

An Informal Euro Standard as a First Step for EMU Membership?

Preliminary Draft

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The enlargement of the European Union is approaching fast. Eight Central and Eastern European (CEE) countries are planned to join the EU by 2004, two CEE countries are expected to follow by 2006. Although the adoption of the *Aquis Communautaire* by the accession candidates requires a large degree of macroeconomic convergence and also leads one to expect ERM2 and EMU membership, the Central and Eastern European economies by now still pursue rather heterogeneous exchange rate policies. While one group has—though sometimes not openly admitted—adopted pegs to the euro, a second group has moved towards more exchange rate flexibility. The paper argues that a common peg to the euro would enhance the macroeconomic stability of the group of CEE accession countries. It explains the rationale for the emerging markets to peg their exchange rates in general, and the rationale for the CEE countries to peg their exchange rates to the euro in specific. Building upon the strong motivation to peg the exchange rates to the euro the paper recommends an informal euro standard as a first step for the EMU membership of the CEE countries which would facilitate real convergence and EMU accession.

Keywords: *Foreign Exchange Policy, EMU, EU enlargement, EMU accession, euro zone, monetary union, Central and Eastern Europe.*

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1. Introduction

European integration has accelerated since the turn of the millennium. With the creation of the European economic and monetary union (EMU) 12 member states of the European Union (EU) unified their monetary and foreign exchange policies. The size of the EMU is large enough to challenge the dollar as the world's leading transaction, intervention and reserve currency.

Furthermore, the EU and EMU face an unprecedented and historic enlargement. 13 mostly Central and Eastern European countries applied for EU membership during the 1990s. In December 1997 the Luxembourg European Council decided to start negotiations with Hungary, Poland, Estonia, the Czech Republic, Slovenia, and Cyprus (Luxembourg group). One year later the Helsinki European Council decided to open talks with Romania, the Slovak Republic, Latvia, Lithuania, Bulgaria, and Malta (Helsinki group).

Intensive talks about the adoption of the *Aquis Communautaire* by the applicant countries having been concluded, the EU enlargement to Central and Eastern Europe (CEE) is approaching fast. In October 2002 the EU Commission recommended closing negotiations with 10 countries: Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Slovak Republic and Slovenia. The accession of this first group of new EU members is scheduled for June 2004. Bulgaria and Romania might follow in 2006.

The EU accession of ten CEE Countries raises the question of their EMU membership. As far as the Optimum Currency Area criterion is concerned, as of 2002 most Central and Eastern European countries hardly qualify for the EMU (De Grauwe/Aksoy 1999). The economic divergence and the productivity gap between the EU and the CEE countries are still considerable. The flexibility of labour markets might also be too low. Furthermore, most CEE countries still fail to meet the Maastricht criteria for EMU accession, i.e., convergence of inflation, long-term interest rates and exchange rates.

Nevertheless, although EMU membership is neither a necessary nor sufficient condition for EU membership, many accession candidates have expressed their strong intention to join the EMU as soon as possible (Lavrac 2002: 10).¹ Even more than words paid, a rapid monetary convergence of the CEE countries towards the Euro Area heralds EMU accession, which begs the question as to the adequate exchange rate strategies that have been a part of EU enlargement. Although eight out of ten CEE countries intend to join the EU within a few years there is no coherent exchange rate strategy in Central and Eastern Europe. While one group of countries

¹ The EU side is more pessimistic about EMU membership, warning against a premature entry of the CEE countries. The inclusion of "unstable currencies could weaken the credibility and stability of the euro. The CEE countries might need financial assistance to deal with asymmetric shocks in the monetary union. Therefore the EU stresses the need for meeting the Maastricht criteria on a sustainable basis (Lavrac 2002: 10-11).

prepares EMU accession by close pegs to the euro, a second group has recently moved toward more exchange rate flexibility.

My argument holds that, under the presumption that all CEE accession candidates want to join the EMU, currency basket and exchange flexibility are not a sustainable exchange rate strategy. Instead, I recommend an informal euro standard in Central and Eastern Europe, which would enhance economic stability and real convergence² as well as EU and EMU accession of the CEE countries.

2. A Shift towards more Exchange Rate Flexibility in Eastern Europe?

While the expected EU accession of ten CEE countries implies a shift towards exchange rate stabilization against the euro, some Central and Eastern European countries seem to have recently moved towards more exchange rate flexibility.

The shift towards flexible exchange rates in Central and Eastern Europe is rooted in the capital market related crisis of the second half of the 1990s. During the 1980s and 1990s many emerging markets—including many CEE economies—have opened their capital markets to international capital inflows. The international capital market liberalization—which is also a required prerequisite for EU accession—improved the access to international funds and thus accelerated the economic catch-up process. But it also made the emerging markets vulnerable to financial and currency crisis: the Mexican Tequila crisis (1994), the Asian crisis (1997/98), the Russian flu (1998), the Turkish crisis (2000), and the long tumbling and final fall of Argentina (2002) are the most prominent cases.

Although the CEE countries were not as strongly affected by the financial turmoil of the 1990s as many Asian and South American countries, the Central and Eastern European currencies were also targets of speculative attacks in 1997/98. Abrupt short-term capital outflows and sudden short-term interest rate hikes caused strong economic downturns in many CEE countries.

Learning from the financial crises in Asia, South America and Central and Eastern Europe, the IMF recommends emerging markets open to international capital flows to float their exchange rates (more) freely (Fischer 2001). According to Fischer, many emerging markets with soft peg arrangements suffered from speculative attacks and burdensome devaluations, while emerging markets with greater exchange rate flexibility (for instance Chile, Mexico, Peru, South Africa and Turkey) seem to have mastered the recent crisis period better. Flexible exchange rate

² Real convergence is understood as catching-up in terms of GDP per capita, implementation of structural reforms and the termination of the transition process. The concept of real convergence is rather vague, and no specific indicators are formulated in quantitative terms. Real convergence criteria might serve to postpone EMU membership of the CEE countries (Lavrac 2002: 12-13).

arrangements allowed them to absorb adverse shocks more easily and to avoid the large adjustment costs of the breakdown of the exchange rate regime.

The IMF concludes that emerging markets open to international capital flows and pegged exchange rate regimes are inherently prone to crisis and these countries “*should be encouraged, in their own interest and for the broader interest of the international community, to adopt floating rate regimes.*” (Mussa et. al. 2000) The IMF even sometimes pressures countries to announce an internal monetary standard—such as inflation targeting—as a substitute for nominal exchange rate anchors.

The result of the shift toward more exchange rate flexibility is what Fischer (2001) calls a bi-polar world. While some countries have adopted hard pegs or even monetary unions, a large number of emerging markets and developing countries are moving towards exchange rate flexibility.³ The drift towards corner solutions—the “hollowing of the middle”—seems to take place in Central and Eastern Europe as well.

Table 1: East Asian Exchange Rate Arrangements According to the IMF Classification

Country	Classification
Bulgaria	currency board arrangement
Czech Republic	independently floating (inflation targeting framework)
Estonia	currency board arrangement
Hungary	pegged exchange rate with horizontal bands
Latvia	other conventional fixed peg arrangement (against a composite)
Lithuania	currency board arrangement (fund-supported or other monetary program)
Poland	independently floating (inflation targeting framework)
Romania	exchange rate with crawling bands (unannounced path)
Slovak Republic	managed floating (other monetary framework)
Slovenia	managed floating (monetary aggregate target)

Source: IMF: IFS (April 2002).

Indeed, according to the official IMF classification, three CEE countries have moved towards more exchange rate flexibility since 1997. The Czech Republic abolished its DM and dollar-based currency basket in May 1997 and started floating its currency. The IMF reclassified the exchange rate regime as a managed float. In January 1998, the Czech central bank adopted an

³ Managed floating and independently floating exchange rates are classified as flexible exchange rate arrangements. Exchange rate arrangements with no separate legal tender, currency board arrangements and other conventional fixed peg arrangements are classified as fixed exchange rate arrangements. Pegged exchange rates with horizontal bands, crawling pegs and exchange rates with crawling bands are classified as intermediate exchange rate arrangements.

inflation target monetary framework and in 2001 the exchange rate arrangement of the Czech Republic moved from managed floating to independently floating.

Similarly, in October 1999, the Slovak Republic abandoned its currency basket arrangement in favour of a (managed) floating exchange rate. Poland followed suit in April 2000, and decided to adopt an inflation-targeting framework and to float the Polish zloty. Because the Romanian leu and the Slovenian tolar have been classified as floating currencies since the early 1990s, the official IMF classification of exchange rate arrangements has declared five out of ten CEE countries to be maintaining flexible exchange rate arrangements (Table 1). Four countries (Bulgaria, Estonia, Latvia, Lithuania) have fixed exchange rate arrangements, while only Hungary (pegged exchange rate with horizontal bands) is classified as a so-called “intermediate exchange rate arrangement”.

2.1. The Rationale for Stable Exchange Rates

Although the official IMF classification of the CEE exchange rate arrangements fits Fischer's (2001) notion of a bi-polar world of exchange rate arrangements, two caveats remain. Do the official IMF classifications correspond to the *de facto* exchange rate arrangement of the respective countries? And if the a country maintains *de facto* flexible exchange rates, are the flexible exchange rates sustainable or would it be better to move to more exchange rate stability against the euro?

Do the official IMF classifications of the Czech Republic, Romania, Poland, Slovenia, and Slovakia as independent floaters correspond to the *de facto* exchange rate policies? Recently, several authors have argued that in emerging markets and development countries the *de jure* exchange rate arrangements reported to (and by) the IMF might not correspond to their *de facto* exchange rate policies. In an influential paper, Calvo and Reinhart (2002) have found a pervasive “*fear of floating*” in emerging markets. Reinhart (2000: 69) summarizes the rationale for exchange rate stabilization in emerging market as follows:

“When circumstances are favorable (i.e., there are capital inflows, positive terms of trade shocks, etc.) many emerging markets are reluctant to allow the nominal (and real) exchange rate to appreciate. ... When circumstances are adverse, the fear of a collapse in the exchange rate comes from pervasive liability dollarization. Devaluations are associated with recessions and inflation, and not export-led growth.”

Based on the arguments of Calvo and Reinhart, the rationale for the stabilization of the CEE currencies is threefold. First, emerging markets might want to stabilize the exchange rates to import macroeconomic stability. Second, stable exchange rates reduce uncertainty for international trade. Third, incomplete capital markets (original sin) might give an incentive to reduce the exchange rate risk of international debt and short-term capital flows.

2.1.1. Importing Macroeconomic Stability

Most emerging markets and in particular the former communist countries of Central and Eastern Europe lack a history of macroeconomic stability. With price controls being removed at the beginning of the transformation process in the early 1990s and hidden inflation emerging as a direct consequence, the Central and Eastern transition economies suffered from substantial inflation. In addition, because tax systems were underdeveloped and central banks were not independent, inflation tax has been a common means to finance government expenditure. In the early 1990s the inflation rates in all CEE countries were far above the Western European level. In some cases—as Bulgaria and Romania—even hyperinflation emerged.

High inflation increases uncertainty and discourages private consumption and investment. From an international perspective inflation and depreciation deter international trade and foreign direct investment. Thus, in moving from a planned regime to a market economy a key objective of the transformation process has been to establish credibility by macroeconomic stability. Because creating a reputation of monetary stability is difficult and time consuming, nominal exchange rate pegs—which help anchor both inflation and expectations—have been an important tool for this purpose.

In Central and Eastern Europe, Estonia has been a forerunner with its efforts to stabilize macroeconomic performance based on a nominal anchor. The Estonian currency board has been in place for more than 10 years without any significant change in the German mark and later euro exchange rate. The unwavering peg contributed to a slow but steady decline of inflation towards the Western European benchmark (Figure 8 and Figure 9). Short-term interest rates had already reached the Western European level in the mid 1990s (Figure 10 and Figure 11).

Although most other CEE countries followed less stable exchange rate paths, they used a variety of exchange rate systems to lower inflation. Poland tried a hard peg to dollar in the early 1990s and then switched to a currency basket with declining rates of monthly depreciation. Bulgaria started its transformation process with a hard peg to the dollar which ended in the hyperinflation of the mid 1990s. Since 1998 a currency board ensures exchange rate (and price) stability against German mark and later euro. Also the Czech Republic, Hungary, Latvia and the Slovak Republic adopted currency baskets with different and varying compositions. Only Romania made no recognizable attempts to stabilize inflation and allowed significant depreciations of the leu.

As a direct result of the fixed exchange rate arrangements, inflation and short-term interest rates in all of Central and Eastern Europe (except Romania) could be stabilized, particularly in the second half of the 1990s. While inflation in most CEE countries was far above 20% in the early 1990s, a steady decline could be observed in every country (Figure 8 and Figure 9). In the late 1990s the decline of inflation and inflation expectations was accelerated by the expected EU

accession. Inflation rates of the CEE countries (except Romania) approached the EU level. Reflecting the slowing path of consumer price inflation, short-term interest rates⁴ declined as well (Figure 10 and Figure 11).

