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1. Introduction

This report briefly assesses effects introduction of the euro could have on the economic development of the euro area itself, Europe as a whole and the global economic system. The main emphasis is on what might happen in the transition countries of Central and Eastern Europe (CEE) that have applied for EU membership.

The third phase of the Economic and Monetary Union (EMU) and the introduction of the euro at the start of 1999 profoundly changed the economic environment – not just in Europe – but globally. In the eleven countries participating in the euro area (the euro-11), national independence in determining monetary and exchange rate policies has been replaced by the European System of Central Banks (ESCB) which sets monetary policy for the euro area as a whole. Monetary policy in the euro area, while conscious of conditions in individual countries, necessarily concentrates on area-wide aggregates and averages. Therefore, at the national level, the most important remaining policy instrument for adjustment to various external and internal shocks is fiscal policy. Such fiscal adjustment, naturally, is easier if the other institutions in the economy are flexible. This applies especially to the labour markets, which in most EU countries are still quite rigid; a situation readily seen in terms of high structural and realised unemployment relative to other developed economies.

The run-up to EMU was characterised by strong nominal convergence among the member countries. It is unlikely, however, that complete convergence will ever be achieved. The European Central Bank (ECB), therefore, will always have to conduct monetary policy in situations where the economic cycles of the member countries are out of sync from one another. On a more hopeful note, there is evidence that poorer countries over the long run should catch up with their richer neighbours, so we can expect convergence in levels, if not in growth rates.

The reasons for divergence inside the euro area are numerous. First, the economic structures of the countries differ. For the moment at least, it seems that countries furthest from the geographic core of the EU have also the widest differences in terms of GDP growth. Second, countries face different external shocks due to their different trading patterns. Third, the transmission mechanisms of economic policy differ among countries. For example, changes in monetary policy may have distinctly different effects in the short and medium run due to varying structures in financial and housing markets. This complicates conduct monetary policy, even if, as expected, financial markets inside the euro area converge over the long run.

The euro area, which is roughly comparable to the US in size, is so large that the euro will undoubtedly have profound implications outside the euro area as well. Slowly, but surely, the euro is already becoming a significant invoicing currency in international trade. The domination of the US dollar will undoubtedly continue for years to come, but for countries with close economic ties to the euro area, the euro continues to become an ever more attractive alternative. The euro is already an important investment currency and has created large and liquid securities markets in Europe. This is evidenced by the increased issuance of euro-denominated securities. This may affect capital flows in the future as investors try to take advantage of these liquid markets.

Because of their geographical proximity and intense economic relations with euro area countries, the euro will have great impact on CEE countries.[1] Much of their trade

[1] Departing from conventional use, we use CEE here to include the Baltics, but exclude countries in southeastern Europe. Romania and Bulgaria will not be discussed. Of the present EU applicant countries, they are clearly the furthest from membership. The EU Commission's latest reports on the applicant countries support this view.

is already with the EU. They may switch much of their borrowing into euros to better take advantage of the liquid euro securities markets. Moreover, use of the euro may increase capital flows to the CEE countries as investors diversify their portfolios.

The introduction of the euro has already affected the exchange rate regime in many CEE countries. Many countries have pegged directly to the euro or to a basket where the euro plays a significant role. It seems likely that most CEE countries will eventually participate in monetary union. In the interim before joining, however, they must decide themselves on appropriate exchange rate and monetary policies.

CEE countries currently employ a wide variety of foreign exchange regimes. As membership in monetary union presupposes exchange rate stability for two years prior the membership, this generally is interpreted as two years of membership in the exchange rate mechanism (ERM). New members therefore need to time their participation in ERM (ERM2, actually) when it is widely perceived that they can proceed without problems to complete monetary union. Holding back prevents speculative pressure against their currencies and increases the credibility of their economic policies in general.

Aspirant countries may use a range of exchange rate regimes before EU membership. Larger countries have moved towards free-floating rates. The Czech Republic, for example, uses inflation targeting as the basis of its monetary policy framework. This could be an attractive option for Poland as well. Among the smaller countries, fixed exchange rates seem the better choice.

Certain problems are common no matter what exchange rate regime a country chooses. For example, successful transition economies typically receive large capital inflows. Thus, even if the home currency is allowed to float and appreciate in response to these flows, they can destabilise the domestic economy if other components of economic policy-making are not appropriately calibrated. This problem is most pronounced in countries with fixed exchange rates, which places great demands on fiscal policy and, e.g. financial sector supervision.

We now look at the effects of the introduction of a common currency in the euro area proper, assessing possible reasons for the observed levels of divergence. We then turn to effects the euro may have on the rest of the world. Here the emphasis is very much on the CEE countries. We try to gauge how the creation of a truly unified market inside the EU will affect the foreign trade and capital flows of CEE countries. Finally, we look at the different exchange rate arrangements currently in use in CEE countries and analyse what paths are available to countries moving towards monetary union.

2. The effects of EMU's third stage on the euro area, the EU and the global economy

The third phase of EMU and the introduction of the euro at the beginning of 1999 have had major impacts. Within the euro area, monetary policy is now set for the entire area. Exchange rate risk has vanished from the trade inside the euro area, completing the single market for goods and services. The introduction of the euro has also meant a fairly large change within the global economy. The current euro area accounts for approximately 20% of global GDP.[2] The effects of the euro are naturally larger for countries closer to the EU in terms of three highly correlated factors: trade,

[2] The US accounts for roughly 20% of global GDP, Japan approximately 10%.

capital flows and geography. This section assesses in broad terms the current experience with the common monetary policy in the euro area and looks into the possible effects the third phase of EMU and introduction of the euro will have on the global economy.

2.1 Some effects of the euro on the euro area countries

2.1.1 Common money

Perhaps the most important legacy for euro-11 central banks is the loss of independent monetary policy. Yet, in actuality, the loss of monetary sovereignty has caused little change. ERM participants had already sacrificed their independent monetary policy during convergence to keep exchange rates of participating countries fixed.[3]

The Governing Council of the European Central Bank (ECB) sets monetary policy in the euro area. The Council consists of the six members of the ECB's Executive Board and the governors of the national central banks participating in the monetary union. National central banks and the ECB, in turn, form the European System of Central Banks (ESCB). The Maastricht Treaty defines the ESCB's primary objective as maintaining price stability within the euro area. As long as this primary objective is not jeopardised, the ESCB works to support the general economic policies of the Community. The goal of price stability has been defined by the ESCB as an inflation rate of less than two per cent. As it is unlikely that the aim would be outright deflation, this mandate is broadly understood to mean an inflation target between zero and two per cent. The inflation rate used for this assessment is derived from the harmonised national price indices computed by Eurostat, the EU's statistical office.

European central banks generally pursue the aim of price stability. This singular goal stems from the experience of the 1970s when central banks wrestled with high inflation and rising unemployment, and found that reaching simultaneous goals of full employment and price stability was a non-trivial task. Thus, most industrial countries allowed their central banks more independence during the late 1980s and early 1990s. Central banks generally were given an explicit mandate to target price stability.

This now-conventional wisdom has its intellectual roots in research that focused on time consistency of optimal economic policies, including monetary policy (e.g. Barro and Gordon, 1983). The insight was that monetary policy could not systematically influence development of the economy as any attempts to do so would be anticipated and neutralised by the private sector. Today we have a large body of literature on central bank independence that seeks to assess the type of institutional framework needed to eliminate the inflation bias and to test empirically whether higher central bank independence is associated with lower inflation (for an overview, see Eijffinger, 1997). The wide acceptance of this view and the clear success of independent central banks, the Bundesbank and the Federal Reserve in particular, led European leaders to grant the ECB broad independence to insulate it from possible political influences. This was supported by evidence that higher inflation tends to lead to lower growth in the long-run (Barro, 1995), especially when inflation exceeds 40%.

[3] Technically speaking, ERM countries retained the option to change the exchange rate parities when underlying economic conditions dictated. In fact, changes in parities became decidedly less frequent from the 1980s onwards.

The move towards independent central banks and low inflation started during the 1980s in most EU countries, so the fact that the euro-11 national central banks no longer set monetary policy does not mean that the goal of monetary policy is different.[4]

A common currency means a loss of monetary policy independence, but it brings many benefits. Introduction of a single currency clearly has enhanced competition inside the euro area. It also eliminates exchange rate risk, which enables small producers to compete in foreign markets by eliminating exchange rate risk. It makes price comparisons easier for consumers. Estimates concerning the efficiency gains from monetary union vary, but the IMF's (1997) medium-term forecast of an extra 3% of GDP over the baseline inside the euro area seems reasonable. The assumption here is that the euro's introduction is accompanied with structural reforms in the product and labour markets. Without appropriate structural reforms, the EMU and common currency could result in economic losses to the member countries.

For most euro countries, nominal interest rates are expected to be less volatile and on average lower than before. Notably, interest rates are no longer used to defend exchange rate parities, which reduces the volatility of the interest rates. Many countries in the current euro area with less-than-perfect inflation records also now enjoy additional credibility in monetary policy thanks to monetary union. This eventually results in lower risk premiums on both nominal and real interest rates. Lower average interest rates and lower volatility in turn lead to higher investment that stimulates economic growth.

2.1.2 Greater emphasis on fiscal policy

As national authorities have lost their say in monetary policy, they have focused on fiscal policy. After all, in a regime of fixed exchange rates, fiscal policy has a greater effect on economic activity. In the euro area, national currencies can be thought of as irrevocably fixed, which means fiscal policy can be used as an effective instrument of economic policy. In the past, when euro area countries pegged their currencies through the ERM, the effects of expansionary fiscal policy would at some point worsen the external balance of the country and threaten the exchange rate peg. In the euro area, this consideration no longer applies. National authorities need not concern themselves with the reaction of the external balance to fiscal stimulus.

The Stability and Growth Pact prohibits national governments from running excessive deficits, which enhances the predictability of economic policies inside the euro area. The main element of the Pact is adherence to a budget balance or surplus in the medium-term. During economic downturns, the Pact allows government fiscal deficits of up to 3% of GDP. In "exceptional" economic conditions, countries may even run larger deficits. A deficit of over 3% of GDP is not excessive when a country's annual GDP declines by more than two per cent. A fall of less than 2% can also be exceptional, if it is abrupt enough. Any deficit over 3% of GDP must be temporary, however, and the country must return to under 3% the year the recession is over (e.g. Strauch, 1999).

The need to conform to Maastricht criteria on fiscal position and public sector debt enticed the euro-11 to reach low deficits in 1997 and 1998. Although long-term

[4] Granted, it would be extremely difficult today for a national authority in the euro-11 to change the goal of the monetary policy, as this would involve a renegotiation of the Maastricht Treaty.

fiscal stability of many countries is threatened by demographic factors,[5] the fiscal stances of the member countries are expected to stay reasonably close to each other in the next few years thanks to the Growth and Stability Pact. As the cyclical development differ from country to country, fiscal stances will also differ. Table 1 in the Statistical Appendix shows the consolidated public sector deficits in 1997-2000 in euro area countries.

2.1.3 The move away from banks towards securities markets

The introduction of the euro affects many industries, and perhaps financial services most of all. Banks and insurance companies previously operated mostly on a national basis, but now cross-border mergers and acquisitions are common. As this process moves forward, banks lose their competitive advantage of business conducted in their domestic currency, which in turn fosters keener competition in euro area financial services (e.g. European Central Bank, 1999a). This benefits the customers of the financial services providers directly and indirectly. Even if no foreign banks or other financial companies actually enter a domestic market, the threat of competition is sufficient to limit the pricing power of the domestic companies to the benefit of the domestic customers. Furthermore, the rapid increase in Internet banking increases the availability of financial services to customers, regardless of where the provider of the services is physically located. Naturally, issues related to security and accountability in transactions tend to favour service providers located in the same country.

