

# *Exchange Rate Strategies of the EU Accession Countries on the Road to EMU: Impact on the Euro Area*

Peter Backé,  
Gabriel Moser,  
Wolfgang Pointner

## **I Introduction**

This paper offers a selective overview of the implications that the exchange rate strategies of the Central and Eastern European countries (CEECs) negotiating EU entry may have for the euro area. Basically, there are two angles from which to approach this issue: First, how do the CEECs' preparations for EU accession and participation in Economic and Monetary Union (EMU) affect their exchange rate regimes, and how do these measures impact the euro area countries? Second, how significant is the timing and speed at which the CEECs prepare to introduce the euro?

In the following, only the first question will be addressed, starting with an overview of the exchange rate strategies that the individual accession countries employ at present (section 2). Section 3 summarizes the positions the EU and the accession countries have adopted on monetary integration. One objective of monetary integration, reducing exchange rate volatilities between the accession countries and the euro area, is analyzed in section 4. To this effect, theoretical and empirical findings of how volatility affects trade and foreign direct investment (FDI) are discussed in detail. Section 5 highlights various aspects of exchange rate interaction between the euro and the currencies of the accession countries, notably the effects of an equilibrium real appreciation of the accession countries' currencies, the institutional framework of exchange rate coordination following EU enlargement as well as the potential for exchange rate turbulences in the accession countries and their implications for the euro area.

This paper will not address questions that arise from the accession countries' future participation in the euro area, including possible implications of the euro area's enlargement for the single monetary policy. Given the small economic weight of the CEECs, it appears to be a plausible proposition that the participation of today's accession countries in the euro area should have just a marginal effect on the single monetary policy. Similarly, we do not investigate what impact the monetary integration of the accession countries may have on the exchange rate of the euro against other international currencies (U.S. dollar, Japanese yen), for lack of a meaningful theoretical grounding necessary for such an analysis. Again, it may reasonably be assumed that the EU should be able to ward off unwelcome influences on the euro exchange rate with a sensible and transparent design and implementation of the monetary integration process of the accession countries.

## **2 Exchange Rate Strategies Pursued by the Accession Countries**

The Central and Eastern European EU accession countries pursue a range of exchange rate strategies (table 1). The Central European accession countries, for example, have made their exchange rate strategies increasingly flexible in recent years, as their exposure to capital market flows has increased (reflecting the greater attractiveness of these markets following stabilization, reforms and the dismantling of capital controls) as well as, above all in the case of Hungary, measures aimed at achieving compatibility with the exchange rate mechanism II (ERM II). By contrast, the Baltic republics continue to stick to rigid exchange rate pegs. Developments in the two Southeastern European accession countries have been mixed: While Bulgaria introduced a currency board regime in mid-

Table 1

**Exchange Rate Regimes of the Central and Eastern European**

**EU Accession Countries (as at April 15, 2002)**

Bulgaria	Peg to the euro (currency board)
Czech Republic	Managed float
Estonia	Peg to the euro (currency board)
Hungary	Peg to the euro, fluctuation band of 15%
Latvia	Peg to the SDR, fluctuation band of 1%
Lithuania	Peg to the euro (currency board)
Poland	Float
Romania	Managed float
Slovak Republic	Managed float
Slovenia	Managed float

Source: OeNB.

1997 in the aftermath of a currency and banking crisis, Romania has pursued a managed float regime since 1991.

While exchange rate volatility in the Baltic republics and in Bulgaria against the given anchor currency is, by definition, zero (or close to zero in the case of Latvia), the other accession countries display highly diverse degrees of exchange rate volatility, despite the formal similarities that exist between their exchange rate regimes. Principally, this is due to the different approaches to foreign exchange intervention the individual central banks have adopted, with Poland (de facto free float) and Slovenia (manages exchange rates tightly within the framework of formal monetary targeting) marking the two corner solutions. The implications of exchange rate volatility for trade and for foreign direct investment will be discussed in greater detail in section 4.

### **3 The Outlook for the Monetary Integration of the Accession Countries**

The EU has proposed a three-step approach for the monetary integration of the accession countries. First, they will accede to the EU, then they will participate in ERM II, and eventually they will adopt the euro, i.e. become full-fledged members of Economic and Monetary Union. Participation in the euro area will be contingent upon at least two years' membership in the EU and upon a sustainable compliance with the Maastricht convergence criteria. Progress toward convergence will be reviewed in a multilateral procedure, as set out in the Treaty on European Union.

Upon EU accession, the exchange rate policies of the new members become a matter of common concern according to the Treaty establishing the European Community (EC Treaty). In essence, this means that beggar-thy-neighbor exchange rate policies or competitive devaluations will cease to be an option. It should be noted that it is, at any rate, debatable in how far such policies can be implemented at all today, given the degree of economic and financial integration that has already been achieved among the EU Member States (see also section 5.2).

Participation in ERM II presupposes the mutual consent of the newly acceding country and the EU institutions. Furthermore, it is incompatible with free floats, crawling pegs and currency pegs to an anchor currency other than the euro (see section 5.2). While a currency board may supplement participation in ERM II as a unilateral commitment, it is no substitute for actual membership.

Each arrangement will be reviewed on a case-by-case basis in the EU accession negotiations. The accession countries have accepted the EU position on monetary policy integration for new members. Alternative options (such as unilateral euroization) have been analyzed by accession countries at the technical level but have, at least for the time being, been dismissed as ineffective given the high uncertainty surrounding the ensuing benefits, costs and risks, and the EU's disapproval.

Thus, the key question for the accession countries is whether to aim at introducing the euro as early as two to three years after EU accession or whether to opt for a more gradual approach to monetary integration.

Currently, the accession countries are pursuing divergent monetary policy integration strategies: Several countries, notably Hungary, Slovenia and Estonia, are aiming at joining the euro area as soon as possible. In the other countries, the decision-making process is still evolving. Within the latter group, the central banks of Poland, Slovakia and Latvia are clearly leaning toward a speedy participation in the euro area, but an official policy statement (reconciled between the central bank and the government) is still outstanding.

