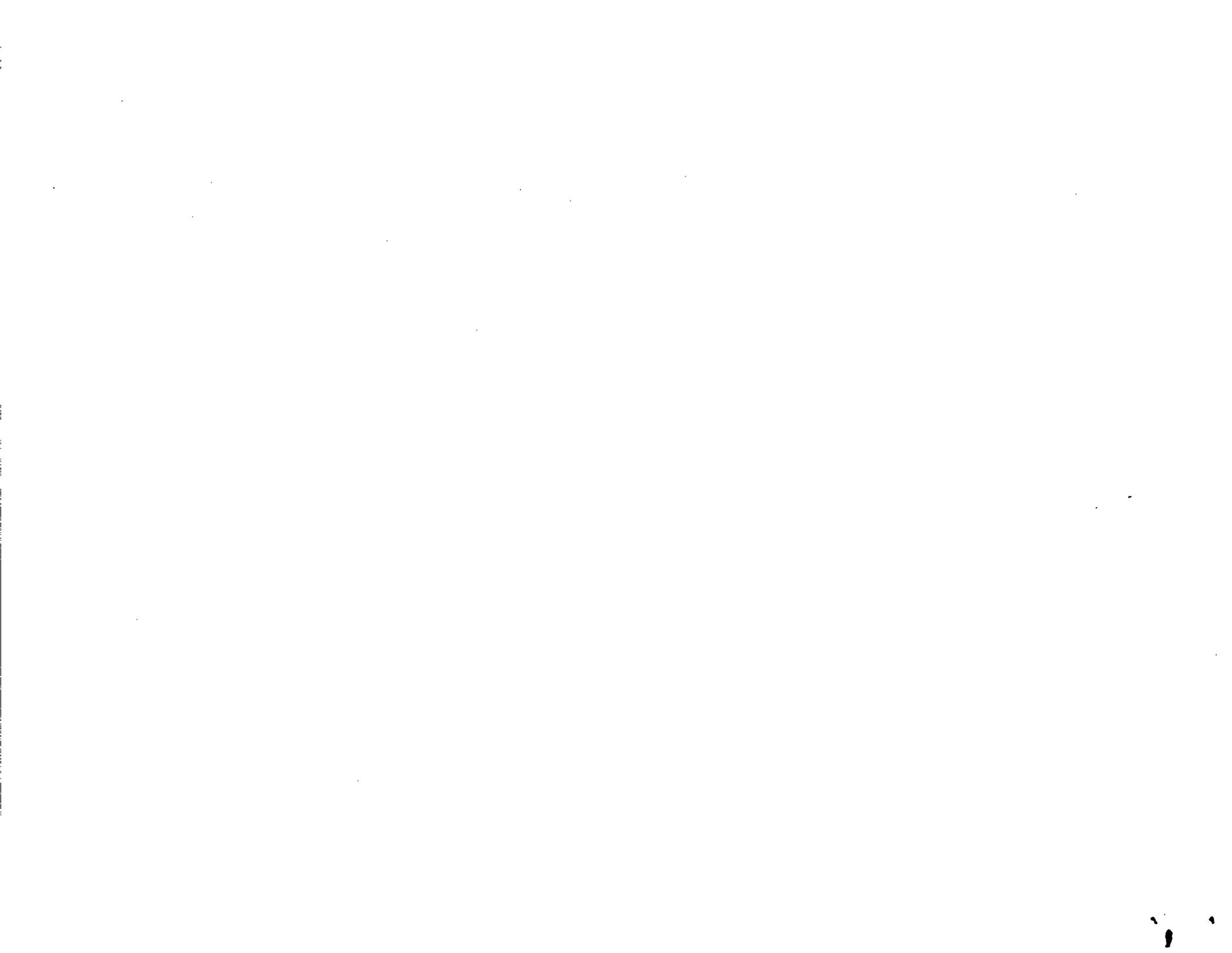


IMF Policy Discussion Paper

Pros and Cons of Currency Board Arrangements in the Lead-up to EU Accession and Participation in the Euro Zone

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Pros and Cons of Currency Board Arrangements in the Lead-up to EU Accession and Participation in the Euro Zone

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Abstract

Historically, countries with currency board arrangements (CBAs) have experienced lower inflation and higher growth than those with other regimes. The experiences of three candidates for EU membership with CBAs (Estonia, Lithuania, and Bulgaria) have also been generally favorable. Can CBAs serve these transition countries well all the way up to the adoption of the euro? After considering the pros and cons, this paper provides an affirmative answer, but notes that to preserve the viability of their CBAs throughout the process, these countries need to maintain strict policy discipline and be prepared to deal with large capital inflows and asymmetric shocks.