This situation should accelerate the decline of banking sectors in many member countries. The development of banking technology and the move towards the use of marketable securities in financial intermediation necessarily imply smaller banking sectors in the future. The ECB (1999a) showed there is a clear downward trend in the number of credit institutions in the euro area, but the changes in the number of branch offices and bank employees differ in member countries. (See Table 2 in the Statistical Appendix.) In the future, the number of bank employees per capita in the euro area will most probably decline and converge.

The introduction of the single currency has already changed the way the capital markets inside the euro area function. The removal of foreign exchange risk has made essentially all financial instruments denominated in euros domestic instruments for all investors inside the euro area. This has far-reaching implications for European capital markets. Traditionally, European capital markets have been smaller than the US markets (as percentage of GDP) and less liquid. Europe's banks have had greater responsibility for financing investments. Before the euro, there was wide speculation that the removal of currency risks associated with different currencies would bring European markets closer to the American system. Only divergent legislation might hamper the birth of a truly unified single capital market. After a year of monetary union, European capital markets have indeed grown. For example, the nominal value of corporate bonds issued in the EU in 1999 reached approximately €160 billion, up 100% from 1998. The number of debt issues were also up (Economist, October 26, 1999). Now we see a corresponding development taking place on the equity side, with stock exchanges joining forces to create a pan-European market place for shares. In derivatives markets the German-Swiss Eurex derivatives exchange has attracted a

[5] In many countries, pension systems are not even partially funded, so the ageing of the population will increase pressure for public sector expenditure. Of the current euro area countries, this problem could be the most acute in Italy.

significant share of trading in both debt and equity derivatives denominated in euros. This development will naturally concentrate on shares of larger companies, leaving some room for smaller stock exchanges. For many smaller companies, the information advantage that local investors enjoy will remain large; it is simply not worthwhile for most foreign investors to gather information about these companies. However, it is by no means certain that the current system of stock exchanges will stay. Lower costs of communication and the Web make it easier for investors to bypass centralised stock exchanges. This development is not connected to the euro per se, but its effects are being felt.

Naturally, progress towards more liquid capital markets does not mean that all companies will be able to turn to the markets when they need additional capital. There will be room for banks crediting smaller companies and households. Competition will likely increase here as well, since banks can offer their services inside the euro area without any exchange rate risk.

2.2 Economic convergence and development inside the euro area

2.2.1 Divergence in inflation and output growth

The Maastricht criteria[6] for participating in monetary union focused on nominal convergence between economies. In this regard, the degree of convergence achieved during the 1990s was remarkable. Chart 1 plots the inflation rate for the euro area and the maximum and minimum inflation in the European economies participating in the monetary union (excluding Luxembourg) from January 1997 to September 1999. Note that inflation rates in 1997 were very close to each other, but have since diverged. At the moment, large inflation differentials exist among countries inside the monetary union. Table 3 gives year-on-year changes in the harmonised consumer price indices in the euro area countries as of September 1999. The difference between the country with highest inflation (Ireland, 2.6%) and the lowest (France and Austria, 0.6%) is rather large. Further, during 1998 the difference in inflation rates widened clearly. At the beginning of 1997, the standard deviation of national inflation rates in the euro area countries was 0.6%. This decreased to 0.5% in January 1998, but jumped to 1% in January 1999. As of September 1999, the standard deviation was slightly over 0.6%.

At least part of the difference in inflation rates corresponds with differences in real activity. Table 4 gives GDP growth in 1997-2000. It can be clearly seen that growth rates vary considerably inside the euro area. In some countries (particularly Ireland, Portugal, Spain and Finland) the risk of overheating is very much present. The German and Italian economies are recovering. There is some correlation between higher growth and higher inflation inside the euro area. To a certain extent, the

[6] These criteria are inflation, long nominal interest rates, public sector deficit, public sector debt, and exchange rate stability. To participate in monetary union, national inflation rates were allowed to be only 1.5 percentage points higher than the average among the three countries with lowest inflation rates. Similarly, the interest rates on long-term government bonds were allowed to be no more than two percentage points higher than in the three countries with the lowest inflation rates. The consolidated public sector deficit should not exceed 3% of GDP, and the corresponding debt 60%. However, with regard to the two criteria concerning public finances, the Maastricht Treaty gives leeway for interpretation, and a strict application of the criteria is not necessary if the variables in question show movement in the right direction. The debt criterion, if strictly applied, would have prevented Italy's and Belgium's participation in the monetary union for many years, as their debt-to-GDP ratios are still over 100%. The criterion on exchange rate stability is interpreted to mean two year's participation in the Exchange Rate Mechanism, although Finland and Italy were partial exceptions to this rule.

different inflation rates inside the euro area reflect structural factors rather than the current cyclical positions of economies. Euro area countries are still at different levels of economic development, and correspondingly their general price levels differ. Table 5 gives the per capita GDP in euro area countries in 1990 and 1998 as well as comparison between their respective price levels. Again, some of the observed differences in growth rates and inflation can be explained by the tendency of countries with lower per capita GDP to grow faster, ceteris paribus, than countries with higher GDP per capita. In fact, this implies that economic activity in euro area countries is converging, but in levels, not in rates. An ECB study (1999b) examines correlations between different economic variables in the euro area and concludes that, while short-run differences will persist, developments are similar in the long run.

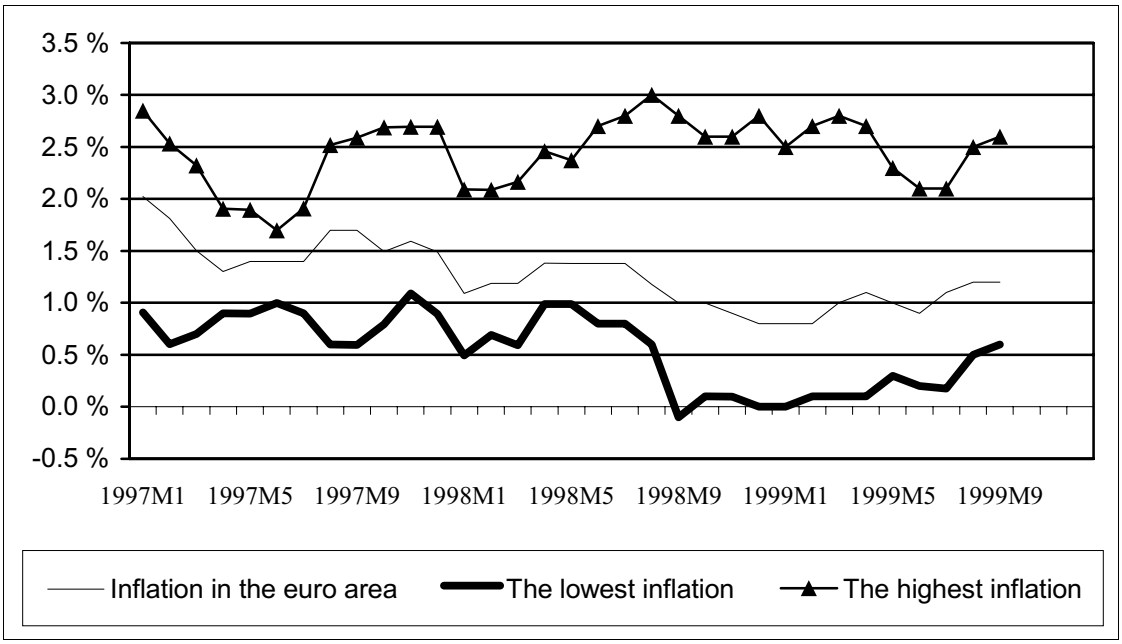

Chart 1 The average inflation for the euro area, and the maximum and minimum national inflation rates

Countries with lower price levels and per capita GDP also have lower productivity in their manufacturing sectors. As this productivity converges towards countries with higher productivity, the real exchange rate must appreciate. If the exchange rate is fixed as in the euro area, appreciation of the real exchange rate must happen through inflation. Therefore inflation can be higher in a particular country for years as long as its productivity growth is also higher. Chart 2 shows the scatterplot of the price level in 1990 and the average annual inflation for euro area countries. We can see a clear negative correlation between the price level at the beginning of the period and subsequent inflation.[7]

As said before, the nominal convergence among euro area countries has been quite remarkable. Inflation and interest rates decreased so that today inflation rates are

[7] The Balassa-Samuelson effect derives from the Balassa-Samuelson model of real exchange rates, where traded and non-traded sectors of the economy have different productivity. The relative price of traded goods is proportional to the ratio of average labour products in the two sectors. It is further assumed that the price of traded goods is the same in different countries. If the ratio of traded goods productivity to the productivity in the non-traded sector rise faster, for example, in an applicant country than in the EU, the relative price of non-traded goods will also rise faster in the applicant country. Because the price of traded goods is the same in the applicant country as in the EU, the currency of the applicant country will appreciate in real terms. Alberola and Tyrväinen (1998) studied the Balassa-Samuelson effect among euro area countries, and concluded that there is scope for inflation differentials in the monetary union.

rather close each other. There are differences, of course, mainly due to cyclical developments and structural determinants related to the long-term convergence in prices and GDP. Thus, it is probably futile to expect closer convergence of inflation inside the euro area until convergence of the economies themselves has progressed. Even in an old "currency union" like the US, there are differences around the country in both price levels and inflation rates. Cecchetti et al (1998) found that inflation in various US cities can differ by economically significant amounts for several years, but eventually inflation differentials reverse themselves.

Real economic activity exhibits considerable divergence at the moment. Increased trade which will follow the adoption of a common currency is expected to bring about greater symmetry in the development of output growth (Frankel and Rose, 1998),[8] but this effect naturally will not remove all asymmetries in the business cycles of the member countries. Thus, the ESCB will continue to conduct monetary policy in a situation where the member countries are in different phases of their business cycles. The experience so far suggests that the common monetary policy has been successful at keeping the area wide price level stable as per the mandate of the new central bank. Developments inside individual countries have not unduly influenced decision-making.

