - 3) Western Europe, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, USSR.

## II. Unit-Root Tests for Convergence

As a second measure of convergence we use unit-root tests in order to measure the convergence of incomes across our samples, following the approach of Ben-David (1993, 1996) and Estrin and Ugra (1996). The advantage of unit-root tests is that - in contrast to cross-country regressions - they make use of the full time-series information. Furthermore, the analysis of income convergence of individual countries provides information on the dispersion of convergence rates in the country samples.

We apply unit-root tests to the differential in per capita incomes between individual countries and the mean income of the country sample. The differential  $z_{it}$  in the income of country  $i$  to the group mean is measured as  $z_t = y_{it} - \bar{y}_t$ , where  $y_{it}$  denotes the log of per capita GDP in purchasing power parities of country  $i$ , and  $\bar{y}_t$  the (unweighted) mean of the log of per capita GDPs in the country sample at time  $t$ . The convergence of per capita incomes over time can then be measured by

$$(A.1) \quad z_{t+1} = \phi \cdot z_t \quad ,$$

where  $\phi$  is a measure of convergence: if  $\phi$  tends to towards one, i.e. if the income differential has a ‘unit-root’, it tends to remain constant, while values of  $\phi$  smaller than one are an indication that per capita incomes tend to converge. Conversely, values of  $\phi$  higher than one are an indication of divergence. The null-hypothesis, that  $\phi$  tends towards to one, is tested by a standard Augmented Dickey Fuller (ADF) test for the same country samples as before.<sup>85</sup>

The results are reported in Table A.II. While it can be shown that per capita incomes of most EU Members and Switzerland have converged to the average incomes of the EU-15 in the post-war period, per capita incomes of the former Members of the Council of Mutual Assistance (CMEA) and Yugoslavia have not - or they have diverged from EU income levels. The exceptions within the EU are Austria, Germany and Ireland, for which no significant evidence of convergence has been found.

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<sup>85</sup> The following formula has been applied:  $\Delta z_t = \beta \cdot z_{t-1} + \delta_1 \Delta z_{t-1} + \delta_2 \Delta z_{t-2} + \dots + \delta_{F-1} \Delta z_{t-F+1} + e_t$ . One caveat needs to be noted: The ADF is not a very powerful test. If the null hypothesis of a unit-root for the lagged income differential cannot be rejected significantly, this does not necessarily rule out that incomes have actually tended to converge. Conversely, significant coefficients for the lagged income differential provide strong evidence that incomes have converged over the time period.

Table A.II

## Unit-Root Test for the Income Differential in Europe

	EU <sup>1)</sup> (1948-1994)					Western Europe <sup>2)</sup> (1948-1992)					total Europe <sup>3)</sup> (1961-1990)				
	$\beta$	t-statistic	lag	half-life	double-life	$\beta$	t-statistic	lag	half-life	double-life	$\beta$	t-statistic	lag	half-life	double-life
Austria	-0.033	-1.175	1	21	..	-0.007	-0.300	1	104	..	-0.022	-0.541	1	31	..
Belgium	-0.039	-3.617 ***	0	18	..	-0.020	-1.964 **	1	34	..	-0.068	-0.973	5	10	..
Denmark	-0.025	-2.088 **	1	27	..	-0.022	-1.732 *	1	31	..	-0.026	-0.545	6	26	..
Finland	-0.194	-2.639 ***	1	3	..	-0.091	-1.7273 *	1	7	..	-0.026	-0.869	1	27	..
France	-0.014	-2.316 **	5	48	..	-0.004	-0.794	2	170	..	0.036	0.990	1	-20	..
Germany	-0.013	-1.308	6	53	..	-0.007	-0.843	6	100	..	-0.097	-1.063	1	7	..
Italy	-0.094	-2.798 ***	1	7	..	-0.054	-2.035 **	1	13	..	-0.030	-0.985	1	23	..
Netherlands	-0.042	-3.088 ***	1	16	..	-0.030	-2.685 ***	4	23	..	-0.104	-1.295	10	6	..
Ireland	-0.007	-0.866	3	98	..	-0.051	-1.218	3	13	..	0.022	0.212	1	-31	..
Greece	-0.026	-2.174 **	3	26	..	-0.029	-2.240 **	1	23	..	-0.012	-0.794	10	55	..
Portugal	-0.017	-2.103 **	4	40	..	-0.020	-2.239 **	1	34	..	-0.022	-2.086 **	1	31	..
Spain	-0.027	-2.076 **	3	26	..	-0.031	-2.221 **	3	22	..	-0.015	-1.141	6	46	..
Sweden	-0.026	-2.900 ***	2	27	..	-0.019	-2.660 ***	1	36	..	-0.050	-1.809 *	2	13	..
UK	-0.036	-3.301 ***	1	19	..	-0.032	-3.208 ***	1	21	..	-0.074	-1.859 *	1	9	..
Norway	-0.018	-0.735	2	38	..	-0.006	-0.343	1	108	..	-0.059	-1.404	3	11	..
Switzerland	-0.023	-3.760 ***	2	30	..	-0.019	-3.351 ***	2	36	..	-0.011	-0.798	3	64	..
Turkey	0.004	0.901	5	..	171	0.003	0.797	5	..	202	-0.004	-0.929	1	185	..
Bulgaria <sup>4)</sup>	-0.034	-1.098	2	20	..	..	..	..	..	..	0.004	0.682	1	..	165
Czechoslovakia <sup>4)</sup>	-0.033	-0.865	1	21	..	..	..	..	..	..	-0.099	-1.859	1	7	..
Hungary <sup>4)</sup>	-0.031	-0.958	1	22	..	..	..	..	..	..	0.012	2.200	1	..	58
Poland <sup>4)</sup>	-0.031	-0.893	1	22	..	..	..	..	..	..	0.007	0.988	2	..	106
Romania <sup>4)</sup>	0.004	0.760	1	..	157	..	..	..	..	..	0.003	0.657	1	..	245
USSR <sup>4)</sup>	0.021	2.300	1	..	33	..	..	..	..	..	0.028	3.299	5	..	25
Yugoslavia <sup>4)</sup>	-0.006	-0.721	7	114	..	..	..	..	..	..	-0.003	-0.460	1	240	..

Half-life: Years until half of the initial gap in log per capita incomes is closed in converging economies (i.e  $\phi < 1$ ).  
Double-Life: Years until the initial gap in log per capita incomes doubles in diverging economies ( $\phi > 1$ ).

Augmented Dickey-Fuller-test (ADF) for unit-roots. Formula:  $\Delta z_t = \beta^* z_{t-1} + \delta_1 \Delta z_{t-1} + \delta_2 \Delta z_{t-2} + \dots + \delta_{F-1} \Delta z_{t-F+1} + \epsilon_t$ .

McKinnon critical values for rejection of the unit-root hypothesis have been used.

Lags have been chosen by the Akaike-information criteria under consideration of the Durbin-Watson Statistics.

\*\*\*, \*\*, \* significant at the 1, 5, 10 per cent level, respectively.

1) Without Luxembourg. - 2) EU, Norway, Switzerland, Turkey. - 3) Western Europe, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, USSR, Yugoslavia. - 4) 1961-1989.

Within the Western European sample the evidence for convergence is less significant than in the EU sample. In line with the results of the first measure for convergence no trend of convergence has been found for the total European sample. Again, positive coefficients for most CMEA-Members indicate that per capita incomes have diverged in the post-war period from those in the EU and other Western European countries. This confirms findings from other studies (Estrin and Ugra 1995). Finally, it worth noting that convergence rates differ largely between individual countries even within the EU and the Western European samples. If we neglect the outliers Finland, Ireland and Italy, the half-life of an initial gap in per capita incomes to the sample mean varied between 20 and 50 years in the EU country sample.

### III. Cross-Country Regressions

As a third measure of convergence we followed the popular approach of measuring the speed of convergence by cross-country regressions. The equation for the estimate can be derived from a simple neo-classical growth model (Solow 1956) with a standard constant return to scale production function and constant saving rate (Mankiw et al. 1992, Islam 1996). We estimated the equation

$$(A.2) \quad \ln(y_{1990}) - \ln(y_{1950}) = a_0 + a_1 \cdot \ln(y_{1950}) + a_2 \cdot \ln(s) + a_3 \cdot \ln(n + g + \delta)$$

and, in restricted form, the equation

$$(A.3) \quad \ln(y_{1990}) - \ln(y_{1950}) = a_0 + a_1 \cdot \ln(y_{1950}) + a_2 \cdot [\ln(s) - \ln(n + g + \delta)] ,$$

where  $y_{1990}$  and  $y_{1950}$  denote per capita GDP in purchasing power parities in 1990 and 1950 respectively,  $s$  the ratio of gross fixed investment to GDP (period average),  $n$  the rate of population growth,  $g$  the rate of technological progress and  $\delta$  the depreciation rate of the capital stock. As in other studies, a rate of 0.05 has been assumed for  $g+\delta$ . The restricted equation (A.2) can be derived from the Solow-growth model.<sup>86</sup> The data is depicted from the Penn World Tables and the results are presented in Table A.III.

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<sup>86</sup> More precisely, a Taylor-approximation of the Solow-model around the steady state can be transformed into

$$\begin{aligned} \ln(y_1) - \ln(y_0) &= a + (1 - e^{-\beta T}) \cdot \ln(y_0) + (1 - e^{-\beta T}) \cdot \frac{\alpha}{1 - \alpha} \ln(s) - (1 - e^{-\beta T}) \cdot \frac{\alpha}{1 - \alpha} \ln(n + g + \delta) \\ &= a + (1 - e^{-\beta T}) \cdot \ln(y_0) + (1 - e^{-\beta T}) \cdot \frac{\alpha}{1 - \alpha} [\ln(s) - \ln(n + g + \delta)] \end{aligned} ,$$

where  $a$  is a parameter derived from the state of technology,  $\beta$  denotes the convergence rate,  $T$  the time span between 0 and 1, and  $\alpha$  the capital share. Thus, the coefficient on initial income implicitly gives the convergence parameter, and the capital share can be derived from the restricted regression (cf. Islam 1994).

Table A.III

### Cross-section Results 1950-1990

	EU (15)	Western Europe (21)	total Europe (28)
<i>unrestricted regression</i>			
c	5.0492 *** (-3.533)	4.1426 *** (-8.374)	1.4854 (-0.891)
ln ( $y_{1950}$ )	-0.5545 *** (-12.746)	-0.5385 *** (-14.554)	-0.4106 *** (-3.774)
ln ( $s$ )	0.5101 *** (-3.864)	0.6335 *** (-6.211)	-0.0856 (-0.284)
ln ( $n+g+\delta$ )	-0.5025 (-0.986)	-0.8305 *** (-5.015)	-1.0024 * (-1.799)
implied $\beta$	0.0202	0.0193	0.0132
adjusted $R^2$	0.94	0.92	0.39
<i>restricted regression</i>			
c	5.0273 *** (-14.730)	4.5772 *** (-16.984)	3.9626 *** (-4.522)
ln ( $y_{1950}$ )	-0.5545 *** (-13.329)	-0.5322 *** (-14.193)	-0.3801 *** (-3.408)
ln ( $s$ ) - ln ( $n+g+\delta$ )	0.5102 *** (-4.021)	0.6846 *** (-7.692)	0.1598 (-0.578)
implied $\beta$	0.0202	0.0190	0.0120
adjusted $R^2$	0.94	0.92	0.32
Wald-test for restriction			
F-statistic	0.0002	1.0951	2.9617
p-value	0.9877	0.3100	0.0981
dependent variable: $\ln(y_{1990}) - \ln(y_{1950})$			

*Notes:* t-values are in parenthesis.  $y$  denotes the log of GDP per capita in purchasing power parities,  $s$  the ratio of gross fixed investment to GDP,  $n$  the population growth rate,  $\delta$  the depreciation rate and  $g$  the rate of technological progress. Investment and population growth rates are period averages.  $(g + \delta)$  is assumed to be 0.05.  $\beta$  denotes the convergence rate,  $\alpha$  the capital share. The data are depicted from the Heston-Summers (1995) dataset.

Three main results are derived from the cross-country regressions: First, we found negative and significant coefficients for initial per capita income in all three country samples, i.e. evidence of convergence. Second, for the EU and the western European samples, the rate of convergence is, with some 2 per cent, in line with the findings of other studies. Note that a convergence rate of 2 per cent implies a rather low rate of convergence: the half-life of a differ-

ential in the log of per capita incomes is as long as 35 years. The inclusion of the socialist economies in the country sample reduces the convergence rate to 1.3 per cent, which is an indication that these economies diverged in the post-war period. Third, in line with the expectations of growth theory, positive and significant coefficients have been found for the saving rates in the EU and the western European countries. However, the negative and insignificant rate in the total European sample provides further evidence that relatively high investment shares in the socialist economies could not prevent per capita incomes from diverging from those in the developed market economies (Weitzman 1996, Easterley/Fischer 1994).

Other explanatory variables may be added to the equation in the cross-country regression to shed further light on the sources of growth and convergence. We limit our exercise here to a baseline regression; for further analysis of the impact of the inclusion of other variable see Part B, Section 3.3.4. The same caveats as for all cross-country regression apply to these results. What is measured are average convergence rates, which may be distorted by spurious results if outliers revert to the mean (cf. Section 7.1 in the text, Box 5).

#### **IV. Conclusions**

The following conclusions can be derived from these different measures of convergence: First, all three measures pointed out that per capita incomes have in fact converged throughout the post-war period in European market economies. Second, per capita incomes between the Western European market economies and the planned economies in Central and Eastern Europe have clearly diverged throughout the post-war period. Third, both the significance and the speed of convergence have been higher in the sample of the present EU Members than in the sample of the Western European economies. Note that coincidence does not necessarily mean causality: EU membership need not necessarily have promoted convergence if countries have been selected for membership because their incomes tend to converge. Fourth, the unit-root tests provide clear evidence that convergence rates have varied widely, even within the EU sample. Fifth, as in other studies the cross-country regressions found an average convergence rate of 2 per cent for the differential in log per capita GDPs. This implies that the half-life for an initial gap in the logarithm of per capita incomes is around 35 years or that it will need 35 years of the CEEC-10 to achieve an average income level of 55 per cent of the present EU.

## **Annex B: Data Description and Tests for Co-Integration of the Variables in the Migration Model**

### **I Data description**

The dependent variable in the model is the ratio of the stock of migrants in Germany to the population in the home country. Three sets of explanatory variables have been used in the model:

- The differential of per capita GDP between the home and the host country as a proxy for wage differentials;
- the employment rate in the home and in the foreign country as a proxy for employment opportunities,
- institutional variables, which capture the removal of institutional barriers to the movement of labour.

The sample covers the migration from 18 countries to Germany: Austria, Belgium, Denmark, Finland, France, Greece, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey, United Kingdom, USA and (former) Yugoslavia. Due to the iron curtain, migrants from the former COMECON countries have been excluded. Otherwise, as many countries as possible have been included to avoid a sample bias. For the stock of migrants, we used the foreign residents from these 18 countries as reported by the Federal Statistical Office in Germany as a variable. This data is available from 1967 to 1998. The stock of foreign residents is reported on December 31 (in some early years on September 30). This variable does not cover border commuters or seasonal workers who have not declared residency in Germany. However, being only several hundred thousand in number, commuters and seasonal workers are negligible at present, relative to a total number of 7.3 million foreign residents in Germany.

In the baseline estimations, the per capita GDP in purchasing power parities (1990 Geary-Khamis Dollars) from Maddison (1995) has been used as an income variable. For the years 1995 to 1998 the Maddison data have been extrapolated by the real growth rate of GDP per capita. The GDP per capita at current exchange rates has been applied in control estimations. The time series for the GDP at current exchange rates in US dollars have been depicted from

the Main Economic Indicators of the OECD and have been deflated by the consumer price index of the USA to 1990 US dollars.

The employment rate is defined as one minus the unemployment rate. Unemployment rates have been taken from the Main Economic Indicators of the OECD and, if not available, complemented by data from national statistical offices. The ILO definition has been used for all unemployment rates.

Different institutional conditions for the mobility of labour have been represented by two dummy variables: the variable *FREE* covers the free movement of persons and labour in the EU; the variable *GUEST* covers countries and periods in which guest worker agreements have been in force. Information on guest worker agreements were drawn from a study by Werner (1996). The civil war affected the immigration and return migration of former Yugoslavian nationals considerably. For regressions including Yugoslavia, the *WAR* dummy covers the years of war, while the *REPATRIATION* dummy covers the two years in which refugees were repatriated to Yugoslavia from Germany. Notice that nationals from Yugoslavia are, behind nationals from Turkey, the largest group of foreign residents in Germany.

Finally, in the regressions which explain the country-specific effects the Human Development Index (HDI) from the 1998 Human Development Report (UNDP 1998) has been applied as a 'catch-all' variable for the quality of life. Notice that the ranking of countries in the Human Development Report is rather stable over time in our sample.

The test statistics for the various samples is available from the author on request.

## **II Tests for cointegration**

The model in equation (1) of Box 5 in the Section 7.3 presumes that a long-run equilibrium between the stock of migrants and the income and employment variables exists. These variables form a dynamic equilibrium, since at least some variables (e.g. the GDP) may grow over time. It is presumed that the relation between the stock of migrants and the income and employment variables is stable when long-run equilibrium has been achieved, even if all variables grow over time. In time-series econometrics, such a dynamic equilibrium of variables is called 'cointegration' (Engle/Granger 1987). To form a cointegrated set, the variables have to fulfil two conditions: first, all variables have to be *non-stationary*, or more precisely, to be integrated of first-order (I(1)). Second, the combination of variables presumed by the theoretic-

cal model has to be *stationary*, i.e. to be I(0). This can be proved by testing the residuals of a cointegration regression for stationarity.

The analysis of cointegrated variables is meanwhile standard in time-series econometrics. However, in our analysis, time-series and cross-sectional data have been pooled. For such data sets, the tests for co-integration have been developed only recently. We based our unit-root tests for the panel data on the critical values of Im et al. (1997), and the tests for co-integrating panel regressions on Pedroni (1995, 1997). It needs to be emphasised that not all of these tests are yet published in scholarly journals, and that the results therefore have to be taken with a grain of salt.

In the first step of our analysis, we tested the stock of migrants, the income variables (per capita GDP at purchasing power parities and at current exchange rates), and the employment rates in Germany and the home countries on unit-roots for all individual countries by the standard Augmented Dickey Fuller (ADF) test. Depending on theoretical considerations, we tested some variables with a constant and some with a constant and a trend. The adequate number of lags have been tested downward from ten by the Akaike-information criteria. The results are reported in Tables A.29-A.32. In most cases, the null of a unit-root could not be rejected for the levels of the variables, while we could reject the null of a unit-root for the first-difference of most variables. This indicates that most variables are, as presumed, integrated of order one (I(1)). However, we were not able to reject the null of a unit-root for the level of the migration stock in all countries. Finally, we used the  $t_b$ -test (Im et al. 1997) to prove the stationarity of the pooled variables. Indeed, it can be shown for all variables that the null-hypothesis of a unit-root cannot be rejected, while the null-hypothesis that the variables are integrated of higher order can be rejected in all cases. Thus, we can conclude that all variables are I(1), i.e. that all variables fulfil the criteria of *non-stationarity* (cf. Tables A.29-A.31).

In the second step we tested for the *stationarity* of the residuals in a cointegrating regression. The combination of variables in the co-integrating regression follows from our theoretical considerations:

$$(B.1) \quad mst_{ht} = a_0 + a_1 * \ln(w_f / w_h)_t + a_2 * \ln(e_f)_t + a_3 * \ln(e_h)_t + \varepsilon_{ht}.$$

This regression have been estimated first for each individual country. The existence of a co-integrating relation demands that the vector of the error terms is stationary. However, the out-

come of the cointegrating is not unequivocal: for roughly half of the countries, the null of a unit-root has been rejected (cf. Table A.33). Thus, we had to apply the test to the pooled sample to derive conclusions. Pedroni (1995, 1998) proposes several tests for panel-co-integration, two of which have been applied to our panel-co-integrating regressions. Note that we did not impose here the restriction that the slope coefficients are the same across countries, as we did in the estimation of the error-correction model. Both tests strictly reject the hypotheses that the variables are non-co-integrated (cf. Table A.33). This allows us to conclude that a long-run equilibrium does exist between the stock of migrants on the one hand, and the income differential and the employment variables on the other hand. Thus, our variables form a co-integrated set and the pre-conditions to estimate the error-correction model from equation (1) in Box 5 of Section 7.3 are fulfilled.

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**DATA ANNEX**

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Table A.1

**Per Capita Incomes at Current Exchange Rates and at Purchasing Power Parities 1997**

	<b>GDP at current exchange rates</b>		<b>GNP at purchasing power parity <sup>1)</sup></b>	
	in US-Dollars per capita	in per cent of EU-15	in US-Dollars per capita	in per cent of EU-15
Bulgaria	1,200	6	3,870	19
Czech Republic	5,047	23	10,380	50
Estonia	3,300	15	5,090	25
Hungary	4,400	20	6,970	34
Latvia	2,288	11	3,970	19
Lithuania	2,581	12	4,140	20
Poland	3,500	16	6,510	31
Romania	1,546	7	4,270	21
Slovak Republic	3,624	17	7,860	38
Slovenia	9,037	42	11,880	57
<b>CEEC-10</b>	<b>3,186</b>	<b>15</b>	<b>6,253</b>	<b>30</b>
<b>EU-15</b>	<b>21,617</b>	<b>100</b>	<b>20,710</b>	<b>100</b>

1) World Bank estimate.

*Sources:* World Bank, World Development Indicators, Washington, D.C. 1999; DIW et al: Wirtschaftslage und Reformprozesse in Mittel- und Osteuropa, Sammelband 1999; IMF: International Financial Statistics, Yearbook 1999, Washington, D.C.

Table A.2

**CEEC-10: Per Capita GDP at Current Exchange Rates 1990-1998**

	1990	1991	1992	1993	1994	1995	1996	1997	1998
<i>in current US-Dollars</i>									
Bulgaria	6,623	943	1,058	1,276	1,196	1,537	1,129	1,200	876
Czech Republic	3,060	2,358	2,713	3,320	3,831	4,879	5,448	5,047	5,340
Estonia	..	97	699	1,099	1,557	2,426	2,964	3,300	2,656
Hungary	3,186	2,983	3,436	3,691	3,961	4,273	4,303	4,400	4,688
Latvia	..	..	565	842	1,432	1,769	2,017	2,288	1,923
Lithuania	..	100	238	762	1,140	1,602	2,096	2,581	2,052
Poland	1,630	1,995	2,194	2,223	2,399	3,055	3,455	3,500	2,334
Romania	1,648	1,230	851	1,159	1,323	1,573	1,571	1,546	976
Slovak Republic	2,702	1,902	2,213	2,256	2,576	3,229	3,529	3,624	2,561
Slovenia	8,699	6,326	6,275	6,366	7,233	9,431	9,471	9,037	6,468
<b>CEEC-10</b>	..	..	<b>1,931</b>	<b>2,145</b>	<b>2,384</b>	<b>2,950</b>	<b>3,172</b>	<b>3,186</b>	<b>2,524</b>
<i>memo items</i>									
CEEC-6 <sup>1)</sup>	2,469	1,856	1,964	2,164	2,369	2,907	3,115	3,109	2,474
<b>EU-15</b>	<b>18,495</b>	<b>19,085</b>	<b>20,736</b>	<b>18,736</b>	<b>19,871</b>	<b>22,675</b>	<b>23,063</b>	<b>21,617</b>	<b>23,003</b>
<i>in per cent of the EU-15</i>									
Bulgaria	36	5	5	7	6	7	5	6	4
Czech Republic	17	12	13	18	19	22	24	23	23
Estonia	..	1	3	6	8	11	13	15	12
Hungary	17	16	17	20	20	19	19	20	20
Latvia	..	..	3	4	7	8	9	11	8
Lithuania	..	1	1	4	6	7	9	12	9
Poland	9	10	11	12	12	13	15	16	10
Romania	9	6	4	6	7	7	7	7	4
Slovak Republic	15	10	11	12	13	14	15	17	11
Slovenia	47	33	30	34	36	42	41	42	28
<b>CEEC-10</b>	..	..	9	11	12	13	14	15	11
<i>memo items</i>									
CEEC-6 <sup>1)</sup>	0	0	0	0	0	0	0	0	0
CEEC-6 <sup>1)</sup>	13	10	9	12	12	13	14	14	11
<b>EU-15</b>	100	100	100	100	100	100	100	100	100

1) Bulgaria, Czechoslovakia (from 1993: Czech Republic and Slovak Republic), Hungary, Poland, Romania. -

Sources: DIW et al: Wirtschaftslage und Reformprozesse in Mittel- und Osteuropa, Sammelbände 1995,1996,1997 und 1998; IMF: International Financial Statistics, Yearbook 1999, Washington, D.C., OECD: National accounts, Main aggregates 1960-1998, Paris 1999.

Table A.3

**Purchasing Power Parity Estimates of GNP and GDP Per Capita 1997**

	World Bank		EUROSTAT		UNDP	
	<i>in USD</i>	<i>in % of EU-15</i>	<i>in Euro</i>	<i>in % of EU-15</i>	<i>in USD</i>	<i>in % of EU-15</i>
Bulgaria	3870	19	4400	23	4010	19
Czech Republic	10380	50	12000	63	10510	51
Estonia	5090	25	7000	37	5240	25
Hungary	6970	34	8900	47	7200	35
Latvia	3970	19	5100	27	3940	19
Lithuania	4140	20	5800	31	4220	20
Poland	6510	31	7500	39	6520	31
Romania	4270	21	5800	31	4310	21
Slovak Republic	7860	38	8900	47	7910	38
Slovenia	11880	57	13000	68	11800	57
<b>CEEC-10</b>	<b>6253</b>	<b>30</b>	<b>7522</b>	<b>40</b>	<b>6317</b>	<b>30</b>
<b>EU-15</b>	<b>20710</b>	<b>100</b>	<b>19000</b>	<b>100</b>	<b>20730</b>	<b>100</b>

Sources: Worldbank, World Development Indicators, CD-ROM, Washington, D.C.; Eurostat, UNDP, Human Development Report 1999, Oxford 1999; authors' calculations.

Table A.4

## EU-15 and CEEC-10: Regional Structure of Trade 1998

	exports (f.o.b.) to						imports (c.i.f.) from					
	World	EU-15	CEEC-6 <sup>1)</sup>	CEEC-10	all transition countries <sup>2)</sup>	USA	World	EU-15	CEEC-6 <sup>1)</sup>	CEEC-10	all transition countries <sup>2)</sup>	USA
	<i>in millions of U.S. Dollars</i>											
Austria	61 302	38 754	7 235	8 393	10 388	2 534	66 787	45 812	5 606	6 268	7 857	3 561
Belgium	178 461	133 355	3 655	4 084	5 875	9 170	163 276	115 528	2 467	2 707	4 205	12 589
Denmark	47 901	31 714	1 435	1 989	3 007	2 264	45 900	32 673	1 145	1 591	2 011	2 309
Finland	42 104	23 375	1 412	3 322	6 114	3 106	31 299	18 035	633	1 298	3 475	2 603
France	299 942	189 468	6 592	8 148	11 635	22 230	285 520	178 171	4 548	5 709	9 199	25 304
Germany	540 706	304 793	39 627	43 971	58 698	50 864	463 263	250 738	33 329	37 042	48 711	38 334
Greece	8 475	4 703	656	690	1 182	469	30 106	20 033	1 011	1 041	1 626	1 490
Ireland	64 568	43 939	595	657	1 512	8 727	44 052	23 640	438	468	1 514	7 136
Italy	242 586	136 873	10 389	12 754	19 946	20 801	215 911	133 072	7 414	8 809	15 472	10 877
Luxembourg	7 743	6 442	171	186	227	418	9 920	8 844	72	74	86	436
Netherlands	152 698	111 954	4 094	4 745	7 087	7 274	159 324	85 955	2 966	3 748	6 397	16 825
Portugal	24 176	19 709	192	211	280	1 189	36 911	28 497	236	260	514	1 052
Spain	106 201	74 657	2 005	2 338	3 804	4 589	138 828	94 994	1 443	1 603	2 947	7 291
Sweden	84 716	46 798	2 342	3 385	6 816	7 264	68 238	43 826	1 443	2 506	7 080	3 991
United Kingdom	268 150	142 009	4 747	5 420	8 033	35 998	309 790	150 063	3 656	4 829	7 635	42 696
<b>EU-15</b>	<b>2 129 729</b>	<b>1 308 543</b>	<b>85 147</b>	<b>100 293</b>	<b>144 604</b>	<b>176 897</b>	<b>2 069 125</b>	<b>1 229 881</b>	<b>66 407</b>	<b>77 953</b>	<b>118 729</b>	<b>176 494</b>
Bulgaria	4 064	2 099	174	231	1 029	109	4 528	2 105	242	265	1 532	172
Czech Republic <sup>3)</sup>	26 315	16 901	5 059	5 426	6 856	588	28 797	18 270	3 508	3 679	5 658	1 076
Estonia	3 243	1 787	31	488	1 159	63	4 786	2 878	124	303	984	222
Hungary	22 116	15 128	1 782	2 101	3 545	1 464	28 780	20 806	1 796	1 974	4 111	531
Latvia <sup>3)</sup>	1 812	1 025	44	264	609	52	2 899	1 602	184	562	1 028	59
Lithuania	3 711	1 409	151	660	1 985	106	5 794	2 736	517	730	2 244	166
Poland	28 228	19 285	2 017	2 771	6 126	766	47 053	31 030	2 812	3 196	6 349	1 775
Romania <sup>3)</sup>	8 128	5 253	404	439	932	305	10 615	6 144	935	979	2 281	442
Slovak Republic <sup>3)</sup>	10 005	5 591	3 143	3 264	3 801	161	12 476	6 374	3 483	3 563	5 274	111
Slovenia	9 034	5 916	607	627	2 339	252	10 068	6 993	686	691	1 583	296
<b>CEEC-10</b>	<b>116 656</b>	<b>74 394</b>	<b>13 411</b>	<b>16 271</b>	<b>28 381</b>	<b>3 865</b>	<b>155 796</b>	<b>98 938</b>	<b>14 286</b>	<b>15 942</b>	<b>31 044</b>	<b>4 849</b>
<i>memo items:</i>												
Czechoslovakia <sup>3) 4)</sup>	31 444	22 492	3 326	3 814	5 781	749	36 397	24 644	2 115	2 366	6 056	1 187
CEEC-6 <sup>1)</sup>	98 856	64 257	12 579	14 232	22 289	3 393	132 249	84 729	12 776	14 923	23 845	4 107

1) Bulgaria, Czech Republic, Slovak Republic, Hungary, Poland, Romania. - 2) CEEC-10, Albania, CIS, Bosnia & Herzegovina, Croatia, FYR Macedonia, FR Yugoslavia.  
- 3) Imports f.o.b. - 4) Without trade between Czech Republic and Slovak Republic.

Sources: IMF, Direction of Trade Statistics, September 1999, Washington, D.C.; authors' calculations.

Table A.5

## EU-15 and CEEC-10: Trade Shares by Country Groups in 1998

	exports (f.o.b.) to						imports (c.i.f.) from					
	World	EU-15	CEEC-6 <sup>1)</sup>	CEEC-10	all transition countries <sup>2)</sup>	USA	World	EU-15	CEEC-6 <sup>1)</sup>	CEEC-10	all transition countries <sup>2)</sup>	USA
	<i>in millions of U.S. Dollars</i>											
Austria	100	63	12	14	17	4	100	69	8	9	12	5
Belgium	100	75	2	2	3	5	100	71	2	2	3	8
Denmark	100	66	3	4	6	5	100	71	2	3	4	5
Finland	100	56	3	8	15	7	100	58	2	4	11	8
France	100	63	2	3	4	7	100	62	2	2	3	9
Germany	100	56	7	8	11	9	100	54	7	8	11	8
Greece	100	55	8	8	14	6	100	67	3	3	5	5
Ireland	100	68	1	1	2	14	100	54	1	1	3	16
Italy	100	56	4	5	8	9	100	62	3	4	7	5
Luxembourg	100	83	2	2	3	5	100	89	1	1	1	4
Netherlands	100	73	3	3	5	5	100	54	2	2	4	11
Portugal	100	82	1	1	1	5	100	77	1	1	1	3
Spain	100	70	2	2	4	4	100	68	1	1	2	5
Sweden	100	55	3	4	8	9	100	64	2	4	10	6
United Kingdom	100	53	2	2	3	13	100	48	1	2	2	14
<b>EU-15</b>	100	61	4	5	7	8	100	59	3	4	6	9
Bulgaria	100	38	4	18	54	3	100	47	9	13	39	3
Czech Republic <sup>3)</sup>	100	52	4	6	25	3	100	46	5	6	34	4
Estonia	100	64	19	21	26	2	100	63	12	13	20	4
Hungary	100	55	1	15	36	2	100	60	3	6	21	5
Latvia <sup>3)</sup>	100	68	7	10	22	3	100	66	6	7	13	4
Lithuania	100	65	5	5	11	4	100	58	9	9	21	4
Poland	100	68	8	9	16	7	100	72	6	7	14	2
Romania <sup>3)</sup>	100	56	31	33	38	2	100	51	28	29	42	1
Slovak Republic <sup>3)</sup>	100	65	7	7	26	3	100	69	7	7	16	3
Slovenia	100	57	2	15	34	3	100	55	6	19	35	2
<b>CEEC-10</b>	100	64	11	14	24	3	100	64	9	10	20	3
<i>memo items:</i>												
Czechoslovakia <sup>3) 4)</sup>	100	72	11	12	18	2	100	68	6	7	17	3
CEEC-6 <sup>1)</sup>	100	65	13	14	23	3	100	64	10	11	18	3

1) Bulgaria, Czech Republic, Slovak Republic, Hungary, Poland, Romania. -2) CEEC-10, Albania, CIS, Bosnia & Herzegovina, Croatia, FYR Macedonia, FR Yugoslavia. - 3) Imports f.o.b. - 4) Without trade between Czech Republic and Slovak Republic.

Sources: IMF, Direction of Trade Statistics, September 1999, Washington, D.C.; authors' calculations.

Table A.6

## EU-15 and CEEC-6: Regional Structure of Trade 1988

	exports (f.o.b.) to					imports (c.i.f.) from				
	world	EU-15	CEEC-6 <sup>1)</sup> all transition countries	USA		world	EU-15	CEEC-6 <sup>1)</sup> all transition countries	USA	
	<i>in millions of U.S. Dollars</i>									
Austria	31 027	20 688	1 471	3 004	1 094	36 223	25 823	1 446	2 540	1 243
Belgium-Luxembourg	92 135	71 332	464	1 188	4 579	92 436	70 630	419	1 568	3 895
Denmark	27 653	17 665	246	467	1 589	25 941	17 821	370	610	1 563
Finland	21 748	12 960	236	3 530	1 204	21 130	12 238	425	3 156	1 338
France	167 787	104 025	1 045	3 613	11 867	178 857	112 586	1 452	4 872	13 671
Germany	323 323	207 238	5 820	14 698	26 020	250 467	149 326	5 168	12 152	16 583
Greece	5 429	3 688	116	270	341	12 323	8 148	339	751	473
Ireland	18 723	14 388	53	84	1 445	15 567	10 693	110	173	2 482
Italy	127 859	79 289	1 224	4 937	11 385	138 553	85 784	2 197	7 673	7 715
Netherlands	103 213	81 228	661	1 519	4 402	99 474	68 022	742	2 122	7 587
Portugal	10 989	8 536	26	100	644	17 866	12 102	47	99	752
Spain	40 341	27 330	162	490	3 164	59 643	36 484	360	1 615	5 404
Sweden	49 747	29 935	550	1 080	4 902	45 627	29 031	602	1 471	3 469
United Kingdom	145 165	79 267	1 012	2 286	19 140	189 340	110 179	1 251	2 897	19 317
<b>EU-15<sup>3)</sup></b>	<b>1 165 139</b>	<b>757 569</b>	<b>13 086</b>	<b>37 266</b>	<b>91 776</b>	<b>1 183 447</b>	<b>748 867</b>	<b>14 928</b>	<b>41 699</b>	<b>85 492</b>
Bulgaria <sup>4)</sup>	2 949	565	935	1 050	35	5 856	2 132	1 161	1 315	94
Czechoslovakia <sup>5)</sup>	14 887	4 364	2 462	7 974	91	14 570	5 221	2 442	7 510	57
Hungary	9 949	3 017	1 161	4 205	294	9 372	3 238	1 148	3 776	210
Poland	13 960	5 003	1 618	5 412	364	12 712	4 689	1 464	5 318	273
Romania	11 392	3 495	1 453	4 434	560	7 643	605	1 346	4 269	233
<b>CEEC-6<sup>1)</sup></b>	<b>53 137</b>	<b>16 444</b>	<b>7 629</b>	<b>23 075</b>	<b>1 344</b>	<b>50 153</b>	<b>15 885</b>	<b>7 561</b>	<b>22 187</b>	<b>867</b>
<b>all transition countries<sup>2)</sup></b>	<b>115 311</b>	<b>39 322</b>	<b>21 884</b>	<b>41 308</b>	<b>2 703</b>	<b>125 902</b>	<b>39 830</b>	<b>24 317</b>	<b>43 308</b>	<b>4 625</b>
<i>memo items:</i>										
U.S.S.R. <sup>4)</sup>	49 511	17 479	12 845	14 492	592	62 578	18 007	15 319	17 859	3 033
Yugoslavia	12 663	5 399	1 410	3 741	767	13 171	5 938	1 437	3 262	725
other transition countries	62 174	22 878	14 255	18 233	1 359	75 749	23 945	16 756	21 121	3 758

1) Bulgaria, Czech Republic and Slovak Republic, Hungary, Poland, Romania. - 2) CEEC-6, (former) U.S.S.R., (former) Yugoslavia.  
3) Sum of country reports as indicated in the table. - 4) Estimate by the IMF (DOTS world total). - 5) Imports f.o.b.

Sources: IMF, Direction of Trade Statistics, Yearbook 1991, Yearbook 1995, Washington, D.C.; author's calculations.

Table A.7

## EU-15 and CEEC-6: Trade Shares by Country Groups 1988

	exports (f.o.b.) to				imports (c.i.f.) from			
	EU-15	CEEC-6 <sup>1)</sup>	all transition countries <sup>2)</sup>	USA	EU-15	CEEC-6 <sup>1)</sup>	all transition countries <sup>2)</sup>	USA
	<i>share of total exports and imports in per cent</i>							
Austria	67	5	10	4	71	4	7	3
Belgium-Luxembourg	77	1	1	5	76	0	2	4
Denmark	64	1	2	6	69	1	2	6
Finland	60	1	16	6	58	2	15	6
France	62	1	2	7	63	1	3	8
Germany	64	2	5	8	60	2	5	7
Greece	68	2	5	6	66	3	6	4
Ireland	77	0	0	8	69	1	1	16
Italy	62	1	4	9	62	2	6	6
Netherlands	79	1	1	4	68	1	2	8
Portugal	78	0	1	6	68	0	1	4
Spain	68	0	1	8	61	1	3	9
Sweden	60	1	2	10	64	1	3	8
United Kingdom	55	1	2	13	58	1	2	10
<b>EU-15<sup>3)</sup></b>	<b>65</b>	<b>1</b>	<b>3</b>	<b>8</b>	<b>63</b>	<b>1</b>	<b>4</b>	<b>7</b>
Bulgaria <sup>4)</sup>	19	32	36	1	36	20	22	2
Czechoslovakia <sup>5)</sup>	29	17	54	1	36	17	52	0
Hungary	30	12	42	3	35	12	40	2
Poland	36	12	39	3	37	12	42	2
Romania	31	13	39	5	8	18	56	3
<b>CEEC-6<sup>1)</sup></b>	<b>31</b>	<b>14</b>	<b>43</b>	<b>3</b>	<b>32</b>	<b>15</b>	<b>44</b>	<b>2</b>
<b>all transition countries<sup>2)</sup></b>	<b>34</b>	<b>19</b>	<b>36</b>	<b>2</b>	<b>32</b>	<b>19</b>	<b>34</b>	<b>4</b>
<i>memo items:</i>								
U.S.S.R. <sup>4)</sup>	35	26	29	1	29	24	29	5
Yugoslavia	43	11	30	6	45	11	25	6
other transition countries	37	23	29	2	32	22	28	5

1) Bulgaria, Czech Republic and Slovak Republic, Hungary, Poland, Romania. - 2) CEEC-6, (former) U.S.S.R., (former) Yugoslavia. - 3) Sum of country reports as indicated in the table. - 4) Estimate by the IMF (DOTS world total). - 5) Imports f.o.b.

Sources: IMF, Direction of Trade Statistics, Yearbook 1991, Yearbook 1995, Washington, D.C.; author's calculations.

Table A.8

<b>EU-15: Exports to and Imports from the CEEC-10 as a Percentage of GDP</b>		
	<b>exports (f.o.b.) to the CEEC-10</b>	<b>imports (c.i.f.) from the CEEC-10</b>
	<i>in per cent of GDP</i>	
Austria	3.96	2.96
Belgium	1.64	1.08
Denmark	1.14	0.91
Finland	2.59	1.01
France	0.56	0.39
Germany	2.04	1.72
Greece	0.57	0.86
Ireland	0.77	0.55
Italy	1.08	0.74
Luxembourg	1.02	0.40
Netherlands	1.21	0.96
Portugal	0.20	0.24
Spain	0.40	0.28
Sweden	1.44	1.06
United Kingdom	0.39	0.35
<b>EU-15</b>	<b>1.18</b>	<b>0.92</b>

Sources: IMF, Direction of Trade Statistics, September 1999, Washington, D.C.; OECD, Main Economic Indicators, Paris, March 2000, authors' calculations.

Table A.9

**EU-15: Exports and Imports by Country Groups**

	exports (f.o.b.) to					imports (c.i.f.) from						
	World	EU-15	CEEC-6 <sup>1)</sup>	CEEC-10 <sup>2)</sup> all transition countries <sup>3)</sup>	USA	World	EU-15	CEEC-6 <sup>1)</sup>	CEEC-10 <sup>2)</sup> all transition countries <sup>3)</sup>	USA		
	<i>in per cent of GDP</i>											
Austria	28.93	18.29	3.41	3.96	4.90	1.20	31.51	21.62	2.65	2.96	3.71	1.68
Belgium	71.47	53.40	1.46	1.64	2.35	3.67	65.39	46.26	0.99	1.08	1.68	5.04
Denmark	27.45	18.18	0.82	1.14	1.72	1.30	26.31	18.73	0.66	0.91	1.15	1.32
Finland	32.80	18.21	1.10	2.59	4.76	2.42	24.39	14.05	0.49	1.01	2.71	2.03
France	20.62	13.03	0.45	0.56	0.80	1.53	19.63	12.25	0.31	0.39	0.63	1.74
Germany	25.13	14.17	1.84	2.04	2.73	2.36	21.53	11.65	1.55	1.72	2.26	1.78
Greece	6.97	3.87	0.54	0.57	0.97	0.39	24.76	16.47	0.83	0.86	1.34	1.23
Ireland	76.13	51.80	0.70	0.77	1.78	10.29	51.94	27.87	0.52	0.55	1.79	8.41
Italy	20.47	11.55	0.88	1.08	1.68	1.76	18.22	11.23	0.63	0.74	1.31	0.92
Luxembourg	42.22	35.13	0.93	1.02	1.24	2.28	54.09	48.22	0.39	0.40	0.47	2.38
Netherlands	39.05	28.63	1.05	1.21	1.81	1.86	40.75	21.98	0.76	0.96	1.64	4.30
Portugal	22.63	18.45	0.18	0.20	0.26	1.11	34.55	26.67	0.22	0.24	0.48	0.98
Spain	18.24	12.82	0.34	0.40	0.65	0.79	23.85	16.32	0.25	0.28	0.51	1.25
Sweden	35.95	19.86	0.99	1.44	2.89	3.08	28.96	18.60	0.61	1.06	3.00	1.69
United Kingdom	19.20	10.17	0.34	0.39	0.58	2.58	22.18	10.74	0.26	0.35	0.55	3.06
<b>EU-15</b>	<b>25.08</b>	<b>15.41</b>	<b>1.00</b>	<b>1.18</b>	<b>1.70</b>	<b>2.08</b>	<b>24.36</b>	<b>14.48</b>	<b>0.78</b>	<b>0.92</b>	<b>1.40</b>	<b>2.08</b>

1) Bulgaria, Czech Republic, Slovak Republic, Hungary, Poland, Romania. - 2) CEEC-6, Estonia, Latvia, Lithuania, Slovenia.

Sources: IMF, Direction of Trade Statistics, September 1999, Washington, D.C.; OECD, Main Economic Indicators, Paris, March 2000, authors' calculations.

Table A.10

**Similarity of EU-Imports from the CEECs with EU-Imports from Other Countries**

	unweighted similarity index <sup>1)</sup>		tariff-weighted similarity index <sup>1)</sup>	
	1989	1996	1989	1996
<i>similarity of imports from CEEC-6 with imports from</i>				
EU-12	34.4	43.0	33.9	40.7
Southern European countries <sup>2)</sup>	32.4	41.5	33.0	39.7
Other industrial countries <sup>3)</sup>	22.8	30.9	23.2	31.1
Other transition countries <sup>4)</sup>	43.5	21.8	53.8	38.7
Developing countries <sup>5)</sup>	26.1	31.5	33.6	38.0
<i>similarity of imports from CEEC-10 with imports from</i>				
EU-12	..	44.9	..	42.1
Southern European countries <sup>2)</sup>	..	43.0	..	41.5
Other industrial countries <sup>3)</sup>	..	30.9	..	31.1
Other transition countries <sup>4)</sup>	..	24.6	..	40.4
Developing countries <sup>5)</sup>	..	32.7	..	38.9

1) Index: 100 = perfect similarity of imports, 0 = no overlapping imports. See text for calculation of index. - 2) Greece, Portugal and Spain. - 3) OECD countries without EU. - 4) Former USSR, former Yugoslavia without Slovenia, Albania. - 5) Rest of World.

Sources: Authors' calculations from Eurostat Trade Data.

Table A.11

**Similarity of Imports of EU Members from CEEC-10 with Imports from Other Countries**  
(Tariff-weighted similarity index 1996<sup>1)</sup>)

	similarity of imports from CEEC-10 with imports from				
	southern European countries <sup>2)</sup>	EU-12	other industrial countries <sup>3)</sup>	other transition countries <sup>4)</sup>	developing countries <sup>5)</sup>
Austria	25.6	38.1	25.7	26.6	25.9
Belgium-Luxemb.	29.6	26.5	19.5	13.4	23.6
Denmark	28.7	22.4	24.5	19.6	32.1
France	29.0	31.5	21.3	18.8	29.6
Finland	22.3	23.7	14.5	13.4	17.7
Germany	30.7	36.5	28.8	43.0	37.9
Greece	22.0	25.4	18.1	19.9	23.4
Ireland	15.7	14.8	13.0	5.8	12.7
Italy	28.2	27.9	18.9	35.0	32.3
Netherlands	24.8	29.2	23.6	22.6	30.0
Portugal	18.9	19.8	16.4	3.8	10.6
Spain	14.1	20.9	15.6	9.8	10.6
Sweden	27.4	28.6	23.6	16.1	25.9
UK	31.2	27.4	18.2	16.3	22.9

1) Index: 100 = perfect similarity of imports, 0 = no overlapping imports. See text for calculation of index. - 2) Greece, Portugal and Spain. - 3) OECD countries without EU. - 4) Former USSR, former Yugoslavia without Slovenia, Albania. - 5) Rest of World.

*Sources:* Authors' calculations from Eurostat Trade Data.

