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The economic impact of enlargement

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TABLE OF CONTENTS

TABLES

GRAPHS

1. Introduction and conclusions

Enlargement is the most important task for the European Union in the years ahead. The applicant countries included in the enlargement process at the present stage number thirteen: 10 Central and Eastern European Countries (CEECs) (Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia) as well as Cyprus, Malta and Turkey.

Enlargement will have far-reaching implications for all aspects of the European Union, be they political, institutional, economic, budgetary or social. The current study focuses on the economic aspects of the enlargement to include the countries of Central and Eastern Europe, and seeks to analyse its impact on the Union and its current members (EU-15) as well as on the applicant countries. Many of the benefits of enlargement are already visible because of the high degree of economic integration reached between the EU-15 and the CEEC-10. Accession itself, provided it takes place in the right conditions, can provide a significant further boost to economic growth and prosperity in the candidate countries as well as a positive, but necessarily smaller, impact on the present Member States.

The study has a prospective time horizon of ten years (2000-09). Since its ultimate objective is to determine the impact of enlargement on the EU, it concentrates as much as possible on groups of, rather than on individual, applicant countries. For practical reasons, therefore, the following main groups are used for purposes of the economic analysis: Poland, the largest applicant, with a population of nearly forty million; Romania, the second largest country, with a population of over twenty million; and CEEC-8, i.e. the eight other CEECs, each with a population of around ten million or less, and amounting to a total of about forty million people. The economic impact of the accession of Cyprus and Malta, with a population amounting to about one million inhabitants, is likely to be small.

Since the process of transition started in 1989, economic integration between the CEECs and the EU has proceeded at a rapid pace, with trade and foreign direct investment (FDI) as the two main channels of integration. The closer East-West ties were greatly fostered by the Europe Agreements, which provide the institutional framework for bilateral relations between the EU and each of the ten CEECs. In the economic field, the Europe Agreements have resulted in reciprocal free trade in industrial products, by removing all tariffs and quantitative restrictions. In addition to the liberalisation of trade in industrial products, the Europe Agreements also contain steps towards the free movement of services and capital, as well as commitments by the CEECs to approximate some of their economic legislation to that of the EU.

1.1. Assumptions

In order to evaluate the economic impact of enlargement, the study needs a definition of what the enlargement process entails. Accession to the EU requires applicants to meet the Copenhagen criteria that set broad political, economic and administrative requirements. Briefly, the economic conditions for accession are the existence of a functioning market economy and the ability to cope with competitive pressures and market forces within the Union. The study assumes that the accession countries are likely to implement some of the necessary reforms regardless of the prospect of membership, but that only those which implement all the reforms will join, and that

they benefit from doing so in terms of growth. Although this is clearly a debatable issue, the study assumes that the fulfilment of all the conditions leading to accession constitutes one of the dimensions of enlargement, although the process occurs *before* the actual accession. Hence, the study defines enlargement as the collection of economic measures that comes *before and after* accession, over and above what countries would implement anyway.

Besides the reforms implemented by the candidate countries before accession, further changes will come with enlargement. There will be full participation in the Single Market; at the moment, under the Europe Agreements, trade is still hampered by a variety of border and non-border measures, although even for agricultural products some of the problems have now been addressed; capital movements are only partially liberalised; but labour mobility is severely restricted. Another important change is that the candidate countries will apply the Common Agricultural Policy (CAP). The CEECs already benefit from financial assistance from the EU from pre-accession programmes, but after accession, they will benefit from increased transfers, on account of their participation in Community policies such as the CAP and the structural operations. Accession will also lead, at some stage, to membership of the euro area. However, the potential impact of enlargement on EMU is not deemed sufficiently clear on the horizon 2009 and is therefore excluded from the analysis.

A prospective evaluation of the economic impact of enlargement on the horizon 2009 also requires an assumption about the dates of accession. Accession is expected to occur as soon as a candidate is deemed to fulfil the Copenhagen criteria, but at this stage it is impossible to judge with any precision which countries will be ready to join the EU at what dates. In order to analyse pre-accession and post-accession effects over an equal time span, for the purpose of the study we simply divide the period 2000-09 into two sub-periods of equal length and make the technical assumption that 8 CEEC countries will join the EU in 2005. We refer to this group of countries as the Accession Candidates 8 (henceforward AC-8) and focus the analysis on these countries. This entirely hypothetical assumption is made for purposes of simplification, and can by no means be interpreted as a prior assessment of the actual dates of accession of any countries inside or outside this group, which will depend on the progress of each country in meeting the criteria for membership.

1.2. Benchmark

The present round of enlargement poses a unique challenge for the Union in terms of scope and diversity. At the same time, it should be emphasised that it is not the first time that the Union is admitting countries with lower levels of economic development than existing members. A useful benchmark for judging the economic challenge posed by the future enlargement is the Southern enlargement, which took place in the 1980s with the accession of Greece, Portugal and Spain, and its impact on the then nine members of the European Community (EC-9). This benchmark is used throughout the study to highlight the similarities and differences between the future and past enlargements.

In macroeconomic terms, the size of the twelve candidates vis-à-vis EU-15 today is broadly equivalent to the size of Greece, Portugal and Spain vis-à-vis EC-9 in 1980, a few years before the Southern enlargement. In 1998, the population of the 12 candidates amounted to 28 per cent of EU-15 (Graph 1), whereas in 1980 the population of Greece, Portugal and Spain totalled 22 per cent of EC-9 (Graph 2). Concerning GDP, the size of the 12 candidates in 1998 amounted to less

than 5 per cent (11 per cent in PPS) of EU-15, whereas in 1980 Greece, Portugal and Spain were equivalent to more than 10 per cent (14 per cent in PPS) of EC-9. The size of Poland, by far the largest candidate country, is also commensurable with that of Spain, the largest of the Southern countries. In 1998, Poland amounted to 10 per cent of EU-15 in terms of population, and less than 2 per cent in terms of GDP (or 4 per cent in PPS). This compares with 14 per cent and 8 per cent (or 10 per cent), respectively, for Spain vis-à-vis EC-9 in 1980.

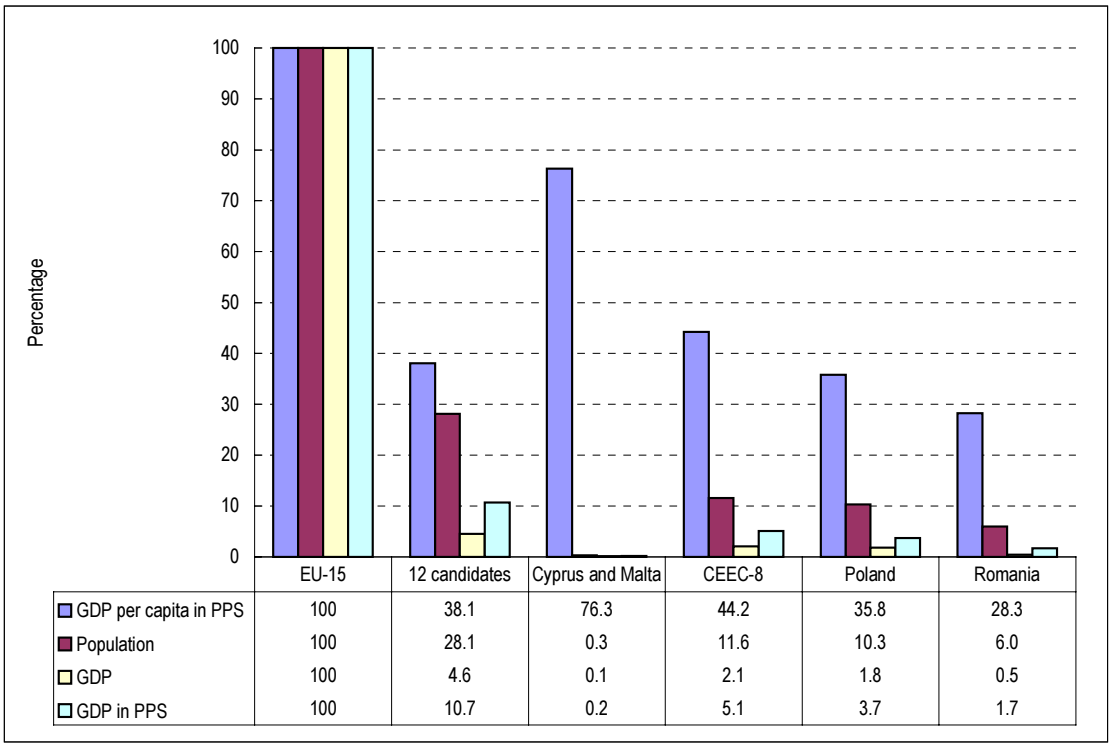
From a macroeconomic perspective, therefore, these comparisons suggest that the Eastern enlargement is not likely to have a greater effect on the existing EU members than the Southern enlargement, which was relatively small. This is confirmed by our simulation (Section 3) which indicates that, even though enlargement could boost GDP growth in the candidates countries by more than two percentage points annually, the (positive) economic impact on EU-15 would be very modest. This is mostly due to the fact that the candidates are very small in comparison with EU-15.

On the other hand, there are at least four major differences between the current economic situation of the Central and East European countries and the condition of the 3 southern countries in 1980.

The first difference concerns the status of the market economy. In 1980, the southern countries were, and had always been, private market economies, albeit with a strong state participation. By contrast, the CEEC-10 only started in 1990 the transition from planned socialist economies to private market economies. Section 2 summarises the enormous achievements of the CEECs during the past 10 years, but also the remaining problems they face in fulfilling the Copenhagen economic criteria.

The second difference is the income gap between new and old EU members. In 1980, the average GDP per capita (in PPS) of Greece, Portugal and Spain was 66 per cent of the level in EC-9 (Graph 2). By contrast, the average GDP per capita of the 12 candidates stood, in 1998, at only 38 per cent of the level in EU-15 (Graph 1). This situation has several implications. First of all, income disparity across EU members will increase with successive enlargements. Based on 1998 figures, the standard deviation of GDP per capita (in PPS) will rise from 5.0 for EU-15 to 7.4 for EU-27. Secondly, the average GDP per capita of the Union will fall significantly. Based again on 1998 figures, the GDP per capita of EU-27 would be 15 per cent lower than the EU-15 level. Thirdly, the generally low income levels of the future members imply that these countries will benefit from important EU transfers in the name of economic cohesion, and this will have important budgetary implications. Assuming these transfers help finance investment, they could contribute to income convergence in the new members. This possibility is taken into account in the analysis in Section 3.

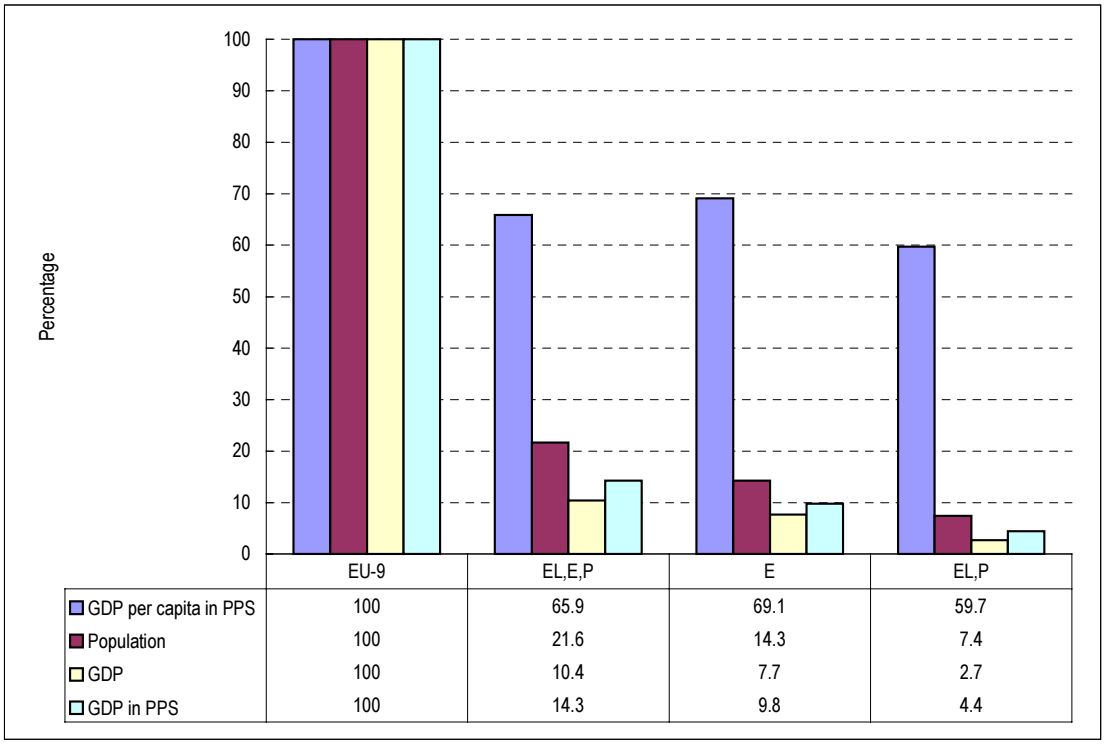
Graph 1: **GDP per capita in PPS, Population and GDP in EU-15 and 12 candidate countries, 1998**



	EU-15	12 candidates	Cyprus and Malta	CEEC-8	Poland	Romania
GDP per capita in PPS	100	38.1	76.3	44.2	35.8	28.3
Population	100	28.1	0.3	11.6	10.3	6.0
GDP	100	4.6	0.1	2.1	1.8	0.5
GDP in PPS	100	10.7	0.2	5.1	3.7	1.7

Source: Commission services.

Graph 2: **GDP per capita in PPS, Population and GDP in EU-9 and 3 candidate countries, 1980**



	EU-9	EL,E,P	E	EL,P
GDP per capita in PPS	100	65.9	69.1	59.7
Population	100	21.6	14.3	7.4
GDP	100	10.4	7.7	2.7
GDP in PPS	100	14.3	9.8	4.4

Source: Commission services.

The third difference between the CEEC-10 today and the 3 Southern countries in 1980 concerns the potential for labour migration after accession. There are two reasons to think that the current enlargement could result in higher migration flows than the Southern enlargement. The first is the income differential. As already indicated, the CEEC-10 are, today, significantly poorer (compared to EU-15) than the Southern countries were (compared to EC-9) a few years before accession. And the convergence analysis of Section 3 shows that the income differential is likely to remain substantial by the time of accession in 2005. The second reason is geographical proximity. Greece and Portugal have no common border with the EC-9 countries, and the Spanish regions bordering France had an income much above the already high national average. By contrast, half of the CEECs have a common border with Austria, Germany or Italy, which makes commuting feasible, especially since border regions are relatively densely populated. At the time of their accession, Greece, Portugal and Spain, all joined the Union with a transition during which the freedom of movement of their workers to the countries of EC-9 was limited. In the event, the fear of massive South-North labour flows proved largely unfounded, the length of transition period was drastically reduced, and indeed relatively few workers migrated from the new to the old Member States. In order to illustrate the potential impact on migration the study assumes that migration would be unimpeded from the time of accession or, alternatively, that member states will open their labour markets to workers from the CEECs sufficiently to allow the expected adjustments to take place. These issues are examined in Section 4.

The last major difference concerns the agricultural sector. Its relative importance is similar in CEEC-10 today as it was in Greece, Portugal and Spain in 1980: it accounts for 8 per cent of GDP and 17 per cent of total employment. But productivity (output per unit of labour) and yields (output per unit of land) are currently much lower in CEEC-10 compared to EU-15 than they were in Greece, Portugal and Spain compared to EC-9 in the early 1980s. It also means that enlargement will add substantial agricultural inputs (land and labour) to those of EU-15, much more so than when the Southern countries joined EC-9. Moreover, agricultural specialisation in the CEECs tends to be more similar to specialisation in EU-15 than was the case for Greece, Portugal and Spain vis-à-vis EC-9. These issues are taken up in Section 5.

The plan and the main conclusions of the study are as follows.

Section 2 examines the progress during the 1990s in the economic transformation of the transition economies, and their economic integration with the EU. It finds that the CEECs have generally succeeded in creating a stable macroeconomic environment and in implementing some of the structural reforms required to become market economies. Those which have succeeded the first in these efforts have been rewarded with sustained economic growth and are well on the way to fulfil the Copenhagen criteria for EU accession. Success has also been fostered by the rapid increase in trade with, and FDI from, the EU, greatly facilitated by the Europe Agreements. The economic implications on the EU-15 of increased integration with the CEECs appear to have been modest, except perhaps in Austria and Germany, which together account for more than 50 per cent of trade and FDI flows between the CEECs and EU-15.

Section 3 looks at the macroeconomic effects of enlargement on the candidate and EU-15 countries. Like previous studies, the present one finds that enlargement is a positive-sum game for the parties involved. The candidate countries should greatly benefit from enlargement thanks to a more efficient allocation of resources, greater investment and higher productivity growth. Depending on the capacity of accession countries to take advantage of the opportunity afforded by

enlargement to implement further growth-promoting policies, accession could increase the average annual growth rate of the AC-8 during the period 2000-09 by between 1.3 and 2.1 percentage points. Growth is also expected to increase in EU-15 due to enlargement, but since the AC-8 account for about 4 per cent of the EU economy, the derived impact of their development on the present Union is necessarily more limited. Using the optimistic growth forecasts for the CEECs, the level of GDP in the existing EU countries will grow by 0.7 of a percentage point, on a cumulative basis, in the period following accession. In terms of the breakdown of this stimulus to EU growth, the result of the Commission services simulation point to half the potential gains coming from the boost to growth from migration flows, with the remainder due to mark-up and trade integration effects. Since the degree of trade and migration exposure to the AC-8 varies quite significantly amongst the existing Member States, the associated economic impact of enlargement will also vary, with those countries with relatively strong ties to the transition economies, such as Germany and Austria, benefiting the most.

Section 4 attempts to assess the impact of enlargement on East-West migration in Europe. Given that barriers to trade and capital movements have already been largely eliminated by the Europe Agreements, the free movement of workers probably constitutes a dimension of economic integration for which relatively more changes will occur after accession. In theory, the large income gap and the geographical proximity between the present EU members and the accession candidates provide an incentive for East-West migration. Most studies, however, find that migration is unlikely to pose any serious threat to jobs and wages in the EU as a whole. In the present study, cumulated net inflows of migrants are estimated to amount to well below one percent of the EU-15's projected working-age population in 2009, without even taking account of possible transitional measures. Such inflows are simply not large enough to affect the EU's labour market in general

While the aggregate EU effects will be limited, the likely geographical concentration of migrants suggests that some countries and/or regions, especially in Austria and Germany, could face some labour market adjustment problems. Against this background, calls for the application of curbs on the free movement of workers over a transitional period have been voiced. Indeed, in previous enlargements, there have been temporary arrangements with respect to labour mobility to ensure a smooth process of integration. In this enlargement round, a 5 to 7 years transition period to the full application of the acquis in the free movement of workers will be an option open to each member state. In any case, however, the absorption capacity of EU-15 labour markets is expected to increase strongly in the future given likely demographic developments, and this might coincide with the expiry of such arrangements. In this perspective, it might become desirable to orient labour markets and social policy institutions in such a way as to promote, rather than oppose, internal labour mobility in the EU. In order to illustrate the potential impact of migration this study assumes that no transition periods will be implemented by member states or, equivalently, that they will open their labour markets to workers from the CEECs sufficiently to allow the expected adjustments to take place.

Section 5 examines the possible impact of enlargement on the agricultural sector. Accession to the EU will result in the final dismantling of trade barriers that have already been addressed by the Europe Agreements, and in the extension of the CAP to the candidate countries. However, the analysis here suggests that the impact on the EU-15 could be limited for two principal reasons. One is product standards, which are lagging behind in the accession countries. The other is the fact that the price gap between the EU and the candidate countries has sharply diminished in recent years. It appears, therefore, that future production and trade developments in the candidate countries will be

more influenced by productivity changes in these countries than by the extension of the CAP, except probably in a narrow range of products. While it is difficult to predict future productivity changes, the past experience in the southern countries after accession and in the present candidate countries over the past few years suggest that average productivity in these countries is likely to remain relatively low for the rest of the decade.

2. Past developments (1990-99)

2.1. Introduction

A decade ago, and swiftly following the transformation of their political systems and the start of extensive restructuring of their economies, the countries of Central and Eastern Europe and the Baltics (henceforth CEEC-10) began the process of political and economic integration towards the European Union. They manifested their desire to join the EU and to reorient their economies towards the West. Some of them succeeded in attracting important amounts of foreign direct investment (FDI), much of it originating from the EU's Member States.

The European Union welcomed and supported the changes, and negotiated Europe Agreements, which provided the institutional framework for further integration in terms of trade and other economic relations. The EU has also provided technical and financial support for the reform process in the CEEC-10.

The Copenhagen European Council in June 1993 established the political, economic and institutional criteria for membership for the CEEC-10 and over the period 1994-95 all the CEEC-10 countries submitted applications for membership. As a result, the Commission issued its *Opinions* in July 1997 on their applications. The economic criteria for accession, as defined at Copenhagen (the existence of a functioning market economy and the ability to cope with the competitive pressures and the market forces within the Union) were evaluated in these *Opinions* and subsequently in the Commission's *Regular Reports* on the applicant countries.