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I. INTRODUCTION AND SUMMARY

This paper discusses the pros and cons of currency board arrangements in the context of accession to the EU and the euro area. This topic is central for a number of IMF member countries that are preparing themselves for EU and EMU membership to which they attach great importance for both political and economic reasons. The discussion is organized around three main themes, and we would at the outset like to summarize the key conclusions relating to each theme:

- **What has the experience with currency board arrangements (CBAs) been in general?** Here, we draw on recent work by Ghosh, Gulde, and Wolf (1999). They find, not surprisingly, that historically countries with currency boards have on average experienced lower inflation compared with floating regimes and simple pegs. Moreover, and perhaps somewhat surprisingly, output growth, far from suffering from the rigidities of the CBA, has actually been higher than in countries with other exchange rate regimes. This could reflect a rebound effect (many CBAs have been established following a crisis) or self selection (governments willing to accept the strictures of a CBA are likely to be more reformist). In any case, CBAs have provided an important tool for gaining credibility and achieving macroeconomic stabilization and sustained growth.
- **How have transition economies with CBAs fared?** The experience with currency boards in Estonia, Lithuania, and, more recently, Bulgaria has been quite favorable. Inflation has been brought to low single digits in all three countries, and both Estonia and Lithuania have demonstrated solid economic growth. In 1998–99 growth and exports in

the three countries have been adversely affected by external shocks (including the Russia and Kosovo crises), but there are already signs of a recovery. Overall, it is not clear whether the absence of an active exchange rate policy and the constraints placed by the currency board exacerbated the effects of the shocks these countries experienced during the transition. However, the discipline provided by the CBAs may have induced the countries to maintain fiscal discipline and carry out a wide array of structural reforms, helping to lay the foundation for sustained rapid growth.

- **What would be the appropriate strategy for currency board countries on their way to EU accession and EMU membership?** As the endpoint is clear—the adoption of the euro—the main issue is whether CBAs can serve the transition countries well throughout the process leading up to adoption of the euro. New entrants are envisaged to undergo three stages: EU accession; participation in ERM II (with a horizontal currency band); and joining the euro zone. It is now widely accepted that prior to EU accession a variety of exchange rate arrangements, including currency boards, are feasible. However, there is more debate about whether currency boards are compatible with participation in ERM II. During this phase it would seem important that an exchange rate regime satisfy a number of requirements: facilitating nominal convergence; allowing a market test for exchange rate stability; helping to ensure that countries enter the euro zone at an appropriate exchange rate; and preparing central banks for operating within the euro zone. After considering the pros and cons, we come to the view that (i) CBAs can in principle satisfy all these requirements, and (ii) if policies and circumstances remain right, a direct transition from a CBA to EMU without any transitional period of greater exchange rate

flexibility could be the first-best policy for prospective EU member countries with currency boards. However, if countries (for good reasons) choose to maintain their currency boards up to the point of adopting the euro, they will face a number of challenges. To preserve the viability of their CBAs throughout the process, these countries need to maintain the strict policy discipline required by CBAs (conservative fiscal stance, healthy financial system, cautious external debt management, and flexible labor markets), and they need to be prepared to deal with possibly large capital inflows and asymmetric external shocks.

Let us elaborate on each of the three themes.

II. EXPERIENCE WITH CURRENCY BOARDS IN GENERAL

Currency boards are back in fashion. Once a prominent colonial monetary regime, currency boards fell into relative disuse in the early 1960s. When resurrected in the 1980s, modern currency board arrangements were introduced not to facilitate monetary relations between a dominant and a dependent economy. Rather, recent CBAs were instituted to address a range of specific economic challenges, including facilitating transition from formerly centrally planned economies (Estonia and Lithuania), arresting hyperinflation (Argentina, Bulgaria), restoring exchange rate stability after a political and banking crisis (Hong Kong), and providing a stable institutional framework in post-conflict reconstruction (Bosnia). Presently a number of other countries facing similar challenges are actively considering currency boards.

The basic features, benefits, and costs of currency boards are quite well known:²

- A currency board combines four elements: a fixed exchange rate peg to an anchor currency; automatic convertibility (that is, the right to exchange domestic currency at the fixed rate whenever desired); prohibition on domestic credit creation by the central bank; and a long-term commitment to the system, often set out directly in the central bank law.
- The primary objective of modern currency boards has been to provide a credible basis for monetary stability and low inflation. To ensure such credibility, three conditions have to be met: sufficient backing of base money (that is, the central bank has to hold sufficient foreign exchange reserves to cover its entire monetary liabilities); a sufficiently restrictive fiscal policy (this in turn requires broad political support—lack of such support could result in a self-fulfilling speculative attack); and a reasonably healthy financial system (or the willingness to let weak banks fail).
- CBAs have an adjustment mechanism that reacts automatically to foreign exchange outflows and inflows. The mechanism works through changes in the money supply—a contraction in the case of a flight into the anchor currency—which will lead to interest rate changes. These, in turn, will tend to counteract the actual movement of foreign exchange, and will also induce adjustments in output and employment. This is essentially the same mechanism that also operates under other fixed exchange rate arrangements, but

² See, for example, Baliño et al. (1997), Bennett (1994), Enoch and Gulde (1998), Schwartz (1993), and Williamson (1995).

the lesser room for discretionary monetary policy and the correspondingly stronger exchange rate guarantee implied by the CBA suggest that the necessary interest rate changes and the associated costs for the economy could be comparatively lower.

- Currency boards are neither a quick fix nor a panacea. Low inflation and interest rates are the immediately obvious advantages of a credible CBA. Currency boards have also proved to be very resilient: there have been no involuntary exits from a modern CBA. But currency boards can prove limiting, especially for countries with weak banking systems or those that are prone to asymmetric shocks (that is, shocks different from those experienced by the anchor currency country): with a currency board in place, the central bank's role as lender of last resort is severely circumscribed. Another limitation is the inability to use monetary policy (that is, adjustments of interest rates or the exchange rate) to stimulate the economy. Instead, under a currency board economic adjustment has to come by way of wage and price adjustments, which can be both slower and more painful if structural rigidities, especially in the labor market, have not been removed. However, with much evidence that the long-term trade-off between inflation and growth is not positive, the inability to pursue permissive financial policies may be a benefit rather than a cost.