Besides the positive impact on the stability of (consumer) prices in the CEE countries, the nominal anchors also helped to curtail government expenses. With the planned EU and possible EMU accession, the fulfilment of the fiscal Maastricht criteria⁵ by the CEE accession candidates has been widely discussed. For some observers the public deficits of the CEE countries have been surprisingly small—even by the standards of the Western European industrialized countries. Public deficits are low and cumulative debt far below the EU average (De Grauwe and Lavrac 1999: 2).

Low government expenses and public debt is not specific for the CEE emerging markets, but a widely observed phenomenon in emerging markets. For instance, in East Asia, the World Bank (1993) praised the sound government expenditure in the early 1990s. The IMF found low public deficits and cumulative East Asian government debt in the aftermath of the Asian crisis.

In developing countries and emerging markets, fiscal, monetary and foreign exchange discipline are closely linked because tax systems and domestic bond markets are underdeveloped (Chin and Miller 1998). If governments are unable to raise money by collecting taxes or issuing bonds, printing money is a common means to finance public expenditure. Central banks which are not independent give credit to the governments. If, however, an exchange rate peg hinders the government from printing money—since it would bring the exchange rate under depreciation pressure—fiscal discipline is the only way to ensure exchange rate stability.

2.1.2. Reducing Risk for International Trade

As monetary and fiscal stability reduces the insecurity caused by exchange rate fluctuations it contributes to stable trade performance. All developing countries, emerging markets and transition economies share the characteristic that international trade is mostly not invoiced in the domestic currency. Instead, exports and imports are traded in the currencies of the major industrial countries which enjoy the confidence of the international business community.

With most trade denominated in foreign currency, exchange rate fluctuations influence the performance of the export sector. If we assume the government of an emerging economy allows the exchange rate of the domestic currency to float freely, the volatile international capital flows would cause large nominal exchange rate fluctuations. Because trade contracts are made in for-

⁴ Because financial markets in the CEE countries are underdeveloped, there is no market for long-term government bonds.

⁵ According to the Maastricht treaty the general government balance must be lower than 3% of GDP. Gross government debt must be lower than 60% of GDP.

eign currency and fixed for several months, the dollar or euro prices would remain stable in the foreign markets.

While this “*pricing to market*” has the merit of stabilizing foreign sales, the exchange rate fluctuations are reflected in profits. If the domestic currency appreciates profits will rise, if the value of the currency falls profits decline or even become negative. If we assume that the value of the currency remains by and large constant in the medium and long-term the exchange rate fluctuations cause a high volatility of profits. The risk for the export (and import) enterprises increases.⁶

To shield the domestic export industry against such pronounced fluctuations of their revenues, the government can stabilize the exchange rate. Domestic wholesale prices are pinned down to the level of the anchor currency. The prices of traded goods remain stable at home and abroad. As price signals and expectations remain reliable, the international competitiveness of the domestic export industry is ensured.

While, large industrial countries such as Euro Area, US or Japan can afford to address the monetary policy to domestic targets because the export sector is comparatively small, small open economies have a larger incentive to keep the export revenues stable because their real output depends heavily on international trade. Stabilizing the exchange rate and export revenues is equivalent to stabilizing the domestic business cycle. As the emerging markets in Central and Eastern Europe are very open economies—international trade (export + import of goods and services) as percentage of GDP ranges from 66% in Poland up to 196% in Estonia (2000)—the incentive to stabilize exchange rates is high. Only Poland as the largest and least open CEE economy might have the freedom to float its currency more freely—as it has since 2000.

2.1.3. Underdeveloped Capital Markets and Original Sin

While macroeconomic stabilization and reduced risk for international trade are the traditional arguments in favour of fixed exchange rates, the discussion about the pros and cons of exchange stability have recently focused on (international) capital markets. Starting in the 1970s the capital markets of most industrial countries were gradually deregulated and opened to international capital flows. During the 1990s, many emerging markets followed the liberalization process.

In Central and Eastern Europe—where free and open capital markets did not exist under communist rule—the built up of a competitive banking sector and robust capital markets has been a prominent goal of the transformation process. This included the access of international capital flows to domestic capital markets, which is a prerequisite for EU accession.

⁶ This risk can even not be avoided if the export enterprises of the emerging market decided to shift the exchange rate fluctuations to the prices in the foreign markets. The exchange rate fluctuations would be reflected in volatile foreign sales. The volatility of profits would increase as well.

Although the former communist economies have proceeded substantially with the liberalization of the domestic capital markets during the transformation process, the task is far from being fulfilled. Lanoo and Salem (2001) argue that “as compared to developed economies, banking and securities markets are still in early stages of development, and many further steps will have to be taken before arriving at levels of mature markets.” Although in countries such as Hungary or Poland short-term government securities have contributed significantly to the creation of capital markets, the development of medium- and long bond markets Central and Eastern Europe is far from being accomplished.⁷

Tight monetary policy, disciplined public finance and confidence in the macroeconomic stability are prerequisites for the development of deep capital markets. As Ricardo Hausmann und Barry Eichengreen (1999: 3) put it, the capital markets of emerging economies suffer from “original sin”:

“Original sin” ... is a situation in which the domestic currency cannot be used to borrow abroad or to borrow long term, even domestically. In the presence of this incompleteness, financial fragility is unavoidable because all domestic investments will have either a currency mismatch (projects that generate pesos will be financed with dollars) or a maturity mismatch (long-term projects will be financed by short-term loans).

Critically, these mismatches exist not because banks and firms lack the prudence to hedge their exposures. The problem rather is that a country whose external liabilities are necessarily denominated in foreign exchange is by definition unable to hedge. Assuming that there will be someone on the other side of the market for foreign currency hedges is equivalent to assuming that the country can borrow abroad in its own currency. Similarly, the problem is not that firms lack the foresight to match the maturity structure of their assets and liabilities; it is that they find it impossible to do so. The incompleteness of financial markets is thus at the root of financial fragility.

Original sin applies to exchange rate stabilization on both low and high frequencies of exchange rate volatility.⁸ Calvo and Reinhart (2002) as well as Hausmann, Panizza and Stein (2001) find a strong relationship between the ability of a country to borrow internationally and the pattern of floating: Development countries and emerging economies have a strong incentive to keep exchange rates stable at low frequencies—i.e. monthly, quarterly or yearly swings of the exchange rate—because liabilities are overwhelmingly denominated in foreign currency.

If for instance, the government of an emerging market were to allow a sustained or sudden depreciation of the domestic currency—due to the currency mismatch—the balance sheets of the domestic banking sector would be placed at risk. As the real value of euro or dollar denominated debts in domestic currency increases, the equity ratio of the domestic financial institu-

⁷ The Economist (2002) comments: “Perhaps it was too much to expect Central European countries to develop mature and properly regulated securities markets within a few years when it took centuries to develop them in the West.”

⁸ I define low frequency exchange rate changes as the monthly, quarterly or yearly gradual swings of the exchange rate. High frequency exchange rate changes are defined as daily and weekly percentage exchange rate changes.

tions falls. Even gradual swings of the exchange rate are harmful, because banks and enterprises will suffer from a high volatility of their liabilities. The overall risk for the financial system increases⁹ and “floating is counterproductive” (Eichengreen and Hausmann 1999: 13). The monetary authorities of emerging markets might try to stabilize the exchange rates.

While Calvo and Reinhart (2002), Hausmann, Panizza and Stein (2001) and Eichengreen and Hausmann (1999) base their perception of “*fear of floating*” on low frequency exchange rate fluctuations, McKinnon and Schnabl (2002a) explain the motivation of emerging markets to keep their exchange rates stable at high frequencies—i.e. daily or weekly changes of exchange rate returns.

On a daily or weekly basis original sin creates an incentive to stabilize exchange rates, because—with incomplete capital markets—the foreign exchange risk of daily or weekly international payment transactions is difficult to hedge. In the highly developed capital markets of the industrial countries an investor can hedge an open position in foreign currency by financial derivatives (forwards) at low cost. This is impossible in the emerging markets, because forward markets don’t exist. As foreign investors don’t accept bonds denominated in domestic currency the foreign exchange risk of short-term external liabilities remains—by definition—unhedged.

Without an efficient forward market risk-averse importers and exporters cannot easily hedge, nor can banks cover open foreign exchange positions. To shield banks and enterprises against the risk of exchange rate flexibility the government of emerging markets might want to provide a substitute for the missing private forward market. If it has enough foreign exchange reserves available, the government could issue forwards on its own and thus “create” a forward market. But as financial markets are incomplete, the interest rate structure might not be deep enough to determine the adequate forward rate. Further, the government might be tempted to support “friends” in banks and enterprises by setting the forward rate lower than it would be set under free market conditions.

Thus, the government could provide a more comprehensive (informal) hedge for short-term international payment transactions by keeping the exchange rate stable in the short and medium terms. Many forward commercial transactions including trade credit are repaid in foreign currency on a daily or weekly basis. If the exchange rate remains stable on a day-to-day or week-to-week basis, these transactions receive an informal insurance against foreign exchange risk.

⁹ Even if the domestic currency comes only under depreciation pressure the banking sector might be at risk due to the maturity mismatch. If a government seeks to defend the currency by increasing interest rates and domestic money supply contracts, the financial institutions will shift the rising interest rates to the enterprises or call their loans. Long-term projects which have been financed with short-term loans might become unprofitable and or the enterprises might be unable to repay the debt. Currency risk is transformed into default risk. Again a banking crisis might result.

High frequency pegging allows the private banks and enterprises to repay their short-term foreign currency liabilities with minimal foreign exchange rate risk (McKinnon and Schnabl 2002a).

2.2. Formal Tests for Exchange Rate Flexibility

The need for macroeconomic stability and the high risk of exchange rate volatility for international goods and capital transactions explain the pervasive *fear of floating* in emerging markets. In Asia, Africa, South America and Central and Eastern Europe exchange rate stabilization is an important pillar of economic policy. Does this strong rationale for stable exchange rates fit with the official IMF policy in favour of more flexible exchange rates?

Two criteria are applied to test whether or not the exchange rates of the Czech koruna, the Polish zloty, the Slovak koruna, and the Slovenian tolar are floating currencies as classified by the IMF. First, the criteria of Calvo and Reinhart (2002) are used to test for low-frequency exchange rate volatility against the euro and dollar. Second, the standard deviations of daily exchange rate changes of CEE currencies are compared with daily volatilities of the euro/dollar exchange rate as the freely floating benchmark currency.

2.2.1. Calvo-Reinhart Criteria

Calvo and Reinhart (2002) use three criteria to measure the extent of open and hidden exchange rate stabilization for 155 exchange rate arrangements in 39 countries: monthly (percentage) exchange rate changes, monthly percentage changes on official foreign reserves, and monthly absolute changes of nominal short-term interest rates.

For all three criteria they set (arbitrary) probability limits to measure the extent of foreign exchange stabilization. First, the degree of exchange rate fluctuations itself indicates stabilization efforts. If, for instance, the probability is high that monthly exchange rate changes fall outside the band of $\pm 2.5\%$, the currency is rated as freely floating. With a low probability that the monthly exchange rate changes fall outside the predetermined band, the currency is classified as fixed.

Second, governments stabilize exchange rates by intervening in foreign exchange markets. For instance, to prevent the domestic currency from appreciating, the monetary authorities exchange domestic currency for dollars, euros or yen. The official foreign exchange reserves increase. To prevent the domestic currency from depreciation monetary authorities will exchange foreign against domestic assets. Thus, if the government tries to stabilize the exchange rate of the domestic currency, the probability is high that the monthly changes of official foreign reserve changes

fall outside the predetermined band of $\pm 2.5\%$. High probabilities indicate high intervention activity and fixed exchange rates. Low probabilities indicate a free float.¹⁰

Third, instead of foreign reserves monetary policy can be used for exchange rate stabilization. For instance, to prevent the domestic currency from devaluation the government might increase interest rates. International capital flows are redirected towards the domestic capital markets and the appreciation pressure abates. Thus, if the probability is high (low) that absolute interest rates changes fall outside the predetermined band of $\pm 4.0\%$ Calvo and Reinhart see indication that these countries stabilize (don't stabilize) the exchange rates via monetary policy.

Table 2 gives an overview over the Calvo-Reinhart exchange rate criterion (ϵ), the foreign reserve criterion (ϕ) and the interest rate criterion (ι) and their respective (arbitrary) bands. According to Calvo and Reinhart (2002) their probability criteria are superior to the use standard deviations as the measure of exchange rate volatility¹¹ because they avoid distortions by outliers, particularly in the case of interest rates. Here both approaches are used to assess the exchange rate flexibility of the CEE currencies.

Table 2: Calvo-Reinhart Criteria

	Exchange rate (e)	Foreign reserves (f)	Interest rate (?)
Criterion	$e = \frac{e_{t+1} - e_t}{e_t}$	$j = \frac{F_{t+1} - F_t}{F_t}$	$i = i_{t+1} - i_t$
Band	$\pm 2.5\%$	$\pm 2.5\%$	$\pm 4.0\%$

To assess the degree of exchange rate stabilization the original Calvo-Reinhart criteria are modified in two regards. First, because the exchange rates of the CEE currencies can be pegged to both the euro or the dollar in principle, both exchange variability against the euro and the dollar are tested. Second, Calvo and Reinhart chose an arbitrary band of $\pm 4.0\%$ for their interest rate criterion ι . Such a band of ± 400 basis points seems primarily apt to distinguish between high and low interest rates countries.¹² In the Central and Eastern European emerging markets the probability that short-term interest rates change by more 400 basis points from one month to the other is extremely small. Therefore, I narrow the band (arbitrarily) to monthly changes of $\pm 0.4\%$.