The economic reform agenda of the CEEC-10 can be assessed under the following main headings:

- *macroeconomic stabilisation,* meaning stabilisation of inflation, sound and sustainable public finances and external accounts, and a return to economic growth, and
- *structural reforms,* meaning the establishment of an enforceable legal system to support the transformation to a market economy in order that markets are freed from government intervention and market forces are allowed to play their role.

In Section 2.2 below, the major macroeconomic and structural changes which have taken place in the CEEC-10 in the last decade are reviewed under the above two headings. The aim is to give a concise overall picture of the state of economic reform without going into too much detail. In Section 2.3, the international economic integration of the CEEC-10 is examined, with particular emphasis on the Europe Agreements. It covers trade, FDI, migration, and the economic effects of developments in these areas on the CEEC-10 and the EU-15 in the 1990s. Section 2.4 concludes with an overall assessment of the developments in the 1990s and of their effects on the EU's economies.

It should be noted at the outset that for the purposes of this study that the two largest countries in terms of population, Poland and Romania, are analysed individually, while the other smaller countries (CEEC-8) are grouped together.

2.2. The major macroeconomic and structural changes in the CEEC-10

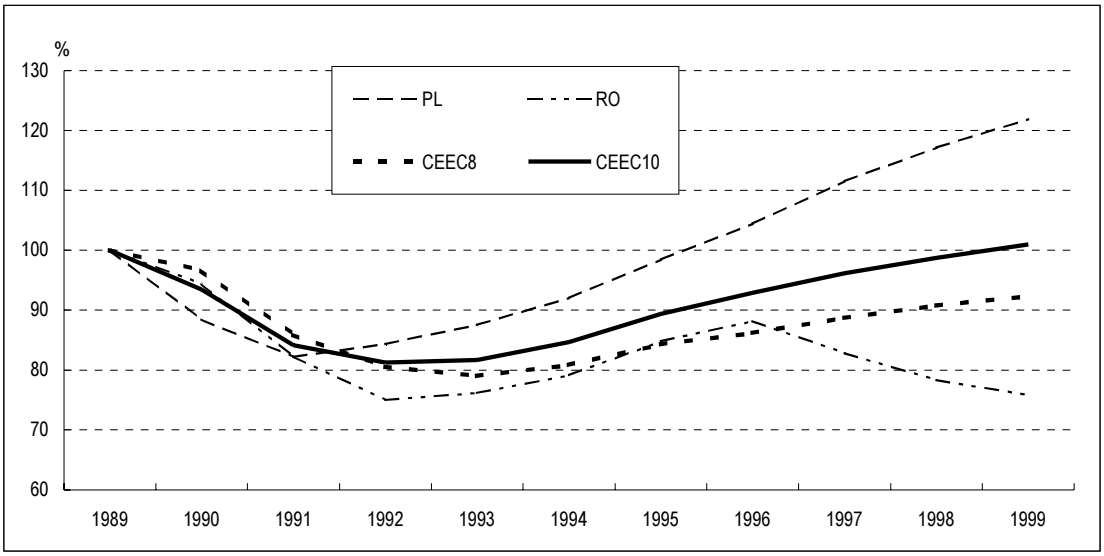
The initial recession

All the CEEC-10 countries experienced a marked decline in economic activity after economic restructuring began. The breakdown of old trade relations, the new and changing relative price structures and the termination of old management structures and business relations inevitably led to a contraction of output. By 1999, despite a revival in production, GDP levels remained below those of 1989 in many of the CEEC-10 (Graph 3). Unemployment remained relatively high, above 10 per cent in most cases.

The initial contraction of GDP seems to have been largest in those countries which were most integrated with the former USSR economy, through the Soviet production system or otherwise, and in those which were initially the least well equipped to establish market economy institutions. This is confirmed by examining the cases of Poland, Hungary and Czechoslovakia, the countries with the smallest declines. Here, some economic reforms had already been initiated before the collapse of the Communist system and some private ownership of land and small private shops already existed. By contrast, the largest contractions occurred in the three Baltic countries, Bulgaria and Romania, where the least of these elements existed.

GDP levels bottomed out in 1991 in Poland, in 1992-94 in the other CEEC-10, though further declines occurred later in Bulgaria, the Czech Republic and Romania. The country with the highest cumulative output growth by 1999 was Poland. This assessment holds if output is compared with its lowest level, and particularly if compared to 1989 levels. Poland and the other seven early reformers (excluding Bulgaria and Romania) also performed best when compared with the transition economies in general (see Fischer and Sahay, 2000). In overall terms, the transition economies closest to Western Europe and with the highest income levels have performed the best.

Graph 3: **GDP in constant prices, 1989 = 100**



Source: Commission services.

Stabilisation

Price liberalisation and a monetary overhang led to an explosion in price levels which was followed - because of loose fiscal policies, high wage pressures and a lack of effective structural reforms - by a period where inflation ran at several hundred per cent per annum in most of the CEEC-10. In Poland the inflation rate reached more than 1 000 per cent in January 1990, while the best performers among the CEEC-8, Hungary and Czechoslovakia, managed to keep their peak inflation rates below 60 per cent.

A stabilisation programme was first initiated in Poland, in January 1990, and by October 1993, all the other CEEC-10 countries had adopted their own programmes, with new institutional arrangements and various features including tight monetary and fiscal policies and wage controls. The Baltic countries had to introduce new currencies.

The choice of exchange rate regime, and exchange rate policies under the chosen regime, were important elements of the stabilisation programmes. Most of the CEEC-10 countries adopted a relatively fixed exchange rate regime as part of their initial stabilisation strategy. After a successful start, many of them moved to more flexible regimes, either due to considerable tensions in the foreign exchange market or as a pre-emptive move. Most of the countries currently under flexible exchange rate regimes, including Poland since 1999, have managed to bring their inflation rates down to single digits, while Romanian inflation has recently been running at a rate of about 50 per cent. The countries with a currency board (Estonia, Lithuania, and Bulgaria) or a peg to the SDR (Latvia) have been successful in bringing their inflation rates close to zero.

After starting the reforms, some deterioration of state finances was inevitable, as there were many upward pressures on public expenditure, and an effective tax collection system was not yet in place. This did not, however, lead to an explosion in public debt, as debt in many countries was very low or non-existent, and perhaps because the governments were not able to borrow extensively due to their low creditworthiness. By 1999, most of the CEEC-10 had brought their general government

deficits down to close to zero or within the range of 3-4 per cent of GDP, with the exception of Lithuania, which still had a deficit of 7 per cent . In addition, government debt at the end of 1999 was below 40 per cent of GDP in most of the CEEC-10. The exceptions were Hungary and Bulgaria where it was at 60 per cent, partly due to their foreign debt overhang, which was above 50 per cent of GDP when reforms began in 1990. Finally, Poland, which was in a similar situation at the start of transition, reduced its public debt to 45 per cent of GDP by 1999.

Externally, the CEEC-10 have regularly had trade and current account deficits. Initially, this was a consequence of declines in their traditional export markets in the former USSR, their need for imports of investment goods to improve production structures, and the difficulties, due to inadequate quality standards, in penetrating markets both in western and in domestic markets. The resulting current account deficits, on average 4 ¼ per cent of GDP over the years 1995-99, were in most cases matched by large foreign direct investment (FDI) inflows, averaging nearly 4 per cent of GDP in the CEEC-10. The high ratio of FDI flows to the current account deficit in most countries meant that the foreign debt exposure of the CEEC-10 did not increase much. In some cases, however, the relatively high current account deficits that were not corrected for with appropriate fiscal policies put pressure on foreign exchange markets, leading to changes in exchange rates or curbs on domestic demand.

Production, investment and financing after the revival

In 1994 economic growth revived in the CEEC-10 as an aggregate, though the diversity of growth outcomes in individual cases was notable. GDP grew fastest in Poland, averaging 5 ¾ per cent per annum over the period 1995-99, while in Romania it fell nearly 1 per cent per annum over the same period. In an intermediate position was the CEEC-8 where GDP grew on average by 2 ¾ per cent.

Table 1: **Production, investment and financing**

Table 1a: **Production, investment and financing**
Annual growth of GDP (in constant 1995 prices at 1995 ECU exchange rates)

	1995	1996	1997	1998	1999	1995-99 average	1995-99 cumulative
Poland	7.0	6.0	6.8	4.8	4.2	5.7	32.1
Romania	7.1	3.9	-6.1	-5.4	-3.2	-0.9	-4.2
CEEC8	4.0	2.6	2.4	2.3	2.0	2.7	14.0
CEEC10	5.5	4.1	3.2	2.5	2.4	3.5	19.0
EU-15	2.3	1.6	2.5	2.7	2.3	2.3	11.8

Source: Commission services.

Table 1b: **Investment (percentage of GDP)**

	1995	1996	1997	1998	1999	1995-99 average
Poland	18.6	20.7	23.5	25.1	26.2	23.2
Romania	21.4	23.0	21.2	19.4	18.5	20.5
CEEC8	27.3	26.2	26.2	26.4	25.2	25.7
CEEC10	21.8	23.6	24.5	25.1	25.0	24.1
EU-15	19.8	19.6	19.4	19.8	20.2	19.8

Source: Commission services.

Table 1c: **Saving (percentage of GDP)**

	1995	1996	1997	1998	1999	1995-99 average
Poland	19.3	18.4	19.5	20.7	18.7	19.4
Romania	16.4	15.7	15.1	12.2	14.6	14.6
CEEC8	24.6	20.6	21.6	21.7	20.8	21.3
CEEC10	20.3	19.2	20.1	20.3	19.3	19.8
EU-15	20.4	20.6	20.9	20.7	20.4	20.6

Source: Commission services.

Table 1d: **Current account (percentage of GDP)**

	1995	1996	1997	1998	1999	1995-99 average
Poland	0.7	-2.3	-4.0	-4.4	-7.5	-3.9
Romania	-5.0	-7.3	-6.0	-7.2	-3.8	-5.9
CEEC8	-2.6	-5.6	-4.5	-4.7	-4.4	-4.4
CEEC10	-1.6	-4.4	-4.5	-4.8	-5.6	-4.3
EU-15	0.6	1.0	1.5	1.0	0.3	0.8

Source: Commission services.

Table 1e: **FDI (percentage of GDP)**

	1995	1996	1997	1998	1999	1995-99 average
Poland	2.9	3.1	3.4	4.0	4.7	3.7
Romania	1.2	0.7	3.4	4.9	3.1	2.8
CEEC8	5.3	3.1	3.5	4.4	5.3	4.3
CEEC10	3.9	2.9	3.4	4.3	4.9	3.9

Source: Eurostat, IMF, central banks and EBRD estimates.

Table 1f: **FDI (percentage of current account deficit)**

	1995	1996	1997	1998	1999	1995-99 average
Poland	-428.3	137.8	85.4	92.2	62.8	96.5
Romania	23.6	10.2	56.8	68.5	79.9	48.0
CEEC8	201.7	54.4	76.5	95.1	122.2	98.6
CEEC10	245.2	64.8	77.1	89.6	86.2	90.7

Source: Eurostat, IMF and EBRD estimates.

Table 1g: **Gross foreign debt (percentage of GDP)**

	1995	1996	1997	1998	1999	1995-99 average
Poland	30.5	27.4	26.4	29.2	33.6	29.5
Romania	16.7	22.9	26.1	19.7	23.7	21.9
CEEC8[1]	37.6	36.8	36.4	35.6	38.9	37.1
CEEC10[1]	32.5	31.5	31.2	31.2	35.3	32.4

Source: Commission services.

Table 1h: **General government net lending (percentage of GDP)**

	1995	1996	1997	1998	1999	1995-99 average
Poland	-2.0	-2.3	-2.4	-2.1	-2.7	-2.3
Romania	-2.1	-3.5	-4.4	-5.0	-3.4	-3.4
CEEC8[1]	-2.6	-2.7	-2.6	-3.4	-2.0	-2.7
CEEC10[1]	-2.3	-2.6	-2.7	-2.8	-2.4	-2.6

[1] Romania 1998,1999 and Lithuania 1999 are missing in this aggregate.

Due to lack of data the figures for Romania in 1998 and 1999 are proxies taken from fiscal data.

Source: Commission services.

Investment rates were high under central planning, but the physical capital stock inherited by the CEEC-10 in the early 1990s was badly outdated. In addition, investment rates were low in the initial period of transition, thus the physical capital stock remained stagnant. Apparently, GDP growth was initially supported by increased efficiency in the use of capital, following economic reforms. Thereafter, GDP growth was closely correlated with investment ratios. The CEEC-10 investment rate average increased steadily throughout the period and is now around 25 per cent, well above the EU-15 level of 20 per cent (Table 1b). There were substantial variations in investment and in the related financing flows between Poland, Romania and the CEEC-8 (Tables 1b-g).

In Poland the investment rate increased throughout the period, reaching 26 per cent in 1999. Domestic savings were relatively high but over the period 1995-99 the current account deficit was nearly 4 per cent of GDP. FDI flows matched it almost completely over the period. However, the increase in the current account deficit in 1999 and its continued rise in 2000 may indicate an imbalance, which is in need of some correction. On the fiscal side, the deficit remained steady at 2-3 per cent of GDP (Table 1h).

In Romania, generally weak economic developments were associated with stagnant investment. Romania was running relatively high current account deficits over the period 1995-98, covering only half of the shortfall by FDI inflows. Thus, its foreign debt burden increased. Tighter macro policies broke the trend in 1999 and the current account deficit decreased, with the increase in the fiscal deficit also being curbed.

In the CEEC-8 investment rates remained at around 26 per cent throughout 1995-99. Domestic savings fluctuated at between 20-22 per cent, producing a 4.4 per cent current account deficit in 1995-99 on average. It was matched by FDI inflows and consequently did not cause any significant increase in foreign indebtedness in these countries with their average foreign debt levels remaining at below 40 per cent of GDP. Individual countries, however, experienced balance of payments crises in this period. On the budgetary side, the fiscal deficit remained at less than 3 per cent of GDP on average over the period 1995-98 in the CEEC-8.

Structural reforms

Microeconomic reforms to establish a market economy system started at an early stage in most of the CEEC-10 through liberalisation of domestic prices, foreign trade and capital movements. Privatisation and restructuring of traditional state-owned enterprises followed soon after, taking different forms in different countries. New government institutions were needed to support the functioning of the markets, to commercialise public utilities and to supervise and monitor newly established private sector firms, such as financial institutions.

Privatisation and enterprise restructuring has taken many different forms in the CEEC-10. Some privatisation methods like vouchers have resulted in very poor restructuring and weak corporate management. It has been found in general that small-scale privatisation progressed well and had a positive impact on growth. By contrast, large-scale privatisation of big state-owned enterprises led in some cases to insider ownership or restructuring under large holding companies or investment funds, though not directly to new dynamic corporate management structures.

Towards the end of the 1990s, the share of the private sector in GDP exceeded 50 per cent in the CEEC-10 and reached as much as 80 per cent in Hungary and Slovakia. Most liberalised their domestic prices early and swiftly. Considering the unfavourable initial conditions in the Baltic states, they made particularly rapid progress in liberalising prices, while in Bulgaria and Romania price reforms came more slowly. In all of the CEEC-10 the share of administered prices is now under 25 per cent of the total.

Many of the CEEC-10 are progressing in the liberalisation of public utilities such as telecommunications and energy supply. They have been particularly successful in generating revenue from the privatisation of telecommunication companies and the sale of mobile phone licences. The restructuring of the energy sector into generation, transmission and distribution companies is also under preparation in many of them. Important parts of this sector have already been privatised and energy prices are being increasingly liberalised.

The Commission's *Regular Reports* assess progress made to date in establishing a functioning market economy as either being good or sufficient in most countries, though stating that some of the CEEC-10 still lack important elements needed for well functioning markets. This general picture is also largely confirmed by the transition indicators of the European Bank for Reconstruction and Development (EBRD Transition Report 1999). There is still scope for further progress in the CEEC-10 in a number of areas, including financial institutions and capital markets, the legal framework for competition policy, and more generally, the strengthening of corporate governance so that enterprises operate under both hard budget constraints and clear rules set by the regulatory authorities.

Regarding competition policy, *antitrust* legislation is largely in place in the CEEC-10. Its implementation has started, although to varying degrees, since administrative capacity is deficient in many countries and because there are difficulties in establishing clear rules in the midst of restructuring. Work on s*tate aid* regulations and their implementation has started, but in all of the CEEC-10 countries clear policies have yet to be established, requiring also a strengthening of the administrative capacity.

Due to the importance of capital and labour markets, further observations concerning the progress made in improving their functioning is reported below.

Capital markets

In Poland and in most of the CEEC-8 the banking sector developed rapidly both through privatisation and the establishment of new banks, with considerable foreign ownership in some countries. Substantial progress has been made in the establishment of bank solvency standards and of a framework for prudential supervision and regulation. Full interest rate liberalisation prevails with little preferential access to cheap financing. There is a significant presence of private banks and also significant lending to private enterprises. The most advanced of the CEEC-10 countries have made important moves to bring banking regulations up to BIS standards. In many cases the banks are suffering from the effects of bad loans, which have increased again due to corporate failures since the Russian crisis of 1998.

In Romania the banking sector and the financial system are still underdeveloped and do not provide a proper basis for a market economy. Extensive non-performing loans have made progress difficult. Preparations for the sell-off of two of the largest banks are advancing.

In Poland and in some of the CEEC-8 - notably in Hungary and Estonia - the stock markets already play a substantial role in capital allocation, though market capitalisation as a percentage point of GDP still remains well below western standards. In Romania the stock market is still very under-developed.

Labour

Employment fell considerably in the CEEC-10 during the transitional contraction period, although due to lack of reliable statistics it is not possible to give a precise figure. It continued to decline even after the revival in economic growth since 1994 so that, despite GDP growth of 19 per cent over the period 1995-99, employment declined by 1 ½ per cent on average. In Poland, where GDP grew by 32 per cent in this period, employment grew by only 6 ½ per cent. In most of the CEEC-8 employment either remained stagnant or declined.

The mirror image of the fall in employment was a decrease in participation rates, which fell from the high levels typical of socialist economies. Since then little change has been registered in participation rates, with the CEEC-10 on average being slightly above the equivalent rate for the EU-15. However, this and other labour market statistics should be interpreted with considerable caution since the informal sector and the grey area of part-time working is extensive and hard to measure in a reliable way.

Unemployment exploded in the early transition years. Since 1994, measured unemployment, based on labour market surveys following the ILO methodology, first decreased slightly to below 10 per cent but increased again to 11 per cent in 1999 in the CEEC-10 on average. In 1999, it was 12.5 per cent in Poland and 6.8 per cent in Romania, the lowest rate among all the CEEC-10 countries. For Romania, this figure may be a particularly inaccurate measure, since registered unemployment is well above 10 per cent. Unemployment rates are higher than average for young adults, with significant long-term unemployment, even though in both respects the situation is easier in the CEEC-10 than in the EU-15. There are significant differences in the unemployment rates between regions in individual countries.

The agricultural sector has remained a potential source of extensive labour market change throughout the transition. Its share both in production and employment has decreased only slightly and its share in employment is still high, especially in the two largest countries, Poland and Romania.

At the end of the 1990s, Polish agriculture was still characterised by very low productivity as it produced roughly 5 per cent of GDP while its share of employment was 19-25 per cent depending on the data source. According to Labour Force Survey data employment in agriculture decreased by 20.5 per cent over the period 1995-99 bringing its share to 18 per cent of total employment. According to this data, the effective labour input declined and productivity increased as output expanded over the same period, though productivity clearly grew by less in agriculture than for the Polish economy as a whole. Other data based on the Agricultural Census of 1996 indicates, however, that the number of people occupied in agriculture remained at 25 per cent of the labour force. This reflects a high number of people in part-time work on small farms and it probably contains an important element of hidden unemployment.

In Romania the share of agriculture in total production remained close to one fifth, and its share in total employment was still at 40 per cent at the end of the 1990s. Thus, even though adjustment had started in Poland, both of these large countries were still characterised by large agricultural sectors with low productivity and hidden unemployment.

At the end of the 1990s in the CEEC-8 on average, the share of agriculture was about 5 per cent, and its share in employment about 12 per cent, both figures having slightly declined over the decade. These shares were 2-3 times higher than the corresponding figures for the EU-15, reflecting their level of development more generally.

The most striking common feature of the labour market adjustment process in the CEEC-10 has been the big fall in employment and participation rates to levels now below those of countries with comparable levels of GDP per capita. The largest drops in employment rates were recorded in the countries with the strongest declines in labour force participation, suggesting that adjustment has primarily worked through inactivity flows. Both flows into and out of unemployment have also been low. Thus, in relative contrast to the overall pace of structural change in the transition countries, labour markets are characterised by very low mobility of workers across labour market strata, occupations and sectors (Boeri et al. 1998, and Huber, 1999).