Let us take a closer look at arguments put forth in favor of speeding up monetary integration, using Hungary as an example: In the spring of 2001, the government and the central bank of Hungary endorsed a road map for introducing the euro in 2006,<sup>1</sup>) pointing out the positive effects that participation in a monetary union is known to generate (trade creation through the use of a single currency in a larger economic area, lower interest rates, elimination of currency turbulences triggered by volatile investor confidence). Moreover, policymakers argue that Hungary's economic cycle is already closely aligned with that of the euro area, and that a small, open economy has limited leeway for monetary policy in a global environment, as the exchange rate tends to create rather than absorb shocks.

Estonia and Slovenia have reasoned along similar lines, with Estonia stressing that it has actually been in quasi-monetary union with Germany for the past ten years under its currency board arrangement and that its economy has proved its flexibility and ability to grow dynamically over a longer period of time under this arrangement.

Conversely, the arguments offered by those accession country representatives who embrace a more gradual monetary policy integration center mostly on the differences in economic structures between the accession countries and the euro area, structural weaknesses yet to be remedied, uncertainty relating to the effects of full integration into the internal market as well as problems and deficiencies in the wage-setting process. Some countries also refer to the output losses that compliance with the Maastricht criteria, above all the inflation criterion, will produce; a more gradual convergence toward these criteria is believed to help reduce the sacrifice ratio.

1 The position of Hungary joining the euro area has changed somewhat in recent months. First, both the central bank and the new government that came into office in spring 2002 have since named the year 2007 as the target date for joining the euro area. Second, even this date has a conditional character according to the new government: While it was desirable to join Monetary Union by 2007, a final decision would only be made after a detailed examination of whether Hungary was in fact ready for complete monetary policy integration by that date.

## 4 Volatility, Trade and Investment

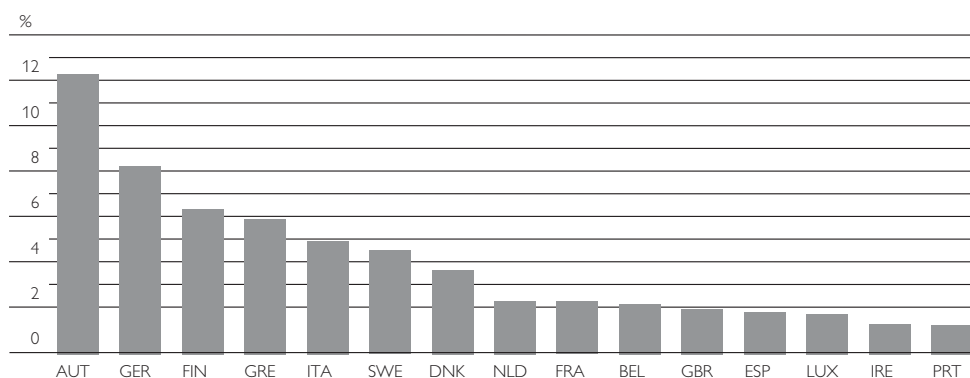
Reducing the uncertainties and distortions caused by exchange rate volatility in cross-border transactions is an explicit objective of monetary policy in numerous countries. The actual effect of exchange rate volatility very much depends on the degree of economic integration that has been established between the countries in question. The purpose of this section is to analyze how the volatility of the accession countries' currencies may affect their economic relations with the euro area. A short theoretical introduction prepares the ground for this assessment. Exact quantifications of the effects of exchange rate volatility will not be provided, however, as empirical analyses in this field tend to produce highly divergent results, depending on the method used and the countries reviewed.

### 4.1 Theoretical Explanations for the Influence of Volatility on Trade and Investment

In the economic literature, the impact of exchange rate volatility on trade flows is traced to the concept of risk aversion.<sup>1)</sup> Risk-averse companies demand compensation in the form of a risk premium for the uncertainty to which they are exposed as a result of exchange rate volatility in international trade. The type of risk depends on the currency in which a business transaction is settled: If the transaction is settled in a foreign currency, the company incurs a price risk; if the transaction is settled in the domestic currency, exchange rate volatility will not affect the price, but trade volumes will be subject to uncertainty. As the risk premium drives up costs, the volume of trade flows between the countries involved will shrink. A policy leading to a reduction of exchange rate volatility may, therefore, contribute *ceteris paribus* to an intensification of trade relations. However, Coté (1994) points out that, strictly speaking, risk aversion as such does not sufficiently explain lower trade flows. An increase in exchange rate

Chart 1

#### Share of the CEECs<sup>1)</sup> in the External Trade Volume of the EU Member States in 2000



Source: UN, Direction of Trade.

<sup>1)</sup> The CEECs comprise Bulgaria, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia.

1 The concept of risk aversion implies that risk-averse individuals will prefer a sure outcome (a given fixed amount) to a game with an uncertain outcome, even if the expected value of this game is as high as the fixed amount.

volatility and the concomitant risk goes hand in hand with a substitution effect and an income effect for risk-averse individuals. When an activity involves higher risks, its utility will sink, causing fewer resources to be used (substitution effect). In turn, the overall utility for an individual will sink as well, leading to a reallocation of resources (income effect). Only a more detailed specification of the underlying utility function will permit assessing clearly which of the two effects prevails.

While market participants can hedge against exchange rate risks on forex markets, even hedging comes at a cost, causing trade volumes to be lower than they would be in the absence of exchange rate volatility. The bigger the share of transactions hedged in the overall trade volume, the smaller the significance of exchange rate volatility is in cross-border trade.

The impact of exchange rate volatility on international investment flows, like that on trade, is attributed to the risk aversion of investors. In other words, an increase in volatility would be expected to cause foreign direct investment in a given country to contract. As underlined by Bevan et al. (2001), FDI inflows are of crucial importance for the CEECs as these investments do more than fulfilling capital needs, given the spillover effects they create. Above all, foreign direct investments serve as a vehicle for technology transfers, i.e. the target countries will benefit from innovations in production and manufacturing and from improved management techniques. Hence, the merits of FDI should not be assessed on volume terms alone; the extent to which new expertise is shared and applied matters as well. Most FDI statistics, however, do not provide for such a fine distinction.

#### **4.2 Empirical Findings on the Impact of Volatility**

The effects of volatility on international trade have been analyzed in a number of empirical studies that came up with divergent results. Anderton und Skudelny (2001) indicate that these differences may be traced to the method used: the outcome will differ depending on whether time series, cross-country data or panel data are used. Time series analyses tend to find only small, statistically insignificant relationships between volatility and trade, while cross-country data imply larger effects that are, however, also hardly or only slightly significant.<sup>1)</sup> Panel data analyses, by contrast, produce significant estimates implying that, were it not for exchange rate volatility, trade volumes might have been bigger by 8% to 15%.