The observation period is from January 1999 to July 2002 for three reasons. First, turmoil in the international markets might distort the results. The wave of currency crisis in the emerging markets of the years 1997/98 can be assumed to have abated by January 1999. Second, the offi-

¹⁰ Given that the governments report the changes in official reserves properly.

¹¹ As, for instance, used by Hernández and Montiel (2001).

¹² For low interest rates industrial countries the probability that the exchange rate changes from one month to the other by more than $\pm 4.0\%$ is (close to) zero.

cial introduction of the euro in January 1999 might have influenced the exchange rate policies of the CEE countries. Third, the EU accession negotiations of both the Luxemburg and Helsinki groups had started by January 1999. Both the second and third factor might have influenced the recent exchange rate policies of the CEE countries.

Table 3 reports the results for the Calvo-Reinhart criteria. The euro/dollar exchange rate and foreign reserves and short-term interest rates of the Euro Area and the US are used as benchmarks. The exchange criterion ϵ yields the following results. First, all four countries which are officially classified as fixed exchange rate regimes show low exchange rate volatility against the euro. Notably for the Bulgarian lev (0.60%), the Estonian kroon (4.65%) and the Latvian lat (16.28%) have a significantly lower probability that the exchange rate changes are higher than $\pm 2.5\%$ than the benchmark euro/dollar exchange rate (39.53%). Lithuania, which has repegged its exchange rate from the dollar to the euro in February 2002, had a very low exchange rate variability against the dollar up to January 1999, but starting in February 2002 low exchange rate fluctuations against the euro can be assumed. Hungary, classified as having an “intermediate” exchange rate arrangement, has the same probability (4.65%) as the hard peg of Estonia.

Table 3: Results for the Calvo-Reinhart (including standard deviations) (1999:01–2002:07)

	Exchange Rate Euro		Exchange Rate Dollar		Foreign Reserves		Interest Rate	
	P	σ	P	σ	P	σ	P	σ
Bulgaria	0.60%	0.44%	37.21%	2.54%	55.81%	5.22%	60.00%	1.12%
Czech Republic	4.65%	1.46%	39.53%	3.07%	32.56%	5.00%	9.30%	0.28%
Estonia	4.65%	0.82%	32.56%	2.41%	60.47%	8.77%	60.00%	3.26%
Hungary	4.65%	1.23%	27.91%	2.48%	65.12%	3.90%	21.95%	0.42%
Latvia	16.28%	1.86%	2.33%	1.24%	51.16%	5.27%	73.81%	1.27%
Lithuania*	32.56%	2.47%	0.00%	0.00%	67.44%	7.60%	74.42%	1.59%
Poland	42.86%	2.65%	28.57%	2.68%	30.95%	2.60%	55.00%	1.57%
Romania	38.10%	2.47%	38.10%	2.47%	60.98%	6.93%	92.50%	8.38%
Slovak Republic	34.88%	2.87%	34.88%	2.47%	55.81%	11.62%	n.a.	n.a.
Slovenia	0.00%	0.46%	44.19%	2.62%	59.52%	4.90%	41.86%	0.66%
US (\$/€)	39.53%	2.57%			34.88%	3.17%	13.95%	0.23%
Euro Area (€/€)			39.53%	2.57%	11.90%	1.54%	9.30%	0.19%

Source: IMF: IFS. P marks the probability that the criterion falls in the predetermined band. σ marks standard deviation of the respective indicator. * Lithuania changed the nominal anchor from the dollar to the euro in February 2002. The observation period is from January 1999 to January 2002.

Second, the Latvian lat, stabilized against an SDR¹³ currency basket since 1994, has low exchange rate variability against both euro (16.28%) and dollar (1.24%). The exchange rate variability is lower for the dollar because it has a larger weight in the Latvian currency basket.

Third, out of the group of *de jure* floaters—the Czech Republic, Poland, Romania, Slovak Republic and Slovenia—two seem to peg their currencies *de facto* to the euro. Both the Czech korona and Slovenian tolar have a very low probability that monthly exchange rate fluctuations against the euro are larger than $\pm 2.5\%$. For Slovenia the probability is even the lowest of all CEE countries. This corresponds to the notion that Slovenia had been shadowing the DM before 1999 and is now shadowing the euro. Only Poland, Romania and the Slovak Republic have comparable or higher probabilities against both euro and dollar than the benchmark euro/dollar exchange rate and thus can be classified as free floaters according to the exchange rate criterion ε . The standard deviations widely support these results.

While the Calvo-Reinhart is a sound criterion for exchange rate stabilization, the foreign reserves criterion ϕ and interest rate criterion ι give only mixed evidence. All CEE countries show a significantly higher probability that monthly changes of official foreign reserves exceed $\pm 2.5\%$ than the benchmark free floater Euro Area. However, the probabilities of Poland and Hungary are close to the probability of benchmark free floater US, although according to the exchange rate criterion ε the Hungarian forint is classified as a fixed currency and the Polish zloty is classified as a free floating currency.

As outlined by Schnabl (2002) the stock of foreign reserves can bias the Calvo-Reinhart foreign reserves criterion ϕ . The same absolute intervention volume can be reflected in high percentage foreign reserve changes in a country with low foreign reserves and low percentage changes in a country with high foreign reserves even if the two countries are the same size. In particular, the US as benchmark free floater has a low stock of foreign reserves. Small intervention volume shows up in comparatively large percentage changes of official foreign reserves.

Even more than monthly percentage changes of the exchange rate, the stock of foreign reserves can be used as an indicator for exchange rate stabilization. High stocks of foreign reserves indicate high past or high intended foreign exchange intervention. From Figure 6 and Figure 7 which plot the development of the official foreign reserve of the CEE countries and two benchmark free floaters—Germany¹⁴/Euro Area and the US the following conclusion can be drawn:

¹³ The SDR's composition is 45% USD, 29% Euro, 15% JPY, 11% GBP.

¹⁴ Note the special status of Germany. The DM exchange rate has been floating freely against the dollar, but up to December 1998 the DM was stabilized against the currencies of the European Monetary System (EMS). Thus, while the EMS membership is expected to have no direct effect on the DM/dollar and DM/yen exchange rate, foreign exchange reserves and interest rates might reflect the exchange rate stabilization against other EMS currencies. After the introduction of the euro in January 1999 intervention between the former EMS currencies has ceased and the euro area as a whole can be regarded as a free floater.

the official foreign reserves of Germany/Euro Area and the US have been by-and-large constant since the early 1990s.

In contrast, all CEE countries have accumulated large foreign reserves as they have been trying to prevent their currency from appreciation or they accumulate foreign reserves as a “war chest” for future exchange rate stabilization. We observe that even in the Slovak Republic and Romania official foreign reserves have recently increased. This might herald that exchange stabilization against the euro has been resumed. Only Poland, the largest of the CEE countries, has had a stable stock of the foreign exchange since the year 2000 when it floated the exchange rate of the zloty.

Finally, the Calvo-Reinhart interest rate criterion τ indicates that the probability that short-term interest rates change more than $\pm 0.4\%$ is significantly higher for all CEE countries than for Euro Area and the US except the Czech Republic. The low probability that monthly interest rate changes are larger than $\pm 0.4\%$ indicate the advanced monetary and exchange rate convergence of the Czech Republic towards the Euro Area. For all other countries the high probabilities of high monthly interest rates changes could indicate both exchange rate stabilization as in the case of the currencies boards of Bulgaria, Estonia, Latvia and Lithuania as well as a (still) significantly higher level of short-term interest rates as observed in Poland, Hungary and Romania.

All in all, the Calvo-Reinhart criteria draw a clear picture of exchange rate stabilization in Central and Eastern Europe. Bulgaria, the Czech Republic, Estonia, Hungary, Lithuania and Slovenia build a euro club that strives toward ERM2 and EMU accession. Latvia still adheres to a currency basket. Poland, Romania and the Slovak Republic pursue floating exchange rate policies.

2.2.2. Daily Exchange Rate Volatilities

The Calvo-Reinhart criteria were used to identify hidden exchange rate stabilization on a monthly basis, i.e. at low frequencies. To complete the picture of foreign exchange stabilization in Central and Eastern Europe day-to-day exchange rate fluctuations are analysed. High-frequency data have gained importance for the analysis of exchange rate policies as the integration of the emerging markets in the world capital markets proceeds (Wickham 2002). As outlined in section 2.1.3 the daily exchange rate returns reflect the attempts of the central bank to reduce the exchange rate risk of short-term international payment transactions. Daily fluctuations of the euro/dollar exchange rate are again used as a benchmark.

The daily returns of the exchange rate of the CEE currencies against the euro are plotted in Figure 4 and Figure 5. At first glance, the patterns of daily exchange rate returns correspond to the result of the Calvo-Reinhart criteria. Seven currencies seem to have a significantly reduced exchange rate volatility against the euro as opposed to the benchmark US dollar—the Bulgarian

lev since 1997, the Czech korona, the Estonian kroon, the Hungarian forint, the Latvian lat, the Lithuanian lita since February 2002 and the slovenian tolar. For the Latvian lat the exchange rate volatility can be assumed to be even smaller against the US dollar. In contrast, the daily volatilities of the Polish zloty, the Romanian leu and the Slovak koruna show the characteristics of a freely floating currency.

For a more formalized comparison of day-to-day exchange rate fluctuations, Table 4 reports the standard deviations of the daily exchange rate returns against the euro and dollar for the CEE sample. As Table 4 shows, the standard deviations of daily percentage exchange rate changes are lowest for the currency board arrangements of Bulgaria (0.05% against the euro), Estonia (0.10% against the euro) and Lithuania (0.03% against the euro since February 2002).

Table 4: Daily Exchange Rate Volatilities against Euro and Dollar

01/01/99 – 05/23/02	Euro	Dollar
Bulgarian Lev	0.05%	0.63%
Czech Korona	0.36%	0.67%
Estonian Kroon	0.10%	0.64%
Hungarian Forint	0.34%	0.65%
Latvian Lat	0.46%	0.25%
Lithuanian Lita*	[0.66%] (0.03%)	[0.02%] (0.43%)
Polish Zloty	0.75%	0.63%
Romanian Leu	0.89%	0.62%
Slovak Koruna	1.32%	0.78%
Slovenian Tolar	0.23%	0.66%
Dollar/Euro	0.64%	0.64%

Source: Datastream. Volatility defined as standard deviations as daily exchange rate returns. * Note two sub-samples for Lithuania due to shift in exchange rate regime: [01/01/99 – 01/30/02] (02/01/02 – 05/23/02)

Further, the standard deviations of the Czech korona (0.36% against the euro), the Hungarian forint (0.34% against the euro), the Latvian lat (0.46% against the euro and 0.25% against the dollar), and the Slovenian tolar (0.23% against the euro) are significantly smaller than the standard deviation of the benchmark euro/dollar rate (0.64%). In accordance with the conclusion drawn from the Calvo-Reinhart criteria, the Polish zloty, the Romanian leu, and the Slovak koruna can be classified as freely floating currencies.

Thus, the *de facto* exchange rate arrangements of the ten Central and Eastern European accession candidates can be subdivided into three groups. First, there is a dominating euro club with six members: Bulgaria, the Czech Republic, Estonia, Hungary, Lithuania, and Slovenia. Second, one country—Latvia—pegs its currency to a currency basket which is dominated by the dollar (45%) and the euro (30%). Third, there is a group of three countries—Poland, Romania, and the Slovak Republic—with widely flexible rates. I conclude that the majority of Central and Eastern accession countries have already built a euro zone that heralds ERM2 and EMU accession.

3. The Shift towards an Euro Zone in Eastern Europe

Given the fact that the euro has already become the dominating anchor currency in Central and Eastern Europe, what will be the future path of the CEE foreign exchange policies? The dynamics of European integration suggest that the euro zone in Central and Eastern Europe will grow. Both dollar pegging and flexible exchange rates are not sustainable.

In the early 1990s the dollar still seemed to be a valuable choice for anchoring the exchange rate. Since then the euro has steadily gained ground as anchor currency. In 1990, Poland started its transformation process with a hard peg to the dollar, which was soon abandoned in favor a currency basket with a weight of 55% for five European currencies.¹⁵ The dollar was left with a weight of 45%. Bulgaria also opted for a hard peg to the dollar at the very beginning of its transformation process, but after a number of discretionary devaluations (1991-1995) the dollar peg collapsed. After a period of hyperinflation (1996/97), Bulgaria introduced a hard peg to the DM in August 1997 (later euro).

The development of the Hungarian currency basket represents the gradual drift from the dollar to the euro (Table 5). The first Hungarian currency basket (February 1990) gave several European currencies a weight of 57.4%, 42.6% was devoted to the dollar. In 1991, the weight of the European currencies dropped to around 50.0%. Parity with the dollar remained in place until May 1994 when the weight of the European currencies was raised to 70% (dollar 30%). Finally, in January 2000 the euro gained “a weight” of 100% heralding Hungary’s EU and EMU accession.