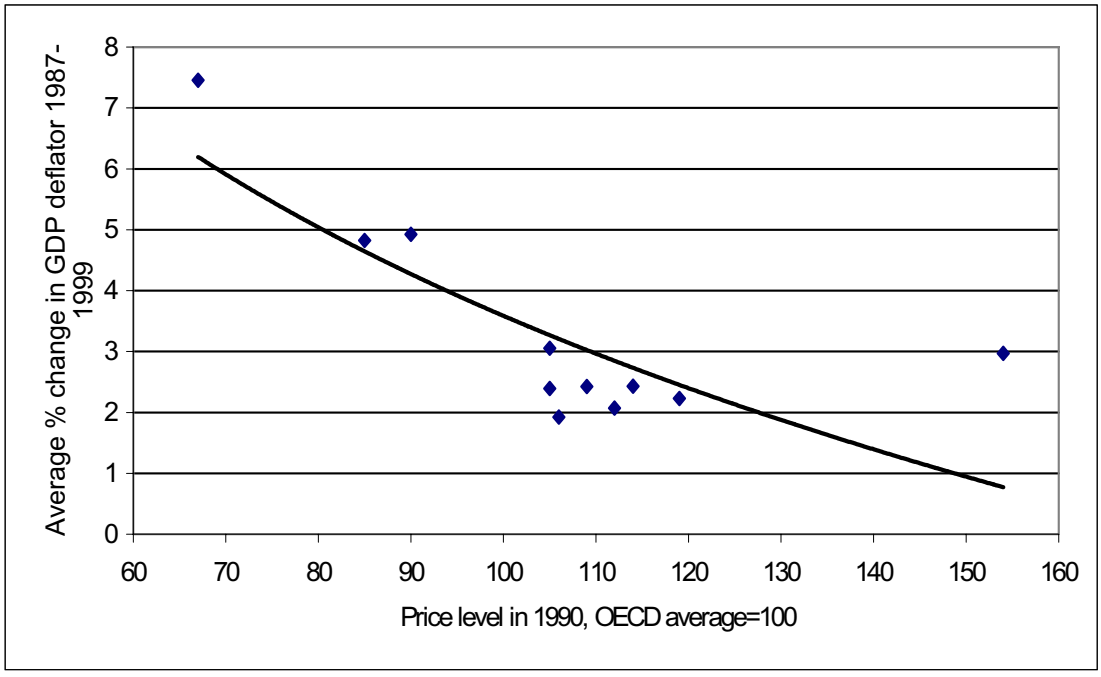

Chart 2 Price level in 1990 and change in the GDP deflator 1987-1999

Experience with the common currency is still brief. Even in the near future, the aforementioned differences in the housing and financial markets may result in wide discrepancies in how the common monetary policy affects the member countries. If such asymmetries persist, national fiscal policies must react to help the economy to return closer to equilibrium. This adjustment is easier when domestic labour and commodity markets the more flexible. For example, functional rental markets enable unemployed to move to other locations in search of an employment. In this regard the member countries still have some way to go.

[8] For an opposing viewpoint, see e.g. Krugman and Venables (1993).

2.2.2 Differing modes of monetary policy transmission

Since the start of monetary union, the remaining interest rate differentials on government debt have been due to the market's assessment of credit risk and, perhaps more importantly, differences in liquidity in different bond markets. Nevertheless, the transmission of interest rates to other economic variables is still quite divergent in different euro area countries. The institutional structures of, inter alia, financial and housing markets differ still markedly from country to country, which affects the impact of interest rates on economic activity and ultimately price levels. Furthermore, since different euro area countries have varying shares of trade with non-euro countries, the effects of the external value of the euro differ considerably.

The empirical studies concerning the effects of the single monetary policy on different countries are naturally subject to the Lucas critique,[9] but they do give us some feel for the likely short-term consequences of adopting a single currency and monetary policy for the whole euro area. For example, Dornbusch et al (1998) found that the effects of monetary policy on inflation and output vary in different countries by a factor of two. Also Hallett and Piscitelli (1999) have noted significant differences in the monetary transmission between the three largest euro area countries, Germany, France and Italy, although differences between Germany and France are somewhat smaller. On the other hand, Kieler and Saarenheimo (1998) show that the choice of structural identification clearly affects the results of the earlier empirical tests. They propose a more robust method for investigating the monetary policy transmission in France, Germany and the UK, and do not find statistically significant differences. Nevertheless, they conclude that differences do exist, which is probably the prevailing consensus. The introduction of common monetary policy will in all likelihood cause some convergence also in transmission mechanism in the medium-term, perhaps through the changes in the financial sector discussed earlier.

There are many possible reasons for this difference in the transmission mechanism of monetary policy. Many of these reasons are related to the way the institutions of the financial sector and housing market have developed in different countries. Maclennan et al (1999) provide a detailed study of housing and financial market institutions in the different euro area countries. They note considerable differences in these institutions across countries. First, the ownership of residential housing varies. In some countries, the majority of households own the apartments they live in, which affects the way the wealth effects arising from interest rate changes are spread in the economy. This in turn influences the mobility of labour inside the countries, as households that own the apartment they live in are less willing to move in order to find a new job. There are also wide discrepancies in the ratio of mortgage debt to GDP (Table 6 in the Statistical Appendix). Furthermore, the interest rate determination of mortgage (and other loans) differs from country to country. In Portugal, 100% of mortgages have variable interest rates. In France, 80% of the housing loans have fixed interest rates (Maclennan et al, 1999). It is clear that a change in the short-term interest rate will have quite different short- and medium-term effects on the behaviour of households and the financial institutions extending these loans in countries with such discrepancies.

[9] Meaning that the parameters estimated from available data may not be invariant with respect to changes in the monetary policy regime. In our opinion, the Lucas critique is important when assessing the effects of monetary policy inside the euro area, at least in the medium-term.

2.3 Some implications of the euro for the outside world

The euro area eventually will constitute an economic power that rivals the US. Already its share of global trade is approximately 20% and the euro is the second largest currency in the world. In many respects, the US dollar continues to dominate, however. The share of the main European currencies now in euro in the foreign reserves of world's central banks was slightly over 20% in mid-1990s, whereas the share of the US dollar was over 50% (Alogoskoufis and Portes, 1997). In 1992 the US dollar was still used in over half of the global trade as an invoicing currency (IMF, 1997).

At the moment the US dollar is clearly the most widely used currency both as a medium of exchange and store of value. It is still the most widely used as a reserve currency by the world's central banks. There are clear externalities in using a single currency for various transactions, so the shift towards the euro should be quite slow at first. Eventually, companies inside the euro area, due to its size, will gain leverage over their customers on the invoicing currency used. Since the use of the euro will eliminate their currency risk, they will want to move to the euro. For companies operating in countries that have pegged their exchange rates to the euro, the use of the euro will be relatively risk-free as well. (Table 7 shows the European countries currently pegging to the euro or to a basket in which the euro plays a significant part.). These factors will help to increase the use of the euro as a medium of exchange.

It is still an open question as to how many euro notes will be used and demanded outside the euro area. In some Eastern European countries, the German mark has been widely used as a store of value, so it is natural to expect that the euro will replace it in this regard. Potentially more important is the use of dollars in Russia and other more populous transition economies. The dollar is widely used as a store of value and as a medium of exchange for many big-ticket items. Estimates of the amount of dollar notes in circulation inside Russia vary widely, but e.g. Brodsky (1997) presents estimates from $20 billion to $30 billion. If the euro displaces to some extent the US dollar in the heavily dollarised economies, the demand for cash euros will higher than otherwise. Correspondingly, the seigniorage accruing to the ESCB would be higher.

The deepening of financial markets inside the euro area will increase the attractiveness of the euro as a store of value. If euro-denominated securities markets grow and become more liquid, they will be increasingly attractive for investors outside the euro area. This applies both to private and official investors, and as was mentioned in the previous section, these markets have already received a sizeable boost from the introduction of the euro.

The euro area offers a viable alternative to investments in the US as the liquidity and diversity of euro markets grow. It is unlikely that other markets anywhere will match the US and euro markets in this regard. However, there may also be an opposite reaction. The disappearance of national currencies creates a need to diversify portfolios. This means that some capital outflows from the euro area should also be expected. For example, there might be larger demand for securities from the more advanced EU accession countries. On the global scale, these capital flows remain small, although they may be quite large for the recipient countries themselves. During 1999, the euro area as a whole had a current account surplus and correspondingly a deficit in the capital account.

Banks may give an additional boost to the use of the euro. Many central banks in regions geographically and/or politically close to the euro area have already pegged to the euro or to a basket where the euro plays a major role. If other central banks also

start to use the euro as a reserve, and even an intervention, currency (a role currently reserved almost exclusively for the US dollar), the use of the euro will be enhanced in the private sector.

The euro has already started to influence development outside the euro area. It is quite widely used as an anchor currency by many small economies. Euro-denominated capital markets grew in the past year quite vigorously, and this growth is expected to continue. Therefore, the euro area will attract additional capital inflows. There will also be capital outflows from the euro area as investors inside the area seek to diversify their currency portfolios.

3. The impact of the third stage of EMU and the euro on CEE economies

In this section we discuss issues specifically dealing with the effects of EMU and the euro on the EU accession countries of Central and Eastern Europe. We concentrate on those countries likely to join the EU soon. First, we examine the likely consequences for the trade between the euro area and the CEE countries. Then we turn to possible effects for capital flows. The last subsection deals with the issue of foreign exchange rate regimes in the accession countries. The choice of the exchange rate regime will depend to a great extent on the size and direction of foreign trade and capital flows, but other considerations also play a role.

3.1. Impact on foreign trade flows

In this subsection we analyse the impact of the introduction of the euro on the external trade of CEE countries. First, we analyse the impact of Stage 3 of EMU on the demand for CEE countries' exports in the EU. Second, we focus on decreasing transaction costs in external trade that accompany the introduction of the euro. We end with a discussion of recent developments in trade between CEE countries and EU-15/euro-11.

3.1.1 Changes in demand for CEE products in the EU

Deepening economic integration within the euro area countries will be one of the most important results of the common currency. The foremost stimulus for this integration is the elimination of exchange rate risk between euro area states. Bekx (1998)[10] identified two types of positive economic gains that should result from the elimination of exchange rate risk, and in turn should increase euro area demand for export products from the CEE countries.

First, the elimination of exchange rate risk and lower transaction costs could be accompanied by microeconomic efficiency gains within the EU. As a result, intra-EU trade should increase, increasing overall factor productivity. The larger capital stock will lead to a permanent increase in the GDP of these countries. While an increase in intra-EU trade will also divert some trade away from CEE countries, the net effect is still expected to be positive.

Second, elimination of exchange rate risks in the euro zone combined with more prudent fiscal and monetary policies should lead to macroeconomic stability effects. These include lower interest rates (which stimulate investment) and lower variability

[10] See also European Commission (1990).

of prices, interest rates, output and other macroeconomic variables (which boost economic growth in euro area countries).

An IMF study (1998) found that a 1% increase in euro area GDP could lead to an approximately 0.2-0.5% increase in CEE countries' GDP and a 0.7-1.5% increase in CEE exports. The WIFO (see Backe, 1999) has estimated the potential boost given by the Stage 3 of EMU in the medium term should translate into a 1.75% cumulative increase in euro area GDP.

The start of Stage 3 of EMU can also be expected to speed up EU structural reforms. The IMF (1997) concluded that if this scenario were to realise and bring about an increase in flexibility of real wages and decrease in the natural rate of unemployment, GDP of the euro area countries could be approximately 3 per cent higher than in its World Economic Outlook base scenario. Based on the Fund's 1998 study, it could be concluded that, by 2010, the cumulative impact of structural reforms in the EU to the GDP and exports of the CEE countries could be respectively 0.6-1.5 percentage points and 2.1-4.5 percentage points. However, there are factors that may diminish these positive scenarios. Most analysts expect the euro to accelerate structural reforms and boost economic growth, but there is nevertheless a risk that these structural reforms do not materialise. If this is accompanied by large asymmetric shocks across the euro area, the end result might be lower growth and more volatility. The IMF (1997) calculated an unfavourable scenario with no structural reforms inside the euro area, where GDP was 2.5% lower than the baseline in the medium term. In other words, the difference in GDP levels between the scenarios with and without structural reforms is approximately five per cent after five years.

There is the further risk that national fiscal authorities will disregard the stipulations of the Stability and Growth Pact, which would certainly be reflected in the external value of the euro and in euro-wide interest rates. The positive effects of the euro should therefore not be taken for granted. It is important to monitor the progress of structural reforms in euro area countries.

3.1.2 Changes in the transaction costs of CEE foreign trade

In addition to accelerating euro area GDP growth and, consequently, the EU demand for CEE goods and services, the common currency decreases transaction costs in foreign trade of the CEE countries. The extent of this impact will depend on the share of the euro in CEE countries' foreign trade. The higher the share of the euro, the greater the decrease in transaction costs related to export and import. A firm and credible peg to the euro will also decrease risks associated with exchange rate movements for the companies operating in CEE countries.