How well have currency boards performed in practice? Ghosh, Gulde, and Wolf (1999) investigated this issue by comparing the inflation and growth records of currency board countries with those of countries operating under other exchange rate regimes (Table 1). It would be natural to expect CBAs to foster lower inflation than under other regimes: lower inflation should result from both the monetary discipline instilled by the currency board and

Table 1: Macroeconomic Performance Under Alternative Exchange Rate Regimes³

	Number of observations	Inflation			Broad Money Growth			GDP Growth	GDP Growth per capita	Gov. Balance
		Mean	Median	Mean	Mean	Median	Mean	Δy	Δy^c	B/y
		π	π	$\pi/(1+\pi)$	μ	μ	$\mu/(1+\mu)$	(In percent)		
Full Sample	1915	29.0	8.4	10.7	32.7	14.3	14.4	3.2	1.3	-4.4
<i>Currency Board</i>	112	5.6	3.9	5.0	12.1	11.1	9.9	4.0	3.1	-2.7
<i>Other Pegged</i>	1089	22.3	8.4	9.1	25.1	13.7	12.3	3.3	0.9	-4.6
<i>Float</i>	714	43.1	9.2	14.2	47.4	16.0	18.2	3.1	1.7	-4.3
Upper income	814	22.9	6.0	9.3	28.3	11.4	13.4	3.1	2.0	-3.0
<i>Currency Board</i>	44	4.7	4.0	4.4	14.3	12.9	12.1	5.7	4.6	-1.4
<i>Other Pegged</i>	317	8.3	6.1	7.0	14.1	11.6	11.2	3.3	1.8	-1.9
<i>Float</i>	453	35.0	6.2	11.5	39.6	11.1	15.1	2.8	1.9	-4.0
Lower income	1101	33.6	9.9	11.7	35.9	17.1	15.1	3.3	0.8	-5.4
<i>Currency Board</i>	68	6.2	3.9	5.4	10.7	8.6	8.6	2.9	2.2	-3.9
<i>Other Pegged</i>	772	28.0	9.4	9.9	29.7	15.6	12.8	3.3	0.5	-5.7
<i>Float</i>	261	57.1	15.2	18.8	61.0	25.4	23.7	3.6	1.4	-5.0
No capital controls	465	11.3	5.6	8.2	18.1	11.4	13.3	3.3	1.8	-4.2
<i>Currency Board</i>	21	10.4	6.0	8.6	15.4	11.4	12.4	3.8	3.1	-0.9
<i>Other Pegged</i>	123	9.6	7.3	8.2	17.7	16.9	14.1	4.6	1.9	-5.1
<i>Float</i>	321	12.0	5.0	8.2	18.4	10.5	13.0	2.7	1.6	-4.0

³ The data underlying this table were taken from the IMF's World Economic Outlook database, and cover all IMF members for which annual data on the exchange rate regime and key macroeconomic variables exist over the period 1975–1996. The dataset contains 112 currency board observations (country-years), 1,089 observations with other pegged regimes, and 714 floating regime observations. Included in the currency board observations are: Argentina, Antigua and Barbuda, Djibouti, Dominica, Estonia, Grenada, Hong Kong, St. Lucia, St. Vincent and the Grenadines, and Lithuania. The paper by Ghosh, Gulde, and Wolf also presents analyses for the period 1961–96, with essentially similar results as with the data for the post-1975 period.

from the higher money demand associated with a more credible system. However, the effect of currency boards on growth is ambiguous a priori: the loss in monetary flexibility might weaken a CBA country's ability to react to external shocks and might thus constrain growth, but, on the other hand, high inflation has been shown to have negative effects on growth.

In the event, the results are quite striking:

- Inflation performance under currency boards has been significantly better than under either pegged or floating regimes. During 1975–96, annual inflation averaged about 6 percent per year for countries with currency boards, 22 percent for other pegged regimes, and 43 percent for countries with floating exchange rates. These statistics, especially for floating regimes, are skewed by a few high and hyper-inflationary outliers. Table 1, therefore, also reports median inflation rates and a scaled measure,
- the real depreciation rate of the currency, $\pi/(1+\pi)$. By either measure, inflation performance under a currency board has been significantly better than under the other regimes. This pattern is evident across country groups at different income levels.⁴
- This better inflation performance did not come at the cost of lower growth. Average per capita GDP growth was actually twice as high under currency boards than under either floats or other pegged exchange rate regimes. In interpreting this finding it should be

⁴ Interestingly, however, inflation performance in countries without capital controls was very similar. Arguably, the absence of capital controls itself imposes discipline, so that the nominal exchange rate regime may make little difference.

borne in mind that most modern CBAs came into existence in the aftermath of a crisis which had sharply reduced output. Given the relatively short lifetime of many of these arrangements, the better growth performance may thus partly reflect a rebound effect. Regardless of the importance of this effect, the case against currency boards based on lower growth performance receives no empirical support from this data set.