Table A.12

## Germany: Regional Distribution of Trade with the CEECs in 1997

		Baden-Württemberg	Bavaria	Berlin (State)	Brandenburg	Bremen (State)	Hamburg (State)	Hessen	Mecklenburg-Western Pomeran	Lower Saxony	North Rhine-Westphalia	Rhineland-Palatinate	Saarland	Saxony	Saxony-Anhalt	Schleswig-Holstein	Thuringia	total
		<i>trade shares in per cent</i>																
Bulgaria	imports	0.11	0.17	0.21	0.06	0.06	0.17	0.10	0.06	0.10	0.13	0.13	0.05	0.18	0.13	0.03	0.15	0.12
	exports	0.13	0.10	0.17	0.09	0.04	0.06	0.11	0.04	0.10	0.12	0.12	0.07	0.44	0.22	0.09	0.12	0.12
	trade turnover	0.12	0.13	0.19	0.07	0.05	0.14	0.11	0.05	0.10	0.13	0.12	0.06	0.32	0.18	0.06	0.14	0.12
Czech Republic	imports	1.90	3.91	1.55	2.07	0.53	0.45	1.53	1.64	1.16	1.15	1.51	1.10	11.63	4.91	0.56	4.33	1.77
	exports	1.62	2.57	1.79	2.49	0.41	1.11	1.77	1.00	1.77	1.52	1.35	1.78	5.97	4.92	0.94	3.10	1.86
	trade turnover	1.73	3.18	1.69	2.25	0.48	0.66	1.63	1.33	1.48	1.33	1.41	1.46	8.66	4.92	0.75	3.65	1.82
Estonia	imports	0.03	0.02	0.02	0.07	0.12	0.11	0.03	3.22	0.08	0.05	0.02	0.01	0.05	0.07	0.22	0.09	0.06
	exports	0.06	0.05	0.08	0.12	0.08	0.08	0.08	0.38	0.08	0.07	0.06	0.02	0.20	0.31	0.19	0.08	0.07
	trade turnover	0.05	0.03	0.05	0.09	0.10	0.10	0.05	1.82	0.08	0.06	0.04	0.01	0.13	0.20	0.20	0.08	0.07
Hungary	imports	2.06	2.52	0.85	0.49	0.82	0.50	1.24	3.07	1.46	0.94	2.55	1.20	2.39	0.97	0.41	1.46	1.39
	exports	1.37	1.94	1.57	1.63	0.23	0.53	1.32	0.57	0.99	0.97	2.24	1.00	1.85	1.40	0.77	1.64	1.31
	trade turnover	1.65	2.20	1.25	0.97	0.56	0.51	1.27	1.84	1.21	0.95	2.37	1.10	2.11	1.21	0.59	1.56	1.35
Latvia	imports	0.03	0.05	0.03	0.08	0.31	0.12	0.01	2.50	0.13	0.09	0.03	0.01	0.25	0.06	0.32	0.10	0.08
	exports	0.07	0.07	0.14	0.19	0.06	0.16	0.10	0.29	0.15	0.09	0.06	0.04	0.31	0.20	0.12	0.14	0.10
	trade turnover	0.05	0.06	0.09	0.13	0.20	0.13	0.04	1.41	0.14	0.09	0.05	0.03	0.28	0.14	0.22	0.12	0.09
Lithuania	imports	0.04	0.07	0.19	0.13	0.27	0.13	0.03	1.43	0.19	0.17	0.09	0.01	0.11	0.17	0.21	0.23	0.12
	exports	0.12	0.11	0.38	0.46	0.25	0.25	0.15	0.73	0.20	0.19	0.20	0.05	0.33	0.37	0.23	0.68	0.19
	trade turnover	0.09	0.09	0.30	0.27	0.26	0.17	0.08	1.09	0.20	0.18	0.15	0.03	0.23	0.28	0.22	0.48	0.15
Poland	imports	1.27	1.23	5.46	8.19	1.20	1.03	0.86	11.01	3.40	2.26	1.35	0.93	5.46	8.14	1.81	3.81	1.84
	exports	1.49	1.54	3.38	9.69	1.05	2.20	2.13	5.02	2.76	2.60	1.85	1.03	5.31	3.99	2.45	2.86	2.33
	trade turnover	1.40	1.40	4.31	8.82	1.13	1.39	1.36	8.06	3.07	2.43	1.65	0.98	5.38	5.85	2.13	3.28	2.10
Romania	imports	0.31	0.55	0.39	0.16	0.15	0.14	0.16	0.19	0.33	0.59	0.27	0.08	0.39	0.43	0.08	0.23	0.36
	exports	0.30	0.38	0.36	0.26	0.12	0.20	0.26	0.19	0.24	0.43	0.26	0.15	0.49	0.37	0.31	0.38	0.35
	trade turnover	0.30	0.45	0.37	0.20	0.14	0.16	0.20	0.19	0.28	0.51	0.27	0.12	0.44	0.40	0.19	0.31	0.36
Slovakia	imports	0.63	0.73	0.66	0.99	0.14	0.12	0.51	0.67	1.51	0.36	0.28	0.26	1.32	0.98	0.23	0.70	0.54
	exports	0.38	0.53	0.95	0.54	0.11	0.21	0.48	0.36	1.05	0.41	0.27	0.35	2.33	1.20	0.32	0.63	0.51
	trade turnover	0.48	0.62	0.82	0.80	0.13	0.15	0.50	0.52	1.27	0.38	0.27	0.31	1.85	1.10	0.28	0.66	0.52
Slowenien	imports	0.85	0.97	0.41	0.78	0.16	0.08	0.25	0.60	0.74	0.43	0.27	0.85	1.21	0.59	0.48	0.80	0.53
	exports	0.39	0.48	0.28	0.45	0.11	0.15	0.35	0.09	0.35	0.35	0.37	0.24	0.47	0.34	0.59	0.73	0.40
	trade turnover	0.58	0.70	0.34	0.64	0.14	0.10	0.29	0.35	0.54	0.39	0.33	0.53	0.82	0.45	0.54	0.76	0.46
CEEC-10	imports	7.21	10.21	9.78	13.02	3.76	2.87	4.72	24.39	9.09	6.17	6.50	4.50	22.99	16.45	4.36	11.89	6.80
	exports	5.95	7.77	9.10	15.93	2.46	4.95	6.76	8.67	7.69	6.74	6.78	4.73	17.69	13.32	6.00	10.37	7.25
	trade turnover	6.46	8.88	9.40	14.24	3.20	3.52	5.52	16.64	8.36	6.45	6.67	4.62	20.21	14.72	5.18	11.05	7.04
<i>memo-item:</i>																		
CEEC-6	imports	6.27	9.12	9.13	11.95	2.91	2.42	4.40	16.64	7.96	5.43	6.09	3.62	21.36	15.56	3.12	10.68	6.01
	exports	5.30	7.06	8.22	14.70	1.96	4.32	6.08	7.17	6.91	6.04	6.09	4.38	16.39	12.10	4.87	8.74	6.49
	trade turnover	5.69	8.00	8.63	13.11	2.49	3.01	5.06	11.98	7.41	5.73	6.09	4.02	18.75	13.65	4.00	9.60	6.26

Source: Statistisches Bundesamt, Tabellennummer 3510 und 0525, Wiesbaden 1999; author's calculations.

Table A.13

**EU-15: Share of Trade with the CEECs in Gross-Output 1994**

	exports in % of gross output		imports in % of gross output	
	total manufacturing	textiles, clothing, footwear & leather	total manufacturing	textiles, clothing, footwear & leather
Austria	3.28	4.7	2.3	4.9
Belgium-Luxembourg	1.04	2.06	0.8	1.7
Finland	1.38	0.41	0.8	3.1
France	0.5	0.92	0.4	1.3
Germany	1.46	6.41	1.4	8.5
Greece	2.3	1.51	2.1	0.9
Italy	0.88	1.25	0.7	1.2
Netherlands	1.29	5.64	1.3	9.1
Portugal	0.09	0.07	0.2	0.1
Spain	0.36	0.18	0.3	0.2
Sweden	1.27	4.31	0.8	7.6
United Kingdom	0.37	0.61	0.4	1.3

Sources: Eurostat Trade Databank; OECD STAN Database; own calculations.

Table A.14

## CEEC-10: Trade Balance vis-à-vis the World and the EU

		1990	1991	1992	1993	1994	1995	1996	1997	1998
<i>Trade balance in millions of U.S. Dollars <sup>1)</sup></i>										
Bulgaria	total	- 1 374	688	- 546	- 1 038	- 200	- 303	- 182	28	- 465
	EU-15	- 1 009	- 585	- 465	- 818	- 815	- 85	133	315	- 6
Czech Republic	total	..	..	..	- 154	- 1 221	- 3 607	- 5 810	- 4 406	- 2 482
	EU-15	..	..	..	- 62	- 532	- 2 406	- 3 453	- 465	- 1 369
Estonia	total	..	..	..	- 91	- 353	- 703	- 1 152	- 1 509	- 1 543
	EU-15	..	..	..	- 152	- 428	- 675	- 1 011	- 1 174	- 1 051
Hungary	total	1 109	- 1 222	- 443	- 3 679	- 3 705	- 2 533	- 3 210	- 2 134	- 6 664
	EU-15	134	78	337	- 1 782	- 2 073	- 1 438	- 1 451	363	- 5 678
Latvia	total	..	..	..	170	- 176	- 459	- 791	- 935	- 1 087
	EU-15	..	..	..	75	- 116	- 254	- 403	- 498	- 577
Lithuania	total	..	..	..	- 254	- 324	- 944	- 1 133	- 1 784	- 2 083
	EU-15	..	..	..	81	- 149	- 372	- 782	- 1 224	- 1 327
Poland	total	5 214	- 854	- 2 377	- 4 691	- 3 981	- 6 155	- 12 697	- 16 557	- 18 825
	EU-15	2 852	- 505	- 827	- 2 410	- 2 158	- 2 743	- 7 491	- 10 467	- 11 745
Romania	total	- 3 428	- 1 106	- 1 421	- 1 128	- 411	- 1 577	- 2 470	- 1 980	- 2 487
	EU-15	- 54	- 60	- 795	- 631	- 147	- 423	- 461	- 568	- 891
Slovak Republic	total	..	..	..	- 875	80	- 192	- 2 292	- 1 471	- 2 471
	EU-15	..	..	..	- 151	130	159	- 385	- 1 294	- 827
Slovenia	total	..	..	..	- 416	- 476	- 1 176	- 1 111	- 985	- 126
	EU-15	..	..	..	- 419	- 601	- 1 037	- 999	- 987	- 1 077
<b>CEEC-10</b>	<b>total</b>	..	..	..	<b>- 12 156</b>	<b>- 10 767</b>	<b>- 17 649</b>	<b>- 30 848</b>	<b>- 31 733</b>	<b>- 38 233</b>
	<b>EU-15</b>	..	..	..	<b>- 6 269</b>	<b>- 6 889</b>	<b>- 9 274</b>	<b>- 16 303</b>	<b>- 15 999</b>	<b>- 24 548</b>
<i>memo items:</i>										
Czechoslovakia	total	- 1 219	395	- 684	- 1 137	- 1 893	- 4 413	- 8 629	- 5 877	- 2 752
	EU-15	- 1 515	1 007	440	- 213	- 402	- 2 247	- 3 838	- 1 759	- 2 079
CEEC-6 <sup>2)</sup>	total	302	- 2 099	- 5 471	- 11 673	- 10 190	- 14 981	- 27 188	- 26 520	- 31 193
	EU-15	408	- 65	- 1 310	- 5 854	- 5 595	- 6 936	- 13 108	- 12 116	- 20 399

1) + = surplus, - = deficit. -

2) Bulgaria, Czechoslovakia (or Czech Republic and Slovak Republic), Hungary, Poland, Romania.

Sources: IMF, Direction of Trade Statistics, Yearbook 1991, Yearbook 1995, Yearbook 1998, Washington, D.C.; authors' calculations.

Table A.15

**EU-8: Residents from the CEECs 1991-1997**

	1990	1991	1992	1993	1994	1995	1996	1997	Σ 90 - 97
	<i>net migration in persons</i>								
Bulgaria	10,088	15,752	20,616	-7,071	-7,664	-2,071	-442	645	29,853
(former) Czechoslovakia <sup>1)</sup>	7,421	10,874	11,843	-1	5,548	4,335	607	576	41,203
Czech Republic	..	..	..	-4,218	619	2,508	180	-134	-1,045 <sup>2)</sup>
Slovak Republic	..	..	..	4,003	5,336	1,961	444	915	12,659 <sup>2)</sup>
Estonia	..	1,076	3,703	3,769	2,524	1,999	1,463	1,297	15,831 <sup>3)</sup>
Hungary	8,889	11,140	6,234	-1,171	-2,626	500	-1,506	-3,259	18,201 <sup>4)</sup>
Latvia	1	17	1,255	1,904	912	1,312	1,317	1,424	8,142 <sup>4)</sup>
Lithuania	2	61	1,044	2,238	1,282	1,447	1,539	1,258	8,871
Poland	141,937	29,921	31,322	-21,051	17,578	24,884	16,762	8,864	250,217
Romania	161,572	55,998	70,105	-16,143	-8,070	2,154	1,708	3,344	270,668
Slovenia	..	..	1,187	680	-1,945	-9	-309	-485	-881 <sup>5)</sup>
<b>CEEC-10</b>	<b>329,910</b>	<b>124,839</b>	<b>147,309</b>	<b>-36,846</b>	<b>7,539</b>	<b>34,551</b>	<b>21,139</b>	<b>13,664</b>	<b>642,105 <sup>6)</sup></b>
<i>memo items:</i>									
(former) Soviet Union	183,589	191,743	249,170	254,036	255,928	272,169	212,045	180,794	1,799,474
Eastern Europe (incl. Soviet Union)	513,428	315,273	390,477	209,279	258,125	301,962	228,865	190,479	2,407,888
total net immigration	856,695	760,539	905,517	601,147	516,281	556,346	414,514	172,515	4,783,554

*EU-8: Belgium, Denmark, Finland, Germany, Luxembourg, Netherlands, Sweden, United Kingdom.*

1) Figures for Czech Republic and Slovak Republic sum not up to Czechoslovakia due to underreporting of migrants from Czech and Slovak Republic. - 2) 1993-1997 only. - 3) 1991-1997 only. Figures for 1992 cover only part of migrants. - 4) Figures for 1990 and 1991 cover only part of migrants. - 5) 1992-1997 only. - 6) Countries are not completely covered in 1990-1992.

Source: Background report by Hönekopp (1999), Eurostat, Council of Europe, authors' calculations.

Table A.16

**EU-8: Cumulative Net Migration from the CEECs by Countries 1990-1997**

	Belgium	Denmark	Finland	Germany	Luxembourg	Netherlands	Sweden	United Kingdom	total <sup>6)</sup>
<i>cumulative net migration in persons 1990-1997</i>									
Bulgaria	191	347	279	25,743	154	1,130	2,067	-58	29,853
Czechoslovakia	399	190	76	30,077	77	1,222	686	8,476	41,203 <sup>1)</sup>
Czech Republic	..	57	-37	-844	40	405	36	-702	-1,045 <sup>2)</sup>
Slovak Republic	..	40	7	3,634	37	302	95	8,544	12,659 <sup>2)</sup>
Estonia	..	477	9,358	4,689	37	92	1,178	n.a.	15,831 <sup>3)</sup>
Hungary	399	363	188	17,736	285	1,180	1,154	-3,104	18,201 <sup>4)</sup>
Latvia	..	481	256	6,893	3	228	581	-300	8,142 <sup>4)</sup>
Lithuania	..	588	107	6,629	5	255	344	943	8,871
Poland	2,886	2,387	321	234,285	379	7,396	8,178	-5,615	250,217
Romania	350	1,062	344	260,445	272	2,800	4,480	915	270,668
Slovenia	..	23	2	-1,080	12	107	55	n.a.	-881 <sup>5)</sup>
CEEC-10	4,225	5,918	10,931	585,417	1,224	14,410	18,723	1,257	642,105
World total (former) Soviet Union	130,164	109,441	49,553	3,661,167	31,202	403,486	186,107	212,434	4,783,554
Eastern Europe (incl. total Soviet Union)	2,375	3,299	29,524	1,739,571	467	9,781	11,413	3,044	1,799,474
	5,976	7,671	30,734	2,306,777	1,423	23,616	28,033	3,658	2,407,888

*EU-8: Belgium, Denmark, Finland, Germany, Luxembourg, Netherlands, Sweden, United Kingdom.*

1) Figures for Czech Republic and Slovak Republic sum not up to Czechoslovakia due to underreporting of migrants from Czech and Slovak Republic. - 2) 1993-1997 only. - 3) 1991-1997 only. Figures for 1992 cover only part of migrants. - 4) Figures for 1990 and 1991 cover only part of migrants. - 5) 1992-1997 only. - 6) CEECs are not completely covered in 1990-1992.

Source: Background report by Hönekopp (2000), Eurostat, Council of Europe, authors' calculations.

Table A.17

### EU: Residents from the CEECs by Countries in 1998

	Belgium	Denmark	Finland	Germany	Greece	Italy <sup>1)</sup>	Netherlands <sup>2)</sup>	Portugal	Spain	Sweden	UK <sup>3)</sup>
<i>residents in persons at January 1th 1998</i>											
Bulgaria	799	341	320	34,463	6,936	2,882	469	311	1,673	1,331	2,000
Czech Republic and Slovak Republic	824	184	139	55,831	1,079	3,227	797	29	512	495	5,000
Estonia	n.a.	384	9,689	3,173	36	55	86	2	22	1,124	n.a.
Hungary	966	366	454	52,029	623	2,153	1,164	91	298	2,925	2,000
Latvia	n.a.	449	134	6,147	73	107	88	1	32	387	n.a.
Lithuania	n.a.	555	163	6,631	109	127	185	10	65	358	n.a.
Poland	6,034	5,457	684	283,312	5,185	12,812	5,642	186	5,496	15,842	27,000
Romania	2,150	1,095	397	95,190	6,060	11,801	1,073	147	2,385	3,213	3,000
Slovenia	n.a.	32	5	18,093	30	1,326	102	4	56	516	n.a.
<b>CEEC-10</b>	<b>10,773</b>	<b>8,863</b>	<b>11,985</b>	<b>554,869</b>	<b>20,131</b>	<b>34,490</b>	<b>9,606</b>	<b>781</b>	<b>10,539</b>	<b>26,191</b>	<b>39,000</b>
<i>memo items</i>											
(former) Soviet Union	2,863	n.a.	30,145	253,957	22,439	5,726	5,064	457	2,506	6,740	20,000
total foreign residents	903,120	249,628	80,600	7,365,833	163,511	784,100	679,869	175,263	609,813	522,049	1,985,000
foreign residents in % of population	8.86	4.71	1.57	8.98	1.56	1.36	4.34	1.76	1.55	5.90	3.37
residents from CEEC- 10 in % of population	0.11	0.17	0.23	0.68	0.19	0.06	0.06	0.01	0.03	0.30	0.07

1)1996, total foreign residents 1995 and 1997 average. - 2) 1997. 3) 1996.

Source: Background report by Hönekopp (2000); Eurostat, Council of Europe; Federal Statistical Office (for DE, partly); authors' calculations.

Table A.18

### Estimated Remittances of Tempory Migrants 1991 - 1998

	1991	1992	1993	1994	1995	1996	1997	1998	Σ 1991 - 1998
<i>in thousands of DM</i>									
Bulgaria	3,533	19,407	40,314	28,171	23,656	14,946	16,352	12,923	159,302
CEEC-10	n.a.	n.a.	42,307	30,165	25,651	16,942	18,349	14,921	n.a.
Czech Republic	n.a.	n.a.	208,289	122,639	134,173	117,595	88,749	81,712	753,157
Estonia	n.a.	n.a.	16	0	0	16	32	16	80
Hungary	124,330	172,552	173,770	115,140	116,262	112,583	78,058	69,154	961,849
Latvia	n.a.	32	2,677	2,544	1,527	1,879	2,879	1,980	13,518
Lithuania	n.a.	178	32	1,444	1,704	1,330	470	795	5,953
Poland	503,583	880,457	585,702	504,957	690,884	748,565	728,164	682,595	5,324,907
Romania	17,288	86,020	149,678	35,530	20,918	20,414	28,236	47,636	405,720
Slovak Republic	n.a.	n.a.	36,662	34,626	45,649	37,941	35,439	29,945	220,262
Slovenia	n.a.	4,016	20,891	14,895	13,149	11,005	7,793	7,454	79,203
memo items:									
CEE-6	720,685	1,364,881	1,194,415	841,062	1,031,542	1,052,045	975,000	923,964	8,103,594
former Czechoslovakia	71,950	206,445	244,950	157,265	179,822	155,536	124,189	111,657	1,251,814
Albania	0	2,093	4,007	2,158	2,044	1,509	162	81	12,054
Russian Federation	0	1,103	32	1,055	1,558	1,882	1,265	1,184	8,079
former Yugoslavia (inc. Slovenia) of this <sup>1)</sup>	162,148	198,623	132,551	102,476	91,921	80,804	66,461	55,199	890,183
FYR Yugoslavia	n.a.	7,349	25,736	145	0	0	0	0	33,230
Bosnia	n.a.	474	12,313	11,345	9,574	6,602	4,956	6,640	51,904
Croatia	n.a.	10,088	69,043	69,634	62,306	61,320	52,627	39,323	364,341
Makedonia	n.a.	n.a.	4,569	6,457	6,892	1,878	1,084	1,781	22,661

1) Detailed figures for all republics are available only from May 1993 onwards.

Estimation of the author on base of detailed program worker figures and results of surveys on various groups of program workers.

Table A.19

**Inward FDI Stocks of the Czech Republic, Hungary and Poland 1996**

	FDI stock	percentage share of total	average. Growth rate p.a. 1994-96
	million USD	%	%
Agriculture & fishing	150	1	24
Mining & quarrying	261	1	67
Food products	3094	11	25
Textile and wood activities	1440	5	44
Petroleum, chemical, rubber and plastic products	2358	8	40
Metal and mechanical products	1262	4	37
Office machinery, computers, radio, TV and communication equipment	626	2	6
Vehicles and other transport equipment	2135	7	34
Electricity, gas & water	1832	6	4711
Construction	1157	4	16
Trade & repairs	3108	11	36
Hotels & restaurants	43	0	14
Transport & communication	2763	10	111
Financial activities	2680	9	20
Real estate & business activities	1052	4	309
Other services	69	0	110
<b>Total</b>	<b>28647</b>	<b>100</b>	<b>47</b>
Primary	411	1	46
Manufacturing	12259	43	28
Services	12943	45	55
Unallocated	3.034	11	na

Sources: Belitz (1999), OECD, International Direct Investment Statistics Yearbook 1998; authors' calculations.

Table A.20

**Shares of German Manufacturing FDI Outward Stocks by Sectors**  
OECD (1996) Classification

	Total	CEEC-10
	%	
Technology		
Low	17.9	36.0
Medium	64.9	51.7
High	14.3	10.0
Unallocated	2.8	2.2
Wages		
Low	14.4	20.4
medium	31.1	33.6
high	51.7	43.8
unallocated	2.8	2.2
Skills		
skilled	48.8	28.6
unskilled	48.4	69.2
unallocated	2.8	2.2
Orientation		
Resource	8.9	25.1
Labour	5.3	7.4
Scale	60.6	53.8
Specialised supplier	22.3	11.5
unallocated	2.8	2.2

*Sources:* Belitz (1995); German Federal Bank; authors' calculations.

Table A.21

**German Manufacturing Outward FDI Stocks in the CEECs  
and Specialisation Indices by Industry 1996**

	All Countries	CEEC-10	All Countries	CEEC-10	Specialisation index
	million DM		in percent		
Manufacturing	172875	8879	100.0	100.0	0
Chemicals and chemical Products, drugs	61178	651	35.4	7.3	-92
Rubber and plastic products	5040	319	2.9	3.6	21
Non-metallic mineral products	8076	1192	4.7	13.4	78
Basic metals	3153	37	1.8	0.4	-90
Machinery	16566	354	9.6	4.0	-70
Motor vehicles	28223	3238	16.3	36.5	66
Other transport	1262	30	0.7	0.3	-65
Electrical machinery	17518	515	10.1	5.8	-51
Electrical equipment (Radio, TV and Comm.)	2825	222	1.6	2.5	40
Instruments, watches and clocks	4451	154	2.6	1.7	-38
Fabricated metal products	6032	360	3.5	4.1	15
Wood	659	159	0.4	1.8	91
Paper	3246	53	1.9	0.6	-82
Printing	3048	260	1.8	2.9	47
Textiles	2565	196	1.5	2.2	38
Clothing	577	101	0.3	1.1	84
Beverages, food	3550	841	2.1	9.5	91
Furniture, jewellery, musical instruments	1122	172	0.6	1.9	79
Recycling	229	25	0.1	0.3	64
Unallocated	3555	197	2.1	2.2	na

Sources: German Federal Bank; Own calculations.

Table A.22

**Austria: The Impact of Trade on Wages by Skill Groups 1991-1994**

	ALL		Blue Collar		White Collar	
	non-instrumented	instrumented	non-instrumented	instrumented	non-instrumented	instrumented
$\Delta w_D \ln(\text{Domestic Demand})$	0.0917 ***	0.0567	0.1375 ***	0.126 ***	-0.0412	-0.0791
<i>t-value</i>	2.72	1.54	3.57	2.99	0.62	1.01
$\Delta w_X \text{ Export Share}$	0.1842 **	0.2413 **	0.1729 **	0.1194	0.0428	-0.0186
<i>t-value</i>	2.450	2.540	2	1.090	0.300	0.100
$\Delta w_M \text{ Import Share}$	-0.0015	-0.0584	-0.0696	-0.1036	0.0881	0.0552
<i>t-value</i>	0.030	1.120	1.170	1.530	1.040	0.720
sample size			6706		2239	

Dependent variable: Change of log gross wage ( $\Delta \ln(W_i)$ ).

Methods: Ordinary Least Squares estimation (OLS); Instrumental Variable (IV) estimation by Two-Stage-Least-Squares (TSLS).

Trade variables are instrumented by German trade variables, Austrian trade variables in 1991.

Other RHS variables: change in age squared, dummy for change in place of work, dummy for change of industry.

\*\*\* (\*\*,\*) significant at 1 % (5 %, 10 %) level.

Source: Background report Hofer and Huber (1999).

Table A.23

## Germany: The Impact of Trade on Wages by Skill Groups 1985-1990

	ALL		Blue Collar		White Collar	
	1985-1990	1990-1995	1985-1990	1990-1995	1985-1990	1990-1995
$\Delta w_D$ ln(Domestic Demand)	0.0116 ***	0.0133 ***	0.0132 ***	0.0142 ***	0.0053 **	0.0098 ***
<i>t-values</i>	7.87	8.85	7.24	7.97	2.03	3.39
$\Delta w_X$ Export Share	0.006 ***	0.004	0.0072 ***	0.008	0.004	-0.0076
<i>t-value</i>	3.19	-1.38	3.160	1.490	-0.980	-0.970
$\Delta w_M$ Import Share	-0.0039 ***	-0.0012	-0.0044 ***	-0.0014	-0.0025	-0.0009
<i>t-values</i>	-3.110	0.930	-3.03	-1.24	1.02	-0.6
R <sup>2</sup> adjusted	0.170	0.130	0.15	0.11	0.25	0.22
observations	77406	77718	53881	54158	23483	23582

Dependent variable: Change of log gross wage ( $\Delta \ln(W_i)$ ).

Method: Ordinary Least Squares estimation (OLS).

Other RHS variables: educational level, age, age squared, marital status, branch, firm size. Dummy for blue collar in first regression.

\*\*\* (\*\*, \*) significant at 1 % (5 %, 10 %) level.

Source: Background report by Brücker, Kreyenfeld and Schröpfer (1999).

Table A.24

**Sweden: The Impact of Trade on Wages by Income Quartiles 1985-1990**

	ALL	Quartil 1	Quartil 2	Quartil 3	Quartil 4
	<i>Huber-White standard errors</i>				
$\Delta w_D \ln(\text{Domestic Demand})$	0.0851 ***	0.1475 **	0.1012 *	0.0523 *	0.0405
<i>t-value</i>	2.856	1.983	1.675	1.715	1.473
$\Delta w_X \text{ Export Share}$	0.0920 ***	0.0443	0.0258	0.0898 **	0.0756 *
<i>t-value</i>	3.382	0.760	0.483	2.206	1.669
$\Delta w_M \text{ Import Share}$	0.0639 **	-0.0512	-0.0246	-0.1019 **	-0.0767 *
<i>t-value</i>	2.307	-0.798	-0.413	-2.311	-1.639
$R^2$ adjusted	0.080	0.090	0.051	0.060	0.062
Test (p-value)	0.528	0.189	0.460	0.182	0.690
observations	23657	5915	5914	5913	5915

Dependent variable: Change of log gross wage ( $\Delta \ln(W_i)$ ).

Method: Ordinary Least Squares estimation (OLS).

Other RHS variables: constant, changes in marital status, educational status, age squared, region of residence.

The test is for equality in the absolute values on the coefficients on  $\Delta \ln(\text{domestic demand})$ ,  $\Delta x$ , and  $\Delta m$ .

Q1-Q4 denotes different quartiles of the predicted earnings distribution in 1985. The predicted earnings distribution was calculated from a regression relating the log of 1990 earnings to a constant, sex, age, age squared, education, immigrant status, marital status, and occupation.

\*\*\* (\*\*, \*) significant at 1 % (5 %, 10 %) level.

Source: Background report by Edin, Fredricksson, Lundborg (1999).

Table A.25

**Germany: The Impact of Trade on Labour Mobility and Employment by Income Quartiles  
1985 - 1990**

	I. Quartil		II. Quartil		III. Quartil		IV. Quartil	
	move to other industries	move to un-employment	move to other industries	move to un-employment	move to other industries	move to un-employment	move to other industries	move to un-employment
$\Delta w_D$ ln(Domestic Demand)	-0.5545 **	0.186	-1.736 ***	-0.468 *	-0.775 **	-0.229	-0.3587	-0.038
<i>t-value</i>	-2.380	0.880	-5.130	-1.710	-2.120	-0.730	-1.080	-0.120
$\Delta w_X$ Export Share	0.5324 ***	0.7018 ***	0.7578 ***	0.3215 **	0.3291 *	0.4347 ***	0.4061 **	0.485 ***
<i>t-value</i>	3.120	4.600	5.020	2.060	1.720	2.600	2.010	2.840
$\Delta w_M$ Import Share	-0.6275 ***	-0.8523 ***	-0.64 ***	-0.183	-0.357 *	-0.322 *	-0.3341 *	-0.362 **
<i>t-value</i>	-3.500	-5.200	-3.580	-1.090	-1.830	-1.860	-1.710	-2.110
Log-Likelihood	-14480		-7799		-6930		-6861	
observations	16294		11617		11553		10894	

Method: Multinomial Logit.

Other RHS-variables: age, age squared, educational level, foreign nationality, marital status, blue collar dummy, branch, firm size.

Source: Background report by Brücker, Kreyenfeld and Schräpler (1999).

Table A.26

**Germany: The Impact of Trade on Labour Mobility and Employment by Income Quartiles  
1990-1995**

	I. Quartil		II. Quartil		III. Quartil		IV. Quartil	
	move to other industries	move to un-employment	move to other industries	move to un-employment	move to other industries	move to un-employment	move to other industries	move to un-employment
$\Delta w_D \ln(\text{Domestic Demand})$	-0.4782 ***	-0.8438 ***	-0.554 **	-1.124 ***	-0.043	-1.506 ***	-0.7012 *	-0.899 ***
<i>t-value</i>	-2.78	-5.86	-2.18	-5.61	-0.12	-6.1	-1.89	-3.16
$\Delta w_X \text{ Export Share}$	-0.3107 **	-0.1294	0.0165	0.0389	0.1221	0.31 *	0.3762 *	0.658 ***
<i>t-value</i>	-2.49	-1.2	0.11	0.35	0.54	1.96	1.93	3.84
$\Delta w_M \text{ Import Share}$	0.466 **	0.212	-0.016	-0.025	-0.186	-0.528 **	-0.630 **	-1.068 ***
<i>t-value</i>	2.340	1.240	-0.070	-0.140	-0.530	-2.150	-2.13	-4.09
Log-Likelihood	-17419		-9482		-7933		-7836	
observations	18282		12498		11766		10760	

Method: Multinomial Logit.

Other RHS-variables: age, age squared, educational level, foreign nationality, marital status, blue collar dummy, branch, firm size.

*Source:* Background report by Brücker, Schräpler and Kreyenfeld (1999).

Table A.27

**Determinants of Migration to Germany 1968-1998: Estimation Results**  
(Sample without Yugoslavia)

variable	regression (1) 1968-1998, without Yugoslavia	t-value
$\Delta \ln(\text{PPP-GDP}_i / \text{PPP-GDP}_h)_t$	-0.000330 **	-2.380
$\Delta \ln(e_i)_t$	0.001295 ***	2.721
$\Delta \ln(e_h)_t$	0.000957 ***	2.726
$\ln(\text{PPP-GDP}_i / \text{PPP-GDP}_h)_{t-1}$	0.000327 ***	7.179
$\ln(e_i)_{t-1}$	0.003659 ***	16.831
$\ln(e_h)_{t-1}$	-0.002853 ***	-16.604
$mst_{h,t-1}$	-0.083004 ***	-12.450
FREE	0.000279 ***	12.105
GUEST	0.001263 ***	15.260
LM-test-statistics ( $H_0$ : homoskedasticity vs. $H_1$ : heteroskedasticity)	1007.71	
LR-test-statistics heteroskedasticity, $H_1$ : heteroskedasticity + groupwise correlation)	518.51	( $H_0$ :
Log-likelihood function	3980.05	
total panel observations	527	
degrees of freedom	136	
dependent variable: $\Delta mst_{h,t}$		
estimation method: Seemingly Unrelated Regression (SUR)		
period: 1968-1998.		

*Notes:* The critical value at the 5%-level for the  $\chi^2(17)$ -distribution of the LM-test for the restriction of homoskedasticity is 27,59. The critical value at the 5%-level for the  $\chi^2(153)$ -distribution of the LR-test-statistics for groupwise correlation is 182.22.

\*\*\*, \*\*, \* coefficients are significant at the 99, 95 und 90 percent level, respectively.

Table A.28

**Analysis of Country Specific Intercepts**

variable	<b>regression (1)</b>	
	<b>1968-1998, without Yugoslavia</b>	
	coefficient	t-value
constant	0.01183 **	2.732
HDI	-0.01239 **	-2.637
distance	0.00000	-0.003
language	0.00106 *	1.790
observations	17	
degrees of freedom	13	
R <sup>2</sup>	0.42	
adjusted R <sup>2</sup>	0.28	
F-statistics	3.65	
dependent variable: countryspecific fixed effects		
estimation method: ordinary least squares (OLS).		

Table A.29

### Stationarity Tests of Income Differential at Purchasing Power Parity

	Augmented Dickey Fuller Tests (ADF-Tests)							
	variable: $\ln(\text{PPP-GDP}_t/\text{PPP-GDP}_h)$							
	levels				first differences			
	constant	lags	constant + trend	lags	constant	lags	constant + trend	lags
Austria	-3.124 *	2	-2.123	2	-3.236 *	3	-3.105	3
Belgium	-4.101 **	2	-4.138 *	2	-3.787 **	2	-3.692 *	2
Switzerland	-1.700	4	-2.328	4	-3.178 *	3	-3.420	3
Denmark	-2.910	1	-3.096	1	-3.499 *	0	-3.473	0
Spain	-2.577	2	-2.643	2	-2.393	1	-2.347	1
Finland	-2.584	2	-2.783	2	-3.517 *	5	-3.669 *	5
France	-2.216	1	-3.025	1	-4.595 **	1	-4.506 **	1
Greece	-2.380	3	-3.551	3	-4.840 **	0	-5.290 **	0
Italy	-1.070	4	-1.205	4	-5.869 **	3	-5.698 **	3
Luxembourg	0.370	1	-1.254	1	-4.737	0	-5.017	0
Netherlands	-1.928	3	-1.056	3	-0.861	2	-1.443	2
Norway	-1.127	6	-1.656	6	-3.257 *	4	-3.148	4
Portugal	2.233	7	0.112	7	-3.758 **	6	-4.956 **	6
Sweden	-1.447	1	-3.198	1	-3.778 **	1	-3.701 *	1
Turkey	-1.288	1	-2.423	1	-4.510 **	1	-4.517 **	1
United Kingdom	-3.613 *	1	-3.398	1	-3.987 **	1	-3.976 *	1
USA	-2.847	7	-2.864	7	-3.177 *	2	-3.646 *	6
Yugoslavia	-1.059	1	-2.216	1	-2.102	5	-2.760	5

Panel Augmented Dickey Fuller-test (Panel ADF-test)				
	-1.801	-1.397	-9.7237 **	-8.1359 **
critical value at the 5%-level	-1.900	-2.530	-1.900	-2.530

\*\* , \* unit root is rejected at the 1 and 5 % level, respectively.

Table A.30

### Stationarity Tests of Income Differential at Current Exchange Rates

	Augmented Dickey Fuller Tests (ADF-Tests)							
	variable: $\ln(\text{GDP}_t/\text{GDP}_h)$							
	levels				first differences			
	constant	lags	constant + trend	lags	constant	lags	constant + trend	lags
Austria	-2.425	4	-1.228	4	-4.766 **	3	-5.446 **	3
Belgium	-2.472	1	-2.724	1	-3.109 *	2	-2.976	2
Switzerland	-2.062	3	-1.245	3	-3.460 *	1	-3.680 *	1
Denmark	-2.772	4	-2.521	4	-5.222 **	4	-5.276 *	4
Spain	-1.771	1	-3.722 *	3	-4.565 **	3	-4.458 **	3
Finland	-1.909	3	-1.736	3	-3.749 *	2	-3.765 *	2
France	-3.865 **	1	-2.697	3	-3.963 **	2	-3.788 *	2
Greece	-1.717	4	-1.403	3	-3.573 *	3	-3.810 *	3
Italy	-1.840	1	-2.411	1	-2.757	1	-2.741	1
Luxembourg	-0.839	5	-0.725	5	-4.038 **	1	-3.300	3
Netherlands	-1.298	4	-2.175	4	-2.209	3	-2.126	3
Norway	-1.628	2	-1.555	2	-4.876 **	1	-4.783 **	1
Portugal	-0.394	2	-1.154	2	-4.870 **	1	-5.461 **	1
Sweden	-1.693	2	-3.023	2	-5.248 **	1	-5.195 **	1
Turkey	-2.368	1	-4.157 *	2	-4.702 **	5	-4.602 **	5
United Kingdom	-2.608	3	-2.955	4	-3.750 **	1	-3.930 *	1
USA	-2.802	1	-2.785	1	-3.917 **	1	-4.048 *	1
Yugoslavia	-1.117	1	-2.031	1	-3.414 *	1	-3.338	1

Panel Augmented Dickey Fuller-test (Panel ADF-test)				
	-2.3537 **	-0.711	-11.5099 **	-9.2702 **
critical value at the 5%-level	-1.900	-2.530	-1.900	-2.530

\*\* , \* unit root is rejected at the 1 and 5 % level, respectively.

Table A.31

### Stationarity Test of Employment Rates

<b>Augmented Dickey Fuller Tests (ADF-Tests)</b>									
variable: $e_t$ ( $e_t = \ln(1 - \text{unemployment rate})$ )									
	levels				first differences				
	constant	lags	constant + trend	lags	constant	lags	constant + trend	lags	
Austria	-1.016	1	-2.213	1	-4.304 **	1	-4.223 *	2	
Belgium	-1.597	1	-1.491	1	-3.147 *	1	-3.284	1	
Switzerland	-0.530	2	-2.836	1	-4.078 *	1	-4.088 *	1	
Denmark	-1.767	1	-1.080	1	-3.303 *	1	-3.576 *	1	
Spain	-0.955	4	-2.721	1	-3.507 *	3	-3.414	3	
Finland	-1.149	3	-4.217 *	1	-4.213 **	1	-4.161 *	1	
France	-0.961	1	-2.262	1	-3.142 *	1	-3.073	1	
Greese	-1.044	1	-3.031	2	-3.091 *	1	-3.373	1	
Italy	-0.532	1	-3.035	1	-3.409 *	1	-3.416	1	
Luxembourg	-0.661	1	-3.362	1	-3.071 *	1	-3.566	2	
Netherlands	-1.742	2	-0.828	2	-3.970 **	1	-4.309 **	1	
Norway	-1.831	1	-2.532	1	-3.520 *	1	-3.454	1	
Portugal	-1.722	5	-0.726	5	-1.879	5	-4.648 **	4	
Sweden	-1.519	1	-2.472	1	-2.767	1	-3.357	4	
Turkey	-2.513	1	-1.967	1	-3.280 *	1	-3.922 *	1	
United Kingdom	-1.650	2	-1.105	2	-4.707 **	1	-4.892 **	1	
USA	-2.720	1	-1.903	2	-4.621 **	1	-5.016 **	1	
Yugoslavia	-0.176	1	-2.185	1	-4.891 **	1	-4.994 **	1	

<b>Panel Augmented Dickey Fuller-test (Panel ADF-test)</b>				
	0.739	-0.365	-9.702 **	-8.752 **
critical value at the 5%-level	-1.900	-2.530	-1.900	-2.530

\*\* , \* unit root is rejected at the 1 and 5 % level, respectively.

Table A.32

### Stationarity Tests of Migration Stocks

<b>Augmented Dickey Fuller Tests (ADF-Tests)</b>								
variable: mst								
	levels				first differences			
	constant	lags	constant + trend	lags	constant	lags	constant + trend	lags
Austria	-3.011 *	1	-2.676	1	-3.190 *	2	-3.720 *	2
Belgium	-1.138	2	-3.902 *	2	-4.612 **	2	-4.562 **	2
Switzerland	-1.115	0	-2.632	0	-5.960 **	0	-5.939 **	0
Denmark	-0.493	1	-2.438	1	-3.525 *	5	-3.705 *	5
Spain	-4.220 **	7	-0.460	7	-1.917	6	-4.979 **	6
Finland	-1.712	1	-2.795	1	-3.359 *	0	-3.334	0
France	-0.710	0	-2.260	0	-5.040 **	0	-4.950 **	0
Greese	-1.944	3	-1.850	3	-3.363 *	5	-3.736 *	5
Italy	-4.220 **	1	-4.512 **	1	-4.870 **	0	-4.952 **	0
Luxembourg	-2.554	0	-3.223	0	-3.090 *	6	-3.419	6
Netherlands	-2.303	0	-2.887	0	-5.880 **	0	-5.780 **	0
Norway	-0.399	0	-1.591	0	-5.566 **	0	-5.656 **	0
Portugal	-3.652 *	2	-3.517	2	-2.540	0	-2.615	0
Sweden	0.384	0	-1.136	0	-4.408 **	0	-4.405 **	0
Turkey	-3.970 **	2	-3.354	2	-2.400	4	-2.575	4
United Kingdom	-1.492	1	-1.962	1	-3.769 **	0	-3.886 *	0
USA	-1.695	0	-2.515	0	-2.930	4	-2.815	4
Yugoslavia	-3.019 *	1	-3.595 *	1	-2.570	1	-2.476	1

<b>Panel Augmented Dickey Fuller-test (Panel ADF-test)</b>			
	-2.657 **	-2.404	-10.799 **
critical value at the 5%-level	-1.900	-2.530	-1.900
			-9.607 **
			-2.530

\*\* , \* unit root is rejected at the 1 and 5 % level, respectively.

Table A.33

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**Test of Cointegrating Regressions**


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**Augmented Dickey Fuller Test (ADF-Tests) for Cointegration**  
 without constant and trend

Austria	-3.75656 *
Belgium	-3.68976 *
Switzerland	-2.74415
Denmark	-4.56705 **
Spain	-5.12244 ***
Finland	-1.99330
France	-3.17900
Greese	-2.99665
Italy	-4.97371 ***
Luxembourg	-4.03583 **
Netherlands	-1.71793
Norway	-4.58388 **
Portugal	-2.17144
Sweden	-4.23256 **
Turkey	-2.97131
United Kingdom	-4.05374 **
USA	-2.16108
Yugoslavia	-3.36067

McKinnon(1991) critical values: -4,79119 (1%), -4,02627 (5%), -3,65603 (10%)

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Panel ADF statistics	-4.11923 ***
group ADF statistics	-15.32053 ***

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\*\*\*, \*\*, \* null of a unit root is rejected at the 1, 5, 10 % level, respectively.

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## Part B

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# Strategic Report

*This part of the report is drafted by Giuseppe Bertola, Tito Boeri, Michael Burda, Fabrizio Coricelli, Juan Dolado, Juan Jimeno, Janos Köllö, Martina Lubyova, Mattia Makovec, Daniel Munich, Richard Portes and Gilles Saint-Paul.*

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## Preface

The challenges and the opportunities arising from the Eastern Enlargement of the European Union have no historical precedent. Unlike previous enlargement episodes, the ten countries which have signed "association agreements" with the EU and even the five countries which are presently at an advanced stage of the accession negotiations have markedly lower income per capita levels than the current members of the Union. Thus, past enlargement episodes offer limited guidance as to the likely impact of accession on trade as well as labour and capital flows. Moreover, European integration has gained momentum since the last enlargement round. Unlike at the time of entry of the EFTA threes, there is now a common currency shared by a core group of EU countries, and the single market principles are much a less a mirage than even just a decade ago. Thus, both the pressures exerted by enlargement on current EU members and the scope of the integration involved by the accession are unprecedented.

Due to the uncertainties related to the enlargement, there are mounting concerns within the current EU members that the accession may have a number of undesirable distributional effects. In particular, a deterioration of living standards of the unskilled, associated with job displacement and wage losses involved by the accession of low-labour cost countries is feared. Mass migration from the East, creating problems in terms of social integration and social cohesion, is also thought to be a likely byproduct of enlargement. Needless to say, such issues are often discussed in a very unstructured a uniformed way. Inferences are often made based on a-priori beliefs, and important interactions between trade, labour and capital flows are ignored.

The purpose of this part of the report is to shed some light on the likely distributional impact of enlargement and to evaluate those policy options which could enhance *net job creation* associated with the enlargement of the EU. Measures to mitigate undesirable *distributional effects* of accession, both in the West and the East, are discussed. The scope for a harmonisation of *labour market institutions* in the candidate countries and the EU Members, in the light of Agenda 2000, the Luxembourg process and the Europe Agreements is also assessed. The analysis is carried out at the level where the

relevant policy actions can be taken, which is mainly (albeit not always) the national scale.

The recommendations do *not* deal with the Common Agricultural Policy and the reform of EC institutions. Both issues are highly relevant in the context of the EU Enlargement process, but would require much more attention than could possibly be offered in this report, which is mainly devoted to the labour market and social policy implications of accession. The reform of EU institutions is, in any event, a time-consuming process, and it may be preferable to envisage at this stage policy options and an agenda for enlargement which do not require different (i.e., stronger) institutions at the EU-level in order to be enforced. Otherwise, the risk is to propose policies that can be implemented too late, e.g. only after accession is completed.

This second part of the report is structured as follows. Chapter One outlines the relevant trade-offs involved by the accession and discusses the likely profile of winners and losers in the enlargement process as well as the credibility effects associated with the enlargement laying down the scenarios at accession. Chapter Two draws on the historical experience of the Southern Enlargement of the EU, the German unification and the NAFTA agreement in order to make inferences as to the proper set of institutions likely to minimize undesirable short-run effects of accession on employment, income distribution and social cohesion. As the social costs of enlargement are crucially related to the speed of convergence of the Central and Eastern European countries to the EU GDP per capita levels, Chapter Three discusses likely impediments to growth in the candidate countries, hence the scope for structural policies to accompany the accession. Some medium-term growth scenarios for the candidate countries are also offered, which isolate the effects of the policies envisaged in this part of the report.

## Chapter One: Outlining the Trade-Offs

### 1.1. Introduction

The first part of the report vividly documents that the scale of the effects related to the enlargement is relatively small.

The cross-country analysis and the country background studies do not point to sizeable effects of trade induced by EU enlargement on *aggregate* employment and wages in the Western European countries, even those geographically closest to the accession countries and most strictly integrated with them. Scale here is the critical factor for enlargement to matter, and imports from the candidates for accession can at most reach 3 per cent of gross output of each individual country of the EU.