In a gravity model for 186 countries, Rose (2000) estimated the effects of the disappearance of exchange rate volatility and the use of a single currency on bilateral trade activities. Through control variables, he tested the influence of other factors, including the income level, the geographical distance and multi-lateral trade agreements, on trade relations. The calculations imply that the trade volume stands to rise by 13% once exchange rate uncertainty disappears. This figure is dwarfed by a 335% increase in trade triggered by the use of a single currency. Rose qualifies his findings by stating that many monetary union

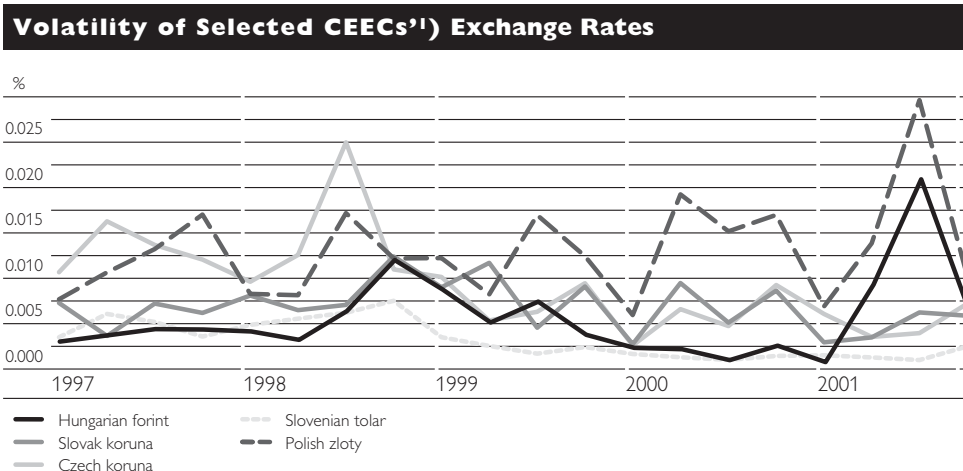
*1 Dell'Araccia (1998) indicates that many of these analyses do not take into account causality problems, because a negative correlation between trade and exchange rate volatility may also result from interventions undertaken by central banks with a view to ensuring exchange rate stability with the major trading partners.*

members in his data set are countries with low incomes and low trade volumes, so that his findings cannot be transferred directly to the EU, for instance. Indeed, most of the countries covered are former colonies maintaining a monetary union with their former colonial power.

In his critique, Persson (2001) doubts specifically that the countries joined together in a monetary union are readily comparable with the remainder of the countries reviewed by Rose. In a matching approach, Persson attempts to show that the trade effects attributed to monetary union can, at least in part, be explained by other differences between the two groups of countries. Persson compares monetary union members with structurally similar nonmembers and finds a monetary union to enliven trade by 13% to 65%. Honohan (2001) indicates that a number of countries not only replaced the currency of their colonialists with their own money in the process of decolonialization, but also refocused their economic policies on developing their domestic industries. The ensuing trade contractions would, however, be attributed to the dissolution of monetary union in a corresponding specification of the estimation. Apart from these methodological caveats, it should be stressed again that the aforementioned papers analyze trade relations among countries that are structurally highly different from the accession countries.

The impact of exchange rate volatility on foreign direct investments in developing countries was analyzed by Bénassy-Quéré et al. (2001). According to this paper, FDI will decrease more strongly when the nominal exchange rate becomes more volatile than amid a real appreciation and the ensuing loss of competitiveness.<sup>1)</sup> On the importance of volatility for investors in the CEECs, Marin et al. (2002) presented in a recent study on FDI in Eastern Europe the results of a survey of companies accounting for 20% of Austrian investment in Central and Eastern Europe. In this study, the underlying risk of these investments is generally considered to be small, but of all types of risk identified, the exchange rate risk is deemed to be highest.

Chart 2



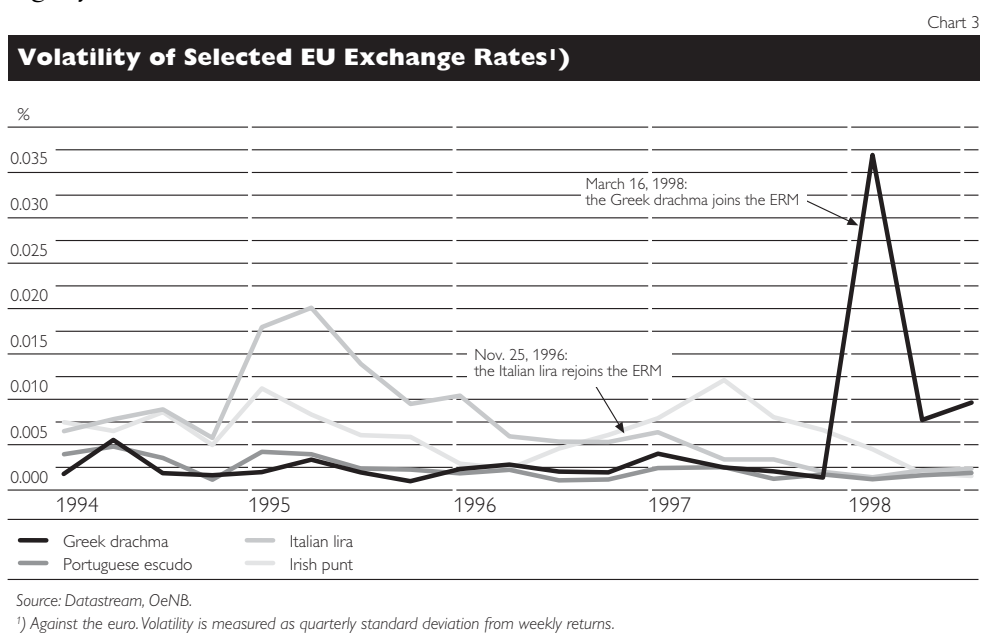
Source: Datastream, OeNB.