- It is noteworthy that fiscal deficits were significantly lower under currency boards than other exchange rate regimes. Presumably, the prohibition under currency boards of central bank financing of the budget forces greater fiscal discipline.

While suggestive, these results should not be taken as conclusive evidence of the superior performance of currency boards. Self selection may play an important part in explaining the results: governments that have been prepared to accept the strictures of a CBA may have been more reformist and disciplined than the comparators.

III. EXPERIENCE WITH CURRENCY BOARDS IN TRANSITION ECONOMIES

Before discussing the specific pros and cons of currency board arrangements during the accession process ahead, it is useful to ask how transition economies with currency board arrangements have fared. With Estonia's currency board in place since 1992 and Lithuania's since 1994, the observation period for these two Baltic countries is long enough to allow for firmer conclusions than for Bulgaria, which introduced the currency board arrangement in mid-1997. (This is not to downplay Bulgaria's impressive reduction in inflation already achieved under the currency board.) We will also make occasional reference to Latvia, which

has had a conventional exchange rate peg (to the SDR) since 1994, but its monetary policy is hard to distinguish from that of currency board countries.

Since an initial drop in measured GDP after the break-up of the former Soviet Union, both Estonia and Lithuania have until recently experienced very solid economic growth. For most of this period, fluctuations in economic growth appear to have reflected largely the small size of these economies and the resulting lack of diversification, rather than the absence of an active exchange rate policy or the constraints placed by the currency board on the conduct of monetary policy. Given the uncertain lag structure and the measurement lags, pursuit of an active anticyclical monetary policy would have been quite difficult.

More recently, the Russia/CIS crisis and, in particular, the sharp devaluation of the Russian ruble since August 1998 and the resulting shrinkage of Russian imports by half dealt a severe blow to exports of the Baltic countries and economic activity. The devaluation of the Russian ruble (and other CIS currencies) posed a policy dilemma: exports to the non-CIS area (which is the most important destination) were continuing to grow briskly and the current account deficits were declining, with the adjustment most pronounced in Estonia. At the same time, fairly massive nominal exchange rate adjustments would have been required to maintain the Baltics' market shares in the CIS and protect sectors such as agriculture, whose exports could not be easily redirected to non-CIS markets because of trade barriers or without quality improvements. The authorities chose to maintain the currency pegs unchanged. In the end, the cyclical downturn appears to have been short-lived. There are signs of a recovery in the

second half of 1999, and substantial positive growth for 2000 and beyond is projected for the two Baltic currency board countries and for Latvia.

The growth record of Bulgaria in the two years after the introduction of the currency board is more mixed. A rebound of activity following the introduction of the currency board resulted in 1998 in the fastest growth rate since the start of transition, but a confluence of shocks over the past year stalled the recovery. These shocks have included weak external demand and prices, the Kosovo crisis, and adjustment strains related to accelerated enterprise privatization and restructuring. Throughout his period, the government has persisted with sound macroeconomic policies and intensive structural reform. As a result, recent months have already seen signs of a renewed recovery, and the outlook is for solid growth in the period ahead.

The extent to which currency board arrangements have contributed to transition countries' growth performance is difficult to assess. As for the Baltic countries, it would be inappropriate to attribute the overall quite impressive growth performance primarily to the currency board arrangement, rather than to fast-paced structural reforms, the creation of a favorable investment climate, and the resulting large-scale foreign direct investment. An important part of the explanation may be that those countries that were prepared to accept the rigor of currency boards would have done well under different exchange rate regimes as well. In contrast, by 1997 Bulgaria had undergone several failed stabilization attempts under a flexible exchange rate regime, and the introduction of the CBA was instrumental in stopping the vicious cycle. In all the countries under discussion, to the extent that currency board