Furthermore, it is shown that so far trade with the accession countries corresponds to a complete specialisation case, a situation where – according to economic theory – trade expansion increases incomes of *all* production factors both in the EU and in the perspective Members. Differences in factor endowments are just too marked for a tendency to factor price equalisation to emerge. EU countries and the Eastern candidates are not within a single "diversification cone", a necessary condition (not even a sufficient one!) -- according to economic theory -- for factor prices to converge in a integrated trade area<sup>1</sup>. Thus, the fear that trade integration with countries with a large (unskilled) labour endowments, may exert strong downward pressures on wages in the EU would seem to be ill-founded.

If trade integration, by itself, is not likely to reduce differentials in labour costs between the EU and the candidate countries significantly, international labour and capital flows may be enhanced. However, the first part of the report does not support many

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<sup>1</sup> Alejandro Cunat (1999) has developed a quantitative criterion for assessing whether national factor endowments are within a single diversification cone. His results suggests that all central and eastern European countries are outside the diversification cone including the US and the EU. Needless to say, even within this group, factor price equalisation does not hold in practice.

concerns that enlargement may involve very large inflows of migrants from the candidate countries and outflows of productive capital to the East.

The threat frequently made by western employers to move production to the low-labour cost countries does not find empirical support: the employment numbers involved by FDI are still marginal (total FDI is only 0.1 per cent of the source countries' GDP) and mass plant de-localisation has not occurred so far, in spite of significant differences in unit labour costs, which are also likely to be reduced after the accession. Furthermore, FDI flows are currently mainly motivated by market access -- a pull-factor that will fade away with integration into a single market -- rather than by lower unit labour costs, which could potentially displace Western employment. The impact of FDI outflows to the candidate countries on wages and employment in the EU has so far been negligible. Once more, scale here is crucial. The rather small size of FDI in most branches makes it unlikely that these investments may crowd-out worthwhile investment projects in the EU.

Similarly, alarming scenarios in which Western countries are invaded by cohorts of jobseekers coming from the East, competing for jobs with westerners and underbidding their wages are not supported by the evidence produced in the first part of the report. So far migrants from these countries have been mainly of the high-skill type and they have competed with other foreigners for blue-collar positions in manufacturing or construction and/or low-skilled jobs in the service sector. Future trends in migration from Central and Eastern Europe crucially depend on how fast the process of convergence in GDP per capita levels will occur, and, even more so, on the expectations of residents of the accession countries about the closing of the income gap with the EU. Estimates of the migration *potential* from time-series models, based on past migration records in Western Germany<sup>2</sup>, suggest that the current levels of immigration from these countries are significantly below (about one-sixth) the potential. Various reasons may explain the deviation of current migration flows from potential, including not only legal restrictions to migration, but also expectations of a relatively fast convergence to the EU GDP per capita lev-

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<sup>2</sup> Needless to say, predictions in the field of international migration, based on historical figures (which are themselves affected by legal barriers to migration and expectations), should be interpreted with caution.

els. Assuming a pace of convergence of 2 per cent per year – which is broadly in line with historical experience<sup>3</sup> – these mechanical models suggest that the migration potential may fall by about 15 per cent in the next 10 years. Thus, unless expectations about convergence quite radically change, a gradual removal of barriers to labour mobility should not involve a very strong pick-up of migration.

Concerning the nature of migration flows, East-west migration is predicted to become increasingly of a temporary nature, whilst permanent migration is likely to continue to be mainly of a East-to-East type, especially if economic recovery in Central Europe gains momentum.

Summarising, there is little to expect at the *macro* level in Western Europe. The key message that the first part of the report delivers is that the Eastern Enlargement will not generate *large* economic losses (or gains) because the acceding countries are just too small --- relative to the European Union -- to matter, at least when size is measured in terms of GDP, rather than in terms of headcounts.

## **1.2. Looking Beyond the Aggregates**

The above does not mean that negative short-run effects of enlargement on employment and wages should be ruled out *everywhere*. On the contrary, effects of enlargement on income distribution will clearly arise in specific regions and sectors as a result of migration flows from Eastern Europe. Distributional effects of enlargement cannot be simply dismissed as irrelevant at a sub-national scale even when the focus is only on the consequences of trade integration.

The Eastern enlargement will indeed involve some inter-sectoral reallocation of workers in the *regions* having strongest trade links with the East, hence not only winners but also potentially some losers, e.g., workers who will have to change jobs and may experience unemployment spells as a result of stronger import penetration of goods pro-

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<sup>3</sup> This is broadly what one obtains by applying the coefficients from Barro regressions of per capita growth rates on factor endowments over roughly one hundred countries between 1960 and 1990 (Barro, 1999). See Chapter Three for alternative predictions on the basis of (different) growth regressions.

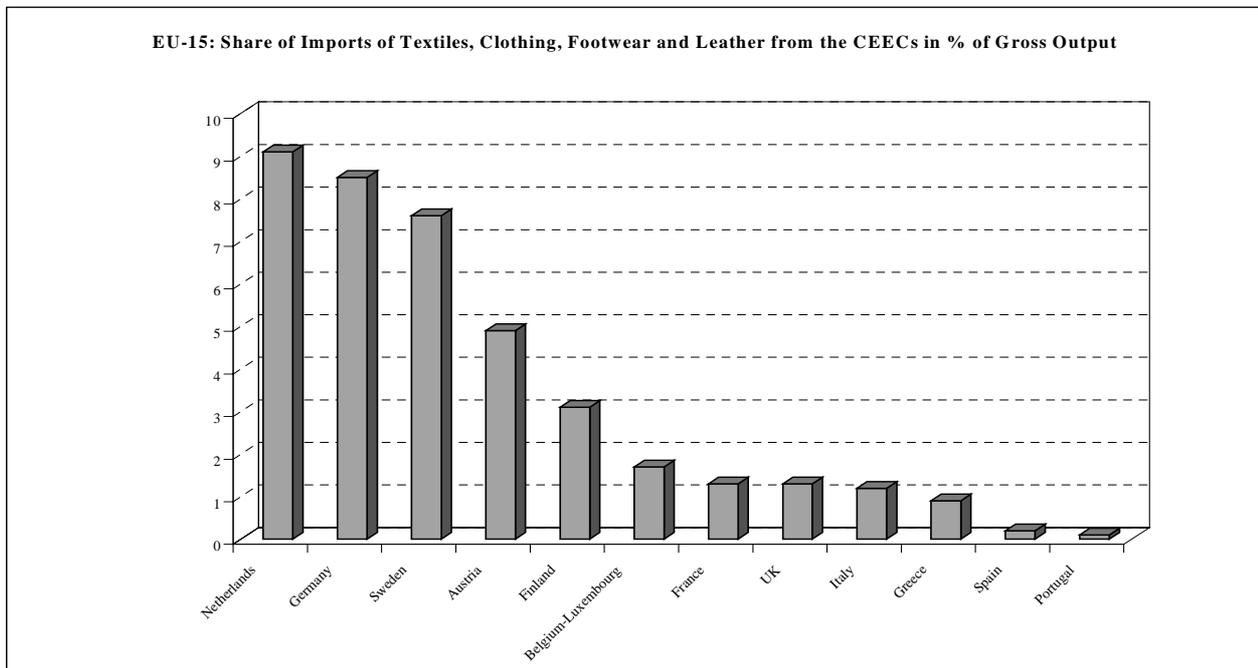
duced in the candidate countries. The background studies drawing on micro data on employment and wages in Austria, Germany and Sweden<sup>4</sup> point to marginal displacement effects of trade integration and negligible wage adjustments resulting from the Eastern enlargement. Yet, wage and unemployment effects may be felt within “closed” (in terms of sectoral specialisation and mobility of the workforce) regions of Western Europe. Unfortunately, trade data are not available at such a detailed regional breakdown and hence it is not possible to quantify these effects.

Some impact of increasing trade with Central and Eastern European countries will also be felt in some specific *sectors*. In particular, the candidate countries may succeed in replacing imports from non-EU Members, thereby undoing the effects of the tariffs posted by the EU vis-a-vis the rest of the World, in some labour intensive sectors (e.g., clothing, footwear, textiles) with significant transportation costs. As suggested by Chart 1.1, imports account for a significant share of output in these sectors in countries like Austria, Finland, Germany, The Netherlands and Sweden. Wage and output declines may also occur in some sensitive sectors, like communication and measuring equipment, computers and motor vehicles. Finally, increasing segmentation of production in Western countries associated with the outsourcing opportunities opened up by enlargement may modify the skill content of labour demand in the West, generally in favour of skilled labour<sup>5</sup>.

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<sup>4</sup> See Huber and Hofer (1999), Bruecker, Kreyenfeld and Schraepler (1999) and Edin, Fredriksson and Lundborg (1999).

<sup>5</sup> This is in line with empirical studies by Cortes and Jean (1997) as well as Feenstra and Hanson (1996) and Sach and Shatz (1996) on the implications of outsourcing on relative demand for skilled/unskilled labour.

**Figure 1.1**

Overall, the job displacement and wage effects of enlargement will be confined to specific sectors *and* regions and will be more than compensated in the aggregate by the benefits of integration in terms of price reductions, and greater product diversification in all countries. Yet there will be some losers. The very fact that accession is taking longer than initially anticipated suggests that there are constituencies somewhere who bear legitimate concerns about the consequences of accession. Although their perceptions may significantly differ from the likely course of events, it is difficult to dismiss them as if they are totally out of place.

One should also bear in mind that, inferences made in the first part of the report forcefully use historical data on the determinants of labour and capital flows to make predictions as to the likely course of events after the EU Enlargement. However, when radical transformations of this nature are involved, past experience may be of little guidance for the future. Moreover, what will happen after the accession will crucially depend on which policies are pursued on both sides, current EU members and acceding countries.

Accession may happen in many different ways, e.g. it can involve different degrees of liberalisation of labour mobility, longer or shorter so-called “transition phases” preceding the complete lifting of restrictions to labour mobility, etc. Accession itself may also occur slowly or quite rapidly and the agenda of accession is likely to affect especially FDI and migration, two phenomena that are intrinsically dynamic as decisions involve ex-ante significant costs which cannot be recovered ex-post. Here expectations as to the timing of accession are crucial, which lead us to an important caveat as to the findings of the first part of the report. The caveat is that the evidence produced so far in this report does not take into account the effects of expectations as to the timing of entry into the EU on the performance of these economies. There are reasons to believe that these expectational effects can indeed be quite relevant.

The remainder of this introductory chapter will try to complement the findings of the first part of the report by outlining the relevant trade-offs as well as the character and scope of the potential losses (if only transitory and limited ones) for at least some of the current EU members’ citizens involved by the accession. It will also discuss the interactions between trade, FDIs and migration and the potential policy responses in the East and the West. This is essential to outline what could possibly go wrong with the accession and identify policies reducing such a risk. Needless to say, the reasoning will be mainly of a speculative nature. This is the price to pay if one wishes to make inferences about revolutionary events of this kind, which are bound to take place somewhere in the future.

### *1.2.1. Identifying the potential losers: theoretical perspectives*

In order to understand what could possibly be wrong with Central and Eastern European (CEE) countries accession, one should focus on smaller-scale interactions (at the level of regions, industries, and groups of individuals). As suggested by Bean *et al.* (1998), on the one hand, economic integration (i.e. removal of barriers to trade and factor mobility) in principle allows more efficient patterns of production and affords welfare improvements at the aggregate level. On the other hand, however, it may generally be expected to have distributional effects within each of the initially segmented economic

systems, and/or to require transitional costs as each of the *status quo* economies adjusts its pattern of production.

Thus, even though economic integration is most unlikely to reduce aggregate welfare, individual economic agents can fear its consequences and oppose it. And from their own perspective this opposition can be quite justifiable, because economic integration makes *all* individuals better off only in rather special circumstances. Loosely speaking, exposure to competition in a larger integrated area tends to decrease the earning potential of relatively inefficient producers: standard models predict that trade and factor mobility should tend to *reduce* income inequality within poor countries, and *increase* inequality in rich countries<sup>6</sup>. Thus, one would expect those producers to oppose economic integration who are most directly exposed to new competitive pressures – whether because they are geographically close to, or because their labour or products are most easily substitutable for, alternative sources of production and migration.

The size of welfare improvements, distributional changes, and adjustment costs depends in obvious ways on the stringency of *status quo* barriers to trade and labour mobility, on the relative size of countries, and on the degree of economic heterogeneity across the countries to be integrated. As argued above, the small economic size of the candidate countries relative to the EU and to its other trading partners makes it difficult to expect a noticeable impact on the current member countries' aggregate income levels when the few remaining barriers to trade and capital mobility are removed. To the extent that the CEE countries' low income levels reflect their economies' structural features, however, both the distributional impact and transitional costs associated with their EU accession need to be scrutinized closely.

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<sup>6</sup> This is not necessarily the case: increasing returns to scale and two-way trade in similar products may be an important source of gains from trade in the absence of distributional effects. Such phenomena are most relevant when economies at similar levels of development are integrated, but not in the CEE countries case where vertical specialisation along human-capital-intensity lines can be identified within the same industries, (e.g. the first part of this report).

Consider, first, the distributional impact of economic integration among countries endowed with very different bundles of productive factors, such as low-skill and high-skill labour for example. Opportunities for trade and factor mobility (and efficiency gains) are all the more important when such differences are large, as in the case for most CEE countries relative to current EU members. At the same time as aggregate efficiency increases, however, the income of relatively abundant factors in each country should increase *vis-a-vis* that of relatively scarce factors. If relative per capita income levels reflect different endowments of factors (i.e., high-earning factors are more abundant in the relatively rich country), then integration tends to reduce income differentials in the poor country. For example, highly skilled labour may be scarce (and earn high wages) in the relatively poor country. Its scarcity (and hence its income) should decrease when the relatively abundant supply of skill factors in rich countries becomes available. Conversely, integration should tend to reduce the income of relatively poor individuals in rich countries, whose factors become more abundant (and less valuable) in the integrated economy.

As to adjustment costs, factor-price changes and new demand patterns should generally lead each of the countries to change its pattern of specialisation across sectors characterised by different factor intensities. To the extent that inter-sectoral factor mobility is costly, short-run adjustment may or may not entail further income losses for owners of factors whose income is decreased by new scarcity patterns in the integrated economy. Adjustment costs, however, may also unevenly affect individual welfare levels when patterns of trade are driven by technological rather than factor-endowment heterogeneity. In general, theory offers no grounds for presuming that *all* economic agents should gain from economic integration. Insofar as welfare gains are indeed positive at the aggregate level, appropriate policy intervention is in principle needed to ensure that producers hurt by economic integration are compensated by those who gain disproportionately from the newly available opportunities to trade goods and factors.

On the basis of the theoretical insights outlined above, the candidate countries are not “too small to matter”. The “smallness” of the accession countries has, however, important implications on the political economy of accession. On the one hand, the nega-

tive effects of enlargement are likely to be limited, and quite narrowly confined. On the other hand, the Western countries' aggregate economic gains are also not large, and clearly not so large as to make immediate and unconditional accession optimal or, at least, politically feasible<sup>7</sup>. Even small coalitions of individuals who expect or even just fear losses from the CEEC accession countries may find it optimal and feasible to block the process, to the extent that they cannot be sure to receive appropriate compensation.

Thus, it is important to assess the extent to which distributional issues within current EU members may be problematic in the Eastern enlargement scenario in order to discuss how accession may best be configured in association with other policy instruments.

While these theoretical insights are qualitatively unambiguous, their empirical relevance is admittedly hard to ascertain in practice, chiefly because income distribution is affected by many other technological and market developments other than economic integration.<sup>8</sup> Yet, some indications as to the number and profile of job losers can be drawn, notably from the background country studies.

### *1.2.2. Identifying the losers: empirical evidence*

The character of economic interactions between the rich current EU members and poor CEE countries is likely to be quite different from that of within-EU trade and labour mobility. While trade among the core EU members is largely based on economies of scale and has intra-industry character, trade and especially migration flows with the CEE countries do reflect substantial heterogeneity of factors. The first part of the report con-

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<sup>7</sup> Clearly, more than economic gains and losses are relevant to Eastern enlargement prospects. As emphasised by Baldwin, Francois, and Portes (1997), one cannot forget that millions of men, and thousands of deadly tanks and bombs, were recently ready to fight on the two sides of the same political and economic boundary that would be erased by EU accession of the CEE countries. Amato and Batt (1999) offer an extensive discussion of political and cultural aspects of the CEEC accession problem.

<sup>8</sup> For conflicting views and surveys of the impact of "globalised" trade on industrial countries' wage structures (which have also been strongly affected by skillbiased technological progress) see, e.g., Bhagwati and

sistently points to the relevance of intra-industry trade, mainly of the vertical type, in economic interactions between Western and Central-Eastern Europe. Present EU members specialise in human-capital intensive products, CEE in labour-intensive products: and while the share of intra-industry trade is increasing over time, extremely high differences in the unit values of goods imported from and exported to the CEE countries indicate that, within each industry, the relatively poorly endowed CEE countries specialise in low quantity and price segments, according to their comparative advantage. The effects of trade and migration, while quantitatively small, are indeed concentrated in specific regions and industries, and qualitatively quite consistent with the simple predictions of standard trade and distribution models.

At smaller-than-macroeconomic scales, negative effects are also feared among certain groups of workers and industries.

The background report on Austria (Huber and Hofer, 1999) finds that wage growth for blue-collar workers is significantly and negatively affected by growing imports, but *all of imports*, not necessarily those coming from the East. All studies (including the background report on Sweden<sup>9</sup>) are consistent in finding effects of import penetration on wages only at the bottom-end of the wage distribution. The demand for white-collar workers appears to be unaffected by changes in industry sales.

In addition to trade effects, populations of border regions fear negative effects from migration and commuting flows. The populations involved are not in favour of full and immediate accession. It is hard to evaluate empirically whether their fears are well-grounded.

There is a large geographical border area with the CEE countries and significant border crossing taking place everyday. The border crossings so far involve mainly so-called "trader-tourists" and "worker-tourists" (Amato and Batt, 1999), taking advantage of visa-free travel to EU countries to acquire extra cash to purchase Western consumer

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Kosters (1994), Wood (1994), and the papers in the Summer 1995 and Spring 1997 issues of the *Journal of Economic Perspectives*, especially Freeman (1995), Richardson (1995), Topel (1997).

durables<sup>10</sup>. The size of these flows may actually decline over time as several projects are already under way along Polish-German, Czech-German, Czech-Austrian and Hungarian-Austrian borderlands to turn these underdeveloped areas into micro-regions with dense commercial and service infrastructures serving the populations on both sides of the border, undercutting the business of individual trader-tourists and possibly rounding employment and welfare opportunities to local populations. Border-crossing may also remedy labour shortages in some regions. For instance, employers' associations on both sides of the Italian/Slovenian border have entered into agreements on cross-border labour migration.

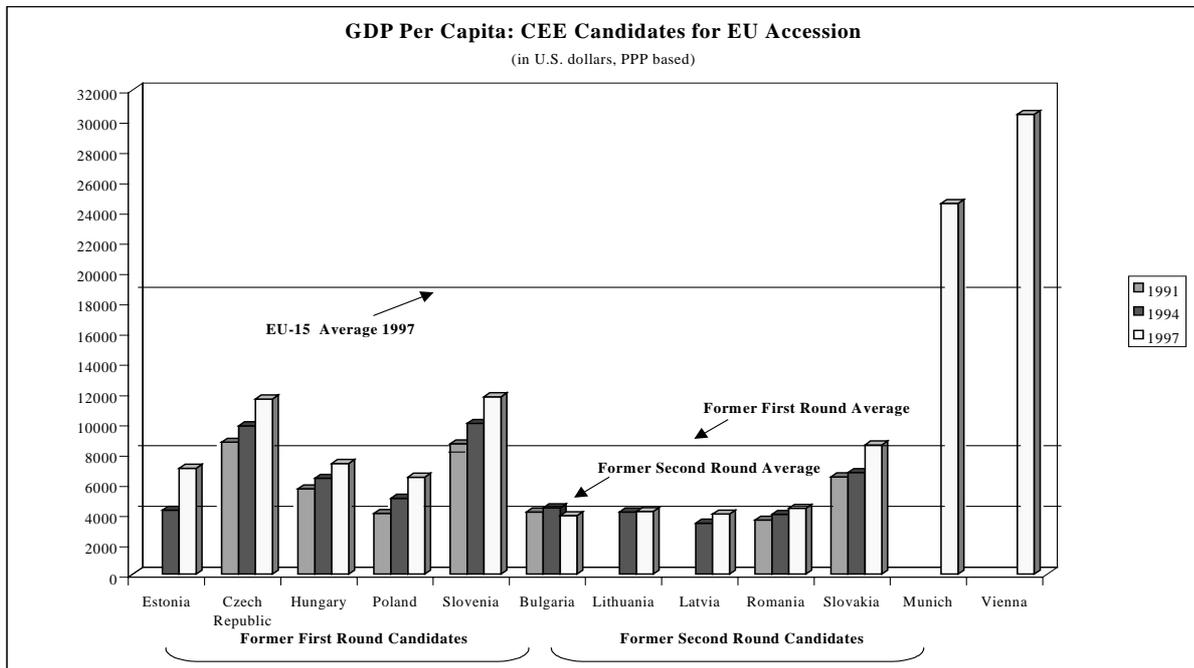
The remainder of the migrants comprise so far highly-skilled, predominantly young individuals. Migration flows associated with enlargement will likely involve a larger proportion of unskilled workers. While the size of these flows is not too large, they may nonetheless be significant relative to the population of border regions. A key feature of the Eastern Enlargement, with respect to other accession episodes reviewed in Chapter Two, is that bordering regions (with the exception of the Eastern German border) are relatively rich, and hence exert a strong pull effect on the East. Chart 1.2 documents the sizeable differences in GDP per capita between, on the one hand, the candidate countries and, on the other hand, Munich and Vienna.

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<sup>9</sup> Edin, Fredriksson and Lundborg, 1999.

<sup>10</sup> Multiple crossings each day are frequent by so-called "ants" who have made these buying and selling trips their main occupation (Amato and Batt, 1999).

Figure 1.2



Source: World Bank Development Report (various issues), and EUROSTAT (1999), Regional Database.

Are the effects otherwise geographically concentrated? Much depends on mobility and flexibility within the West. While trade and migration with CEE directly are and will be observed mostly in geographically close regions<sup>11</sup>, trade diversion and possibly further migration can be experienced within the current EU membership at large. Moreover, wage and employment effects of trade in certain sensitive sectors (communication and measuring equipment, computers, motor vehicles, and agriculture) will imply effects in other sectors if relative prices change, which they should. Thus, the accession effects have the potential to “spread” within the Union. In the more strongly affected portions of current EU economies the effects may be large enough to delay accession.

In German and Austrian wage regressions on micro data, Winter-Ebmer and Zweimueller (1996) and Pischke and Velling (1997) estimate insignificant or positive coefficients for the share of immigrant labour in regional and industry local markets; De

<sup>11</sup> This applies also to increases in non-traded goods associated with immigration (Kuhn and Wooton, 1991), which will clearly be concentrated in the countries receiving the largest flows of Eastern migrants.

New and Zimmermann (1994), by contrast, found relative large effects using data at a higher level of aggregation. As in all such empirical exercises, the effects of immigration are hard to disentangle from those of concurrent industry-level or regional developments. The background study on Austria (Hofer and Huber, 1999) finds rather negligible effects of an increase in the share of foreigners in an industry and wage growth, while the report on the return of ethnic Germans (Kreyenfeld, 1999) suggests that even when migrants speak the same language as the natives (a case that will occur also with Estonians going to Finland), they may find it very hard to get a job, particularly anywhere near their educational attainment. Recent empirical work points to very strong effects of proficiency in the host country language on labour market performance of immigrants<sup>12</sup>. Clearly, this may indicate that skilled migrants from CEE can compete with blue-collar domestic labour for unskilled and low-paid jobs.

Some concerns about potential losses associated with the enlargement also arise as to the fiscal displacement effects associated with giving Eastern citizens access to the more generous Western welfare systems. Yet the larger flows of temporary, short-term, income-seeking migrants predicted by the background country studies are unlikely to pose a financial burden on EU member states. Any public welfare provisions these migrants receive, such as medical insurance, unemployment benefits and social security, will be drawn in their home states, not in the West. Temporary migrants leave their families behind during their stay abroad and thus make no demands on social welfare and public education in the receiver-states.

Some relevant insights as to the strength of migration pressure on welfare systems may however be obtained from North-American evidence discussed in Chapter Two. Mobility of labour is very intense within the United States, and illegal migration is also quite relevant across the Mexico-US border.<sup>13</sup> Meyer (1998) offers a careful empirical analysis and a review of the extensive literature on benefit-induced migration in the

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<sup>12</sup> See Dustmann and van Soest (1998) for tests of the endogeneity of language fluency in earning equations using panel data on Germany. The authors find that the effects of language proficiency are "far more important than suggested by the existing literature".

US. The phenomenon, while modest, is both statistically and economically significant: the regional benefit differences in 1980 account for some 18% of single women's migration inflows and outflows (to and from high and low benefit States, respectively), and those in 1990 for some 15% of the flows. Within the US, however, the standard deviation of State-specific welfare benefits (of the order of \$100 per month) is low. Most social assistance and other welfare policies, in fact, are funded at the Federal level in the US. Welfare support is quite difficult to implement at the State level, since in 1969 the Supreme Court's Shapiro decision ruled that State-level welfare benefits could not be conditioned on previous residence.

The US experience suggests that, not surprisingly, local provision of welfare benefits is particularly difficult in the presence of labour mobility. External immigration magnifies the relevant strategic interactions. Borjas's (1998) empirical work on US micro data finds that the effects of welfare-system generosity differentials across States are much more relevant for new immigrants from outside the USA than for long-time residents. For example, 45% of the immigrants from outside the US who received welfare payments in 1990 lived in California (the highest-benefit State), while only 29% of the new immigrants who did not receive welfare lived there. More detailed statistical estimates indicate that the elasticity of welfare-participation rates to benefit differences is about twice as high for new immigrants than for US natives. Thus, those among the immigrants who are likely welfare recipients appear sensitive to even small differences in local benefit arrangements. This is not surprising, of course, in the light of the fact that migration costs are largely fixed. Depending on whether migrants are net fiscal contributors or recipients, local welfare policies will attempt to attract or repel them. As shown by the theoretical model of Wellish and Wildasin (1996), external immigration importantly affects the strategic interaction between decentralised redistributive policies, such as those prevalent in the EU institutional arrangements. The very existence of potential immigration magnifies the adverse welfare effects through co-ordination failures.

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<sup>13</sup> In fact, the Clinton administration has attempted to reduce strains on local welfare arrangements by decreeing that illegal immigrants – and their children – would no longer be allowed to access social services.

Overall, the statistical evidence on potential losses associated with enlargement is rather weak. Yet, the possibility of negative employment and wage effects is clear enough in the minds of policymakers and workers under threat from foreign competition, i.e., unskilled workers.<sup>14</sup> The wage effects of immigration are small, but certainly not insignificant in the eyes of those who lobby against it. The fiscal displacement effects rather unlikely to occur, but cannot be fully ruled out in the presence of failures in coordinating social welfare provision across current and perspective EU member states.

### **1.3. Credibility Effects**

The speed of macroeconomic and structural development in the CEE countries depends on whether accession is certain to occur soon (leading to faster convergence), or accession prospects are doubtful instead. Accession is taking longer than expected, possibly due to the distributional concerns sketched above and to related social policy issues discussed below. Delayed and uncertain prospects of accession may in turn affect negatively the structural developments that would reduce the distributional impact.

#### *1.3.1. Credibility and the speed of convergence*

A dynamic perspective, in fact, suggests that trade and FDI effects have not already played out fully, since trade barriers are already all but dismantled (Part A). It is often noted that CEE economies could quickly be brought to a level of development similar to that of current EU members. After all, if obsolete products and backward technology are the main blocking factors of CEE countries development, they could quickly be eliminated by training, patent licensing, and new equipment. However, quite large (if slowly narrowing) discrepancies of per capita GDP levels indicate that Western and Eastern European economies are not yet exploiting fully all opportunities for trade and specialisation.

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<sup>14</sup> Migrants, regardless of their high education level in the country of origin, work in labour-intensive sectors with high unskilled content, and in construction and manufacturing industries with a high share of blue-collar workers. Hence, they compete with unskilled Western workers (also affected by technological developments, and non-EU immigration e.g. from Turkey, former Yugoslavia and North Africa). Scheve and Slaughter (1999) show that less-skilled workers are significantly more likely than the skilled workers to prefer limiting immigrant inflows into the United States.

To understand why, we may note that the likelihood of future accession interacts importantly with the very same structural change that can make adjustment to accession more or less speedy and painless. The reason, of course, is the substantial remaining uncertainty as to the timing (if not the eventual occurrence) of accession and full economic integration. Even though now trade is free and property rights are enforced, it may be misleading to work under the assumption that economic agents trust that the same will be true forever, or indeed expect further convergence between CEE and EU business conditions. Hence, it is fully rational for economic agents in both CEE countries and the EU to refrain from adjusting fully to current conditions, because the cost of the necessary investment and restructuring would not be recovered if integration failed to progress apace.

As documented in the first part of the report, FDI has so far been relatively low for countries that are in the process of entering the European Union and have lower unit labour costs than current EU Members. The historical experience of other accession episodes – e.g., the Southern Enlargement of the EU reviewed in Chapter Two – suggests that low-wage countries entering the common market benefited from a large increase of FDI inflows. In Spain and Portugal, in particular, FDI inflows increased from about 0.5 to 2.5-3 per cent of GDP over a couple of years before returning, by the mid-1990s, back to their levels before the accession.

The small scale of FDI oriented to the Central and Eastern European countries can be explained by a lack of credibility of accession. FDI involves large sunk costs, and hence irreversible commitments on the part of investors. Moreover, low wages in these countries are often associated with low labour productivity: as unit labour costs are what ultimately matters for profit-maximizers, investors need to be convinced that the recipient countries are on a irreversible path leading to a rather rapid convergence to the productivity levels prevailing in the West.

### *1.3.2. Credibility and law enforcement*

Credibility of accession is also important for the strengthening of domestic institutions and law enforcement. Western countries have much better records of law enforcement than central and eastern Europe. EU accession may, in this context, play the

role of a powerful disciplining device. If citizens believe that accession is forthcoming, they will be more prone to comply with the law. Low-abiding behaviour by a large fraction of the population in turn makes it less costly to repress illegal behaviour. In other words, credible accession promotes enforcement of the rule of law because it makes more credible the penalties given to those breaking the law and reduces the costs of the repression apparatus.

The real issue is then that the Eastern Enlargement process is proceeding at a much slower pace than envisaged at the time when the bilateral association agreements were signed. Were EU Accession to lose credibility, the beneficial effect of prospective entry on law enforcement could be undone.

Strong repression of illegal behaviour may be a substitute for the credibility of EU Accession, but repression is costly and poor law enforcement typically goes hand-in-hand with weak tax collection and the presence of a large informal sector. Increasing tax rates in order to pay for larger and better equipped inspectorate functions is likely, in this context, to have perverse effects, that is, to end up just by increasing the size of the informal sector. This magnifies the risk that the postponement of the accession, especially if not accompanied by the definition of a credible agenda for entry, may increase the costs over the benefits of the return to Europe.

#### **1.4. Accession Scenarios**

For the purpose of highlighting the strategic implications of policies accompanying the accession it may be useful to sketch two extreme scenarios for macroeconomic, microeconomic, and policy interactions within an enlarged EU. The two scenarios are quite extreme and admittedly far from realistic in light of the evidence discussed in the first part of the report. Consideration of such extreme possibilities, however, will help us put in stark relief the possible roles of policy actions in reinforcing desirable developments, and avoiding undesirable ones.

##### *1.4.1. The Optimistic Scenario*

Any undesirable distributional effects of CEE countries accession depend crucially on the new members' relatively low levels of economic development, especially as regards fixed capital, know-how, infrastructures, and the legal and social framework of economic interaction. If accession itself could spur development in all such respects to such an extent as to ensure that CEECs become similar to current members, then immediate accession should be desirable and feasible for all concerned parties. An *optimistic scenario* could therefore envision that CEEC growth, spurred by foreign direct investment and new trade opportunities, will be so fast as to make full economic integration unambiguously desirable to all Western and Eastern economic agents. In such a scenario, trade would quickly conform to intra-industry patterns, and westward migration flows would be curtailed by narrowing income differentials. Any residual migration would (like trade and investment) only pursue appropriate specialisation patterns, with little or no net distributional impact.

A strategic assessment of the potential effects of Eastern enlargement, however, should take into account the current configuration of Western distributional policies. Many of the current EU members' economies are quite "rigid:" they tend to accommodate new events by increasing long-term unemployment and social transfers rather than by structural changes.<sup>15</sup> In past decades, pressure on labour and social policies came from oil shocks, technological developments, and macroeconomic policies. The distributional impact of Eastern enlargement, however small and transitory, can add further stress the current configuration of European labour markets. While the unsatisfactory performance of many member countries' social and labour market policies may lead one to welcome such challenges, resistance to reform of many European Welfare States indicates that current EU members might find it politically difficult to address further stress factors. Such political and distributional issues may explain the prolonged uncertainty regarding the details and timing of CEE countries' accession, and may also form the basis of an alternative extreme view on post-accession political and economic interactions.

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<sup>15</sup> See, e.g., the data and references in Bertola et al, 1999.

#### 1.4.2. *The Pessimistic Scenario*

In a *pessimistic scenario*, the actual or potential distributional impact of CEE countries accession might lead to imposition of inappropriate institutional constraints on Eastern economies, meant to prevent them from competing with Western producers. Inefficient restrictions on Eastern economies can fit the short-term interests of some Western producers but, in this scenario, accession would not enhance the less developed country's growth prospects. Rather, economic integration would result in persistent underdevelopment when is paired with inappropriate institutional constraints. At least part of the CEE economic region might become a "Mezzogiorno of Europe", which would fail to develop as poor human resources, low protection of property rights, and poor public administration discourage foreign capital inflows despite low wages. Out-migration could only be prevented by limits to personal mobility, or by transfers from the rest of the EU meant to protect Western welfare systems.

Neither the optimistic, nor the pessimistic scenarios are even remotely realistic in light of the evidence. But each of these extreme stylised views of possible futures captures – albeit in a crude and simplistic way – some of the politico-economic mechanisms that were at work in the past accession episodes analysed in Chapter Two, and must be at work in the current CEE accession process. Uncertainty about the timing of irreversible economic integration can explain why Western FDI in CEECs has so far proceeded at a disappointingly slow pace in comparison to previous accession episodes. Low credibility risks undermining the process of accelerated development and homogenisation that would, as in the optimistic scenario outlined above, make full economic integration desirable and immediately feasible. From this perspective, accession can only increase the intensity of growth-enhancing capital and trade flows, and should be implemented as soon as possible. A higher intensity of economic interaction between current and prospective members of the EU may well have negative implications for some Western economic agents. Inasmuch as this possibility may result in an inappropriate institutional configuration of the newly enlarged EU, prompt and irreversible accession may precipitate negative rather than positive developments for Eastern economies and Western welfare systems.

The relative strength of desirable and undesirable politico-economic mechanisms is extremely hard to gauge. The unprecedented nature of the CEE transition from planned to market economies implies that growth regressions like those in Chapter Three provide only limited guidance as to their post-accession growth prospects and economic policy configuration. More generally, it is impossible to predict the relative likelihood of more or less extreme scenarios. Our strategic assessment of advisable and non-advisable policies, however, can constructively exploit the self-reinforcing character of the economic and political interactions outlined in the extreme scenarios outlined above. Just like the optimistic scenario relies on a “virtuous circle” development process, where growth begets growth, the pessimistic scenario foreshadows a “vicious circle” whereby social protection would beget economic stagnation. In principle, elements of each circular interaction may be at work from very similar starting conditions. In such a situation, economic analysis may play a crucial role by outlining the complex nature of the relevant politico-economic interactions, aiming to ensure that well-informed political decisions take into account the ultimate consequences of policy actions. The task is both difficult and important in the CEE countries accession context. The economic transition process, in fact, is inevitably associated with some political instability. CEE governments may be tempted to engage in short-sighted policies, i.e. reaping benefits from the liquidation of existing assets rather than investing in a wide-ranging economic transformation with long-term payoffs. Similarly, the current EU members may focus too narrowly on relatively small short-run distributional problems, and fail to reconfigure their social policies so as to best take advantage of economic integration.

In what follows, we examine how economic policy may be best configured so as to strengthen the desirable channels of interaction and weaken the undesirable ones within each circular chain of causation.

### **1.5. Policy Issues**

The first set of policy issues is focused on *labour market and social policy reform within the current EU Members*. In order to forestall more or less pessimistic scenarios whereby excessive concern with distributional issues would prevent economic

growth through excessive rigidity, accession strategies should take into account explicitly the impact of economic integration with CEE countries on the current configuration of EU regional, adjustment, and social policy. Forward-looking reforms of Western institutional configurations should aim at offsetting any negative implications of CEE countries accession without reducing the potential for economic and social gains through proper adaptation of industrial relations and social welfare systems. As discussed above, it is hard to evaluate empirically whether distributional concerns should play an important role upon CEE countries accession. They do loom large in public opinion, however, and will need to be addressed or dismissed by policy actions. Consistently one should entertain the possibility that such concerns may indeed elicit policy reactions, and discuss how policy should be configured so as to prevent undesirable feedback effects.

The second set of policy issues focuses on *policy actions within the CEE countries*, especially as regards *reforms to be undertaken as a condition for EU accession*. EU institutions, despite their lack of politically accountable executive power and despite the constraints imposed by unanimity requirements in most of the relevant policy areas, may play a very important role in shaping institutional reforms within the new potential members. In order to amplify the positive-feedback effects highlighted by optimistic scenarios, whereby accession-related CEE growth eases distributional tensions, policies should focus credibly on long-term objectives, and aim at the establishment of a modern public sector, an efficient fiscal infrastructure, the reform of the education and pension systems.

In the following two sections, we attempt to gauge the strength of positive and negative feedback effects in light of past experience, and we highlight policy options meant to strengthen the former and subdue the latter.

#### *1.5.1. Issues in the West*

Can appropriate regional transfers and, more broadly, redistribution within the current EU members, be used to moderate the opposition of the lobbies that are currently opposing Eastern Enlargement?

In previous European trade and labour market integration experiences, the effects of actual or potential competition by initially disadvantaged areas for relatively rich labour markets were often avoided by explicit or implicit subsidisation of unemployment in relatively poor labour markets.<sup>16</sup> The German reunification experience, reviewed in Chapter Two, provides a particularly stark example. In these cases large transfers in terms of unemployment benefits, short-time work schemes and active labour market policies contributed to, on the one hand, reducing the social costs of redundancies and, on the other hand, mitigated pressures on the partners in collective bargaining to adjust wages to productivity levels.

It is hard to envision that fiscal transfers could be used for this purpose in the Eastern enlargement context, for at least two reasons. First, the size of the EU supranational budget is tiny relative to the size of the transfers effected, for example, in the German unification episode. Cross-national redistribution in the EU has historically been small, in contrast to the substantial redistribution across regions and individuals within each country. The budget of the EU is only a little more than 1% of GDP, and quite unlikely to be increased. Second, and most importantly, the income differentials between the EU-15 and the CEE countries are much wider than those featured by other European integration episodes. Anything resembling the policies enacted in East Germany unimaginable even if the CEE countries were to be integrated fully within a federal fiscal budget, rather than in the current institutional structure of the EU (where fiscal policy is essentially subsidiary). Equalisation of wages and of social policy may be a sustainable political arrangement across Southern and Northern Italy or Eastern and Western Germany, where it is accompanied by some degree of transfer-based redistribution. But it would be impossible across (say) France and Portugal in the absence of substantial transfers from the former to the latter.

In the aftermath of Eastern enlargement, accordingly, the current member countries could not use subsidies and centralised wage setting to stifle competition in goods

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<sup>16</sup> For a model and a review of simple evidence from the US and Puerto Rico, East and West Germany, Spain and the EU, and Italian regions, see Spilimbergo, 1999.

and factor markets from less developed economies. Such competition is likely to make it more difficult and expensive to protect the less skilled among Western workers from economic hardship. Only income support schemes of the last resort, e.g. means-tested social welfare systems, can be introduced at the EU scale. Yet, they already exist in most of the Western countries bordering CEE, which will bear most of the (gross) costs of enlargement.

Concerns with immigration are particularly relevant. Across the EU-15 and the CEE countries, in fact, *absolute* productivity differentials may be quite prominent, reflecting not only natural endowments but also the different level of development of social institutions, particularly as regards security arrangements, political stability, and the enforcement of property rights. The next Section discusses how policy may best address such issues, and ensure that free trade and increasing living standards ease migration pressure for workers in the CEE countries. Here, the focus is on the possible negative effects of any migration flow on the current configuration of Western social policies.

As emphasised in Chapter Two, the NAFTA experiment of economic integration between economies at very different levels of development may in some respects be relevant to prospects for CEE countries accession. It would be difficult to assess pressures on Western welfare systems on the basis of that experience, for at least two reasons. On the one hand, because social and labour market policies are much less relevant in the US than in the EU. On the other because, while NAFTA did not legalise labour mobility, free movement of persons is a fundamental right in the EU, and undoubtedly an issue in the CEE accession context.

The relatively limited income differentials and substantial cultural differences among current EU members do not induce much migration. However, CEE countries' immigrants may have stronger incentives to "benefit shop" once they have been uprooted by the much larger income differential between their country and any of the richest Western labour markets. Within the EU, a culture of limited labour mobility and the strong anti-mobility bias of institutions have so far prevented "race to the bottom" tensions among current members. Incipient migration flows from CEE countries may potentially

disrupt the current state of affairs, multiply the difficulties of local social-welfare systems within the EU, and lead policy to either dismantle social protection systems, or enhance the anti-mobility bias (possibly along ethnic lines) of the current configuration.

In general, labour mobility and economic integration make it difficult to implement welfare safety nets at the local or “subsidiary” level, as in the current institutional setting of the EU (where social policy is left at the national level, with very minor interference from EU-wide institutions: see Bertola et al, 1999, for an extensive discussion). This is because the effectiveness of social policy depends on the elasticity of local labour supply. When a local constituency tries to tax factors of production and redistribute income to relatively poor residents, labour taxes may be shifted to take-home wages if migration is disallowed, but will have important employment effects if producers can elect to “opt out” of solidarity arrangements by working elsewhere. On the other side of the coin, poor individuals are likely to be attracted by relatively generous welfare systems. Immigrants need not draw benefits themselves to trigger important consequences: when they compete with low-skill workers, and the latter’s wages fall below the non-work benefits, substitution of the indigenous poor by foreigners is effectively subsidised by the taxpayers of more generous constituencies.

The intensity of such effects is modest, but CEE countries accession cannot but increase it. Hence, policy discussions at accession provide a welcome opportunity to reconsider the configuration of EU social policies.

On the one hand, unfettered “competition among systems” need not produce appropriate configurations of social and labour market policies for each of the member countries, or indeed for regional entities within them. Policy interventions meant to remedy market failures and/or to implement politically desirable redistribution should be designed by collective choice processes, so as to prevent “races to the bottom” in the provision of social policy.

On the other hand, the tension between economic freedoms and local “subsidiary” social policies may also be resolved, more dangerously, by reinstating barriers to fundamental economic freedoms, and especially reducing labour mobility. Co-ordinated social

and labour market policies might conceivably tend to reproduce at the EU level the current configuration of the larger Continental countries, where institutions often reduce the intensity of interregional and inter-occupational competition. These twin dangers can and should be averted by explicit discussion of policy guidelines, and by better targeting the limited budget of the EU.

### *1.5.2. A Pan-European Safety Net?*

To prevent distributional concerns from leading either to a reduction of social protection in current EU members, or to limits to economic integration upon CEE accession, it may be necessary to reconfigure current practices so as to address explicitly the relevant issues and prevent uncoordinated, myopic policy choices.

Following Bertola et al. (1999), it is helpful in this respect to recognise that social policy has a variety of goals. Policy intervention aims on the one hand at transferring resources to “excluded” individuals, who would otherwise experience extreme poverty; on the other, at insuring individuals who currently enjoy adequate income levels against future misfortune. These goals are intertwined in the complex web of European welfare systems. The first one, however, is primarily pursued by unconditional or targeted benefits, granted as a right of citizenship and financed by general tax revenues. And the second one is primarily pursued by employment-based social-security systems, whose experience-rated benefits are financed by mandatory contributions. The potential tensions between economic integration and the provision of adequate social protection are different for the two sets of policy goals, which therefore call for differently configured coordination and harmonisation processes at the EU level.

In the case of transfers meant to guarantee a minimum welfare level to citizens, any tendency of poor people to move towards more generous jurisdictions and of rich tax-payers to move out of them makes it more difficult for local constituencies to implement their own preferred exclusion-preventing programs. Hence, poor policy coordination can potentially generate a “race to the bottom” and/or excite political sentiment against free personal mobility. To ensure the long-run sustainability of social protection and free personal mobility within the EU, the social rights of European citizens

could be defined in the form of minimum welfare standards at the EU level (Atkinson, 1998; Bean et al., 1998; Bertola et al., 1999). The wide income differentials among current and prospective EU members do imply that minimum-welfare transfers and services may also need to be co-financed at the EU level. The size of the relevant budget line, however, could be smaller than that of the current Structural, Cohesion, or Common Agricultural Policy funds (which currently amount to some 60 billion euro and would more than suffice to lift all Europeans out of extreme poverty). Moreover, a poverty-prevention programme could in principle be run along the same lines as those existing funds, and hence require no institutional reform. Even EU institutions with little supranational powers could be in charge of running income support of the last resort schemes (Bertola et al., 1999).

In practice, of course, the design and implementation of such a programme would need to address many difficult issues, chiefly that of appropriately balancing the undesirable welfare-shopping and labour-supply incentives of any poverty-prevention policy in a heterogeneous environment. Minimum assistance levels could be specified on a relative basis, as a proportion of local average earnings, and could be adjusted to reflect local price levels; both criteria would imply lower benefits in the less-developed regions of the EU. As long as a welfare floor prevents absolute poverty at the EU-wide level, however, an appropriately harmonised policy of this type could also reduce or eliminate incentives for welfare-motivated mobility by disadvantaged groups.

Since entitlement to poverty-prevention transfers is based on citizenship (rather than on past contributions), proper implementation of any centrally co-funded minimal welfare program is intimately related to the intensity and character of migration flows from *outside* the EU, or from newly acceding countries during the transition period. Before addressing this important aspect in the next subsection, however, we may discuss briefly less pressing co-ordination issues arising in the context of other social policies, namely those meant to cover workers against income losses due to old-age, disability, and unemployment. Such programs need not decrease labour-supply incentives, nor do they necessarily redistribute resources *ex ante*: in fact, the relevant insurance could in principle be provided by private contracts, and could be provided by collective institutions if their

enforcement and information-gathering are superior to those of *laissez-faire* markets. In practice, however, however, the quasi-market nature of such arrangements is very often intertwined with redistributive aspects, and the current configuration of unemployment and pension benefits is quite far from preserving appropriate incentives for regional and occupational mobility within each of the EU. Reforms of such programs in the direction of actuarial fairness are therefore desirable, and need not call for explicit co-ordination or co-financing at the EU level: social insurance need not be subject to downward pressure from fiscal competition when there is a clear link between contributions and benefits (Atkinson, 1998). Also in this context, however, EU-level policy processes could usefully mandate minimum standards and enforce actuarial fairness of social-insurance programs, so as to minimise *ex-post* opting-out incentives for relatively advantaged individuals<sup>17</sup>.