2.3. Economic integration

Although trade within the Council of Mutual Economic Assistance (CMEA) group was still important for the CEEC-10 in 1990, the most western and most economically advanced among them already had important trade relationships with the EU and other regions of the western world. Some of the CEEC-10 countries were already members of GATT, and all have now either become members of the WTO or are in the final stages of concluding their membership.

By the early 1990s, all of the CEEC-10 countries assumed the obligations of IMF membership, with Article VIII status, meaning among other things full convertibility of current account transactions. The Czech Republic, Hungary and Poland, and most recently Slovakia, are members of the OECD and many OECD activities now cover other CEEC-10 countries as well.

Once reforms and liberalisation of foreign trade began, the CEEC-10 countries became relatively open economies, particularly the smallest of them. The EU became their main trading partner, and for most, exports to the EU represented well above half of total exports. CEEC-10 imports from the EU also grew rapidly, resulting in a surplus of trade for the EU.

In what follows, the content of the Europe Agreements is briefly explained. The most central topics of integration, namely trade, capital movements, in particular FDI, and labour movements are then discussed and their effects on the CEEC-10 economies and on the EU-15 assessed. The aim is to highlight some central themes, recognising that trade flows or any other visible results from integration emanate not only from the institutional framework but also from macroeconomic developments and structural changes both in the CEEC-10 and in their trading partners. It should be noted that the Europe Agreements have a special role to play as the agreements themselves and the accompanying prospect of accession to the EU affects the orientation of macroeconomic and structural policies and of private sector behaviour in the CEEC-10.

The Europe Agreements

The Europe Agreements form a comprehensive framework for bilateral relations between the EU and each of the CEEC-10 countries. From an overall economic perspective, the most important areas covered are establishment of a free trade area for industrial goods, liberalisation of capital movements, approximation of laws relevant for the EU's internal market and competition policy, and financial co-operation, notably under the Phare Programme.

However, the Europe Agreements fall short of full membership of the EU in certain important areas. While they include provisions for dismantling quantitative restrictions on agricultural products and improved market access in both directions, which has recently been addressed by the 'double-zero' agreements, they do not yet give the CEEC-10 free trade in the agricultural sector. Another economically important area where the CEEC-10 does not have full access to EU markets is in the area of labour mobility: migration from the CEEC-10 is still strictly regulated.

Effects of integration on trade, capital movements and migration

The following paragraphs provide a review of integration and its effects in particular areas, namely trade, capital flows and migration. The most important source for the findings and data to be presented is *Consortium 2000*, a research report prepared by four research institutes on behalf of the Employment and Social Affairs Directorate General of the European Commission (see References).

Trade

The Europe Agreements provided for an asymmetrical removal of tariffs on industrial goods, leading to full elimination of tariffs on imports from most of the CEEC-10 to the EU on 1 January 1997. Dismantling of tariffs on EU exports to the CEEC-10 will be completed by 2002. The Europe Agreements include provisions in several areas requiring parties to act in accordance with WTO/GATT principles.

After opening up to international trade and, in particular, as a result of the agreements with the EU, trade between the CEEC-10 and the EU developed rapidly. The volume of EU-15 exports to CEEC-10 grew from 1989 to 1999 by a factor of 3.9 and the volume of imports from the CEEC-10

to the EU-15 by a factor of 3.1, or at annual rates of 15 per cent and 12 per cent on average over the period. This produced a trade surplus for the EU, resulting from market conditions, but also from more regulated sectors as preferences granted by the CEEC-10 to selected agricultural products from the EU contributed to a surplus in agricultural trade.

Table 2: **Trade between CEEC-10 and EU-15**

Table 2a: **CEEC-10 exports to EU-15 as a percentage of total exports**

	1994	1995	1996	1997	1998	1999
Poland	63.0	70.0	66.3	64.2	68.3	70.5
Romania	48.0	54.1	56.5	56.6	64.5	65.5
CEEC8	42.7	55.4	56.5	58.4	63.6	68.2
CEEC10	48.0	58.8	58.9	59.7	64.8	68.6

Source: Commission services.

Table 2b: **CEEC-10 imports from EU-15 as a percentage of total imports**

	1994	1995	1996	1997	1998	1999
Poland	58.0	64.6	63.9	63.8	65.9	64.9
Romania	46.0	50.5	52.3	52.5	57.7	60.4
CEEC8	41.5	55.9	56.6	57.4	60.6	61.3
CEEC10	46.1	57.6	58.3	59.0	62.0	62.3

Source: Commission services.

Table 2c: **EU-15 exports to CEEC-10 as a percentage of EU-15 exports to extra-EU-15**

	1992	1993	1994	1995	1996	1997	1998	1999
Poland	1.9	2.1	2.0	2.7	3.2	3.5	3.8	3.8
Romania	0.4	0.5	0.5	0.7	0.7	0.7	0.9	0.8
CEEC8	1.7	4.3	4.2	6.0	6.3	6.7	7.6	7.7
CEEC10	4.0	6.9	6.7	9.3	10.2	10.9	12.3	12.3

Source: Commission services.

Table 2d: **EU-15 imports from CEEC-10 as a percentage of EU-15 imports from extra-EU-15**

	1992	1993	1994	1995	1996	1997	1998	1999
Poland	1.5	1.6	1.7	2.2	2.1	2.1	2.3	2.3
Romania	0.3	0.3	0.5	0.6	0.6	0.7	0.7	0.7
CEEC8	1.6	3.6	3.7	5.3	5.4	5.7	6.6	6.8
CEEC10	3.4	5.5	5.8	8.1	8.1	8.5	9.6	9.8

Source: Commission services.

Trade with the EU now represents more than half of the total foreign trade of the CEEC-10, thus making the EU by far their most important trading partner (Tables 2a-b). This trade, despite its fast growth, is relatively less important for the EU, since it is small as a proportion of the relevant EU figures (Tables 2c-d). In 1999, EU imports from and exports to the CEEC-10 represented 10 per cent and 12 per cent, respectively, of EU external trade, or 1 per cent of EU GDP. If intra-EU trade is included in the comparison, trade with the CEEC-10 accounts for only 4-5 per cent of average EU Member State trade flows. This figure hides, however, big differences between the EU Member States, as trade is concentrated in those Member States which are geographically close to the CEEC-10, namely Germany, Austria and Italy which together represent three quarters of this trade. In relation to the total foreign trade of each EU Member State, Austria leads, having more than 10 per cent of its trade with the CEEC-10, with Germany and Finland following with 8 per cent and 6 per cent, respectively.

This picture from the aggregate trade flows can be completed by observing that the unit values of CEEC-10 exports into the EU-15 area are very low compared with EU imports from other countries. This indicates that in the same markets the CEEC-10 are specialised in low quality segments. Relatively low unit values may also reveal that the CEEC-10 are exporting at low prices due to lack of marketing skills and low reputation. As skills and reputation improve, export prices may increase and greater income from production and exports may be extracted.

The composition of trade between the EU-15 and the CEEC-10 by commodities and sectors also reveals that the EU has specialised in high technology products while the CEEC-10 now provide products requiring lower skilled labour, having originally concentrated in resource-intensive sectors. This pattern still remained at the end of the 1990s, although the difference in the factor content decreased gradually over the decade from the very abnormal levels recorded in 1990.

Trade figures by sector show that the CEEC-10 are still mainly involved in horizontal specialisation across industries. However, vertical integration has increased, especially in sectors like machinery and telecommunications equipment. Linked to the changed patterns of trade, the share of intermediate products in both CEEC-10 imports from the EU-15 and exports to the EU-15 increased and exceeded 50 per cent in the mid-1990s, suggesting an increased participation of the CEEC-10 in the international division of production processes. For CEEC-10 imports, the high and increasing share of intermediate inputs has contributed to the improved quality of finished products, a conclusion supported by the good export performance of CEEC-10 industries importing intermediate goods. On the export side, high and rising shares of intermediate products

still reveals that the competitiveness of capital goods is still relatively low, although it too has increased (Freudenberg and Lamoine, 1999).

The commodity structure of trade between the CEEC-10 and the EU-15 reveals strong complementarity as both areas still supply very different commodities. This conclusion is valid even though CEEC-10 export structures changed to some extent during the 1990s towards that of the EU-15 as the production processes in the CEEC-10 area were improved. This holds also for the southern EU Member States, meaning that they still specialise in different products and quality segments compared with the CEEC-10 (Freudenberg and Lamoine, 1999, p.71, covering developments until 1996, and European Commission calculations until 1999).

Capital movements and foreign direct investment (FDI)

Foreign capital movements have been important in providing financing and stimulating domestic financial and capital markets. All the CEEC-10 liberalised capital movements early in the reform process, as they implemented the Europe Agreements and anticipated the obligations of future EU accession. Only a few restrictions now remain in place.

Most net capital inflows to the CEEC-10 have been FDI flows, which covered the bulk of the current account deficits in the CEEC-10 from 1995-99 on average. The FDI flows have depended crucially on progress made in reforms towards a functioning market economy. Macroeconomic stability, non-discrimination towards foreign investors, provisions in areas such as profit repatriation and taxes, and more generally, investors' confidence in the fairness and stability of the regulatory and legal environment have affected FDI flows. A more specific factor, namely whether or not foreign investors have been actively called to participate in privatisation initiatives has also clearly affected the level of the flows. The leading recipients of FDI in per capita terms have been Hungary, Estonia and the Czech Republic. Over a rather short time span, these countries received quite large investment flows, as indicated by a high stock of foreign direct investment as a share of GDP.

As a result of privatisation methods implemented in some of the CEEC-10, nearly half of the FDI flows have been directed to non-tradeable sectors such as public utilities (e.g. telecommunications and financial institutions). Thus, at least this part of the FDI flows has not negatively affected the markets for EU-based production. In the tradeable sectors most of the FDI seems to have been motivated more by the desire to increase market shares in the CEEC-10 rather than for export substitution purposes. One fifth of total FDI has occurred in relatively labour-intensive industries such as textiles, clothing, electrical machinery and the motor vehicles sector. This part of FDI points to exploitation of wage differentials, and may thus have had a negative effect on low-skilled labour in the EU. However, even in these sectors the overall effect on all factors of production may have been positive for the EU, as FDI has enhanced EU exports of human-capital-intensive products and technology services to the CEEC-10.

Two thirds of net capital flows into the CEEC-10 in the 1990s originated from the EU Member States. These flows, although important for the recipient countries, were small for the EU economies, representing only 0.15 per cent of EU GDP and less than 1 per cent of gross fixed investment. Consequently, these flows have been too small to have had any general effect on financial markets, investment or growth. As in trade, the EU Member States bordering the CEEC-10 have been most active in providing FDI, with Germany leading in absolute terms while Austria

leads in relation to the size of its economy. In these countries, and in some other particular cases, FDI to the CEEC-10 area may have led to some relocation of production.

Movement of labour

The Europe Agreements give the right of non-discrimination to workers from the CEEC-10 already resident in the EU. They also permit CEEC-10 nationals to establish companies in the EU, with the important limitation that they do not give the right for self-employment in the EU. Decisions on the movement of labour are left to the Member State authorities, some of which now give CEEC-10 nationals – unilaterally or in bilateral agreements – the right to temporary employment under strictly regulated quotas.

Based on registered migration and labour market data, net immigration from the CEEC-10 to the EU was over 300 000 persons in 1990, and 100 000 – 200 000 from 1991-93. Thereafter, net immigration ceased, although flows to the EU and back to the CEEC-10 continued at a level of 150 000 – 180 000 persons annually (Eurostat and Salt et al., 1999). Thus, low net migration has been accompanied by flows in both directions. These flows have been small compared with the EU's population, but they may have some importance for some segments of the candidate countries' populations and labour forces.

According to Eurostat, the registered number of CEEC-10 nationals in the EU in 1998 was 850 000, which represents 0.2 per cent of the EU's population. According to labour survey data, at most 300 000 of these immigrants are workers, including those in temporary employment, equivalent to 0.2 per cent of total EU employment.

Migration from the CEEC-10 to the EU has also been modest when compared with migration to the EU from other countries. From 1990-97, CEEC-10 immigrants represented 12 per cent of total immigrants to the EU, or a quarter of those coming from Eastern Europe and the former Soviet Union.

Migration from the CEEC-10 to the EU is highly concentrated into the bordering Member States, with some 80 per cent residing in Austria and Germany. In these countries they represent not more than 1.1 per cent and 0.5 per cent of the respective labour forces, although due to regional concentration, higher figures apply for some specific regions.

According to the statistics for Germany, the number of temporary workers has in recent years been at the level of 250 000, equal to a labour input of about 50 000 full-time workers. They have been concentrated in agriculture and construction. As the primary motivation to employ them has been low wage costs, the market for German blue collar workers has been affected, although due to the low number of immigrant workers, not dramatically so.

The figures above do not include estimates for informal and illegal migration or working in the EU. Such migration occurs in various ways, such as "labour tourism", informally contracted short-term workers etc. The amount of such flows are unknown by their very nature, and the picture is further complicated by the fact that an important part of these migratory movements represent third country citizens coming through the CEEC-10. Based on figures given by Morawska (1999), it could be cautiously estimated that these informal and illegal migratory channels could amount to the same order of magnitude as registered migrant labour flows from the CEEC-10.

2.4. Overall assessment

A decade ago, at the start of the transition process in the CEEC-10, the transformation from central planning to market economies led to an initial recession. After the revival had started in all of the countries concerned, from 1994 to 1999 GDP increased by 3 ½ per cent per annum on average while GDP grew by 2 ¼ per cent in the EU-15 over the same period.

The revival of growth came earlier in those countries where the initial conditions were more favourable. However, the degree of commitment to reform soon became a more determining factor. Those committed to reform grew faster while those where reforms failed entered into new recessions.

The revival was possible in most of the CEEC-10 as they made significant progress in establishing legal and regulatory frameworks for well-functioning market economies and in achieving macroeconomic stability. They also made progress in various structural reforms, and became integrated with market economies. Increased trade and foreign direct investment helped the CEEC-10 to reform their economic structures by providing new sources of supply, new product markets and access to improved technology. At the institutional level, the Europe Agreements with the EU paved the way for further integration, with accession as the final target.

The transition of the CEEC-10 countries to open market economies has given new opportunities to the EU's Member States. Due to the initial economic depression in the CEEC-10 area, the expansion of these geographically proximate markets was only gradual, but economic growth eventually revived in Poland and most of the CEEC-8 at a sufficiently strong rate to give grounds for positive long-term prospects.

The CEEC-10 countries soon became relatively open economies, with more than 60 per cent of their trade with the EU. As regards total EU foreign trade, this trade grew faster than with any other major region.

Throughout the 1990s, the structure of trade between the CEEC-10 and the EU-15 has revealed strong complementarity. The EU has specialised in high technology products while the CEEC-10 have moved from resource-intensive products and sectors to labour-intensive ones. The CEEC-10 are still specialised in low quality market segments. Therefore, trade has provided new opportunities for both. The share of intermediate goods in this trade grew fast and reached over 50 per cent, suggesting an increased integration of CEEC-10 production processes into those of the EU-15, including increased vertical integration by sectors and companies.

The structure of trade and its large volume in comparison to the size of the CEEC-10 economies, allow the conclusion that this trade had clear positive effects for the countries concerned. The effects on the EU-15 may not have been that significant since this trade was still no more than 10-12 per cent of total external EU trade or 1 per cent of EU GDP at the end of the 1990s. However, the complementarity between the EU-15 and the CEEC-10 has been so strong that the positive effects on the EU economies can be judged to have outweighed any possible negative effects due to adjustment costs and the effects on low-skilled labour. This holds also for the southern EU Member States, since they still specialise in different products and quality segments compared with the CEEC-10 group. The effects are greatest in the EU Member States closest to the CEEC-10, namely Germany and Austria, which represent the largest part of this trade. In these countries in

particular, further integration has started to affect the restructuring of certain industries. This has added to dynamism at the firm level, though with inevitable adjustment costs.

The same general conclusions hold for capital and labour movements. These gave new opportunities both for the CEEC-10 and for the EU, but were small compared to the overall EU's economy. Capital flows from the EU to the CEEC-10 represented less than 1 per cent of gross fixed investment in the EU, thus causing no noticeable general effects on capital markets. Likewise, labour market migration from the CEEC-10 remained low, only a fraction of 1 per cent of the EU's labour force. As for trade, the Member States and regions bordering the CEEC-10 have been the most affected as they have provided the most FDI and hosted more than 80 per cent of migration and cross-border workers from the CEEC-10.

3. Possible macroeconomic effects of the enlargement process (2000-09)

3.1. Introduction

This section of the paper looks at the macroeconomic effects of the process of enlargement over the next decade, both for the CEEC-10 and for the present EU15 countries. Part I examines the growth prospects in the CEEC-10 and in the AC-8, over the 10 year period 2000-09, with particular emphasis being placed on the supply-side impact on growth of the ongoing economic restructuring programmes in these countries and the likely effects emanating from EU membership. As quoted in former studies (e.g., in Baldwin et al., 1997, Kohler and Keuschnigg, 1999, Breuss, 1999, Gács, 1999), *these effects may be quite substantial*. Part II provides some quantification of the derived impact on the EU15 economy of this AC-8 scenario, with simulations that point to *positive, but smaller*, economic effects, given the small economic weight of the CEEC-10, compared to the EU15's GDP.

3.2. Illustrative growth scenario for the CEEC-10 and the AC-8

The analysis in this sub- section of the paper will highlight a number of factors which appear constantly in the academic literature as being important in explaining both the pattern of past growth and consequently the potential for future success. These factors include the initial starting conditions of a country, the savings / investment position and the potential for catching-up as reflected in existing income and productivity differentials; macroeconomic policy variables, including the manner and speed with which stabilisation has been achieved; and, finally, the degree of ambition attached to the structural reform programme.

Theories about what exactly determines economic growth and sustains it at a high rate have been discussed at length since the 1950s and are not exempted from controversy. However, in recent years, the neo-classical growth model, initially proposed by R. Solow (1956) has been used in "growth accounting" analyses for both developed and developing countries (see, for example Barro and Sala-I-Martin (1992) or Mankiw et al. (1992)) and a modified version of it is used here (see Annex 1 for model details and properties).

In short, the basic idea is to decompose real GDP growth into its main determinants and to try to measure:

- What part of the overall growth rate of GDP can be attributed to the accumulation of inputs of factors of production, i.e. to the growth of employment and of fixed capital?
- Once the contribution of production factor inputs is eliminated, does a residual remain (the so-called *Solow growth residual*) that can be attributed to independent technical progress, also called total factor productivity (TFP) since it cannot be attributed separately either to labour or to capital?[1]

Indeed, such a framework can capture the essential characteristics of the CEEC-10 economies at the present time, especially their relatively low capital endowments (both private and public) and a low level of technology (TFP). It may also be asserted that their future speed of real per capita GDP convergence towards the EU average essentially depends on the rate of investment (including FDI) and the adjustment of TFP to levels of economically more advanced countries.

An illustration of the approach: Growth accounting analysis 1994-99

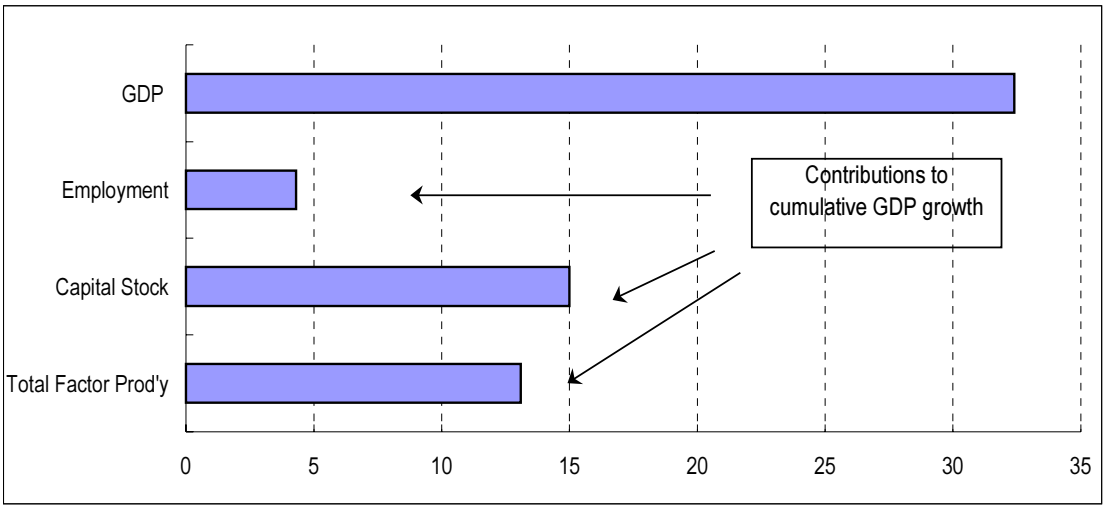
It would be difficult to develop reasonable growth scenarios for the CEEC-10 countries over the next ten years without first assessing where they are starting from, taking as a benchmark the period during which most of them returned to positive growth rates i.e. 1994-99. The past contribution of employment, fixed capital and total factor productivity (TFP) to the cumulative growth of real GDP during these 6 years are presented for illustrative purposes in Graphs 4 to 6.

