Exchange-Rate Policies for Emerging Market Economics
The Political Economy of Global Interdependence
Thomas D. Willett, Series Editor

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# Contents

*Acknowledgments* ix

Introduction, *Richard J. Sweeney, Clas Wihlborg, and Thomas D. Willett* 1

**PART ONE**

**Fixed vs Flexible Exchange Rates: The Debate Continues**


2 Is Optimum Currency Area Theory Irrelevant for Economies in Transition? *Linda S. Goldberg* 45

3 The Relevance of the Optimum Currency Area Approach for Exchange Rate Policies in Emerging Market Economies, *Thomas D. Willett and Clas Wihlborg* 61

**PART TWO**

**Exchange Rate Pegging as an Anti-Inflation Strategy**

4 Exchange Rates as Nominal Anchors: An Overview of the Issues, *Jilleen R. Westbrook and Thomas D. Willett* 83

5 Central European Exchange Rate Policy and Inflation, *Richard C. K. Burdekin, Heidi Nelson and Thomas D. Willett* 113

6 The Baltic States: Alternative Routes to Credibility, *Gediminas Dubauskas, Clas Wihlborg and Thomas D. Willett* 127
7 Exchange Rate Based Stabilization Policy in Latin America, Pamela Martin, Jilleen R. Westbrook and Thomas D. Willett 141

8 Is Pegging the Exchange Rate a Cure for Inflation? East Asian Experiences, Reuven Glick, Michael Hutchison and Ramon Moreno 165

PART THREE
Issues for Exchange Rate Management

9 Intervention Strategy and Purchasing Power Parity, Richard J. Sweeney 195

10 Trade and Payments in Eastern European Economic Reform, Sven W. Arndt 227

11 Real Exchange Rate Targeting in Economies in Transition and the Sterilization Problem: The Hungarian Experience, Pierre L. Siklos and István Ábel 239

PART FOUR
Currency Areas and Currency Boards


13 The Estonian Currency Board, Märten Ross 287

14 The Lithuanian Currency Board, Gediminas Dubauskas 295

PART FIVE
Experiences from the Emerging Market Economies

15 The Czech Case: Fixed Exchange Rates through Stages of Transition, Miroslav Hrnčíř 309

16 Exchange Rate Policy in Hungary Between 1989 and Mid 1995, Pál Gáspár 333
17 Poland’s Exchange Rate Policy in the 1990s,
   Tadeusz Kowalski and Renata Stawarska
   
18 An Evaluation of Optimal Currency Areas for the
   Commonwealth of Independent States,
   King Banaian and Eugenue Zhukov
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A major purpose of the project was to establish economic policy dialogues between Western economists and economists and policy officials from the former communist countries. The emphasis was not on having Western economists tell Eastern economists what to do, but rather to enter into discussions which would culminate in shared agreement about the nature of the key issues—even if there was not always agreement about policy recommendations. To this end we organized a substantial number of conferences and workshops which brought economists and officials from the former commu-
nist countries to Claremont, Georgetown, and Göteborg and brought groups of Western economists to locations in Central Europe and the former Soviet Union. We especially appreciate the cooperation of local host institutions: the Czech National Bank in Prague, the Czech Republic; Tallinn Technical University in Tallinn, Estonia; the Institute for World Economics in Budapest, Hungary; and the Institute for Advanced Studies and the Austrian National Bank in Vienna, Austria.

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Richard J. Sweeney
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Exchange-Rate Policies for Emerging Market Economics
Introduction

Richard J. Sweeney, Clas Wihlborg and Thomas D. Willett

Exchange Rate Regime Choice: The Debate

The merits and limitations of fixed versus flexible exchange rate regimes are the focus of one of the most long-standing debates in economics. There are important costs to both fixed and flexible rates, the relative costs of each depending on a country's characteristics and circumstances. As a consequence, policymakers in many countries have attempted to avoid choosing between these extremes and have opted for compromise regimes of adjustable or crawling pegs. This was the basic philosophy of the Bretton Woods international monetary system set up at the end of World War II. However, both economic and political considerations make such compromise systems difficult to manage effectively. This is especially true in a world of high international capital mobility.