Figure 1 compares the development of euro and dollar as anchor currencies in Central and Eastern Europe. A value of 100% would correspond to a complete dollar or euro zone respectively. The quarterly values for euro and dollar are computed as follows: for all ten CEE countries the composition of the currency baskets is taken from the official IMF classifications (IMF various issues). The specific weight of the dollar and the aggregated weight of all European currencies are listed in the respective quarters of observation starting in the first quarter 1990. For instance, for Hungary in the first quarter of 1990, a value of 0.426 (42.6%) is attributed to the

¹⁵ DM, French Franc, Pound Sterling and Swiss Franc.

dollar and a value of 0.574 (57.4%) is attributed to the European currencies (compare with Table 5).

Table 5: Development of the Hungarian Currency Basket

Date	Dollar	European Currencies
February 1990	42.6%	57.4% (DEM, ATS, CHF, ITL, FRF, GBP, SEK, NLG, FIM, BEC)
March 1991	50.9%	49.1% (DEM, ATS, CHF, ITL, FRF, GBP, SEK, NLG)
December 1991	50.0%	50.0% (ECU)
August 1993	50.0%	50.0% (DEM)
May 1994	30.0%	70.0% (ECU)
January 1997	30.0%	70.0% (DEM)
January 1999	30.0%	70.0% (Euro)
January 2000	0.0%	100.0% (Euro)

Source: National Bank of Hungary

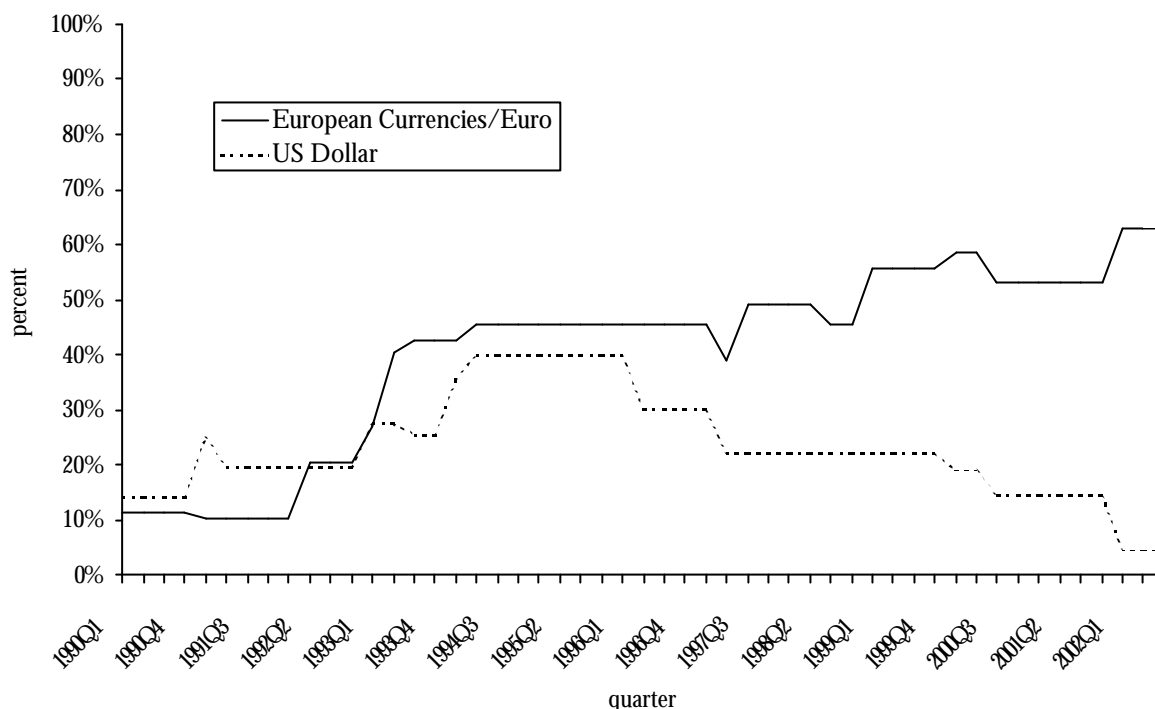
If a country has adopted a unilateral peg, to the euro for example, the maximum value of 1 (100%) is attributed to the euro, and 0 is attributed to the dollar. If there is no information about exchange rate stabilization or the exchange rate is independently floating the value of 0 is listed. Further, if there is evidence that a currency is *de facto* pegged to the euro while *de jure* classified as a free float—as in the case of Slovenia and the Czech Republic—1 instead of 0 is attributed to the euro. When the exchange rate arrangements or the weights in the currency baskets change, the values are adjusted in the respective quarter. Finally, the arithmetic middle of the respective values of the ten CEE countries is calculated for every quarter.

Figure 1 shows the respective chronological development of Central and Eastern European pegging to the dollar and the European currencies.¹⁶ The role of the European currencies as anchor currencies in Central and Eastern Europe has steadily increased and outperformed the dollar since 1997. Even the shift of some countries to more exchange rate flexibility starting in 1997 could not stop the trend in favour of euro pegging. In the new millennium, the drift towards the euro zone has reached a new record high.

There are three reasons why this trend in favour of a growing euro zone will persist. First, the EU accession of the CEE countries requires a convergence of macroeconomic policies and thus implicitly also a convergence of the exchange rates. Second, the CEE countries want to join the ERM2 and EMU as soon as possible. Third, EU accession heralds further growing trade linkages with the EU and integration in the European capital markets.

¹⁶ A weighted average by country seize (GDP) would lead to a lower level of exchange rate pegging since 1997 as the larger countries (Poland and Romania) have pursued flexible exchange rate arrangements.

Figure 1: Development of Euro and Dollar as Anchor Currencies in the CEE countries



Source: IMF (several issues) and own calculations (arithmetic averages).

3.1. EU Accession, EMU Membership, and Macroeconomic Convergence

The planned EU accession of the CEE countries provides a strong rationale for pegging the exchange rate to the euro. Although the EMU accession is neither a necessary nor sufficient condition for EU membership the adoption of the *Aquis Communautaire* as the EU legal framework requires macroeconomic convergence. This implies implicit exchange rate stabilization against the euro as the foreign exchange policy becomes a matter of common interest.

The EC Treaty, which is the fundament of the *Aquis Communautaire*, states that the economic policies of the respective EU countries are of common concern and shall be coordinated (art. 99 EC Treaty). Central Banks are not allowed to give loans to the government and related organizations (art. 101). The member states must avoid excessive budget deficits and have to comply with the rules of the stability and growth pact (art. 103, 104).

As the adoption of the *Aquis Communautaire* by the accession candidates requires significant degree of macroeconomic convergence, EU membership is a first step for compliance with the Maastricht criteria and thus EMU membership. As many Eastern European countries want to

join ERM2 and EMU as soon as possible, this tendency is even stronger.¹⁷ In short: “*it would look odd if the candidate countries invested a lot of effort in the EU accession, but would then not be willing to participate in the crowning project, the EMU.*” (De Grauwe and Lavrac 1999: 4).

Indeed, many EU accession candidates have clearly expressed their intention to join the EMU as soon as possible—independent from pro-and-cons of flexible exchange rate during the economic catch up process. For instance, Estonia planned to adopt the euro as official currency even before its EU accession in 2001.¹⁸ The Hungarian Central Bank stated that the “*accession to the Economic and Monetary Union is one of the most important steps in Hungary’s European integration, which will entail abandoning the national currency and adopting the euro as domestic legal tender.*” (National Bank of Hungary 2002: 1). The Bank of Slovenia has clearly defined the medium-term monetary goal “*to gain access to the EMU as soon as possible*” (Bank of Slovenia 2002: 8). The Lithuanian government decided to peg its currency to the euro in order to join the ERM2 and EMU *as soon as possible* after EU accession (Alonso-Gamo et. al. 2002: 4).

Given the need for macroeconomic convergence and the clear intention of joining the EMU, the monetary and exchange rate policies are to be redirected towards the EMU benchmark. More than any public declarations by central banks or governments, the monetary convergence between the EMU and the accession candidates heralds EMU accession—including the freely floating economies Poland, Romania, and the Slovak Republic.¹⁹

While the fiscal Maastricht criteria²⁰ were already met in many CEE countries before the accession negotiations started (De Grauwe and Lavrac 1999: 54), the monetary Maastricht criteria were far from being met in 1998.²¹ Since then the CEE countries have shown an astonishing speed of convergence. The inflation rates of the CEE countries rapidly approached the EMU benchmark (Figure 8 and Figure 9). By mid 2002 the inflation rates of the Czech Republic, Poland, Latvia, Lithuania and the Slovak Republic had already reached the level of the Euro Area.

¹⁷ The *Acquis Communautaire* requires EU member states to accomplish all obligations of EU membership including the monetary union. The candidate countries have to join the EMU as soon as they meet the Maastricht criteria without the possibility to opt out (as Great Britain, Denmark and Sweden did). Nevertheless in practice the new Central Eastern European members could postpone their EMU membership by simply not meeting the Maastricht criteria.

¹⁸ But the European Central Bank denied the support

¹⁹ According to the ECB (2000: 44), although floating independently Romania and the Slovak Republic use the euro unofficially as the reference currency.

²⁰ The yearly budget deficit is supposed to be lower than 3% of GDP. The cumulated public debt is supposed to be lower than 60% of GDP.

²¹ Up to the present time, the Maastricht criteria that had to be met by the actual members of the EMU were not redefined for the new members. Nevertheless it can be assumed that **inflation** must not exceed the average inflation of the three EMU member states with the lowest inflation by more than 1.5%. The (long-term) interest rates must not be more than 2 percentage points above the average long-term interest rate of the three member states with the lowest long-term interest rate. Alternatively the EMU average inflation and long-term interest rate might be the benchmark. Note that the Maastricht convergence criteria might have to be redefined, as no long-term bond markets exist in the CEE countries yet. To join the EMU the nominal exchange rates have to remain within the ERM2 band of $\pm 15.0\%$ for at least two years.

Estonia, Slovenia and Hungary seem to be following. Only the two Central and Eastern European accession candidates whose accession has been postponed—Bulgaria and Romania—are still far from meeting the Maastricht inflation criterion.

The convergence of short-term (money market) interest rates in the CEE countries shows a similar pattern. The Maastricht interest rate criterion has been formulated for long-term interest rates. Here, short-term interest rates are used as a measure of convergence, because long-term interest rates simply don't exist in the CEE countries due to original sin.²² Figure 10 and Figure 11 show that the short-term interest rates of Bulgaria, the Czech Republic, Estonia, Latvia, Lithuania, and Slovenia have come close to the level of the Euro Area. Also Hungary, Poland and the Slovak Republic are converging fast to the euro level. Only Romania still maintains a considerable higher level of short-term interest rates.

Given the high degree of monetary convergence towards the EMU benchmark it is not surprising that since the start of the accession negotiations in 1998 the depreciation path of many CEE currencies has slowed down or even abated for most CEE countries (Figure 2 and Figure 3). The exchange rate volatility against the euro can be expected to fall further as the new EU members are expected to join the EMU2 soon after their EU accession and accept a fixed exchange rate arrangement against the euro.²³ To this end, at the latest with EMU2 accession, the monetary policy of the accession country becomes a matter of common interest and the exchange rate against the euro will become the target of monetary policy of all new EMU2 members.²⁴

3.2. Integration of Goods and Capital Markets

As macroeconomic policies and exchange policies in Europe converge, both further growing trade linkages with the EU and further integration into the European capital markets can be expected. This gives an additional rationale to adjust exchange rate policies to the euro.

First, while the CEE economies have already reached a considerable degree of trade linkages with the European Union, with the EU accession trade creation and trade diversion are probable to let intra-European trade to grow even further.

²² Convergence of short-term interest rates in combination with the convergence of CPI inflation implies the convergence of "shadow long-term interest rates".

²³ In bilateral negotiations the EU and the new member countries determine a central rate with a permissible fluctuation band of $\pm 15.0\%$ around the central rate. Moving from the central rate gradually towards the upper limit is not recognized by the ECB and EU as meeting the nominal exchange rate criterion for EMU accession (Bank of Slovenia 2002: 10).

²⁴ Nominal exchange rate stabilization, the concordance with the inflation criterion and real convergence are in contradiction, however. Fast real convergence and high productivity growth, particularly in the traded goods sector, imply price increases in the non-traded sector (Balassa-Samuelson-Effekt) and thus higher inflation in the accession countries. Real appreciation of the currencies of the accession countries are an inevitable consequence (Egert et. al. 2002).

Table 6 shows how the direction of trade of the CEE accession countries²⁵ has changed since the early 1990s. In Table 6 “EU+” is defined slightly broader than EU15, it also encompasses other potential Western European members of the euro zone than the 15 EU countries—namely Island, Norway, and Switzerland. “CEE+” is a broader definition of the CEE accession countries which also contains Cyprus and Malta as well as the Balkan countries which do or are likely to peg their exchange rates to the euro. “CIS” defines the former member states of the Soviet Union excluding the Baltic countries. “ROW” is the Rest of the World including the United States and Japan. EU+ and CEE+ are assumed to form the potential euro zone. ROW is assumed to by and large correspond to a dollar bloc.²⁶

As shown in Table 6 trade of the CEE countries with Western Europe has grown steadily. In 2000 65% of the CEE exports were traded with the EU+, up from 52% in 1992/93. 58% of the CEE imports came from the EU+, up from 50% in 1992/93. If EU+ and CEE+ are added to a potential euro zone, 82% of CEE exports and 70% of CEE imports were traded within the euro bloc. If the CIS countries and ROW are added to the world dollar zone only 19% of CEE exports and 30% of CEE imports were traded within the potential dollar zone.