On the basis of this graphical evidence, one could be rather sanguine for the future growth prospects of these countries, especially for Poland and to a lesser extent for the CEEC-8 and for Romania.

Indeed, it emerges in the case of Poland that growth since the middle of the 1990s has been due to a mixture of what is commonly referred to as "extensive" growth (i.e. that component of growth which is due to an accumulation of both capital and labour inputs) and part has been due to "intensive" growth (i.e. due to TFP growth). The CEEC-8 group on the other hand is more problematic, with an overall growth performance for the CEEC-8 which was lower than for Poland and with the composition of that growth less favourable in terms of setting in place the foundations of a sustained catching-up process. The situation with regard to Romania is particularly worrying with GDP actually declining over the period.

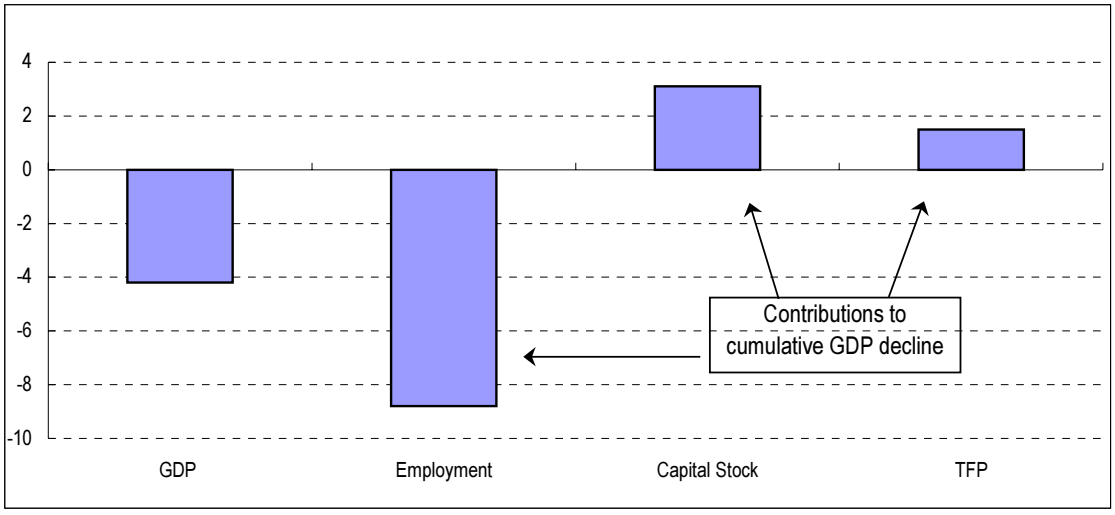
[1] The controversy about the exogenous or endogenous nature of technical progress will not be dealt with here.

Graph 4: **Poland: Contributions to growth, 1994-99**



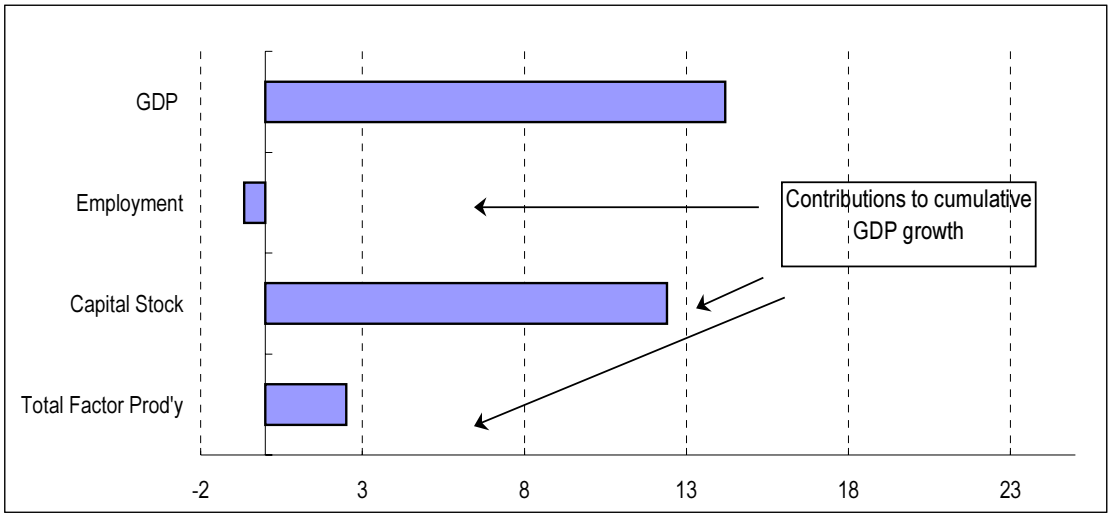
Source: Commission services.

Graph 5: **Romania: Contributions to GDP decline, 1994-99**



Source: Commission services.

Graph 6: **CEE8: Contributions to growth, 1994-99**



Source: Commission services.

Examples such as Poland, Romania and the CEEC-8, put also into perspective the qualitatively different nature of the challenges to be faced. In the case of Poland, and undoubtedly for some of the constituent members of the CEEC-8 group, the challenge will be to maintain, and perhaps deepen in some respects, the present policy course since the latter appears to be bearing fruit in terms of the underlying growth performance. If this policy reform path can be maintained in the coming years, EU membership seems assured for these countries. For the remaining members of the CEEC-8 group and for Romania, on the other hand, the challenge is more daunting, with a greater effort needed to set these countries on a sustainable real convergence path.[2]

AC 8 SCENARIO

On a cautionary note, it must be stressed at the outset that it is not the purpose of this scenario to act as a forecast. Its role is simply to outline a realistic growth path for these countries, given initial conditions, policy developments and purely technical assumptions concerning the enlargement dates.

As in all similar exercises, the growth scenario presented here starts from a reference, or "baseline" scenario. Since the scenario aims at measuring the potential effects of enlargement, the reference has to be an anti-world with no enlargement before 2010. However, it is also assumed that the reforms which have been introduced in these countries over the recent past *will not be reversed* over the period to 2009 and will continue, albeit perhaps at a slower rate. In other words, the reference is not a "catastrophic" scenario since, in growth terms, it means that for the AC-8 and for the

[2] Of course one must be careful in interpreting the results of growth accounting exercises for the CEEC-10 area because of the difficulties in distinguishing between those countries experiencing high rates of transitional growth, following completion of a successful stabilisation programme, and those where a more sustainable long run growth trajectory is being initiated based on the typical neo-classical growth factors. In many cases, a high rate of transitional growth reflects not only the stabilisation efforts mentioned above but also the initial fruits of tentative moves towards economy-wide liberalisation, often including privatisation initiatives, which boost foreign capital inflows, and of the fact that the countries in question are at a relatively low initial level of development which provides greater opportunities for strong bursts of growth over short periods of time.

CEEC-10 as a whole, an average growth rate of 3 per cent per year over the period 2000-09 would still be achievable, compared to a prudent assumption of 2.5 per cent average annual growth for the EU15 over the same period. Thus, catching-up would continue, albeit at a very slow rate.[3]

Central scenario

The AC-8 Scenario assumes, on the premise that no policy reversals occur in the respective countries, that Poland and all the countries in the CEEC-8 group except Bulgaria would join the EU in 2005. The expectation of such an outcome would already result in some acceleration in growth in the pre-accession years 2000-04, with respect to the baseline. Bulgaria and Romania would wait until the Copenhagen accession criteria is fulfilled[4]. However, it is also assumed in conformity with the reference scenario that a delay in the timing of membership does little to derail the reform programmes which have been agreed and initiated in these countries, and that the essential, market economy, operating institutions which have been established in the recent past continue to function normally over the period. Sustained commitment to, and implementation of, the chosen reform path by policy makers in these countries is what is needed if membership is the desired goal. For those countries showing a clear commitment to such a path, the full gains from EU integration are simply deferred until full membership becomes a reality.

In the case of the AC 8, growth is expected to average over 4 per cent a year for the period 2000-09 (Table 3), with growth getting a boost following accession reflecting both the initiation of the financial flows to these countries from the EU as well as TFP gains from membership and the integration into the Internal Market.

This average rate of growth of over 4 per cent for all the AC-8 would appear justifiable given the latent growth potential in many of these economies as represented by the still relatively high proportion of total employment in low productivity sectors. In this regard, it is noteworthy that this productivity potential varies widely within the AC-8 group as a whole. For example, unlike Poland where big productivity boosts can be achieved by a sharp reduction in the numbers employed in agriculture over the period, the room for such manoeuvre for the rest of the AC 8 group as a whole is substantially less. In 1999, the employment share of agriculture in Poland was over 18 per cent, compared with around 14.4 per cent in the AC-8. This latter 12 per cent rate, however, is still high compared with an average rate of less than 5 per cent in the EU.

For Romania and Bulgaria, it is assumed, in the central scenario, that growth will be 1-2 per cent points lower on average than for the AC-8. However, the scenarios assume that the economic outlook for these latter countries will improve in the second half of the decade as the reform programme pre-requisite for both growth and EU membership is increasingly put in place. If an ambitious reform agenda is met, it is assumed that growth will be further boosted by growing FDI flows, drawn in by both the improved economic environment in these countries and by the realistic prospects for EU membership on the not too distant horizon.

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3 From a technical viewpoint, the scenario results are obtained by introducing in the baseline new values for policy or exogenous variables (e.g. Foreign Direct Investment, migration, growth of total factor productivity, etc) in agreement with the multiplier table given in Annex 1.

4 This entirely hypothetical assumption is made for purposes of simplification, and is not intended to prejudge the actual dates of accession of any country inside or outside this group, which will depend on the progress of each country in meeting the criteria for membership.

As Table 5 shows, the effect of these different growth scenarios for the two groups of countries means that in aggregate terms the CEEC-10 should grow by about 4 per cent on annual average over the period as a whole, with a faster rate of 4.3 per cent predicted for the second half of the decade.

In terms of the determinants of growth in the countries over the 10 year period, the investment to GDP ratio is predicted to average over 26 per cent of GDP in the first five years of the period and to rise by an additional point subsequently. In terms of sectoral employment changes, the process of restructuring which has been ongoing in many of these countries is maintained, with the 10 year average employment shares for agriculture and the public sector falling by 1 and 2 per cent points respectively, compared with 1999 values. Clearly, the sectoral employment shifts in particular countries could vary dramatically from the CEEC-10 average, depending on the degree of scope that exists for such reductions.

Foreign transfer income as a percentage of GDP is assumed to stay constant in the first five years of the period at a little over 1 per cent of GDP and following the accession of the AC 8 , this percentage share rises to more than 3 per cent, on average, over the last 5 years up to 2009. With regard to labour market reform, given the already high rate of labour force participation in these countries, , it is felt that only a small rise could be expected . Migration (see Section 4) will be slightly negative for growth over the period as a whole since it decreases the available manpower. This is especially the case for the AC-8 over the last five years of the period. Finally, with regard to TFP growth, the AC-8 will receive a small TFP boost equivalent to 0.25 per cent in terms of GDP.

A more optimistic scenario

In addition to the central scenario, the transition economy growth model is also used to produce an optimistic scenario for the second half of the decade for the AC 8. This latter scenario essentially simulates the potential economic gains that could accrue to these countries from exploiting the full benefits of EU membership. As these countries join the EU, the processes which have been set in train since the transition began will be deepened further, with trade and capital movements enhancing the integration process and with EU structural and social fund transfers helping to finance essential physical infrastructures and to contribute to human capital improvements.

This increased membership effect is introduced through a "comprehensive reforms" upward impulse to TFP. In general terms, such an impulse refers to a very favourable policy environment, with all the key factors which are likely to be positive for human and physical capital accumulation and TFP growth likely to be in place. In particular, the catching-up process must be underpinned by a comprehensive package of pro-growth policies, including a clearly focussed investment strategy, a business environment that fosters innovation and entrepreneurship as well as institutions focussed on the resolution of the normal distributional conflicts inherent in a process of widespread structural reform. Finally, good co-ordination of demand management policies would also appear to be a necessary pre-requisite for a successful realisation of this scenario.

If such a "virtuous circle" develops, it could push up the average growth rate of the AC 8 by a further 1½-2 per cent. As shown in Table 4, which decomposes the growth rate scenarios for the AC 8 into the "normal" employment, capital stock and TFP components, the essential difference between the central and optimistic views is shown to be this additional TFP effect. In the particular case of the AC 8 , for such a large boost to materialise, it is assumed that in addition to

the direct productivity enhancing effects of EU membership, these countries would have to intensify their existing reform programmes, in particular bringing their public sector and agricultural employment shares down towards levels prevailing in the EU. The rate of growth for the AC 8 increases up to 5.1 per cent annually over the period 2000-09, compared with the central increase of 4,3 per cent.

In aggregate terms, these "optimistic" assumptions would increase the level of growth of the CEEC-10 up to 4.8, in comparison with the central scenario growth of 4 per cent (Table 5).

Table 3: **AC-8 join EU in 2005.**
AC-8 GDP growth rates 2000-09: Annual averages

	2000-09	2000-04	2005-09
Baseline Scenario			
AC-8	3	3.1	2.9
Central Scenario			
AC-8	4.3	4	4.6
Optimistic Scenario			
AC-8	5.1	4	6.1

Source: Commission services.

Table 4: **AC-8 join EU in 2005**
AC-8: Contributions to GDP growth 2000-09: Annual averages

	Baseline	Central Scenario	Optimistic Scenario
Employment	0.4	0.6	0.7
Capital Stock	1.6	2.0	2.1
TFP	1.0	1.6	2.3
Total GDP	3.0	4.3	5.1

Source: Commission services.

Table 5: **AC-8 join EU in 2005.**
CEEC-10 GDP growth rates 2000-09: Annual averages

	2000-09	2000-04	2005-09
Baseline Scenario			
CEEC-10	3	3.1	2.9
Central Scenario			
CEEC-10	4	3.8	4.3
Optimistic Scenario			
CEEC-10	4.8	3.8	5.6

Source: Commission services.

Table 6: **AC-8 join EU in 2005**
CEEC-10: Contributions to GDP growth 2000-09: Annual averages

	Baseline	Central Scenario	Optimistic Scenario
Employment	0.4	0.6	0.7
Capital Stock	1.6	1. 9	2
TFP	1.0	1.5	2.1
Total GDP	3.0	4	4.8

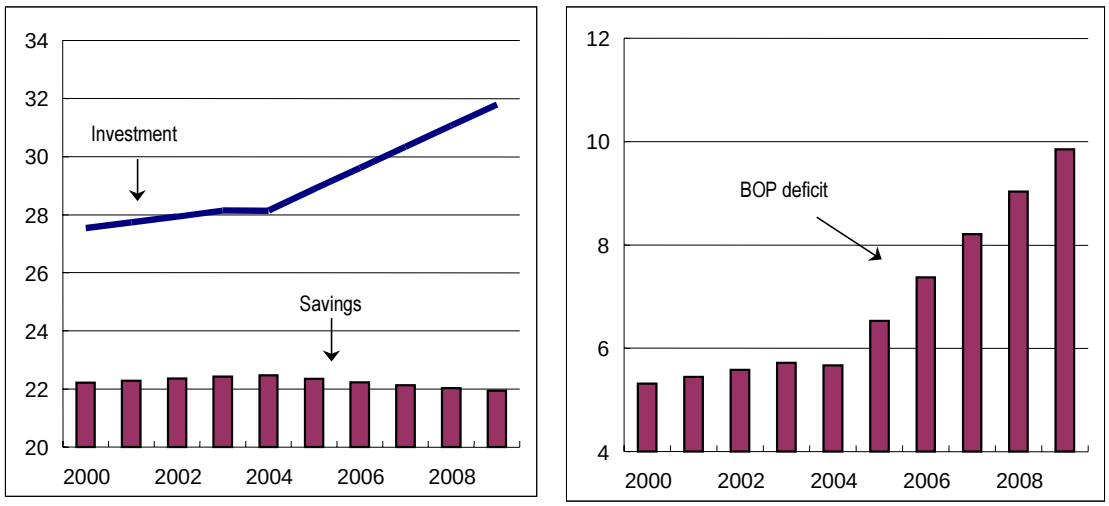
Source: Commission services.

A potential problem: implications of the optimistic scenario for balance of payments sustainability in the AC-8

While strong rates of growth are undoubtedly achievable in these countries, action is necessary to ensure that such a robust growth performance is not prematurely ended due to balance of payments (BOP) funding constraints. In this regard, unlike the standard Solow model, the one used for this exercise includes a rudimentary consumption equation, which provides the possibility to look at such BOP sustainability issues. In relation to the above optimistic scenario, Graph 7 shows the implications for the current account balance of the AC-8 if an average growth rate of about 5 per cent is realised over the period. As can be clearly seen, the increase in the investment share needed to underpin the 5 per cent growth rate would lead to BOP sustainability problems unless domestic sources of funding, either private or public sector savings, were to increase from their present levels. Alternatively, the share of FDI flows would have to increase dramatically in order to place the BOP on a more sound financial footing.[5]

[5] Some estimates suggest that at the present time FDI flows represent up to 20 per cent of the investment levels in some of the CEE countries and clearly represent an important factor in assessing the potential for catching up. Direct foreign investment is a very sought after commodity in central and eastern European countries with policy makers stressing the key benefits emanating from such investment flows, namely the facilitation of strategic restructuring and spillover effects to domestic firms in the form of know-how and technology. Of course, the extent to which individual countries benefit from the positive externalities from FDI flows, in many cases, depends on the size of the existing technological gap between the countries involved, with a low skill base in particular compromising the absorptive capacity of local firms.

Graph 7: **Optimistic scenario: BOP sustainability problems for the AC 8**



Source: Commission services.

3.3. Impact on EU-15 countries

Nobody doubts that the future enlargement of the European Union will have deep political consequences. On the economic side, however, opinions are more varied, but one point should always be kept in mind: the combined GDP of the AC-8 only represents now about 3 per cent of the EU-15 GDP and even the combined GDP of the CEEC-10 countries as a whole represents just 5 percent of the EU-15 GDP. As a consequence, the derived impact of their own development on the present Union is always likely to be small, *be it positive or negative*!

However, should the future development of the AC-8 follow the growth path described in the scenarios of Section 3.2 and given certain assumptions, this macro-economic impact could become positive and somewhat more significant for the whole EU-15 and even more for some of its Member States.

Be this as it may, the economic consequences of enlargement will come basically through three channels, of which one relates to final demand and the other two to supply-side effects.

The final demand impulse is fairly straightforward: given the present trade patterns between EU-15 and AC-8 and their likely evolution towards even more trade integration as enlargement takes place,[6] an acceleration of growth in the AC-8 should result in an increase in their demand for EU-15 products and services, hence a direct positive impulse to EU15 exports. The latter in turn will act positively on domestic demand, notably capacity-expanding investment if this increase in external demand is expected to stay for a sufficiently long period. Of course, some sectors in some member countries may suffer from increased competitive exports from the AC-8 but overall the demand effect should be positive, albeit small, given the magnitudes involved.

6 A pattern that was followed in all former enlargements of the EU.

Besides, on top of this final demand impulse, it could be argued that enlargement could also generate an increase in the potential growth of the EU-15 in future years through two supply-side impulses.[7]

First, migration from the AC-8 to EU-15 countries will add to EU-15 labour force growth over the period and therefore would imply an increase of the long-term growth potential of the EU-15.

Second, the widening of the European single market implied by the accession of these new member countries will undoubtedly result in increasing the competitive pressure for the acceding countries but also for some sectors of the present members of the EU. Using ex-post evaluations of the internal market programme as a benchmark, this should result in a decrease in mark-ups, which will also increase the growth potential of the EU-15 over the period.

At member country level, the degree of trade and migration exposure to the AC-8 varies quite significantly among Member States and consequently the associated economic impact of their accession. To illustrate these differences, simulations were run with the multinational macroeconomic model QUEST II of the Commission services.[8]

As quoted in the former section, a prudent, "no-policy-change", medium term baseline was run, into which growth for the EU-15 was kept at a prudent 2.5 per cent per year on average between 2000 and 2009.

A positive demand impulse: trade effects of the increase in GDP growth in AC 8 on EU-15 countries

In order to evaluate the macro-economic impact of enlargement on EU-15 countries, this section measures the impact of the supplementary growth which the AC-8 experienced in the central scenario compared to the baseline. In this scenario, following the implementation of further structural reforms and the benefits of EU membership (EU transfers, stronger FDI flows...), the accession countries are supposed to grow by 4.3 per cent per year over the ten-year period compared to 3 per cent in the baseline.

As said above, this higher expected income in the AC-8 leads to an increase in export expectations among EU-15 countries, especially in countries with strong trade relations with the AC-8. This stronger export market growth leads to an increase in business fixed investment via a usual accelerator effect.

However, both higher export demand and higher investment lead to an increase in real interest rates, which reflects the tightening of the savings-investment equilibrium. Furthermore, this higher interest rate leads to an appreciation of the Euro exchange rate consistent with interest rate parity at the world capital market level.