In the medium term, there are several factors that support the increase in the share of the euro in external trade transactions. The share of the US dollar in trade between CEE countries and the EU has been approximately 40%. As many CEE currencies now track the euro, the current high share of the dollar is simply inconvenient (Köhler and Wes, 1999). Moreover, an increase in the importance of the euro will probably result from the increasing share of the euro zone in the external trade of the CEE countries, in other words, as the economic integration between these two zones deepens.

For CEE countries credibly linked to the euro, the transaction costs can be substantially lower. If the number of countries fixing their currencies to the euro is relatively great, the advent of the euro can stimulate intra-CEE trade as well. This depends on regional trading patterns, of course.

Köhler and Wes (1999) have drawn attention to the fact that diminishing transaction costs could also support external trade on a broader scale. To the extent that increased competition highlights restrictive trade practices from the EU, it also accelerates the process of dismantling tariff and non-tariff barriers. This should be particularly important in "sensitive sectors" such as agriculture and steel. Thus, on the one hand, EMU can facilitates accelerated growth in markets important for CEE countries, while on the other hand, improving their access to these markets.

3.1.3 Trends in CEE foreign trade with the EU

Since the start of transition, CEE foreign trade with EU countries has increased rapidly. In 1997-1998, EU trade of the main countries studied here exceeded 60% of their total foreign trade (Table 8). The share of exports to the EU is especially high in Hungary and Poland, while the share of EU imports is highest in Estonia and Slovenia. Although there are no exact data on the structure of CEE foreign trade in 1999, preliminary information indicates that since the 1998 Russian financial crisis, the share of EU trade in CEE foreign trade has increased further. For instance, in the first half of 1999, year-on-year exports from Hungary and the Czech Republic increased by 18 and 12 per cent respectively (Eurostat, 1999). In the same period, the EU's share increased by 8 and 7 percentage points respectively in the share of Estonia's and Latvia's exports.

Although there are no recent data for trade between the CEE and euro area countries, statistics from 1995-1997 indicate that trade of the CEE countries with the euro area varies greatly (Table 9). Based on these data, three sub-groups with differing degrees of trade ties can be discerned among the CEE countries. Within the first group (Slovenia, Estonia and the Czech Republic), trade with the euro area in these three years reached approximately 60-70% of their GDP. In the second group (Hungary and Slovakia), the figure was between 45-54% of GDP, and in the third group (Latvia, Poland and Lithuania), the ratio of trade with the EU and GDP was approximately 24-32%. These data suggest that, *ceteris paribus*, changes in the economic activity in the euro area should have the greatest impact on the countries of the first group (that is, Slovenia, Estonia and the Czech Republic) and the least impact on economies in the third group (Latvia, Poland and Lithuania). Here, one has to remember that the share of trade with the EU in the GDP of the CEE countries as well as its structure by the countries can change significantly even in the medium term.

The IMF (1998) noted several factors behind the rapid growth in the trade between the CEE countries and the EU (as well as the euro area). First, the EU's extension of its Generalised System of Preferences and the signing of new trade agreements have improved CEE exporters' access to EU markets. Second, trade has intensified significantly because the artificial barriers to such trade connections were dismantled at the start of transition. Several studies based on gravity models predicted that there would be a substantial increase in trade with EU, implying a rapid and substantial reorientation of exports toward western Europe from Council of Mutual Economic Assistance (CMEA) structures based on bureaucratic commands. Third, exports to the EU reflect in part a redirection of goods from the CMEA to other markets through significant cuts in price, or so-called distress exports. Last, structural reforms in the CEE and policy measures aimed at macroeconomic stability have helped facilitate trade between the EU and CEE countries.

In addition the increase in the EU share in CEE exports, the export base in the CEE countries also changed. In Poland, Hungary, Slovakia, the Czech Republic and

Slovenia, the share of food and agricultural products, raw materials and fuel products in the commodity structure has decreased and the share of machinery and transport equipment increased (Table 10a). In the Baltic countries, the changes in export structure are somewhat less pronounced. In Estonia, and to a lesser degree Lithuania, tendencies similar to these in the Central European countries can be observed. In Latvia, there has been a decrease in the share of machinery in the export structure (Table 10b). Overall, there has been a shift towards higher value-added products in CEE exports to the EU, the income elasticity of which is, as a rule, higher than that of lower value-added goods. If this is indeed the case, the volume of CEE exports should become more dependent on changes in EU economic activity.

Changes in the relative factor intensity of the region's exports to Western Europe in the past few years also indicate that within the period 1993-1996 there has been a change towards higher value-added exports in several countries (ECE, 1998). According to Krause classification,[11] which measures increases between 1993 and 1996 in the contribution of relevant groups, the most dynamic commodities in the Czech Republic, Estonia and Hungary were in the technology-intensive group, whereas in Poland, Slovakia and Slovenia the share of human capital-intensive exports increased most noticeably (Table 11). Only in Latvia and Lithuania did commodities in the unskilled-labour intensive group have the largest contribution. According to Lary's classification,[12] when the export baskets of 1993 and 1996 are compared, the most dynamic group of exports in Hungary, Slovakia and Slovenia were capital-intensive goods, while in the Czech Republic and Estonia, goods in the skilled labour-intensive group exhibited the largest gains in share (Table 12). This classification also proves Latvia and Lithuania to be the exceptions, where the strongest growth was in the group of unskilled labour-intensive goods.

If one assumes that the income elasticity of demand for imports with higher value-added is larger than that of goods with lower value-added, changes in the level of euro area GDP should *ceteris paribus* have a larger impact on exports from Hungary, the Czech Republic, Slovenia and Slovakia, and correspondingly, a smaller impact on exports from the Baltic countries. This argument is supported by the fact that according to Krause classification (also valid for the Lary classification) the share of technology-intensive and human-capital intensive goods in exports to the West was approximately 55%. In the case of the Baltic countries, the share of such goods was merely 7-27%. However, one has to keep in mind that the share of higher value-added goods in total exports increased during the period of 1993-1996 in all countries, except Latvia and Lithuania. If successful structural changes in the CEE countries continue, the share of higher value-added goods should increase, and thus one could expect that income elasticity of the demand for exports from CEE to increase in the future. Consequently, the impact of the euro on euro area GDP should have an even larger impact on economic growth in CEE countries.[13]

[11] Krause classification explained in Table 11.

[12] Lary classification explained in Table 12.

[13] ECE estimates show the approximate extent of this effect. According to the ECE, income elasticity of import demand in the EU was 2.42 in 1990-1996.

3.1.4 Areas of greatest impact

To a large extent, the advent of the euro on the economies of the CEE countries reveals itself via two channels of external trade links. First, the introduction of the common currency should accelerate output growth in the euro area, which will *ceteris paribus* increase demand for CEE exports. Introduction of the common currency will create some trade-diversion effects, but the net effect for CEE exports should be positive. Second, the start of Stage 3 of EMU should lower trade-related transaction costs for the CEE countries.

Considering the intensity of CEE trade with the euro area, changes in economic activity of the euro zone should have the greatest impact on Slovenia, Estonia and the Czech Republic, where the volume of trade with the euro area reached approximately 60-70% of GDP. The impact of decreasing transaction costs should also be especially marked in these three countries. Considering the commodity structure of Western exports of the CEE countries, changes in economic activity of the euro area should have the largest impact on Hungary, the Czech Republic, Slovenia, and Slovakia.

3.2 The impact on capital flows

In this subsection we analyse the impact of the introduction of euro on foreign investment flows into CEE countries. Initially we will concentrate on the impact of Stage Three of EMU on inflows of portfolio and other investments. Secondly we will focus on the impact of the advent of the euro on foreign direct investment flows into the CEE countries. The last part of this chapter is dedicated to recent developments in foreign investments into the CEE countries.

3.2.1 The impact of the euro on portfolio and other investments to CEE countries

Interest rate levels in the euro area

The introduction of euro can influence investment flows into CEE countries through its effect on euro area interest rates. As short-term foreign investments account for approximately 40-50 per cent of total foreign investments made into CEE countries (ECE, 1999),[14] it is obvious that changes in the level of euro area interest rates is an important determinant of capital flows between CEE countries and the EU. In numerous studies concerning the determinants of the capital flows into emerging markets the US dollar interest rate has been found highly influential. As the CEE countries do receive most of their capital inflows from the euro area countries, the euro interest rate is important. Ceteris paribus, a decline in the level of interest rates in the euro area should stimulate capital flows into CEE countries and vice versa.

Money market interest rates in the euro area have been lower during the first nine months of 1999 than in two previous years. In general terms, the same is true for yields on government bonds; however, these have shown a rising trend starting from the second quarter of the year as inflation expectations have risen. If the pick-up in the economic activity continues, bond yields could increase further, although the most recent interest rate increase by the ECB seems to have had a positive effect on bond

[14] Although at the moment there is no reliable information on the structure of host countries for portfolio investments into CEE countries, it is very likely that EU investors have a prominent position.

prices. Higher interest rates inside the euro area would dampen the outflows of short-term investments into the CEE countries.

Portfolio diversification

During this decade foreign investments into developing countries (including CEE countries) have been partly stimulated by the investors' desire to diversify their asset portfolios (World Bank, 1997). This trend is partly evidenced by sharply higher share of portfolio investments into equity securities in the structure of capital flows directed to the developing countries as compared to the capital flows in the past decades. One factor behind this trend of portfolio diversification is the deepening of capital markets in developing countries.[15] The other factor has clearly been the low correlation of returns in industrial and developing countries.[16]

A more specifically euro-related factor behind increasing foreign investment flows into the CEE countries could be the convergence of interest rate levels in the southern EU countries (Portugal, Spain, Italy, and to some extent, Greece) with the interest rate levels in so-called core countries of the EU. Since investors aim to diversify their portfolio structure to include assets with different risk and yield combinations, the CEE countries may become partial substitutes for southern European countries. The IMF (1998) considers the Czech Republic, Poland and Hungary to be most likely candidates that offer assets with a higher yield and higher-but-moderate risk combinations.

Frankel (1998) has found that exchange rate stability and economic integration increase asset price correlation between different countries. Presuming that the introduction of the euro will provide a stimulus for further economic integration as well as a higher degree of synchronisation of macroeconomic performance between the euro area countries, changes in financial asset prices in these countries could become more correlated. This tendency can force investors to seek non-euro area opportunities for diversification of their portfolios. In other words, the trend towards greater economic integration in the euro zone should increase capital inflows also into CEE countries.

Investment and borrowing in euros by CEE countries

Prati and Schinasi (1997) as well as McCauley and White (1997) have argued that highly integrated, larger, and more liquid securities markets in the euro area will attract international investment flows to euro zone, diverting the potential flows into the CEE countries. On one hand, if this scenario were to realise, CEE investments into euro area countries could increase. On the other hand, euro area investments outside of the area may decrease. Data from the ECB (1999c) indicate that at least in the first half of 1999 there were sizeable outflows of capital from the euro area: the deficit on the financial account was €61.4 billion. In part, this reflects the current account surplus the euro area as a whole currently has (€26.7 billion in the first six months of 1999), but it should be noted that errors and omissions are also very large in the euro area balance of payments (+€28.5 billion in the first half of 1999). These errors and omissions can be interpreted to represent unrecorded investments into the euro area. If the economic activity inside the euro area accelerates clearly, this current account

[15] For example, total capitalisation of stock markets in the Czech Republic, Hungary and Poland increased from USD 10.6 billion in 1994 to approximately USD 40 billion in 1997 (IFC 1998).