Thus, while the integration of the Central and Eastern European goods markets with the EU has already reached a high degree, further growing trade linkages and the creation of a coherent euro zone in Europe will further increase the incentive to invoice trade in euro and to peg the exchange rates to the euro.

Table 6: Direction of Trade of CEE Countries (Arithmetic Average)

Exports	EU+	CEE+	CIS	ROW	Imports	EU+	CEE+	CIS	ROW
1992/93	52%	17%	16%	13%	1992/93	50%	13%	22%	14%
2000	65%	17%	7%	12%	2000	58%	12%	16%	14%

Source: IMF: Direction of Trade Statistics. EU = EU 15 + Island, Norway, and Switzerland; CEE+ = CEE accession candidates + Cyprus, Malta, Albania, Bosnia-Herzegovina, Croatia, Macedonia, Montenegro, Yugoslavia; CIS = former members of the Soviet Union except the Baltic countries; ROW = Rest of the World including US and Japan.

Second, the EU and EMU membership also leads one to expect the integration of the CEE economies into the highly developed Western European capital markets. As outlined in section 2.1.3 the CEE countries still suffer from original sin. As capital markets are underdeveloped it is difficult and costly to hedge foreign exchange risk. During the 1990s high inflation and devaluation has been reflected in high-risk premiums on short-term interest rates and missing medium-term and long-term bond markets.

²⁵ The data for the single countries can be found in Table 7 in the appendix.

²⁶ Japan is the only important exception.

With EU and EMU accession approaching, the risk of inflation and depreciation is declining as the cost of opting out the accession process are too high. The advent of the euro will put an end to any sovereign monetary policy and inflation differentials. Foreign exchange risk will vanish. Reduced yields spreads between Western and Eastern Europe show that the financial markets already anticipate the EU accession of the CEE countries and the adoption of the euro.

The growing confidence of the international investment community will facilitate the creation of deeper capital markets in Central and Eastern Europe. The very difficult task to built up the reputation of macroeconomic stability can be easily completed as the reputation of the European Central Bank is irrevocably imported. The CEE countries will be able to create deeper capital markets much faster and much more easily than any other emerging market.

However, instead of building up new own capital markets it might be even a better choice to participate in already existing EU capital markets. For instance, instead of taking the burdensome work of building up own stock or bond markets CEE stocks or bonds could be simply listed in Frankfurt or London.

This would have three merits for the CEE countries: First, they would be spared the cost and the trouble of building up their own financial markets. Second, they would enjoy the expertise of the highly developed EU capital markets. Third, in financial markets size matters as large financial markets increase liquidity and improve diversification. If every country would built its own capital market, the result would be a highly fragmented CEE capital market with small transaction volumes in every country. In contrast, in a unified EU capital market portfolios would be more efficient and systemic risk would be less.

The efficient allocation of capital would promote real convergence in the CEE countries and economic growth in the EU as a whole. Thus, the integration of the EU capital markets gives a further incentive to unify the transaction and invoice currency.

4. An Informal Euro Standard as the Optimal Exchange Rate Strategy

Floating exchange rates and currency baskets are not compatible with ERM2 membership (Lavrac 2002: 9). EU, ERM2 and EMU accession of the CEE countries imply sooner or later the convergence of inflation, interest rates and exchange rates. I recommend unifying the Central and Eastern European exchange rate policies as soon as possible. As the majority of the CEE countries have already introduced tight pegs to the euro Latvia, Poland, the Slovak Republic and Romania should join the CEE euro bloc. The resulting informal euro standard in Central and Eastern Europe would enhance economic stability, economic growth, real convergence and to this end facilitate EMR2 and EMU membership.

4.1. The Case against the Currency Basket

A unilateral peg to the euro is superior to the Latvian currency basket for two reasons. First, Latvia's EU and possible EMU accession will further increase the necessity to adjust macroeconomic policies. Under a currency basket arrangement a country follows the path of the weighted average of the monetary policies of all countries represented in the basket. But ERM2 membership and EMU accession will require Latvia to follow the monetary policy of the European Central Bank. This implies a unilateral peg to the euro.

Second, many observers have proposed that emerging markets should adopt a trade-weighted currency basket as an optimal exchange rate strategy. For instance, Williamson (2000) argues that the East Asian crisis countries should abandon their unilateral dollar pegs in favor of currency baskets. He recommends a composition of the currency basket which gives a weight of 33% to dollar, yen and euro respectively. Similar propositions are made by Kawai and Akiyama (2000) as well as Kawai (2002) to reduce the risk of extraneous exchange rate fluctuations. From this perspective Latvia's currency basket might seem superior to the unilateral euro pegs of Estonia or Lithuania, because it reduced the risk for trade with the euro, dollar and yen zone.

According to McKinnon and Schnabl (2002b) a unilateral peg to the currency of one country with a highly developed capital market is superior to a currency basket arrangement, however. As outlined in section 2, banks and enterprises in emerging markets are unable to hedge the foreign exchange risk of international payment transaction due to original sin. A currency basket reduces the foreign exchange risk for all transactions which are invoiced in the basket currencies, but the exact future exchange rate against all anchor currencies remains to some degree unknown. This tendency is even stronger if the weights of the major currencies in the basket are somewhat uncertain.

In contrast, a unilateral peg to the euro minimizes the foreign exchange risk for all payment transactions with the euro area, which are dominating Latvian external trade (Table 7). The foreign exchange risk for the remaining dollar (or yen) transactions will be high, but can be hedged at low cost via the euro capital markets. For instance, the Latvian exporter can use the euro/dollar forward market to hedge the foreign exchange risk of its dollar invoiced exports.

Thus, if Latvia joins the informal CEE euro standard, it not only prepares itself for ERM2 membership, but it also provides the Latvian banks and enterprises reduced risk for all payment transactions with both the euro area and the rest of the world.

4.2. The Merits of an Informal Euro Standard with Respect to EMU Accession

The countries which presently pursue flexible exchange rate arrangements—notably Poland, the Slovak Republic and Romania—should join the euro zone. The result would be an informal euro standard in Central and Eastern Europe which would enhance the macroeconomic stability of the accession group and would be a first step towards the EMU membership.

A common peg to the euro for all CEE countries would not only reduce the foreign exchange risk for Polish, Slovak or Romanian banks and enterprises, it also would contribute to the economic stability of the whole region by avoiding competitive “beggar-thy-neighbor” depreciations.

As outlined by McKinnon and Schnabl (2002a) for East Asia, the common dollar peg of the smaller East Asian economies contributed to economic stability and growth in the region during the 1980s and 1990s up to the Asian crisis, because it stabilized the macroeconomic policies and avoided competitive depreciations. Like the smaller East Asian countries, the CEE countries are very open economies with shallow capital markets which compete in the same export markets. In contrast to East Asia, however, the foreign exchange and macroeconomic policies have been much more heterogeneous. The common EU accession is an opportunity to stabilize the economic performance by unifying the macroeconomic policies.

A common exchange rate peg is an important exchange rate strategy for the CEE countries with respect to their EU accession, because the adoption of the *Aquis Communautaire* requires the accession candidates to abolish all capital controls. Thus more than in the pre-accession period volatile net capital flows can sharply affect nominal exchange rates. Sticky prices would contribute to large real exchange rate fluctuations and thus to large fluctuations in the international competitiveness. As Lavrac (2002: 11-12) puts it until EMU membership the CEE countries will be vulnerable to volatile speculative capital flows, but they won't have any instruments to protect themselves against speculation.

Under these circumstances the fact that the CEE economies compete in the same export markets—notably the EU—creates a strategic interdependence in choosing the exchange rate arrangement. If for instance, the Czech Republic chooses to peg the exchange rate of the korona to the euro while Poland allows its currency to depreciate, Polish enterprises would gain a strategic advantage. The Czech enterprises would lose competitiveness in the EU exports markets, if the zloty is allowed to depreciate. Output growth in the Czech Republic would then decline. To

avoid the economic downturn the Czech Republic might be tempted to depreciate the koruna as well.²⁷

While sharp devaluations of the CEE currencies have become rather unrealistic with the planned EU and EMU accession of the CEE countries, exchange rate fluctuations of some currencies within the CEE accession group increase the volatility of business cycles. Because the CEE countries can be assumed to by and large compete in the same sectors, fluctuations of the Polish zloty or the Slovakian koruna affect the international competitiveness of the neighboring countries.

The exchange rate flexibility of some CEE currencies increases the amplitude of the business cycles of every CEE country. The larger the number of floating currencies, and the larger the fluctuations of the respective currencies, the larger the fluctuations of the business cycles of every single country and the CEE countries as a whole.

To eliminate the output volatility caused by the exchange rate fluctuations of some CEE currencies, the euro could be the common exchange rate anchor. If all CEE countries adhere to the same target of the exchange rate policy, it would stabilize the growth performance of the whole region. With a more stable trade and output performance, the real convergence and thus EMU accession could be accelerated.

As in East Asia, this common euro peg would neither necessitate a formal agreement (as EMR2) nor a totally unified exchange rate policy. The Central and Eastern European accession candidates still require a large amount of structural reforms and preparation for the convergence criteria. For this purpose an informal euro standard would allow every country some exchange rate flexibility within the enlarged euro club.

5. Conclusion

While in the beginning of the transformation process of the CEE economies unilateral dollar pegs or currency baskets seemed a valuable choice for the exchange rate arrangements, the advent of the euro in January 1999 and the approaching EU accession of many Central and Eastern European countries imply a tacit pressure to redirect the exchange rate policies towards the euro.

Although the IMF recently recommended emerging markets to float their currencies more freely, this is not a sustainable option for the CEE economies. As the approaching EU ac-

²⁷ Such competitive depreciations were observed in East Asia before and during the Asian crisis. Before the Asian crisis the depreciation of the Japanese yen eroded the international competitiveness of its neighboring countries in third markets such as the US and Europe (McKinnon and Schnabl 2002a). During the Asian crisis the depreciation of the Thai baht triggered the depreciation of the Indonesian rupiah, the Philippine peso, the Malaysian ringgit, the Korean won and even the Japanese yen. The countries which maintained their pegs to the dollar suffered from recession and deflation as their exports lost competitiveness.

cession and a possible EMU membership require macroeconomic convergence and stable exchange rates against the euro, the Central and Eastern European euro club is steadily growing.

The countries which have not joined the Central and Eastern European euro zone by now are advised to join the euro club as soon as possible: Latvia should abandon its currency basket arrangement, because a unilateral peg to the euro would facilitate macroeconomic convergence and reduce foreign exchange risk of international trade.

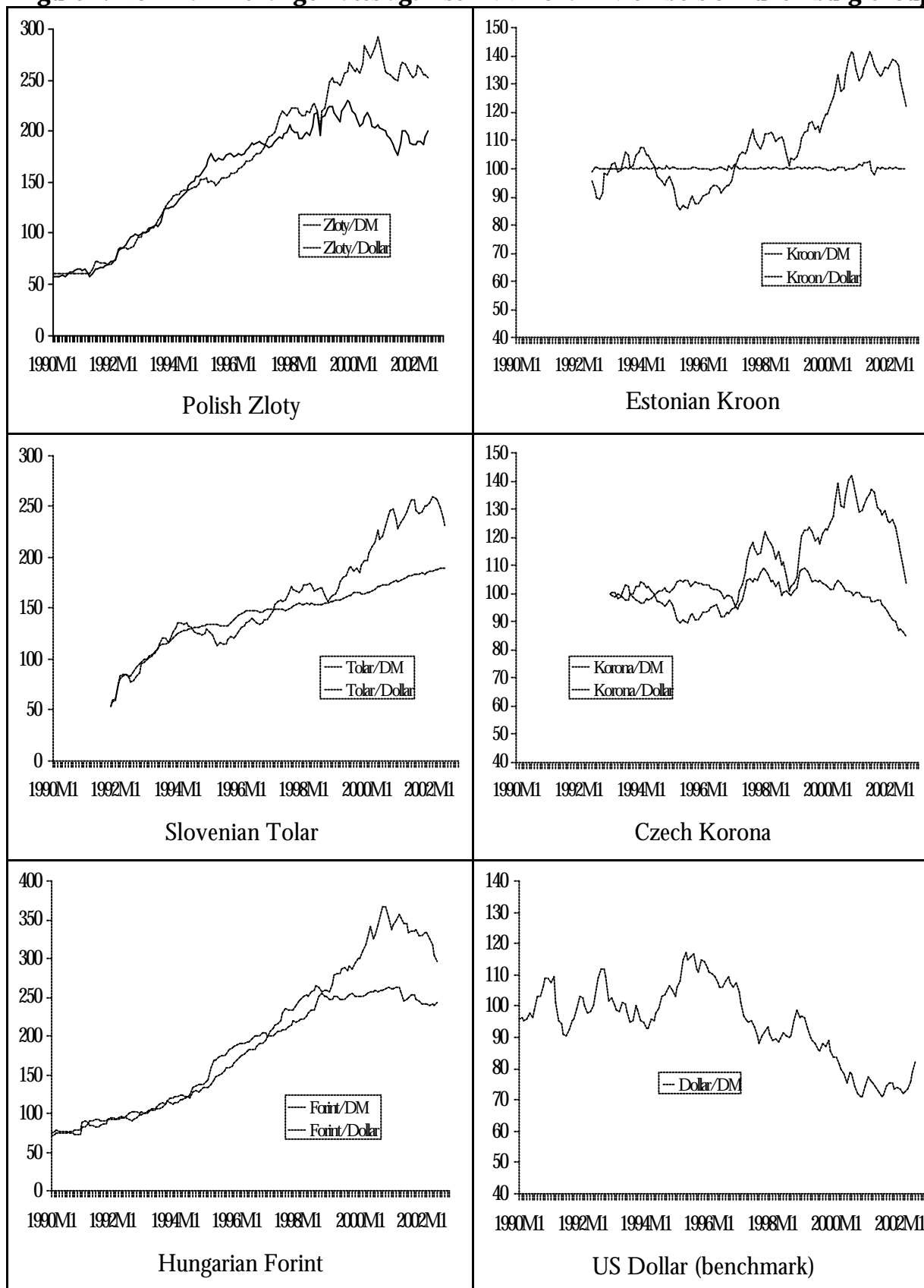
Poland, Romania and the Slovak Republic should stabilize their exchange rates against the euro to enhance the macroeconomic stability of the whole accession group. Economic stability and economic growth would accelerate the real convergence with the Euro Area and thus facilitate EMU accession.