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7 Of course, these supply-side effects will also generate induced demand effects, notably via increases in employment and incomes.

8 The model includes all Member states as well as other countries, covers total world trade and is a modern version of the neo-classical - Keynesian synthesis, which includes in its long-run behaviour imperfect competition in both goods and labour markets.(Roeger and in't Veld (1997))

This negative feedback effect on interest rates and real exchange rates partly offsets the small positive initial trade impulse and leads to an almost negligible impact on EU-15 GDP growth in yearly terms. For countries like Germany, which have strong trade relations with the AC-8, [9] the positive increase in export market growth is clearly predominant relative to the negative impact of higher interest rates and leads to a small but significant increase in GDP. For countries like France, which are not trading very much with the AC-8,[10] the negative impact of a higher real exchange rate and a higher real interest rate may outweigh the positive trade effect. However, these type of countries will eventually benefit from the export impulse received from Germany.

A positive demand impulse and a first positive supply impulse: trade and migration effects on EU-15 countries

On top of this demand impulse generated by higher expected income in CEEC-10, the option of free movement of workers constitutes the principal change in economic integration after accession, as barriers to trade, FDI and other capital movements have already been largely removed.

Following the central migration scenario described in part 4 of this report, it is assumed that around 180 000 migrants from the AC-8 enter each year into the EU from 2005 onwards. It is also assumed that their destination patterns follow the present distribution of CEEC-10 residents in the EU-15 (two-thirds going to Germany and one tenth to Austria).

Even if the composition of this migration is particularly difficult to anticipate, following existing surveys for Czechs, Poles and Hungarians, it seems reasonable to assume that the bulk of East-West labour flows will be short-term or "incomplete" migration from working-age males. Therefore, in these simulations, it has been assumed that migrants increase more than proportionally the labour force, i.e. that the migrant population has a higher participation rate than the average EU-15 (80 per cent compared to 60 per cent) and that they have the same skill-structure as the average EU-15 labour force. The productivity of migrants is slightly above average because they are all employed in the private sector.

In the framework of the neo-classical growth paradigm, this increase in the EU-15 labour force represents a positive supply impulse, which leads to a higher level of GDP and employment. However, the model also predicts that because of labour market rigidities and adjustment costs for labour, the EU labour market will not be able to fully absorb the additional migrant labour force and there will be a slight increase in unemployment. A full integration of the additions to the labour force into employment positions would require a certain decline in the real wage costs for firms. Given the appreciation of the euro and the accompanying fall in consumer prices, real wage costs could fall, keeping real consumer wages constant. However, the downward rigidity of wages does not allow for a full pass through of consumer prices onto wages and there is an increase in the consumer wage.

These effects are of course concentrated in Germany, which receives two-thirds of the migration flows. For other EU countries, they are much smaller.

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[9] In 1998, German exports to the CEEC-10 represented about 1.3 per cent of German GDP.

[10] In 1998, French exports to the CEEC-10 represented about 0.4 per cent of French GDP.

A positive demand impulse and two positive supply impulses: trade, migration and mark-up effects on EU-15 countries

The accession of the AC-8 to EU membership may also generate other positive supply impulses on EU-15 potential growth besides the increase in the labour force resulting from migration flows.

For some sectors of the EU-15 economies, enlargement could lead to a higher degree of competition due to the reduction in non-tariff barriers implied by the accession of these countries to the EU's single market. The elimination of trade barriers will reduce the degree of segmentation of markets and should lead to a decrease in price-costs margin levels within EU-15 economies. It can even be argued that this removal of the trade barriers could lead not only to positive allocation effects, via reduction in mark-up levels, but also to positive accumulation effects, via the decline of X-inefficiency prompted by greater competition[11] and/or via spillover effects on EU-15 TFP growth of the higher TFP growth in the AC-8 resulting from accession.

However, as these different effects are quite delicate to estimate and as also the economic integration of CEEC-10 with the EU-15 is already quite developed, the supplementary supply impulse has been calibrated by taking only mark-up reduction effects equal at most to one half of their supposed reduction for the ex post evaluation of the internal market programme.

This increase in competition/efficiency or allocation gains puts the economy on a higher potential level and leads to a more significant "transitory" increase in GDP growth and employment from 2005 onwards. These effects are still predominantly affecting Germany, as mark-up reductions have been calibrated according to trade weights.

Table 7: **Cumulative impact on EUR-15, AC-8 countries joining in 2005, central scenario 2000-09**
(Cumulative impact on real GDP, in percentage)

Total impact	From Trade	From migration	From mark-up
0.5	0.0	0.3	0.2

Source: Commission services.

The distribution across member countries varies substantially with, as could be expected, an above average impact being registered in countries with the highest present rate of relations and proximity, i.e. Germany, Austria and Finland. Conversely, a lower impact is found in the countries "farthest away", i. e. Ireland, Spain and Portugal.

In order to estimate the "maximum" plausible macro-economic impact of enlargement on EU-15 countries, another simulation has also been run which combined a stronger mark-up reduction effect (up to ¾ of the effect of the ex-post study on the internal market) and the highest growth

[11] cf. Aiginger and Pfaffermayr, 1997 « Looking at the cost side of Monopoly » the Journal of Industrial Economics, which provides evidence suggesting that the cost effect of imperfect goods market competition is larger than the demand side loss.

scenario for the AC-8 (optimistic scenario) in order to have the strongest possible positive trade effects (Table 8).

As regards the distribution across countries, the same comment applies as in the former scenario described in Table 7 (above average for D, A and FIN, below-average for IRL, E and P).

Table 8: **Cumulative impact on EUR-15, AC-8 countries joining in 2005, optimistic scenario 2000-09**
(Cumulative impact on real GDP, in percentage)

Total impact	From Trade	From migration	From mark-up
0.7	0.1	0.3	0.3

Source: Commission services.

3.4. Overall conclusions for macro-economic impact

On the basis of any prudent evaluation of the growth promoting factors for the AC 8 economies (initial starting conditions, macro-economic policy framework and structural reform programmes) the illustrative scenarios suggest relatively good convergence prospects for most of the AC 8 countries over the next decade. In the most optimistic scenario presented in this section, rates of growth in excess of 5 per cent are forecast for the period 2000-09, with the pace of growth actually strengthening to over 6 per cent over the second half of the decade.

Enlargement effects for the AC 8, i.e. the collection of economic measures that come before and after accession over and above what these countries would in any case implement on their own initiative, are quite significant. According to the intensity of the structural reforms undertaken, they represent between 1.3 per cent to 2.1 per cent higher yearly growth than in the "no-joining" baseline scenario.

Enlargement boosts AC 8 growth essentially via the following channels: firstly through higher physical investment ratios due to EU transfers and higher FDI inflows; secondly, through higher labour force growth due to labour force participation rate increases; and finally via higher TFP growth due to shifts in both the sectoral composition of output and to the implementation of structural reforms consequent to the more competitive EU internal market environment which these countries will be faced with.

Effects for EU-15 are very small (between 0.5 and 0.7 % cumulative impact in the 2000-9 decade). This is especially the case over a transition period, which is the focus of this study, since the convergence process of the AC 8 will lead to a slight increase in real interest rates and real exchange rates which will partly offset the beneficial demand impulses.

Countries in the EU will be affected differently. Those countries with relatively strong trade linkages with the transition economies such as Germany and Austria will benefit the most.

Effects from migration seem to be larger than from trade (for absolute GDP). Labour market rigidities in Europe may, however, prevent a full absorption of migrant flows.

Additional beneficial effects on goods market competition can be expected from enlargement. However, these effects are very hard to quantify ex ante. This paper takes a quite cautious approach by assuming that the goods market effects of enlargement will be less than 25 per cent of the single market program for the EU as a whole.

A degree of caution should be taken into account when assessing these effects. Some of them are quite easily quantifiable (EU transfers, FDI inflows, migration flows) others (mark-up effects, TFP increases) are evaluated with a wide margin of possible error.

4. Impact on migration

4.1. Setting the stage

Shortly after the fall of the Iron Curtain, the rising tide of East-West migration flows induced by economic, political or ethnic reasons led to concerns regarding the possibility of large-scale population transfers. However, these concerns have not been realised. Although westward emigration flows have continued, in particular towards Germany, they have diminished considerably since 1993. Very rapidly, due largely to the restrictive policies implemented in the principal host countries, the emigration of CEEC nationals took on a temporary nature, being characterised now predominantly by short and frequent moves of workers under (legal) temporary contracts and of short-term income-seeking labour tourists.

The accession of the CEECs to the EU will fundamentally alter the conditions of migration. Free movement of workers as enshrined in Article 39 EC, is one of the four fundamental liberties granted under Community law. It has three main aspects:

- access to employment: a Union citizen has the right to look for work and take up employment in any other Member State
- residence rights: the worker has the right to reside in the host State and to have his/her family join him/her in that State
- equality of treatment: any discrimination based on nationality is forbidden.

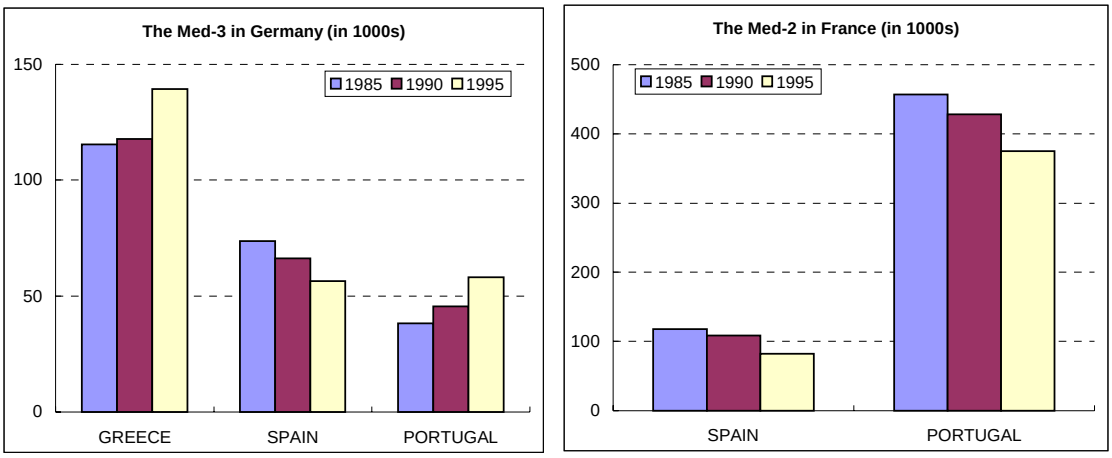
Indeed, given that barriers to trade, FDI and other capital movements have already been largely removed, the free movement of persons and workers constitutes the probably most significant dimension of economic integration to change after accession compared to the status-quo. Certainly, the large gaps in per capita income and wages between the present EU members and the accession candidates provide high incentives for East-West migration, which are likely to persist for quite some time; furthermore, geographical proximity and established historical and cultural ties may ease migration flows from the CEE countries. Not surprisingly, thus, a debate on the economic and social consequences of immigration, possibly on a large-scale, has been triggered in many countries. In particular, fears have been raised in sometimes emotionally highly charged debates that East-West labour flows may lead to a further deterioration of the labour market position of the unskilled, associated with job displacement and wage losses for the indigenous workforce.

The experience of the previous southern enlargement comprising Greece, Portugal and Spain (Med-3) can be used as a benchmark for a first assessment to what extent these concerns may be justified. Graph 8 shows the evolution of stocks of foreign workers from the Med-3 in the two

single most important destination countries Germany and France over the period 1985-95. Clearly, the development has not been homogenous across countries; while the number of workers from Spain decreased in both France and Germany, the number of Portuguese workers fell significantly in France, but rose in Germany. The stock of Greek citizens resident in Germany increased by about 80.000 (somewhat less than 1 per cent of the Greek population) in that period, with around $^1/_3$ of them joining the labour force. Thus, the labour market participation rate of the immigrants has been lower than that of the initial stock of Greek citizens in Germany. This holds

According to the latest available figures, less than 2 million citizens from the Med-3 are resident in other EU countries, a number equivalent to about 3 per cent of the combined Med-3 population. However, the present stock of Med-3 citizens resident in other EU countries has not been the result of a quick build-up following accession and the introduction of the principle of free movement of labour; in fact, aggregate net migration flows for the Med-3 have been practically nil over the past decade. Thus, from an overall perspective the removal of barriers to labour mobility has had only a minor impact on migration flows from the Med-3 into the EU.

Graph 8: **Stock of foreign labour**



Source: Commission services.

The aggregate picture masks considerable different country-specific migration patterns from the Med-3. The highest propensity to migrate into the EU is found among Portuguese citizens; almost 10 per cent of the Portuguese population are resident in other EU countries, predominantly in France, followed by Germany and Luxembourg. The number of Greek citizens living in another EU country amounts to slightly more than 4 per cent of the Greek population; the prime destination country for the Greeks has been Germany, where more than 4/5 of the EU-migrants from Greece reside. The number of Spanish citizens in other EU countries is considerably smaller in relative terms, amounting to slightly more than 1 per cent of the Spanish population, with the major destination countries being France, followed by Germany.

In summary, in the case of the accession of the Med-3 South-North labour flows remained rather limited in size. However, it should also be noted that the forthcoming enlargement differs in several important aspects, notably with respect to opportunities for cross-border commuting, attaching some caveats to simple comparisons.

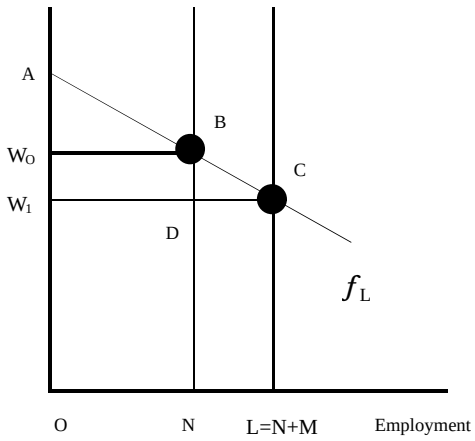
The purpose of this section of the report is to shed some light on the likely potential of East-West migration flows following enlargement and its impact on the host countries. Overall, we will

conclude that fears of mass migration following enlargement, creating significant problems of labour market integration and social cohesion in the receiving countries, appear to be ill-founded. Arguably, migration pressures will tend to concentrate on countries and regions geographically closer to the accession countries, but even for the two most affected countries, namely Austria and Germany, the impact of migration on wages and employment prospects of the native workforce is likely to remain rather moderate. With migrants presumably competing mainly for unskilled and low-paid jobs, often also accepting some sort of "brain waste", native unskilled labour (including earlier immigrants) in these countries may indeed lose out in terms of wages and job prospects. Although the magnitude of this negative impact should not be overestimated, it will tend to fall on a group already exposed to relatively high labour market risks.

Box 1: **The economic impact of immigration - basic considerations recapitulated**

The simplest way of thinking about the economic effects of immigration is in terms of an equilibrium labour demand and labour supply model, where immigrants induce an outward shift of perfectly inelastic labour supply.

The immigration surplus in a model with homogenous labour and fixed capital



For an inflow of M foreign workers, output increases by the area NBCL; NDCL is the immigrants' wage bill, and the immigration surplus is given by the area of the triangle BCD. Note that a plausible picture corresponding to more realistic values would rather put the vertical lines N and L much closer together. Indeed, for a 10 per cent addition to the initial labour force a typical estimate would suggest an overall immigration surplus of about 0.1-0.2 per cent of GDP (Borjas et al. 1997).

While the overall immigration surplus turns out to be fairly small, the distributional effects tend to be more significant. In the above model, the native wage bill falls by the area w_0Bw_1D, which accrues to the owners of capital together with the immigration surplus. However, to put things into perspective, note that again assuming an immigration inflow of 10 per cent of the labour force, a typical calculation would suggest an income redistribution of about 2 per cent of GDP from native workers to capital-owners. Clearly, when wages are sticky downwards, no surplus from immigration will arise, but unemployment will emerge.

Refinements of the model include the introduction of heterogenous labour, usually distinguishing between high-skilled and low-skilled workers, both among natives and immigrants, and lifting the assumption of a fixed capital stock. An assessment of gains and losses for the different factors of production then requires information on the respective factor price elasticities, on the skill-mix of both native workers and immigrants and on the degree of complementarity/substitutability between these different groups of workers.[1]

Based on a model of this type, Bauer and Zimmermann (1995) have attempted to gauge the magnitude of migration's gains and distributional effects on native factors of production applying calibration techniques using data for Germany. Their results confirm the general observation that under reasonable assumptions the overall impact of immigration remains fairly limited, while the distributional effects are significantly more pronounced; see below for an impression of the order of magnitudes involved.[2]

The gains and pains from an immigration inflow equalling 5 per cent of the labour force
(Equilibrium model calibrated with German data 1993, in per cent of national income)

	Skill-mix of immigrants		
	All unskilled	**50:50**	**All skilled**
Capital	0.71	0.95	1.13
Labour of which:	-0.51	-0.91	-1.07
- skilled	1.33	-0.14	-1.60
- unskilled	-1.84	-0.77	0.53
Natives total	0.20	0.04	0.06
Immigrants	2.18	3.13	3.72
Overall total	2.38	3.17	3.78

Source: Calculated from Bauer and Zimmermann (1995), Table 6. Income shares are kept fix at 14 per cent for the unskilled, 56 per cent for the skilled and 30 per cent for capital. The factor price elasticity for the unskilled is assumed to be -0.85, and -0.45 for the skilled. The elasticity of the wage of skilled workers with respect to a change in the quantity of unskilled is 0.15, and the respective elasticity for the unskilled wage is 0.55. The share of skilled workers in the labour force is 72.9 per cent.

It should be noted, though, that perceptions of the distributional impacts of immigration may alter drastically when different types of economic models are entertained. Indeed, standard trade theory offers the strong presumption that immigration may have no significant effect on income distribution at all, because of the output-composition effect in a multi-sector economy (Rivera-Batiz, 1983). Putting model mechanisms in a nutshell, the increase in labour endowments caused by immigration may simply allow for an expansion of the labour-intensive sectors, eliminating any tendency for the wage rate to fall. Clearly, though, when market imperfections are taken into account, such as less than fully mobile factors of production, income distribution effects are reintroduced into these models.

In summary, economic theory suggests that free international movement of labour tends to be beneficial because of allocative reasons, at least for the economy as a whole. The key issue for evaluating the labour market effects of immigrant labour is whether migrants are substitutes or complements to natives. Assuming that migrants from the CEECs will mainly compete with blue-collar domestic labour for unskilled and low-paid jobs, it is precisely this group of native workers who might see their wage and employment opportunities depressed. However, as long as the migrant flows are not too large, negative impacts on native workers are likely to remain rather moderate.

1 Models of this type have been championed for the USA by George Borjas; see for example Borjas, 1994.

2 The authors also analyse disequilibrium settings, where immigration may cause unskilled unemployment, with potential losses for natives running up to 5 per cent of national income in worst case scenarios with immigrants crowding out native unskilled workers on a one-to-one basis.

4.2. Enlargement migration scenario

It goes without saying that any projection of East-West migratory flows following enlargement is subject to a considerable degree of uncertainty. As already indicated, member states have the option of implementing a 5 to 7 year transition period for the free movement of workers. In order to illustrate the potential impact on migration it is assumed in this study that no transition periods will be implemented by member states or, alternatively, that they will open their labour markets to workers from the CEECs sufficiently to allow the expected adjustments to take place. Thus, the migration scenario presented here must not be taken as an actual forecast, but rather serves illustrative purposes. The scenario is largely compiled from the existing literature[12] and is, therefore, in line with existing studies and the available empirical evidence. The basic ingredients can be summarised as follows:

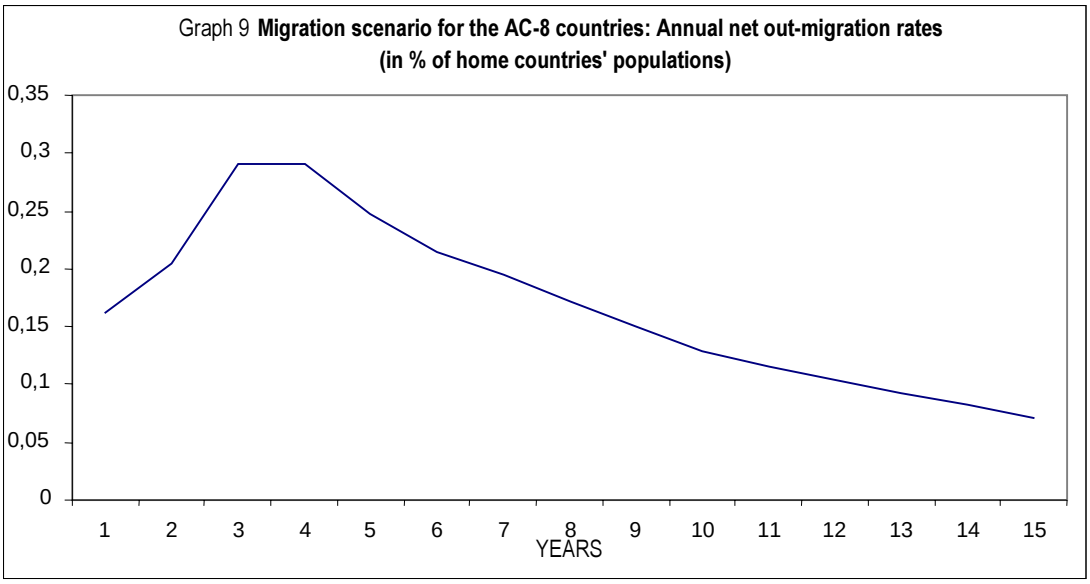
- The cumulated net out-migration rate is calibrated to a value of 2,5 per cent of the AC-8's population over a period of 15 years. This is broadly consistent with a number of studies on migration potentials referring to survey results, econometric estimates and/or historical experience.
- Annual outflow rates are assumed to increase gradually due to "learning effects", reaching a peak after a period of 3-4 years, and to decline more or less in a linear way thereafter.
- Using available estimates for the sensitivity of migration propensities with respect to income gaps and unemployment gaps and taking into account the varying sizes of the agricultural sectors, out-migration rates are differentiated across the AC-8. However, for all countries a similar time profile of out-migration rates is applied. The resulting projection of the (weighted) average net out-migration rate for the AC-8 is shown in Graph 9.