<sup>1)</sup> Against the euro. Volatility is measured as quarterly standard deviation from weekly returns.

1 Foregoing the possibility of adjusting structural changes by changing the exchange rate calls for high wage and price flexibility. If prices are inflexible, e.g. imbalances may emerge in the labor market.

Chart 2 depicts the volatility of the exchange rates of a number of CEE currencies. The different degrees of volatility reflect the different monetary policy objectives that the individual countries pursue (see table 1). In this respect, volatility has been calculated as the quarterly standard deviation of the weekly exchange rate return. Chart 3, by comparison, shows exchange rate volatility in a number of EU Member States prior to the introduction of the euro. Regarding ERM participation, please note that in the case of Italy, this means participation in ERM I as defined from 1993, as opposed to participation in ERM II for Greece. Italy's ERM I experience from 1996 may well serve as a meaningful benchmark, as the – limited – differences in design (parity grid in ERM I versus peg to the euro in ERM II) are evidently irrelevant for the extent of exchange rate volatility.

The implications of these movements for the euro area countries are dependent on the extent of trade relations and investments activities. Here, there are major differences. For instance, 40% of all foreign direct investments made in the CEECs by euro area countries in 1999 were made by Germany, 15% by the Netherlands and 11% each by Austria and France. Similarly, Germany accounted for 46% of all exports from the euro area to Central and Eastern Europe in 2000, compared with roughly 10% attributable to Austria. Measured as a percentage of the euro area countries' external trade, the share of the CEECs is highest in Austria at 12%, followed by 8% in Germany and 6% in both Finland and Greece, compared with a euro area average of slightly above 4.7%.



Reflecting a 13% expansion of trade – the effect Rose (2000) found the disappearance of exchange rate volatility to have, which is within the band identified by Anderton and Skudelny (2001) and Dell'Arricia (1998) – euro area exports to the CEECs in 2000 would have been EUR 14 billion or 0.24% of GDP higher, while imports would have been EUR 11 billion or 0.17% higher. For Austria, these effects would have been even three times higher (measured as

a ratio of GDP), given the closer trade relations it has established with the CEECs. Mirroring national differences in trade relations and investment activity, the individual euro area countries are, as a result, more or less sensitive to exchange rate volatilities in the CEECs. Overall, the repercussions of exchange rate volatility on trade relations and foreign direct investment are evidently fairly limited, particularly when one considers that the figures identified in the various papers can be considered to be rather the upper ceiling of the anticipated effects.

Regarding the impact of a given exchange rate strategy on volatility, developments in Slovenia show that even under a managed float regime, exchange rate volatility can be kept at a very low level. However, as already mentioned, Slovenia manages its exchange rate very tightly. The examples of Italy and Greece imply that participation in ERM II should not have a meaningful effect on volatility, at least not in the short run. The ERM II framework permits the currencies to move within given fluctuation bands, compliance with which allowed volatility to rise in the case of Greece (unlike in the case of Italy). After the second quarter of 1999, the volatility of the Greek drachma was, however, again within the boundaries registered before participation in ERM II.

## **5 Scenarios of Exchange Rate Developments Between the Euro Area and the Accession Countries**

### **5.1 Equilibrium Development of the Real Exchange Rate**

The following is meant to serve as a theoretical basis, supported by empirical evidence, for a plausible scenario regarding the development of the real exchange rates of the accession countries. Discussing the development of the equilibrium real exchange rate is important, as it is the starting point for the analysis of the nominal exchange rate and thus of the nominal exchange rate regime of the accession countries.

The medium- to long-term development of the real exchange rates between the accession countries and the euro area is closely linked with the real convergence process, i.e. with the evening out of income levels among accession and euro area countries. The major aspects can be discussed with a neoclassical equilibrium model for two economies linked by trade and capital flows and both producing internationally tradable and nontradable goods (e.g. Obstfeld and Rogoff, 1996). Such models assume purchasing power parity for tradable goods and complete wage and price flexibility. Accordingly, the path of the real exchange rate, measured in terms of the development of the relative consumer price indices and the nominal exchange rate, is given by the following equation:<sup>1)</sup>

$$\pi^* - \pi - \Delta e/e = (1 - \gamma)[(\Delta A_T^* - \Delta A_N^*) - (\Delta A_T - \Delta A_N)]$$

The left-hand side of the equation describes the change of the real exchange rate, as caused by an inflation differential between the two countries,  $\pi^* - \pi$ , and by nominal exchange rate movements,  $\Delta e/e$ . The real exchange rate will adjust when the difference between the growth of total factor productivity in

*1 Assuming identical shares of wage-based income in the sectoral output as well as identical shares of non-tradables in the consumption profile of both countries.*



the tradable and nontradable goods sectors,  $\Delta A_T^* - \Delta A_N^*$ , becomes bigger in one country than in the other, which is also known as the Balassa-Samuelson effect. The intensity of this effect will, moreover, be influenced by the share of nontradables in the consumer profiles of the two countries,  $1 - \gamma$ .

The underlying mechanism is based on the assumption that the factor labor is fully mobile domestically between the two sectors while it is fully immobile across borders. This leads to uniform wage growth within a country, but to potentially divergent loan growth rates (reflecting productivity growth in the respective tradable goods sector) between the two countries. As a result, wage growth in the nontradable goods sector outpaces productivity growth in both countries and consequently nourishes inflation. When one country's sectoral productivity differential is bigger than that of the other, the rates of domestic price level growth will diverge, thus exerting upward pressure on the real exchange rate. However, other mechanisms may also be at play in inducing appreciation caused by sectoral productivity differentials. For instance, if wage negotiations are centralized and wage growth depends on productivity growth in the tradable goods sector, this results in a forecast path for the real exchange rate that is equivalent to the path projected with the Balassa-Samuelson effect and thus observationally equivalent.<sup>1)</sup>

This explanatory approach assumes that the two economies under observation are in a steady state equilibrium, in which both labor and capital productivity will change only as total factor productivity changes. What speaks against this proposition is that in the tradable goods sector the amount of capital invested per employee in the euro area is at present significantly above the corresponding amount in the accession countries. On the assumption that the levels of total factor productivity are not highly divergent, this implies that marginal returns of capital are comparatively higher, which induces arbitrage opportunities for euro area investors. As capital movements among accession and euro area countries are being fully liberalized amid EU accession, unless liberalized earlier, there is a high potential for net capital flows from the euro area to the accession countries (see Lipschitz, Lane and Mourmouras, 2002). These high net capital flows, in turn, influence the bilateral real exchange rates.