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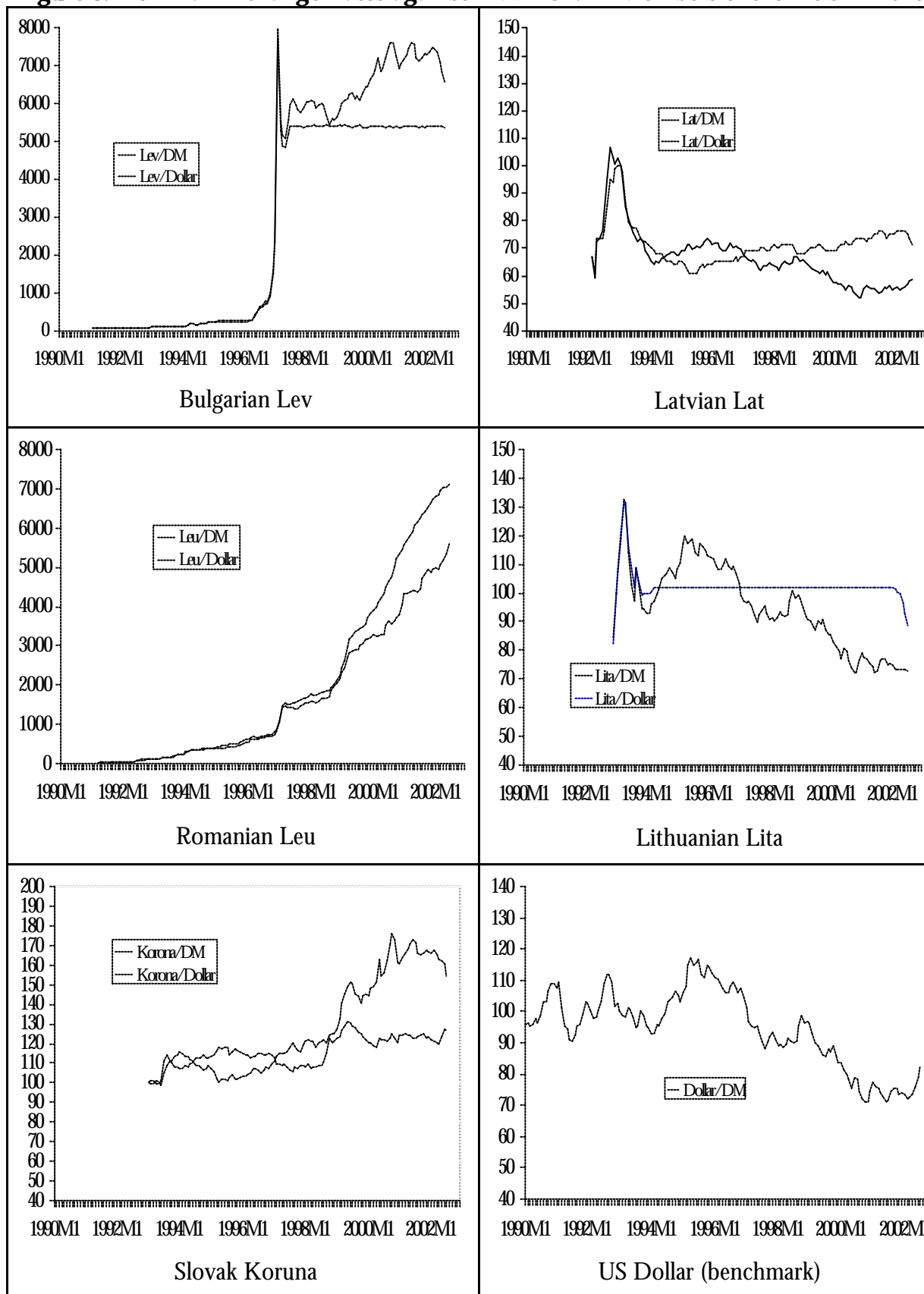
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Figure 2: Nominal Exchange Rates against DM/Dollar – Members of Luxemburg Group



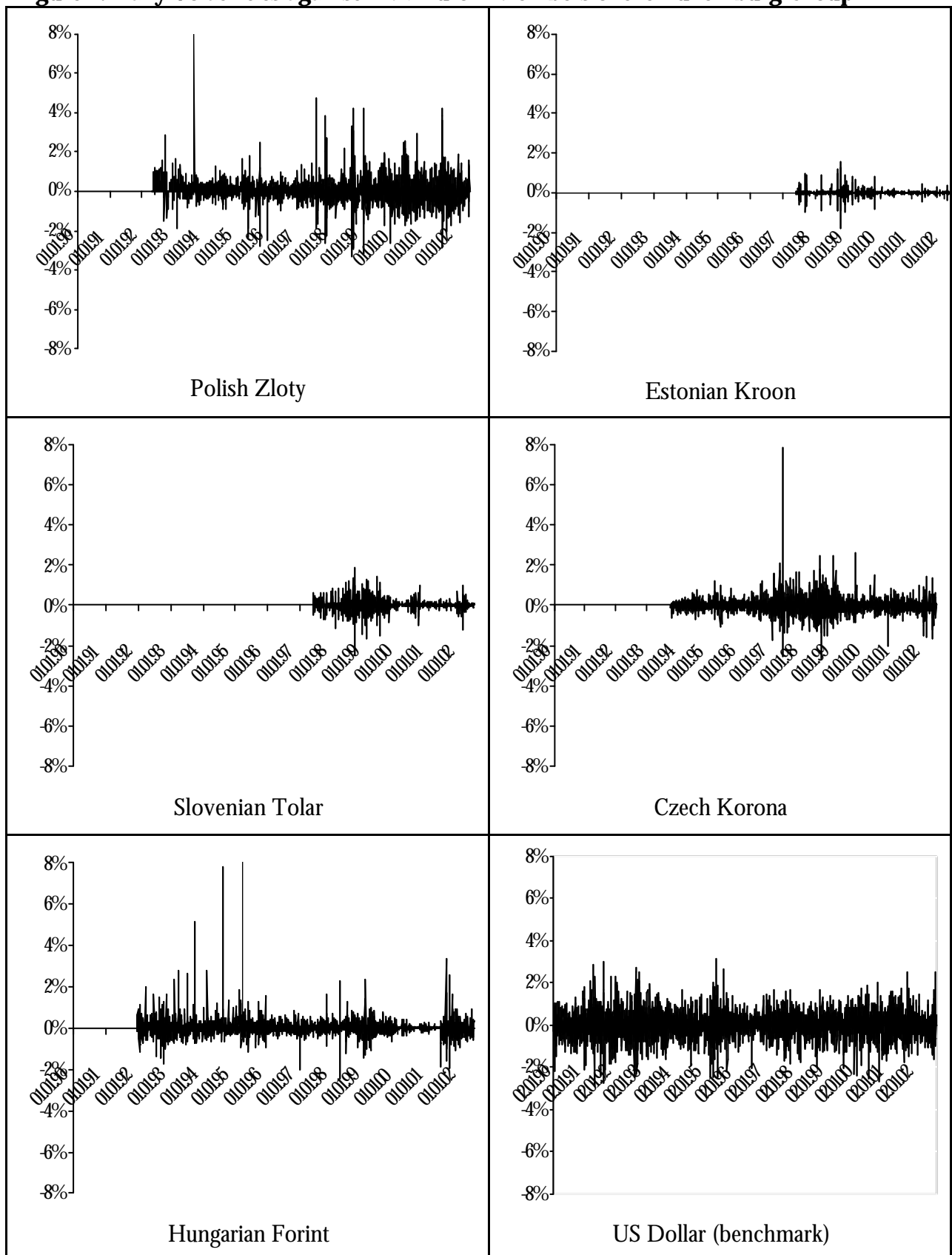
Source: IMF: IFS. Index 1993 :01=100. Note different scales. The DM represents the euro starting in January 1999.

Figure 3: Nominal Exchange Rates against DM/Dollar – Members of the Helsinki Group



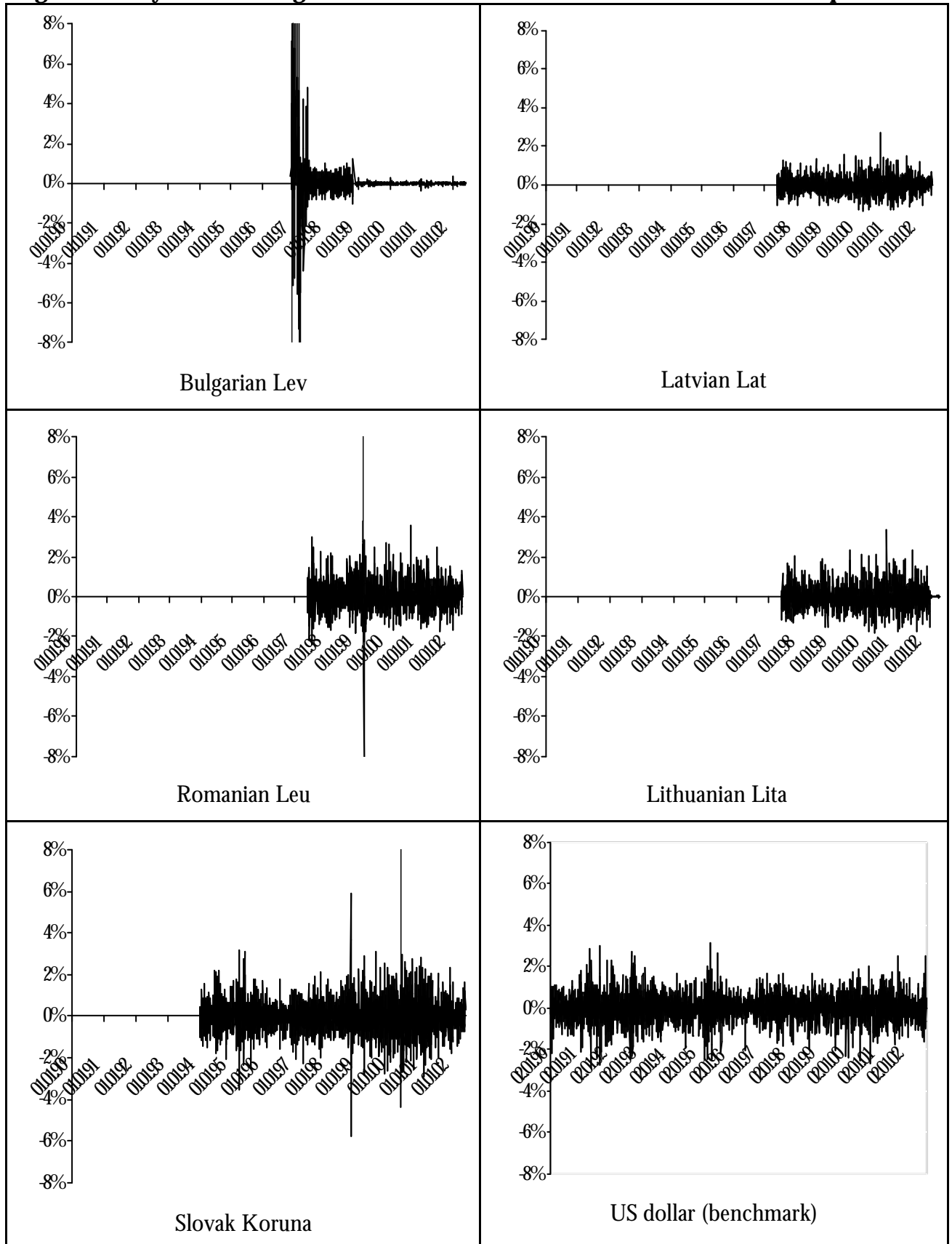
Source: IMF: IFS. Index 1993 :01=100. Note different scales. The DM represents the euro starting in January 1999.