As a result, the present scenario for net out-migration rates differs only marginally from the scenario developed by the European Integration Consortium (2000), both in terms of levels and time-profiles. Overall, thus, the projected net migration flows assumed in this scenario are of a comparable order of magnitude.[13]

12 See in particular European Integration Consortium (2000), study commissioned by DG Employment and Social Affairs.

13 Projected net migration flows from the CEEC-10 into the EU-15 cumulated over the first five years after accession are 1 397 million people in the study by the European Integration Consortium, while the corresponding number in the scenario presented here would read as 1 430 million. Note, however, that in the former study the largest inflows are seen to happen immediately after accession, while the present scenario assumes peak annual migration inflows to occur 3 to 4 years later.

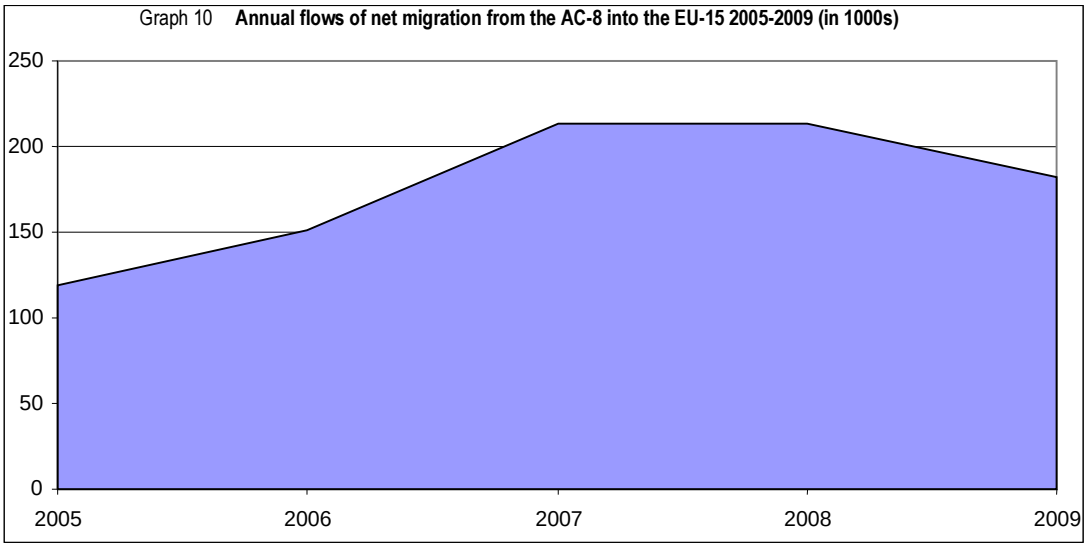
Graph 9 **Migration scenario for the AC-8 countries: Annual net out-migration rates (in % of home countries' populations)**



Source: Commission services.

Applying the out-migration rates as shown in Graph 9 to population figures[14] for the AC-8 then allows to compute out-migration flows in absolute numbers.[15] The resulting annual net migration

Graph 10 **Annual flows of net migration from the AC-8 into the EU-15 2005-2009 (in 1000s)**



flows over the period 2005-09 are given in Graph 10. Source*:* Commission services.

Under the assumptions of this scenario , annual flows of net out-migration from the AC-8 into the EU-15 are estimated to increase from initial values of about 120 000 to a peak value of about 215 000 persons 3-4 years after accession, gradually abating thereafter. Cumulated over the five-year period 2005-09, the absolute net number of migrants is estimated to come close to 900 000

14 The figures are taken from the UN population projections.

15 All calculations refer to the baseline growth scenario for the EU-15 and the AC-8.

people.[16] This corresponds to around 1.2 per cent of the sending countries' total population, and to 0.35 per cent of the projected working-age population of the EU-15 in 2010.

Putting the results of this scenario into perspective, it may be interesting to note that household polls on migration intentions in the Czech Republic, Hungary, Poland and Slovakia indicated a migration potential of about 700 000 persons, equalling about 1 per cent of the over 14 year old population of these countries (Fassmann and Hintermann, 1997). The migration projections in the recent study from the European Integration Consortium (2000) also fall in the range of this scenario. However, econometric studies applying estimates for the income-elasticity of migration flows across European regions (Barro and Sala-i-Martin, 1991) to the enlargement-case tend to come up with significantly higher numbers; for example, Franzmeyer and Bruecker (1997) estimated a yearly migration potential of between 340-680 000 people from Poland, Hungary, the Czech Republic, Slovakia and Slovenia into the EU-15 immediately after accession. Salt et al. (1999), on the other hand, argue that in the medium-long term estimates based on the experience of other Member States have the most validity, suggesting an annual migration from the Czech Republic, Hungary, Estonia, Poland and Slovenia to the rest of the EU of between 55 000 and 278 000 per year, perhaps half of which will be labour. The latter study also offers a useful synopsis of research on the migration potential following enlargement.

Thus, from a bird's eye view potential labour migration following enlargement should not pose any major economic problem for the EU as a whole. However, migration streams following enlargement will not be uniformly spread across the whole EU. Assuming that migration streams from the AC-8 will flow along existing ethnic networks and geographic distance, it is quite likely that East-West migration will be mainly concentrated on Germany and Austria.

The most recent statistics indicate that AC-8 nationals resident in the EU number about 650 000. Germany has attracted the by far highest number of residents from the AC-8, with a share of almost $^2/_3$, followed by Austria, the UK and Italy. Relative to its population, Austria exhibits by far the largest share of residents from the AC-8, followed by Germany, Sweden and Finland; for all the other Member States, their share of AC-8 residents is less than proportionate (see Graph 11).

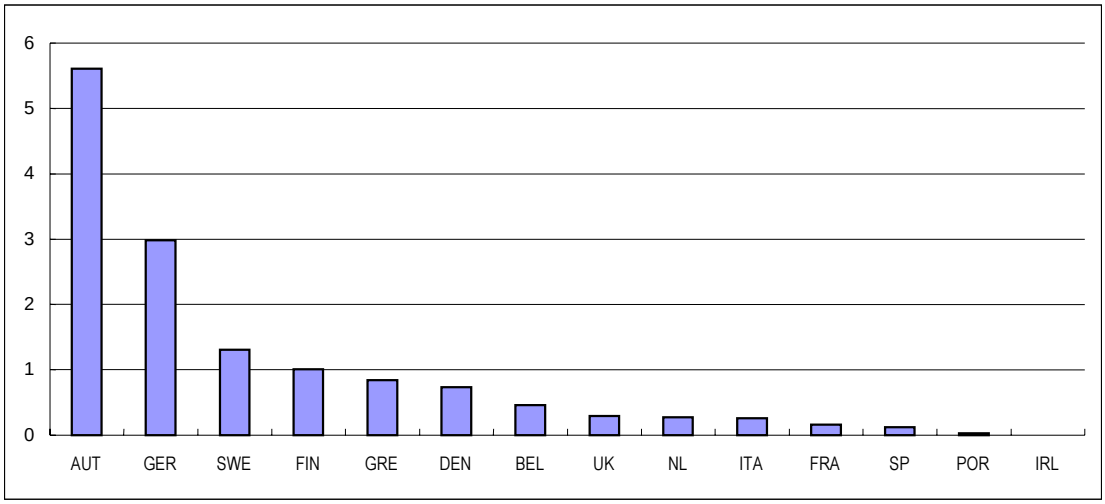
Following the approach taken by the European Integration Consortium, one may assume as a variant A that cross-country migration destination patterns following enlargement will resemble the present distribution of residents from the AC-8 in the EU-15. Furthermore, the distribution pattern across destination countries is taken to be constant over the period under consideration. In a second variant B, a different assumption regarding the destination distribution of migration streams from the AC-8 into the EU-15 is entertained; it combines a fairly crude gravity approach, with demand pull approximated by the relative economic size of EU-15 countries measured in PPPs (with a weight of $^2/_3$), and the current distribution of AC-8 residents across the EU (with weight $^1/_3$).[17] Basically, compared to Case A this variant has a distribution of migrants less concentrated on

[16] It may be worth noting in this context that the current Eurostat population projection foresees only a small increase in the working-age population for the EU-15 from 249 mill. in 2000 to 251 mill. in 2010, even under the assumption of net immigration from outside the Union totalling 6 mill. over that period.

[17] It is of course easy to think of more sophisticated approaches introducing additional explanatory variables determining the destination of migration flows. However, given the uncertainty surrounding all these estimates this would only pretend a degree of precision, which is simply not available.

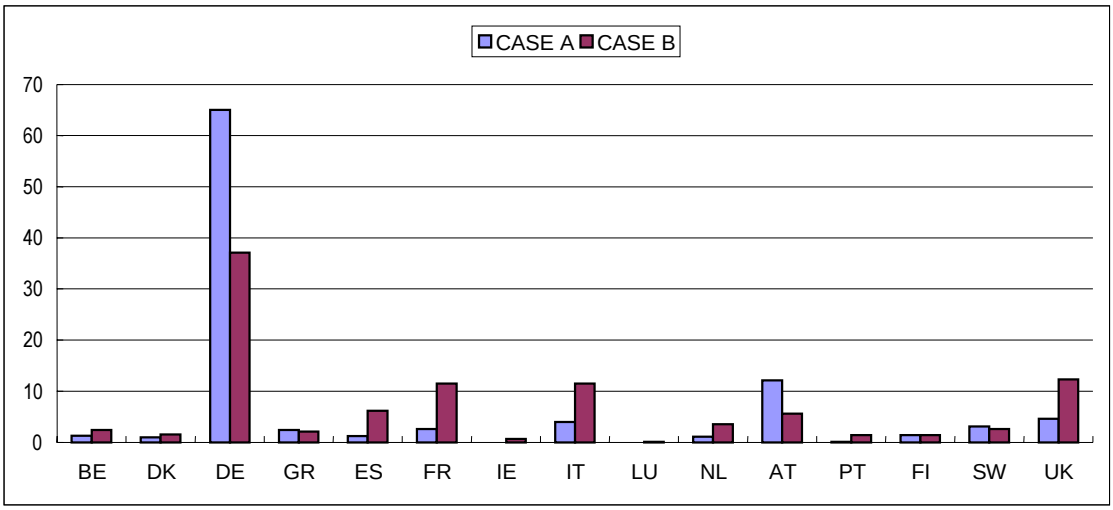
the destinations Germany and Austria, with a greater share taken by the larger EU-economies of the UK, France, Italy and Spain (see Graph 12).

Graph 11: **Residents from the AC-8 in the EU-15, 1998**
Coefficients of relative importance



Source: Commission services.

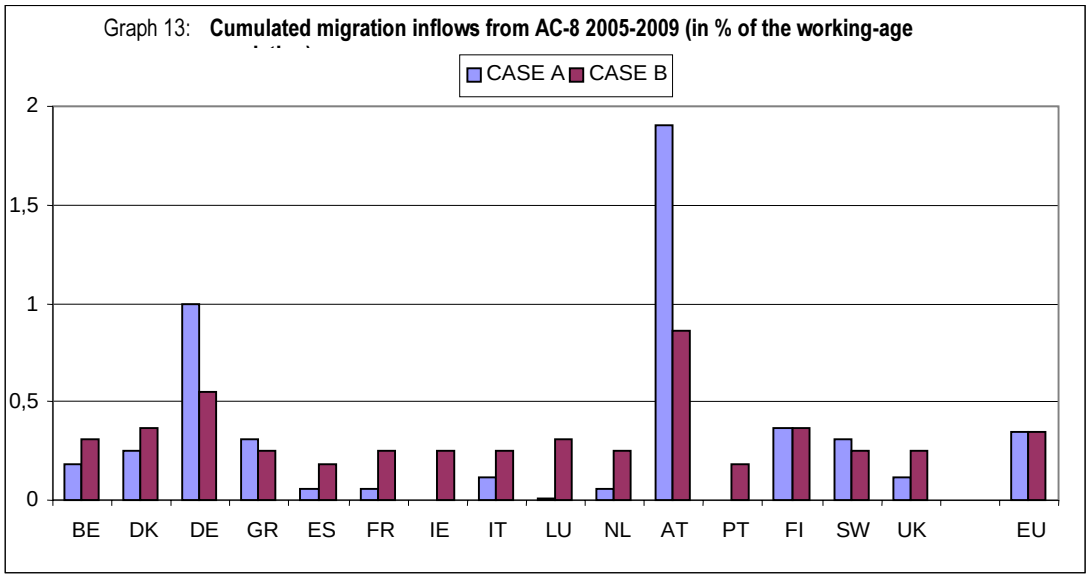
Graph 12: **Cross-country destination distributions**
(% of all migratory inflows into the EU-15)



Source: Commission services.

The resulting projections for migration flows from the AC-8 into the individual EU-15 destination countries for the different migration destination variants are summarised in Graph 13, showing the cumulated net inflows as a percentage of the working-age population of the respective receiving countries.

Graph 13: **Cumulated migration inflows from AC-8 2005-2009 (in % of the working-age**



Source: Commission services.

In relative terms, when cumulated net-inflows of migrants are measured as a percentage of the projected working-age populations, Austria clearly emerges as the country with the strongest impact, irrespective of the different distributional assumptions regarding destination patterns. In variant A, the projected value for Austria for this share amounts to 1.9 per cent. The corresponding value for Germany, the country with second strongest impact in relative terms according to these projections, reads as 1 per cent.. For all other EU-15 countries, projected magnitudes of cumulated net-migration flows are fairly small in relative terms, not significantly exceeding 0.35 per cent of the working-age population. Sweden, Finland and Greece fall in that range, while the rest of the EU-15 Member States are estimated to record cumulated inflows of less than 0.25 per cent of their working-age population.

If economic size matters more for determining the destination of migration flows (variant B), migration flows may tend to be less concentrated on Austria and Germany and to be somewhat more equally distributed across the EU-15 than in the baseline projections. However, the overall qualitative picture does not change very much. Austria still appears most likely to be the country with the strongest relative migration impact, followed by Germany, while for the rest of the EU-15 countries net-immigration flows induced by AC-8 enlargement are projected to vary around a value of about 0.25 per cent of their working-age populations.

In summary, thus, these projections suggest that from an overall economic perspective potential East-West net flows of labour following enlargement do not appear to pose any serious threat to jobs and wages in the EU as whole. However, the likely geographical concentration of relative migratory pressures indicates that some countries and regions, in particular Austria and Germany, may indeed face some adjustment problems to cross-border labour flows, including commuting. Nevertheless, the potential magnitude of a negative impact on wages and employment prospects of the native workforce should not be overestimated.

4.3. A brief look behind the aggregate numbers

Labour migration is conventionally seen as the movement of people who leave their country for socio-economic reasons with a view to working in another country, typically involving a more or less permanent change of residence. However, migration is by no means a homogenous phenomenon, even when considering only labour migration and the associated family migration in the stricter sense.[18] Indeed, an important conclusion from the East-West migration potential studies is the need to differentiate between various types of migration, in particular distinguishing between short-term and more permanent movement. Existing survey studies do suggest, for example, that the propensity for permanent emigration is fairly small for Czechs, Poles and Hungarians, while the preference for short-term migration, including cross-border commuting, seasonal and casual work is clearly much higher. Such patterns of "incomplete migration", where those involved make frequent short-duration trips abroad to earn a living while maintaining a home in the origin country, already exist, both in legal and illegal forms.[19] Thus, it is not implausible to assume that incomplete migration will be the more important type of East-West labour flows following accession than conventional migration.

Given the combination of long common borders with almost no geographical barriers and very different income levels, one might envisage, in particular, an upsurge in cross-border commuting, perhaps on a weekly or even longer term basis. Indeed, combining high wages in Austria or Germany with the low cost of living at the original place of residence may be an attractive option for workers from the neighbouring CEEC-countries. It is fairly difficult, however, to project cross-border commuting potentials; in particular, historical experience offers little guidance, since earlier enlargements of the EU did not encompass integration of high wage and low wage economies with such high population densities in the immediate vicinities of the borders.[20]

A related phenomenon, probably again affecting particularly border regions adjoining the CEECs, could be a significant increase in the cross-border provision of services, including construction, through posted workers or self-employed. Following the "Rush Portuguesa" judgement, the EC Directive 96/71/EC has brought an obligation to uphold certain minimum wage and working conditions prevailing in the countries receiving temporarily posted workers. However, recent EU experience clearly suggests that legal enforcement may be difficult to achieve; but perhaps more important, even when the respective minimum requirements as regards wage rates and other employment conditions are honoured, the labour cost of posted workers may fall considerably short of the going effective wages for indigenous workers.

Obviously, the types of East-West labour flows likely to occur are closely interrelated with the personal profiles of the migrants. If the assertion is correct that labour flows will be predominantly of the temporary, incomplete migration type, the majority of migrants can be expected to be young, single males, while family migration may be of somewhat less importance, at least in the initial

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18 Other major types of migration include, inter alia, ethnically based migrations, transit migrations or the movement of refugees and asylum seekers.

19 Salt et al. (1999) distinguish two types of so-called labour tourists: (a) short-term income-seeking workers, often without appropriate documents whose average stay is 2-4 months, currently estimated to number 600-700.000 annually (Morawska, 1999); and (b) a smaller group of contracted temporary workers, about 300.000 in number.

20 Existing estimates of the commuting potential between Austria and its CEEE neighbours, for example, put the numbers at between 40.000 up to 110.000 over the first five years, with some estimates as high as 200.000 or more over a ten year period.

years.[21] Another implication is that legalisation upon accession may partly bring to the surface already existing undocumented temporary migration.

An important question concerns the skill distribution of migrants. As Salt et al. (1999) point out, in general, the old adage that "migrants move from positions of strength" seems to be applicable.[22] However, the jobs taken in destination countries are frequently of a lower qualification level than those left, with migrants going into construction, manufacturing and low skill service jobs. Morawska (as cited in Salt, op. cit.), putting together evidence from various studies, suggested that 12-14 per cent of post-1989 westbound migration could be classed as highly skilled comprising, inter alia, managers, scientists and researchers, and students.

In general, human capital endowments of some of the CEE countries, measured by formal indicators such as school enrolment rates and average years of schooling, are higher than those of countries with comparable income levels, higher than those of the southern EU Member States, and almost matching those of the other EU Member States. However, formal enrolment rates may not be easily comparable given the different educational systems; moreover, there is evidence that the quality of education falls considerably short of average standards in the EU.[23]

Historical experience suggests that there could be a polarisation of migrants' jobs along the qualification dimension, with the far bigger pole formed by low-skilled, low-paid, flexible and often atypical jobs, probably quite regularly also associated with some sort of "brain waste".[24] At the upper end of the job spectrum one might find a group of highly skilled immigrants, comprising for example groups such as professional support personnel and managerial representatives or scientists, researchers and specialists in various fields, in particular where a "common language of understanding" can be easily established.

A special migrant group is likely to be formed by students from the CEECs receiving tertiary education in countries of the EU-15. At present, their number is still relatively low, according to recent statistics.[25] While a trend increase in these numbers appears likely, it remains unclear, though, what proportion of the foreign students will enter the labour force of their host country during or after their studies.

A type of East-West migration in Europe generally believed to be of less importance in the future is ethnic migration. Although it is impossible to rule out the emergence of new refugee and asylum seeker movements, following ethnic conflict or other disastrous developments, a stable democratic

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21 Migration research does suggest, however, that migration should be modelled as a household decision, even if only single family members move.

22 The "investment" cost associated with migration usually requires surpassing at least a minimum threshold level of income and/or wealth (including human capital). This explains to some extent, why unemployment rates tend to be poorer predictors of migration movements than income differentials and employment opportunities in the destination countries.