In a fixed nominal exchange rate regime, net capital inflows lead to monetary expansion, which spurs inflation.<sup>2)</sup> At a given foreign inflation rate, this triggers a real appreciation of the domestic currency. The real appreciation will continue as long as the current account deficit has widened to an amount that matches the net capital inflows. In a regime of flexible nominal exchange rates, net capital inflows cause the recipient country's currency to appreciate nominally, thus causing the real exchange rate to appreciate vis-à-vis given domestic and international inflation rates. This, too, leads to a current account deficit that matches the net capital inflows.

- 1 *General equilibrium models can typically be solved decentrally or centrally (through a social planner). The optimal allocation and the price vector and the equilibrium price vector are not dependent on the solution method.*
- 2 *The upward pressure on domestic prices may, in the short run, be dampened by sterilizing capital inflows (see Lipschitz, Lane and Mourmouras, 2002).*

In other words, in this model framework, the nominal exchange rates of the accession countries do not have an influence on the development of real exchange rates; much rather, they are determined by “more fundamental” supply-side factors, such as the development of total factor productivity and the initial capital stock.<sup>1)</sup>

The effects on relative labor productivity, and thus on the national price level and the real exchange rate, that are linked with the economic catching-up process and that are caused by divergent developments of sectoral total factor productivity and the convergence of capital intensities are well founded empirically; see table 2 for examples for several European countries for the period from 1973 to 1991.

Table 2

**Productivity Differentials and Real Appreciation in Western Europe  
Between 1973 and 1991**

	Relative price change between tradable and nontradable goods %	Sectoral productivity growth differential	Average real appreciation against Germany	Contribution of the relative price effect percentage points
Germany	0.5	0.4	x	x
Italy	3.0	3.2	1.7	1.6
Spain	2.5	2.7	2.0	1.1
Austria	2.1	2.1	1.3	1.0

Source: Canzoneri, Cumby, Diba and Eudey, 1998.<sup>1)</sup>

<sup>1)</sup> De Gregorio, Giovannini and Wolf (1994) and numerous other papers arrive at similar results.

Table 2 shows that the development of relative prices between tradable and nontradable goods was closely correlated with the productivity growth differential between the two sectors in all countries. Moreover, this effect was bigger for the then catching-up countries<sup>2)</sup> than for Germany, as productivity grew faster in the tradable goods sector of these countries. On balance, a large part of the real appreciation can in all cases be traced to this effect. The figures documented here are likely to represent rather the lower boundary for the anticipated real appreciation, as the convergence process of the accession countries is evolving in the context of fully removed capital controls, which was not the case in the countries listed at the time. Moreover, the accession countries started to converge from significantly lower levels. Dismantling the capital controls loosens the credit restriction of the accession countries, thereby facilitating faster capital accumulation and thus higher productivity growth. The

1 In this neoclassical model, the actual amount of current account deficits and the real appreciation will typically even be higher than the amount that allows capital allocation levels to converge, because demand-side effects may emerge as well. For instance, expectations of growing incomes may induce agents in the accession countries to finance consumption through debt (consumption smoothing). Preferences for nontradable goods rising hand in hand with growing incomes have similar effects. Other mechanisms are based on monopolistic competition in the nontradable goods sector. In this respect, note a recent contribution to the debate on the Balassa-Samuelson effect: MacDonald and Ricci (2001) argue that relative productivity gains in the distribution sector may lead to a real appreciation, similar to productivity gains in the tradable goods sector through the Balassa-Samuelson mechanism.

2 In 1971, the gross domestic product (GDP) per inhabitant at current exchange rates corresponded to 65% of German GDP for Austria, 37% for Spain and 62% for Italy. These differences shrank by roughly 20 percentage points in all countries until 1991.

current consensus estimate for trend real appreciation in the accession countries is 2% p.a.

Generally, both theory and empirical evidence indicate that the real exchange rates of the accession countries will continue to appreciate against the euro. This development is a long-term equilibrium phenomenon, driven by the growth of total factor productivity and capital accumulation in the accession countries.<sup>1)</sup> This real appreciation can be achieved either with a fixed exchange rate and an inflation differential to the euro area, or with a flexible and gradually strengthening nominal exchange rate.

What is important in assessing the effects of this equilibrium phenomenon for the euro area is to take account of the mutual causation of capital inflows and real appreciation. As capital flowing into the accession countries spurs productivity growth in the export sectors of these countries, the real appreciation against the euro is “competitively neutral”; in other words, the real appreciation of the accession countries’ currencies puts euro area companies neither at an advantage nor at a disadvantage vis-à-vis accession country companies.

Regarding the capital inflows induced by the real appreciation, the euro area is the “natural source” of these capital flows, given its geographical proximity, the deepening of capital markets in the euro area as well as existing ties between the financial sectors of the two economic areas, i.e. between the banking sectors. As capital is being accumulated more rapidly in the accession countries than in the euro area, given the economic catching-up process of the former, the share of investments in the euro area of total net wealth in the euro area, and thus the economic interlinkages between the two economic areas, will tend to grow. The positive net investment position of the euro area in the accession countries is a factor that stands to exert a downward pressure on the bilateral real exchange rates in the future, once the loans taken out or the interest accrued have been redeemed, or once the profit from foreign direct investments has been repatriated. At present it is not possible to quantify the exchange rate effects accompanying the development of a net investment position, given the scarcity of data on the euro area’s net investment position in the accession countries.

A negative side effect of the real appreciation for the euro area is the ensuing loss of purchasing power of the euro in the accession countries. For instance, services bought on traveling in those countries tend to become dearer. The ensuing welfare losses must be juxtaposed with the welfare gains generated by the economic catching-up process (higher returns on investment in the accession countries, increased efficiency through increased division of labor among accession and euro area countries, etc.).