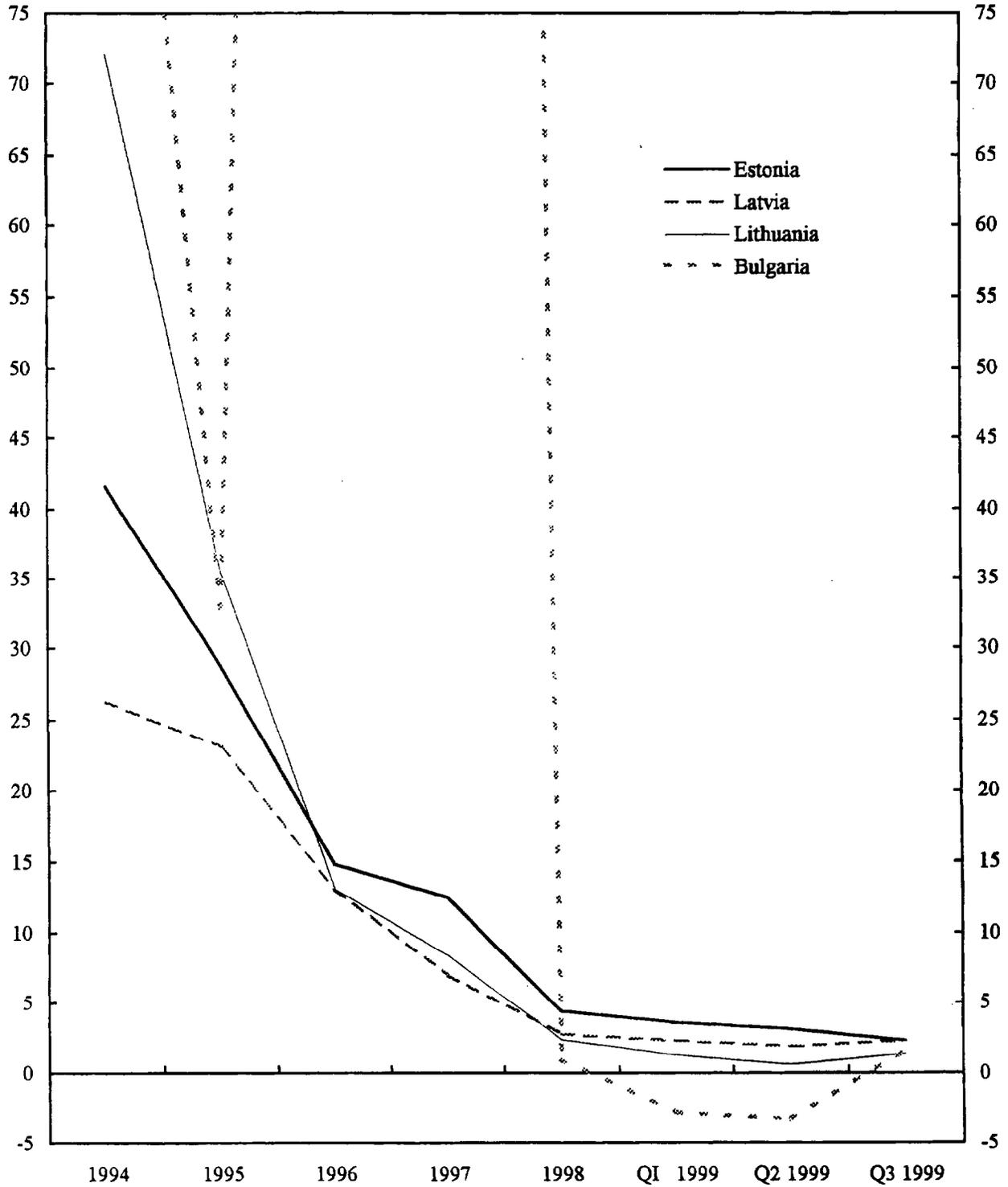
arrangements created credibility and thus contributed to faster reductions in inflation, they supported solid growth.⁵

The decline in inflation was indeed remarkable, despite at times relatively high growth of money supply in some of these countries. The latter reflected the strong growth of demand for financial assets, in part bolstered by the confidence effect generated by currency boards. The fixed exchange rate pegs have contributed to a drop in 12-month CPI increases by mid-1999 to well below 3 percent in the Baltic countries (including Latvia) and Bulgaria (Figure 1). Core inflation (excluding special factors such as excise tax adjustments) was even lower. This compares favorably with the inflation performance of several other transition economies with different nominal anchors (Figure 2).

The discipline of the currency board arrangements has also severely constrained budgetary imbalances, or at least their domestic financing. In Estonia, the consolidated public sector budget was on average balanced over the period 1994–98 (treating privatization proceeds as financing rather than revenue). In Lithuania, the average deficit over this period was limited