Figure 4: Daily Volatilities against DM/Euro – Members of the Luxemburg Group



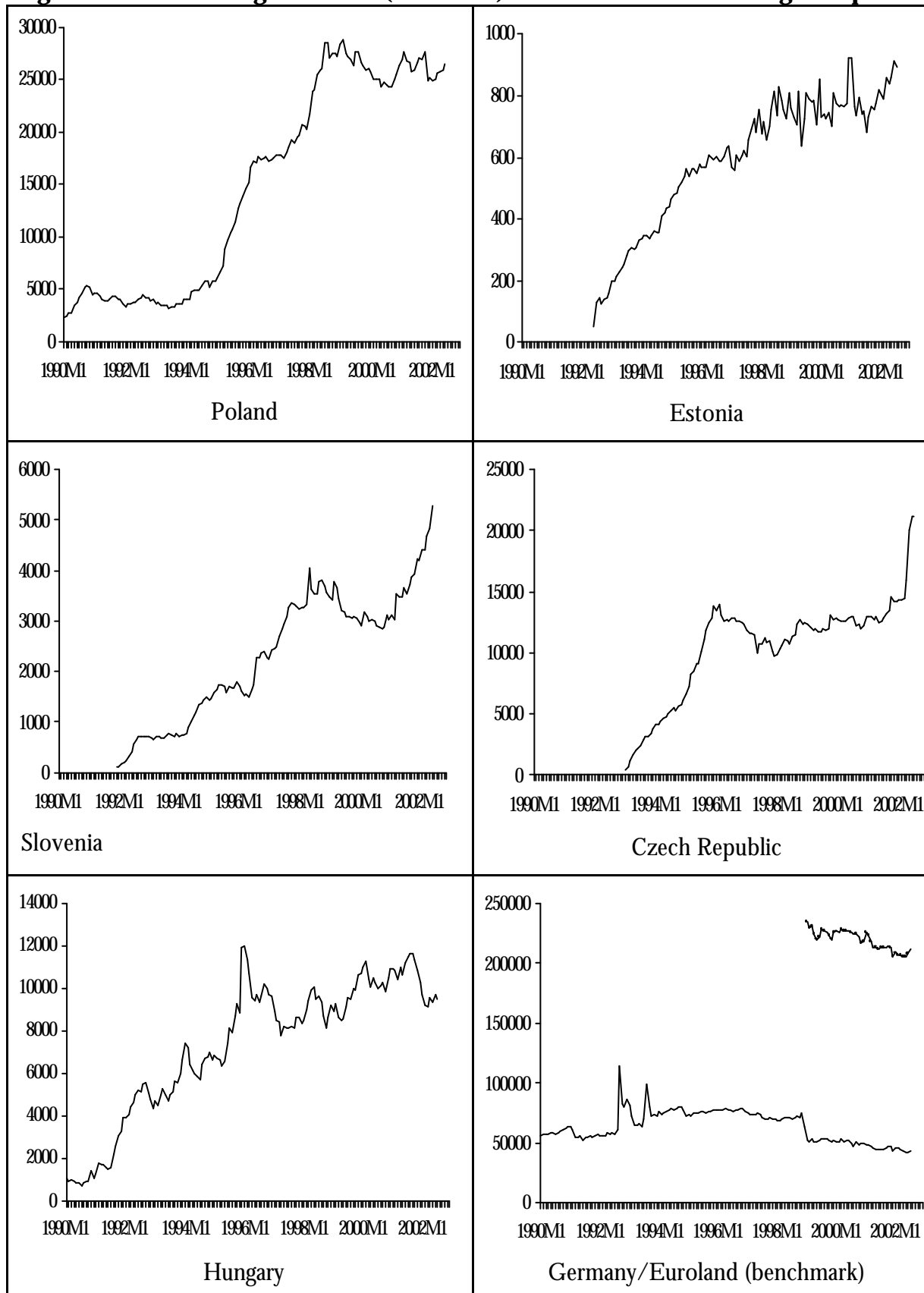
Source: Datastream. Daily percentage changes.

Figure 5: Daily Volatilities against the DM/Euro – Members of the Helsinki Group



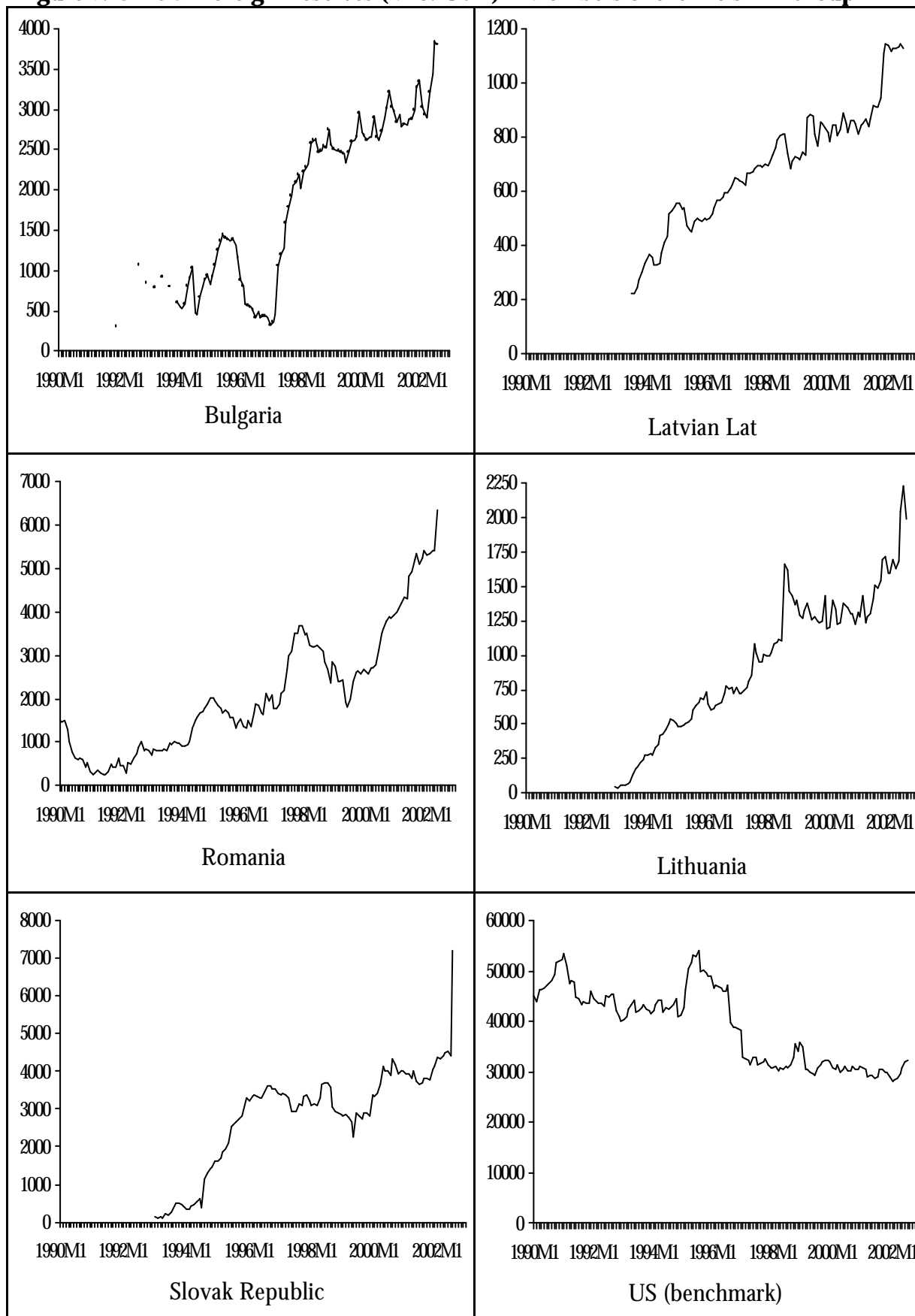
Source: Datastream. Daily percentage changes.

Figure 6: Official Foreign Reserves (Mio. USD) – Members of Luxemburg Group



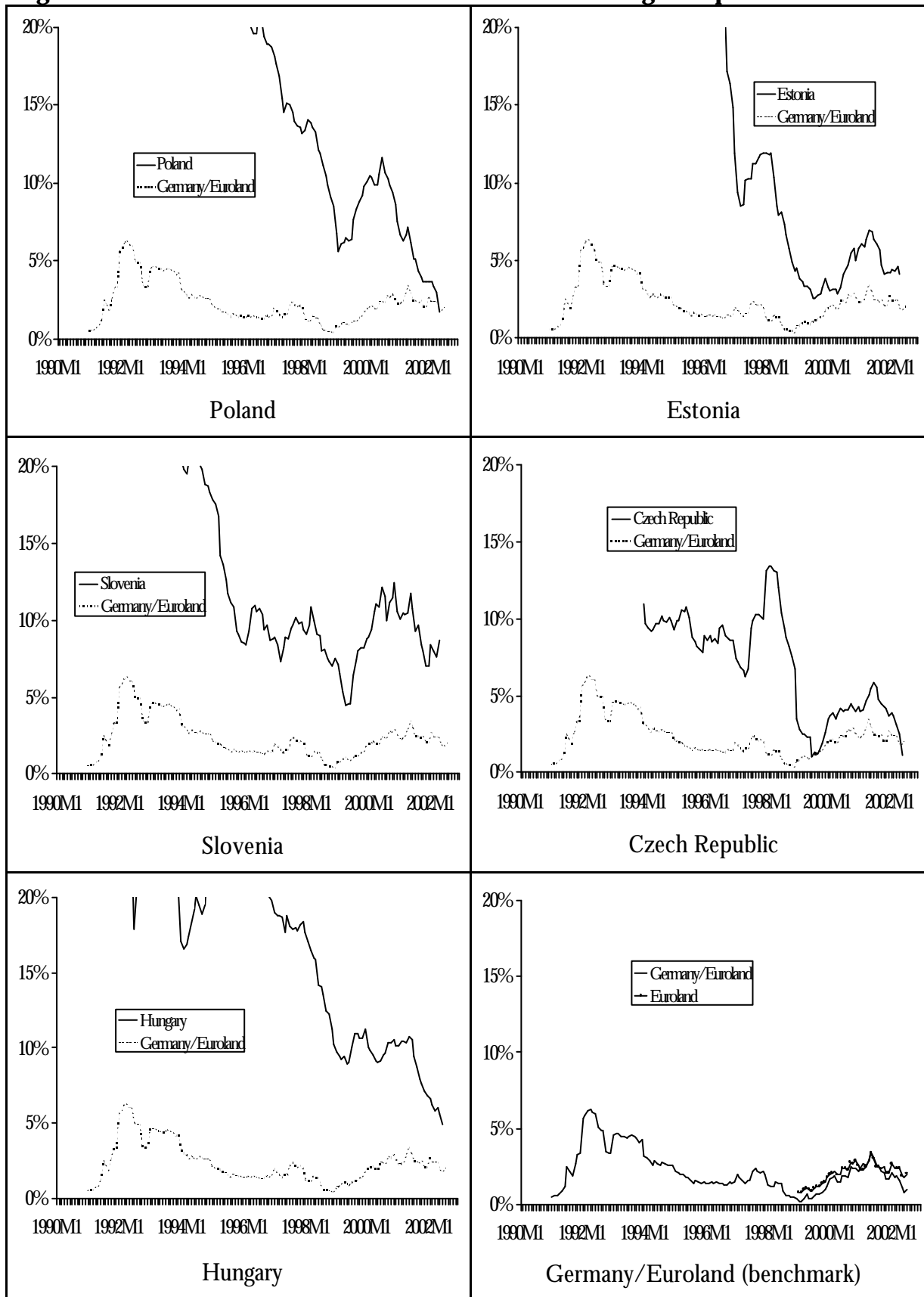
Source: IMF: IFS. Note different scales.