In applying the above considerations to the real world (in this case, to the exchange rates of the accession countries) it is important to always bear in mind that the underlying assumptions are relatively far from reality. For instance, assuming a smooth adjustment of wages and prices to their equilibrium level, on which the irrelevance or neutrality of the nominal exchange rate regime is

*1 A countereffect leading to a real depreciation of the accession countries’ currencies against the euro materializes (under plausible assumptions) when the loans linked with the bilateral capital flows are redeemed or interest is paid thereon (so-called transfer effect).*

grounded, is a crucial drawback of these theories. Numerous empirical and theoretical papers (for an overview, see Obstfeld, 1999) show that changes in the nominal exchange rate and, thus, the nominal exchange rate regime have significant effects on the real exchange rate and, consequently, on the allocation of goods and productivity factors above all in the short term. Moreover, the model assumes that financial market players take fully informed decisions, while in reality investment decisions must always be taken under uncertainty. In the case of the real exchange rate, this uncertainty means that a clear discrimination between equilibrium appreciation and disequilibrium overvaluation is hard to make, which may cause opinions of market participants and of monetary and exchange rate policymakers to be divided. Moreover, owing to uncertainty, erratic changes and overreactions of financial market participants' expectations may lead to excessive capital in- and outflows.

### **5.2 Coordination of Exchange Rate Policies in the Enlarged EU**

In the theoretical debate, the nominal exchange rate regime only becomes relevant when nominal rigidities are introduced into the above model. In such case, changes of the nominal exchange rate or, given constant inflation rates, inflation differentials may cause significant real exchange rate movements. As far as these changes are not justified by fundamentals, inefficiencies will result, either through "dysfunctional shifts" of goods production among countries (Mundell, 2000) or through shifts in purchasing power that are not justified by productivity changes. These distribution effects among states create incentives to coordinate economic policies in the area of nominal exchange rates. The main tool for balancing interests and for implementing the consensus in an EU enlarged by the accession countries is ERM II.<sup>1)</sup>

In the enlarged EU, in particular following integration into ERM II, nominal exchange rates will be influenced heavily by multilateral political decisions. This is particularly true for the adoption of the euro, which presupposes a consensus on the irrevocable fixing of the euro entry exchange rate.

However, these decisions must be supported by the financial markets, above all because they are made under conditions of removed capital controls. Should policymakers and financial markets be divided on the adequate nominal exchange rate level, or should financial markets disacknowledge the adequacy of the exchange rate advocated by policymakers, speculative attacks might be launched on accession country currencies, which, if successful, may have consequences for the real economy. For instance, the United Kingdom saw only small growth rates in the aftermath of the ERM crisis, while the countries hit by the Asian crisis even plunged into a massive recession. As documented by Kaminsky and Reinhart (1998) and Mishkin (1999), the Asian crisis is a worst-case scenario when it comes to the impact on the real economy.

What is important for the real effects is how the negative income effect caused by the withdrawal of foreign capital compares with the positive substitution effect stemming from the lower exchange rate (Gupta, Mishra and Sahay, 2000), as well as the extent of corporate bankruptcies and banking problems

*1* However, the exchange rate becomes a matter of common concern from the point of EU accession, which need not necessarily coincide with accession to ERM II.

that occur as foreign capital is being pulled out (Calvo, 1998). Empirical analyses, such as effected by Dollar (1992), show that the volatility of the exchange rate and long-term economic growth are negatively correlated. Exchange rate crises often go hand in hand with banking crises, which in turn tend to lead to temporary growth setbacks. As evidenced by Reininger and Schardax (2001), companies in the accession countries are comparatively highly indebted in foreign currencies. In the event of a currency crisis, this might trigger a shakeout in the real economy sector. The extent of this effect depends on the extent to which the foreign currency debt has been hedged; while no data are available, theoretical considerations indicate that such hedging has not been undertaken on a large scale.

### **5.3 Currency Turbulences in the Accession Countries – Impact on the Euro Area**

The 1990s saw a number of currency crises some of which were accompanied by banking crises. The crisis of the exchange rate mechanism of the European Monetary System in 1992, the Mexican crisis of 1994, the Asian crisis of 1997/98 and most recently the Argentine crisis (to name but a few) have shown that every crisis has its own history – specific trigger factors and specific consequences for growth and employment, both nationally and in other countries – and that there are just very few factors that all crises have in common. At the same time, both market participants and economic policymakers have been learning lessons from these crises, which may in itself be a reason why crises keep striking in ever new forms, with new causes and with new repercussions. Nevertheless, out of the many factors on which the emergence and the development of crises have been blamed in the past, some appear to be of particular relevance for the accession countries.

As explained in section 3.1, the accession countries are likely to see high capital inflows.<sup>1)</sup> In this case, these inflows and the accompanying phenomena, i.e. real appreciation and a current account deficit, are a long-term equilibrium phenomenon, while in the past they would often be an indicator of a looming crisis. This indicates how difficult it is both for markets and policymakers to distinguish between an equilibrium development and an overshooting of the exchange rate. Such constellations facilitate the emergence of divergent views between policymakers and markets, which may in turn trigger speculative attacks on fixed exchange rates.

One aspect on which the emergence of crises was blamed in the past is the dismantling of capital controls and the deregulation of domestic financial sectors. On both counts, the accession countries have been making significant headway in recent years. Capital controls were removed step by step, which is typically considered by the literature to have a stabilizing effect. Regarding the deregulation of the financial sector, permitting nonresidents to acquire equity stakes in banks was a crucial move, likewise described as stabilizing in the literature on account of the concomitant import of know-how. Indeed, the

*1 The given nominal exchange rate regime of the accession countries directly influences the extent of these flows, as the fluctuation of the expected gains increases with the fluctuation band of the nominal exchange rate, which affects the relative attractiveness of holding assets in the accession countries.*

strong international ties of the banking sector in the accession countries appear to be an asset that none of the countries hit by crisis in the past had such abundantly. Here, a tradeoff may exist; the external influence, particularly from the euro area, should lessen the probability of crises. In turn, the correspondingly higher exposure would push up the costs of crisis given a more efficient transmission channel.