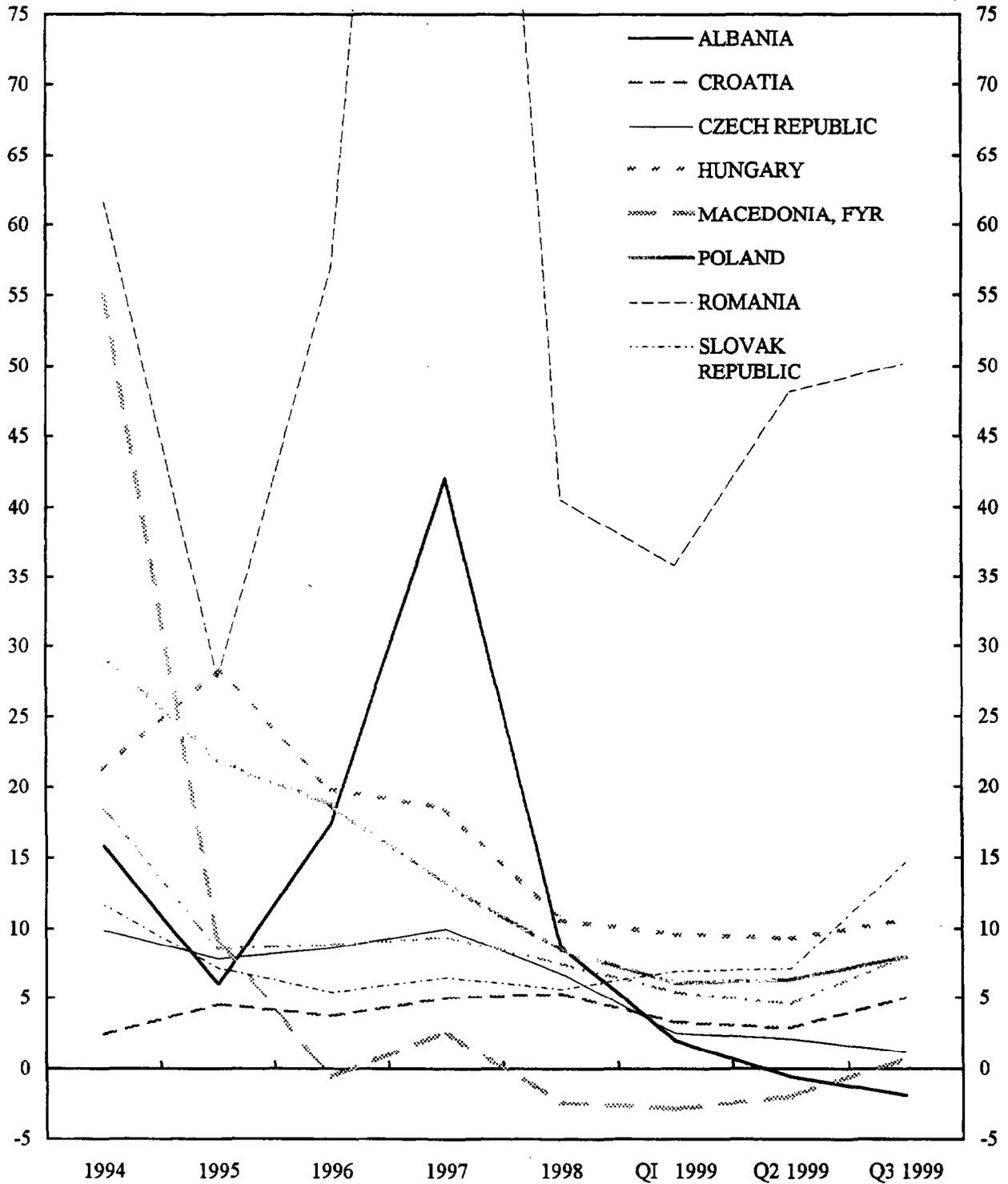
⁵ Estonia's early experience with the CBA was similar to that of Bulgaria more recently. Estonia's CBA, introduced in June 1992, contributed to stopping near hyperinflation and demonstrating the government's ability to run an independent economy, something that was doubted at the time. This could have had wider impact on confidence and growth. As for Lithuania, by 1994 it had already reduced inflation, and its management of the CBA in 1994–95 did not inspire extra confidence.

Figure 1. Baltics and Bulgaria: CPI Inflation, 1994-Q3 1999
(Month over same month previous year)



Sources: Country desks.

Figure 2. Other Transition Countries: CPI Inflation, 1994-Q3 1999
(Month over same month previous year)



Sources: EDSS; and Fund staff calculations.

to about 4 percent; this, however, was in large part financed by foreign borrowing and privatization proceeds. Following years of very large deficits, in 1998 Bulgaria recorded the first general government surplus (1 percent of GDP) during its transition, and a small deficit of 1½ percent of GDP is projected for 1999.

The generally strong fiscal efforts have helped to contain the external current account deficits. Despite the collapse of CIS markets, Estonia has made commendable progress in reducing its current account deficit to an estimated 5–6 percent of GDP in 1999 (as in 1998, foreign direct investment is estimated to be substantially higher than the current account deficit in 1999). Lithuania still needs to strengthen its fiscal efforts to reduce the large external imbalance, which stems in part from the appreciation of the currency because of the peg to the strong U.S. dollar and its larger initial exposure to CIS markets. In Bulgaria, the various shocks have resulted in a marked increase in the current account deficit (to an estimated 5½ percent of GDP), but a strong rebound of foreign direct investment after the end of the Kosovo war should provide sufficient financing to cover the deficit.

The transparency of policies and the policy discipline under currency boards appear to have supported, rather than hindered, the transformation from centrally planned to market economies, and promoted the nominal and real convergence of their economies toward those of EU members. This is not to say that there did not exist other viable policy options: as already noted, Latvia, for example, has made similar progress under an exchange rate peg that was not supported by a currency board. And we suspect that fixed exchange rates and

currency boards would probably not have done well in circumstances where the country is predominantly a raw materials exporter and needs to cope with volatile world market prices.

IV. STRATEGIES FOR TRANSITION TO THE EURO IN CURRENCY BOARD COUNTRIES

None of the modern currency boards has a predefined exit strategy.⁶ A CBA faces an inherent conflict: to render its distinctive benefits it needs to be perceived as a credible long-term system, but over time circumstances may arise that would make higher policy flexibility desirable or necessary. In practice, the fear of not reaping currency board benefits has to date prevented almost all modern currency board countries from openly discussing exit and designing exit strategies.

Accession countries with currency boards will need to address the issue of transition to the euro. This issue was not a major consideration at the time the transition countries currently operating under CBAs adopted these arrangements. Nevertheless, the goals of EU and EMU membership define a clear endpoint: the adoption of the euro. For new entrants in general, it is envisaged that the process would have three stages: EU accession; participation in ERM II; and joining the euro zone. The important question in the case of transition countries with CBAs is what path they should follow on their way to the eventual adoption of the euro. In particular, can a CBA be consistent with the requirements leading up to adoption of the euro,

⁶ Last year, Lithuania planned for an exit but has since abandoned such plans. However, the authorities intend to switch from the current peg to the U.S. dollar to a peg to the euro in 2001. There has been no indication that the CBA would not be continued.

or should the adoption of the euro only take place after an intermediate period under a different exchange rate regime?