23 See European Integration Consortium (2000) for a discussion of human capital quality in the CEECs.

24 In general, lower reservation wages (in the sense of accepting jobs of a lower calibre than, in principle, being qualified for) may put immigrants on a competitive advantage relative to the indigenous workforce. However, both insider-outsider and efficiency wage considerations do suggest that "underbidding" may not be a real-world option in many cases.

25 UNESCO statistics for the mid-90s (cited in Salt et al., 1999) put the overall number of students from the Czech Republic, Hungary, Estonia, Poland and Slovenia in the EU at about 19.000.

socio-political environment in the CEECs respecting, in particular, minority and human rights will be indispensable to prevent people from leaving more or less involuntarily their home country.[26]

A final question related to the likely types of migration dealt with here concerns the possible implications for the public welfare provisions of EU-15 countries.[27] Clearly, a relatively larger proportion of temporary, short-term income seekers will tend to pose less of a problem for public welfare provisions. Such migrants are likely to leave their families behind and, thus, to make little demands on social welfare provisions, parental care and public education systems in their host countries. However, it appears fairly implausible to assume that all migrants will be net contributors to the welfare state; the gross number of beneficiaries is bound to increase as well and, after all, the generosity of social protection systems in the West will inevitably also induce some amount of welfare-shopping following CEE countries accession. While the overall intensity of these effect should not be overestimated, in particular for the EU-15 as a whole, it may nevertheless put some pressure on existing systems, with the risk to lead policy, particularly in the bordering countries and regions, to the undesirable effects of either an unfettered erosion of protection levels or an increase in the anti-mobility bias (possibly along duration of residence lines) of existing regulations.

[26] Some concerns have been voiced in this context, for example, that disrespect of their human rights could lead to a mass exodus of Romas to the west.

[27] For a general discussion of trend in welfare systems and labour markets in Europe see Bertola et al., 1999.

5. Impact on agriculture

5.1. Introduction

Agriculture requires special attention in enlargement because:

- Current (remaining) trade restrictions between CEEC-10 and the EU are more important in agricultural and food products than in other sectors.
- Agriculture falls within a complex framework of instruments under the Common Agricultural Policy, veterinary and phytosanitary and commercial policies, which in total cause some specific accession issues (e.g. budget, prices, trade, WTO, consumer protection…).
- In the two most populated countries, Poland and Romania, agriculture makes up a large share of employment. Furthermore agriculture in those countries is characterised by low productivity and hidden unemployment.

The discussion in this section only focuses on the impact on the EU-15 and discusses the effects in CEEC agriculture only to the extent that they affect the EU-15.

5.2. The importance of agriculture in the CEECs

The CEECs are a heterogeneous group with respect to the role of agriculture and food in their economies. The most important agricultural countries, in terms of agricultural area and in terms of the farm population are Poland and Romania. Combined they have almost as many farmers (7.3 million) as the EU-15 (7.6 million) and more than three times as many as the CEEC-8 combined .[28]

Agricultural production accounts for around 4,3 per cent of GDP and 14,4 per cent of employment in the AC-8 on average. In Poland and Romania the share of employment is around 19 per cent and 40 per cent respectively; while the share in GDP is considerably less: around 4 per cent and 15 per cent, respectively. Food expenditures account for less than 30 per cent of total household expenditures in the more advanced CEECs, but are as high as 55 per cent in Romania, almost three times the average of the EU-15 (22 per cent).

If we compare this with the southern enlargement countries (Greece, Portugal, Spain) we see that in terms of the importance of agriculture the situation in Spain 5 years before accession and in Portugal at the time of accession was very close to the average of the CEEC-10. For example, in Spain, five years before enlargement the share of agriculture in GDP was 8.1 per cent and in employment 16.4 per cent, very close to the current CEEC-10 average of 7.6 per cent and 16.7 per cent, respectively.

[28] There are serious problems with statistics on CEEC agricultural labour, in particular for Poland. Part of the difficulties is due to the fact that many people registered as "employed in agriculture" are working part-time in other sectors or receive welfare payments. For example, according to estimates of the Polish Institute of Rural Development and Agriculture, 60 per cent of inhabitants of rural areas are "connected to a farm", but for only 20 per cent of them it is their main occupation, and for only 10 per cent their only source of income.

Table 9: **The role of agriculture in applicant countries**

	AGRICULTURAL AREA		GROSS VALUE ADDED OF AGRICULTURE (2)		AGRICULTURAL EMPLOYMENT (2)		TRADE OF AGRICULTURAL PRODUCTS (4)		FOOD EXPENDITURE
	UAA (3) (000 Ha)	% total area	Mio EUR	Share of Agric. in GDP	Agric. employment (000)	as % of total employ-ment	% total exports	% total imports	% of total expenditure
	1999	**1999**	**1999**	**1999**	**1998**	**1998**	**1997**	**1997**	**1998**
Bulgaria	5696	51,3	2054*	21,1	2933,0	26,2	14,7	10,3	49,6
Romania	14 784*	62,0	4441	15,5	4338,0	40,0	7,3	7,2	55,3
AC-8	38655	53,0	11218	4,3	4345,0	14,4	12	9.3	32
CEEC-10	59135	48,2	17713	7,6	9478,1	16,7	11,4	10,3	36,8

* = 1998 / ** = OECD. : = n.a.

(1): Purchasing Power Standard (Source: EUROSTAT); (2): Including Forestry, Hunting and Fishing sector
(3): Utilized Agricultural Area; (4): All Agricultural Products - less fish and fish products but incl. UR products.
Source: OECD, Commission services.

Table 10: **Importance of agriculture in southern enlargement**

	Percentage of agriculture in GDP			**Percentage of agriculture in employment**		
	5 years before	Accession	5 years after	5 years before	Accession	5 years after
Greece	13.1	14.5	12.0	N/A	29.4	27.3
Spain	8.1	8.2	6.1	16.4	13.9	9.4
Portugal	10.2	9.2	6.7	19.2	17.4	14.0

Source: OECD, Commission services.

5.3. Trade, WTO, and the CAP

Accession to the EU will dismantle remaining barriers to trade, which will further intensify trade relations between the EU-15 and the CEECs. The integration of the CEECs into the CAP will admit the CEECs to trade protection and subsidies under the CAP and is likely to cause an increase in agricultural production, and in net exports of food and agricultural products in CEECs.

The size of the CEECs involved in enlargement and the low labour costs in these countries causes concerns in the EU-15, not only because of future competition from the CEEC farms, but also because of its potential impact on the CAP given WTO agreements and budgetary constraints.

Since the conclusion of the "Uruguay round" in 1992, subsidies to agricultural production and export subsidies are constrained by WTO rules. Specifically, there are restrictions on the total support to agriculture, on the total amount of export subsidies, and on the volume of exports that can be subsidised. The concern is that enlargement with accession to the CAP will cause an increase in CEEC agricultural prices and, hence, in production, and that this would imply more

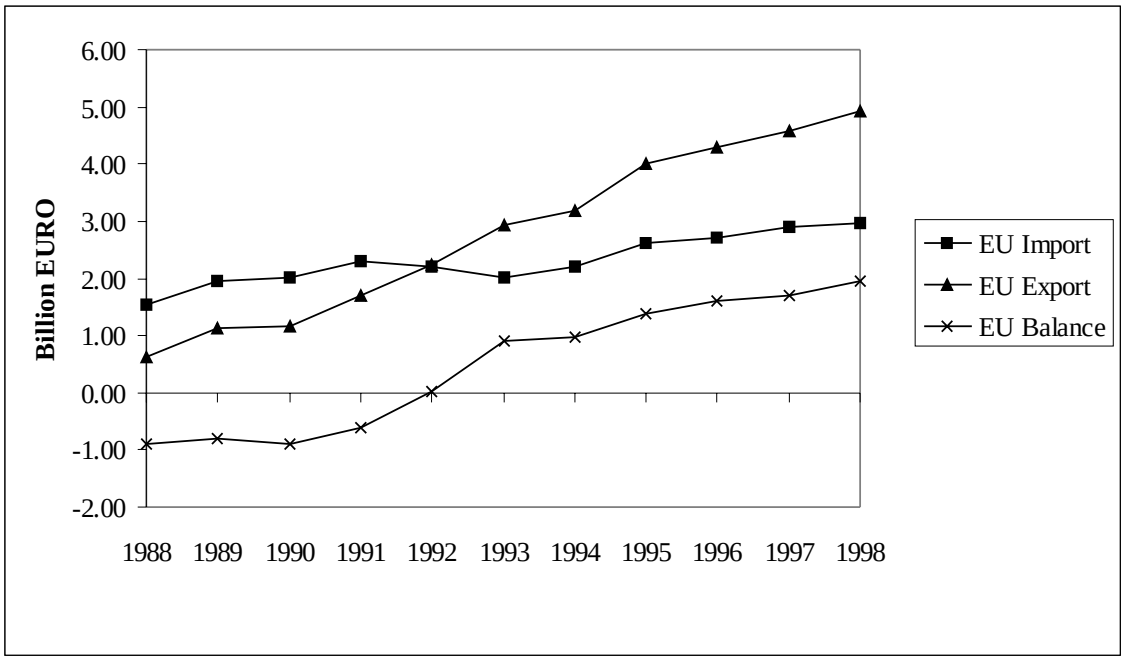
export subsidies in the unified EU, and hence put pressure on the EU budget and conflict with WTO agreements on agricultural trade.

Several factors suggest that the impact on the EU-15 will be limited although uncertainly remains in particular regarding the interaction with WTO.[29]

First, it may be useful to emphasise that these effects will have little impact on overall EU-15 growth. Agriculture accounts for only 1.5 per cent of GDP in the EU-15. Agricultural employment represents only slightly more than 4 per cent of total employment and has declined on average by 3.2 per cent annually over the past decade. It is unlikely that the accession of the CEECs will have a significant effect on this.

Second, since the beginning of transition, agri-food trade between EU and CEEC has increased dramatically, and net exports of the EU strongly increased (see Graph 14). While EU agri-food imports from CEECs have doubled, EU exports to CEECs have increased almost tenfold (Graph 9). As a result, the net trade balance for the EU has improved from negative € 1 billion to a positive € 2 billion.[30]

Graph 14: **Trade between CEECs and EU-15 in agricultural and food products, (EUR bill.)**



[29] Burrell (2000), Tangermann (2000)

[30] As a share of total EU-CEEC trade, agri-food trade is less than 10 per cent for both imports and exports.

The nature of agri-food trade has changed as well. While trade has increased in most categories, exports of processed products from the EU to CEECs have increased considerably more than exports of primary products. Imports of the EU from CEECs have increased more or less the same across different categories.[31]

Behind this trade development are quality differences and the competitiveness of the EU food marketing, processing, and retailing industry, the more developed institutional framework, and also EU export subsidies.

Quality, hygiene and health requirements, are extremely important for agricultural and food products. Recent food crises (dioxine, BSE…) have reinforced the importance of these characteristics, and in this perspective the growing trade deficit of the CEECs versus the EU-15 is less surprising. Exports from the EU-15 to CEECs may therefore further increase when CEEC import constraints are removed with accession.

The imposition of such standards on CEEC products -- which may come both from demands by private processing and distribution companies concerned about consumer and export demands[32] and from government regulations through the adaptation of the regulatory framework to EU standards[33] -- is likely to have two (opposite) effects on exports from the CEECs to the EU-15. Transaction costs for the trade of CEECs agricultural and food will reduce and quality standards will increase, which will improve access to the EU-15 market. However, the implementation of the standards will require significant investments which not all CEECs producers and processors will be able to make. Hence the production which satisfies these requirements will be less than the current output.

Third, in comparison to the immense reduction of trade barriers since 1989 future changes are moderate.[34] For example, recent market and policy changes have reduced the price and output effect of CAP integration. Specifically, the price gap between EU and CEECs in agricultural products has diminished since the earlier 1990s, because of three reasons:

- Reforms of the CAP (1992 CAP Reform and Agenda 2000) have reduced support prices for some of the most protected commodities.

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31 The Grubel-Lloyd index, measuring intra-industry trade, increased from around 20 per cent in 1988-89 to around 40 per cent in the second half of the 1990s, with the EU predominantly and increasingly the exporter of high quality food products while the CEECs export mainly lower quality and less processed products. The importance of intra-industry trade is considerably less in the Baltic countries than in the other CEECs (van Berkum, 2000).

32 Foreign direct investment in the food processing and retail industry will play an important role here. The share of total FDI going to the agro-food sector is around 15 per cent on average. On a per capita basis, Poland and some of the CEEC-8 are the recipient countries with the highest agro-food FDI. The vast majority of agro-food FDI has been directed to the agro-industry, rather than to primary agriculture. At most, 2-3 per cent of total FDI (Romania) has been directed to primary agriculture. Within agro-industry, most FDI has been directed into the sugar and confectionery, the tobacco and the soft drink sub-sectors. Alcoholic beverages and milk and dairy production also attracted substantial FDI. However, meat processing, for example, has received relatively little investment from foreign firms (OECD, 1999).

33 An important part of the agricultural community acquis focuses on health and hygiene requirements for food and agricultural production.

34 European Integration Consortium (2000), Tangermann and Swinnen (2000).

- Increases in agricultural protection in CEECs since the mid 1990s, partly because of CAP-imitation in anticipation of accession, but primarily because of domestic political pressure from CEEC farmers.
- Appreciation of real exchange rates in CEECs has further reduced the nominal price gap between EU and CEECs.

The impact of these developments is important for the trade effects of enlargement. For example, protection in some CEECs is now higher for some agricultural commodities than in the EU.[35] As a consequence, prices for these commodities may actually decline with accession in these CEECs.

Significant price increases with the accession should only be expected for beef, sugar, milk (and processed derivatives, butter and milk powder), and coarse grains (barley, maize, rye). However, the only commodity (group) where significant increases in EU-15 imports may emerge as a result is coarse grains.[36] The average quality of beef in the CEECs is considerably below EU standards, and quality adjustments will offset production effects with price increases. Both sugar and milk production is constrained by CAP production quota at the national level. Implementation of the CAP therefore implies national quota for sugar and milk for all CEECS - and hence no output increase with accession.[37] Hence the only trade effect in sugar (and milk if quota are applied rather than price reduction) is from the demand side in CEECs: with higher prices for these products, consumption will decline and hence net imports decline (or net exports increase), but this effect should be mitigated by consumer income increases.

Simulations indicate that, taking into account the combined effect of these factors, the impact of introducing the CAP in CEECs on agricultural prices in CEECs might be relatively small on average.[38] It now appears that future developments of production in the CEECs, and the likelihood of a conflict with WTO constraints after accession, will largely be dominated by trends/changes in productivity, rather than by the introduction of the CAP.[39]

Accession and CEEC productivity

Future changes in CEEC (relative) productivity in agriculture will be determined by the same factors as in other sectors of the economy, such as improved access to capital and technology, changes in management and company restructuring, changes in wages and other (local and imported) input costs and exchange rate developments.

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35 For example, in Poland, prices for several livestock commodities (e.g. poultry, pork, eggs) are now higher than in the EU where these prices approach world market price levels.

36 Imports for fruits and vegetables may also increase, not so much because of CAP price effects but rather because current imports from CEECs are restricted by trade barriers, as quality differences are relatively small in fruits and vegetables and CEECs benefit from low labour costs in labour intensive production activities.

37 The discussion on the quota allocation to CEECs is complicated because of the absence of an obvious reference period, and no official decisions have been taken yet on this issue.

38 Münch (2000).

39 Except for those products where production quotas are imposed under the CAP (milk and sugar) and which continue to receive high support. Here future output will be constrained by policy (quota) decisions.

At this moment, agricultural productivity in CEECs is considerably lower than in the EU-15.[40] CEEC agricultural productivity is expected to increase significantly, especially for those countries that become part of the EU both because of the economic conditions that will have been fulfilled and because of the improved access to capital, technology, etc., which results from enlargement. However, there is no consensus about the extent to which these productivity increases will emerge in the next decade.

Empirically, one can already observe significant productivity increases in some of the CEECs since the mid 1990s (e.g. in sugar beet and milk production). However this seems less the case in the two large countries, Poland and Romania, both with a large share of agricultural employment, are also largely characterised by unfavourable production structures. Around 80 per cent of Polish land and most Romanian land is used by (very) small-scale family farms. Empirical evidence indicates that these small-scale family farms have not been conducive to rapid restructuring and productivity growth over the past years. They are characterised by hidden unemployment, low skills, difficult access to input and inefficient scales in imperfect market conditions. Given the large share of total CEEC-10 agricultural inputs (land and labour) employment by these farms, this will be an important additional constraint on future productivity and output growth for the CEEC-10.

Looking at the impact of southern enlargement (Greece, Portugal, Spain) on productivity and input use we find that there was no fast reduction in the productivity gap either before or in the first years after accession in some of the most protected commodities (wheat, barley, milk, wine). For some of these products the productivity gap with the EU average has not reduced and has even increased further. While one should be careful with this comparison,[41] it does suggest that one should not *necessarily* expect a quick catch-up in productivity to emerge with accession or in the five years afterwards.

5.4. Agricultural employment, accession and migration

Both hidden unemployment in CEEC agriculture as well as large pools of unemployed people in rural areas without future job expectations could be an important source of migrants to the EU-15.

While labour in most sectors of the CEEC economies was inefficiently employed, studies suggest that this was especially the case in agriculture. Allocative efficiency improvements in the economy with liberalisation and subsidy cuts,[42] therefore caused a strong outflow of labour from agriculture.

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40 Gross value added of agriculture in the CEEC-10 is only 16 per cent of that of the EU-15, with the CEEC-10 using 46 per cent of the agricultural area and more than 100 per cent of agricultural employment of the EU-15.

41 Southern enlargement implied a transition period in accession to the CAP, different climatic conditions and, hence, competition for different commodities between the acceding countries and the EU member countries. Still, Southern accession created similar concerns in terms of increasing competitive pressure for EU farmers in commodities heavily protected by the CAP.

42 Price and trade liberalisation and the cut in consumer and producer subsidies reduced demand for labour in agriculture in all CEECs. This reduction in demand was partially offset by substitution of other inputs by labour.

Table 11: **Average annual change in employment in CEEC agriculture (in percentage)**

	1989-94	1994-98
CEEC-8	-6,0	-2,1
Poland	-3,3	-4,5
Romania	2,3	0,6
CEEC-10	-2,4	-1,8

Source: Commission services.

From 1989 to 1994, there was a very strong reduction in agricultural employment in CEEC-8 : the annual reduction was - 6.0 per cent on average. In Poland labour use reduced somewhat less (-3.3 per cent average annually) while employment increased in Romanian agriculture (+2.3 per cent average annually) over this period (see Table 11).

Since 1994, agricultural employment still increased in Romania, although less than before (+0.6 per cent annual average). In the CEEC-8 the reduction in agricultural employment continued, although at a slower pace (-2.1 per cent average annually), while the reduction strengthened in Poland (-4.5 per cent annual average). In terms of numbers, agricultural employment in Poland declined by almost 600 000 units after 1994.[43]

The outflow of labour is strongest where large-scale farms have remained dominant in agriculture.[44] Reformed collective and state farms with independent management have laid off a large amount of workers, beyond those that voluntarily left the farms for other employment. In contrast, small farms played a "buffer role" during transition, especially in poor regions.[45] Rural households faced with lay-offs in other sectors or low incomes turned to (subsistence) farming for food and social security reasons.

A significant amount of workers which left agriculture went into retirement, others found jobs in other sectors, and still others became unemployed.[46]

In Poland, many of the farm workers which were laid-off became unemployed as they were not able to find other employment in the first years of transition, with high overall unemployment. An important constraint is the low level of education of agricultural workers in Poland: as much as 43 per cent have only elementary and lower education (compared to 16 per cent in construction, 13 per cent in industry and 8 per cent in services) and 33 per cent basic vocational education. A study

43 There are large regional differences. Labour outflow from agriculture was strong in the northern and north-western regions (up to 50 per cent between 1989 and 1997), while much less in the eastern and southern regions (from -10 per cent to an actual inflow of labour).

44 This holds across CEECs as well as across regions within CEECs (Swinnen et al. 2000).

45 In the richer CEECs rural households could rely more on state social security, pensions, unemployment benefits etc.

46 In the Czech Republic, about half of the farm workers retired, about 45 per cent transferred to other sectors (with 75 per cent of them to urban areas and 25 per cent remaining in rural areas), and only about 5 per cent became unemployed (OECD, 1999). The low level of agricultural unemployment is related to the low overall level of unemployment during the early years of transition in the Czech Republic, a level which has grown since 1996. The adjustments in Slovakia have the same order of magnitude, but a larger share of workers became unemployed (10-12 per cent), with Slovakia's level of unemployment considerably higher than that of the Czech Republic (see section 2).

by Leiprecht (1999) found a strong relationship between the level of education of agricultural workers and the likelihood of finding another job in the service sector or in industry.

Accession and migration

Accession to the EU may slow down the shedding of labour from agriculture because of the inflow of subsidies. On the other hand, further movement of employment out of agriculture will result from the need to restructure and increase productivity in agriculture, as well as the increase in job opportunities in the rest of the economy with growth in other sectors. The latter is expected to be reinforced with enlargement (see Section 3).