[16] During the period from 1991 to 1996, the correlation of stock market indices in the Czech Republic, Hungary and Poland with the FT's Europac index of Western European stock markets was respectively 0.11, 0.25 and 0.4 (IFC 1997).

surplus will decrease and correspondingly the capital outflows from the euro area should also decrease.

The advent of the euro might increase borrowing in euros by non-EU countries (including CEE countries) since non-EU borrowers would have access to the larger, more liquid, and more competitive financial markets that EMU will generate. The IMF (1998) has explained this likely tendency with the fact that EMU is expected to increase substantially competition in the markets for the underwriting of bond issues and syndicated loans, which will tend to reduce the cost of issuing in the European bond markets and of obtaining syndicated loans. The introduction of common currency could significantly improve cross-border payment systems in the euro area as well as the integration of the euro area and non-EU countries payment system. Together with ongoing deregulation and technological process in the financial systems of both EMU and non-EU countries, and capital account liberalisation in the latter, these factors should also stimulate borrowing by non-EU countries in the euro area. Latvia and Lithuania issued several euro-denominated bonds during 1999 without even pegging to the euro first.

3.2.2 The impact of the euro on foreign direct investments to CEE countries

This subsection discusses the possible effects the euro might have on foreign direct investment (FDI) flows into CEE countries.

Developments that could have a positive effect on FDI inflows into CEE region include an increase in investment demand in the euro area, which might spill over to geographically close CEE countries. Heightened competition in the single market brought on by the introduction of the common currency may encourage EU entrepreneurs to take more advantage of low production costs in CEE countries.

However, the probable positive output effects of the new currency in the euro area itself could also increase investments made into the euro area countries. This situation might leave less FDI available for other regions (including CEE countries).

Bekx (1998) listed several factors arising from the common currency that stimulate FDI. First, there are integration dynamics, that is, the outlook for higher growth perspectives in the EU and the various advantages linked with the completion of the single market will incite foreign firms to increase their level of FDI. Second, structural changes in EU financial markets could create broad, deep, and liquid securities markets following the completion of the single market in financial services. This could encourage FDI as transaction costs of equity purchases are reduced. Higher liquidity in the debt markets reduces borrowing costs of EU subsidiaries or branches of foreign companies. Bekx concluded, however, that the overall impact of the introduction of the euro on FDI is relatively small.

We should note here that the one of the main reasons for FDI into the CEE countries is access to a local or regional market or the exploitation of first-mover advantages (Lankes and Venables, 1996). For that reason, diversion effects of EMU on net FDI inflows to CEE countries need not be significant.

3.2.3 Trends in capital flows to CEE countries

As Table 13 shows, the period 1995-1997 was characterised by intensive net capital inflows into the CEE countries of interest here. The influx of capital peaked in 1995 at USD 21 billion. As foreign investment flows into Hungary and the Czech Republic subsided, however, annual net inflows decreased somewhat in 1996-1998 to USD 13-19 billion.

There are several factors behind net inflows of foreign capital into CEE countries. Claessens et al (1998) have found that differently from foreign investments into Latin America and Southeast Asia, investments into CEE region depend largely on domestic factors, most importantly on structural reforms and stability-oriented macroeconomic policies in these countries. As the transition from a planned economy to a market-based economy progresses, the importance of structural reforms might be expected to diminish somewhat. A stable macroeconomic environment will always be an important determinant of foreign investment.

During the period 1995-1998, the annual FDI into this region reached approximately USD 7-12 billion (Table 14), approximately 45-60% of all foreign investments in these countries.[17] The largest inflow of FDI was USD 12 billion in 1998.[18] During this period, the ratio of FDI to GDP was relatively high in Estonia, Latvia, Hungary and the Czech Republic, and relatively low in Slovenia and Slovakia. If the introduction of the euro has any effect on FDI flows into CEE countries, the effect should be most powerful in Estonia, Latvia, Hungary and the Czech Republic, and least evident in Slovenia and Slovakia.

In Table 15 we note that, during the period 1995-1998, the CEE countries under consideration attracted high levels of capital in the form of loans and debt securities. This development was most evident in 1997, when the level of loans and debt securities reached USD 12.7 billion. Since the end of 1997, however, it has been more difficult for emerging market borrowers to raise funds in the international financial markets. This has affected also the CEE countries in 1998 and the first half of 1999.[19] In the wake of the Russian crisis in August 1998 and devaluation of the Brazilian real in January 1999, access of CEE countries to international debt markets was drastically reduced. Initially, the conflict in Yugoslavia also disrupted debt issuance by the transition economies, but since then the conditions for CEE countries to raise funds in international financial markets have eased. These developments reveal that in the short-term, non-FDI flows to CEE countries are highly influenced by general developments in emerging markets. The impact of the euro on foreign portfolio investments and investments into CEE countries should therefore become evident mostly in medium and long term.

3.2.4 Are CEE countries attractive investments?

The introduction of euro affects capital flows into and out of CEE countries through many channels. The introduction of the common currency has tended to lower euro area interest rates. In addition, the interest rates will likely be less volatile

[17] Importantly, investments by EU investors exceeded 50% of all FDI (IMF, 1998).

[18] The level of FDI remained high in the first quarter of 1999, when, according to the preliminary estimates ECE (1999b) these capital inflows were higher than in the first quarter of 1998.

[19] It is important to note that according to ECE (1999b) estimates, most CEE debt issued in the first half of 1999 was denominated in euros.

than in the past. Lower interest rates create an incentive for capital outflows from the euro area. Creation of a common currency also forces European investors to diversify their asset portfolios away from the euro area. These factors increase capital flows into the CEE countries. Introduction of the euro has already led to more liquid capital markets inside the euro area, which increases the attractiveness of lending and borrowing in euros. Additionally, the introduction of euro could boost economic activity in the euro area and make euro area investments more attractive. This would have a negative impact on FDI into CEE countries.

Given the different importance of FDI in different CEE countries, we assume that, at least in short-term, changes in the attractiveness of investments into the euro area and the region's economic activity should have the greatest impact on the economies of Estonia, Latvia, Hungary and the Czech Republic. The impact of the common currency on portfolio investments should be most noticeable in Poland, the Czech Republic and Hungary, which have the largest domestic financial markets.

3.3 The impact of the euro on foreign exchange regimes in CEE countries

The creation of a single currency also affects the exchange rate and monetary policies in the CEE countries. As the countries discussed here prepare for membership in the EU, a range of policy options present themselves. Although the accession process itself is clearly a separate issue from the euro as such, in this section we consider its likely effects on the exchange rate policies in the CEE countries in the medium-term. We look first at the existing exchange rate arrangements and how the euro has changed these. We then review the main arguments for fixed and floating exchange rate regimes and how they apply to CEE countries. Finally, we assess the kind of regime these countries are likely to have when preparing for the membership in the EU and monetary union.[20]

3.3.1 Present exchange rate arrangements

At the moment the CEE countries under review here have widely different exchange rate and monetary policies. Table 7 lists the present exchange rate arrangements. They range from the currency board peg to the euro in Estonia to a floating/inflation targeting regime in the Czech Republic. In many countries the arrangements have changed over time. In many transition economies, an exchange rate anchor has been used to help stabilise the economy.

It appears that smaller countries currently are more likely to prefer fixed exchange rates. All three Baltic countries have maintained rigidly fixed exchange rates for several years. Slovenia has had a managed float for years, but in practice the tolar has been very stable against the German mark and the euro. Slovenia has maintained more restrictions on the capital account than many other transition economies, which may have helped its central bank maintain stability of the currency in the absence of a more formal commitment to exchange rate stability.

In larger CEE countries, the exchange rate regime is usually more flexible. In the Czech Republic, for example, the exchange rate floats and the central bank pursues an inflation target. The Czech Republic had a fixed exchange rate until spring 1997, but

[20] Here we again take as given that the CEE countries will join the monetary union. Notably, Vaubel (1999) argues that membership is currently "efficient" only for Slovenia and Hungary.

was forced to let the currency float in the face of speculative attack. The Polish zloty follows a crawling peg with a wide band around its central parity. This gives the Polish central bank substantial room to manoeuvre. Poland has also maintained minor restrictions on the capital account. The zloty is now pegged to a currency basket with a 55% euro weighting. Hungary maintains a crawling peg regime with a tight band around parity. Hungary uses a 70% euro weighting in its currency basket. Slovakia followed the Czech Republic in floating its currency in October 1998.

All CEE countries applying for EU membership have liberalised their current account transactions, but in some instances restrictions on capital account remain. Restrictions on the capital account may help central banks maintain fixed exchange rates, but in the end they are no substitute for economic policies aimed at a stable currency. EU membership requires complete liberalisation of capital flows, and most probably accession countries will implement this well in advance of membership (some have already done so). Maintaining exchange rate stability (if so desired) cannot be based on restrictions of capital inflows and outflows. As capital flows can be quite large for the economies in question, they present a difficult challenge to policymakers.[21]

3.3.2 Fixed or floating exchange rates?

Some CEE countries have pegged to the euro or to a basket of currencies, some countries float their currencies. Which approach is best? In this subsection we review the main arguments presented in the literature for and against fixed exchange rate and assess their relevance to CEE countries.

The analytical literature on the effects of fixed exchange rates and currency unions begins with Mundell (1961). A subsequent theme developed in the literature says that countries have more to gain from fixed exchange rates when they are more open to foreign trade. As smaller countries are usually more open to international trade, smaller countries usually have more to gain by fixing their currencies or joining a monetary union. The more open an economy, the faster the changes in the external value of the currency transmitted to domestic wages and prices. This makes the exchange rate policy less effective in e.g. maintaining the external balance. Because the domestic price level is so responsive to changes in the exchange rate, the volatility of the exchange rate can cause also volatility in prices, something authorities usually try to avoid.

Pegging a currency reduces the exchange rate risk in respect to the country to which the currency has pegged, which will *ceteris paribus* increase trade between the two countries. And as long as the peg remains credible, the interest rates of the country pegging should be fairly close to the anchor country.

In a very small country, the domestic currency may even start to lose some of the traditional roles assigned to money. If banks and companies use foreign currencies widely, the domestic currency can lose its status as a unit of account. If most transactions are carried out in foreign currencies (in many countries big-ticket items like cars and apartments are bought and sold in foreign currency), the domestic currency loses part of its role as a medium of exchange. In many CEE countries, foreign currency deposits form a large share of all deposits, so a large part of savings

[21] As they have been in the past. The net capital inflows into the Czech Republic were 17% of GDP in 1995.

and presumably transactions are carried out in foreign currency. This would speak for fixed exchange rates.[22]

Fixing the external value of the currency is not without costs (see Isard, 1995). A flexible exchange rate better shields the economy from nominal shocks from abroad, while a fixed exchange rate is generally thought to be better in stabilising the effects of a domestic nominal shock. If the real shocks to the economy pegging its currency are different from the ones hitting the country to which the currency has been pegged, a fixed exchange rate may carry some substantial real costs.

If the fixed exchange rate comes under pressure (e.g., underlying economic policies have not been compatible with the peg, the economy is hit by a large external shock), mounting a defence with higher interest rates will clearly be costly for the economy. Whether or not the peg is abandoned during the attack, higher interest rates are sure to increase the financial distress for domestic borrowers. On the other hand, if companies and even households have borrowed in foreign currencies, then abandoning the peg could also prove costly as recently seen in Thailand.