It appears generally accepted that in the run-up to EU accession a variety of exchange rate arrangements are feasible—after all, this was the experience of the countries that have already joined the EU. Hence, as long as Estonia, Lithuania, and Bulgaria are well served by their currency boards and are able and willing to maintain the necessary policy discipline, there appears to be little reason for these countries to abandon their CBAs prior to EU accession. For all these countries accession is still several years down the road, and an exit from the CBA in the next few years could confuse market participants and the public, destabilizing expectations and damaging the credibility of these governments' policies.

However, it still needs to be examined whether currency boards are compatible with participation in ERM II. During this phase, EMU countries are envisaged to establish central rates for their currencies against the euro, and to limit fluctuations of their exchange rates to a band of up to ± 15 percent around the central rate. Participation in ERM II can be seen to fulfill several objectives: facilitating nominal convergence (meeting the Maastricht criteria); allowing a market test for exchange rate stability; helping to ensure that countries enter the euro zone at an appropriate exchange rate; and preparing central banks for operating within the euro zone.

In what ways might a currency board be viewed as *not* fulfilling these objectives? Several arguments could, in principle, be made in favor of moving from a CBA to more flexible

regime during ERM II. One argument would be that a regime allowing some exchange rate variability would reveal whether a country's macro policies stood up to the test of ensuring adequate exchange rate stability. Such a regime would in principle also help to ensure that a country did not enter the euro zone at the wrong parity. An additional argument would be that it might be desirable for monetary institutions and officials in currency board countries to gain experience with active monetary policy management prior to EMU accession. Also, some exchange rate flexibility could smooth the transition and promote nominal convergence by allowing nominal appreciations to absorb the well-known Balassa-Samuelson effect (a tendency for the real exchange rate to appreciate as a result of faster productivity growth in the traded goods sector than in the nontraded goods sector) and by allowing the nominal exchange rate to react to asymmetric shocks.

In light of how CBAs work in practice, a number of considerations suggest the merits of retaining an existing CBA during the ERM II period:

- While testing the stability of the exchange rate regime in the market is clearly important in the lead-up to adopting the euro, such a test is certainly possible in the context of a CBA: the current account position, the level of reserves, monetary aggregates, growth performance, and interest rates provide clear indications of whether exchange rates are at appropriate levels. In particular, the requirement of interest rate convergence before

doption of the euro should provide assurances that the financial stability criterion has been met.⁷

- CBAs have a built-in adjustment mechanism helping to ensure that the exchange rate is at the right level provided prices and wages are sufficiently flexible: while the nominal exchange rate is fixed, other prices adjust to keep the real exchange rate at an appropriate level. Indeed, for CBA countries already pegged to the euro (Estonia and Bulgaria) the requirements for good economic performance are already very similar to those of EMU participants. Of course, temporary disequilibria are possible, and it is important that exchange rate pegs are not maintained by excessive recourse to foreign borrowing or at the expense of growth. However, if a currency board has been viable for a number of years, if output and export growth are robust, and if the economy has proven to possess the necessary flexibility to adjust relative prices and reallocate resources under a CBA, a severe misalignment is hardly possible.
- It is doubtful whether an intermediate period with a more flexible exchange rate regime would allow the market to find the appropriate nominal parity at which to join the euro zone. The three economies in question are relatively small and their foreign exchange markets lack depth, which was one of the reasons that these countries chose a fixed peg to begin with. It is, therefore, more likely that such an interim period would be

⁷ Full interest rate convergence also requires full capital mobility. In that regard, the capital accounts of Estonia and Lithuania are already very open. Bulgaria's new foreign exchange law (to become effective from the beginning of 2000) envisages that most capital flows will be free from restrictions, while the outflow of potentially volatile short-term capital would remain subject to permission from the central bank.

characterized by wide swings in the exchange rate as market participants would be speculating about the entry rate (“convergence play”). Also, abandoning a well-established and well-functioning currency board could bring about an adverse market reaction as markets may see it as motivated by some, as yet hidden, underlying weaknesses. One should also not underestimate the loss of policy transparency and discipline from moving away from currency boards and the impact of greater uncertainty on domestic and foreign investors, and on households’ willingness to hold savings in the domestic financial system. Moreover, the question arises as to which monetary policy framework to adopt for the interim period. With inflation rates below 3 percent per annum in the Baltics and Bulgaria, the potential stabilization gains, which motivated recourse to direct inflation targeting in some other transition countries, are limited at best.

- The temporary switch to a more flexible regime during ERM II would also create a host of legal, institutional, and practical problems for countries with currency boards now in place. The laws and regulations forming the legal basis for the CBAs would have to be amended. Major investments would need to be made to develop, test, and refine policy instruments for what would be a hopefully short transition period to ERM II and the euro, particularly if the interim regime involved inflation targeting.⁸
- On the need for experience in active monetary policy management, not all EMU countries pursued independent monetary policy in the lead-up to the creation of the euro

⁸ In Estonia, for example, there are no government bonds or bills, as the budget did not depend on domestic financing in the past. Also, the Bank of Estonia has not issued significant amounts of certificates of deposit.

zone. Austria and the Netherlands, for example, adopted a fixed peg to the deutsche mark early on. This peg required full coordination (and subordination) of their monetary policy with that of Germany. The reasons for that move were similar to what motivates the two Baltic countries and Bulgaria to maintain their currency board arrangements.