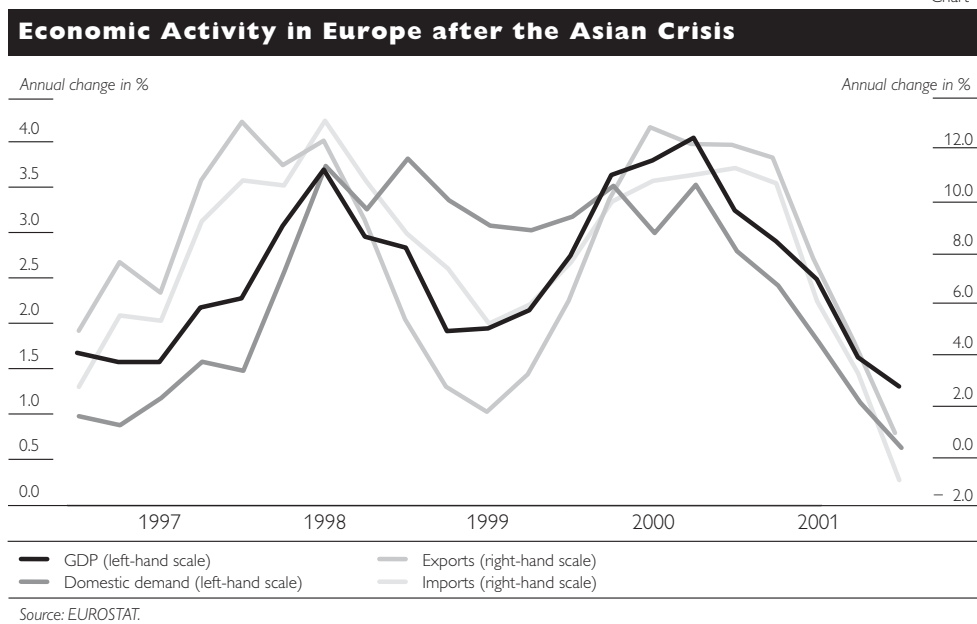
Finally, the above factors apply to all accession countries (if to different extents), which is why they might be understood by the markets to have very similar effects. In other words, should crisis strike in a given accession country and lead to a reversal of capital flows, there is a chance that the other countries, too, might suffer large capital withdrawals, solely on account of this similarity, even though pulling out the money would not be justified by fundamentals (contagion). Furthermore, there is a fundamental reason why a currency crisis, i.e. a strong depreciation in an accession country, may spill over to the region: given the high interlinkage of trade both among accession countries and with the euro area, the depreciation of the currency of one accession country against the euro has a direct bearing on the competitiveness of the other countries (for an empirical study on the relationship between trade ties and spillover, see Glick and Rose, 1998). However, no significant contagion effects were registered in the past, particularly not during the Russian crisis.

To sum it up, it cannot be ruled out that exchange rate and financial crises could occur in the accession countries owing to these risk factors. The international transmission of such developments to the euro area can, theoretically, occur via a number of channels:

- The purchasing power and competition effects that go hand in hand with the depreciation of the accession countries' currencies cause exports to the countries concerned to contract. Investments directly linked with such exports are being shelved.
- Given the recession emerging in the event of crisis, investments made in these countries lose in market value, causing the capital position of (euro area) investors to deteriorate. This balance sheet effect reduces the investment power of companies.
- The lending capacity of banks hit by such losses may be affected adversely. This is particularly true for financial institutions with a high exposure in Central and Eastern Europe that failed to adequately diversify potential regional risk concentrations on international financial markets (through loan insurance or securitization on the assets side, or through banking alliances on the liabilities side).
- On account of increased uncertainty, financial market perturbations emerge, which translate into higher interest rates or stock market downturns, which in turn adversely affect investments.
- Expectations of negative repercussions of a crisis on the euro area may produce a downward pressure on the exchange rate of the euro.

The quantitative impact of a currency crisis in the accession countries on the euro area very much depends on its intensity and regional dispersion. Here, a range of scenarios are conceivable. Another major factor is the extent of the economic integration of the euro area with the accession countries in relation to overall economic activity in the euro area. To cover both factors and to assess, as

Chart 4



a benchmark, the repercussions of a worst-case scenario on the euro area, this section continues with a discussion of the impact of the Asian crisis on the euro area and with a comparison of the latter's economic ties with the accession countries and with Asia.<sup>1)</sup>

As is evident from chart 4, the Asian crisis markedly dampened external trade in the euro area, with the export setback exceeding the contraction of imports. This reflected a reversal of capital flows that translated into a rapid reversal of the current accounts of the countries concerned,<sup>2)</sup> which was caused by a combination of a recession and a massive nominal and real depreciation. Moreover, the Asian crisis also sparked significant contagion effects on other emerging markets, which added to the slowdown of international growth. A major aspect of the relatively mild impact on the euro area was the then very robust internal demand, which was evidently the reason why, apart from the external trade channel, none of the transmission channels mentioned above was significant. Regarding the time dimension of the crisis, exports were fairly quick to bounce back to their precrisis growth path, causing the Asian crisis to have relatively minor economic repercussions on the euro area on balance.<sup>3)</sup>

What was crucial for the relatively minor effect of this crisis was the small economic significance of the Asian countries for the euro area. The share of exports in the region was between 0.7% of euro area GDP, or of 1.2% when Japan is factored in. By contrast, exports to the accession countries accounted for some 1.4% of GDP in 2000.<sup>4)</sup>

1 As a regional breakdown of the net investment position of the euro area is not available, this comparison must be limited to the share of external trade in GDP.

2 The difference between the current account/GDP ratio of Indonesia, Korea, Thailand, Malaysia and the Philippines before and after the crisis averaged approximately 12%, and the real depreciation roughly 25%.

3 The unemployment rate remained unaffected.

4 Source: Eurostat.

The anticipated macroeconomic costs of currency and financial crises depend both on their intensity and on their likelihood of occurrence. Given the size of the accession countries relative to the euro area, there is an inbuilt cost threshold. The likelihood of occurrence can be reduced by effective and credible economic policy institutions, particularly central banks, financial market authorities and wage-setting institutions, as well as adequate national budget policies in the accession countries. The intensified economic policy coordination and surveillance within the EU, in which the accession countries will participate immediately upon the EU's enlargement to the east, the multi-lateral obligation to defend an exchange rate within the ERM II framework, as well as the improvement of the institutional and legal framework conditions in the accession countries through the adoption of the *acquis communautaire* should be further important factors reducing the probability of crises in the accession countries.