A pan-European safety net would also contribute to ease social tensions in that it could be established as a European citizenship right. In the spirit of social cohesion, all EU legal residents could be fully integrated into such a system of minimal welfare provision. This would also provide a strong rationale for EU-wide immigration policies. To address the obvious co-ordination problems arising when local constituencies grant EU-wide citizenship entitlements,<sup>18</sup> entry into the EU could indeed be centrally regulated. A EU-wide immigration policy is envisioned (albeit after a long transition process) by the provisions added in Amsterdam under Title IV of the EU Consolidated Treaties. Of course, immigration can be beneficial to growth in the EU. The relevant policies, however, should be configured so as to ensure that migration responds to proper economic incentives, and does not put undue pressure on welfare systems in either the source or destination countries. Unconditional restrictions on labour mobility, such as those imposed on citizens of non-EU countries, are clearly not the first-best policy to achieve this goal. It would be naïve, however, to rely exclusively on market mechanisms to ensure that migration decisions appropriately internalise all relevant interactions. Development-oriented policies and other social flanking measures are called for in Western economies,

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<sup>17</sup> See Bertola et al., 1999, for more extensive discussions of these issues.

<sup>18</sup> See, e.g., Wellish and Wildasin (1996).

and in Eastern economies as well. The character of the latter is discussed in the next section.

### *1.5.3. Issues in the East*

As argued in the previous section, an appropriate mobility-oriented reconfiguration of current EU practices in key social policy areas and labour market institutions can play a crucial role in fostering growth and social cohesion in the aftermath of CEE accession. Micro- and macroeconomic policies within each of the candidates for accession can play an equally crucial role in ensuring that future developments mimic the optimistic scenario outlined above as closely as possible.

From the perspective proposed, policy should be configured so as to rule out undesirable long-term equilibria whereby stagnation in CEE countries and self-fulfilling lack of trade and FDI flows perpetuates current income differentials and migration pressures. The growth scenarios outlined in Chapter Three suggest that one can be reasonably optimistic regarding the pace of convergence of Eastern income levels to Western standards. However, these forecasts should be used with caution, because they are based on estimates that do not take into account the specific character of transition economies. More fundamentally, they are based on the hypothesis that the CEE countries operate normally, and that none of them embark on anomalous divergent paths. Arguably, the CEE countries were and still are subject to a number of factors, which may reduce their growth performance. First, inadequate human capital may not lead to excessive optimism regarding growth prospects. Second, pervasive corruption is also likely to have an adverse impact on growth, as empirically found by Mauro (1996) and others. Third, the size of the public administration is growing, which is all the more preoccupying given that one should expect exactly the opposite to occur in a transition economy. Finally, there are large regional economic imbalances, which implies that some of the CEE regions are far poorer than the EU average.

All such aspects call for decisive public policy action. From the perspective of this report, the accession process offers a unique opportunity to reshape CEE countries economic policies so as to be consistent with a long run, self-reinforcing process of de-

velopment. This is because current EU members, and EU institutions, can impose conditional accession clauses on candidate countries in many of the relevant policy areas.

Conditions for accession may be specified not only in the most immediately relevant fields of labour and social policy, but also as regards fiscal and monetary policy. After accession, the CEE countries will be prominent recipients of structural funds, and the supply of such funds can also be conditioned on the policies being pursued by the new members. All such instruments of EU conditionality could and should be deployed, in co-ordinated and forward-looking fashion, so as to foster paths of stable and orderly development. This would of course be in the best interest of current EU members, since CEEC development would reduce any pressure on their internal welfare systems and, in particular, prevent excessive incipient migration flows. But it would also be in the CEE countries' best interest to abide by well-specified conditionality clauses, in that commitment to externally enforced (hence, credible) policy plans can eliminate temptations of opportunistic behaviour for local policy makers. In turn, policy credibility can induce economic agents to form optimistic expectations, and foster growth-enhancing (and migration-reducing) FDI flows. Quite simply, commitment can trigger virtuous circles of interaction, and conditionality can make it possible to commit.

Practical implementation of this basic insight, of course, needs to take carefully into consideration all the economic, social, and political aspects of a very complex, multi-faceted, and fast-evolving situation. Obviously, policy should aim at reducing the costs of accession to both Eastern and Western countries, but there are dilemmas that cannot be escaped. Transition and accession in the East is associated, and will inevitably remain associated, with adjustments and trade-offs. For example, the need to keep taxation credibly at moderate levels will conflict with the goal of improving public infrastructure investing in education and setting up a decent social safety net (three areas where policy intervention is badly needed, according to the analysis carried out in Chapter Three).

Further, and very importantly, the scope of conditionality is not unlimited, and proper design of robust policy frameworks must address enforcement problems explicitly. Conditioning on too many dimensions and on actions that are difficult to observe may jeopardise the credibility of the accession process in various ways. On the one hand, the West may be tempted to postpone accession, short of detailed evidence that real progress is being made. On the other hand, the CEE countries' governments may take advantage of the monitoring problems expected to be loose in implementing the provisions. That is, excess conditionality may reduce the extent to which exercise of conditionality lengthens the horizon of economic policies and fosters development-oriented convergent paths.

## **Chapter Two: Learning from Past Accessions and the German Unification Episode**

### **2.1. Introduction**

The CEE economies are much less developed than current EU members. From this perspective, full economic integration would be an unprecedented experiment, significantly different from the Southern enlargement episodes of the 1980s. Only NAFTA comes close in terms of initial discrepancies. However, the possible scope of integration is much more intimate in the European case than in North America, particularly because unhindered labour mobility needs to be considered (and negotiated). Article 48 of the Treaty of Rome recognizes the right to freedom of movement within the EU borders, while the NAFTA Agreement does not.

Four further aspects distinguish the CEE accession from other past and potential integration experiments:

- Unlike Greece, Portugal and Spain, CEE has a large bordering area with regions which are significantly richer than the EU average; in other words, income differentials are larger within a shorter range;
- The historical experience of Mexico and other less-developed countries is characterised by slow and uncertain processes of catch-up growth. The CEE economies, by contrast, are in a state of flux and transition. Relatively high enrolment rates, and a historical experience of industrialisation, may imply that productivity and incomes could in principle catch up with Western economies, or at least with the relatively backward portions of Western Europe, in relatively little time (see Chapter Three of this report).
- Unlike the USA, current EU members feature extensive social safety nets. Hence, they tend to accommodate new events (such as the oil shocks in the 1970s, and monetary and fiscal policy shocks in the 1980s) by increasing non-participation, long-term unemployment and large social transfers.

- Unlike Mexico (but also in many respects Portugal and Greece at the time of accession) many CEE countries as well have in place significant social welfare systems, and a much broader range of cash transfers than most middle-income countries.

In spite of these differences, past enlargement episodes are useful to understand how trade, labour and capital mobility interact. They can also shed some light on the dynamic effects of different labour markets and social policy institutions. All of these aspects outlined above are indeed intrinsically dynamic: they pertain to the ability of the CEECs EU incumbents to cope with change, adapting to new economic opportunities so as to take full advantage of trade and factor mobility. Hence, a dynamic perspective is essential to a proper analysis of the relevant issues.

In this chapter we will analyse three relevant experiences with accession episodes. Section 2.2 reviews the Southern Enlargement experience, Section 2.3 the NAFTA case. Section 2.4 draws some lessons from the German unification episode. Finally, Section 2.5 summarises the most relevant policy implications of these experiences for policies aimed at fostering the job generation potential of accessions, and reducing undesirable distribution as effects, as well as for the social policy harmonisation perspective.

## **2.2 The Southern Enlargement of the EU**

### *2.2.1. Introduction*

Greece, Portugal and Spain joined the EU at different development stages. They have also followed different economic evolutions since accession. Spain has almost reached the EU average level of labour productivity but at a cost of reducing significantly its employment rate, which has impeded convergence in GDP per capita. Portugal has had catch-up both in terms of labour productivity and GDP per capita. On the contrary, Greece has lagged behind EU average levels of labour productivity and GDP per capita (see Box 2.1).

From the experience of these countries several lessons can be drawn with regard to the enlargement of the EU to the Central and Eastern European countries. First, it has been argued elsewhere (for instance, Boeri, Burda and Köllö, 1998) that, as countries prepared to become EU members, they had to reshuffle their economic structure, and this resulted in higher unemployment. In fact, structural change did not stop at the moment of accession and proceeded afterwards at an even faster pace. Having to cope with these structural changes with relatively rigid labour market institutions, accession to the EU had a negative effect on the labour market, pushing unemployment up and slowing employment creation down. However, there is a striking difference in the evolution of aggregate unemployment in these three Southern countries. Whereas unemployment was at comparable low rates in the three countries at the early seventies, Portuguese unemployment is now below the EU average, Greek unemployment is close to that average, while Spain, despite a recent significant reduction, still has the highest unemployment rate not only in the EU, but also in the OECD.

Secondly, trade reform and liberalisation brought further changes in the labour market, not only with regard to employment and its composition, but also to wages and wage inequality. Foreign direct investment inflows may have also contributed to changing the employment and wage structure of the acceding countries. Moreover, regions within the same country were in different economic situations, and EU accessions also exacerbated regional inequalities. Both national governments and EU authorities have pursued regional policies to try to influence the market forces driving higher regional inequality. Hence, the regional distribution of FDI inflows and of Community Funds is also relevant for the analysis of the consequences of EU accession.

In this section the macroeconomic and labour market evolutions of Greece, Portugal, and Spain during the last three decades are reviewed and some conclusions are drawn which can be taken into account for the future accessions of CEE countries. The discussion is organized around four main topics:

- i) Structural changes induced by accessions.
- ii) Capital accumulation and its consequences for regional inequalities.

- iii) The effects of EU Structural and Cohesion Funds.
- iv) Changes in the labour markets (employment, unemployment, wages) and implications for international migration.

### Box 2.1. Converging with the EU.

Figures 2.1a and 2.1b plot GDP per capita and GDP per employee relative to the EU15 average (in PPS units), Portugal, Greece, and Spain had a GDP per capita of about 50%, 65% and 70% of the EU average, respectively, at the time of accession, after significant catching-up in the 1960-75 period. Afterwards, the three countries have experienced different convergence paths: Portugal has improved its relative GDP per capita from about 54% in 1986 to 63% in 1996, and Spain from about 70% in 1986 to about 75% in 1996, while Greek GDP per capita relative to the EU average has fallen from about 64% in 1981 to about 58% in 1996. In terms of GDP per employee, the differences are also noticeable. Spain shows very rapid catching-up in labour productivity in the 1960-86 period to remain at about 95% of the EU average after accession. On the other hand, Portugal has improved from about 52% to 55%, while Greece has experienced a significant fall, from about 69% in 1981 to 61% in 1996. Obviously the difference between the evolution of GDP per capita and GDP per employee shows up in the evolution of the employment rates, which have dramatically fallen in Spain, while in Portugal and Greece this fall has been much less noticeable.

Figure 2.1a. GDP per capita (EU=100), 1960-98

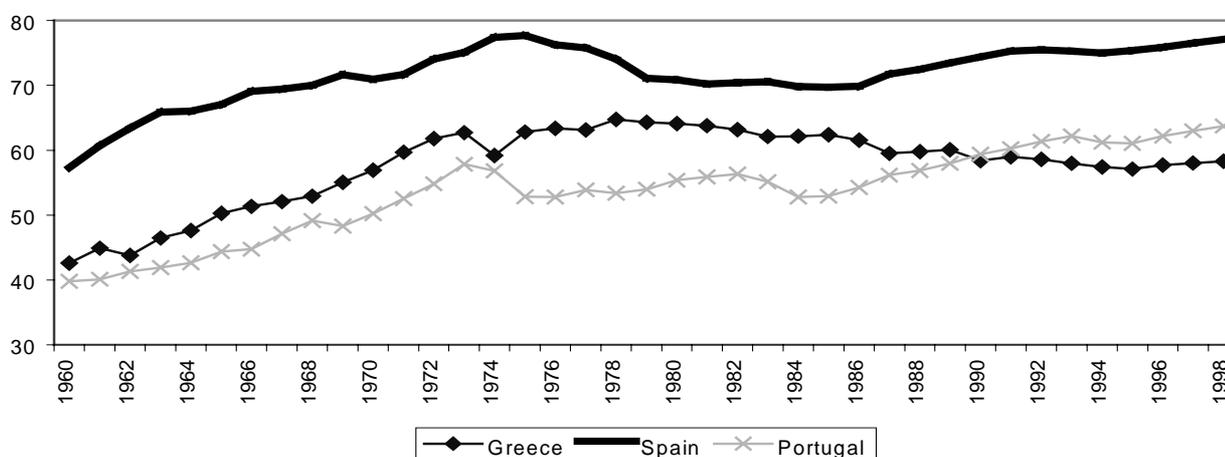
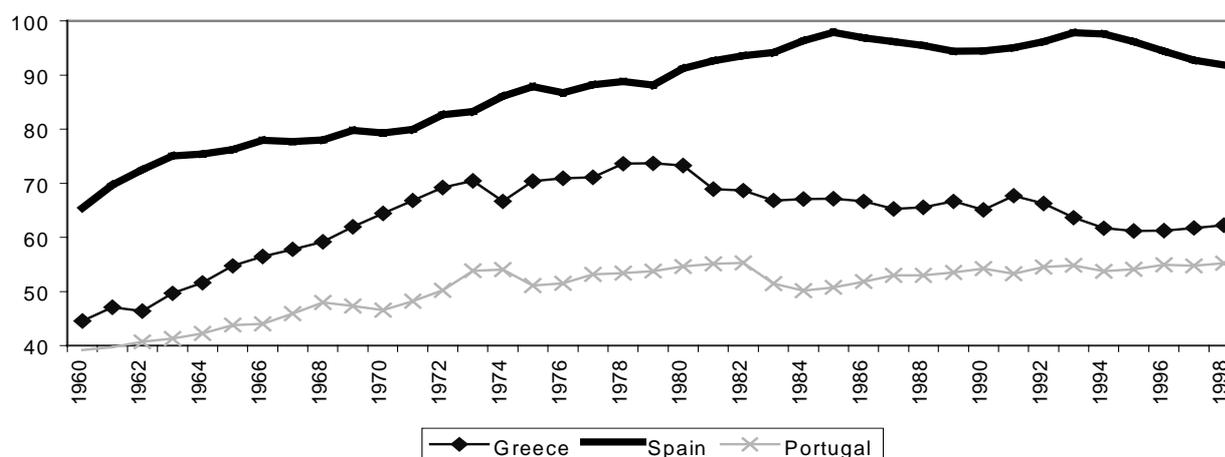


Figure 2.1b. GDP per employee (EU=100), 1960-98.



Source: EUROSTAT, *Statistical Appendix to European Economy*.

### 2.2.2. *Structural change*

The magnitude of structural changes that these Southern European countries underwent during the EU accession period manifested itself in different dimensions. First, the degree of openness of the economy has increased and the geographical and product composition of trade has significantly changed. Secondly, changes in the sectoral composition of employment have also taken place.

In these countries there is an increasing trend in the ratios of exports and imports to GDP that goes back to the sixties and seventies and shows no significant break at the moment of accession (see Box 2.2). The Portuguese economy has been more open throughout the period (as a smaller country and a founding member of the European Free Trade Association -EFTA), while the Greek and the Spanish economies were relatively closed and very similar in this respect. If anything, the most relevant facts in this regard seem to be the high increase of exports in Spain after 1993 and the stagnation of Greek exports in the nineties, far after accession.

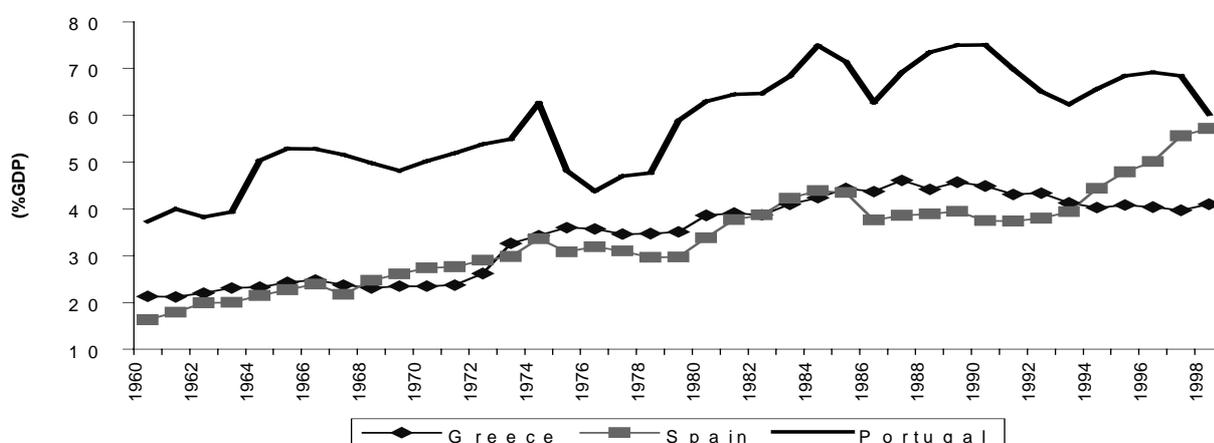
As for the sectoral composition of employment, all of the three economies, Greece, Portugal and Spain, were involved in a rapid transformation from rural to industrial economies during the sixties and seventies. During the last two decades, this process continued although at different rates in each country: while Spain and Portugal are currently closer to the EU average sectoral composition of employment, Greece still keeps a relatively large fraction of the working force in agriculture and self-employment (see Box 2.3.). Several facts should be singled out about these evolutions. First, accession to the EU, and the subsequent participation in the Common Agricultural Policy, have undoubtedly played some role at slowing down the destruction of agricultural jobs in these countries. Secondly, employment in social services expanded during the eighties and nineties, as these countries increased the scope of their social policies. Finally, it should be stressed that labour reshuffling took place with more intensity after accession, as indicated by the fact that rates of job creation and job destruction increased in the second half of the eighties and during the early nineties (see García-Serrano and Jimeno, 1998, for the evidence on Spain).

Summing up, as regards restructuring, the lesson is that there have been shifts in specialisation from the traditional unskilled labour-intensive products to higher value-added ones (especially in Portugal and Spain, and to much lesser extent in Greece). However, in retrospect one could say that where this reshuffling of resources has been too quick, the industrialisation patterns which took place have somewhat failed to attract labour intensive industries and to integrate the successful foreign based sectors with domestic sectors concentrated in specific regions (like Andalusia and Extremadura the poorest regions in Spain with unemployment rates close to 30%). In this sense, the available evidence points out that, although income differentials between regions within each country have narrowed down during the eighties and nineties, differentials across regions within the EU have widened.

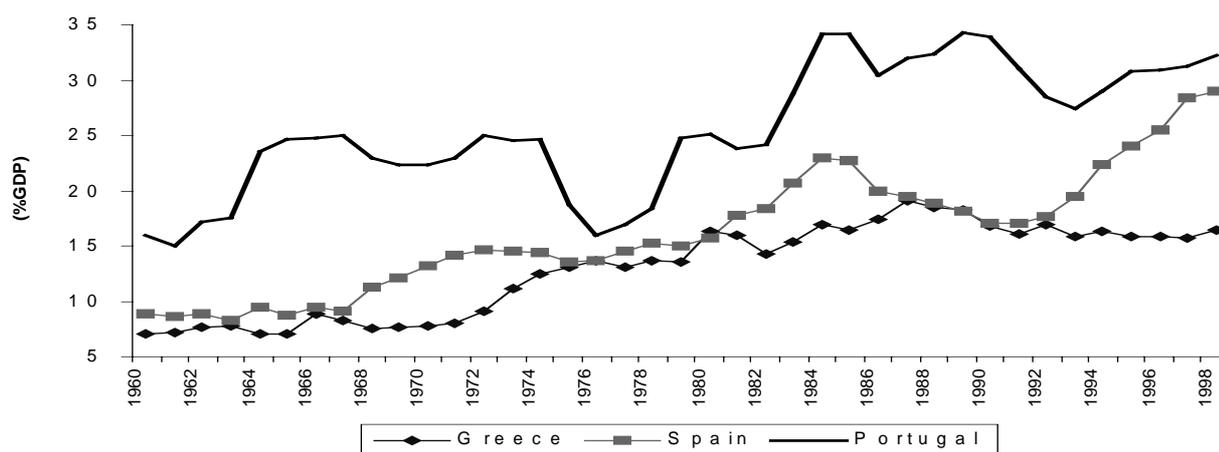
### Box 2.2. Trade

Figure 2.2 shows that the three countries have increased their degree of openness, as measured by the total exports and imports to GDP ratios, but it is doubtful that this rise can be explained by the mere fact of accession. For instance, the steeper trend in the trade shares in Portugal, which was and is the more open economy in the group, goes back to the late seventies when political transition took place. Greece, in turn, shows a much more stagnant behaviour, particularly after accession to the EU. Indeed, the only clear example of a regime shift in trade creation after accession is the Spanish one, where the shares of imports and, particularly, of exports have experienced a spectacular rise after 1992. Thus, it is seemingly the implementation of the Single Market Programme rather than integration into the EU that was behind the Spanish catch-up in trade.

**Figure 2.2a. Openness (Total exports and imports as percentage of GDP), 1960-98.**



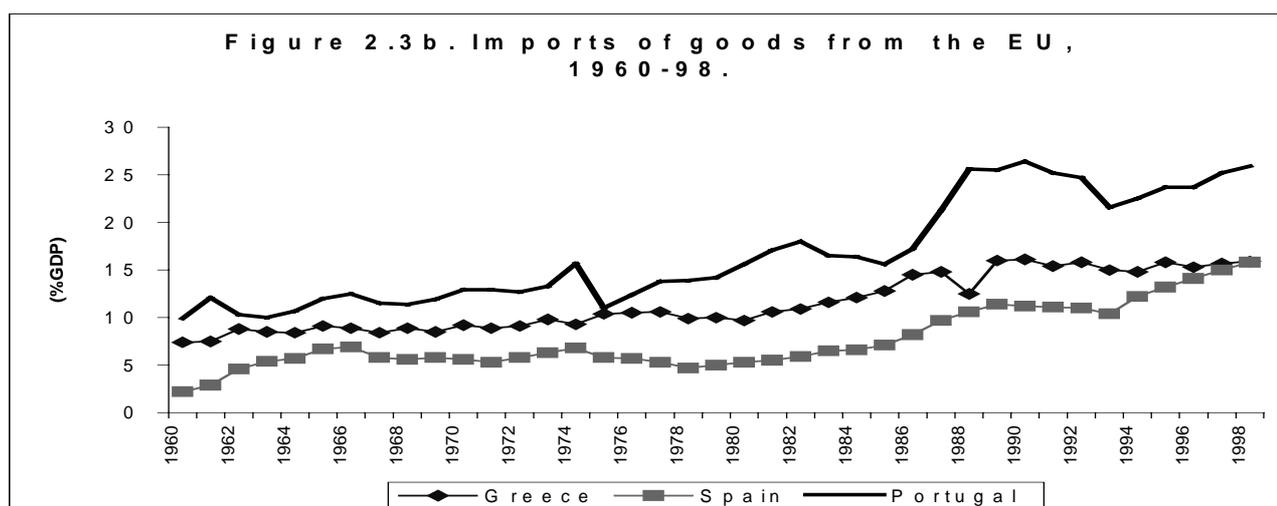
**Figure 2.2b. Total exports of goods and services, 1960-98.**



Source: EUROSTAT, *Statistical Appendix to European Economy*.

**Box 2.2 (continued)**

As for geographical patterns of trade, Figure 2.3 shows an increasing concentration of exports and imports of the three countries to and from the EU, with the respective patterns in each country clearly linked to the observations made above, i.e. the rise in intra-EU trade is much more noticeable in Portugal and Spain than in Greece.



Source: EUROSTAT, *Statistical Appendix to European Economy*.

As for the evolution of intra-industry versus inter-industry trade, one should expect that, since the three countries had a larger labour intensity and a higher share of farming population than their partners before accession, inter-industry trade would be predominant. However, this has not been the case in Portugal and Spain, where the intra-industry trade share in total trade has gone up by 10 and 14 percentage points, respectively, between 1996 and 1995. Greece, on the other hand, has hardly experienced any change, with the share of inter-industry trade remaining at 85% of total trade (see *European Economy*, 1996, no. 4). As regards specific sectors with a strong export orientation and, therefore, subject to stronger specialisation in each country (see Table 2.1), one should emphasize the role of textiles in Portuguese manufacturing, which still contributes 30% of export earnings, whereas there are other sectors (like food and beverage and electrical engineering) where FDI flows have strengthened their comparative advantage. Spain, in turn, has intensified specialisation in products of medium and low quality with strong or intermediate demand at the EU level. Thus, while food stuffs gradually lost ground, durable consumer goods (cars exported to the EU and capital goods to Latin-American countries) have seen a steep rise in importance. Lastly, while Greece shifted from minerals and agricultural products to manufactured products (textiles and metals) during the seventies, the disappearance of several trade-assisting devices (export subsidies and favourable barter trade agreement with the Eastern bloc states) upon accession, has contributed to a sharp decline in manufacturing performance afterwards, leaving comparative advantage only in low-price ranges like food products and textiles.

## Box 2.2 (continued)

Table 2.1. Trade by types of products

	Exports (as % of total exports)			Imports as (% total imports)		
	1985	1990	1996	1985	1990	1996
Agricultural and food products						
Greece	27.1	25.7	22.8	15.7	14.3	13.8
Portugal	8.2	6.6	6.4	11	9.7	10.9
Spain	14.4	13.5	14	10.2	9.7	10.9
EU15	7.2	7.5	6.6	11.5	8.5	7.9
Chemical products						
Greece	3.3	3.7	5.2	10.5	10.6	12.6
Portugal	6.1	5.3	4.5	11.5	9.2	10.1
Spain	8.2	8.8	8.3	11.8	10.1	11.8
EU15	10.4	11.5	12.9	6.3	6.5	7.7
Manufacturing products						
Greece	56.8	55.1	52.5	59.9	72.3	71.5
Portugal	80.2	81	86	64.1	73.6	75.0
Spain	75.7	78.1	79	60.9	71.7	73.2
EU15	80.1	83.1	87.5	53	61.7	69.3
Equipment and transportation materials						
Greece	2.9	4.2	7.3	25.8	31	28.7
Portugal	15.9	19.5	32.5	29.4	36.5	36.3
Spain	31.9	38.2	41.9	29.7	38.4	37.4
EU15	38.7	40.6	45.2	23.8	28.6	32.3

Source: EUROSTAT, *Yearbook '97*.

### Box 2.3. Sectoral composition of employment

As seen in Table 2.2, the proportion of agricultural jobs more than halved between 1980 and 1996 in both Portugal and Spain, while in Greece experienced a milder decrease from 30% to 20%, a figure which is markedly above the EU average of 4%. Of the three countries, Portugal has the largest proportion of manufacturing employment, while movements towards the service sectors have been noticeable in all the three countries. In Greece, services represent around 56% of the total employed population, a proportion which is significantly lower than the EU share (64%), further reinforcing the suggestion that the Greek economy is significantly less developed than its EU partners. Greek industrial employment, at 22% in 1996, is also below the EU average, reflecting a relatively weak performance by the manufacturing sector. Despite sustained efforts to bring about structural change in line with the rest of the EU, unemployment in Greece tends to be relatively low by European standards. It should, however, be noticed that the large share of self employed workers and the availability of casual jobs in the agricultural and urban informal sectors, as also appears in Portugal, contribute to keep unemployment down.

The sectoral employment pattern in Portugal also diverges quite markedly from the EU average. However, the last decade has witnessed a rapid decline in agricultural employment and a sustained expansion in the service sector. Currently 12% of the labour force are employed in agriculture, 30% in industry and 58% in services in contrast to 1985 where the shares were 22%, 33% and 45%, respectively.

As in the other two countries, Spain underwent the fastest economic growth in the sixties and early mid-seventies. The importance of the agricultural sector diminished in favour of industry, and more especially, in favour of construction and service activities. Later on, the relative loss of agriculture and industry was significant as services expanded to account 52% of total employment in 1985. While the reduction of the primary sector is comparable to that in Portugal, albeit starting from a much lower share, the fall in industrial activity can only be explained by a deep crisis in a number of sectors (steel, household equipment, shipbuilding) in which the Spanish authorities had bet heavily in the past and which were severely hurt by the rise of energy prices. The need to undertake a drastic restructuring came only after the second oil price crisis, during the early eighties, following the failure to modify the expansionary strategy pursued by the Spanish government in order to ease the political transition in the mid-seventies. While experiencing severe difficulties, yet with most of the sectoral adjustment already undertaken, Spain became a member of the EU.

**Table 2.2. Sectoral composition of employment, 1980-96**

	Spain			Portugal			Greece		
	1980	1985	1996	1980	1985	1996	1980	1985	1996
Employment (thousands)	11,551	10,875	12,394	3,940	4,064	4,475	3,356	3,601	3,824
Self-employment(%)	30.8	30.0	25.0	32.4	31.3	28.7	50.3	50.7	46.1
Agriculture (%)	19.3	16.2	8.7	27.3	21.9	12.2	30.3	28.5	20.4
Manufacturing (%)	25.5	22.7	18.9	26.0	24.5	22.2	30.2	19.9	15.1
Construction (%)	9.0	7.7	9.5	9.5	8.2	8.0	n.a	6.5	6.6
Services (%)	44.7	51.7	61.6	36.1	44.0	56.4	39.48	43.4	56.4
Social services (%)	17.9	22.2	27.4	18.2	21.8	24.8	n.a.	17.3	21.4

Source: OECD, Labour Force Statistics.

### *2.2.3. Capital accumulation and regional inequalities*

The removal of barriers to mobility and changes in financial regulations, which will go with EU accession, may stimulate FDI flows into the acceding countries. These flows, together with other capital flows, play a relevant role in the capital accumulation of relatively backward countries. Traditional theory of the determinants of FDI stress the role of the divergence of factor prices, transport costs and tariffs, together with ownership specific advantages, locational advantages and internalisation opportunities in the case of multinational enterprises. According to this theory we should expect FDI to flow in a single direction from capital intensive/high wage countries towards labour intensive/low wage countries. In this case, another important factor affecting FDI is economic stability and the degree of stringency of the labour market legislation (see OECD, 1994, chapter 4). Moreover, high transport costs and low firm-level fixed costs may induce two-way FDI that will displace trade and become more intensive as countries converge in factor prices. Thus, on the one hand economic integration will tend to decrease FDI as tariffs are reduced, trade increases and factor prices converge, and on the other hand will foster FDI if the determinants of two-way FDI are relevant. The capability of countries to absorb foreign capital (mostly determined by the amount and specialisation of human capital) is another relevant determining factor of FDI inflows. Thus, significant FDI flows into relatively backward countries should not be taken for granted, even after accession to the EU.

The experience of Greece and the Iberian countries is enlightening in this regard (see Box 2.4). While FDI inflows significantly increased in Portugal and Spain in the 1985-92 period, the accession of the Greece economy to the EU did not have any significant impact on capital inflows. The timing of the Greek accession, at the beginning of the eighties before the expansion of FDI, the political instability at the time, and the poor macroeconomic performance of the Greek economy during the eighties and early nineties are undoubtedly relevant factors explaining the Greek experience in this regard (Alogoskoufis, 1995). As for Portugal and Spain, the increase of FDI inflows, which took place during the second half of the eighties, has not persisted. After the recession of the early nineties, these inflows have remained at relatively low levels (in contrast with Ireland and the Netherlands, for instance). EMU and the elimination of exchange rate risks

could conceivably have an impact on FDI flows into the Portuguese and the Spanish economies, and they may well return to the levels of the second half of the eighties.

#### Box 2.4. Foreign direct investment

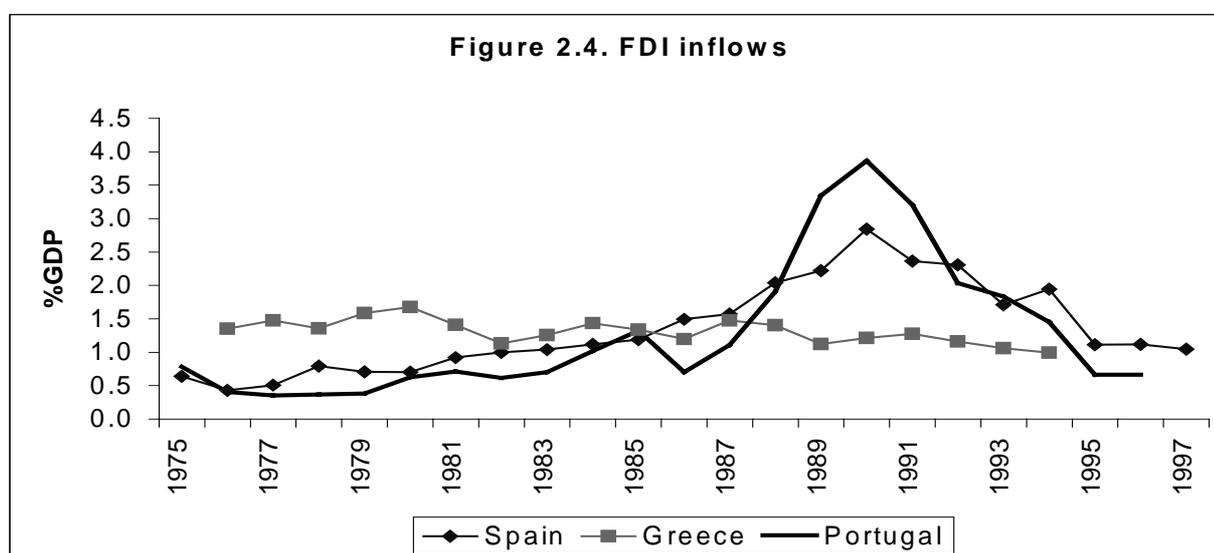
Table 2.3 shows that these three countries were low wage countries by EU standards at the time of accession. Since the early eighties, average hourly labour costs relative to the EU average decreased in Greece and increased in Portugal and Spain, although these increases were reversed by the devaluations of the early nineties. Arguably, the differences in average hourly labour costs reflect differences in productivity (so that human capital in the receiving country matters) and PPS, which firms take into account when deciding on FDI. However, it can be also argued that for FDI differences in productivity and PPS across countries are not relevant, as a large fraction of productivity is firm-specific (independent of location), and production is traded in international markets. In any case, on the labour cost front, Greece, Portugal, and Spain were good candidates to receive FDI inflows both before and after accession to the EU.

**Table 2.3. Average hourly labour costs in industry (EU12(1990)=100)**

	Greece	Portugal	Spain
1984	58.04	23.61	73.02
1988	43.01	23.95	73.39
1992	43.70	34.80	94.73
1995	46.49	33.47	82.35

Source: EUROSTAT, *Labour Costs Survey*. For Spain, 1984, International Labour Office, *Yearbook of Labour Statistics*, 1994.

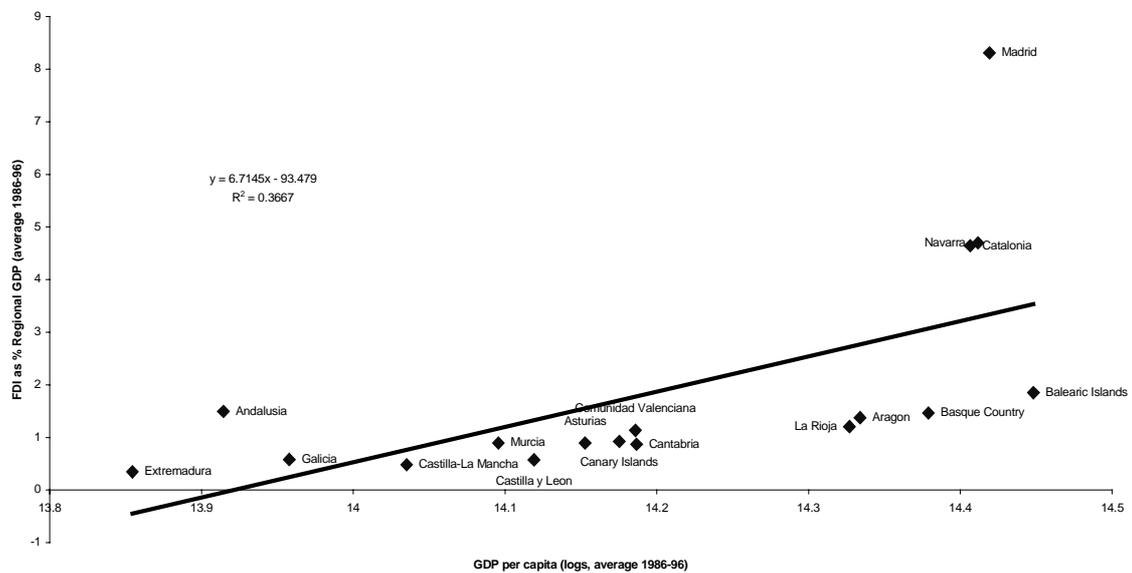
The evolution of FDI inflows in these three countries is given in Figure 2.4. As seen in the Figure, FDI inflows significantly increased in the eighties (mostly in the second half of the decade) both in Portugal and Spain, but not in Greece. This increase reflects an overall increase in FDI which have taken place across the world since the mid-eighties together with accession to the EU. The very poor performance of the Greek economy in this regard can be explained by distance from the core EU countries (gravity models), and, more importantly, by political and economic instability and the move towards more regulation which took place in Greece after accession to EU (see Alogoskoufis, 1995). On the contrary, Portugal and Spain started to reform their economies in the early eighties before accession to the EU and followed more orthodox fiscal and monetary policies since the mid-eighties.



Source: IMF, *Balance of Payments Statistics*.

FDI inflows are not equally distributed across the regions of the recipient country. Locational advantages, absorption capabilities, and agglomeration effects drive the regional distribution of FDI inflows, resulting in a widening of income and productivity differentials across regions. Of the three economies considered, Spain is the most relevant to analyse this issue, and the available evidence is clear-cut in this respect. Figure 2.5 characterises the regional distribution of FDI inflows to Spain by means of the relationship between the size of the inflows (measured in terms of regional GDP) and GDP per capita during the 1986-96 period. This Figure shows that FDI inflows have tended to go to the richer regions, with Madrid, Catalonia, and Navarra (the three richest regions together with the Balearic Islands, which is specialised in tourism) attracting a very significant share of FDI inflows.

Figure 2.5. Regional distribution of FDI inflows (Spain, 1986-96)



2.2.4. *EU Structural Funds***Box 2.5. EU Structural Funds into Greece, Portugal, and Spain.**

As seen in Table 2.4, structural funds amount to about 1% of GDP in Spain, and 1.5% and 2.5 % in Greece and Portugal, respectively. Regional funds, which represent .34% of EU GDP, are the most relevant transfers in the three countries with shares of .5% of GDP in Spain and 1.4% and 2% of GDP in Greece and Portugal, respectively. The second most relevant set of transfers is channelled through the European Social Fund, which on average amounted to about .15% of GDP in 1996, and which in Spain have increased to reached almost the same size as regional funds. In Portugal and, especially, in Greece these funds are of a smaller magnitude: about .2% and .15% of GDP, respectively. Finally, cohesion funds amount to about .25% of GDP in Spain and Greece, and .2% in Portugal.

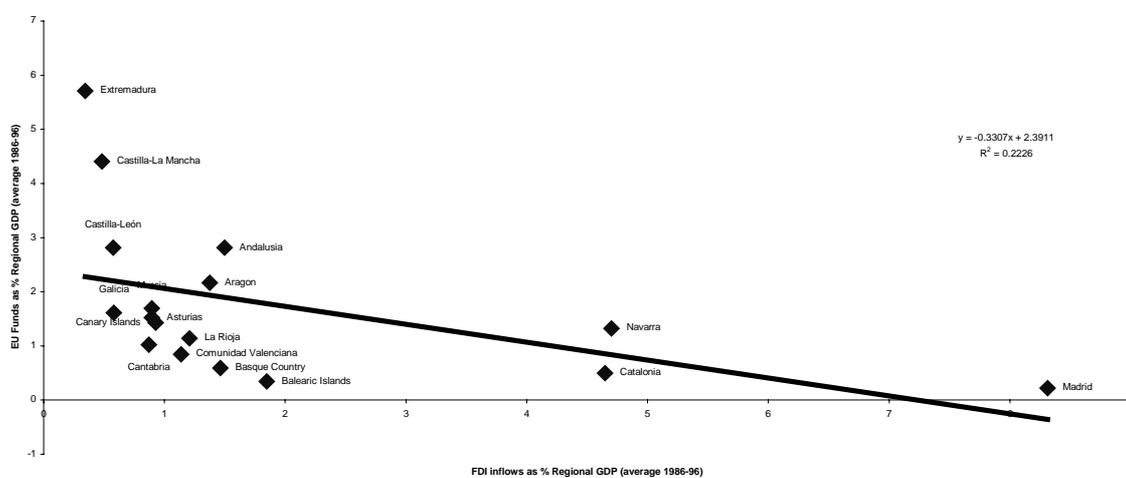
**Table 2.4. Structural funds and cohesion funds receipts as percentage of GDP**

	Spain				Portugal				Greece			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
1985									.58	.15		
1986	.13	.07			.55	.32			.64	.22		
1987	.14	.12			.65	.55			.60	.31		
1988	.19	.14			.91	.55			.57	.27		
1989	.28	.14			.95	.52			.69	.36		
1990	.36	.16			.94	.14			.83	.46		
1991	.35	.16			1.79	.70			.75	.48		
1992	.45	.18			2.04	.80			1.33	.34		
1993	.43	.20		.10	1.73	1.07		.13	1.40	.53		.19
1994	.33	.16		.10	1.57	.36		.35	1.10	.54		.19
1995	.71	.27	.04	.26	1.75	.70	.36	.50	1.37	.29	.17	.10
1996	.46	.39	.06	.24	1.97	.67	.19	.40	1.39	.12	.12	.25

(1): Regional funds. (2): European Social Fund. (3): Other Structural Funds. (4): Cohesion Funds. Source: Domenech, Maudes and Varela's (1998) elaboration of EU budget data.

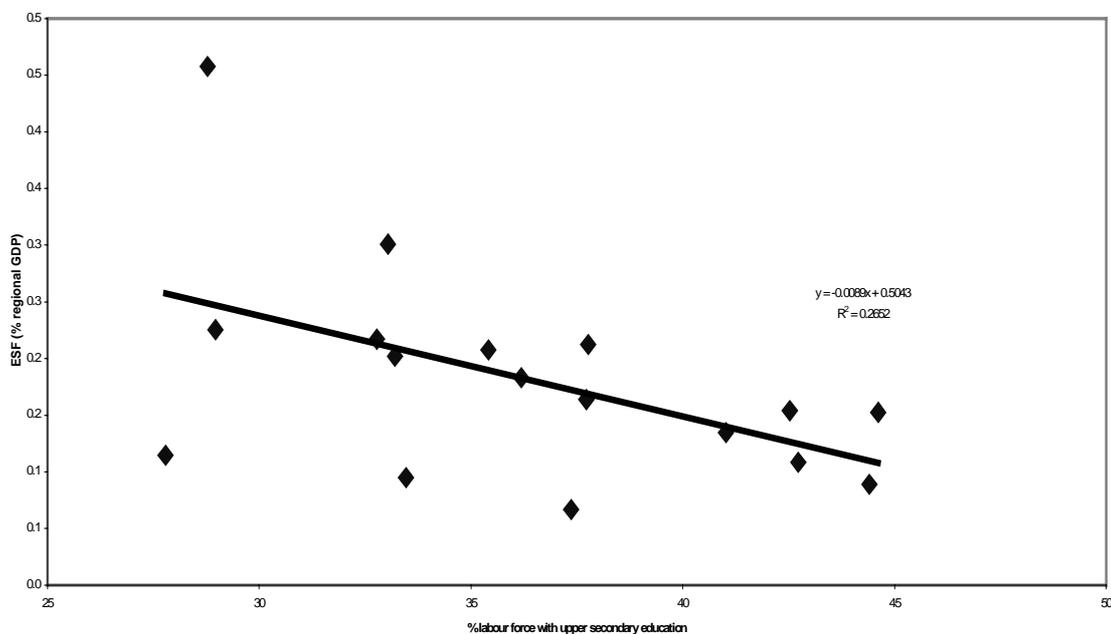
These funds have played a very significant role in the recipient countries. First, in contrast with FDI inflows, Structural Funds do mostly go to the less favoured regions, thereby compensating for the concentration of FDI inflows in most developed regions, as shown in Figure 2.6. Secondly, structural and cohesion funds have contributed very significantly to capital accumulation, mainly through the improvement of infrastructure. Regional funds nowadays amount to about 25% of public investment in Portugal and Greece and about 10% in Spain (in terms of total investment, these proportions are 5% in Portugal and Greece and 2% in Spain). Adding up structural and cohesion funds, EU transfers amount to about 45% of public investment in Greece and Portugal, and about 25% in Spain (which in terms of total investment represent about 7% and 2.5%, respectively). According to Boscá, Domenech and Taguas (1998) had these transfers not occurred, the stock of public capital would be about 10% lower in Greece and Portugal, and 5% lower in Spain. Finally, there is evidence that regional funds have been effective in reducing regional disparities within the recipient countries. De la Fuente and Vives (1995) found that, in the second half of the eighties, regional funds, despite their limited size, added around 2 points to average regional productivity growth in the Spanish regions and reduced the dispersion of regional output by about 5%, which is about one-third of the observed decrease in the dispersion of productivity during the 1980s.

**Figure 2.6. Regional distribution of EU Structural Funds (Spain, 1986-96)**



Besides their relevance for physical capital accumulation in less favoured regions, EU funds also significantly contribute to human capital accumulation. Training schemes may be financed with regional funds. Moreover, transfers through the European Social Fund are mostly channelled toward the development of human resources. Overall and from a macroeconomic point of view, it is difficult to assess to what extent these transfers have achieved their objectives. First, there are no data available on the total amount of resources from the EU transfers devoted to development of human resources (no consolidation across the different funds and programmes by objectives is available). Secondly, ex post evaluation of the schemes is not as widespread as it should be. Thus, there is just superficial evidence on the regional distribution of the European Social Funds and its relationship with educational attainments in each region. As shown in Figure 2.7, there is a clear negative correlation between the regional distribution of funds and the proportion of employees with upper secondary education. This suggests that, at least, ESF funds are well targeted insofar as they reach the regions lagging behind in the accumulation of human capital. Although both Figures 2.6 and 2.7 give the correlations between averages for the 1986-96 period, a similar finding applies for each of the years within that period.

Figure 27. ESF and regional educational attainments



### 2.2.5. *The labour market and international migration*

The diverging experiences of Portugal and Spain offer important lessons as to the labour market consequences of EU accession,. Between the mid-1970s and the mid-1980s, Spanish unemployment soared from below 5% to around 25%. Then, after EU accession, it went down to about 16% in the 1991. On the contrary, Portuguese unemployment never reached double-digit levels and has remained relatively low by European standards. Arguably, part of these differences could be explained by methodological issues regarding labour force statistics in both countries. But the difference in unemployment rates is so large that even accounting for this, the Spanish unemployment rate would be far above the Portuguese one. Moreover, the high Spanish unemployment rate is complemented by a low participation rate (even by Mediterranean standards) which gives an

employment rate of about 50% of the working age population (more than 5 points lower than in Greece and almost 15 points lower than in Portugal).

Besides (non)employment, the different response to EU accession also manifests itself in the evolution of wage inequality. In Portugal, wage inequality has significantly increased since the early 1980s, while in Spain, this increase seems to have been much less noticeable and mostly associated with the increasing incidence of fixed-term employment contracts, which rose from about 15% of employees in the late 1980s to above 30% in the mid-1990s.

The reasons for the diverging Portuguese and Spanish labour market outcomes are discussed elsewhere (see Boxes 2.6 and 2.7). Institutional differences seem very relevant. Given the extent of structural changes to take place in the acceding countries, it is crucial to design institutions well-suited to provide the flexibility needed to proceed with those changes. Unfortunately, more flexibility often goes hand-in-hand with less insurance and protection to workers, so that a proper balance between these objectives has to be found. However, the Spanish experience unambiguously shows that a system of inefficient and rigid labour market institutions does not preclude job destruction and may build-in significant locking-in effects in the functioning of the labour market, so that unavoidable short-term increases in unemployment become persistent.

The trade-off between flexibility and insurance in the acceding countries is not only relevant for the labour market performance of the candidate country. It may also have implications for the EU countries, as international migration flows may be affected by the provision of insurance and protection in the countries entering the union. It is possible that the lower the generosity of non-employment benefits in the acceding country, the higher may be migration outflows. To this respect, the experience of Southern European countries is quite revealing. Greece, Portugal, and Spain were all countries with significant migration flows in the 1960s and early 1970s.