- Under currency boards, nominal convergence will be affected in part by relative price adjustments that involve higher-than-EU-average inflation, but this should not necessarily be seen as a problem. The special characteristics of the transition process entail important trade-offs regarding prices and exchange rates, as discussed by Masson (1999), for example. While nominal convergence is a key objective for transition countries seeking to adopt the euro, with strong productivity growth in the traded goods sector the real value of these countries' currencies will tend to appreciate (the Balassa-Samuelson effect). Under a CBA, this will result in consumer price increases that are somewhat higher than in the euro area. Additional price level shocks can be expected as a result of the introduction of the EU's agricultural pricing system, the harmonization of excise tax rates, and the completion of price liberalization (which is already far advanced in all three countries). While a nominal appreciation could counter these factors, this "excess" inflation in the run-up to EU and EMU membership should not be seen as a sign of policy weakness or as endangering economic growth: it reflects relative price adjustments rather than macroeconomic imbalances. Moreover, the magnitudes need not be large. A

substantial portion of this relative price adjustment has already taken place,⁹ and much of the initially very substantial undervaluation of the currencies in transition countries has been eliminated through sustained real appreciations. It can be expected that with real convergence the importance of Balassa-Samuelson effects will continue to fade over time, and this would probably put currency board countries in a relatively favorable position of meeting—when they become relevant—the Maastricht criteria on inflation and interest rates.

Based on the above considerations, we would on balance see currency boards as fulfilling the objectives of the ERM II phase of joining the EMU. Indeed, without unexpected changes in circumstances, an eventual direct switch to the euro could, in our view, be the first-best solution for accession countries that are able to maintain well-functioning currency boards until EMU membership. This would avoid putting at risk the hard-gained macroeconomic stability of these countries (which will be key to achieving nominal convergence) while helping to provide the discipline to carry out growth-enhancing structural reforms (necessary to achieve real convergence).

However, such a strategy—maintaining the currency board until the euro becomes the national currency—is not without challenges, and would be quite demanding:

⁹ At the time of their EU accession, Portugal's and Spain's ratios of nominal GDP to purchasing power parity (PPP) GDP were 0.39 and 0.56, respectively. For comparison, these ratios are 0.39 for Estonia, and 0.28 for Bulgaria.

- Economic policies need to remain consistent with the viability of the currency board arrangement for several more years, as the adoption of the euro is only expected over the medium term. This requires that, in particular, fiscal policies remain conservative so as to avoid an undue build-up of debt. Where necessary, the financial sector needs to be strengthened to make it more resistant to shocks. Structural reforms need to be pursued vigorously to maintain and increase the flexibility of the economy and to continue to achieve productivity gains to facilitate real convergence. Flexibility is particularly important in the labor market: in addition to wage flexibility, the traditionally low mobility needs to be increased, and institutional rigidities reduced.
- Another set of challenges for all fixed exchange rate countries arises from the need to deal with possibly large capital inflows. The experience of the more advanced transition countries shows that sound macroeconomic policies, greater openness, deepening financial integration, as well as enterprise and bank privatization will likely result in large capital inflows, including foreign direct investment. Estonia and Lithuania have already received large inflows (the former mainly in the form of FDI), and Bulgaria may well have to grapple with these issues a few years down the road. While massive capital inflows would be a sign of success, they could cause external debt problems and excessive real appreciations. To avoid this, fiscal policies may need to be tightened significantly, possibly requiring at times that the countries run sizable budget surpluses. This is not an easy task in rapidly transforming economies preparing for EU accession (with increased spending needs to upgrade infrastructure and meet EU directives), although it was done in Estonia in 1997 and the first half of 1998, for example.

- The CBAs in accession countries will need to withstand external shocks successfully. In this regard, it is important to note that the countries under discussion have made strong efforts to orient their trade toward the EU: while these efforts are still ongoing, already about one-half of Bulgaria's and Lithuania's trade is with EU countries, and for Estonia the figure is as high as 70 percent. Hence, there should by now be a large degree of shock correlation and business cycle synchronization between the EU countries and these transition economies, and the problem of asymmetric shocks need not be a serious challenge for the countries under discussion. It should be noted, however, that Lithuania's current peg to the U.S. dollar leaves it more exposed than the deutsche mark/euro pegs that Estonia and Bulgaria have.¹⁰ Moreover, asymmetric shocks also result when the structures of production and demand differ. Further progress in the transition process should make the production and trade patterns of these countries increasingly aligned with those in the EU.

Will the accession countries with currency boards be able to meet these challenges? Time will tell, but the experience of the Baltics and Bulgaria gives us some confidence. The CBAs of these countries have already been tested by severe shocks, and they have so far passed the test. With continued determination to maintain policy discipline, these countries may be able to benefit from currency boards up until they are ready to adopt the euro. Indeed, CBAs should be seen as an ERM II-compatible framework, entailing a discipline which is in line with what will be required of these economies in the EMU.

¹⁰ For this reason, Lithuania intends to peg to the euro in 2001, as mentioned above.

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