## 6 Summary and Conclusions

This paper starts with a succinct overview of the exchange rate regimes that the accession countries currently pursue, and of the positions that the EU and the accession countries have adopted on the issue of monetary integration. The stocktaking attests to the diversity of the exchange rate policies in accession countries. The EU has proposed that the accession countries take a three-step approach to complete monetary integration (EU accession – ERM II participation – introduction of the euro). While all accession countries have essentially accepted the phased integration, their positions on, and strategies for, the timing of the introduction of the euro differ.

This raises the question of whether exchange rate volatilities will subside as the integration process advances and whether trade-creating and growth-boosting effects will consequently emerge. Papers that address this question indicate that a complete elimination of exchange rate volatilities should visibly enliven bilateral trade. The introduction of a single currency, by contrast, promises to have a multiple of the effect of the disappearance of exchange rate uncertainty alone, according to Rose (2000). It is difficult to assess the impact the institutional framework of the accession countries' monetary policy integration will have on volatility. In the short run, the implications of participation in ERM II for volatility appear to be mixed, while over a longer period of time – particularly in the run-up to the introduction of the euro – such participation is likely to dampen exchange rate fluctuations.

In the long term, the real exchange rates of the accession countries are likely to appreciate against the euro. The current consensus estimate is a trend appreciation of some 2% p.a., reflecting a long-term equilibrium phenomenon caused by the convergence of the output levels of the two economic areas. Current account deficits linked with these developments would also be considered equilibrium phenomena. However, in the short term, there is a chance that excessive capital inflows may cause a disequilibrium, i.e. a real overvaluation and excessive current account deficits. As a result, currency crises may emerge in individual countries under certain circumstances, which could affect the banking sector adversely and possibly spill over to other accession countries. From today's perspective, the repercussions for the euro area of both equi-



brium and possible disequilibrium developments would appear to be limited, given the small size of the accession country economies in relation to the euro area. The likelihood that such crises emerge may be reduced by effective macroeconomic institutions and policies and efficient coordination, for which EU accession is the best guarantee, as well as by the multilateral surveillance of national economic policies. In other words, participation in Monetary Union eliminates the risk of currency crises, but not the risk of other financial crises.

## Bibliography

- Anderton, R., Skudelny, F. (2001).** Exchange Rate Volatility and Euro Area Imports. European Central Bank, Working Paper 64.
- Bénassy-Quéré, A., Fontagné, L., Lahrière-Révil, A. (2001).** Exchange-Rate Strategies in the Competition for Attracting Foreign Direct Investment. In: *Journal of the Japanese and International Economies*, 15 (2), 178–198.
- Bevan, A., Estrin, S., Grabbe, H. (2001).** The Impact of EU Accession Prospects on FDI Inflows to Central and Eastern Europe. ESRC Policy Paper 06/01.
- Calvo, G. (1998).** Capital Flows and Capital Market Crises: The Simple Economics of Sudden Stops. *Journal of Applied Economics*, November, 1, 35–54.
- Canzoneri, M. B., Cumby, R., Diba, B., Eudey, G. (1998).** Trends in European Productivity: Implications for Real Exchange Rates, Real Interest Rates and Inflation Differentials. Oesterreichische Nationalbank, Working Paper 27 (May).
- Coté, A. (1994).** Exchange Rate Volatility and Trade. Bank of Canada, Working Paper 94/5.
- De Gregorio, J., Giovannini, A., Wolf, H. (1994).** International Evidence on Tradables and Nontradables Inflation. *European Economic Review*, 38 (June), 1225–1244.
- Dell’Ariccia, G. (1998).** Exchange Rate Fluctuation and Trade Flows. IMF Working Paper 98/107.
- Dollar, D. (1992).** Outward Oriented Developing Economies Really do Grow More Rapidly: Evidence from 95 LDCs, 1976-85, *Economic development and cultural change*, 40 (3), 523–544.
- Dornbusch, R., Goldfajn, I., Valdes, R. (1995).** Currency Crises and Collapses. *Brookings Papers on Economic Activity*, 2.
- European Commission (1999).** Composite paper – Reports on Progress Towards Accession by Each of the Candidate Countries. Brussels, <http://europa.eu.int>.
- Glick, R., Rose, A. (1998).** Contagion and Trade: Why Are Currency Crises Regional? NBER Working Paper 6806.
- Gupta, P., Mishra, D., Sahay, R. (2000).** Output Response to Currency Crises, Mimeo.
- Honohan, P. (2001).** Discussion. *Economic Policy*, 33, 457–458.
- Kaminsky, G., Reinhart, C. (1998).** The Twin Crises: The Causes of Banking and Balance of Payments Problems. *American Economic Review*.
- Lipschitz, L., Lane, T., Mourmouras, A. (2002).** Capital Flows to Transition Economies: Master or Servant. IMF Working Paper 02/11.
- MacDonald, R., Ricci, L. (2001).** PPP and the Balassa Samuelson effect: The Role of the Distribution Sector. CESifo Working Paper 442 (March), Munich.
- Marin, D., Hauser, F., Protsenko, A., Raubold, A. (2002).** Österreichische Auslandsinvestitionen in Osteuropa: Theorie und Evidenz. Anniversary Fund project no. 5827, OeNB, Vienna.
- Milesi-Ferretti, G., Razin, A. (1998).** Current Account Reversals and Currency Crises: Empirical Regularities. IMF Working Paper 98/89.
- Mishkin, F. (1999).** Global Financial Instability: Framework, Events, Issues. *Journal of Economic Perspectives*, 13 (4), 3–20.

- Mundell, R. A. (2000).** A Reconsideration of the Twentieth Century. *American Economic Review* (June), 327–340.
- Obstfeld, M., Rogoff, K. (1996).** *Foundations of International Macroeconomics*. MIT Press, Cambridge, Massachusetts.
- Obstfeld, M. (1999).** *Open-Economy Macroeconomics, Developments in Theory and Policy*. NBER Working Paper 6319.
- Persson, T. (2001).** Currency Unions and Trade: How Large Is the Treatment Effect? *Economic Policy*, 33, 435–448.
- Reininger, T., Schardax, F. (2001).** The Financial Sector in Five Central and Eastern European Countries: An Overview. *Focus on Transition* (Oesterreichische Nationalbank), 6 (1).
- Rose, A. K. (2000).** One Money, one Market: the Effect of Common Currencies on Trade. *Economic Policy*, 30, 9–45.