However, during the 1980s and 1990s, net migration flows have been declining (see Box 2.8). Even in Portugal, with a low degree of unemployment insurance during the eighties, there were no significant outflows toward the rest of the EU after the accession.

The expansion of the second half of the eighties and the fact that a very high proportion of Portuguese migration goes to the US could explain the lack of labour mobility to other EU countries. As for Spain, migration has been declining since the mid-1970s even across Spanish regions, which is partly explained by the increase in the generosity of unemployment benefits throughout the 1980s.

**Box 2.6. Spanish and Portuguese unemployment**

What explains the different labour market performance of Portugal and Spain? The explanation has to do with some differences in labour market institutions compounded by the incidence of similar shocks that occurred with a different timing. The Spanish labour market is characterised by a relatively high degree of employment protection, a medium degree of centralisation of wage bargaining, and unemployment benefits close to the EU average and of relatively long duration. The combination of these features results in a labour market that shows a high degree of hysteresis, that is, a labour market in which transitory shocks have very-long lasting (in the extreme case, permanent) effects. Thus, the incidence of negative shocks compounded with such a high degree of hysteresis can account for the rise and persistence of Spanish unemployment.<sup>1</sup>

Despite the outward similarities in the labour market institutions of the two neighbour economies, there are several differences that could explain such a stark contrast between Spanish and Portuguese unemployment. First, although, at first sight, institutions look similar, in practice the situation is rather dissimilar (see Bover, García-Perea, and Portugal, 1998). For instance, in Portugal there is a restrictive employment protection and relatively centralised wage bargaining which, however, does not preclude wage flexibility at both the macro-economic and the microeconomic level. Second, before accession Spain already enjoyed a generous system of unemployment benefits, while Portugal had none; after 1989, the benefit systems look more similar, although Spain has a higher coverage rate and longer benefit duration (Blanchard and Jimeno, 1995). Third, minimum wages (set by collective bargaining) are higher, vis-a-vis average wages, in Spain, giving employers less room for manoeuvre, in spite of the sharp contrast between the wages of temporary and permanent employees. Finally, it also the case that, in practice, firing costs in Spain have been higher than in Portugal. This difference, combined with more generous unemployment benefits and the enhanced power of insider employees on permanent contracts induced by the two-tier nature of labour market reforms, may also help to explain the stronger power of unions and the smaller real wage flexibility in Spain than in Portugal since their accession to EU. In fact, the Portuguese labour market has shown a fairly high degree of flexibility (Luz and Pinheiro, 1994) and shocks have had only transitory effects (Castillo, Dolado, and Jimeno, 1998). Thus, opposite to what happened in Spain, Portugal could cope with labour reshuffling and disinflation while keeping unemployment at low levels.

Thus, as for labour market performance, the main lesson from the Portuguese and Spanish accession to EU is that a rigid labour market like that of Spain with its panoply of rigid rules in the mid-eighties, appears ill suited to dealing with the structural changes that inevitably accompany accession and, more generally, that a comprehensive European-style safety net may not be well suited to the special needs of poorer countries joining an area of free trade and capital mobility.

**Box 2.7. Wage inequality**

Table 2.5 provides some descriptive statistics of the wage distribution in Portugal, for 1985 and 1995, and in Spain, for 1995 (adequate data no available earlier). These descriptive statistics show that wage inequality increased in Portugal between 1985 and 1995, mostly because of a relatively higher rise of wages at the the 90<sup>th</sup> percentile. In contrast, Spain has a less compressed distribution at the bottom (which can be explained by a relatively higher minimum wage in Portugal), a less dispersed top tail of the distribution, and only slightly lower levels of overall wage inequality.

A more detailed analysis of the wage distribution (see Jimeno et al. 1999) shows that the increasing wage inequality in Portugal is mostly due to a rise of the skill premium (the return to a year of education went up from about 5.3% in 1985 to 6.2% in 1995, and the wage differential of manual workers rose from -9% in 1985 to -22% in 1995), and a rise of the wage differential between males and females (from -17.3% to -23.4%). Inter-industry and inter-regional wage differentials changed only marginally despite EU accession (with the wage premium of the service sector falling, and the wage premium of Lisbon and the Algarve slightly increasing).

The lack of comparable microeconomic data in Spain does not permit a similar analysis of the sources of changes in the wage structure. However, the comparison between the wage structure of Portugal and Spain for 1995 provides interesting findings. First, the skill premium seems to be lower in Spain than in Portugal, although the skill upgrading of the labour force seems to have been similar in both countries (see Cantó et al., 1998). Secondly, the wage premium of non-manual workers relative to manual is about half in Spain (11%) than in Portugal (22%). Thirdly, inter-industry wage differentials are much lower in Spain. Fourthly, the structure of collective bargaining makes more differences in Spain, where workers with collective agreements at the firm level enjoy a wage premium of around 15% (7% in Portugal). Finally, as for regional differences in wages, these are much larger in Spain than in Portugal, as corresponds to a larger country with very small inter-regional migration flows. Overall, the general conclusion is that the Spanish labour market institutions (collective bargaining, firing costs) result in higher union power that is used to compress the wage distribution, while in Portugal the national minimum wage only has an effect at the very bottom of the wage distribution.

Possibly, the differences in unemployment and in wage inequality between Portugal and Spain are interrelated. It is tempting to argue that, facing similar shocks from EU accession, from changes in technology and in international trade, both countries followed different routes. While Portugal managed to keep some wage flexibility both at the macro and the micro level by allowing some sectors and occupations to suffer relative wage losses, Spain went for reducing wage differences among sectors and occupations, with more rigid wages at the macro and micro level. As a result, unemployment, mostly among workers of traditional industries with low-skill levels, increased in Spain, while in Portugal employment in traditional sectors (noticeably, textiles) and in low-skill occupations did not fall as much as in Spain.

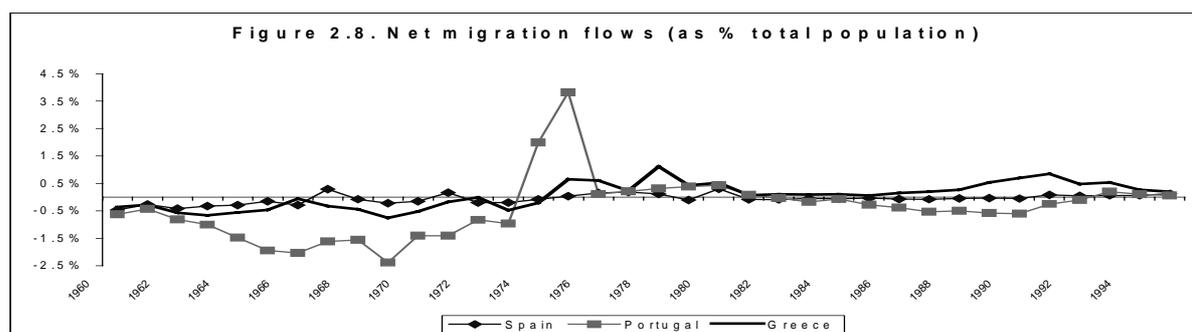
**Table 2.5. Wage inequality in Portugal, 1985 and 1995**

	Portugal		Spain
	1985	1995	1995
<b>Gini Index</b>	0.31	0.36	0.32
<b>Theil Index</b>	0.20	0.26	0.21
<b>Wage ratio Q90/Q10</b>	3.37	4.09	3.62
<b>Wage ratio Q50/Q10</b>	1.50	1.58	1.66
<b>Wage ratio Q90/Q50</b>	2.26	2.59	2.18
<b>Coefficient of variation</b>	0.83	0.96	1.14

Source: Cantó et al. (1999).

### Box 2.8. International migration flows

Current EU membership comes with the complete removal of barriers to labour mobility. However, when Mediterranean countries entered the EU some restrictions to labour mobility remained until the completion of the Single Market in 1991. The removals of barriers to labour mobility in the early nineties however did not have a significant impact on migration flows from these countries. Although historically Greece, Portugal, and Spain were countries with high migration flows to the rest of Europe (especially in the 1950s and the 1960s), migration flows fell significantly since the mid-seventies as the labour market performance of the core-EU countries worsened. Gaps in expected wages have always been conducive to migration from Greece, Portugal, and Spain to the EU core countries, especially in the case of the poorest regions of these Mediterranean countries which also suffer the highest unemployment rates. As income differentials are concerned, at the moment of accession Greece had a GDP per capita of about 60 per cent of the EU average and the unemployment rate was about 3% against a 5% unemployment rate in the EU. As for Spain and Portugal, these figures were about 70% and 55%, for GDP per capita, respectively, while unemployment rates stood at 20% and 7% against an average EU unemployment rate close to 10%. Later on, at the early nineties when the completion of the Single Market took place, relative incomes remained roughly similar but unemployment rates were at that time on the rise all across the EU. However, as seen in Figure 2.5, which plots net migration flows in Greece, Portugal, and Spain in the 1960-95 period, neither EU membership nor the complete removal of barriers to labour mobility with the implementation of the Single Market in the early nineties, yielded a reversion to the high migration period of the 1950s and 1960s. In these countries, net migration flows were negative in the 1960s and early 1970s: -0.19%, -1.32%, and -0.41% of total population as average for the 1960-73 period in Spain, Portugal, and Greece, respectively. Portugal, the country with the largest negative flows in this period received large migration flows after the colonial wars in 1974-75 and, to a minor extent in the second half of the seventies, and turned again into negative flows in the second half of the eighties. On the contrary, Greece turned into positive flows in the mid-seventies. Finally, Spain had the smallest negative flows in the 1960-73 period, relative to total population. These flows either turned positive or became smaller in the mid-seventies, mainly due to the return of political exiles after the advent of the democracy in the second half of the seventies. Since then, net flows have been practically nil, although recently there has been a substantial increase of immigration, mainly from North Africa and Latin American countries. For the last decade the average flows were .01%, .42% and -0.26% for Spain, Greece and Portugal, respectively. Further it is worth noticing that a significant proportion of Portuguese migrants since the mid-seventies have moved to North America. The existence of Portuguese communities in the US and Canada created the network opportunities for migration to these countries which changed the direction of Portuguese migration flows when the labour market opportunities in the core EU countries were reduced.



Source: EUROSTAT, *Demographic Statistics*, 1997.

Thus, the overall conclusion is that the removal of barriers to labour mobility had only a marginal impact on migration flows from the Southern countries. There are however some caveats to be made to this conclusion. First, there is always the issue of data reliability. One inconvenience is that we have analysed the evolution of net migration flows, not gross migration nor the composition of these flows by skill content which is relevant to assess its economic implications.<sup>1</sup> Moreover, as barriers to mobility disappear, the magnitude of unrecorded flows may increase. Secondly, as argued by Bean, Bentolila, Bertola and Dolado (1998), at the margin even potential mobility may make a big difference to economic behavior. Finally, there are non-administrative barriers to mobility, like cultural and language differences across countries, different labour market institutions and regulations yielding different degrees of protection, which are also important for migration and whose relevance is eroded as economic integration deepens. Thus, increases in the migration flows between Greece, Portugal and Spain and the rest of the EU countries may occur with some delay after the removal of regulatory barriers to migration.

### 2.3. What can be learned from the NAFTA experience?

The level of development of the CEE economies is much lower, relative to that of current member countries, than was the case in the Mediterranean accession experiment of the 1980s. In the five fast-track countries, GNP per capita ranged from 20% (Bulgaria) to 61% (Slovenia) of the EU-15 average in 1997. Collectively, these countries stand at about 33% of the EU-15 average; per capita incomes are an even lower 14% of the EU average if the CEE-10 are considered. By contrast, at the time of accession, Portugal had 53 per cent, Greece 64 and Spain 70 per cent of EU GDP per capita at PPP. Hence, the effects of full economic integration of such poor countries in the EU cannot be reliably extrapolated from previous European experiences while North American evidence may be useful.

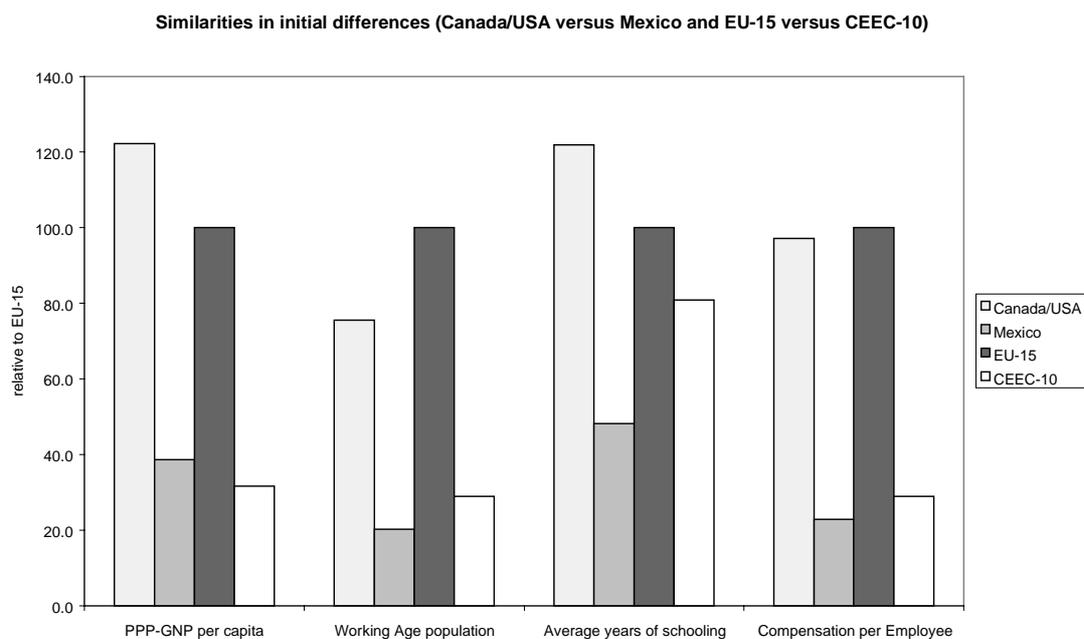
#### 2.3.1. *Similarities: NAFTA in early 1990s, CEEC accession in late 1990s*

The North American Free Trade Agreement (NAFTA) was signed by the trade representatives of the United States, Canada, and Mexico on August 12, 1992, and went into effect after ratification on January 1<sup>st</sup>, 1994. It aimed at reducing and ultimately eliminating (after a phase-in transition of up to 15 years) most of the barriers to trade and investment across the member countries, creating a \$7 trillion market with a population of some 370 million people.

The heterogeneity of economic development levels and the overall size of the market being integrated are quite similar in the NAFTA experiment and in the CEE context. While Canada's per capita GDP is some 80% percent of the US one, Mexico weighs in at a per capita income level of only some 12%. The similarity of this figure to the 14% relevant to the CEE-10 vs. EU-15 comparison indicates that some CEE accession lessons may be learned from the NAFTA experience. Even more interestingly, initial heterogeneity in other relevant respects is also quite similar in the two integration experiments. As the Figure 2.9 shows, in 1992 not only per capita GDP, but also the size (as measured by working age population) of Canada and the USA relative to Mexico in 1993 were quite similar to those of current EU members relative to the CEE countries. Education levels, as measured by average years of schooling, are much more similar in the European case than they were in North America. However, the apparently high education levels of CEE countries are much lower than at

face value given the over specialization in vocational training inherited from the previous system (Chapter 3), and need to be discounted. The relative wage levels of richer and poorer countries in the 1993 North American and current European snapshots, in fact, are quite similar despite the very different stocks of education.

**Figure 2.3**



### 2.3.2 *Two integration experiments*

Despite the similarity of initial conditions, of course, the NAFTA experiment is quite different from current and future interactions between incumbent and acceding countries in the EU context. Most importantly, the possible scope of economic and social integration is much more intimate in the European case. Like other free-trade agreements (such as EFTA), NAFTA is not meant to harmonise trade barriers *vis a vis* non-member countries: hence, much of the voluminous agreement specifies detailed rules-of-origin, to avoid evasion of national tariffs and quotas through trans-shipment. In some respects, NAFTA is closer to the EU Single Market scheme than to traditional free-trade agreements. Besides the eventual elimination of trade barriers among the countries (and the more immediate replacement of quotas by tariffs), the Agreement specifies non-discriminatory access provisions (especially as regards telecommunications, but also as regards government procurement for large contracts) and regulatory provisions (especially as regards the protection of intellectual property rights, but also as regards technical standards) not dissimilar in character, though of course more limited in scope, to those that form the backbone of the Single Market Program.

Removal of barriers to labour mobility, however, is much less relevant to NAFTA than in the EU context. While full membership in the Single Market would ultimately afford complete labour mobility to CEE citizens, only temporary entry permits for certain categories of business persons are contemplated under NAFTA.

Further important differences between NAFTA and CEEC accession are perhaps obvious, but at least one deserves to be noted explicitly. The US and Mexican economies have always been more contiguous than the Western and Eastern European economies before the fall of the Berlin Wall, and perhaps also more closely integrated than is currently the case along the Eastern boundary of the EU. The long and quite porous land boundary of the two countries can hardly be expected to stem the tide of migration and cultural assimilation. As a result, much of the southernmost portion of the US is barely distinguishable, from the economic and linguistic point of view, from the Mexican regions on the other side of the boundary. For example, the 3.6 million

inhabitants of the border region between Texas and Mexico has a per capita income of little over 50% of the US average. At 32 billion US\$, the assessed property tax base in this 33,000 square mile region is significantly lower than the 36 billions assessed to commercial property alone on the island of Manhattan (Fukasawa and Johnston, 1996). Hence, the boundary regions where the wage and employment impact of economic integration are most likely to be felt are also low-income in the US – which implies that the effects are not large. The CEE accession to the EU, by contrast, happens to occur right next to the richest, most developed regions within Western Europe. Such geographical proximity (together with relatively well established traditional industrial base and relatively high levels of human capital) may help the acceding countries develop more quickly than in the case of Mexico, which fits more closely the standard profile of a developing country. It may also, however, exacerbate transitional problems, especially as regards the intensity and patterns of labour mobility and cross-border commuting.

### *2.3.2. Pre-NAFTA and pre-CEE accession: policy discussions*

Bearing in mind these caveats, it is quite interesting to find that much the same issues were prominent in the policy discussions leading to NAFTA as in the current discussion of future CEE accession. Within the U.S., concern was expressed as to the ability of some domestic industries to compete successfully in the wider integrated economy, and especially as to the potential loss of jobs for less-skilled workers. As in the case of CEE accession, and unlike most previous trade-liberalisation experiments, the extremely different levels of economic development across Mexico and the other partners was perceived to imply major changes in specialisation patterns and massive job dislocation. The assessment of the likely future impact of NAFTA by mainstream economists, however, was reassuring (see, for example, the contributions in Lustig et al, 1992). Interestingly, the pre-NAFTA reasoning was based on the same considerations that lead this Report to offer a similarly reassuring message to those among the current EU citizens who fear damages from CEE accession. First, trade barriers were not too marked, even before NAFTA: in 1992, tariffs averaged only about 13% in Mexico and 7% in the US, and Mexico had been scaling back its non-tariff and regulatory barriers significantly in the process of modernising and deregulating its economy. Second, the small size of Mexico relative to the US would imply that the impact

of further economic integration on within-US economic relations would be quite small. Clearly, low-skill workers would lose relative to highly skilled workers, but the impact of NAFTA on the relevant trends would be small, also in light of the fact that increased trade with Mexico might displace trade with other less developed countries.

In the words of Bosworth et al (1992),

*"The United States is faced with a choice between two strategies: (1) protecting a set of industries that would continue to pay low wages to less-skilled workers, or (2) improving the skills of its existing work force so that a larger number of workers can qualify for high-productivity, high-wage jobs. The importance of this choice extends far beyond trade with Mexico. NAFTA sharpens the issue, but only marginally."*

Clearly, the same sentence could aptly summarise many of our European references if "United States" was replaced by "European Union", and "NAFTA" by "CEEC Accession". Many details of the contributions in Lustig et al (eds, 1992) also echo current European thinking quite strongly. No significant impact could be expected on the U.S. wage structure (Hinojosa-Ojeda and Robinson, 1992, and their extensive references), although the effect on US unskilled wages was perceived to be very uncertain and to be much greater if indirect migration effects are taken into account. American labour organisations did voice concerns that trade and FDI might force a reduction towards Mexico's low levels of US labour standards. Potential problems, however, were seen in the capability of Mexican authorities to enforce existing legislation rather than with the character of Mexican labour-market institutions which on paper, like in most CEE, were quite protective of workers (Pastor, 1992).

In summary, public concern with (and economic evaluation of) the consequences of NAFTA on the eve of its implementation were both quite similar to those featured by current discussions of Eastern Enlargement.

#### *2.3.4. Broad macroeconomic and trade trends after the accession*

Since NAFTA (unlike Eastern enlargement) lies in the past rather than the future, one would think that useful lessons could be learned from the subsequent six years. Unfortunately, the relevant research is only now beginning to bear fruit, and

has found it difficult to offer clear and unambiguous results. On the one hand, disaggregated trade data are available only through 1996 (see Krueger, 1999), and the information contained in such a short time series need not be sufficient to disentangle the effects of NAFTA from those of broad technological and energy-price trends. On the other hand, and more importantly, the counterfactual exercise is made extremely difficult by the eruption of Mexico's financial crisis in December 1994, less than a year after the implementation of the agreement (see e.g. Lustig, 1995, and Edwards, 1997, for accounts of the causes and consequences of the crisis).

At the macroeconomic level, one might have expected to be a period of strong growth for the Mexican economy, for the same reasons that lead us to expect that the CEE countries will grow into the EU once their accession is definitively implemented. In the aftermath of the financial crisis, however, Mexican GDP fell by 6.9% in 1995, as wages in manufacturing and commerce in major metropolitan areas lost 20% of their purchasing power and investment fell by more than 30% (Weintraub, 1997, p.65). Quite unlike the case of the 1981-83 balance of payment crisis, when overall trade and even exports to the US fell dramatically as the Mexican government imposed trade restrictions to stem the tide of currency losses, trade continued to grow and export to the US increased by some 11% over 1993-95. This effect is directly attributable to NAFTA in Weintraub's (1997) view, who also attributes to continued trade freedom the availability of external finance and the relatively swift recovery from the crisis in 1996-97. Over the 1994-96 period, however, US trade increased very strongly with non-NAFTA countries as well as with Mexico: Krueger's (1999) preliminary analysis of disaggregated trade data finds no evidence of trade-diversion effects of NAFTA.

Other effects of NAFTA are harder to evaluate, as the relevant data are influenced not only by economic integration patterns (whether NAFTA-related or not) but also by the unprecedented length of economic expansion in the US, which certainly prevented the negative effects of NAFTA (if any) from surfacing in unskilled unemployment rates or in domestic investment flows.<sup>19</sup> Quite interestingly, however, the

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<sup>19</sup> Freeman and Rodgers (1999) offer the most recent review of unskilled-worker labour market outcomes during the unprecedented US economic expansion of the 1990s. The expansions boosted earnings and employment prospects of young men, though not those of low-education adults.

increase of Mexico-US trade is overwhelmingly concentrated in manufactured goods (which now account for about 80% of all Mexican exports), and particularly consists of two-way intra-industry trade (Weintraub, 1997, p.35). This might indicate that US-Mexico trade is driven by product differentiation, as is largely the case within the core members of the EU. Thus, the NAFTA experience confirms that widely different levels of per capita income do not automatically lead to intra-industry trade driven by cost differentials, and to relative factor-price changes (as would be the case if income differentials reflected very heterogeneous factor endowments). The same source, however, reports that about 50% of both exports and imports in US-Mexico trade are intra-firm as well as intra-industry, i.e., that they are intimately related to FDI flows and to strategic alliances. The implications of this fact for the impact on the two economies perhaps deserve to be discussed, and may be relevant for the CEE accession. If intra-industry trade takes the form of intra-firm shipment of intermediate goods, then the allocation of production is again quite sensitive to productivity and cost differentials. Redistributive tensions may arise from such trade if the low-skill intensive portions of each production process are allocated to poorer countries.

### 2.3.5 *Motor vehicle trade and FDIs*

A closer look at the impact of economic integration within the relatively advanced country is possible in the context of the auto industry (see Doh, 1998). This is a relatively narrow segment of the broad and complex picture of international economic integration. However, it is a sector where NAFTA was expected to have an important impact (all tariffs on cars, trucks, and other automotive goods with over 60% North American content were either lifted immediately, or scheduled to be phased out over a 5 or 10 years period). US motor vehicle imports from Mexico rose by more than 260% over 1992-96, while those from North America grew by 75% and those from the whole world by 40% (these figures, and others in this paragraph, are from Doh, 1998). Trade in trucks and other automotive goods similarly grew much faster within the NAFTA countries than overall, and both imports and exports to Mexico experienced the sharpest and indeed quite dramatic increases: US truck imports from Mexico grew from 24424 units in 1992 to 200954 (+720 per cent) units in 1996, while overall truck imports fell from 757936 to 657336 (-13 per cent) and imports from Canada dropped from 532213 to 403300 (-24 per cent). Thus, the free-

trade agreement did have a strong impact on North American trade and production patterns, and the low Mexican labour costs presumably played a role in shifting production away from Canada. Output of cars and (especially) trucks, however, experienced a sustained increase over the period (over 1991-1995, the value of annual car output increased by 22.46%, and that of trucks by 88.76% in the US). Wages increased by some 14% in the automotive industry over the period, and employment by 22.7% (to be compared with 10.6% and 5.6%, respectively, for the whole US economy; employment in automotive parts and accessories grew by about 21%, and wages in this category by 18.8%). Of course, it would be quite difficult to disentangle the effects of NAFTA from those of the prolonged US economic expansion and of substitution of imports with US-assembled Japanese cars. By all indicators, however, the competitiveness of the US car industry was not reduced by NAFTA, and fears that jobs would be “sucked” South appear quite ungrounded in retrospect. Quite to the opposite, strong growth in Mexican car and truck demand played a significant role in the growth of US production over the period.

Thus, the NAFTA experience corroborates the view that, within the highly sensitive motor vehicles market segment, the producers of current EU countries may benefit more than their CEEC counterpart from complete removal of trade barriers. There is no evidence, however, that broader measures of US FDI flows were diverted from Canada into Mexico (Love and Lage-Hidalgo, 1999). Interestingly, and in accordance with theoretical predictions, possibly significant industry-level reallocation does not appear to imply across-the-board changes in individual countries’ “competitiveness” within the richer portion of a large economically integrated area.

### *2.3.6 Labour mobility and localisation effects*

As remarked above, a set of interesting differences and similarities between (past) North American and (future) European economic integration experiments pertains to the actual and potential relevance of migration flows and localisation effects.

While NAFTA as such has extremely limited implications for legal labour mobility, migration flows from Mexico to the US are quite intense. Hanson and Spilimbergo (1996) use data on border apprehensions and patrol intensity by the US

border enforcement authorities to study illegal migration flows. They find that such flows respond in obvious ways to economic incentives, and that their motives appear to be akin to those of *temporary* rather than permanent migration: in particular, the purchasing power of US wages in terms of Mexican goods is a more powerful predictor of the intensity of migration attempts than that in terms of US goods, which should be more relevant to workers who do not intend to return to Mexico (or otherwise maintain ties to the source country). While temporary migration is largely illegal in North America, such evidence is relevant to actual and potential temporary migration and cross-border commuting flows between CEE countries and neighbouring EU regions. These flows are already quite intense and may become fully legal upon CEE accession. Interestingly, Hanson, Robertson, and Spilimbergo (1999) find that the fluctuations in (illegal) worker migration flows due to varying enforcement effort have little or no impact on wages in the receiving US labour markets. This evidence, to the extent it may be extrapolated to European issues, indicates once again that increasing and eventually unhindered labour mobility need not have dramatic implications for the labour markets within the current EU members most likely to attract migrants – i.e., the border regions of Germany and Austria, in light of their geographical and cultural proximity. Interestingly, American public opinion is quite different on such issues. Scheve and Slaughter (1999) document from survey evidence that low-skill workers are significantly more likely to prefer limiting immigrant inflows. While this may be rational in light of standard Hecksher-Ohlin predictions as to the wage effects of factor intensity, low-skilled workers in high-immigration communities are (if anything) *less* strongly anti-immigrant – confirming, once again, that received wisdom may provide little guidance to the actual effects of immigration.<sup>20</sup>

In other respects, the geographic configuration of North America and the institutional features of NAFTA are such as to provide poor guidance to localisation effects within the EU. As remarked above, while Eastern expansion of the EU will occur next to some of the richest regions of the current member countries, relatively less well developed regions within the US are found on the Mexican border. Hanson

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<sup>20</sup> Within Mexico, the limited economic integration afforded by duty-free shipments to “Maquiladora” plants resulted in increased demand for relatively skilled workers (Feenstra and Hanson, 1997), also in contrast with simple Hecksher-Ohlin predictions.

(1996, 1998) documents that manufacturing activity increased strongly in those areas. Even before NAFTA, duty-free transshipment of intermediate products to “maquiladora” plants induced US firms to set up twin processing facilities in border cities, within which low-skill production was performed in Mexico while higher-skill requirements were fulfilled in the US. Symmetrically, manufacturing activity moved from the Mexico City region to border regions of Mexico. Clearly, lack of international legal labour mobility, even on a commuting basis, is crucial to such phenomena, and makes it hard to extrapolate such evidence to EU developments. Within an enlarged EU, transshipment and location of manufacturing activity to low-wage areas may play a much more limited role than they did in the North American context. Still, the North American evidence of strong proximity effects may be taken to indicate that some (already relatively well developed) regions within current EU members and their neighbouring regions within CEE should be expected to benefit most from more intense trade flows and better opportunities for economic specialisation.

Summarising, the North American situation was remarkably similar in the early 1990s to the current status quo in Europe. The effects of NAFTA, while small and difficult to detect due to concomitant macroeconomic shocks, are largely in accordance with theoretical predictions and may offer useful guidance in assessing the impact and evolution of CEE accession. In Europe, as in North America, geographical proximity may be expected to play an important role, especially as regards migration flows. In several respects, however, the effects of economic integration with poor countries make themselves felt within the richer portion of the newly economically integrated area. For example, the motor vehicle industry underwent a major reorganization across the US and Canada, and in Europe it may also be expected that new sources of component supply and newly opened markets may result in substantial reorganization within the current EU countries.

## **2.4. Lessons from the German Unification Process**

### *2.4.1 Introduction*

German unification, while not directly related to the Eastern accession, offers central insights into the potential risks and benefits of European integration. When the

Iron Curtain fell, the German Democratic Republic looked remarkably similar to the Czech Republic in terms of Stalinist industrial organization, the degree of nationalization of economic activity and emphasis on primary industries (Burda 1991). Eastern Germany, 10 years after German monetary and social union (July 1990) and political union (October 1990) represents an economic "fast-forward" to a state in the integration process that CEE countries may require twenty years or more to achieve after EU-accession.

On the basis of objective indicators, however, the East-West German case is easily distinguishable from CEE integration. First, migration potential at the outset was high, given shared language, culture and history of the two regions. Capital mobility was also high, since political union removed virtually all differential uncertainty for investors compared with Western Germany, while in addition capital formation in the East was heavily subsidized early on. Finally trade integration was virtually instantaneous, with the consequence that Eastern producers were initially devastated by competition, but later recovered with output in some sectors exceeding their initial, noncompetitive communist levels. All these qualifications stress that East Germany should be thought of as an upper bound on the extent of integration that is feasible.

As for explanations for why Eastern German integration looks different from that of the CEE, two are policy-related and therefore relevant for CEE-EU integration. The first was a steady flow of economic support available from the richer Western side: measured net fiscal transfers have summed to more than 1.2 trillion DM since 1990 (Federal Finance Ministry 1999). The second important factor was a wide-ranging adoption by the GDR of West German economic institutions with little question concerning suitability or viability in a transformation context. These include rules as diverse as the working time regulations, severance rules, shop-closing laws and other product market regulations, and West German collective bargaining structures. Most important, strong interests pushed for setting eastern German wages in the tradition of western German collective bargaining; that is, wide-ranging, broad-coverage agreements (*Manteltarifverträge*) which set lower bounds on contract wages for most if not all firms in a sector or region. While these contracts may help "take the market out of the wage" and insure workers against idiosyncratic and uninsurable circumstances, they also inhibit if not prevent the type of downward wage adjustment ob-

served in the US, UK and more recently Holland and some Scandinavian countries. These agreements seemed particularly ill-suited for Eastern Germany, which was in the throes of severe structural change<sup>21</sup>, and wage parity between East and West was explicitly adopted as a political goal.

The striking consequence of this wholesale adoption of West German labor institutions was an unprecedented jump in nominal (Ostmark, then DM) wages of more than 200% since 1990, which was unjustified on the basis of labor productivity at the time and could be rationalized only by political, social or moral arguments (see Akerlof et al. 1991, Burda/Funke 1994, Hunt 1998). In retrospect, it is now widely held that this increase was engineered in the interests of the West German collective bargaining system; it is hard to believe that bargaining parties had interests of Eastern German workers and capital owners (ie taxpayers) in mind. Subsidies (both actual and expected) to the new states certainly played a key role in supporting the rise in real wages, but also in productivity which was achieved through a combination of new investment and labor shedding. The result was a sharp rise in unemployment.

The real effects of unification – including monetary union – are of particular interest since they contain implications for the European Monetary Union (see Burda 1999) as well as for the integration of the new market economies of central and eastern Europe (Boeri, et al. 1998). In the former case, the introduction of a common currency will subject national labor unions to increased pressure to decentralize and increase the need to centralized wage bargaining. For the latter case, the German experience can help us understand the longer run effects of integration, since it can be thought of an accelerated version of the usual east-west integration (Burda 1999).

#### *2.4.2. The Facts*

Table 2.6 displays the consequences of unification on wages since 1991, computing nominal weekly wages deflated by either producer or consumer prices, to give a picture of the rapid wage gains which occurred, and especially how different they

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<sup>21</sup> Hunt (1998) calculates that only 40% of those Eastern Germans still employed in 1996 were in the same job they held in 1990.

appear when deflated to control for regional inflation.<sup>22</sup> The discussion focuses on earnings, since these data are more readily available; note that earnings *overstate* the degree of convergence due to longer workweeks and shorter vacations in the East.

**Table 2.6: East-West German Wage Convergence and Transfers**

Jahr	East German pre-tax weekly earnings DM	As percent of West weekly earnings	Product wage (1991=100)	Consumption wage (1991=100)	West-East transfers, gross (Mrd. DM)	West-East transfers, net (Mrd. DM)
1991	425	50	100	100	139	106
1992	571	65	131	118	151	114
1993	644	71	145	121	167	128
1994	683	72	152	124	169	126
1995	726	74	160	129	185	140
1996	722	72	157	125	187	140
1997	767	76	163	130	183	136
1998	782	76*	168	131	189	142

*Source:* Statistisches Bundesamt, BMF (Stand Januar 1999), Statistisches Jahrbuch, Wirtschaft und Statistik, 1/1999.

\* Neue Länder und Berlin Ost

Another second fact of note is that convergence of these aggregate indexes has been largely uniform. Table 2.7 displays a breakdown by industry and shows that the variation of the differential across sectors is rather small. Interestingly, the variance of monthly earnings in Eastern Germany was much greater at the outset of unification than at the end.

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<sup>22</sup> This regional inflation was a product of the deregulation of deeply distorted housing, transport, energy and basic foodstuff prices.

**Table 2.7: East-West German Earnings Convergence by Sector, 1991-1997**  
 (Total gross monthly earnings as percent of West German counterpart)

<b>Blue-collar workers (<i>Arbeitnehmer</i>)</b>							
	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
All Industry		62.3	70.8	72.0	73.7		
Power generation, gas, water		60.8	68.0	71.2	75.1		
<i>from 1995: Energy and water</i>					75.0	79.2	79.9
Mining		68.4	82.3	85.2	76.9		
<i>from 1995: Mining and quarrying</i>					73.4	84.3	83.3
<b>Manufacturing</b>							
Primary/interm. goods production		52.6	61.4	63.7	67.5		
Investment goods		55.1	65.0	67.2	72.0		
Consumer goods		58.8	63.5	65.2	68.3		
Food and related goods		58.0	63.2	66.4	69.8		
<i>from 1995: All manufacturing</i>					70.2	72.5	73.8
Construction		72.2	76.0	77.0	76.0		
<i>from 1995: Construction</i>					75.9	76.3	76.9

**Table 2.7 (continued) : East-West German Earnings Convergence by Sector, 1991-1997**  
 (Total gross monthly earnings as percent of West German counterpart)

<b>White-collar workers (<i>kaufmännische und technische Angestellte</i>)</b>								
	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>
Industry	41.6	52.4	60.0	65.4	69.6			
<i>from 1995: Industry</i>					69.8	72.8	73.9	74.5
Energy and Water	47.3	61.9	67.5	70.8	74.5			
<i>from 1995: Energy and Water</i>					74.5	78.8	80.0	
Mining	37.6	53.4	63.0	70.6	65.1			
<i>from 1995: Mining, quarrying</i>					65.6	78.1	77.2	
Primary and Intermediate Goods	40.8	49.2	56.3	59.6	64.9			
Investment goods	38.1	47.9	56.4	64.0	70.1			
Consumer goods	43.7	53.8	59.7	64.8	69.1			
Food and related goods	39.5	47.8	52.3	56.4	60.6			
<i>from 1995: Manufacturing</i>					67.8	70.6	72.2	
Construction	54.3	64.8	69.7	73.7	75.7			
Trade, Banking, Insurance	46.7	59.7	68.2	72.9	75.6			
<i>from 1995:</i>					71.1	73.6	75.0	75.6
Trade, Maintenance, Banking and Insurance								

Source: Statistisches Bundesamt

Deviations are easily explained by reference to unusual circumstances. The initial 3-4 years following unification was characterized by a substantial construction boom which led to two-digit growth rates in this sector; in 1992 a construction worker was already earning 72% of western levels compared with 62% on average and 53% in primary goods production. After five years, the construction boom had gone bust: the same construction worker's earnings had stagnated at 77% of the west German average, compared with 76% in industry overall and 83% in mining and quarrying.

A similar picture emerges for *regional* wage convergence. Table 2.8. shows monthly earnings in the new states relative to the overall West German earnings. Remarkably, regional earnings variability is very low, lower than industry variation, with the key exception of East Berlin. Wages in the eastern half of Berlin have reached virtual parity for obvious and not-so-obvious reasons: first, labor mobility within the city-limits of Berlin is, owing to an extensive mass-transit system in the city-state, extremely high, allowing east Berliners to commute to the West and return again in the evening. Second, Berlin has departed from a cartel arrangement binding states in the East on civil servant and state employee pay, and has gone for parity in a number of cases. This radical rate of pay convergence has no doubt contributed to Berlin's worsening fiscal position and hemorrhaging of its industry to the surrounding state of Brandenburg, which free rides on Berlin in a number of ways.<sup>23</sup>

Even in Berlin, however, it is evident that mobility has not enforced convergence of sectoral wages across the board. There is evidence of heterogeneity: despite the convergence of averages, Figure 2.4. shows that at the industry level convergence remains incomplete. With the exception of the public utilities – which have converged quickly as a result of public wage agreements – capital intensive activities tend to converge more slowly, implying that economic factors (here sectoral mobility and adjustment costs of investment) are conditioning wage developments even in this labor market.

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<sup>23</sup> Indeed the emergence of a "beltway" or *Speckgürtel* seems to be an inevitable consequence of the failure to merge the states and coordinate tax and subsidy policies. Brandenburg's high investment rate has led to a convergence of productivity, according to unpublished work by Seitz (1999) to almost 90% of western levels, demonstrating the importance of new investment in this process.

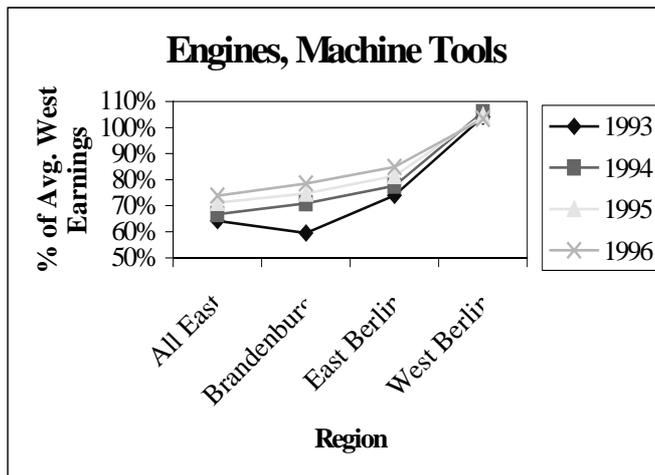
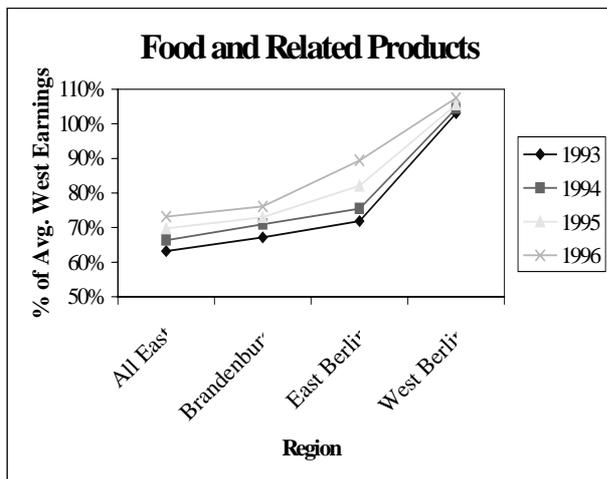
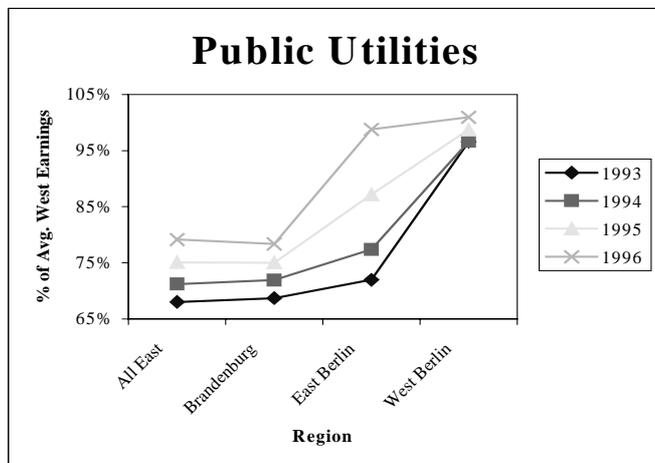
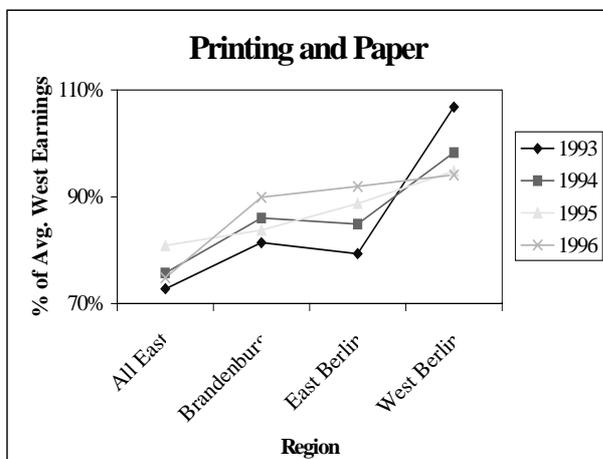
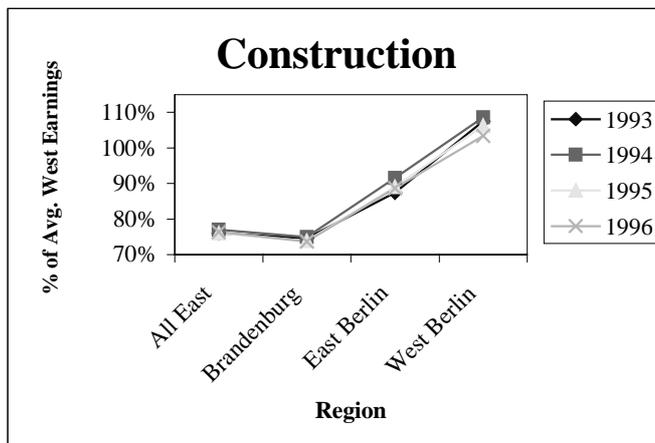
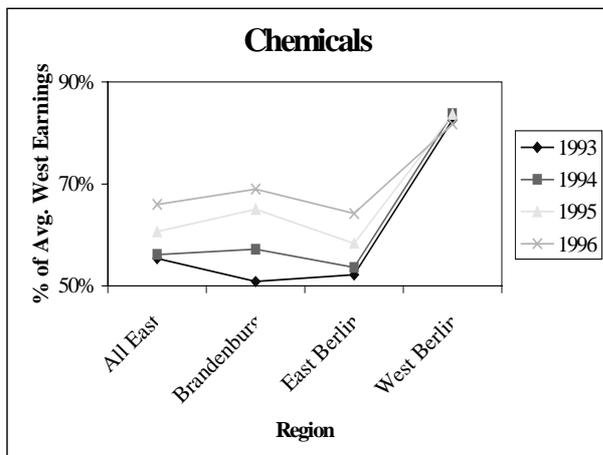
One is still left puzzling over the surprising lack of geographic mobility, which leaves Berlin with 90-95% of west German nominal wages but much less convergence in other new *Länder*. While it is true that city dwellers in the west generally enjoy higher nominal wages, it is generally thought of as compensation for more expensive amenities and other benefits of urban agglomeration (Roback, JPE 1979 1980 or 1981). The wage gradients in Figure 2.4. show that there has been little tendency for the relative shape of the Brandenburg-East Berlin-West Berlin wage gradient to change or become more flattened over time. Limited mobility is confirmed in more rigorous econometric studies; in a recent paper on commuting and migration in eastern Germany, Hunt (1999) reports results show that equations estimated on west German regions overestimate the amount of mobility that is observed in the East, which is consistent with the wage gradients reported here.

**Table 2.8: East-West *Berlin* Sectoral Blue-Collar Earnings Convergence 1993-1997 (total gross monthly earnings as percent of West Berlin average)**

<b>INDUSTRY</b>	<b>Year</b>		
	<i>1993</i>	<i>1995</i>	<i>1997</i>
<b><i>Food and kindred products</i></b>	69.7	77.8	89.8
<b><i>Printing and Paper</i></b>	74.3	93.6	98.8
<b><i>Chemicals</i></b>	63.2	69.7	81.7
<b><i>Machinenbau(machine tools)</i></b>	71.0	77.8	81.1
<b><i>Electronic equipment, office machinery, data processing</i></b>	79.2	89.5	93.2
<b><i>Electricity Gas Water</i></b>	74.5	88.3	99.0
<b><i>Construction</i></b>	81.3	83.8	85.0

Source: Statistisches Bundesamt

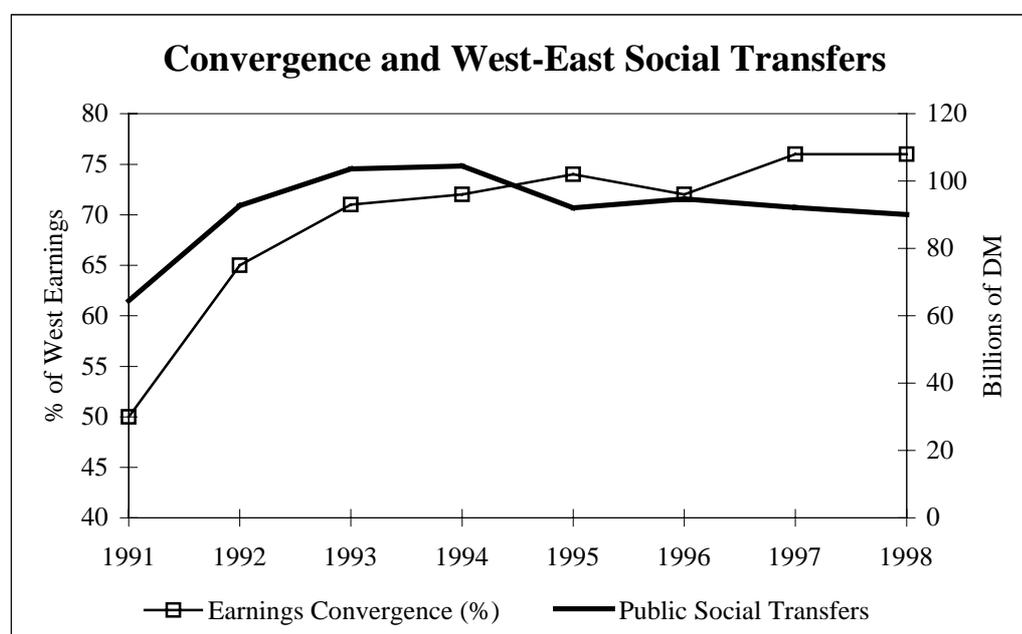
Figure 2.4. Wage Gradients, Berlin and Brandenburg by Industry



### 2.4.3. The role of institutions and subsidies

A standard interpretation of what happened is the import of collective bargaining institutions had interests at heart which are "European" in their emphasis of fairness and equity, which in the end had severely negative consequences for the transition. A key aspect of this interpretation is the role of the government, which negotiated vis-a-vis (west German) labor unions at the time. Promises were made of wage parity by 1995; Sinn spoke of "Japanese wage levels" in Eastern Germany. These wages were paid by West German taxpayers, initially as financial transfers to firms, then as short-time work, early retirement, and unemployment benefits, followed by "active labor market policies." These subsidies of all sorts contributed to a ballooning fiscal problem; in 1994 subsidies came under increasing political criticism, and they have been reduced substantially since then. Figure 2.5. displays the path of convergence of gross wages for east German employees alongside the development of social transfers and show that the termination of subsidies has coincided with a dramatic slowdown in wage growth across the board.