3.3.3 Foreign exchange regime in the CEE countries before membership in the monetary union

When the current EU applicants finally join the European Union,[23] they commit to fulfilling the stipulations of the Maastricht Treaty and eventually joining the monetary union. In the realm of monetary policy, all applicant countries know the point-of-no-return. They may arrive at different times, but route there is clear. What is not clear is how the exchange rate and monetary policies should be handled before membership in the monetary union.

Before joining the monetary union countries must be members in ERM2 for at least two years without changes in the central parity of the currency.[24] It is hard to imagine any country joining the ERM2 with the expressed intention of seeking a realignment somewhere in the future. No country should join ERM2 until it can credibly make a commitment to fix its exchange rate permanently. When can a country make a credible commitment? Presumably when it is perceived that all structural problems that might hinder adoption of a single currency have been resolved and the country has achieved sufficient nominal and real convergence with the euro area. In the realm of structural policies, it could be costly for a country to join the monetary union if its labour markets were significantly more rigid than other countries of the union. Considering the current accession countries, this probably is not the case in general. However, some countries may offer a supply of labour with different characteristics than those demanded by buyers of labour. Kuddo (1998), for example, calls large parts of the labour force in transition economies “functionally illiterate,” meaning that they lack the skills needed to compete in a market setting. If such rigidities cause high structural unemployment, a country would face difficulties

[22] See IMF (1999).

[23] At the moment, it appears that new members may join in several waves. If the accession countries are judged solely on the merits of their structural reforms and administrative capability, the accession process could be spread over several years as the accession countries reach the desired level one by one. On the other hand, it might be administratively easier to admit several countries into the EU at the same time. Most analysts currently put the entry of the first new members in 2004 or 2005. Clearly, most applicant countries will not be ready to join at that time.

[24] This is a Maastricht Treaty criterion.

in fulfilling the Maastricht criterion on budget deficits due to high social security outlays.

The structure and development of the financial sector also affect the decision to participate in ERM2 and subsequently monetary union. As seen, current euro area members themselves have significant differences in their financial sectors. However, in many accession countries the level of financial intermediation is still quite low, which might make the economies respond quite differently to the common monetary policy. It is also critical from the perspective of other euro area and EU members that banking and financial supervision is adequately handled in the new member countries. The new member countries must ensure that all banks in their countries are ready to use the euro system's monetary policy instruments.

However, it would be very hard to argue for some level of per capita GDP that the new members should achieve before joining the ERM2 and monetary union. The current members of euro area differ vastly in per capita GDP. Membership in monetary union (and ERM) has not prevented Portugal from growing quite rapidly in the past few years. The new member countries will further widen the distribution of per capita GDP in the EU. Boone and Maurel (1998) find that CEE countries' (excluding the Baltics) business cycles are actually quite highly correlated with the German cycle, despite the wide discrepancy in per capita GDP.

Thus, new member countries need to achieve nominal convergence as specified in the Maastricht Treaty before joining the monetary union. If one looks at the track record of the more successful CEE countries in the fiscal policy (see Table 16), it is probable that they will have little trouble in meeting the criterion on public sector deficit in normal times. On the debt criteria they should pass easily. Of course, it should be remembered that the way general government deficits are now defined may not be compatible with the definitions of the Maastricht Treaty (Masson, 1999).

This leaves the inflation criterion. Is it realistic to expect that the new member countries attain high nominal convergence in this regard without endangering real convergence. If one accepts that the Balassa-Samuelson effect plays a role in determining the real exchange rate in accession countries, then fixing the nominal value of the exchange rate should automatically result in higher inflation. The level of inflation will depend on the speed of productivity catch-up. Paradoxically, those countries with the fastest real convergence will be furthest away from convergence in inflation. Here the time dimension is crucial. Assuming the first new members join the EU in 2005, they must start worrying about the Maastricht criteria in 2006 and 2007, at the earliest.[25] Therefore there is ample time for structural reforms and catching-up in the accession countries. Backé (1997), on the other hand, argues that pegging to the euro immediately after the EU accession is probably an optimal policy for only certain advanced accession countries. As we mentioned earlier, what really counts is that a country's peg is deemed credible from the outset. Therefore, the decision cannot be taken lightly (a point also emphasised by Honohan and Lane, 1999). Presumably the new member countries have completed most of their structural reforms by the time they join the EU,[26] and the differing structural characteristics of the economy should not be enough to prevent a country from joining ERM2 and

[25] It should be emphasised that the Maastricht criteria are not criteria for membership in the EU, although naturally low and stable inflation is desirable in accession countries. Furthermore, accession countries will benefit from sustainable fiscal policies, but the strict implementation of the Maastricht criteria can wait until a country applies for membership in the monetary union.

[26] Assuming membership is decided solely on a set of objective criteria. The authors are aware that this may not be the case.

monetary union. As noted in section 2, the present euro area members differ widely in many aspects of their economies, and even though some convergence is expected, this will take time.

It is obvious that the CEE countries are still far from fulfilling the interest rate criterion. In many countries, it is hard to even find a liquid instrument roughly comparable with government bond in the current euro area members. High real long-term interest rates reflect both a higher risk premium for CEE countries as well as a liquidity premium due to thin markets. In larger countries, the liquidity premium may decrease in the future, especially if the introduction of the euro causes capital inflows into these countries. As general convergence towards EU levels progresses, the risk premium should also diminish. It should be remembered how much some Mediterranean EU countries were able to cut their interest rate spreads vis-a-vis German rates in preparation for the EMU. However, for small countries the interpretation of the interest rate criterion can become problematic. Up until now countries like Slovenia and Estonia have run very small public sector deficits, and consequently there really is no market for long-term government debt. If these countries continue with nearly balanced budgets in the future, they will join the EU without a properly functioning government bond market. In such cases, interpretation of the interest rate criterion might be difficult.

Early entry into ERM2 could therefore be possible for certain accession countries. They could use the credibility and support of ERM2 to maintain fixed exchange rates. New EU members must completely liberalise their capital movements anyway when they join, so a unilateral adjustable peg might be impossible to maintain for any length of time. This question is especially topical for countries with relatively large and liquid capital markets, namely Poland, Hungary and Czech Republic (see Masson, 1999). For smaller countries, maintenance of a peg might be easier and more desirable for reasons outlined above.[27] But if a country wishes to peg, it is safer and more credible to do it in the ERM2. Naturally the ERM2 continues to offer an option of realignment when the central parity is deemed unsustainable.

Before EU membership, CEE countries enjoy freedom to decide on their exchange rate arrangements. In many countries the experience of (managed) floats seems fairly positive. In principle, it should be possible to float at least up to EU membership, unless there is a danger that as capital flows are liberalised, the nominal exchange rate will becomes excessively volatile.[28] A floating regime with sufficiently large and liquid currency markets may also help in determining an appropriate nominal exchange rate prior to EU membership. The smaller the country, the less likely this condition can be satisfied by a floating regime.

For smaller countries pegging is probably the more desirable option. In all likelihood this peg will be to the euro, both for economic (trade and investment flows) and political reasons. It is naturally possible that the ESCB would enter into some sort of agreement with accession countries on their exchange rate policies and stand ready to provide even financial assistance in case of a speculative attack, but at the moment this seems remote. Since the ESCB does not have competence over the exchange rate arrangements of the euro area, political pressures within the EU might argue for such

[27] We are aware that when measured in nominal GDP, most CEE countries are "small." Poland is the possible exception.

[28] One could imagine this happening in Slovenia, which has up to now maintained more capital restrictions than other CEE countries. Slovenia has a managed float, and is a small, open economy, where the exchange rate movements are speedily reflected in domestic variables.

arrangement, but even then the ESCB would have ensure they do not jeopardise the primary objective of price stability.

It should also be noted that the choice of foreign exchange regime in one country depends on what the other countries are doing. Korhonen (1999) showed that the desirability of fixed exchange rates in the Baltic countries changes as more countries choose the same strategy. The idea is naturally more general, and more important, the smaller the country in question.

Somewhat more technical is the question of currency boards before the membership in the monetary union. The current currency boards seem to have served their countries well. Lithuania has announced it will exit the arrangement, but keeps moving the date back. Certainly, there are no compelling reasons for Estonia and Bulgaria to give up these arrangements before the membership in the EU. (In Bulgaria's case membership could take decades, so the question becomes how long the current parity is sustainable. The examples of Argentina and Estonia, in contrast, show that currency boards can be in place for a long time without a change in the parity.) It is a trickier question whether a currency board would be compatible with the exchange rate stability criterion of the Maastricht Treaty and ERM2. A successful currency board automatically means exchange rate stability. But since all other members of the monetary union have been required to participate in the ERM before the union, would a currency board be compatible with this as well? At the moment there is no consensus on this issue. If one defines ERM2 merely as a requirement to intervene in the foreign exchange markets at the agreed band edges, then currency boards are surely compatible. In the present ERM2, for example, Denmark uses tight bands around the central parity of its currency.

Concluding remarks

We have seen that the euro led to convergence in the economies of the participating countries. This convergence has been both nominal and real, but as of late the nominal convergence seems to have stopped. Thus, the ECB conducts its monetary policy in a situation where the member countries are in different phases of the business cycle. It was also seen that in the longer run member countries continue to experience different GDP growth and inflation rates due to structural factors. However, when countries have different per capita GDP and price levels, the countries with lower levels tend to catch up with the others. There may convergence in levels inside the euro area, which then precludes convergence in growth rates until level convergence is achieved.

Moreover, the effects of the common monetary will be transmitted quite differently in different member countries because of differences in their financial and housing markets. This creates problems for the ECB, even if the financial structures of the economies are expected to converge in the long run.

The effects of the euro on the outside world are numerous. The euro area has a significant role in international trade, and the use of the euro as invoicing currency should increase. Euro-denominated securities markets grew considerably during 1999, making the euro a more attractive investment currency. Notably, the common currency may also cause capital outflows from the euro area as investors diversify their portfolios in an attempt to maintain the desired combinations of risk and yield.

Outside the euro area, the CEE countries are among those most affected by the introduction of the euro. Not only are they dependent on the trade with the euro area,

many CEE countries have also pegged their currencies to the euro or to a basket that includes the euro. Ultimately, all the countries analysed herein are likely to join the EU and the monetary union. Before they do this, they have several options in their foreign exchange and monetary policies. We argue that more advanced CEE countries could join the ERM2 when they join the EU or soon after to better prepare for their participation in the monetary union. Before EU membership, larger countries probably will find it most expeditious to choose freely floating regimes. Large and liquid capital markets help determine the equilibrium exchange rate set for accession to the ERM2. Large markets also make the maintenance of a rigid peg more difficult. For most small countries, the continuation of the present pegs appears to provide the most attractive option. The standard caveats concerning fixed exchange rates naturally apply here, so if domestic policies are incompatible with the chosen exchange rate regime, the regime may come under attack, even if domestic capital markets are poorly developed.

In the pre-accession phase, CEE countries are free to choose their exchange rate regimes, but as soon as they join the EU, they face pressure to participate in ERM2. Not all countries are expected to join ERM2 immediately upon the EU membership, but eventually they must do so. Before accession, larger countries may choose a floating regime. This approach presupposes a certain level of credibility for domestic policy-makers. Small countries should find pegging more suitable.