Figure 7: Official Foreign Reserves (Mio. USD) – Members of the Helsinki Group



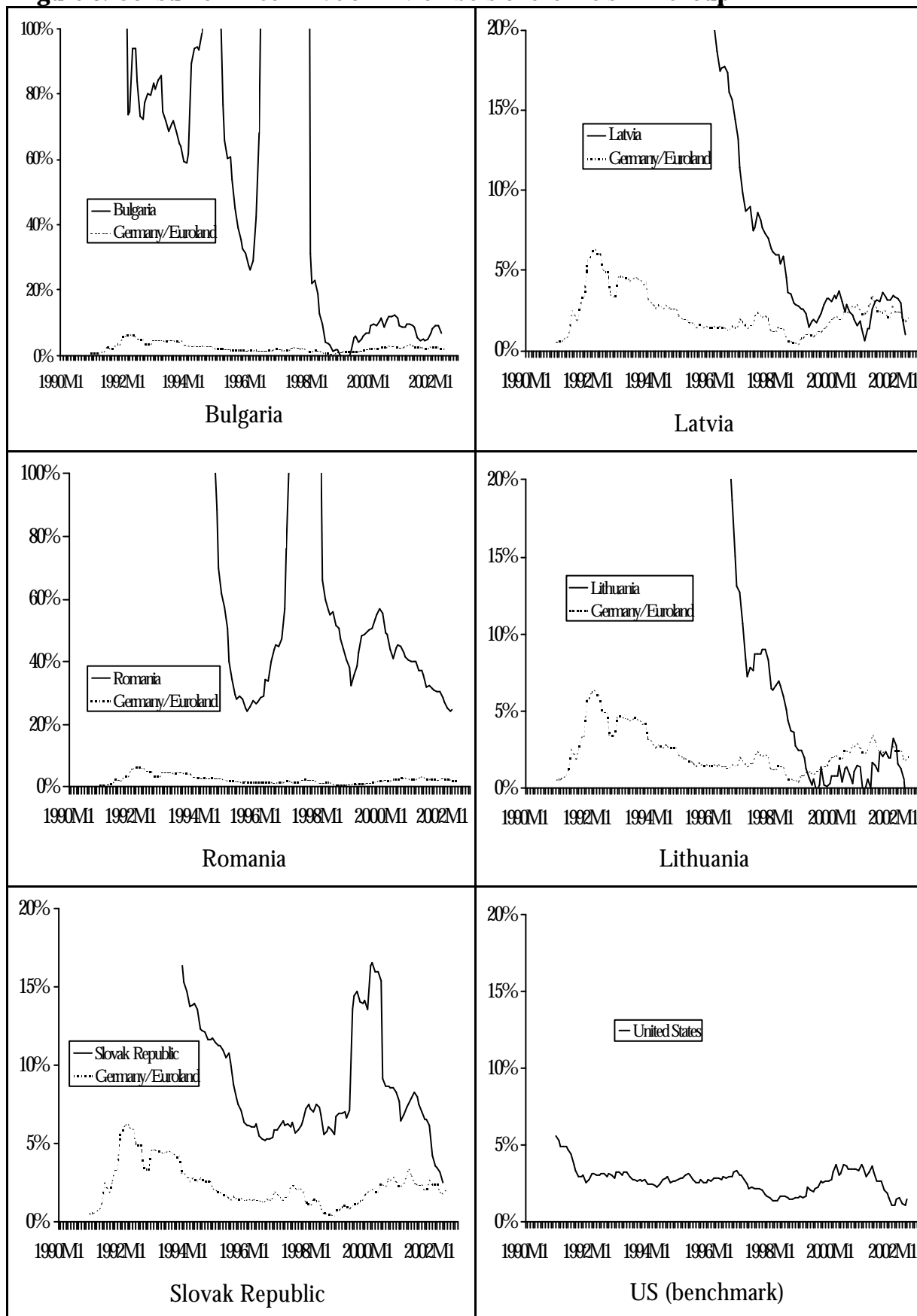
Source: IMF: IFS. Note different scales.

Figure 8: Consumer Price Inflation – Members of Luxemburg Group



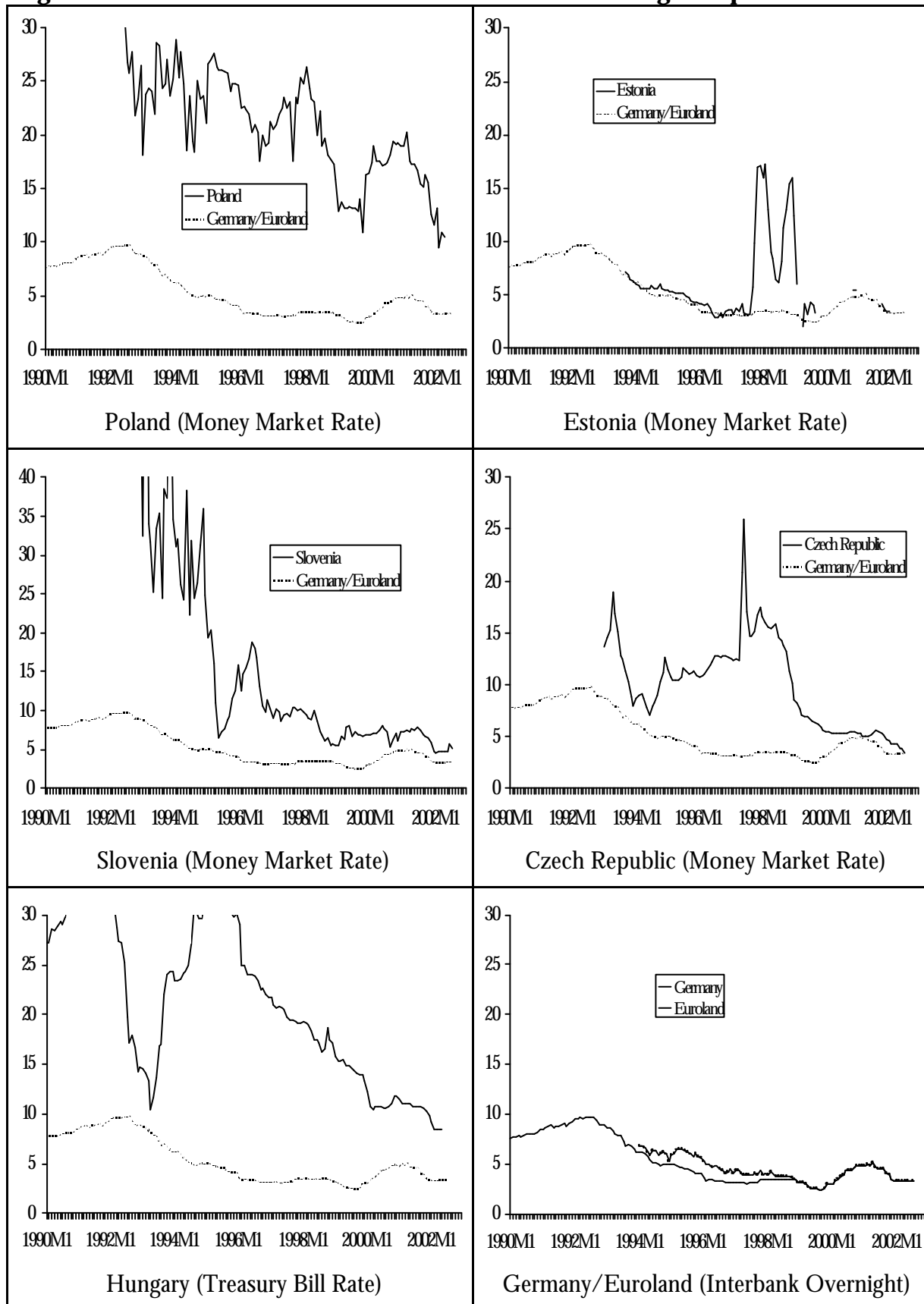
Source: IMF: IFS. Change rates versus previous year's month.

Figure 9: Consumer Price Inflation – Members of the Helsinki Group



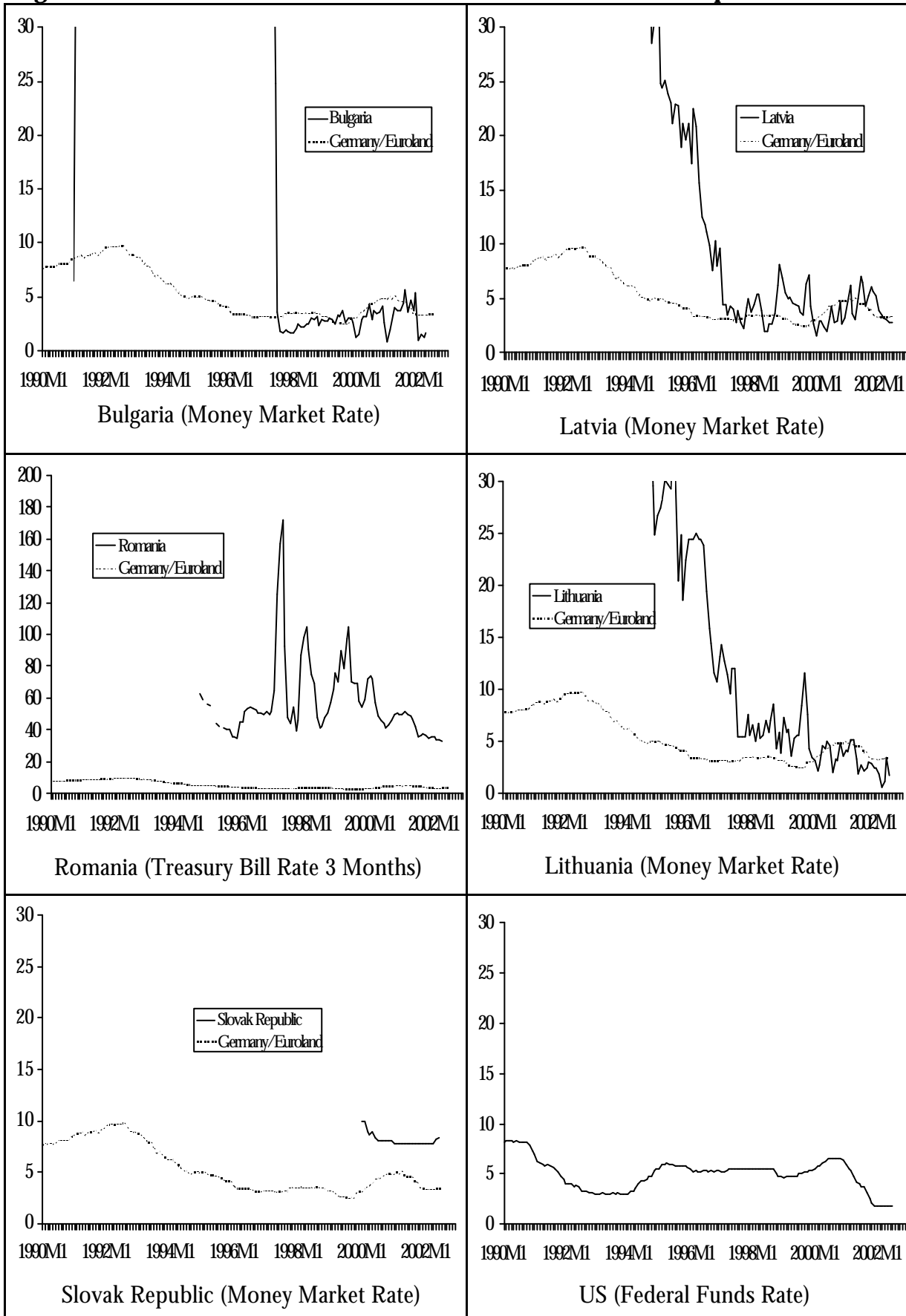
Source: IMF: IFS. Change rates versus previous year's month. Note different scale for Romania and Bulgaria.

Figure 10: Short-term Interest Rates – Members of Luxemburg Group



Source: IMF: IFS. Monthly data in percent per annum.

Figure 11: Short-term Interest Rates – Members of the Helsinki Group



Source: IMF: IFS. Monthly data in percent per annum. Note different scales for Bulgaria and Romania.

Table 7: Direction of Trade of CEE Countries

Exports	EU+	CEE+	CIS	ROW	Imports	EU+	CEE+	CIS	ROW
Bulgaria					Bulgaria				
1992	48%	6%	10%	37%	1992	39%	5%	34%	22%
2000	53%	16%	8%	23%	2000	46%	7%	31%	25%
Czech Republic					Czech Republic				
1993	57%	27%	7%	9%	1993	54%	23%	15%	9%
2000	71%	18%	10%	8%	2000	65%	12%	8%	15%
Estonia					Estonia				
1993	49%	15%	30%	5%	1993	61%	7%	22%	10%
2000	72%	13%	10%	6%	2000	58%	7%	18%	16%
Hungary					Hungary				
1992	64%	5%	19%	12%	1992	60%	7%	28%	5%
2000	70%	8%	5%	17%	2000	60%	7%	10%	23%
Latvia					Latvia				
1992	41%	8%	45%	6%	1992	32%	7%	40%	21%
2000	66%	16%	9%	9%	2000	55%	22%	17%	6%
Lithuania					Lithuania				
1993	68%	18%	7%	8%	1993	51%	10%	32%	7%
2000	50%	25%	16%	9%	2000	50%	11%	32%	7%
Poland					Poland				
1992	65%	8%	9%	19%	1992	64%	6%	11%	20%
2000	72%	12%	7%	10%	2000	63%	8%	11%	18%
Romania					Romania				
1992	39%	7%	19%	35%	1992	44%	7%	17%	31%
2000	65%	10%	4%	21%	2000	58%	10%	13%	19%
Slovak Republic					Slovak Republic				
1993	30%	52%	8%	9%	1993	29%	40%	23%	8%
2000	61%	32%	2%	5%	2000	50%	21%	19%	9%
Slovenia					Slovenia				
1993	63%	21%	5%	12%	1993	64%	15%	4%	17%
2000	65%	22%	5%	7%	2000	70%	13%	4%	13%

Source: IMF: Direction of Trade Statistics. EU+ = EU 15 + Island, Norway, Switzerland; CEE+ = EU accession candidates + Albania, Bosnia-Herzegovina, Croatia, Macedonia, Montenegro, Yugoslavia; CIS = Former members of the Soviet Union except the Baltic States; ROW = Rest of the World including US and Japan.