**Figure 2.5 Earnings Convergence and Transfers**



Source: Statistisches Bundesamt, BMF (Stand Januar 1999), Statistisches Jahrbuch, Wirtschaft und Statistik, 1/1999. 1998 value for earnings convergence includes East Berlin.

In the meantime, contradictions of the (west) German collective bargaining system are beginning to show. Unit labor costs remain in Eastern Germany 15-30% higher than in the West, despite drastic shedding of labor. Unemployment in East Germany remains between 15 and 20% of the labor force depending on how it is measured. While labor force participation remains part of the problem – especially eastern German women show high participation rates – the problem remains one of labor costs.

This has become an important source of tension. Organized labour in Eastern Germany has been on the defensive and losing members in droves. Table 2.9 shows the precipitous drop in the rank-and-file since 1991. Part of this is simply the fact that promises were made which were not kept; East German workers were not happy with promises of high unemployment benefit as the result of the rapid increase of wages in the early years. The punishment for the rise in unemployment and incomplete wage convergence was a sharp decline in union membership in the East. Just as rapidly as it had risen, the onset of unemployment and the inability of unions to secure employment for their members has resulted in a backlash in the membership rolls and a dramatic loss of union influence in the new eastern states.

**Table 2.9: Eastern German Membership in DGB (Deutscher Gewerkschaftsbund): 1991-1998**

	Yearend Union Membership (000s)			As percent of total employ- ment*		
	1991	1995	1998	1991	1995	1997
<i>Berlin-Brandenburg</i>	1085	755	608	38.0	36.6	32.3
<i>Sachsen</i>	1342	677	510	59.0	42.0	34.6
<i>Sachsen-Anhalt</i>	727	377	306	52.8	41.4	37.0
<i>Thüringen</i>	613	327	244	50.2	38.5	32.1
<i>Mecklenburg-Vorpommern</i>	439	225	227	48.3	36.7	31.1
<b>All new states</b>	4158	2360	1841	50.6 <sup>a)</sup>	39.0	33.4
<i>Memorandum:</i>						
<i>West Germany</i>	7643	6994	6470	32.3	31.4	31.8

\*Dependent-status employment.

Source: DGB, Statistisches Bundesamt

This decline in influence has resulted in an increased readiness on the part of workers and works councils to engage in US-style "concession bargaining," i.e. ac-

cepting wages below minimum (industry-wide) contract-determined wage levels to save enterprises from bankruptcy. Tables 2.10 documents this striking trend.

Under West German collective bargaining rules, this development would have been unthinkable, as enterprises which are members of an employers' association are joint signatories to the collective agreement (*Flächentarifvertrag*) and are bound to pay at least minimum wages specified in the contract. Yet an increasing number of firms, no longer able to pay wages decided on in the West, have implicitly or explicitly defected from collective bargaining agreements and have abandoned their employers' associations in the East, leaving open the possibility of enterprise level bargaining.<sup>24</sup>

**Table 2.10: Evolution of Membership in Employers' Associations and Union Wages in Eastern Germany**

	<i>1993</i>	<i>1995</i>	<i>1998</i>
Share of all firms that are members of an employers' association (%)	36	27	21
Share of all employees employed by members of employers' associations (%)	76	64	45
Share of firms which generally pay below the union wage in their sector and region (%)	35	33	41
Share of employees who are paid below union wage (%)	12	16	28

Source: DIW (1999)

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<sup>24</sup> This situation can be changed only to the extent that the Minister of Labour declares a contract binding for all firms and worker in a particular sector, should he deem this in the "public interest." The possibility of such an action seems particularly remote at the present time.

Employer associations represent management in industrial wage negotiations, so it stands to reason that low membership in these associations vitiates the credibility of both collective agreements and the collective bargaining system. Even firms which remain members – one third of all enterprises by most guesses – have the option of invoking the *Öffnungsklausel* in the East – originally conceived in the West as an escape valve for rare and dramatic cases – and this option could become *de facto* practice. See Schnabel (1998). Their widespread dissatisfaction over time is evident in Table 2.10.

The outcome is a schism in collective bargaining between East and West which, first ignored in public discussion, now emerges as a point of great friction. Both Western workers and firms observe with concern the rapid increase in enterprises which disregard collective agreements or conduct decentralized wage bargaining on their own. It remains to be seen how these contradictory developments can be reconciled without major structural reforms of the German collective bargaining system.<sup>25</sup>

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<sup>25</sup>This is exemplified by the urgency with which labor unions regarded metalworkers and public service rounds in 1999 as well as their uniform application in all union districts. Despite the rhetoric, it is not clear how the recent metalworking agreement has been implemented in Eastern German enterprises. The legal survival of the "Phoenix" agreement concluded with the relatively insignificant Christian Metalworkers Union however shows the current weakness of the union position even with an SPD government at the helm.

**Table 2.11: East-West German Earnings Convergence by Region, 1991-1997**  
(total gross monthly earnings as percent of West German average)

<b>Blue-collar workers*</b>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Brandenburg	n.a.	65	74	75	74	77	77
Mecklenburg-Vorpommern	n.a.	64	70	73	76	78	78
Sachsen	n.a.	61	68	70	72	73	74
Sachsen-Anhalt	n.a.	62	71	72	74	76	76
Thüringen	n.a.	60	69	69	71	71	73
<i>Memo: East Berlin</i>	n.a.	69	79	82	85	90	92
<b>All new Bundesländer</b>	n.a.	62	71	72	74	75	76
<b>White-collar workers**</b>	<i>1991</i>	<i>1992</i>	<i>1993</i>	<i>1994</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
Brandenburg	45	59	66	70	74	72	72
Mecklenburg-Vorpommern	45	58	64	68	74	70	70
Sachsen	44	56	64	67	74	72	74
Sachsen-Anhalt	46	57	65	67	74	72	73
Thüringen	43	56	63	66	71	70	71
Nachrichtlich: Berlin-Ost	n.a.	61	70	76	85	88	90
<b>All new Bundesländer</b>	45	57	65	68	74	73	74

*Source:* statistical yearbooks of the Bundesländer

\**Arbeitnehmer* \*\**Kaufmännische und technische Angestellte.*

#### 2.4.4. *A tentative assessment: A Trojan Horse?*

The ambitious aim of imposing wage equality across eastern and western Germany by 1995 succeeded only in Berlin, and there convergence is incomplete in sectors where mobility is difficult or human capital specific. Despite widely heralded wage agreements guaranteeing parity of wages within a limited time horizon, monthly earnings for workers in Eastern Germany remain on average three-quarters of that in the West (see Table 2.11) and hourly earnings are more likely in the range of 65-70%. It seems that while real consumption and especially product wages have risen dramatically, they are still far from "Japanese levels" predicted by Sinn and Sinn (1991). At the same time, the objective of imposing uniform wages *within* East Germany (across regions as well as sectors) must also be considered. To the extent that the goal of "equal pay for equal work" receives a large weight relative to economic efficiency, the German outcome could even be judged to be a success (again, excepting Berlin). One must always keep the tyranny of averages in mind, since the averages we report mask large variation in enterprise level compensation and at finer levels of sectoral disaggregation.

The imposition of the West German system of wage determination on the East has pointed up just how inappropriate certain collective bargaining institutions can be in the context of transformation. It is therefore relevant for the EU as it contemplates the effects of adopting EU institutions in Eastern Europe. At the same time it is worth noting that integration is two way: like the Trojan Horse, the unprecedented developments in East Germany have introduced flexibility there that is lacking in the West. Due to the striking variation in fortunes of industrial sectors in the East (Pohl 1996) it is likely that this will show up in a broader differentiation of wages across these sectors. Burda and Funke (1995) show that dispersion in wages and productivity has increased across two-digit manufacturing industries. The gap is being closed over time but not for all sectors, nor at the same rate of speed; in some sectors productivity has increased dramatically while not

at all in others, while productivity increases have been achieved by layoffs in some industries and expansion in others.

The inevitable conclusion is that Western Europe may end up yielding to the competitive pressures of Eastern Europe. Mechanisms of collective bargaining already under duress due to monetary union, will face enormous differential pressure from the East, with German and Austrian unions facing the brunt of it. While some might see the benefit of this on the lines of labour costs, it will cause serious disruption of established ways of doing things...

## 2.5. Main Lessons

The preceding discussion suggests three broad conclusions in what concerns labour market performance subsequent to accession to the EU of Greece, Portugal, and Spain, the NAFTA experience and the German unification episode.

First, as regards *employment*, the lesson is that shifts in specialisation patterns (from unskilled labour-intensive products to higher value added ones, for instance) are better accommodated with more flexible labour markets. The stark contrast between Portugal and Spain with regard to unemployment and non-employment rates provides a good illustration of two different ways of coping with the changes associated with accession. Higher employment protection in Spain has not prevented intense labour shedding and high employment destruction from the re-industrialisation programmes that took place in the early eighties. Equally, the more generous provision and longer duration of unemployment benefits in Spain contributed to strengthen some hysteretic features in the Spanish labour market. Further two-tier institutional reforms, like those taking place in Spain since 1984, have resulted in dual labour markets in which temporary employees suffer the burden of the adjustment.

Hence, it seems better to develop institutions coping with (rather than opposing) flexibility. Non-statutory firing costs agreed in collective bargaining, short-term unemployment allowing for in-work benefits, different minimum wages for adults and youth are good examples of the kind of institutions which could provide sufficient insurance to workers without precluding structural reforms and yielding high unemployment rates. Current labour market institutional arrangements in the West have proven to be ill-suited to cope with structural changes and should not be imposed on the CEE acceding countries. Finally, it also should be noticed that more flexible arrangements, although providing lower insurance and protection to workers, do not necessarily translate into high out-migration flows, as demonstrated by the Portuguese experience. The North-American experience also points to the advantages of having flexible labour markets. Free trade with countries like Mexico, at GDP per capita levels, relative to the US, comparable to

those of CEE countries vis-a-vis the EU, led to the kind of resource reallocation that was expected to occur at the outset. Yet, reallocation did not involve employment losses as North-American labour markets can accommodate such shocks without large and persistent flows into inactivity.

Secondly, in what concerns *distribution*, the lesson to be drawn is that accession involves an important component of reshuffling and uncertainty in the short run, which needs to be offset through an increase in social expenditures. This increase could be partly financed by the current member states through Social Funds as was the case with Spain, Portugal and Greece. If the size of the EU budget remains unchanged, transfers to the CEE countries will involve a reduction in the current transfers to the incumbent states. The experience of Eastern Germany suggests that such transfers are likely to be increasing in the degree of wage convergence occurring independently of the convergence in productivity levels. Therefore, more flexibility in wage bargaining through decentralisation is probably needed, so as to reflect better the differences in productivity both between EU and CEE countries and within the latter, and avoid mass redundancies in the acceding countries. Likewise, experience-rated unemployment benefits, like in the US, could well prevent an excessive shedding of labour during the early stages of the accession process by internalising to bargaining partners part of the costs of redundancies.

Finally, with regard to *harmonisation of institutions*, one should bear in mind that harmonisation of institutions does not necessarily imply harmonisation of outcomes. Harmonisation of collective bargaining institutions, in particular, can end to increasing, rather than reducing differentials in labour market conditions and incomes.

In the context of the German unification, the fear of large scale East-West migration meant exporting western collective bargaining institutions to the East where there were previously neither unions nor profit maximizing employers. The German unification episode suggests that costs of collective wage setting not internalised to the unions can threaten the conditions for high employment in labour markets if: i) state subsidies to the unemployed are significant and ii) collective bargaining holds *erga omnes*. The experience of the new German states has shown that radical reduction of labor market subsidies

has led to falling coverage rates of collective bargaining and growing "self-help" through decentralised agreements violating erga omnes arrangements. If the collective bargaining system does not succeed in reining in this development, its legitimacy may be severely weakened, leading to wildcat decentralization and a fundamental change of the bargaining landscape.

## **Chapter Three: How should the East best prepare for the Accession**

### **3.1. Introduction**

The speculative scenarios provided in Chapter One and the analysis of past accession episodes carried out in Chapter Two suggest that potential undesirable distributional effects of the accession will be larger the longer the time required for the CEE countries to converge to the EU GDP per capita levels. Since the start of the transition to a market economy, only convergence *among the candidate countries* in terms of GDP per capita has been achieved. The distance to be covered before the CEE countries close the gap with the current EU Members is still broadly the same as at the beginning of the decade.

Convergence is not something to be taken as given in the enlargement process. Policies have the potential to affect the speed of the convergence. As shown by the empirical growth literature, some institutions are more conducive than others to growth and can better unfold the potential behind the endowments of the countries embarked upon the accession process.

The purpose of this Chapter is to discuss which kind of social and labour policies in the CEE are best suited to accompany the accession. Section 2 highlights, on the basis of the historical experience of middle-income countries, the factors that are likely to affect the speed of convergence of CEE to the EU GDP per capital levels. It also reviews the macroeconomic performance of the candidate countries since the beginning of the 1990s. Against this background, Section 3 analyses the key features of labour market and social policy institutions in the CEE countries which, in the light of the previous results, can be adjusted in order to promote faster growth. Section 4 goes back to growth scenarios and assesses the implications of the reforms discussed in Section 3 on GDP convergence. It also provides illustrative scenarios as to the effects of faster convergence, associated with the reforms discussed above, on East-West migration. All of this discussion is carried out at the aggregate level, while there are significant regional labour market disparities within these countries. Ethnic minorities with nomadic traditions tend to be concentrated in the depressed regions. Hence, Section 5 evaluates the profile and de-

terminants of regional labour market imbalances in the CEE countries, assessing which kind of policies are more likely to spread across regions the gains from faster convergence. Section 6 summarises the main policy implications of this part.

### **3.2 Mid-term Convergence Scenarios for CEE Countries**

Income per capita levels of countries of Central and Eastern Europe (CEEs) that are in the process of accession to the European Union lag far behind the average of the European Union. The gap with respect to the low-income countries of the EU (Greece, Portugal and Spain) is much smaller, though still significant. Indeed, when assessing the prospects for convergence of the CEEs to European income levels, it is more relevant to consider the low-income countries of the EU.

Projecting growth rates is not an easy task. For instance, a recent work by Easterly, (1999) points out that international institutions such as the World Bank have tended to over-estimate long-term growth prospects of developing countries by as much as 3 percentage points per annum! Nevertheless, it may be useful to analyse what the existing empirical literature on growth in market economies would predict for CEE countries.

CEE countries are in a state of flux and transition. Hence, in discussing growth prospects for the candidate countries, two aspects should be distinguished. One is the so-called transition growth (including the so-called "transitional recession" which hit all these countries at the beginning of the 1990s), namely the behavior of output characterizing the period of radical reforms that started in the early 1990s. The other is the long-term scenario covering the post-reform period. According to indicators of progress in market reforms compiled by the EBRD, it can be argued that CEE countries considered for EU accession have approached the end of their transition process (EBRD Transition Report, 1998). Therefore, it is generally assumed that these countries, from the year 2000 onwards, will behave like market economies and, consequently, that existing cross-country literature can be used to project per capita growth rates of CEEs in the New Millennium.

Although this view provides a useful benchmark to discuss growth prospects, it may be over-optimistic to assume that transition is over. In fact, the build up of market institutions (effective legal system, development of financial markets) is still an ongoing process. Moreover, important choices on the size and the role of the government have still to be made in these countries which still devote a larger share of output and employment to the public sector and to state enterprises. These considerations call for some amendments to the traditional growth accounting framework which is used to forecast long-term growth (hence convergence).

Another factor which should be taken into account when making inferences on growth prospects for CEE countries is that they are small open economies highly integrated in Western markets. A successful convergence for the candidate countries will therefore imply a long period of rates of growth significantly larger than in the main trading partners. Thus, the catching-up process is likely to be associated with sharp appreciation of real exchange rates and large current account deficits. Although this is a natural and, in many respects, welcome development, it may nevertheless put strain on macroeconomic management in the acceding countries.

### *3.2.1 Recent developments in CEE countries*

After the initial fall in output, most Central-Eastern European countries have displayed positive changes in output starting in 1994 (Table 3.1).

Table 3.1

<b>GDP Growth</b>	<b>1990</b>	<b>1991</b>	<b>1992</b>	<b>1993</b>	<b>1994</b>	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>Average 1990-1998</b>	<b>Average 1994-1998</b>
<i>Former First Round Candidates</i>											
Czech Republic	-1.2	-11.5	-3.3	0.6	3.2	6.4	3.9	1	-2.7	-0.1	3.6
Estonia	-8.1	-13.6	-14.2	-9	-2	4.3	4	11.4	4.0	-3.4	4.4
Hungary	-3.5	-11.9	-3.1	-0.6	2.9	1.5	1.3	4.4	5.0	-1.1	2.5
Poland	-11.6	-7	2.6	3.8	5.2	7	6.1	6.9	4.8	1.6	6.3
Slovenia	-4.7	-8.9	-5.5	2.8	5.3	4.1	3.3	3.8	4.0	0.0	4.1
<i>Former Second Round Candidates</i>											
Bulgaria	-9.1	-11.7	-7.3	-2.4	1.8	2.1	-10.9	-6.9	3.4	-4.6	-2.1
Latvia	2.9	-10.4	-34.9	-14.9	0.6	-0.8	3.3	8.6	3.6	-4.7	3.1
Lithuania	-5	-5.7	-21.3	-16.2	-9.8	3.3	4.7	7.3	5.1	-4.2	2.1
Romania	-5.6	-12.9	-8.8	1.5	3.9	7.1	4.1	-6.9	-7.3	-2.8	0.2
Slovak Republic	-2.5	-14.6	-6.5	-3.7	4.9	6.9	6.6	6.5	4.4	0.2	5.9
<i>Average</i>	-4.8	-10.8	-10.2	-3.8	1.6	4.2	2.6	3.6	1.8	-1.8	2.8
<b>Inflation (CPI)</b>											
<i>Former First Round Candidates</i>											
Czech Republic	10.8	56.6	11.1	20.8	10	9.1	8.8	8.5	10.7	17.0	9.1
Estonia	23	211	1076	90	48	29	23	11.1	10.6	188.9	27.8
Hungary	28.9	35	23	22.5	18.8	28.2	23.6	18.3	14.3	24.8	22.2
Poland	585.8	70.3	43	35.3	32.2	27.8	19.9	14.9	11.8	103.7	23.7
Slovenia	550	117.7	207.3	32.9	21	13.5	9.9	8.4	8.0	120.1	13.2
<i>Former Second Round Candidates</i>											
Bulgaria	26.3	333.5	82	73	96.3	62	123	1082	22.3	211.2	277.1
Latvia	10.5	172	951	108	36	25	17.6	8.4	4.7	148.1	18.3
Lithuania	8.4	224.7	1021	410.4	72.1	39.5	24.7	8.9	51	206.7	39.2
Romania	5.1	161.1	210.4	256.1	136.7	32.3	38.8	154.8	59.1	117.2	84.3
Slovak Republic	10.8	61.2	10.1	23.2	13.4	9.9	5.8	6.1	6.7	16.4	8.4
<i>Average</i>	126	144.3	363.5	107.2	48.5	27.6	29.5	132.1	28.8	111.9	53.3
<b>Fiscal Balance (% of GDP)</b>											
<i>Former First Round Candidates</i>											
Czech Republic	na	-1.9	-3.1	0.5	-1.2	-1.8	-1.2	-2.1	-2.7	-1.5	-1.6
Estonia	na	5.2	-0.3	-0.7	1.3	-1.3	-1.5	1.9	-0.3	0.7	0.1
Hungary	0.4	-3.7	-7.6	-8.9	-8.6	-6.2	-3.1	-4.9	-4.6	-5.3	-5.7
Poland	3.1	-6.7	-6.6	-31	-3.1	-2.8	-3.3	-3.1	-3.0	-6.7	-3.1
Slovenia	-0.3	2.6	0.2	0.1	-0.3	-0.5	-0.2	-1.7	-1.4	-0.01	-0.7
<i>Former Second Round Candidates</i>											
Bulgaria	na	na	-5.2	-10.9	-5.8	-6.4	-13.4	-2.6		-7.4	-7.1
Latvia	na	na	-0.8	0.6	-4	-3.3	-1.4	1.3		-1.3	-1.9
Lithuania	-5.4	2.7	0.5	-3.3	-5.5	-4.5	-4.5	-1.8		-2.7	-4.1
Romania	1	3.3	-4.6	-0.4	-1.9	-2.6	-4	-3.6		-1.6	-3.0
Slovak Republic	na	na	na	-7	-1.3	0.2	-1.9	-3.8		-2.8	-1.7
<i>Average</i>	-0.2	0.2	-3.1	-6.1	-3.04	-2.92	-3.45	-2.04		-2.6	-2.9

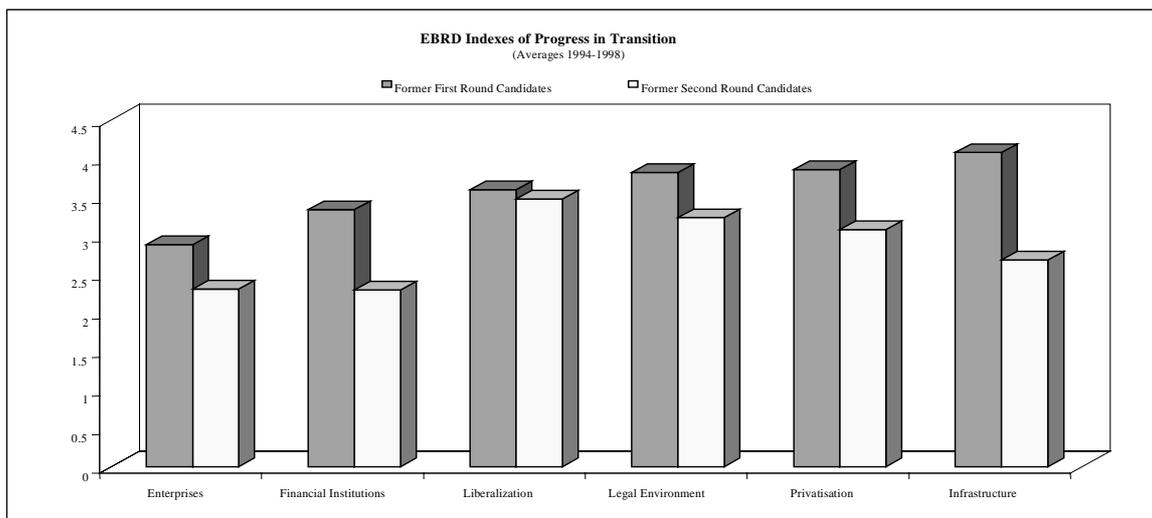
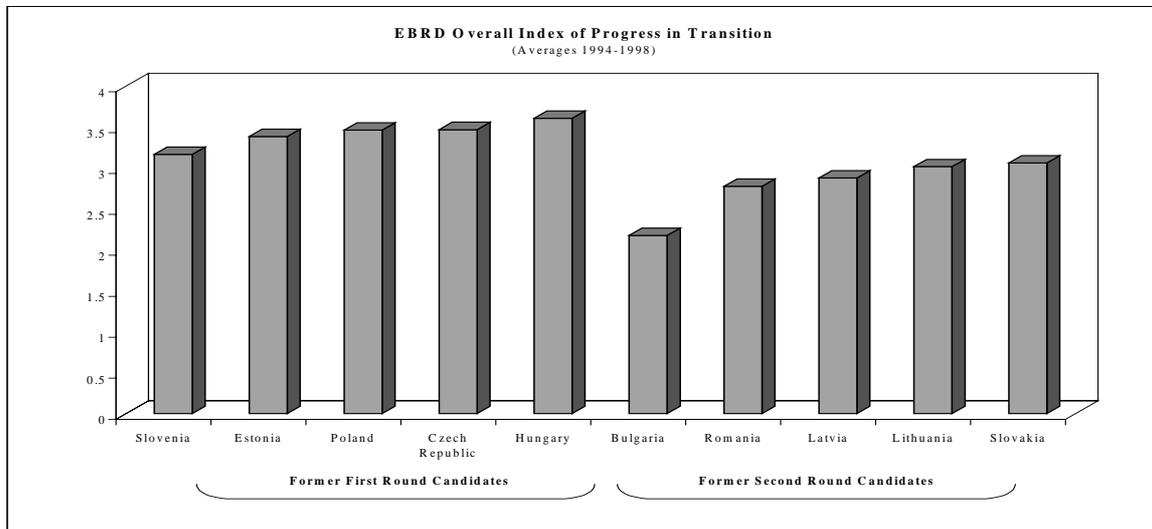
Source: OECD Statistical Compendium (1999), TRANS-MONEE Database (1999).

However, among the ten applicants, Romania and the Czech Republic have been struggling to switch their economies onto a sustained growth path and have experienced a fall in output in 1998. With the exception of the Czech Republic, the performance of the five countries that are the front runners for accession to the EU has been positive, with growth rates ranging between four and five percent. Similarly, positive developments can be noted for inflation, and especially for fiscal accounts. Despite the rapid progress, inflation remains nevertheless much higher than in EU countries.

Structural reforms have been far reaching. For several applicants for EU membership, transition indicators (Box 3.1) signal that market reforms are about to be completed.

If one takes these reform indicators as proxy for a well-functioning market economy, the conclusion is that for the front-runners in EU accession, determinants of growth are already similar to those dominating the experience of market economies. However, this interpretation may be over-optimistic as implementation of legislation and policies supporting a market economy is a necessary but not sufficient condition for the effective operation of a market economy. Accession to the European Union can probably accelerate the process of institutional convergence. Growth scenarios for the post-accession period can thus be based on typical determinants of growth for market economies.

### Box 3.1: Progress in Transition



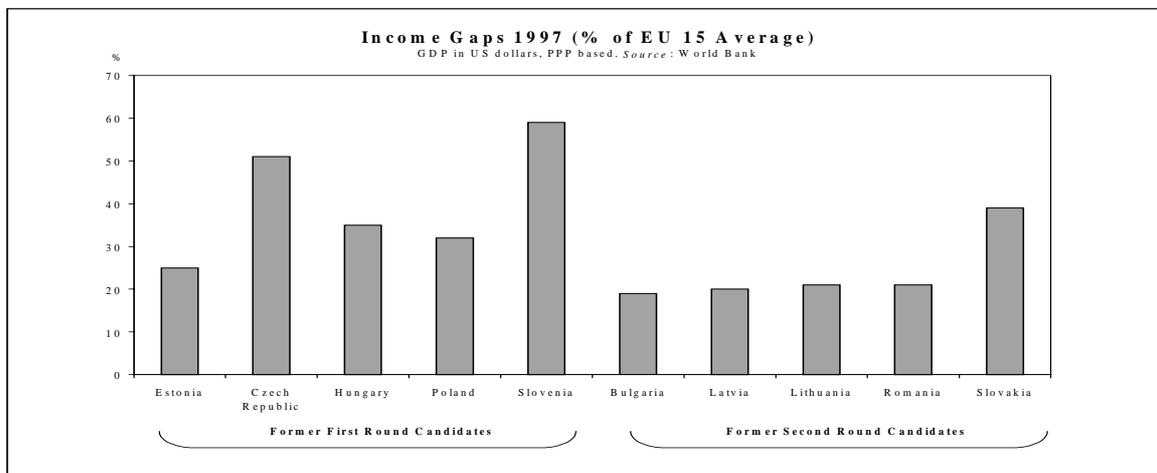
Source: EBRD (1999). Transition Report.

The indicators of progress in transition computed by the EBRD summarise the state of the reforms achieved in the various countries. The indicators account for the performances registered in six fields: liberalisation (*price liberalisation and trade and foreign exchange system*), privatisation (*small and large scale privatisation*), enterprises (*governance and enterprise restructuring and competition policies*), infrastructure, financial institutions (*banking reforms and interest rate liberalisation and securities market and non-bank financial institutions*). The indicators range from a minimum of 1 (little progress) to a maximum of 4 (standards and performance typical of advanced industrial economies). The upper chart reports an overall indicator of progress obtained averaging the values of the indicators for all the classes of the classification system. The chart below shows the performance of the two candidates group by each class of the classification system. The comparison of the two charts tells us that substantial progress has been made by the group of former first round candidates, while the former second round candidates still lag behind in the reform path.

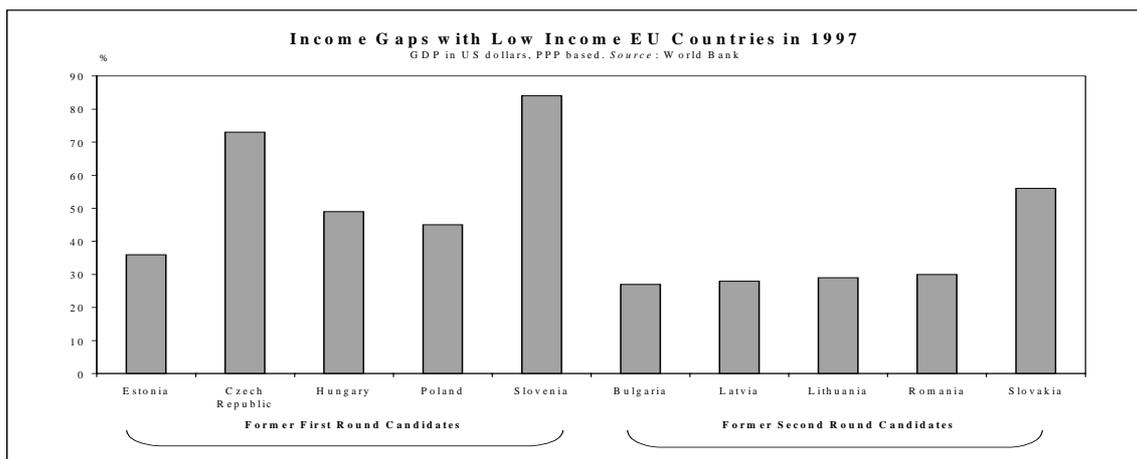
### 3.2.2 Convergence to EU income levels

Empirical cross-country studies have found that initial levels of income per capita are an important predictor of future growth. Controlling for other factors, poorer countries tend to grow faster than richer countries. Figures 3.1 and 3.2 display the income gap (in terms of GDP per capita, in purchasing power parity terms) between CEE countries (both for the 10 applicants and the five front-runners) and European Union members.

**Figure 3.1**

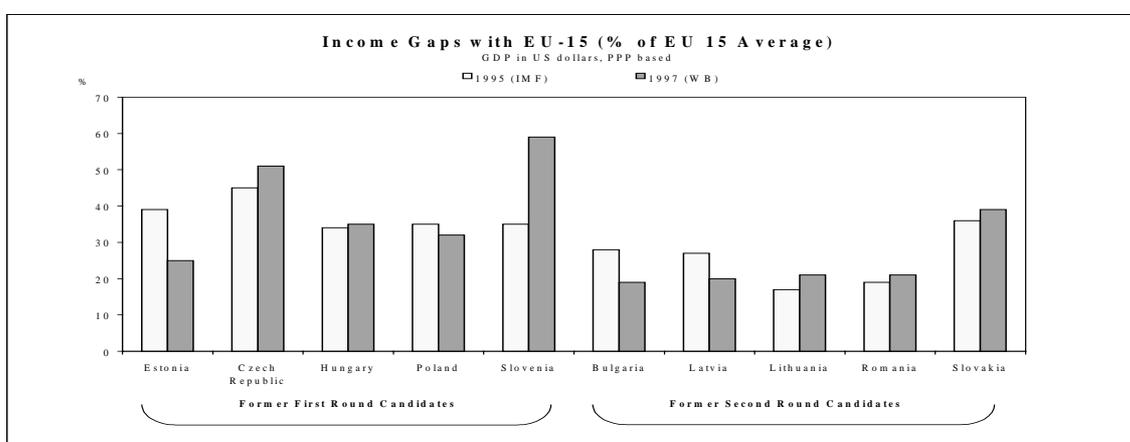


**Figure 3.2**

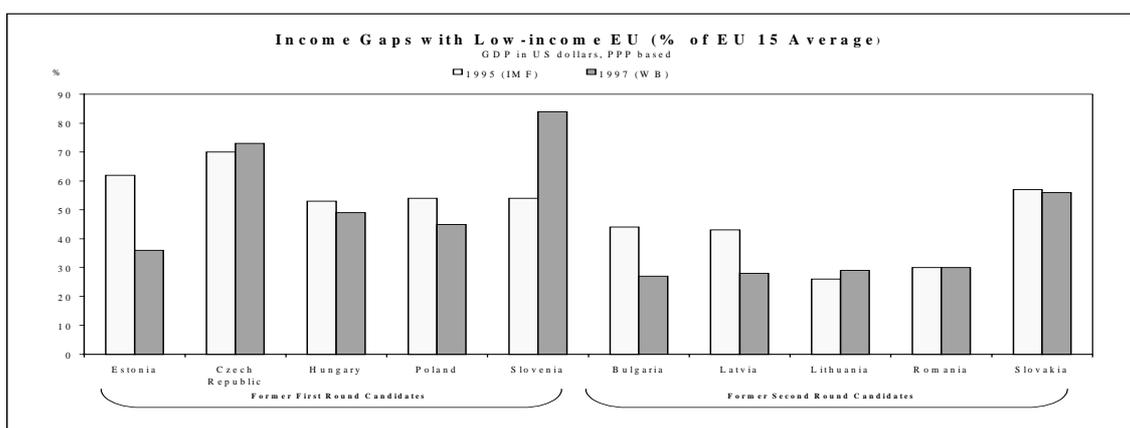


Figures 3.3 and 3.4 show the probably more relevant gap with respect to low-income EU countries, such as Greece, Spain and Portugal. In both charts two sources are used, namely the IMF (which estimated such income gaps in 1995) and the World Bank (1997) as the methods being used by the two international organisations are different and produce quite different results, notably in the case of Slovenia, Bulgaria, Latvia and Lithuania.<sup>26</sup>

**Figure 3.3**



**Figure 3.4**



<sup>26</sup> The differences in levels of GDP-PPP per capita income from IMF and World Bank calculations are mainly due to different computations of the PPP. PPP estimates are based on price comparisons of comparable items and problems may arise when not all the items are exactly comparable; in particular for non market services (government services) this is likely to be the case. World Bank estimates of the PPP for the countries candidates to the EU accession are based on a survey carried out by EUROSTAT in 1996 to include in the comparison a basket of goods and services which could be representative for both the EU-15 and the CEE candidates; this yields estimates of the PPP different from those reported by IMF.

The growth literature implies a convergence over time of income per capita across countries. Although the topic is the subject of debate, and empirical tests are not very robust, it has been found in several cross-country and cross-regional studies that the rate of convergence tends to be of the order of 2 per cent per year. In other words, every year the income gap is closed by roughly 2 per cent. One can thus take the initial gap and compute the number of years needed to close it. Needless to say, small changes in the convergence estimate imply large variations in the estimated speed at which the income gap is closed. To give an example, Fischer et al. (1998) estimated the rate of convergence for a sample of 12 EU countries (the current members minus Greece, Spain and Portugal) in the post-war period, finding a rate of convergence of 2.9 percent. However, for the the EU-15 overall, the rate of convergence is reduced to 0.5 percent. While a gap of 50 per cent can be closed in less than 20 years with a rate of convergence of 2.9, it will take a century to close the income gap if the rate of convergence is only 0.5 percent.

It follows that the mechanical application of unconditional measures of convergence is not very useful in discussing the prospects for convergence of CEE countries to EU income levels.

A more promising approach, and one which is taken below, is to use growth regressions and apply estimated coefficients to the values of the variables (the initial conditions) characterizing CEE countries at the end of the 1990s.

### *3.2.3 Predictions on the basis of growth regressions*

There are two popular specifications used in cross-country regression within the empirical growth literature, namely the growth equations estimated by Barro (1991) and those by Levine and Renelt (1992). The two specifications emphasise the role of human capital and initial income per capita in affecting growth. Barro includes as well a fiscal variable, namely the level of government consumption, while Levine and Renelt include the level of fixed investments.

Assuming that after completing transition (i.e., market reforms) CEE countries will behave like market economies, estimates from cross-country regressions can be used to project growth rates for the CEE countries, by simply plugging in the equations estimated by Barro and Levine-Renelt the most recent values of the independent variables in the candidate countries (see Box 3.2).

### **Box 3.2: Projecting growth rates from existing growth-regressions**

The well-known Barro-Levine and Renelt growth regressions are based on cross-country studies of average growth rates over long time-intervals. Variables used in the regressions are of two types: one type is given by initial conditions (initial income per capita and initial stock of human capital, proxied by levels of education); the other type are policy variables, such as government consumption as a share of GDP in the Barro regression. Variables affect growth contemporaneously. In other words it is not the initial level of this variable affecting growth but its level during the same period in which growth rates are estimated. This distinction is important when growth regressions are used to project future growth rates. Indeed, while values of initial conditions are observed, values for government consumption have to be extrapolated. Different projections are obtained for any assumption on future government consumption. This is the reason why this variable is a policy variable, as it can be modified in order to affect rates of growth.

In sum, projections for transition economies are obtained by multiplying the coefficients in the regressions by actual values of initial conditions for transition economies, and by projected values for the policy variables (government consumption in the Barro regression and investment rates in the Levine-Renelt regression). A similar approach will be implemented when we use the modified Barro regressions to emphasise the role of social expenditure and of institutional variables.

Following Fischer et al. (1998) it is possible to compute growth rates and the time-interval needed for CEE countries to converge to low-income EU GDP per capita (Spain, Portugal and Greece). Government consumption in the Barro specification, and the investment rate in the Levine-Renelt specification have been taken by Fischer et al. as control variables. They pick a value of 10 percent for government consumption, which implies a reduction on average of 8 percentage points in the rate of growth for CEE countries, and an investment rate of 30 percent, which implies an increase of 7 percentage points from the average value in 1995 (Table 3.2).

**Table 3.2: Growth regressions**

Dependent variable= per capita GDP growth

Independent variables	Barro	Levine and Renelt
Y <sub>1960</sub>	-0.0075*	-0.35*
PRIM	0.025*	
SEC	0.0305*	3.17*
GOV	-0.119*	
INV		17.5*
POP		-0.38
Constant	0.0302*	-0.83

\*The asterisk indicates the coefficient are significant at the 5 percent level

Y <sub>1960</sub> =initial level of real per capita income, PPP basis
PRIM=gross primary school enrollment rate
SEC=gross secondary school enrollment rate
GOV=share of government consumption in GDP
INV=share of investment in GDP
POP=population growth rate

Table 3.3 displays projected rates of growth for CEE countries under the Barro and the Levine-Renelt specifications. Interestingly enough, the two specifications yield very similar results. Moreover, the cross-country variation of projected growth rates is relatively small. Differences are mainly associated with different initial levels of GDP per capita (see Figure 3.2).

**Table 3.3 Projected per capita growth rate****(Annual rate of change in real GDP per capita)**

<b>Countries</b>	<b>Barro Regression</b>	<b>Levine-Renelt regression</b>
<i>Former First Round</i>		
<i>Candidates</i>		
Czech Republic	5,44	4,40
Estonia	5,23	4,93
Hungary	5,28	5,02
Poland	5,42	4,75
Slovenia	5,31	4,58
<i>Former Second Round</i>		
<i>Candidates</i>		
Bulgaria	4,92	5,01
Latvia	5,50	5,79
Lithuania	6,10	6,22
Romania	5,47	5,64
Slovak Republic	5,86	5,00

Taking these projected rates of growth and assuming that low-income EU countries will grow at 2 percent per year, one can obtain the time needed for CEE countries to converge to the average income per capita of the group formed by Greece, Spain and Portugal (Figure 3.5).

The average time-span estimated for the convergence of CEE countries to low-income EU countries is about 30 years. Even for advanced countries, such as Hungary and Poland, convergence to low-income EU countries would take about 20 years. This gives some clues as to the order of magnitude of the persisting income gap that will characterize an enlarged European Union.

It is worth noting that the growth rates projected are not far from the rates observed in the last few years in some of the countries (the exception being the Czech Republic). However, if one considers that these countries are emerging from the sharp fall in output experienced at the outset of transition, projected rates appear fairly optimistic.

One reason for which projections may be too optimistic is the role of human capital. Available indicators may overestimate the human capital endowments of the CEE countries, as rates of school enrollment -- which are relatively large in CEE countries --

offer a highly imperfect proxy of human capital endowments. As discussed further in Section 3.3 below, the legacy of central planning was a secondary system concentrated on dead-end vocational schools and providing training in narrowly designed occupations. In other words, there is a quality of education issue that such aggregate indicators do not capture.

Moreover, the approach adopted by Fischer et al. may be misleading with regards to the role of government expenditure. It is important to take into account not only of the size, but also of the composition of government expenditure, as further discussed below.

Figure 3.5a

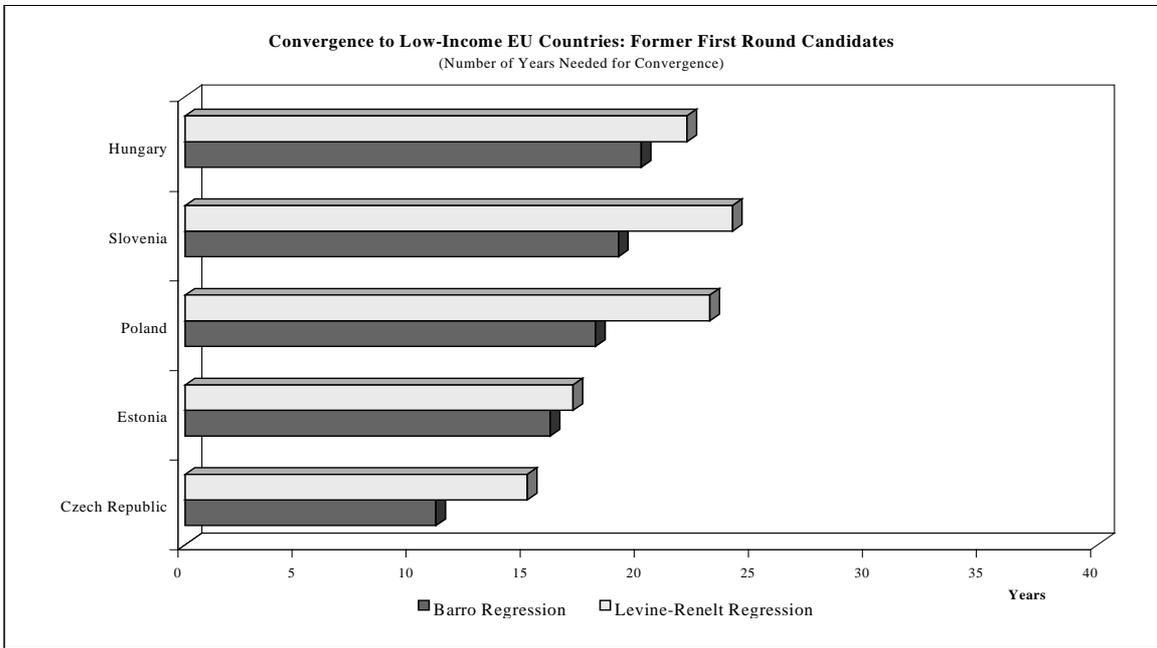
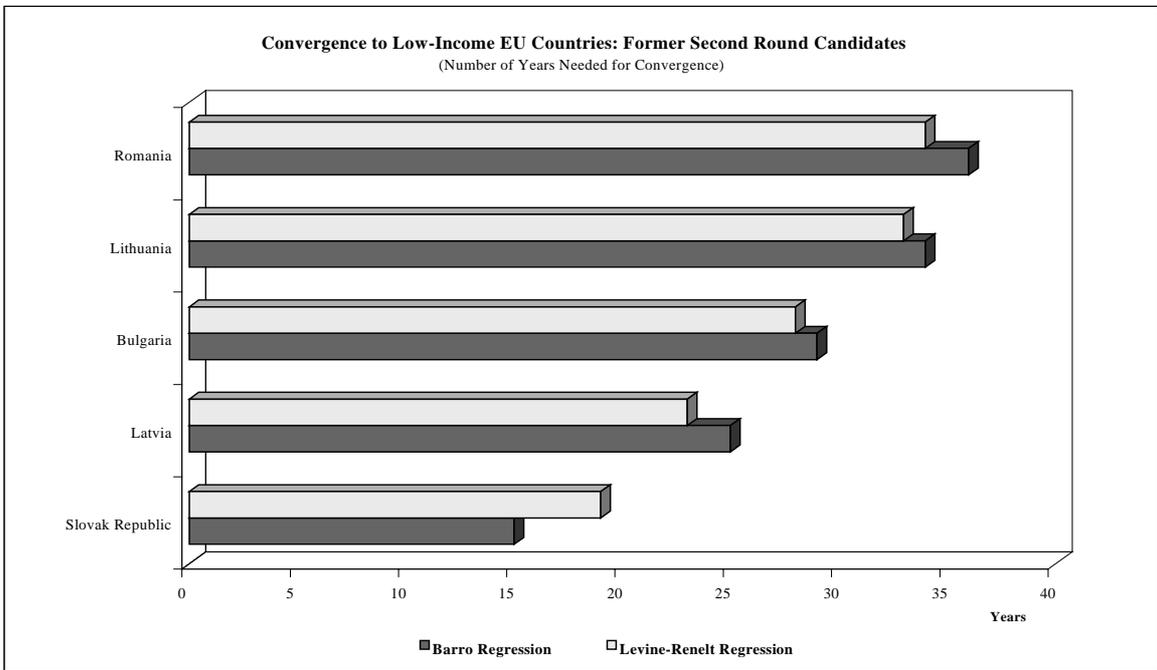


Figure 3.5b



### 3.2.4. *Public expenditure*

In Barro's regression government consumption has an adverse effect on growth. Government consumption includes expenditure on goods and services by the government and expenditure for wage and salaries in the public administration. However, it is important to disentangle the different components of government expenditure, especially since the task is to evaluate a long-term convergence scenario. According to the views advanced, *inter alia*, by Coricelli (1995 and 1998) and Boeri (2000), government expenditure may also ease market reforms. Two main channels can be identified. One relates to the role of public investment, especially in infrastructure; the other relates to the role of social expenditure, which may play an important role in permitting structural adjustment in these economies (reallocation of labor across sectors, for instance). Thus, we should test whether for market economies different types of government expenditure --distinguishing mainly public consumption from social expenditure and transfers and including public investment -- have a different impact on growth. Simple correlations between fiscal variables and long-term growth (Easterly and Rebelo, 1993) show that social expenditure and government transfers are positively correlated with growth while government consumption (especially if one excludes expenditure in education and defense) is negatively correlated with it. Although simple correlations are not very informative, these correlations do survive in a regression framework that extends Barro's regression to take account of potentially different effects of different elements of government expenditure. An important caveat is the causality issue. It is conceivable that faster growth improves government accounts thus permitting higher expenditures. However, it is unclear why such a reverse causality should affect only some and not all the components of government expenditure.