Statistical Appendix

Table 1 General government financial balance in the euro countries, % of GDP

	1997	1998	1999	2000
Austria	-1.9	-2.2	-2.1	-2.5
Belgium	-1.9	-1.0	-1.0	-0.9
Euro area	-2.6	-2.0	-1.6	-1.2
Finland	-1.6	1.4	3.0	4.4
France	-3.0	-2.7	-2.2	-1.7
Germany	-2.6	-1.7	-1.6	-1.2
Ireland	0.6	2.2	3.4	3.8
Italy	-2.8	-2.7	-2.3	-1.6
Luxembourg	-	-	-	-
Netherlands	-1.2	-0.8	-0.6	-0.2
Portugal	-2.5	-2.2	-1.8	-1.6
Spain	-3.1	-2.3	-1.4	-1.1

Source: OECD Economic Outlook November 1999, Preliminary

Table 2 Number of credit institutions, branch offices and bank employees in the euro countries

	Number of credit institutions			Number of branches per 1000 capita			Number of bank employees per 1000 capita		
	1990	1997	Change 1985-1995, %	1990	1997	Change 1985-1995, %	1990	1997	Change 1985-1995, %
Austria	1210	995	-16.1	0.58	0.58	7.9	9.86	9.43	9.4
Belgium	157	134	-12.1	0.90	0.72	-13.3	7.94	7.57	4.1
Finland	529	371	-41.7	0.58	0.32	-57.1	10.15	5.21	-34.4
France	2027	1299	-30.2	0.45	0.44	-6.4	7.63	6.89	-8.6
Germany	4720	3578	-20.2	0.63	0.57	-3.3	11.1	9.2	-1.9
Ireland	48	70	-3.5	0.27	0.32	20.8	4.99	6.29	51.3
Italy	1156	935	-18.6	0.31	0.44	78.3	5.92	6.00	10.1
Luxembourg	177	215	86.4	0.78	0.75	25.0	41.8	45.8	77.0
Netherlands	111	90	25.9	0.54	0.44	-25.4	7.86	7.19	-5.4
Portugal	260	235	4.0	0.20	0.41	133.3	6.20	5.97	3.2
Spain	696	416	-27.2	0.83	0.97	22.4	6.22	6.29	4.8

Source: European Central Bank Possible Effects of EMU on the EU Banking Systems in the Medium to Long Run

Table 3 Year-on-year changes (%) in harmonised consumer price indices in euro countries, September 1999

Austria	0.6
Belgium	1.3
Finland	1.3
France	0.6
Germany	0.8
Ireland	2.6
Italy	1.9
Luxembourg	1.6
Netherlands	2.0
Portugal	1.9
Spain	2.5
Euro area average	1.2

Source: Eurostat

Table 4 GDP growth (%) in euro countries, 1997-2000

	1997	1998	1999	2000
Austria	2.5	3.3	2.2	2.9
Belgium	3.2	2.9	1.8	2.8
Finland	5.6	5.6	3.7	4.2
France	2.0	3.4	2.4	3.0
Germany	1.5	1.3	1.0	2.7
Ireland	10.7	8.9	8.6	7.5
Italy	1.5	1.3	1.0	2.4
Luxembourg	7.3	5.0	5.1	4.3
Netherlands	3.8	3.7	3.0	2.7
Portugal	3.7	3.9	3.1	3.4
Spain	3.8	4.0	3.7	3.7
Standard deviation	2.7	2.0	2.1	1.4
Euro area	2.2	2.8	2.1	2.8

Source: OECD Economic Outlook November 1999, Preliminary

Table 5 Per capita GDP and price level in 1990 in euro countries

	Comparative price levels for GDP, OECD average = 100		Per capita volume indices for GDP, OECD average = 100	
	1990	1998	1990	1998
Austria	114	111	109	114
Belgium	109	103	109	115
Finland	154	114	106	103
France	112	112	113	105
Germany	119	116	104	109
Ireland	105	100	74	107
Italy	109	95	106	103
Luxembourg	109	113	149	164
Netherlands	109	106	104	110
Portugal	67	70	63	73
Spain	85	85	77	80

Source: OECD

Table 6 Housing market and mortgage lending

	Share of owner occupied housing, %[1]	Interest adjustment of mortgages[2]	Outstanding residential mortgage, % of GDP
Austria	54 (1995)	Some F, mostly N and R	30-33
Belgium	67	N (75%), F (25%)	22
Finland	62 (1995)	V (90%)	30
France	54	F (80%), V (20%)	21
Germany	38	F (20%), N (40%), R (40%)	51
Ireland	79	R (57%), F (43%)	27
Italy	68	V (40%), F (60%)	7
Luxembourg	70	Mostly R	n.a.
Netherlands	48 (1995)	V (10%), N (65%), F (25%)	60
Portugal	67	V (100%)	26
Spain	78	V (80%), F (20%)	22

Source: Maclennan et al (1999)

[1] In 1990, unless otherwise stated

[2] Fixed (F), Renegotiable (N), Variable (V), Reviewable (R), Fixed: rate fixed until maturity; renegotiable: rate not fixed over entire term, but more than 1 year; variable: rate adjustable according to index or reference rate; reviewable: rate adjustable, at the discretion of lender.

Table 7 European countries pegged to euro or a basket with euro participation

Country	Exchange rate regime	Peg against	Features of the arrangement
Bosnia and Herzegovina	Currency board	EUR	
Bulgaria	Currency board	EUR	
Croatia	Managed floating (EUR used informally as reference currency)		
Cyprus	Peg	EUR	±2.25% fluctuation band
Czech Republic	Managed floating (EUR used informally as reference currency)		
Denmark	Peg within co-operative arrangement	EUR	±2.25% fluctuation band
Estonia	Currency board	EUR	
Greece	Peg within co-operative arrangement	EUR	±15% fluctuation band
Hungary	Crawling fluctuation band	Basket: EUR (70%) USD (30%)	±2.25% pre-announced fluctuation band with a 0.5% monthly depreciation rate
Iceland	Peg	Trade-weighted currency basket including EUR	±6% fluctuation band
Latvia	Peg	SDR	
Macedonia	De facto peg		
Malta	Peg	Basket: EUR (56.8%) USD (21.6%) GBP (21.6%)	±0.25% fluctuation band
Poland	Crawling fluctuation band	Basket: EUR (55%) USD (45%)	±15% pre-announced fluctuation band with a 0.5% monthly depreciation rate
Slovakia	Managed floating (EUR used informally as reference currency)		
Slovenia	Managed floating (EUR used informally as reference currency)		
Turkey	Managed floating with a de facto crawling peg	Basket including USD and EUR	

Source: European Central Bank Monthly Bulletin August 1999

Table 8 Share of the EU in the CEE countries' foreign trade

		1995	1996	1997	1998
Czech Republic	Export	60.9	58.2	59.9	64.2
	Import	61.1	62.4	61.7	63.3
Slovakia	Export	37.4	41.3	45.0	55.8
	Import	34.8	37.3	39.5	50.4
Hungary	Export	62.7	62.7	71.2	73.0
	Import	61.5	59.8	62.8	64.1
Poland	Export	70.0	66.2	64.0	68.3
	Import	64.6	63.9	63.8	65.6
Slovenia	Export	67.0	64.6	63.6	65.5
	Import	68.8	67.5	67.4	69.4
Latvia	Export	44.1	44.7	48.9	56.6
	Import	49.8	49.3	53.2	55.3
Lithuania	Export	36.4	32.9	32.5	38.0
	Import	37.1	42.4	44.3	47.2
Estonia	Export	54.2	56.9	56.6	61.7
	Import	66.0	72.6	75.3	75.6

Source: WIIW Handbook of Statistics: Countries in Transition 1999 and national authorities

Table 9 Trade indicators of CEE countries

	Trade openness (% of GDP)	Share of trade with euro-11(%)	Share of trade with euro-11 (% of GDP)
Czech Republic	115.5	52.3	60
Estonia	154.4	44.2	68
Hungary	93.2	57.5	54
Latvia	106.2	29.7	32
Lithuania	80.9	29.7	24
Poland	54	55.8	30
Slovak Republic	125	36.2	45
Slovenia	111.2	62.8	70

Source: IMF (1998)

Table 10a Trade by commodity in Czech Republic, Hungary, Poland, Slovakia and Slovenia

		Export structure		Import structure	
		1994	1998 [1]	1994	1998 [1]
Czech Republic	Food, beverages and agricultural products	7	6	9	7
	Raw materials except fuel	7	4	5	5
	Fuel products	6	4	10	5
	Chemical products and intermediates	40	26	30	27
	Machinery and transport equipment	26	46	35	44
	Other manufactured goods	14	15	12	12
Hungary	Food, beverages and agricultural products	19	11	7	5
	Raw materials except fuel	5	2	4	3
	Fuel products	4	2	12	7
	Chemical products and intermediates	28	21	33	31
	Machinery and transport equipment	26	51	34	45
	Other manufactured goods	18	13	11	10
Poland	Food, beverages and agricultural products	12	11	10	8
	Raw materials except fuel	5	3	5	4
	Fuel products	9	6	10	7
	Chemical products and intermediates	34	33	35	34
	Machinery and transport equipment	20	26	29	38
	Other manufactured goods	21	21	10	9
Slovakia	Food, beverages and agricultural products	6	4	9	7
	Raw materials except fuel	5	4	5	4
	Fuel products	5	4	19	12
	Chemical products and intermediates	52	42	30	30
	Machinery and transport equipment	19	33	28	37
	Other manufactured goods	13	13	9	10
Slovenia	Food, beverages and agricultural products	5	4	9	7
	Raw materials except fuel	2	2	6	5
	Fuel products	1	1	7	6
	Chemical products and intermediates	38	38	32	34
	Machinery and transport equipment	30	35	32	36
	Other manufactured goods	24	20	14	12

Source: Economic Survey of Europe 1998 No. 3. United Nations

[1] January-June 1998

Table 10b Trade by commodity in Estonia, Latvia and Lithuania

		Export structure		Import structure	
		1994	1998 [1]	1994	1998 [1]
Estonia	Agriculture produce	10	8	6	8.7
	Food, beverages and tobacco	12	9	10	10.4
	Mineral products	8	5	14	6.4
	Chemical or allied products	7	8	8	8.4
	Wood and articles of wood	10	13	1	1.7
	Textiles and textile articles	14	11	10	7.3
	Base metals and articles thereof	8	7	6	8.6
	Machinery and equipment	9	17	20	22.6
	Vehicles, transport equipment	8	5	8	10.8
	Total above	86	85	84	84.9
	Total	100	100	100	100
Latvia	Agriculture produce	4	4	6	7
	Food, beverages and tobacco	9	9	5	8
	Mineral products	2	2	29	10
	Chemical or allied products	7	6	10	12
	Wood and articles of wood	20	33	0	1
	Textiles and textile articles	13	16	6	8
	Base metals and articles thereof	10	9	5	8
	Machinery and equipment	9	7	16	19
	Vehicles, transport equipment	10	2	7	11
	Total above	85	87	84	83
	Total	100	100	100	100
Lithuania	Agriculture produce	12	9	6	6
	Food, beverages and tobacco	12	5	4	6
	Mineral products	17	19	33	16
	Chemical or allied products	11	9	9	10
	Wood and articles of wood	4	5	1	1
	Textiles and textile articles	12	17	7	9
	Base metals and articles thereof	6	4	6	6
	Machinery and equipment	12	12	16	17
	Vehicles, transport equipment	4	9	6	13
	Total	100	100	100	100

[1] January-June 1998

Table 11 Central European and Baltic exports to Western Europe based on factor intensity, 1993-1996 (Krause classification)