In both Spain and Portugal the outflow of labour from agriculture increased after their accession to the EU (see Table 12). In fact, the average annual rate of reduction in labour employment in both countries was around 1 per cent larger in the 10 years after accession (between 3 per cent and 4 per cent annually on average) than in the 5 years before. Over the last decade, labour reduction in these countries is somewhat less (around 2 per cent) than in the rest of the EU-15 (average -3.2 per cent).

Under the AC-8 scenario , one can expect that between 800,000 and 1.7 million workers will leave agriculture in the countries that join the EU in the next decade.[47] The extent to which this outflow will contribute to migration to the EU-15 after accession depends on several factors. Several of these factors suggest that the impact will probably be small.

Table 12: **Average annual change in employment in EU agriculture (in percentage)**

	Spain	Portugal	Greece	ex-DDR	EU-15
5 years before accession	-3,1	-2,0	n.a.	n.a.	
1-5 years after accession	-3,9	-3,2	-1,0	-15,8	
5-10 years after accession	-3,9	-1,1	-4,7	* -5,2	
1-10 years after accession	-4,1	-2,8	-2,8	n.a.	
1991-1998	-2,1	-2,0	-0,9	** -12,2	-3,2

* 1993-97
** 1991-97
Source: Commission services.

First, a significant share of the outflow is the large number of older people currently still employed in agriculture and who will retire over the next decade.

Second, as the simulations in Section 3 show, a significant amount of workers will leave agriculture for jobs in other sectors as economic growth continues and even increases with enlargement. Under the optimistic scenario, this reallocation will be twice as strong. It can be expected that the

47 See the scenarios and model results in section 3 for a discussion of the assumptions behind these estimates. The low estimate (0.7 million) corresponds with a 2 per cent average annual outflow, which is similar to the 1994-1998 change in CEEC-8 and to the change between 1991 and 1998 in Spain (2.1 per cent) and Portugal (-2.0 per cent). The high estimate (1.5 million) corresponds with a 5 per cent average annual outflow, which is slightly higher than the 1994-1998 reduction in Poland and corresponds to the 1993-1997 change in former East Germany (-5.2 per cent), after the initial rapid adjustment had taken place in 1991-1993. The average number (1.1 million) corresponds to an adjustment which is in between the average for Spain (-4.1 per cent) and that of Portugal (-2.8 per cent) and of Greece (-2.8 per cent) during the first ten years after accession.

higher skilled workers currently still employed in agriculture will move proportionally more to jobs in other sectors.

Third, incentives for migration will be larger for those who are laid off by restructuring farms and cannot find other employment, or for those who remain inefficiently employed on farms. However, those who cannot find employment in growing sectors are older and less skilled workers; a disproportionate share of both groups is employed in agriculture.

However, the same factors which constrains them finding jobs in other sectors also limits their incentives and constrains opportunities for migration to the EU-15. As is explained more extensively in Section 4 on migration, it is mostly better educated workers and the better off who tend to migrate to the EU-15 because of investment costs associated with migration. This argument is supported by empirical evidence, which suggests that these workers are rather immobile and do not tend to migrate to other regions within the CEECs where jobs are available.

In conclusion, a large share of the future outflow of agricultural labour concerns retirements and higher skilled workers moving to better jobs. Those are unlikely to migrate to the West. The people with most incentives are those which are either unemployed or inefficiently employed on farms; however they are constrained by low skills and mobility constraints. Hence, while rural (open or hidden) unemployment certainly provides incentives for migration, the factors causing it simultaneously constrain labour migration to the West.

5.5. Concluding comments

In summary, the effects of enlargement in agriculture will have little impact on overall EU-15 growth since agriculture accounts for a small share in GDP and employment.

Productivity in the CEEC agri-food sector is expected to improve over the next decade and in combination with the removal of trade barriers to increase competition for EU farms. However, so far the removal of trade barriers has led to a dramatic increase in net agri-food exports from the EU to CEECs. Given the importance of hygiene and quality requirements for agri-food products this development may continue although accession should reduce differences.

A large number of workers is expected to leave agriculture in the next decade in the countries joining the EU. The impact on labour migration to the EU-15 is likely small since many of them will retire and the reallocation of agricultural labour to other sectors will continue with growth in the rest of the economy, which will probably be reinforced by EU accession. Those who are likely to become unemployed as a consequence of agricultural restructuring, or those who remain inefficiently employed, are older and low skilled workers, which typically face constraints as well and lower incentives for migration.

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Annex: Transition economy model

Departures from the Standard Solow Model

Before going on to discuss the specific features of the model used, it is important to highlight two important differences with the standard Solow model:

- **Firstly**, one important departure from the standard neoclassical growth model is that the common technology assumption of that model is relaxed. This is a crucial change since if one assumes that the technology levels of EU countries can be easily transferred to the CEE economies then all that these countries need to do is to invest in these new technologies and convergence will be a fairly smooth and relatively rapid process. However, the empirical evidence suggests that the speed of convergence is much slower (i.e. an average of 2 per cent) than that predicted by the original Solow model. There are two ways of reconciling the predictions of the model with the empirical evidence – the first way is to augment the share of capital in the model by including an estimate for human capital, the second way is to relax the common technology assumption. This paper follows the latter approach for two reasons:

  i. Firstly, it is felt that the assumption of common technologies is unrealistic, with a lot of evidence to suggest that the speed of technology transfer at the international level is quite slow because of large implementation costs.

  ii. Secondly, human capital is quite difficult to measure with existing indicators such as enrolment rates etc being capable of only providing a qualitative assessment. It is also felt that the use of such qualitative indicators in the case of CEE countries is potentially flawed.[48] Of course, while explicit measures of human capital are difficult to construct one can argue that an implicit indicator of human capital is included by relaxing the common technology assumption since the two are interrelated. The slower speed of technology transfers which has been observed in studies undoubtedly reflects human capital problems in the developing countries, with an absence of an appropriate skill base leading to a reduced potential for technology absorption in the respective country.

- **Secondly**, unlike most Solow based models, which exclude consumption, in order to be able to concentrate on capital accumulation and long run growth determinants, a rudimentary consumption equation is included which permits an analysis of BOP sustainability questions.

Specific Features of Model

The model presented below is kept simple with the discussion starting with the production side since modelling of this aspect is crucial for the CEE transition economies.

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48 In terms of human capital endowments, a recent study by Boeri and Brücker (2000) questioned whether normal human capital indicators, such as average years of schooling or rates of enrolment, provided a fair assessment of the effectiveness of the CEEC's education systems. They highlighted a number of fundamental problems, including school curricula which had still not been sufficiently updated and adapted and that the education system produced an excessively narrow range of qualifications which were mainly of a vocational rather than of a general nature and consequently could not be easily transferred across sectors.

Technical Progress (TFP)

Given an estimate of the output elasticity of capital (usually approximated by one minus the wage share), a series for TFP can be calculated.[49] This information can be used to project future developments of TFP on a pure time series basis. Of course more sophisticated models of TFP can in principle be used, for example by analysing the influence of FDI and public investment on TFP. While such sophisticated approaches are not adopted in this study, an attempt is made to partially endogenise TFP growth. In this regard, given the fact that the transition economies have relatively large agricultural and government sectors, the present analysis in particular tries to capture the growth effects related to sectoral adjustments. A production function is assumed, where GDP is produced from land (L), capital (K), industrial labour (N_I), agricultural labour (N_A) and public employment (N_G). The level of technical knowledge is represented by TFP:

$$Y = L^{\theta} K^{a} N_I^{b} N_A^{c} N_G^{d} TFP$$

$$\text{where } N_I = s_I N,\ N_A = s_A N \text{ and } N_G = s_G N.$$

The production function can be rewritten in terms of aggregate labour as follows:

$$Y = L^{\theta} K^{a} N^{b+c+d} TFP^{O} \text{ with } TFP^{O} = s_I^{b} s_A^{c} s_G^{d} TFP.$$

From this equation, a relationship can be established between the percentage change of TFP at the aggregate level as a consequence of changes in the sectoral employment share. The production technology, as specified here, captures two effects from the sectoral reallocation of employment. Firstly, productivity increases from lowering the share of low productivity production and secondly, an increase in the marginal product of employment in the low productivity sector. The elasticity of aggregate TFP with respect to a change in the agricultural employment share is, for example, given by:

$$\frac{\Delta TFP^{O} / TFP^{O}}{\Delta s_A} = \frac{c}{s_A} - \frac{b+d}{(1-s_A)}.$$

In order to evaluate the impact of sectoral change on observed TFP, one needs an estimate of c, b and d. Assuming that agricultural, industrial and government (public enterprise) employment gets paid according to their marginal product, values for b, c and d can be chosen from sectoral wage shares. On the basis of existing studies, a typical value for c would be .0056, while the value of b

[49] Two problems arise with the measurement of trend total factor productivity. The first problem is related to the fact that the level of technology is not directly observable. What can only be observed is the difference between GDP and an estimated combination of input factors, also known as the Solow Residual, with this residual consisting of a combination of excess capacity and total factor productivity. The second complication relates to the decomposition of total factor productivity - whatever its precise definition - into a trend and a random component. Various views are possible. The standard view in neoclassical growth models regards technical progress as completely exogenous, i.e. it does not depend on the past investment activities of firms, households or governments. Of course, there also exists many other endogenous growth hypotheses which try to explain total factor productivity from investment activities. One can at least distinguish the following three alternatives :vintage models; R&D models (quality ladder models, variety of products models); human capital models. Consequently, under these three alternatives, trend growth of total factor productivity would be determined either by the age of the capital stock (with average labour productivity being raised by new investment since the latter incorporates labour-embodied technical progress), the stock of R&D capital or the stock of human capital.

would be around 0.6.[50] On the basis of these values, the model would predict that given a large share of agricultural employment in total employment, as currently observed for most transition economies, a 1 per cent point reduction in the agricultural labour share would increase the **level** of observed TFP by around 1 per cent.[51] The TFP effect becomes smaller as the agricultural share declines. For example a 1 per cent reduction in the agricultural employment share around an agricultural employment level of 10 per cent would be associated with only a 0.5 per cent increase in observed TFP.

There remains an exogenous TFP component. In principle, this component can be influenced by integration, trade, FDI etc. In this case, assumptions must be made concerning the TFP effects and this paper draws on the literature to obtain estimates. For example, a recent paper by Frankel and Romer (1999) estimates the effect of increasing the trade share in GDP on income levels to be of the order of 0.5 per cent. This translates into very small growth effects. For example, Breuss (1999) estimates the effect of abolishing trade costs to be 0.08 per cent per year for the CEEC-10. Any effects of increased competition due to membership (bankruptcy of less productive firms) would also show up in TFP.

Investment

A simple model of investment is used for the present analysis, which links investment to economic activity, like, for example, $I^j = is^j Y, \quad j = d, f$. The investment to output ratio is taken to be exogenously given and this ratio is adjusted in the various scenarios. In particular, it is assumed that a 1 per cent of GDP increase in EU transfers to the CEE countries would increase the investment to output ratio by 0.8 per cent (and correspondingly the share of public consumption by 0.2 per cent). The capital stock is determined by the rate of fixed capital investment and the rate of depreciation. Formally, the investment equation looks as follows:

$$I = (is^{dom} + is^{fdi} + is^{csf})Y .$$

Such a (quasi accelerator) specification for investment underlies many empirical growth models. Apart from its simplicity it generates a declining growth rate of capital (for given TFP and employment), since $\Delta k = (is^d + is^f)(L/K)^{\alpha} TFP - \delta$. This specification also introduces simultaneity between investment and GDP.

Of course determining the investment share (***is***) is an empirical matter. It needs to be analysed empirically whether the investment share in GDP is trending or not. Here it is assumed that domestic and foreign investment can simply be aggregated into one capital stock and that there is no special contribution of FDI to productivity. The FDI contribution to growth can, however, be analysed directly via Total Factor Productivity.

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50 These values are chosen on the basis of data for the French economy. The output elasticity of agricultural labour is more than likely overestimated since it includes agricultural subsidies.

51 Given the fact that the level and growth rate effects of TFP are broadly the same, this 1 per cent level effect would translate into a 1 per cent increase in the growth rate of TFP in each year over which the adjustment takes place (i.e. the level of TFP is permanently 10 per cent higher after 10 years and the growth rate is only affected in the transition years).

Employment

The employment contribution to growth can be analysed by decomposing the employment rate into the participation rate and the employment rate of the labour force itself:

$$L = (1 - lur(m,a))(1 - npart) * POP \qquad (2)$$

Given the population, employment is determined by the participation rate and the unemployment rate. The calculations in this paper are carried out with an exogenous unemployment rate. However, in principle, a feedback effect from migration and the release of agricultural labour on unemployment can be allowed for. Population growth is determined by natural factors and by migration. The growth rates for the overall population and for the working age population have been taken from the latest UN Population projections, with the migration assumptions underlying those projections adjusted to take account of the specific migration scenarios for these countries which have been made for the labour market part of the study.

Consumption

Total Consumption (i.e. public plus private consumption) is affected by two parameters in the model which links consumption to both transfers from abroad (FTR) and to the net foreign asset (NFA) position of the country. With regard to the latter, an increase of 1 per cent in the net foreign asset position leads to a decrease in consumption of the order of 0.1 per cent. The rationale for this effect is that as the foreign debt of the private sector is growing, consumers reduce their spending in anticipation of higher future debt repayments (i.e. a wealth effect). It is assumed that total consumption is given by:

$$C = a(Y + \lambda NFA) + (1 - is^{csf})FTR \qquad (2)$$

Savings and Current Account Sustainability

The implications of growth for the current account can be analysed if one uses the above consumption equation to make projections about total consumption spending (public + private). Such projections could be based on historic consumption to GNP ratios. Households and the government consume a constant fraction of current output and a wealth effect is allowed for due to a change in net foreign assets. In addition, a certain fraction of foreign transfers is used for consumption purposes. Once the consumption picture is elaborated, domestic sources of Balance of Payments (BOP) financing (private plus government savings) form the residual.

The current account of the balance of payments in the model is set equal to nominal GDP less total nominal consumption less total nominal investment. The net foreign asset position is adjusted simply through allowing for current account developments. This method of calculating the current account of the BOP gives figures that are very close to the historical trend. Combining the current account equation with the GDP identity gives the following dynamic relationship for net foreign assets as a share of GDP (NFA):

$$\Delta(NFA/Y) = (r - \Delta y)(NFA/Y) + (1 - C/Y - I/Y) + FTR/Y\ .$$

Impulses with the MODEL: Basic Multiplier Effects

In order to give an insight into the simulation properties of the model used for the growth scenarios, it is important to describe the basic multiplier effects associated with various impulses. Impulses to the model are, for exposition purposes, confined to the areas of capital accumulation, public sector reform, the effects of EU membership, including migration, and structural reforms, such as specifically in the labour market (with impulses to the labour force participation rate), sectoral employment shifts and economy-wide TFP impulses.

Explanation of the Multiplier Effects

The results in Table A show the basic multiplier effects from the range of impulses undertaken. Some points of interest should be noted which are applicable for all countries and country groupings in terms of understanding the driving forces behind growth.

- **Capital Accumulation**: If the neo-classical model is accepted then it would appear that capital accumulation in the form of investment in physical and human capital, as well as in the build up of knowledge, matters a great deal to the growth performances of countries over time and to their steady state levels of income. Capital accumulation impulses in the model are introduced through changes to the investment to GDP ratio. While this is an essential source of future growth, it is important to underline the order of magnitude of the effects emanating from an investment impulse. In the case of the transition economy model used for this exercise, a permanent 1 per cent point increase in the investment to GDP ratio (i.e. the ratio would increase by 1 per cent point and stay at that higher level over the long run) would only increase the level of output by 2 per cent in the long run. If you assume that the long run is 20 years this would imply an annual increase in the long run growth rate of 0.1 per cent a year. These multiplier effects are of course heavily dependent on the assumption used regarding the elasticity of output with respect to capital, which in the transition economy model is set at 0.35. If this parameter was to increase to 0.5 then the long run output effects, in terms of levels and growth rates, would be higher, with the level of output growing by around 5 per cent and the growth rate by 0.25.

- **Public Sector Reform** This is an area that has been consistently highlighted in the literature as being crucial to the long run growth prospects of these countries. This view is backed up by the results using the "transition" model, which shows a strong growth benefit from a shift of workers out of the relatively low productivity public administration. For example, a 1 per cent point per year decline, for 10 years, in the share of public sector employment in total employment, would add roughly ¾ of a percentage point to growth in year 1 with the benefits of such a sectoral employment shift declining over time.

- **EU Membership**: In the model, the effect of EU membership is introduced through two distinct channels :

  i. The indirect benefits in terms of stronger FDI flows and greater commitment to structural reforms is assumed to be already impacting on both capital accumulation and efficiency levels, with a further intensification of that process over the period up to 2005. Once membership is achieved, the model assumes for the central scenarios that countries get a small additional TFP boost that reflects essentially trade and investment gains. In addition, as described below in the context of "comprehensive" reforms, in the optimistic scenarios

it is assumed that countries have the potential to reap further TFP gains from an intensified structural reform programme associated with the adjustment to the more competitive EU market environment.

ii. The direct financial impulse from EU transfers in 2005 and subsequent years is included in the model, with the amount of these transfers, and their pattern over the period 2005-09, being dictated by the experience of the cohesion countries in their early years as members. In terms of measuring the effects of EU transfers following accession, it is assumed that these resources are shared between investment and consumption using a ratio of 80/20. From the table, it can be seen that the effect of additional EC transfers on growth is roughly equivalent to an investment impulse. Effects of only 0.14 in the first year and 0.05 after 10 years may appear small but it must be underlined that the boost to investment takes time to impact on growth whilst the increase in consumption (20 per cent of the transfers) has an almost immediate deleterious effect in terms of additional imports. Consequently, while an increase in transfers has a large impact on the level of GDP, the growth rate effects are comparatively small.

- **Migration**: After membership, migration flows are assumed to rise in the respective countries. If all eight countries were to join, these flows are expected to rise to a maximum of about 0.3 per cent of the total AC-8 population after about three years following accession, and to decline thereafter. To get a rough idea of the economic impact of such movements, the migration rate in the "transition" model was increased by a ¼ of a percentage point. In the year in which the migration takes place this would have the effect of reducing the rate of GDP growth by 0.18 and if this ¼ point increase in the migration rate was not reversed over the subsequent 10 years, not surprisingly, the GDP growth rate in year 10 would be reduced by a similar amount as in the initial year of the impulse.

- **Structural Reforms**: Simulations in the structural reform area are divided into the following three areas:

  Labour Market Reforms: The impact of labour market change in these countries is introduced in the model through changes to the labour force participation rate, with favourable government action in this area being reflected in a greater share of the working age population being prepared to actively seek employment. As regards the growth rate effect of such changes, the model predicts that a 1 per cent point increase in the participation rate would boost growth by an equivalent amount in the year in which the change took place but that this strong initial effect would quickly fade away, with virtually no effect on growth after 10 years.

  Sectoral Output Shifts: Changes in the sectoral composition of output are introduced in the model through changes in the relative sectoral share of agricultural employment in total employment. Implicit in these simulations is that the non-agricultural sector is capable of providing employment for the displaced agricultural workers. The transmission channel is therefore similar to the public sector reform simulations described earlier but, as Table A shows, the growth effects are greater since the average productivity level in the agriculture sector is substantially lower. A sustained 1 per cent point drop in agricultural employment numbers each year for 10 years would boost growth by slightly more than 1 per cent in year one, with the effect after 10 years remaining high at well over ¾ of a percentage point.

Comprehensive Reforms: With regard to what is referred to in Table A as a "comprehensive" reforms scenario, this is picked up in the model as a TFP impulse. Such TFP impulses are applied, in various forms, only in the optimistic scenarios for the CEE countries. A boost to TFP growth is clearly the most potent growth promoting factor in the model, with a 1 per cent point increase leading to an equivalent gain in growth in year 1 and with the growth effects actually mushrooming over time to reach 1 ¼ per cent after 10 years. This mushrooming effect is explained by the direct impact of a TFP impulse on growth allied to the indirect gains via an accumulation of additional capital.

Table A: **Basic multiplier effects of different impulses**

	Effect on GDP Growth Rate		
	After 1 Year	**After 5 Years**	**After 10 Years**
Capital Accumulation 1% Point increase in Investment to GDP Ratio	0.17	0.11	0.06
Public Sector Reform 1% Point Decrease in the Share of Public Sector Employment in Total Employment*	0.77	0.64	0.43
EU Membership: Direct Financial Effect** 1% of GDP Increase in EU Transfers	0.14	0.08	0.05
Migration ¼ % Point increase in the Migration Rate	-0.18	-0.20	-0.21
Structural Reforms Labour Market Reform - 1% Point Increase in Labour Force Participation Rates	1.04	0.03	0.02
Sectoral Output Shifts: TFP Effect of a 1% Point shift out of Ag Employment to Non-Ag*	1.03	0.98	0.84
Comprehensive Reforms Scenario (incl. Institutional Reforms) – 1% Pure TFP Impulse	1.08	1.22	1.30

Source: Commission services.

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