Tables 3.4 and 3.5 report results of a regression disentangling social expenditure from capital expenditure and the residual component of government consumption over the sample of countries used (and the time period covered) by Easterly and Rebelo (1993).

The low level of significance of capital expenditure was expected as Easterly and Rebelo (1993) showed that only certain elements of public investment, namely those in infrastructure, affect positively and significantly output growth. Although the results should be

taken with caution, they indicate that rather than reducing public expenditure, a change in its composition can have significant effects on growth. In particular, shifts in expenditure from government consumption to public investment and social expenditure or transfers can improve growth prospects considerably.

**Table 3.4. Effects of Government Expenditure in Social Security and Welfare on Growth: Regression Results.**

Dependent variable= Growth rate of per capita GDP during 1970-1988

Independent variables	Coefficient	T Statistic
GDP1960	0,000003*	-2,07
PRIM	0,029*	3,1
SEC	0,033	1,76
GC	-0,07*	-2,2
CAPEXP	0,084	1,68
SOCEXP	0,079	1,13
Constant	-0,001	-0,17

\*The asterisk indicates the coefficient are significant at the 5 percent level

R <sup>2</sup>	0,26
Adjusted R <sup>2</sup>	0,20
Standard Error	0,018

**Description of the variables:**

GDP1960 = Initial level of GDP per capita (1960)
PRIM = Primary school enrollment rate (1960)
SEC = Secondary school enrollment rate (1960)
GC = Government consumption / GDP
CAPEXP = Government capital expenditure / GDP
SOCEXP = Government expenditure in social security and welfare / GDP

**Table 3.5. Effects of Government Expenditure in Social Transfers on Growth: Regression Results.**

Dependent variable= Growth rate of per capita GDP during 1970-1988

Independent variables	Coefficient	T Statistic
GDP1960	-0,000005*	-2,5
PRIM	0,026	1,91
SEC	0,036	1,67
GC	-0,12*	-2,9
CAPEXP	0,135	1,4
GTRAN	0,153*	2,3
Constant	0,003	0,3

\*The asterisk indicates the coefficient are significant at the 5 percent level

R <sup>2</sup>	0,30
Adjusted R <sup>2</sup>	0,22
Standard Error	0,018

GDP1960 = Initial level of GDP per capita (1960)
PRIM = Primary school enrollment rate (1960)
SEC = Secondary school enrollment rate (1960)
GC = Government consumption / GDP
CAPEXP = Government capital expenditure / GDP
GTRAN = Government expenditure in social tranfers / GDP

The more advanced CEE countries are characterized by a structure of public expenditure which is fairly similar to that of EU countries. The higher level of capital expenditure, however, may be misleading as the need to develop a public infrastructure is much stronger in CEE countries. Such levels of public investments appear low when compared to those of developing countries with similar income per capita levels.

**Table 3.6**

<b>Public Expenditure (% of GDP)</b>							
<b>Country</b>	<b>Total</b>	<b>Current</b>	<b>Consumption</b>	<b>Subsidies</b>	<b>Social Security and Welfare</b>	<b>Interest</b>	<b>Capital</b>
Belgium	54,7	52,6	14,2	2,9	24,8	10,7	2,0
Denmark	57,6	55,3	24,7	3,0	20,5	7,2	2,3
France	50,2	46,6	18,3	1,6	23,5	3,1	3,6
Germany	45,8	42,3	18,5	1,9	19,3	2,6	3,5
Ireland	44,5	43,5	14,6	4,4	16,4	8,0	1,3
Italy	53,2	48,3	17,4	2,2	18,9	9,7	4,9
Netherlands	56,3	52,3	14,9	1,6	29,1	6,7	4,0
UK	42,9	38,1	20,0	1,1	13,7	3,4	4,7
Portugal	42,7	40,2	19,7	1,5	10,5	8,6	2,4
Spain	41,5	35,5	14,2	1,6	16,1	3,6	6,0
Greece	53,9	51,0	21,9	1,8	16,1	11,2	2,9
Poland	49,8	47,3	14,9	1,8	21,0	5,3	2,5
Hungary	55,3	49,9	18,7	3,5	18,8	8,9	5,3
Czech Republic	49,8	42,2	18,2	3,4	19,4	1,3	7,7
Slovakia	47,3	42,3	14,8	4,8	20,5	2,2	5,0
Slovenia	46,2	43,2	7,9	3,7	28,6	1,5	3,0
	<b>Total</b>	<b>Current</b>	<b>Consumption</b>	<b>Subsidies</b>	<b>Social Security and Welfare</b>	<b>Interest</b>	<b>Capital</b>
<b>Average EU</b>	49,4	46,0	18,0	2,1	19,0	6,8	3,4
<b>Average Low-Income EU</b>	46,0	42,2	18,6	1,6	14,2	7,8	3,8
<b>Average CEEs</b>	49,7	45,0	14,9	3,4	21,7	3,8	4,7

Source: EPI, Fiscal Policy in Transition. CEPR, 1997

Note: EU (1990), CEEs (1995).

### 3.2.5. Institutional Quality

The process of integration of CEEs in the EU and the speed of convergence will also be significantly affected by the development of market institutions. Needless to say, this is another area where measures are difficult to produce and interpret. Yet recent work on growth suggests that institutional quality (protection of property rights,

effectiveness of the legal system etc..) has significant effects on growth (Knack, 1996, Keefer and Knack, 1995), so it is worth trying to capture this factor as well.

Institutions may be crucial for growth in the long-run. This aspect, generally relevant (as shown by Keefer and Knack (1995)), is particularly important for countries undertaking radical institutional change. It is therefore useful to specify growth regressions in such a way to include institutional variables and use these estimates in projecting growth rates for CEE countries.

The EBRD Transition Report 1997 uses a regression analysis carried out by Knack (1996) to assess the impact of improvements in institutional quality in CEEs on their growth prospects. Knack (1996) estimated an equation similar to that of Levine and Renelt (1992) for the period 1960-89, introducing a variable measuring institutional quality. Box 3.3. offers details on this measure. In essence, this variable (ICRG, International Country Risk Guide) is constructed by a US commercial company (Political Risk Services) and is based on the security of property rights and effectiveness of contract enforcement mechanisms in the various countries.

**Box 3.3: Measuring Institutional Quality.****Table 3.7: ICRG index of institutional quality**

(1995 for Eastern European countries, 1984 for Western Europe and Japan)

Bulgaria	37
Czech Republic	42
Hungary	46
Poland	44
Romania	34
Slovak Republic	39
Western Europe and Japan	44

*Source:* EBRD (1997). Transition Report.

The ICRG (International Country Risk Guide) is an index of the security of property rights and of the enforcement of contracts published by a US commercial company. The index ranges between a minimum of 7 and a maximum of 49 and summarizes five indicators: *expropriation risk* and *rule of law*, which refer to the security of property rights; the *risk of repudiation of contracts by government*, which measures the degree of contract enforcement; *corruption in government* and *quality of the bureaucracy* finally define the efficiency in the provision of government services. The overall index is the sum of the indicators above mentioned.

Knack's results can be summarized by the following regression:

$$GYP = -6.602 - 1.308 \log RGDP60 + 1.273SEC + 2.296PRIM + 12.086INV + 8.122LFGR + 0.755PRIC + 0.058ICRG,$$

where GYP is the average annual rate of growth of GDP per capita during the period 1960-89; RGDP60 is the initial level of GDP per capita in 1960; PRIM and SEC are the primary and secondary school enrollment rates; INV is the investment ratio; LFGR is

the rate of growth of the labor force; PRIC is the change in terms of trade (not significant in the regression) and ICRG is the institutional quality index, that has a maximum value of 46.

The ICRG estimates for CEE countries (Table 3.7) appear overly optimistic, placing the more advanced CEEs at levels similar to those of Western Europe in 1984.

Nevertheless, the coefficients in the regression indicates that achieving the highest index of institutional quality would for instance bring to the Czech Republic an additional  $0.0586 \times 4$ , that is, more than 0.2 percentage points of additional growth of GDP every year.

### 3.2.6 *Transitional growth*

As the time required to complete the transformation of these countries in market economies is subject to considerable uncertainty -- even in the case of the more advanced transition countries -- it is useful to test on historical data for CEE countries the role played by the various factors discussed above. This can also provide valuable information regarding the developments to occur in the future and the effects of different structural and macroeconomic policies accompanying the transition.

Three caveats apply to this analysis. First, market oriented reforms can improve growth prospects of the CEE countries, but their impact is moderated by initial conditions. The stronger is the impact of initial conditions on growth performance, the longer is likely to be the period of adjustment of these economies. Second, reforms may have non-linear effects on growth: as it takes time before reforms affect microeconomic behaviour, the initial impact on growth of policy changes may be modest and, in some cases, even negative. Third, the effect of policies themselves may vary with initial conditions. The same policy measures can have a different impact depending on the initial conditions. It is not clear which way this will go: countries with more favourable initial conditions may extract higher benefits from reform measures, or, by contrast, countries with more unfavourable initial conditions could benefit more from reforms. In other words, marginal returns to reforms may be either decreasing or increasing.



**Table 3.8**

Dependent Variable: GDP Growth Rate (1992-1997)

<b>Variables</b>	<b>Coefficient</b>	<b>T Statistic</b>
WARD	2.53	0.57
GROECD	2.5	2.22
TOT	0.0049	0.09
YPCINI	-0.001	-2.11
GOVY	0.07	0.38
FBAL	0.51	3.07
INF	-6.13	-3.54
LII	-6.14	-0.48
LIE	35	2.72
LIP	-15.9	-1.54
LILIINI	81.05	1.23
LIELIINI	-170.345	-2.41
LIPLIINI	112.391	2.37
BUROQUAL	-0.82	-1.23
RULELAW	0.44	0.48
CIVSOC	0.836	1.1
C	-15.4	-1.88

**Adjusted R<sup>2</sup> = 0.72**

**Table 3.8 (continued).****Explanation of the Variables:**

WARD = Dummy for War

GROECD = OECD average GDP growth rate

TOT = Terms of Trade

YPCINI = Initial Level of per Capita Income

GOVY = Government Expenditure

FBAL = Fiscal Balance

INF = Inflation rate

LII = Liberalization Index (Internal)

LIE = Liberalization Index (External)

LIP = Liberalization Index (Privatisation policies)

LIILIINI = Liberalization Index (Internal), Initial Level

LIELIINI = Liberalization Index (External), Initial Level

LIPLIINI = Liberalization Index (Privatisation policies), Initial Level

BUROQUAL = Quality of Bureaucracy

RULELAW = Rule of Law

CIVSOC = Civic Society, Putnam Indicator

C = Constant

Table 3.8 reports regression results over a panel of CEE countries in the period 1992-1997. The estimated equation is similar to that in Fischer et al. (1998). External factors include a dummy for war, growth of OECD countries, and terms of trade. Macroeconomic variables include the fiscal balance and the inflation rate. Initial conditions are summarised by income per capita in the base year, and by the degree of liberalisation (a proxy for some form of market economy) before full-fledged market reforms of the 1990s. Policy variables include government expenditure and reform policies. The latter are related to internal liberalization, external liberalisation and privatization/policies supporting the private sector. Finally, the differential effect of reforms in relation to the initial conditions in terms of economic liberalization before full-fledged market reforms is tested.

The results offer some clues as to the factors most likely to affect growth in a transitional economy. First, the negative coefficient of the initial per capita income indicates some convergence within the CEE group occurred during the 1990s. Second, macroeconomic variables, namely inflation and the budget balance, appear significant and with the expected sign. Macroeconomic stability in the form of low inflation and balanced fiscal accounts also contribute to growth. A caveat on this result is that causality may go from growth to favourable fiscal accounts, rather than the other way round. Nevertheless, this result may be interpreted optimistically as stating that macroeconomic stability, that will be reinforced with accession to the European Union, would ensure faster growth. Results on the role of reforms and institutions are less clear-cut. Reforms seem to stimulate growth only in the case of external liberalisation. Domestic liberalisation and privatization do not appear to have a significant impact on growth. In fact privatization seems to reduce transitional growth. However, this result should be analysed together with the coefficient of the reform variables interacted with initial conditions in terms of liberalization progress before reforms. Interestingly, it turns out that privatization fosters growth when it occurs in a country in which there was already some form of market mechanism (partial liberalization before full-fledged reforms).

In sum, initial conditions matter not only directly, but also indirectly, as they do influence the effects of structural reforms. This suggests, more generally, that reforms induced by the accession to the European Union may have differential effects depending on the initial conditions of the various countries.

Finally, institutional variables do not appear significant. However, measurement problems -- the indicators of institutional quality measured by ICRG may simply not be appropriate -- should discourage one from drawing any conclusions from this result.

### 3.3 Strategic Factors in Growth

The previous section suggests that growth prospects for CEE countries that are considered for entry to the EU very much depend on initial conditions. It also suggests that the quality and composition of public spending can play an important role in speeding up convergence. This section reviews initial conditions, notably in terms of the human capital endowments of these countries. It also analyses the composition of public spending. Finally it develops some considerations as to the effectiveness of domestic institutions, hence the amount of time required to complete the transition to a market economy.

#### 3.3.1 *Human Capital Endowments*

It was widely believed at the outset of transition that former centrally planned economies had a highly qualified labour force compared not only with countries at similar stages of development, but also with OECD countries. A main strength of these economies was indeed identified in their human capital, which would attract foreign investors and facilitate inter-industry and inter-occupational shifts of workers affected by economic restructuring.

This view was based on aggregate data on educational attainments of the workforce. The latter pointed to employment shares of workers with only primary or lower educational attainments generally of the order of 25-35 per cent compared with well over 45 per cent in countries like Greece and Spain and with an average of 37 per cent in the European Union.

However, a closer look at schooling systems and educational attainments of the workforce in these countries would suggest a less optimistic assessment of the legacies of the previous regime [Boeri and Keese, 1992]. The fact of having a relatively high number of workers with educational attainments above elementary schooling was mainly a by-product of the presence in these countries of lower vocational schools offering generally one to two years of training in narrowly defined occupations up to the completion of

compulsory schooling. These lower vocational schools were actually part of the basic schools and were indeed not even formally considered as a part of the secondary system<sup>27</sup> in these countries. Much of this training was also done within the enterprises to which the training centres were attached, and this further strengthened the specificity of the skills being provided. Moreover, upper vocational schooling -- although offering up to five year courses and then the possibility to have access to tertiary schooling -- was also *de facto* a dead-end. Only a minor fraction of the pupils (generally below five per cent) in upper vocational schools were indeed enrolled in courses offering a school-leaving certificate and VOTEC fields were not covering a broad range of new occupations, while those contemplated were to a large extent outdated<sup>28</sup>. Finally, general secondary schools were heavily undersized by OECD standards: enrolment to general secondary schools was of the order of 20-30 per cent (of the population of the relevant age group) compared with 60 to 90 per cent in western Europe.

Thus far fewer workers in central and Eastern Europe than in the West had completed secondary education at the outset of transition, and even less had tertiary-level educational attainments. If the quantity, that is the coverage, of education was far less satisfactory than thought at the outset, the quality of education was even worse. Adult literacy surveys (see box 3.4) attribute rather low scores to CEE countries in terms of literary, documentary and numerical literacy at all levels of the educational ladder.

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<sup>27</sup> For instance, in the Czech Republic even in the pre-transition phase the *uciliste* (vocational) schools were not formally considered as a part of the secondary school system.

<sup>28</sup> To give an example, in the Czech Republic at the outset of transition it was necessary to newly introduce or reform about 70 VOTEC fields per year in order to make curricula somewhat related to the targeted professions.

### **Box 3.4: Human and Social Capital in Transition Countries**

#### *Inheritance of Communism and Social Capital*

The physical and human capital of Western Europe was to a large extent destroyed by the World War II. What remained, however, was a market system of incentives, rules, and tradition. The societies affected by the war carried a deep tradition of civic development. What lacks the most in the transition economies after the end of the Cold War are market institutions and "healthy" behavioural patterns of the workforce. The labour market inheritance of communism included relatively skilled labour force, but little or no self-employment and entrepreneurship, administrative wage grids resulting in pay egalitarianism, guaranteed employment, abundance of life-long jobs and full unionisation, vast redistribution through poorly targeted social assistance. With the exception of the high educational attainment endowment, all of the inheritance represents labour market rigidities that are likely to hamper economic growth and accession progress and should be removed in the transition process.

The labour force is skilled when measured using educational attainment, but it is not used to changing jobs, learning new skills, problem-solving, moving between regions, working in an innovative way, or running its own business. To provide an illustrative example, consider the arguably well advanced Czech labour force. According to a survey conducted by the Sociological Institute of the Czech Academy of Sciences in 1999, only about a half of Czech workers feel proud about their work and most of them "work only to make money". Only about 15% of Swedish workers will share the same view. Furthermore, very few Czechs are willing to invest into improving their skills once they leave schools. This picture is typical for the other transition economies as well. Freeman and Blanchflower (1997) use a worker survey from early transition to demonstrate that the citizens of former communist countries exhibited a greater desire for egalitarianism and more support for state intervention in the job market and economy than do Westerners.

The issue of to what extent has the post-soviet labour force been fundamentally damaged by communist work habits and popular attitudes toward entrepreneurship, is an important one. Shiller et. al. (1991) ask whether the structure of the market and the government, the amount of red tape, and the distorted business incentive system of the Russian economy merely reflect the fundamental preferences of the Russian people, manifested in public support for subsidies and other measures promoting equality and inefficiency. One of the often quoted differences between the NIS and CEE countries is the fact that CEE countries did enjoy periods of democracy and market economy before becoming a part of the Soviet block. The resulting difference in civic development might be among the forces driving the different paths of transition taken by these two regions.

#### *Quality of Human Capital*

In spite of typically very high secondary school enrolment, the level of tertiary education enrolment was quite low in some of the pre-accession transition countries. The system of vocational education is likely to be over-stratified especially in the CEE countries. Further, under communism, there was a general lack of attention to (or a major distortion in) social sciences, including law, economics, and business administration. The "educational technology" of communist schools was based on memorising and suppressed analytical and independent creative thinking. There are therefore potential problems with the quality of the human capital endowment of workers. Schooling attainment indicators provide only an indirect and possibly misleading measure of the stock of human capital as they ignore the issue of quality. Two recent surveys provide more detailed evidence on both the amount and quality of human capital in several of the accession countries.

Based on the results of the recent International Adult Literacy Survey (IALS) measuring various forms of *adult literacy*, the Czech and especially the Polish population ranks below the average of the EU countries surveyed. The IALS study is run by ETS Princeton and Statistics Canada and provides comparable indices of functional literacy for adult populations of many EU countries, but also for the Czech Republic, Poland,

and Slovenia. Two waves of the survey were conducted, the first in 1994 and the second in 1996. Currently available information allows us to compare only the second-wave results for the Czech Republic and the first-wave results for Poland with a group of first-wave results from EU countries.

Three forms of adult literacy were measured in these surveys and the distinction between them is important for interpreting the results. Prose literacy reflects the ability to understand and analytically use information from texts. This is the form of adult literacy most likely affected by the communist educational system. Document literacy reflects the ability to locate and use information from documents and quantitative literacy has to do with the ability to perform arithmetic functions.

Table 3.9 provides the proportions of population in different literacy brackets with higher brackets representing higher, better scores achieved. The overall picture is not substantially altered if we look at other indicators, such as mean scores etc. Let us first focus on the prose literacy. The most natural comparison of Czech and Polish results is perhaps to those for Germany. Germany has a similar educational system with much emphasis put on vocational education and it is also the largest neighbour of both of the pre-accession countries. While only 8.4 % of Czechs and drastic 3.1% of Poles were able to reach the highest group of scores, 13.4 Germans had very high prose literacy and in Sweden, over 32% of the population had the best results. While many Czechs score in the intermediate brackets, most alarming is the almost 43% of Poles in the lowest bracket.

**Table 3.9: % of Adult Population (15-65) by Type of Literacy**

(All data come from 1<sup>st</sup> wave of IALS except the Czech data)

**Percentage of Adult Population (16-65)**

**a) by PROSE Literacy**

<b>Prose %</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4/5</b>
Sweden	7.5	20.3	39.7	32.4
Netherl	10.5	30.1	44.1	15.3
Canada	16.6	25.6	35.1	22.7
Australia	17.0	27.1	36.9	18.9
New Zeal	18.4	27.3	35.0	19.2
USA	20.7	25.9	32.4	21.1
Belgium	18.4	28.2	39.0	14.3
Germany	14.4	34.2	38.0	13.4
Switz (F)	17.6	33.7	38.6	10.0
UK	21.8	30.3	31.3	16.6
Ireland	22.6	29.2	34.1	13.5
Czech	15.7	38.1	37.8	8.4
Switz (G)	19.3	35.7	36.1	8.9
Poland	42.6	34.5	19.8	3.1

**b) by DOCUMENT Literacy**

<b>Doc %</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4/5</b>
Sweden	6.2	18.9	39.4	35.5
Netherl	10.1	25.7	44.2	20.0
Belgium	15.3	24.2	43.2	17.2
Czech	14.3	28.0	38.1	19.6
Germany	9.0	32.7	39.5	18.9
Canada	18.2	24.7	32.1	25.1
Australia	17.0	27.8	37.7	17.4
Switz (F)	16.2	28.8	38.9	16.0
Switz (G)	18.1	29.1	36.6	16.1
USA	23.7	25.9	31.4	19.0
UK	23.3	27.1	30.5	19.1
New Zeal	21.4	29.2	31.9	17.6
Ireland	25.3	31.7	31.5	11.5
Poland	45.4	30.7	18.0	5.8

**c) by QUANTITATIVE Literacy**

<b>Quant %</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4/5</b>
Sweden	6.6	18.6	39.0	35.8
Czech	8.9	22.3	37.0	31.9
Germany	6.7	26.6	43.2	23.5
Netherl	10.3	25.5	44.3	19.9
Switz (F)	12.9	24.5	42.2	20.4
Belgium	16.7	23.0	37.8	22.6
Switz (G)	14.2	26.2	40.7	19.0
Canada	16.9	26.1	34.8	22.2
Australia	16.8	26.5	37.7	19.1
USA	21.0	25.3	31.3	22.5
New Zeal	20.4	28.9	33.4	17.2
UK	23.2	27.8	30.4	18.6
Ireland	24.8	28.3	30.7	16.2
Poland	39.1	30.1	23.9	6.8

The picture improves a bit for Czechs when we consider document literacy and in quantitative literacy, Czechs score very high – above Germany and below the first Sweden. The quality of cognitive skills is however very low in Poland as this country ranks below the Czech Republic and far below any of the 12 EU countries included in the first wave of the survey. Overall these results shed light on the dimensions in which the quality of transition human capital lags behind that of the EU countries. It is especially in terms of understanding text and its analytical use. The findings also provide a rather dim picture of the quality of Polish labour force. According to the same study, the ability of adult population to communicate in a foreign language in the Czech Republic and Poland is much lower than in the EU. While over two thirds of adult population communicates in at least one world language in Netherlands and Belgium, this share is below one third in the Czech Republic and is especially low in Poland. Although current cohorts of young school graduates are performing much better than the rest of the population, they are still lagging behind the concurrent cohorts in the EU. The TIMSS<sup>29</sup> study provides internationally comparable indices on the

<sup>29</sup> The Third International Math and Science Survey (TIMSS) provides evidence on the performance of students in the last grade of secondary schools using literacy-oriented tests. The survey was run in 21

quality of human capital of current students at different levels of education, including last grade of secondary schools. This evidence necessarily complements that from SIALS because human capital quality of current graduates is a leading indicator of the long-term population trend and because one would expect dramatic institutional changes in the educational systems of the CEE countries during transition. Moreover, young population is by far the most sensitive to job-related migration incentives. The survey finds that the average scores in participating CEE countries including Russia are very similar, and that all CEE countries rank at the bottom half of the total distribution, which included the EU countries.

**Table 3.10. Literacy Test Scores of Adult Population based on the (S)IALS study.**

	Educational Attainment					
	Lower Secondary and Higher Secondary		Full Secondary		Tertiary	
	Average Score	Rank	Average Score	Rank	Average Score	Rank
<b>Literary Literacy</b>						
<b>Poland</b>	210.5	12	252.7	14	277.3	13
<b>Czech Republic</b>	206.9	14	253.3	13	279.9	14
<b>Average w/o Poland and Czech Republic</b>	241.3	-	281.5	-	306.7	-
<b>Documentary Literacy</b>						
<b>Poland</b>	201.5	13	251.5	14	275.6	14
<b>Czech Republic</b>	232.6	9	273.8	12	292.0	13
<b>Average w/o Poland and Czech Republic</b>	241.2	-	284.8	-	308.1	13
<b>Numerical Literacy</b>						
<b>Poland</b>	213.2	13	263.2	14	285.8	14
<b>Czech Republic</b>	235.2	11	284.3	12	308.8	11
<b>Average w/o Poland and Czech Republic</b>	246.7	-	288.0	-	312.9	-

countries world-wide. Among the CEEC, the Czech Republic, Slovenia, Hungary, and Lithuania participated in this survey.

Those who had gone through vocational training had developed skills which were not adequate for market conditions and which made the worker less transferable across different occupations. This was consistent with the philosophy of central planning which rewarded physical work in the production sector highly, attaching a very low value to “mental” work in non-directly productive activities<sup>30</sup> and, consequently, over-invested in vocational training [Flanagan,1993]. It was also functional to managers of state enterprises wishing to maintain employment levels (in order to be in a stronger bargaining position in the planning process) and reduce the turnover of workers. But it was a recipe for trouble given the radical structural changes in the composition of employment by sector and occupation that were to follow.

A confirmation of the inadequacy of the education system inherited from the previous regime comes from data on labour market outcomes of workers with vocational school attainments after the liberalisation of markets, and on enrolments in institutes of secondary education since 1989. These data are contained in Table 3.11. The first column provides a measure of unemployment incidence for this group, that is, the share in unemployment of workers with (primary and secondary) vocational education. The next two columns tabulate the probabilities of job loss and of finding a job as deviation from the same rates for individuals with general secondary education, in order to evaluate differences in labour market outcomes of VOTEC workers vis-a-vis individuals with broadly the same years of schooling, but a less specialised education. Such flow data are estimated on the basis of retrospective information from Labour Force Surveys. In particular, the probabilities of job loss are estimated by taking the number of persons declaring to be non-employed because of a layoff as a percentage of the employees with the same educational attainment; the job-finding probability is obtained by taking as numerator the number of hirings from non-employment of individuals with vocational education and as denominator the population of origin. Finally, the fourth column provides

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<sup>30</sup> Significantly, the reformers were in the former Soviet Union fiercely opposing this emphasis on vocational education (Fitzpatrick, 1979)

information on wage reductions associated with having, *ceteris paribus*, vocational education rather than general secondary education.

Four facts are striking. First, workers with vocational training account in countries like the Slovak Republic for more than 60 per cent of the unemployed and elsewhere for no less than one-third of total unemployment. Second, the probability of job loss is up to 10 per cent (e.g., in the Czech Republic) higher for workers with vocational education than for those with general secondary attainments. Third, job finding rates for unemployed individuals who underwent vocational training can be (e.g., in Poland) even 15 per cent lower than for jobless people with general secondary education. Fourth, wage premia of workers with general secondary education compared to workers with vocational schooling (fourth column) range between 20 and 25 per cent, that is to say other things being equal a worker with general secondary earns about one-fourth more than a worker with vocational (secondary) education. It should be stressed that before the transition these premia were of the order of only 8 to 10 per cent<sup>31</sup> and that according to trade theory, integration in the Western markets should have led to a relative (if not absolute) increase in the price of the abundant factor, i.e., relative wages of people with vocational education should have gone up.

The best indication of the fact that the previous system had over-invested in educational training comes, however, from the changes which occurred in enrolment rates at secondary education institutes (Figure 3.6). Just as human capital theory would have predicted, there has been a veritable boom of enrolments for general secondary and a strong decline of inflows into vocational education. This happened even in a country like the Czech Republic, which had in place at the outset the best apprenticeship system in Central and Eastern Europe (heavily influenced by the German *Lehrausbildungs-system*)

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<sup>31</sup> See Sakova (1996) for estimates of pre-transition earning functions in the Czech Republic, Rutkowski (1996) for Poland and Kertesi and Köllö (1997) for Hungary. Based on household income data, Vecernik (1996) shows that income inequality across households having as head individuals with different educational attainments have significantly increased in CEECs since the start of transition. Significantly, there is a large income inequality (at least judging from decompositions of Theil indexes of disposable incomes) also *within* the group of families headed by individuals with vocational education attainments.

and where significant effort had been put since 1990 into the modernisation of vocational schooling.

**Table 3.11. The Over-Specialisation of the Workforce**

Country	The fate of workers with vocational education 1994-1997			
	Share in total unemployment <sup>a</sup>	Differential probability of job loss <sup>b</sup>	Differential job finding probability <sup>c</sup>	Wage premia wrt general secondary <sup>d</sup>
Bulgaria	11.1	9.3%	-6.4%	...
Czech Republic	42.5	10.5%	-2.9%	-21.4
Hungary	36.4	2.7%	-6.6%	-21.7
Poland	43.6	0.7%	-13.5%	...
Romania	32.1	3.2%	-4.8%	...
Russia	28.6	3.1%	-8.1%	-25.2
Slovak Republic	63.3	0.6%	-5.6%	-19.9
Slovenia	36.2	1.0%	-4.4%	-24.4

Source: Boeri (2000).

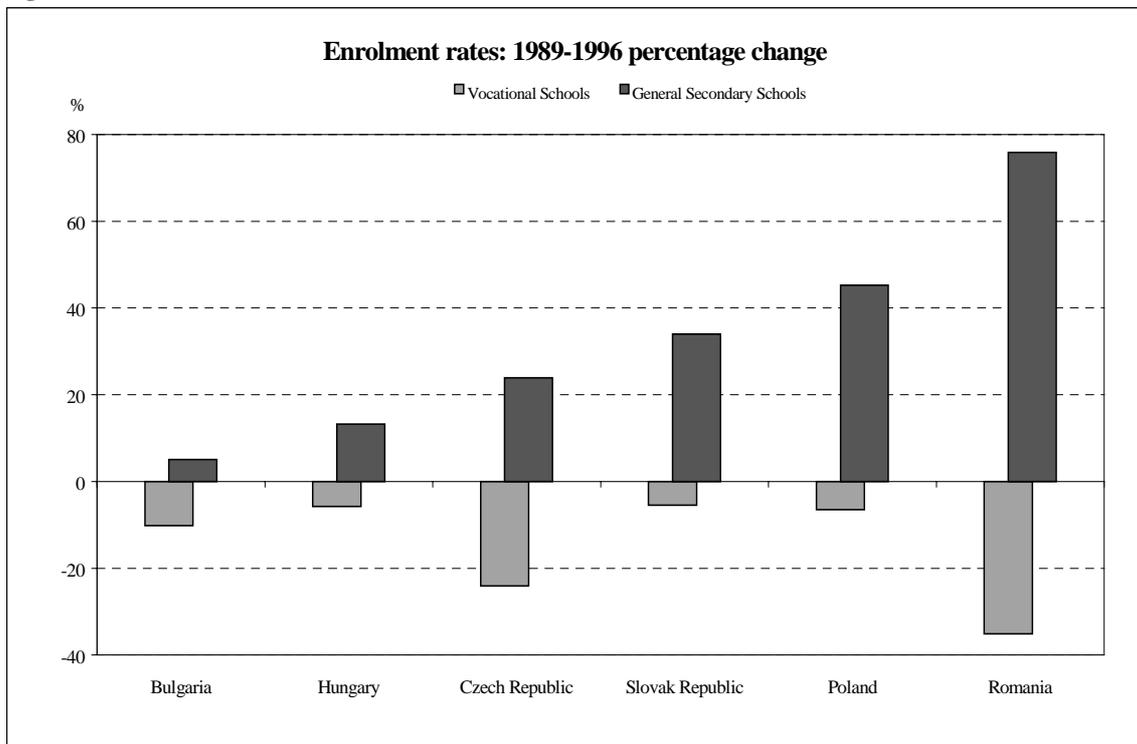
<sup>a</sup> Share in unemployment of workers with vocational education, average data for 1994-1997.

<sup>b</sup> Difference between the probability to be laid-off for a worker with vocational education and for a worker with general secondary education.

<sup>c</sup> Difference between the probability to find a job for an unemployed with primary vocational education and for an unemployed with general secondary education.

<sup>d</sup> Percentage difference of wages for workers with secondary vocational education relative to workers with general secondary education (from estimates of Mincer-type wage equations).

<sup>e</sup> Enrolment as a percentage of the 15-18 population age group. Vocational education includes here technical secondary and vocational secondary.

**Figure 3.6**

Source: Boeri (2000).

### 3.3.2 Social Security and the Composition of Public Spending

CEE countries are allocating between one-sixth and one-fourth of their GDP to social policies (Figure 3.7). It is important to analyse the main components of social spending and their effectiveness in attaining their redistributive goals.

Table 3.12 provides details on the shares of social spending going to pensions and to a broad category of non-employment benefits (unemployment benefits, social assistance, sickness benefits and other cash transfers to persons in working age) and on the contribution of social transfers to changes in Gini coefficients. In particular, the last two columns on the right-hand-side of Table 3.12 display the contribution of social policies to

changes in the Gini coefficient, as estimated by Branko Milanovic (1999) on the basis of microeconomic, household budget survey data<sup>32</sup>.

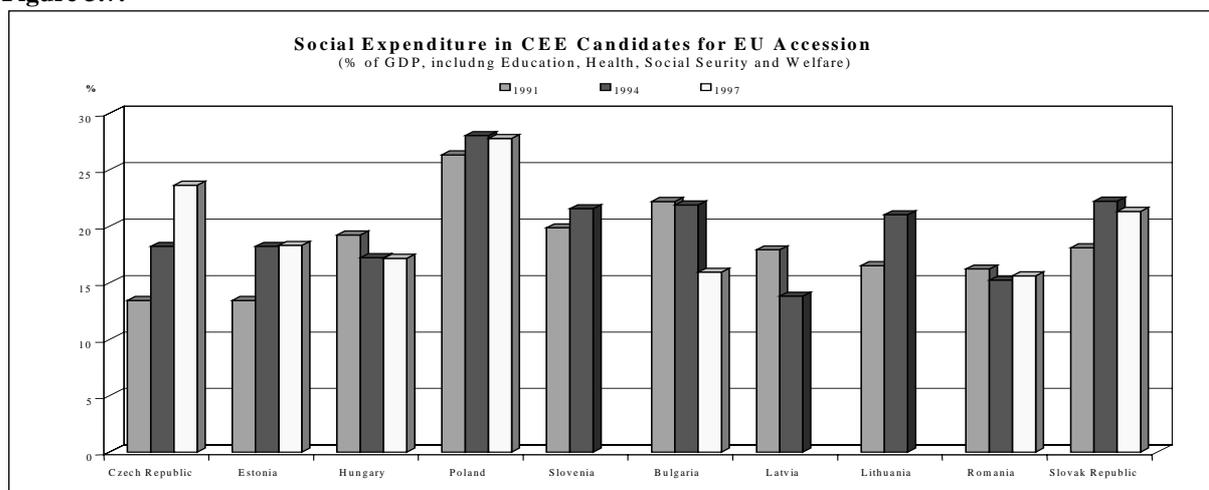
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<sup>32</sup> The overall change in the Gini coefficient,  $\Delta G$ , was decomposed into the contributions of the four main income sources (wages, w, non-wage private incomes, n, pensions, p and non-employment benefits, ne) as follows:

$$\Delta G = w_w \Delta C_w + w_n \Delta C_n + w_p \Delta C_p + w_{ne} \Delta C_{ne}$$

where w is the share of the income source in total income and C is the corresponding concentration coefficient.

Figure 3.7.



Source: Milanovic (1999) and IMF (various issues).

Table 3.12

### Social Policy Models, Redistribution and European Union Accession

Countries	Social policy expenditure as a percentage of GDP <sup>a</sup> (1991-5)				The role of social policies in redistribution		
	NE benefits <sup>b</sup>	2) Old-age pensions <sup>c</sup>	1/2	Total	Δ Gini <sup>d</sup>	Contribution of social transfers to Δ Gini <sup>e</sup>	of which non-pensions
<b>Former First Round Candidates</b>							
Czech Republic	3.6%	11.0%	32.7%	25.5%	8.0	0.9	0.4
Estonia	1.1%	6.6%	16.6%	26.0%	12.0	...	...
Hungary	2.4%	11.5%	20.9%	32.3%	2.2	1.2	-0.2
Poland	5.0%	15.8%	31.8%	29.5%	10.6	3.3	-0.1
Slovenia	2.7%	9.8%	27.5%	29.5%	2.6	-0.5	-0.4
Unweighted average	3.0%	10.9%	25.9%	28.6%	7.1	1.2	-0.1
<b>Former Second Round Candidates</b>							
Bulgaria	1.6%	9.4%	17.2%	14.1%	10.0	0.9	0.4
Latvia	0.5%	9.5%	5.3%	26.5%	10.0	-1.5	0.5
Lithuania	1.1%	6.6%	16.7%	19.3%	14.0	...	...
Romania	1.9%	6.9%	27.5%	16.5%	6.0	...	...
Slovak Republic	2.7%	9.1%	29.6%	26.0%	-1.0	...	...
Unweighted average	1.6%	8.3%	19.2%	20.5%	7.8	-0.3	0.5

Source: Boeri (2000).

<sup>a</sup> As a percentage of GDP. Dates: Czech Republic 1991/95, Hungary 1991/94, Poland 1990/1994, Slovenia 1990/95, Bulgaria 1991/95, Romania 1990/94, Slovak Republic 1990/95.

<sup>b</sup> Non employment benefits include unemployment benefits, social assistance, early retirement, disability pensions and sickness benefits.

<sup>c</sup> Average-period data.

<sup>d, e</sup> Czech Republic 1987-88/1993-95, Estonia 1987-88/1993-95, Hungary 1987/1993, Poland 1987/1995, Slovenia 1987/1995, Bulgaria 1989/1995, Latvia 1989/1996, Lithuania 1987-88/1993-95, Romania 1989/1993-95, Slovak Republic 1987-88/1993-95, Belarus 1987-88/1993-95, Russia 1989/1996 and Ukraine 1987-88/1993-95.

<sup>e</sup> Contribution of social policy to changes in the Gini coefficient between the pre-transition phase and 1995-6. See the text and Milanovic (1999) for details on the de-composition method.

Notes: Groups 1, 2 and 3 refer to the likely rounds of accession to the European Union.

"..." = not available

The table confirms the visual impression given by Figure 3.7 that the first-round candidate countries spend more on social policies than the countries belonging to the second group. It also suggests that they spend more especially in the field of non-employment benefits, which cover about one-fourth of social spending in the first round countries compared to about 20 per cent in the other countries. All this hints at the pressures for stronger social spending in terms of cash transfers to individuals in working age which are associated with the furthering of the accession process.

How effective are social policies in these countries in their primary goal of reducing income inequalities? Not very effective it would seem. The decompositions of the changes in the Gini coefficient displayed in the table point indeed to social transfers inducing in some countries more rather than less inequality. Significantly, this is not only the byproduct of pension payments (which typically contribute to increasing inequality in all the countries where public pensions are paid maintaining a strong link with previous earnings, e.g., Germany and Italy), but also of non-employment benefits themselves. In Poland, Bulgaria and Latvia, the latter increase inequality, presumably because of a poor targeting of these schemes.

Especially under conditions of rapid structural change, the bulk of redistribution tends to fall on unemployment benefits and targeted social programmes. As argued in Chapter 2, the demand for redistributive policies is likely to increase over the accession process. Unfortunately, available information does not suggest that the (relatively large) social welfare systems of the candidate countries are particularly successful in reducing income inequalities.

The key pressures on the social spending side seem to come mainly from deteriorating labour market conditions as the demographics still look favourable compared with Western countries. Large flows have occurred in the CEE countries from employment and unemployment to inactivity at the outset of transition, which have only partly matched by flows occurring in the opposite direction. Hence, labour supply has been declining significantly in all the countries of the region. As the former planned econo-

mies entered the 1990s with high labour force participation by Western standards, notably high female participation rates, a decline in labour supply was commonly predicted at the outset of transition and even advocated as a way to prevent employment reductions in state enterprises from translating into large increases of unemployment. However, the decline in labour force participation has been much stronger than initially anticipated.

Significantly, the largest drops in employment rates were associated with the strongest declines in labour force participation<sup>33</sup>. This suggests that the main vehicle of employment reductions were flows to inactivity, e.g. those associated with the forced retirement of working pensioners and early retirement schemes, undeclared employment or household production related to survival-oriented activities. Moreover, it was not mainly participation of women that fell: in most countries the deepest declines in participation occurred among men. The a-priori expectation was that participation of women should have been declining the most because labour supply of women is more elastic – and hence could have been more affected by real wage declines; nurseries and childcare facilities previously attached to enterprises were being dismantled, thereby increasing the opportunity cost of employment; and the presumption was that many women were “obliged” to work under the previous regime.

Some of the decline in employment rates may be hidden by participation in the informal sector. Almost by definition, there is a paucity of data on the informal sector, and above all on the determinants of the decisions of firms to hide their activities, enabling one to assess the links between taxation and the size of the informal sector. Aggregate data reported graphically in Figure 3.8 and discussed in Box 3.5 hint at a positive correlation between the share of the hidden economy in GDP and compulsory social security contributions, when control is made for the size of the private sector (a broad measure of progress made in the road to a market economy). Although the line of causation may also

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<sup>33</sup> See also Boeri, Burda and Köllö (1997) who decompose the decline in employment rates into the shares associated with i) the growth of unemployment, ii) the increase of inactivity, and iii) the decline in demographic pressures. They find that the strongest employment declines occurred in the countries with the largest falls in inactivity.

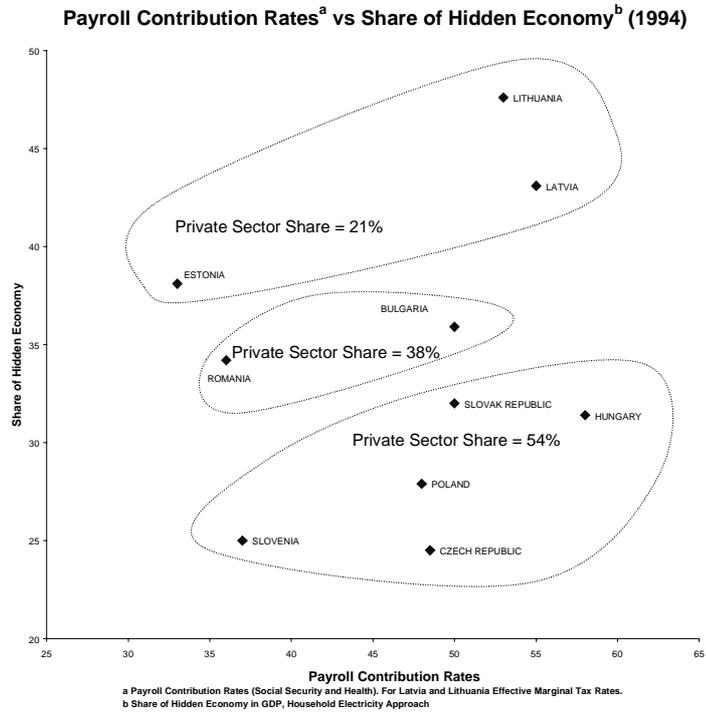
go the other way round (that is, a large informal sector forces governments to raise compulsory contributions), mandatory social security contributions have not significantly picked up in the countries on the road to EU accession while all estimates of the size of the informal sector display a marked upward trend. This may suggest that high taxation on labour<sup>34</sup>, coupled with inefficiencies in the state sector, does play an important role in the spread of the unofficial economy.

Poor tax collection administration and, more broadly, poor enforcement of the rule of law are feeding the ranks of the informal sector. Microeconomic evidence drawn from surveys of employers in these countries suggests that many firms underreport their sales in order to pay lower bribes [Johnson, et al., 1999], something which suggests that bribes are proportional to sale volumes and that tighter law enforcement may actually reduce the size of the informal sector.

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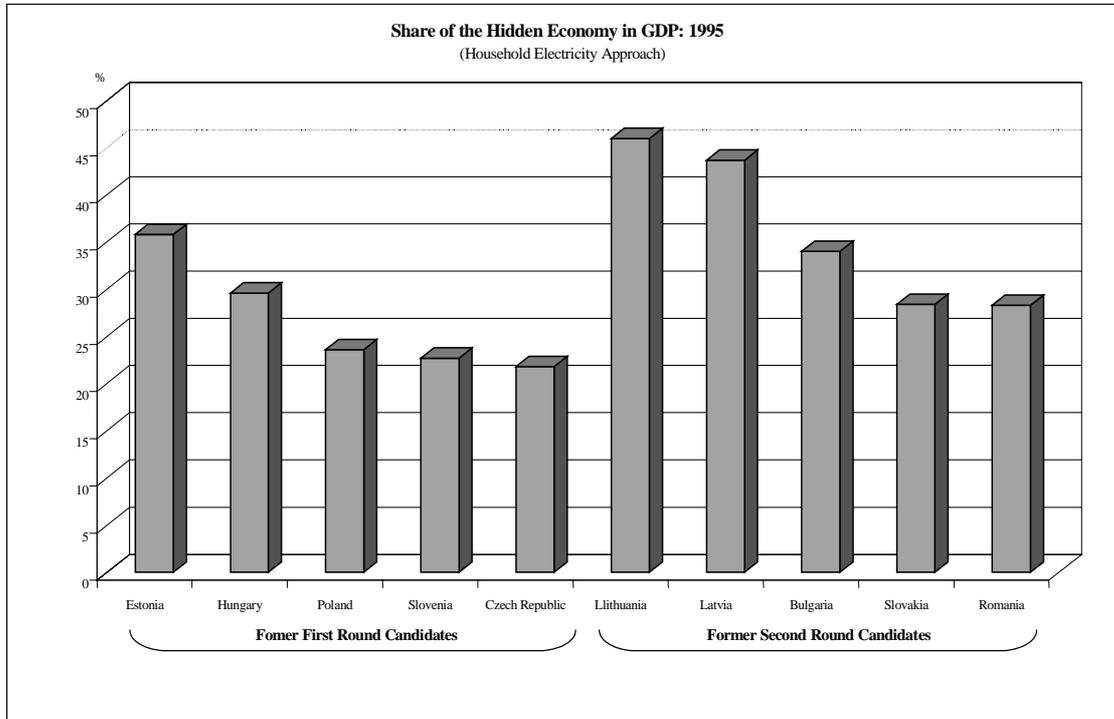
<sup>34</sup> Lacko (1999) reports a strong positive correlation between capital taxation and the size of the informal sector. This correlation is likely to capture delays in the transition. Marginal tax rates on capital are higher in the CIS countries that failed to reform their tax systems, and hence were not able to shift taxation away from corporate taxes towards personal income and indirect taxation.

Figure 3.8



### Box 3.5 Measuring the informal sector in Transition Economies

Figure 3.9



*Source:* Lacko, M. (1999). Hidden Economy - An Unknown Quantity? Comparative Analysis of Hidden Economies in Transition Countries in 1989-1995. Johannes Kepler University, Linz. Working Paper no. 905.