Countries	Commodity groups	Structure		Avg. annual growth	RCA[1]
		1993	1996	1993-1996	1997
Czech Republic	Natural resource-intensive	28.1	21.4	12.5	0.61
	Unskilled labour intensive	25.2	23.5	19.7	1.72
	Technology intensive	18.9	24.5	34.2	0.73
	Human capital-intensive	27.8	30.7	27.3	1.4
Slovakia	Natural resource-intensive	26.7	20.4	25.1	0.57
	Unskilled labour intensive	28.6	23.2	28.3	1.73
	Technology intensive	16.2	20.6	50.1	0.65
	Human capital-intensive	28.6	35.8	52.6	1.56
Hungary	Natural resource-intensive	33.2	24.1	11.9	0.68
	Unskilled labour intensive	27.5	20.6	12.9	1.31
	Technology intensive	22.7	33.0	42.0	1.17
	Human capital-intensive	16.7	22.3	37.4	0.94
Poland	Natural resource-intensive	38.0	30.1	8.6	1.11
	Unskilled labour intensive	30.2	30.4	16.8	2.22
	Technology intensive	11.5	15.0	28.4	0.43
	Human capital-intensive	20.2	24.5	25.7	1.04
Slovenia	Natural resource-intensive	17.0	15.6	11.8	0.55
	Unskilled labour intensive	33.1	28.3	8.3	2.26
	Technology intensive	13.9	15.6	20.2	0.41
	Human capital-intensive	36.0	40.6	19.2	1.64
Latvia	Natural resource-intensive	85.2	81.2	24.7	3.03
	Unskilled labour intensive	7.6	11.8	49.8	0.99
	Technology intensive	5.3	5.2	35.9	0.12
	Human capital-intensive	1.9	1.8	28.2	0.07
Lithuania	Natural resource-intensive	74.7	44.5	1.6	1.54
	Unskilled labour intensive	11.5	29.1	66.6	2.63
	Technology intensive	10.6	20.8	55.5	0.53
	Human capital-intensive	3.2	5.6	70.9	0.22
Estonia	Natural resource-intensive	52.1	53.8	51.9	2.11
	Unskilled labour intensive	29.9	24.8	39.8	1.71
	Technology intensive	13.1	14.9	61.2	0.44
	Human capital-intensive	5.0	6.5	72.7	0.23

Source: Economic Survey of Europe 1998 No. 3. United Nations

Under the Krause classification, the "Natural resource-intensive" group consists of food, beverages, raw materials, mineral fuels, animal and vegetable oils, leather, plywood, mineral manufactures, diamonds and non-ferrous metals. "Unskilled labour-intensive" represents commodities with the lowest value added per employee and includes textiles, garments, furniture, glass, etc. Technology intensive group represents goods with the highest ratios of R&D expenditure to value added and includes chemicals, some capital equipment, telecommunications equipment, medical scientific and measuring equipment and photographic supplies. "Human capital-intensive" contains goods with the lowest rations of R&D expenditure to value added and includes paints, rubber, paper, TV and radio sets, etc.

[1] Here a country's "revealed" comparative advantage (RCA) in a product j is defined as a ratio of the share of j in the country's exports to the share of the product j in Western Europe's imports. If a value for this index is above unity, the country is considered to have an RCA in the product. An index value below unity indicates a comparative disadvantage.

Table 12 Central European and Baltic exports to Western Europe based on factor intensity,1993-1996 (Lary classification)

Countries	Commodity groups	Structure		Avg. annual growth	RCA[1]
		1993	1996	1993-1996	1997
Czech Republic	Physical capital-intensive	39.5	37.6	24.5	0.84
	Skilled labour intensive	13.7	20.3	44.3	0.97
	Unskilled labour intensive	40.1	37.1	23.1	1.24
	Physical and human capital-intensive	6.8	5.0	15.1	1.39
Slovakia	Physical capital-intensive	42.4	46.9	50.6	1.01
	Skilled labour intensive	10.9	11.4	44.4	0.6
	Unskilled labour intensive	39.4	36.8	38.3	1.26
	Physical and human capital-intensive	7.3	4.9	24.8	1.12
Hungary	Physical capital-intensive	27.0	37.3	46.9	0.96
	Skilled labour intensive	14.9	16.7	35.5	0.78
	Unskilled labour intensive	53.7	42.8	20.3	1.24
	Physical and human capital-intensive	4.4	3.1	16.6	0.8
Poland	Physical capital-intensive	30.3	31.1	24.9	0.68
	Skilled labour intensive	11.6	12.3	25.2	0.66
	Unskilled labour intensive	53.8	51.8	20.9	1.74
	Physical and human capital-intensive	4.3	4.7	26.7	1.43
Slovenia	Physical capital-intensive	27.8	34.0	23.8	0.72
	Skilled labour intensive	20.3	22.6	19.3	1.04
	Unskilled labour intensive	48.0	40.2	8.3	1.44
	Physical and human capital-intensive	3.8	3.1	7.9	0.92
Latvia	Physical capital-intensive	37.6	27.6	45.4	0.53
	Skilled labour intensive	3.5	5.4	65.3	0.29
	Unskilled labour intensive	54.4	64.5	51.7	2.35
	Physical and human capital-intensive	4.5	2.5	38.1	0.48
Lithuania	Physical capital-intensive	24.9	14.6	45.9	0.22
	Skilled labour intensive	2.7	4.5	85.8	0.2
	Unskilled labour intensive	50.8	63.8	69.5	2.45
	Physical and human capital-intensive	21.6	17.1	45.0	4.76
Estonia	Physical capital-intensive	18.7	23.7	80.9	0.42
	Skilled labour intensive	5.1	12.9	110.8	0.83
	Unskilled labour intensive	67.8	59.4	44.5	2.07
	Physical and human capital-intensive	8.4	4.0	23.3	1.17

Source: Economic Survey of Europe 1998 No. 3. United Nations

Under the Lary classification, the "Physical capital-intensive" group includes chemical products, rubber manufactures, paper, paperboard, fabricated building materials, glass, iron and steel, manufactures of metal, machinery non-electric, transport equipment, photographic and cinematographic supplies and developed cinematographic film. The "Skilled labour-intensive" group contains explosives and pyrotechnic products, fur skins, some manufactures of metal, some machinery (telecommunications, domestic electrical equipment, etc.), aircraft, ships and boats, scientific medical, optical, measuring instruments and apparatus, and printed material. "Unskilled-labour intensive" includes textiles, leather and wood manufactures, textiles and leather machinery, equipment for distributing electricity, bicycles and other non-motorized, furniture, clothing, footwear, watches and clocks. "Physical and human capital-intensive" contains perfumery, cosmetics, dentifrices, fertilisers, floor coverings, tapestries, mineral manufactures, glassware, wire products, cutlery, household equipment of base metals, and sanitary, plumbing, heating and lightning fixtures and fittings.

[1] Here a country's "revealed" comparative advantage (RCA) in a product j is defined as a ratio of the share of j in the country's exports to the share of the product j in Western Europe's imports. If a value for this index is above unity, the country is considered to have an RCA in the product. An index value below unity indicates a comparative disadvantage.

Table 13 Net capital flows into selected CEE countries, 1995-1998

	USD billion					Capital flows/GDP			
	1995	1996	1997	1998 [1]	1999 [2]	1995	1996	1997	1998 [1]
Czech Republic	8.8	3.5	1.4	2.7	0.4	16.9	6.1	2.8	4.8
Slovakia	0.9	2.3	1.4	1.2	-	5.2	12.4	7.2	8.1
Hungary	7.0	0.2	0.8	1.6	2.1	15.7	0.5	1.8	3.4
Poland	2.7	5.3	8.1	10.8	2.1	2.1	3.7	5.6	6.8
Slovenia	0.3	0.5	1.3	0.3	-	1.6	2.9	6.9	1.9
Latvia	-	0.5	0.4	0.5	0.1	-	9.1	7.4	8.6
Lithuania	0.8	0.7	1.2	1	0.6	13.3	9.3	12.7	9.4
Estonia	0.3	0.5	0.8	0.5	0.2	6.9	12	16.2	9.4

Source: Economic Survey of Europe 1998 No. 3. European Commission, OECD (1999), BIS (1999), authors own calculations

[1] Jan.-Sept. 1998 for Slovakia and Slovenia
[2] First quarter for Latvia and Czech Republic, January-May for Poland, First half for Estonia, Lithuania and first 7 months for Hungary.

Table 14 Inflows of foreign direct investment in CEE countries,1992-1998

	USD million							FDI/GDP			
	1992	1993	1994	1995	1996	1997	1998	1995	1996	1997	1998
Czech Republic	1004	654	869	2562	1428	1300	2540	4.9	2.5	2.6	4.5
Slovakia	100	134	170	157	206	161	508	0.9	1.1	0.8	3.4
Hungary	1471	2339	1146	4453	1983	2085	1935	9.9	5.0	4.7	4.1
Poland	284	580	542	1134	2768	3077	5129	0.9	1.9	2.1	3.2
Slovenia	111	113	128	176	186	321	165	0.9	1.1	1.7	1.1
Latvia	43	45	214	180	382	521	274		6.9	9.6	4.7
Lithuania	10	30	31	73	152	355	926	1.2	2.0	3.8	8.7
Estonia	58	160	225	205	150	267	571	4.7	3.60	5.4	10.7
Total	3081	4055	3325	8940	7255	8087	12048				

Source: Economic Survey of Europe 1999 No.2. European Commission, authors calculations

Table 15 Medium- and long-term funds raised on the international financial markets by selected CEE countries, 1993-1998 (USD million)

	1995	1996	1997			Jan-Oct 1998			Medium- and long-term debt/GDP			
			Total	Bonds	Loans	Total	Bonds	Loans	1995	1996	1997	1998
Czech Republic	1000	2191	3982	586	3396	1579	509	1070	1.9	3.8	8.0	3.4
Slovakia	427	1130	1302	0	1302	1549	967	582	2.5	6.1	6.7	12.5
Hungary	4178	2108	1756	541	1215	2464	1359	1105	9.4	5.3	4.0	6.3
Poland	324	526	4479	1566	2913	1602	100	1502	0.3	0.4	3.1	1.2
Slovenia	226	594	435	234	200	735	556	179	1.2	3.4	2.3	5.6
Latvia	41	0	60	0	60	110	0	110		0.0	1.1	2.3
Lithuania	60	125	435	275	160	50	0	50	1.0	1.7	4.6	0.6
Estonia	0	64	252	82	169	234	106	128	0.0	1.5	5.1	5.3
Total	6256	6738	12701	3284	9415	8323	3597	4726				

Source: Economic Survey of Europe 1998 No.3. European Commission, authors calculations

Table 16 Economic indicators for CEE countries

	GDP growth		Inflation		Broad money/GDP		General government balance/GDP	
	1998	1999	1998	1999	1997	1998	1998	1999
Czech Republic	-2.3	0.0	10.7	2.5	72.5	70.3	-2.6	-5.0
Estonia	4.0	0.0	8.2	3.3	40.4	35.5	-0.3	-3.0
Hungary	5.1	3.0	14.3	9.0	46.8	45.1	-4.6	-4.5
Latvia	3.6	1.5	4.7	2.2	25.6	24.5	-0.8	-3.8
Lithuania	5.2	0.0	5.1	1.6	19.0	19.5	-5.8	-7.0
Poland	4.8	3.5	11.8	7.0	39.6	42.0	-3.0	-3.0
Slovakia	4.4	1.8	6.7	10.6	69.4	64.9	-5.8	-3.2
Slovenia	3.9	3.5	8.0	7.5	47.7	51.6	-1.4	-1.0

Source: EBRD Transition Report 1999

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