An attempt to measure the size of the hidden economy in the countries candidates to the EU accession has been made based on the so-called "Household electricity approach". Its rationale is that part of the household consumption of electricity is used to "fuel" the informal sector. The model adopted to estimate the share of the hidden economy consists of two equations, one identifying the household electricity consumption and the other output per capita in the hidden economy. The household electricity consumption is assumed to depend on the following variables: per capita real consumption of households, share of GDP in agriculture, country-specific climate characteristics, share of energy sources different from electricity, real price of consumption of residential electricity and size of the hidden economy. This latter is influenced by: tax rates on labour and capital income, cumulative output decline since 1989, inflation and general government expenditure. The estimate for the size of the hidden economy is then obtained by combining the two equations. The chart above reports the results of the estimation for 1995 carried out by Maria Lacko (in line with the results obtained by other authors): among the candidates to the EU accession, those with the highest incidence of the hidden economy are the Baltic countries. Estonia, in particular, despite being in the first round group, exhibits a level almost identical to the average for the second group.

### 3.3.3 *Institutions*

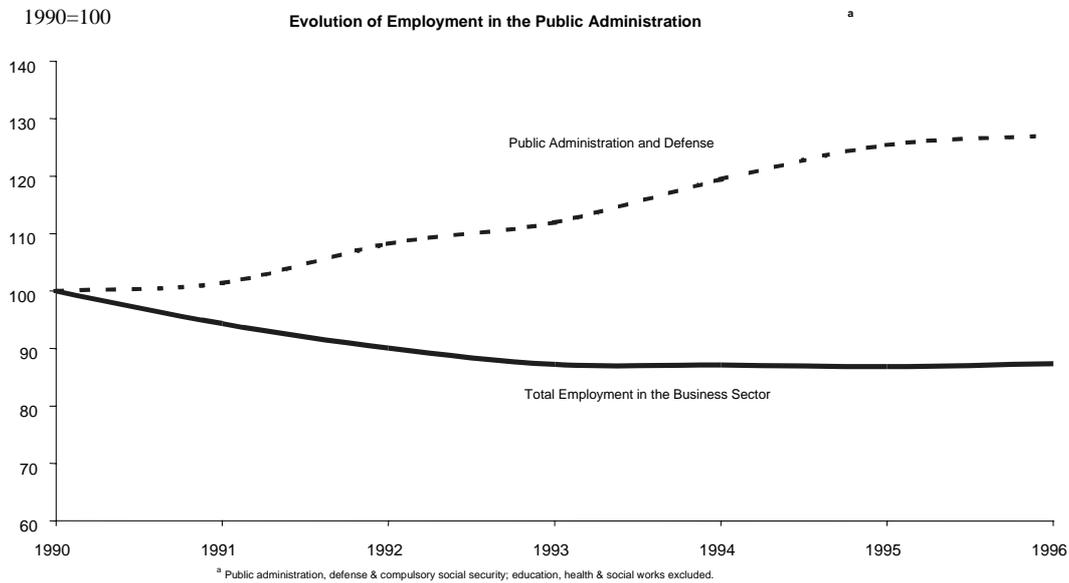
All centrally planned economies entered the 1990s with a very heavy regulatory framework and large bureaucracies. Under the old regime, virtually all aspects of working life were regulated, and the price of each commodity legally set. There was also a large battery of cash transfers provided to the workers and their families to be administered.

With the transition to a market economy many of these norms became redundant. However, rather than abolishing the old norms and introducing new ones encompassing a broad range of provisions, the new legislative bodies adopted an incremental approach, that is, they tended simply to add new norms to those previously existing. As a result, the legislative framework became even more complex than at the outset, with a jungle of (often overlapping) provisions, sometimes mutually inconsistent<sup>35</sup>.

This institutional complexity feeds relatively large bureaucracies. An indication of this comes from the dynamics of employment in the public administrations of these countries. Figure 3.10 shows strikingly divergent patterns of employment since 1990 in the public administration (central government plus local administrations, dotted line) and in the business sector (continuous line) in the CEE countries. While employment in the business sector was declining by 10 to 20 percentage points, the ranks of public administrations were getting larger and larger. At the end of 1996 the employment share of public administration in the CEECs was almost 4 per cent, up from about 2.5 per cent in 1990. It is worth recalling that one of the legacies of the previous regime was considered as being an overmanned public administration, and that the reduction of the public intermediation of resources was expected to involve significant reductions in the number of civil servants.

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<sup>35</sup> Significant, in this respect, is the opinion of the managers of large multinational enterprises who have exposure to a variety of national regulations. According to a report of the European Roundtable of Indus-

**Figure 3.10**

Source: Boeri (2000).

Institutional complexity and large (often poorly paid) bureaucracies are often a recipe for corruption. Even in the Czech Republic, a country that had inherited from the past a rather efficient, Prussian-style state administration, corruption among civil servants would seem to be pervasive. According to a survey carried out in 1998, only 12 per cent of the population believes that ministerial offices are not corrupt. Significantly, the survey reveals that the share of acts of corruption witnessed by respondents in the state administration increased over time, and indeed public administration is unanimously deemed as the most corrupt sector of the economy.

Country scores on corruption in the public sector produced by Transparency International (1998) (see Box 3.6 and Figure 3.11 for details) on the basis of at least three surveys in each country also point to high levels of corruption among civil servants throughout the transition countries arena. Russia leads the group, and former Soviet Re-

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trialists (gathering the top 45 European industrialists), “in a number of central and eastern European countries there are too many regulations, some of which are enforced in an inconsistent fashion” (ERT, 1999).

publics, like the Ukraine, generally have higher levels of corruption than CEE countries<sup>36</sup>. Yet, *all* former Communist countries reveal comparatively high levels of corruption, which suggests that corruption among civil servants – rather than being related to country-specific institutional features, limits of the political class or, in any event, transient characteristics – is a systemic characteristic of formerly planned economies. The conclusions from a survey of private sector businesses carried out by the World Bank [Brunetti et al., 1999] are not dissimilar: they point to corruption among civil servants as one of the top obstacles to doing business in the former Communist regions.

The persistence of high levels of corruption throughout the transition process can set in motion a vicious circle. On the one hand, large bureaucracies has to be maintained within tight budgetary constraints which means low wages to civil servants. The latter are notoriously a factor inviting corruption insofar as they reduce the opportunity costs of being caught and of losing one's job. On the other hand, in order to reduce corruption,

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<sup>36</sup> The high frequency of corrupt practices among civil servants in the region is confirmed also by surveys carried out by the Economist Intelligence Unit and the DRI MC Graw Hill Global Risk Service (see EBRD, 1998 for a summary of the results of such surveys). Interestingly, the rankings of countries in terms of corrupt practices provided by TI are confirmed by these sources.

supervisory bodies have to be strengthened<sup>37</sup>, but this results in a further increase in the size of bureaucracies.

This is a typical case where – without changing the rules, without reducing the specific knowledge of regulations and discretion of public administrations in enforcing them and hence ultimately the number of civil servants – stiffening supervision could do little about corruption or could even have perverse effects on bribery<sup>38</sup>.

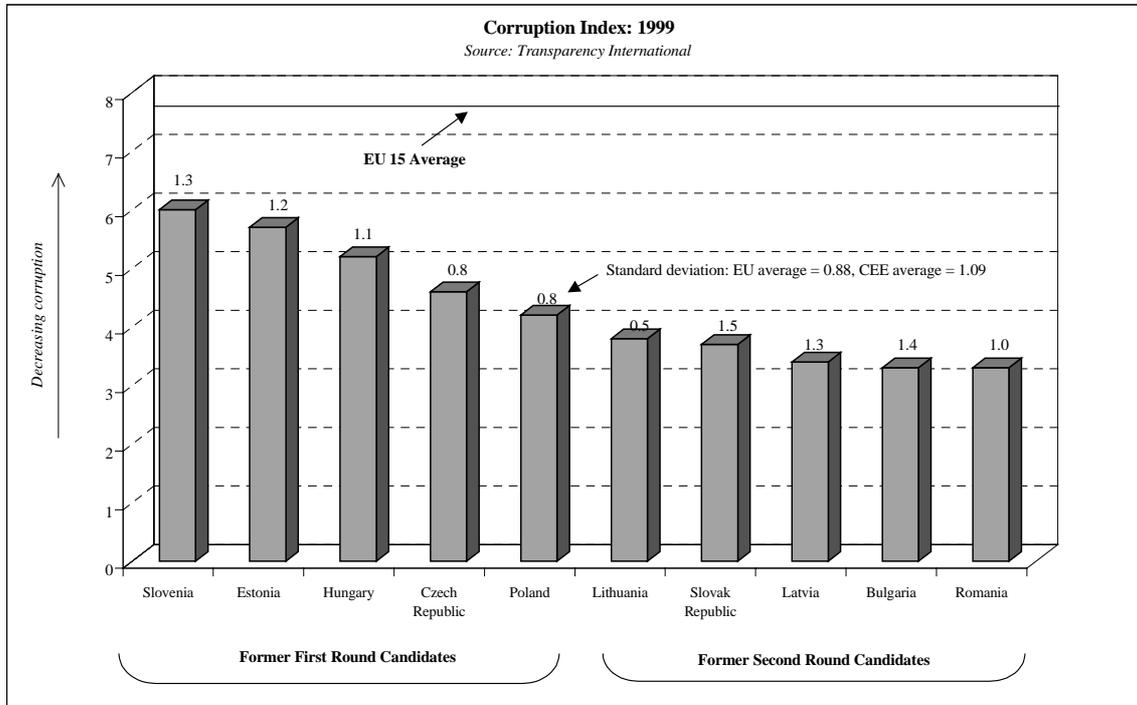
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<sup>37</sup> Increasing the probability to detect illegal behaviour is, after all, the main device to reduce corruption among civil servants according to the experience of Hong Kong, Philippines and Singapore. See on this Klitgaard (1988), *Controlling Corruption*, University of California Press, Berkeley.

<sup>38</sup> Carrillo (1995) developed a model in which increased supervision has perverse effects on bribery. In his model this is due to the fact that supervisors are themselves carrying out a cost-benefit analysis of accepting grafts and have no career promotion incentives. In the case of transitional economies, the perverse effects of supervision on corruption may simply come from the fact that increasing monitoring efforts squeeze the wage bill to be shared among civil servants.

### Box 3.6: Measuring Corruption

Figure 3.11



Source: Transparency International (1999).

The Transparency International Corruption Perceptions Index (TI-CPI) ranks countries according to the degree by which corruption is perceived to exist among public officials and politicians. The index is based on 17 different polls from 10 independent institutions carried out among business people, the general public, country experts and risk analysts. In 1999, 99 countries were surveyed. The TI-CPI ranges between 0 (highly corrupted) and 10 (highly “clean”). Additional information is provided by the standard deviation, which measures how different are the perceptions of a country among the sources used to carry out the survey. For the ten candidates to the accession, the homogeneity of the perceptions across sources seems not too far from the EU average, and this adds to the reliability of the index. Corruption may hamper progress in the reforms process: the chart tells us that the majority of the candidate countries are still distant from EU standards. However there is considerable variation within the EU as well, and the “less corrupt” CEE countries outperform the “most corrupt” EU according to this index. For instance, Slovenia and Estonia outperform Belgium, Greece and Italy, while Hungary outperforms Greece and Italy.

Summarising, among the obstacles to growth in the CEE countries: depreciated and inflexible human capital, with education systems in need of reform; a high social security burden induced by the overshooting of the decline in employment rates and a system of cash transfers which is fairly ineffective in achieving its primary goal of re-

ducing inequalities; a sizeable informal sector; large bureaucracies, legal complexity and apparently high levels of corruption.

### **3.4. Impact of reforms on convergence and migration: some illustrative scenarios**

Can the removal of some obstacles to growth in transitional economies discussed in the previous section significantly affect growth? Can such reforms speed up significantly the convergence to EU GDP per capita levels? If so, can such a faster convergence also affect the projected East-West migration flows?

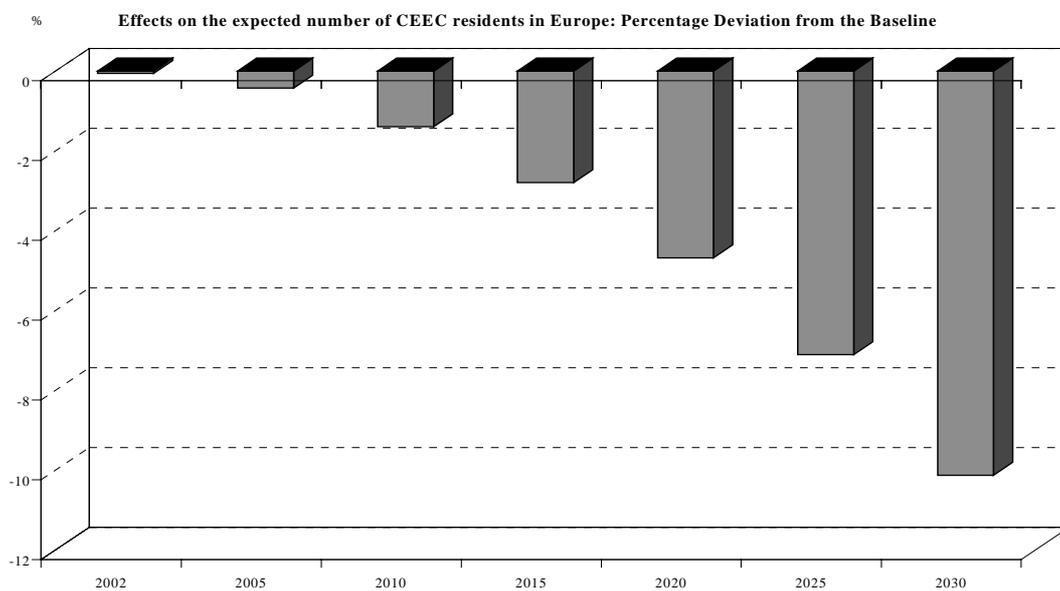
These are the key issues addressed in this section. In particular, three simulations are carried out. All the factors considered are likely to affect convergence according to the empirical growth literature reviewed in Section 3.2. The first evaluates the effects of changing the composition of government expenditure away from salaries of civil servants (that is, reducing the size of the public administration) towards social expenditure and public investment, holding total government consumption constant. The second simulation assesses the implications of speeding up institutional reforms. The third simulation investigates the potential effects of an increase in participation in education on growth.

In the first simulation, general government consumption is reduced by twenty percentage points, and these savings are entirely used to finance social expenditure and public investment. According to the specification presented in Table 3.5, this involves broadly a 10% increase in the speed of convergence. Migration flows are affected, among other factors, by income differentials between source and receiving countries. Therefore prospects for migration depend on the growth prospects for transition economies and the speed at which they will converge to the income levels of countries of the European Union. Thus, faster convergence should reduce migration flows. An illustrative example of the order of magnitude of the reduction of migration flows that would arise from a shift of expenditure from government consumption to social expenditure and

public investment can be obtained by simply substituting the new convergence scenarios in the migration equations estimated in the background reports.

**Figure 3.12.**

**Effects on migration in Western Europe of an increase of 10% of both Social Expenditure and Public Investment, after a 20% cut in Government Consumption in CEE: percentage deviation from the baseline scenario.**



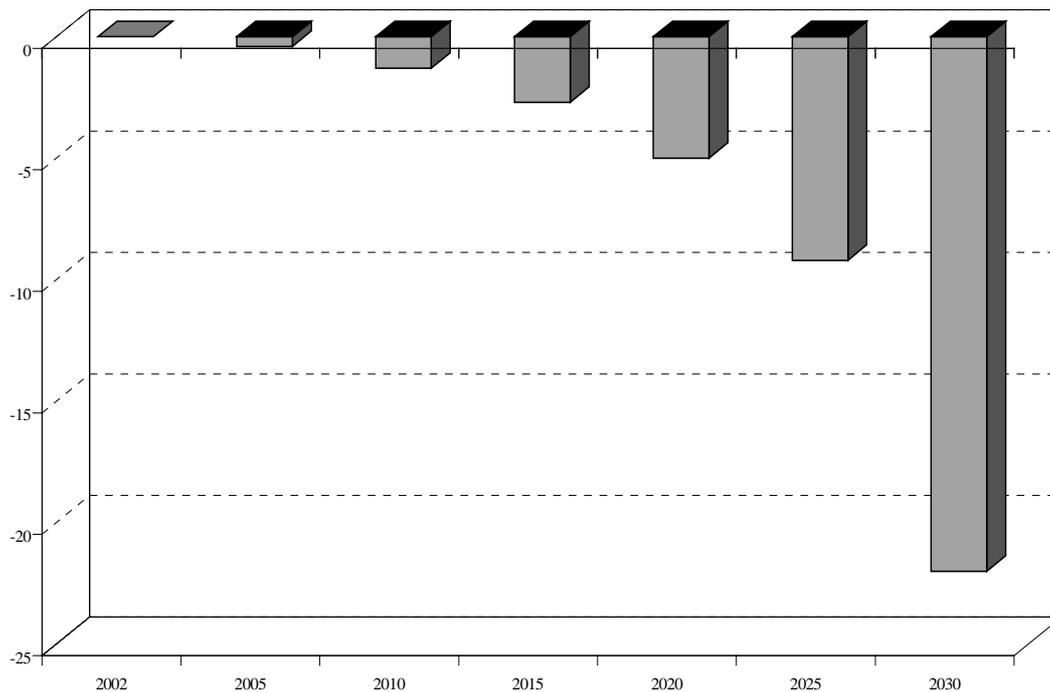
*Note:* the simulated increase in the convergence rate is determined by an increase of 10% of both Social Expenditure and Public Investment, after a 20% cut in Government Consumption.

Another simulation has been run by increasing the indexes of institutional quality up to the level needed to reach the EU average as from Table 3.7, but the effects on the speed of convergence are in this case modest for the more advanced countries of Central-Eastern Europe, that have already made significant progress in institutional reform. Nevertheless, the implications for less advanced countries is highly significant. For instance, as shown in Figure 3.13, for countries such as Bulgaria and Romania a jump to the level of quality of institutions of Western Europe would increase the rate of convergence by

more than 0.5 percentage points per year. This, in turn, would gradually reduce migration flows up to more than 20 percent at the end of the simulation sample.

**Figure 3.13**

**Effects on migration in Western Europe of an increase of the institutional quality index of 10 points: percentage deviation from the baseline scenario.**



*Note:* an increase of 10 points of the Index of Institutional Quality is that needed by the less advanced CEE countries (Bulgaria and Romania) to align to the EU average level.

The third simulation has been carried out by increasing the average rate of participation in both primary and secondary education among CEE countries to the EU average level. As pointed out in Part A (3.3), human capital endowments may play a crucial role in speeding the convergence process. Table 3.13 provides a comparison of two traditional indicators of human capital supply for Eastern and Western Europe: primary and secondary school enrolment rates (see the note for explanations) and expected years of schooling. While the basic educational attainments of the population in CEE countries seems in line with the EU average, the gap exhibited by secondary and tertiary school enrolment rates is still substantial. Figure 3.14 shows the effects of a joint increase in primary and

secondary education enrolment rates (by 5% and 10% respectively) on the expected number of CEECs residents in Western Europe.

**Table 3.13. Human capital indicators.**

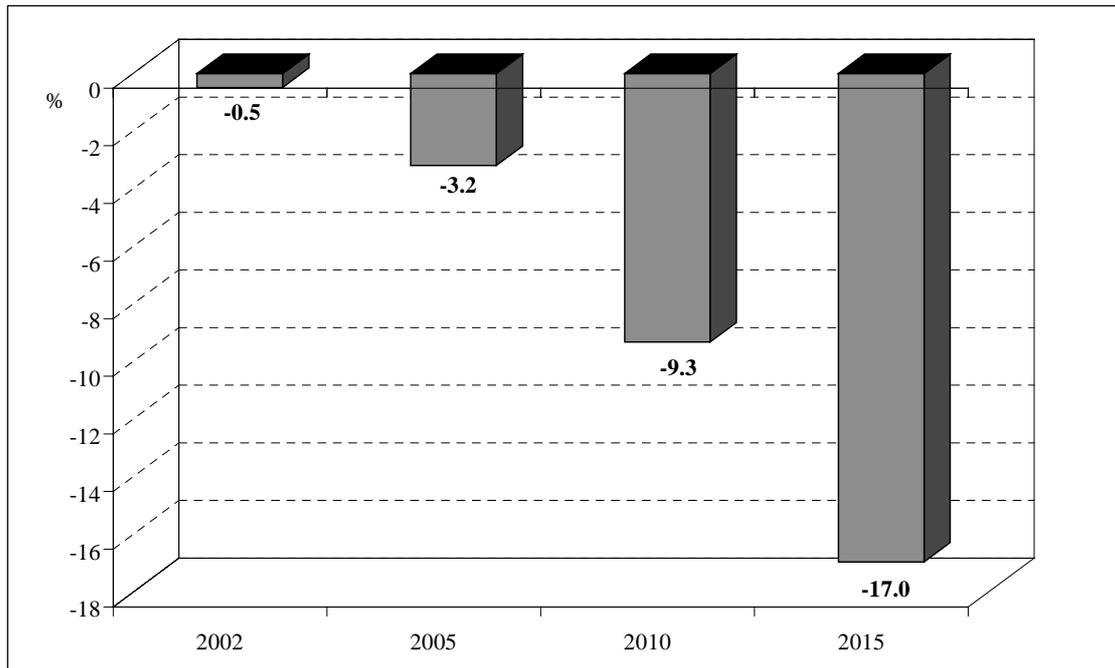
	Gross Enrolment Rate			Net Enrolment Rate		Expected years of schooling			
	Primary	Secondary	Tertiary	Primary	Secondary	Males		Females	
						1980	1995	1980	1995
Austria	101	104	48	100	88	11	14	11	14
Belgium	103	<i>146</i>	57	98	99	14	16	13	16
Denmark	102	121	46	99	87	14	15	14	15
Finland	99	116	71	99	93	n.a.	15	n.a.	16
France	106	111	52	100	94	13	15	13	16
Germany	102	104	45	100	87	n.a.	15	n.a.	15
Greece	94	95	43	90	87	12	14	12	14
Ireland	104	116	40	100	86	11	14	11	14
Italy	101	94	43	100	n.a.	n.a.	n.a.	n.a.	n.a.
Netherlands	107	<i>137</i>	50	99	91	14	16	13	15
Portugal	128	<i>106</i>	38	104	78	n.a.	14	n.a.	15
Spain	109	122	51	105	n.a.	13	15	12	16
Sweden	97	<i>137</i>	49	102	98	12	14	13	15
United Kingdom	103	<i>133</i>	50	100	92	13	16	13	17
<b>Average EU</b>	<b>104.0</b>	<b>117.3</b>	<b>48.8</b>	<b>99.7</b>	<b>90.0</b>	<b>12.7</b>	<b>14.8</b>	<b>12.5</b>	<b>15.2</b>
Bulgaria	99	77	41	92	74	11	12	11	13
Czech Republic	104	99	23	91	87	n.a.	13	n.a.	13
Estonia	94	104	42	87	83	n.a.	12	n.a.	13
Hungary	103	98	25	97	87	9	12	10	13
Latvia	96	84	33	90	79	n.a.	11	n.a.	12
Lithuania	98	86	31	n.a.	80	n.a.	n.a.	n.a.	n.a.
Poland	96	98	24	95	85	12	13	12	13
Romania	104	78	23	95	73	n.a.	12	n.a.	11
Slovak Republic	102	94	22	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Slovenia	98	94	36	95	n.a.	n.a.	n.a.	n.a.	n.a.
<b>Average CEEC</b>	<b>99.4</b>	<b>94.0</b>	<b>30.0</b>	<b>92.8</b>	<b>81.0</b>	<b>10.7</b>	<b>12.1</b>	<b>11.0</b>	<b>12.6</b>

*Source:* World Bank (1999). Figures in italics indicate that enrolment rates encompass unemployed on training. The gross enrolment rate is defined as the total enrolled, regardless of age, as a percentage of the population in the age group that officially corresponds to the level of education shown. Net enrolment rates equal to the number of pupils of official school-age (as defined by the national education system) as a percentage of the population in the corresponding official school-age.

The simulation shows that an increase in human capital investments of such magnitude may rise significantly the speed of convergence of the countries candidates for accession, yielding projected yearly real GDP growth rates of 6% on average. Thus, the potential effects on migration flows are likely to be stronger than those found above within a shorter simulation interval.

**Figure 3.14.**

**Effects on migration in Western Europe of an increase of 10% in secondary education enrolment rates and of 5% in primary enrolment rates in CEE: deviation from the baseline scenario**



### 3.5. Behind the Aggregates: Poor Regions

The above suggests that structural reforms may, on the one hand, reduce significantly the income gaps vis-à-vis EU-15 and, on the other, contribute to reducing East-West migration. However, as discussed in Chapter 1 of this report, migration pressures are also related to the presence within the CEE countries of a number of particularly poor regions, where often nomadic populations are located (see Box 3.7 and Tables 3.14 and 3.15 for a description of the incidence of Roma population in the candidate countries). Economic growth prospects for these regions are discussed in this section.

**Box 3.7 Ethnic and Gypsies minorities****Table 3.14**

<b>Incidence of Roma Population in CEE Countries</b>				
	Thousands		Share of total population (%)	
	Low estimate	High estimate	Low estimate	High estimate
<i>First Round Candidates</i>				
Slovenia	4	10	2.1	5.26
Hungary	550	800	5	8
Czech Republic	33	250-300	0.32	2.4-2.9
Poland	15	30	0.04	0.08
<i>Second Round Candidates</i>				
Lithuania	2.7		0.07	
Slovak Republic	81	480-520	1.53	9.1-9.8
Latvia	7		0.26	
Bulgaria	577	800	6	8.9
Romania	410	1500-2500	1.8	6.5-10.9
<b>TOTAL</b>	<b>1680</b>	<b>3700-5000</b>	<b>1.6</b>	<b>3.5-4.8</b>

**Table 3.15**

<b>Non majority population and unemployment in selected CEE regions:</b>					
	Share of non-majority population (%)	Unemployment rate (%)		Share of non-majority population (%)	Unemployment rate (%)
<b>Bulgaria</b>			<b>Slovakia</b>		
Ruse	34.2	15.1	Dunaska Streda	88.7	17.6
Haskovo	26.1	11.4	Rimavska Sobota	49.1	25.6
Varna	21.4	9.7	Komarno	73.9	19.6
Burgas	15.7	9.3	Galanta	44.2	16.4
<i>National average</i>	14.3	10.7	Nove Zamky	42.9	16.2
			Trebisov	42.5	22.7
<b>Romania</b>			Levice	33.3	17.5
Harghita	86	10.8	Velky Krtis	32.5	18.9
Covasna	76.6	8.2	Roznava	30.9	22.7
Mures	47.9	13.9	Lucenec	26.1	18.4
Satu Mare	41.4	8.7	<i>National average</i>	13.9	13.3
Bihor	33.9	7.5			
Salaj	27.8	12.5			
Cluj	22.4	10.6			
<i>National average</i>	10.6	11.1			

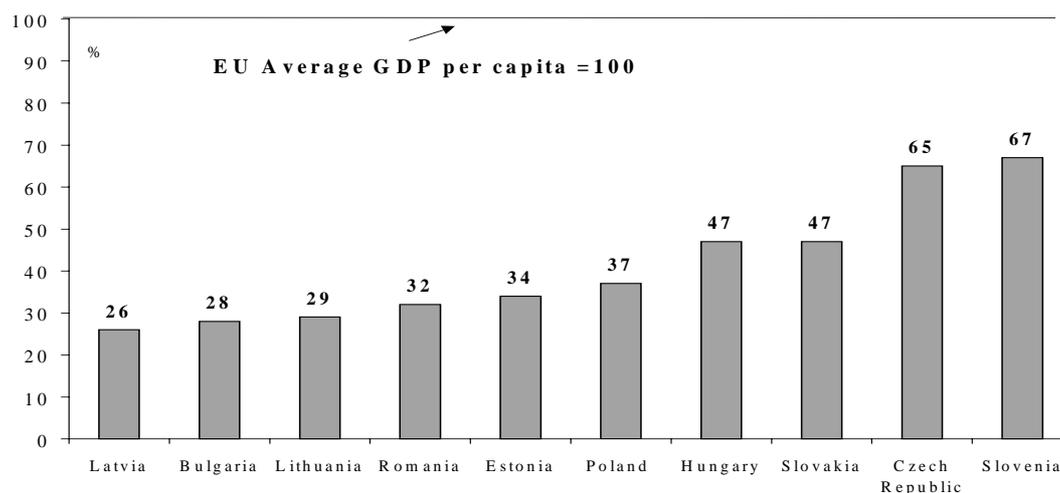
Sources: Lubyova (1998), ILO (1997) and Liebich (1998).

The process of EU enlargement to the East cannot leave out of consideration the existence of different ethnic groups in the countries candidates for the accession, as the degree of their integration in the society may have important consequences on the labour market. Minorities are often disproportionately represented in unemployment and non employment for a variety of reasons, including discriminatory practices in both the hiring and firing process, concentration in professions hit by the economic restructuring or in the hidden economy, low mobility, languages difficulties (in some cases also : demographic structure and precarious health conditions). Table 3.13 reports estimates of the incidence of Roma population in Central and Eastern Europe. The correspondence between ethnic minorities and unemployment however does not always hold true: the table below shows the labour market situation of the non-majority groups in regions where their concentration is higher. In Romania for example, the presence of a strong minority concentration in regions with unemployment rates lower than the national average is explained by the leading role of the Hungarian community in both the business sector and in the public administration.

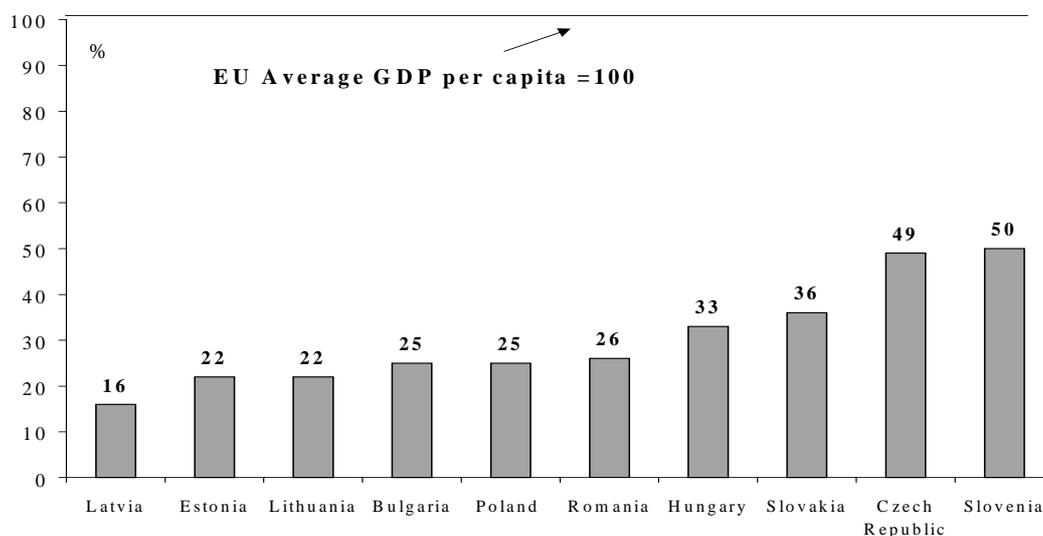
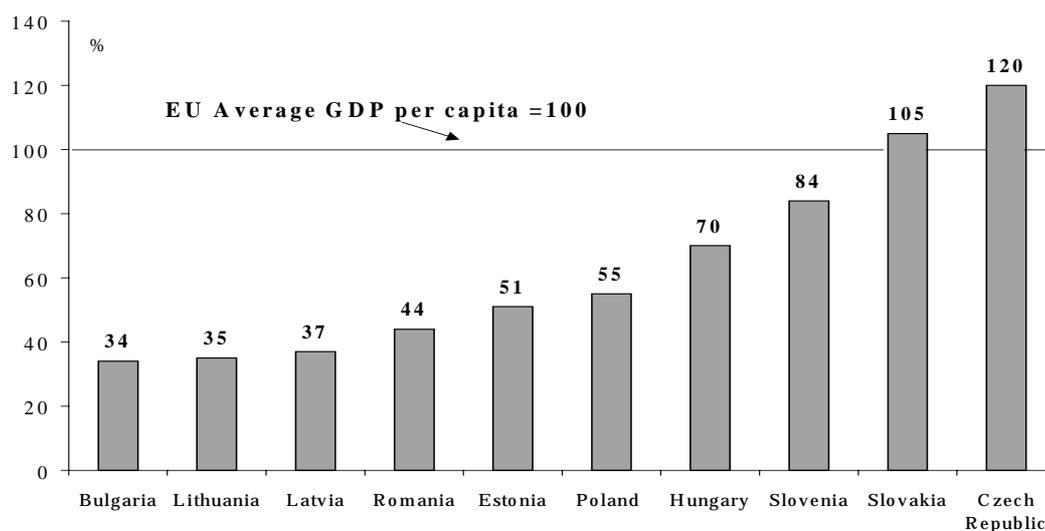
### 3.5.1. The Gap in Public Infrastructure

The poorest regions of the EU15, in Greece, have per capita incomes of about 40% of the EU average. The least developed regions of the CEE countries are much poorer: their GDP/capita levels are only 15-20% of the EU average, according to available statistics.<sup>39</sup> These regions are not only poor but apparently lag behind the European average in terms of accessibility, infrastructure, schooling levels, social services, and other respects. Furthermore, regional, other than national, differentials in per capita income represent a serious obstacle to the convergence process: the charts below (figures 3.15a to 3.15b) compare the gap in per capita income between the EU average and both the “richest” and the “poorest” regions among the applicants.

**Figure 3.15a. National GDP per capita as a percentage of EU average**



<sup>39</sup> A comprehensive overview using data from EC *Regions* and national sources is given by Horváth (1998).

**Figure 3.15b. Lowest regional GDP per capita as a percentage of EU average****Figure 3.15c. Highest regional GDP per capita as a percentage of EU average**

Source: European Commission (1999): Regular Report for Accession, various issues. Data refer to 1996.

The transition process and the reorientation of trade led to a further concentration of economic activity in the primary agglomerations, and resulted in above-average growth in more developed regions close to the Western borders (EC 1992, 1994, 1996a, 1996b).

The growth of central agglomerations, especially those of Bratislava, Budapest and Prague, is one of the most marked regional developments occurred after the start

of transition. The CEE capitals, except for Budapest, are relatively small in terms of share in population, but their share in GDP is significantly higher than in the EU (even if we exclude Sofia where 14% per cent of national income is concentrated) as shown in Table 3.15. The degree of centralization is striking: in 1994 Budapest, with less than 20% of Hungary's population produced 34% of its GDP, had more than 60 per cent of the public sector employees, almost half of the financial sector workers, 43% of the university students, 57% of the joint ventures and 75% of the R&D expenditures (*Fazekas and Ozsvald, 1998*). Despite the emergence in recent years of 'agglomeration diseconomies' (growing real estate prices, congestion and pollution), the capital areas continue to grow fast and attract a high share of foreign capital notably in the Czech Republic, Slovakia and Hungary.

The growth of regions along the main East-West transport axes (and of the Western border areas in Hungary, Slovakia and Poland) is another distinguishing feature of regional restructuring. Trade diversion is an important factor behind this process as in the case of Mexico following trade liberalization. (*Puga 1994, Hanson 1997*). Moreover, the Western regions are relatively developed in terms of infrastructure and human capital<sup>40</sup>. Physical capital formation in these regions was accelerated by foreign direct investment from which the border areas (together with the capital agglomerations) took the lion's share. An illustration using Hungarian data is given in Box 3.8.

The poorest regions of CEE are rural and located far from the main transport routes. A belt of backward and depressed regions passes along the former Soviet border from North-Eastern Poland to the Moldavian districts of Romania (EC 1996a, 1996b, *Gorzalak 1996*)<sup>41</sup>. The main losers are remote rural regions (much like in the

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<sup>40</sup> The Czech Republic is an exception in that some of its less developed rural areas are located near the Austrian and German frontiers

<sup>41</sup> Western observers probably find the recent patterns of regional inequalities more familiar than those observed during the 'transitional recession'. Following the collapse of CMEA trade and the elimination of fiscal subsidies, dramatic output losses in many large firms and associated plant closures and downsizing created at the beginning of the 1990s spots of high unemployment in some regions. However, many of the hard-hit industrial regions like Székesfehérvár in Hungary or the Katowice conurbation are on the way to recovery in recent years.

EU).<sup>42</sup> Apart from receiving less foreign capital, these districts fail to benefit from a series of publicly-supported day construction, airport development or investments in tourism and culture.

The data point to a widening schooling gap between urban and rural areas. Tests of reading and mathematics conducted in 1991 and 1995 in Hungary (*Közoktatási Intézet* 1996) revealed a major falls in the test scores of students in villages and smaller towns compared to Budapest and the county capitals. School enrollment rates at the secondary and tertiary levels are considerably lower in the rural areas in Romania (*UNICEF* 1998, 46). The gap between rural and urban areas with respect to pre-school enrollment is also widening in Lithuania. The strong correlation found between school enrolment, on the one hand, and family income or parental unemployment, on the other, suggests that the educational gap between urban and rural areas may further increase in the future.

### 3.5.2 *Regional mobility*

As discussed above, the centripetal forces – increasing the difference between primary conurbations and rural peripheries as well as between Western and Eastern lands – are rather strong in the CEE countries. The process is influenced by a number of factors like educational levels, natural endowments, geographical location, historical specialization in trade and services. Public infrastructure, like motorway construction or the development of telecommunication, may alter the regional distribution of some of these endowments. However improving the accessibility of rural periph-

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<sup>42</sup> For sake of illustration we might call the examples of Romania and Hungary. In the latter country the linear correlation between the ‘agricultural character’ of regions and their unemployment rates rose from 0.19 to 0.36 in 1990-96. The correlation with the employment rate was as high as –0.52 in Romania, 1996. (Agricultural character is measured with agricultural employees per inhabitant in 1990 in Hungary’s 170 regions, and with the share of agriculture in GDP in 1994 in Romania’s 41 counties. In the latter case the employment figure includes self-employed persons.)

eries by road construction, may also lead to a further concentration of economic activity<sup>43</sup>.

Promoting interregional mobility may be a more effective way to reduce regional inequalities, and one levelling off job-finding probabilities. Reductions of travel-to-work (commuting) costs in particular have a high potential to reduce regional inequalities and, by enlarging the market, they can also result in a better matching of jobs and people.<sup>44</sup>

Regional mobility, as an equilibrating mechanism, can hardly ever become as important as in the US (*Blanchard and Katz* 1992) under the institutional of CEE countries. The private rental housing sector is small, mortgage financing is at an embryonic stage, secondary school students generally go to school at the family's place of residence, kinship relations are relatively strong, people adhere to their place of living more than do Americans, and so on. Despite these constraints and habits, regional mobility is non-negligible and does respond to changes in the economic environment.

Studies of regional migration in the Czech Republic (*Erbenova* 1995) and Hungary (*Daróczy* 1998, *Kertesi* 1997) found net migration rates to be correlated with wages or indicators of labour market tightness (unemployment in Hungary, vacancies in the CR). Yet interregional migration flows have declined since the start of transition<sup>45</sup>.

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<sup>43</sup> See *Kilkenny* 1998 for a theoretical discussion and *Markusen* 1994 on the case of Brazil where motorway construction resulted in the expansion of the Sao Paulo agglomeration rather than the growth of inland regions.

<sup>44</sup> If the innovations in question also reduce the cost of goods transport the effect is more difficult to predict.

<sup>45</sup> The gross migration rate *within* regions amounted to about 1.5% per annum in the Czech Republic between 1970 and 1990. It jumped to 2.5% in 1991 and remained at that level in 1992 and 1993. Migration *across* regions occurred at a lower and steadily declining rate (0.9% in 1970 and 0.6% in 1993). Hungary's gross migration rate was 2.13% in 1985-88, 1.95% in 1989-92 and 2.04% in 1993-96. Intra-regional migration accounted for about 70% of the gross flow before, during and after the transition period. Nevertheless, if we disregard the ongoing suburbanization of Budapest (increasing flows to the surrounding villages) we can speak of a marked *decline* in the intensity of spatial mobility after 1989 both within and across regions.

A possible explanation for the decline in interregional migration flows is in the privatization of the rental housing stock for tenants, which implied relatively high mobility costs also in the light of the absence of mortgage financing. Policies promoting the mobility of young people can do part of the job might include the opening of the secondary schools for non-residents; subsidizing the accommodation and travelling of non-resident students; the offering of temporary assistant positions and training for young people from depressed areas.

Commuting is reduced by gaps of the public transportation network in CEE and the relatively high costs of private (car) transportation. The gasoline price/train fare ratio is 0.9 for Austria while similar data suggest ratios of 1.4 in Poland, 3.0 in Hungary, 4.3 in the Czech Republic, 4.6 in Romania, 5.0 in Slovakia and 8.3 in Bulgaria<sup>46</sup>. Moreover, only 28% of the rural households with unemployed members owned a car in Hungary 1993 and this ratio may be lower in Poland, Romania and Slovakia.

Table 3.16 illustrates the role played by public transport connections in explaining regional unemployment differentials. The regressions indicate that local unemployment rates fall steeply as we move towards settlements with better transport connections (holding the regional unemployment rate, settlement size and distance from the neighbouring centers constant).

The returns to better public transport, in terms of employment gains, are potentially higher in those macro-regions where the urban labour markets are tight. Increased expenditures on short-distance public transport may substantially reduce the urban-rural inequality in these areas.

### *3.5.3. Regional wage adjustment*

In CEE countries local, enterprise-level bargaining plays a central role in wage determination. Though several countries tried to introduce centralized bargaining of a

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<sup>46</sup> Data come from *Transition*, Vol. 9, No. 2, April 1998, p.8.

Scandinavian or Austrian fashion in the early years of transition, tripartite agreements on the central and industrial levels, if they exist at all, have weak influence on enterprise-level wage setting.

In economies where wage bargaining typically takes place at the enterprise level, often informally, wages are expected to respond to local unemployment and this indeed seems to happen in most of the CEE countries in which data are available.

**Table 3.16**

<i>The share of the primary agglomerations in GDP</i>			
(OLS for 18 countries, 1994)			
$\ln(y/Y) = 1.0058 \cdot \ln(p/P) + 0.1683 \cdot \text{CEE} + 0.7566 \cdot \text{Bulgaria} + 0.2259$			
(18.9)	(2.5)	(6.0)	
$R^2 = 0.96$ F=129.9 (0.000)			
<p><i>Notes:</i> <math>y/Y</math> = The capital's share in GDP, <math>p/P</math> = The capital's share in population. CEEC: Visegrad 4 and Romania. Non-CEEC: EU15. Luxembourg, Ireland and Denmark excluded for lack of regionalized GDP figures. In each case the capital area includes the surrounding NUTS2 area. Data: Bachtler et al. (1997), Horváth (1998).</p>			

**Box 3.8 FDI in Hungary.**

The bulk of FDI has so far been directed to Budapest and the Western border regions. Regions with high educational levels attracted more FDI, other things being equal. The table below provides evidence on this by regressing an indicator of foreign firm density on educational attainments and four regional dummies.

The regional distribution of FDI in Hungary, 1995 (OLS for 170 regions)

Dependent: Foreign firm employees/population of working age

	Coefficients	T-value
Educational level <sup>1</sup>	0.032	5.2
Budapest	0.068	1.9
Austrian border regions: <sup>2</sup>		
Vas	0.098	5.2
Győr-Sopron I.	0.063	3.1
Győr-Sopron II .	-0.006	0.3
Constant	-0.219	
<b>R<sup>2</sup></b>	<b>0.411</b>	
Cook-Weisberg .	2.56	(0.1096)
Reset	2.86	(0.0389)

Dependent variable (x100). Mean: 4.4, min: 0, max: 25.1

Predicted values at the minimum (7.0 classes) and maximum (9.4 classes) of the education variable are 0.5 and 7.8

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1) Completed schoolyears in the population over 7 years of age, 1990 Census. 2) Győr-Sopron: I. comprises Győr and the districts around border towns Sopron and Mosonmagyaróvár, II comprises the Beled, Csorna and Kapuvár regions. *Data source:* Foreign firm employees: Wage Survey 1995. Education and population: CSO TSTAR 1995

The model accounts for over 40% of the regional variation of foreign firm density. However the high correlation between the level of education and indicators like per-capita phones, share of dwellings connected to the drainage and gas systems or per-capita taxable income suggest that results should be interpreted with some caution. Experiments with alternative specifications suggest that education is indeed the key variable in a set of correlated regional indicators.

**Table 3.17 Public transport connections and local unemployment (Hungary, March 1993)**

(OLS regression with robust standard errors)

Dependent variable: Municipality-level unemployment rate (per cent)

Number of centers within a distance of 40 km:	1	2	3	4
Regional unemployment rate (per cent)	1.258 (5.4)	1.522 (12.1)	1.603 (19.3)	1.332 (33.9)
Settlement size <sup>1</sup>	-0.051 (-1.7)	-0.016 (-1.9)	-0.023 (-2.6)	-0.011 (-3.1)
Average distance from centers 1-4 (km)	0.071 (0.5)	0.111 (1.2)	0.412 (4.9)	0.264 (6.4)
Centers available by means of public transport: <sup>2</sup>				
* None	6.891 (2.1)	4.914 (2.6)	-0.516 (-0.4)	2.850 (2.2)
* Two	–	-3.238 (3.9)	-1.684 (-2.5)	-1.344 (-3.5)
* Three	–	–	-2.866 (-2.4)	-1.714 (-3.6)
* Four	–	–	–	-1.809 (-1.9)
Constant	0.639	-3.916	-13.128	-5.951
aR2	0.535	0.515	0.509	0.497
RMSE	10.2	9.1	8.4	7.4
Nobs	108	398	653	1828

1) Active population x 100. Census 1990 2) One available center is the reference.

Municipalities: Excludes Budapest and settlements with no center within a distance of 40 km Centers: Centers of the 170 labour office districts. Availability: Center i is classified as available from municipality j if it is possible to arrive at i from j between 5.30 and 7.30 by train or coach operated by a Volán company. For details see Köllő (1997).

### 3.6 Final Remarks

Growth prospects for the CEE countries that are considered for entry to the EU appear rather favourable. Stronger integration with Western markets, coupled with a more stable macroeconomic environment, can further support economic growth in CEE.

Nevertheless, the convergence to the EU GDP per capita level is likely to require a fairly long number of years, and there is no a-priori guarantee that this process will go smoothly. The experience of transitional economies in the last decade, after all, is indicative of the inner fragility of CEE countries, small open economies which are bound to grow faster than their main trading partners.

Economic policy can play an important role in fostering the economic convergence process. It is important to improve the allocation of public expenditure. The necessary control of the budget balance should not jeopardize the necessary investment in public infrastructure and social expenditure. Significant benefits may be obtained by changing the composition of public expenditure away from the maintenance of a large (and often corrupt) public administration towards increasing social expenditure and public investment.

Economic policy can also play an important role in reducing the large regional labour market imbalances existing in the CEE countries. In particular, policies fostering regional mobility of the workforce and stimulating foreign direct investment in rural areas have an important role to play. It is also important to avoid interfering with the decentralised wage bargaining structure existing in the CEE countries, which proved capable of responding to regional unemployment differentials. The experience of Eastern Germany, analysed in Chapter 2, suggests that centralised wage setting may exacerbate regional labour market imbalances.

EU countries also have a vested interest in supporting such efforts, since faster convergence may significantly reduce East-West migration pressures, as suggested by the (admittedly rough) convergence and migration scenarios produced in this Chapter. The EU can impose its conditionality vis-à-vis the candidate countries before they enter the Union, and induce them to adopt policies with a longer time horizon. At the

same time, EU conditionality should take into account the constraints imposed by the weakness of institutions in the acceding countries. A key problem in this area is the large size of the informal sector. Strategies aimed at reducing the informal sector in transitional economies will have to combine stricter enforcement of the rule of law with declining or, at least, non-increasing tax rates on the formal sector. This can only be achieved by rationalising the public administration, reducing corruption within the state machinery and simplifying regulations in a way to ease the supervision of law compliance. Poor enforcement of the rule of law and over-regulation is also an obstacle to FDI. The EU can support this effort by financially and technically assisting candidate countries to reform their public administrations.

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