The adjustably pegged exchange rate regime of the Bretton Woods system broke down in the early 1970s, but the lessons of this experience were not always remembered. In the 1980s and 1990s, various forms of pegged rate regimes again became popular across the globe, being adopted in Western and Eastern Europe, Asia and Latin America. In the 1990s, the difficulties of managing adjustably pegged exchange rates have once again been dramatically illustrated. The latest example of this point is the Asian currency crises of 1997–98, but many others abound, including the crises surrounding the Bulgarian lev, the Mexican peso, and the Russian ruble in 1994, the European monetary crises in 1992 and 1993 and the failure of the Bretton Woods system itself in the early 1970s. As the workability of compromise exchange rate regimes has become questionable, the choices facing policymakers have become more difficult. To a large extent the current controversy over exchange rate policies in the emerging market economies has simply transferred an ongoing debate to a new battleground. There are, however, arguments about the applicability of fixed or flexible exchange rate regimes based on the special circumstances of the emerging market economies.
The break-up of the Soviet Union and its loss of control over Central and Eastern Europe, along with the moves toward economic liberalization in many developing countries, has led to a huge increase in the number of convertible currencies worldwide in the last decade. Trade and financial relations are affected by, but also constrain management of, these currencies. Many developing and transitional countries are trying to establish their external and internal economic relationships on liberal economic principles. These principles, however, give no clear guidance about what type of exchange rate arrangements a country should adopt. A market-oriented economy may function effectively under either fixed or flexible exchange rates, as long as heavy use of exchange or capital controls is avoided. Thus, a country's choice of exchange rate regime will depend on how different exchange rate regimes perform in terms of macroeconomic independence and stability, and in terms of inflation control.

The contributions to this volume focus on issues that determine the answers to these questions. Economists from Central Europe and the former Soviet Union, as well as the United States and Western Europe, analyze the experiences of the formerly communist and developing countries and draw lessons for future exchange rate policies there and elsewhere.

The debate about exchange rate regimes is confused, and sometimes confusing, for several reasons. One is that most countries' exchange rate arrangements are not easily classified as fixed or flexible. Another is that the objectives underlying the choice of exchange rate regime often are not clearly stated. These objectives may be as much political as economic, as documented in many of the contributions in this volume. Most of the debate over the superiority of fixed or flexible rates concerns the use of exchange rate changes as an adjustment mechanism, and is only implicitly about the higher order objectives which the exchange rate regime will help achieve.

The principal argument for allowing exchange rate changes to adjust balance of payments disequilibria is that under some circumstances it provides a lower cost method of adjustment than do changes in domestic macroeconomic policies. The chief arguments against it are that fluctuating exchange rates may increase transactions and uncertainty costs for firms and households, and that expected or actual exchange rate changes could be destabilizing to the domestic economy in one way or another. A considered review of the available theory and evidence does not indicate a general advantage to either regime. Advocates of flexible exchange rates can point to cases where they have worked well and critics can point to cases where they have not. The same can be said for fixed exchange rates. The debate continues.

As discussed in Part I of this volume, the development of the optimum currency area (OCA) approach to exchange rate analysis has provided us with
a conceptual framework for analyzing these issues. A major insight of this approach is that there are costs and benefits to any exchange rate regime for any country, but the ratio of costs to benefits associated with each regime varies systematically depending upon a country’s characteristics and the external economic environment it faces.

The early literature on optimum currency areas focused on criteria for the choice between a credibly fixed exchange rate and a flexible or adjustable rate responding either to market forces or to policy-induced shocks. The optimum currency area was determined by a tradeoff between the microeconomic benefits of fixing the relative price among monies, thereby expanding the domain of a single currency, and the macroeconomic costs of giving up independent exchange-rate and monetary policies. Giving up these policy options reduces a country’s ability to achieve balance of payments equilibrium (external balance) at noninflationary full employment (internal balance). The analytical contributions of the OCA approach have focused on the macroeconomic aspects while the microeconomic benefits of establishing a currency area have been asserted or taken for granted.

In the real world, most countries face a choice between pegging with more or less adjustment and floating with more or less intervention. A highly credible pegged rate requires a nearly irrevocably fixed rate. Once we depart from such a regime, there is no well-defined scale of increasing flexibility. Intermediate regimes between a pure float and a highly credible fixed rate have characteristics of both fixed and flexible rates as defined in OCA theory.

Although OCA theory has relevance for the analysis of benefits and costs of different intermediate regimes, the criteria of this theory may be insufficient to evaluate the relative superiority of different intermediate regimes. For example, the tendency for a particular regime to cause the real exchange rate to deviate from an equilibrium rate (by some definition) would depend on the efficiency of the market mechanism to the extent the exchange rate floats, and on the government’s exchange rate policy objectives to the extent the government intervenes in the foreign exchange market. Evaluation of different regimes is, therefore, going to depend on the general objectives underlying the choice of exchange rate regime.

In this introductory chapter, we offer a brief perspective on some of the key issues of dispute concerning exchange rate policy, paying particular attention to the special circumstances facing emerging market economies. In the next section we discuss alternative objectives that determine, more or less explicitly, a government’s choice of exchange rate regime. Specific characteristics of transition economies that could influence the objectives for exchange rate regime choice and the conflicts among such objectives are discussed. In the third section we review the issues addressed in this volume, referring to specific chapters.
Exchange Rate Regime Objectives and Characteristics of Transition Economies

General Objectives of Regime Choice

The traditional OCA approach takes the view that a country’s exchange rate regime should enable its economy to restore balance in international payments after various shocks with the smallest possible costs in terms of output, employment and inflation. A second objective is a stable price level. This objective gained importance after inflation theory incorporated intertemporal considerations which imply that a simple Phillips-curve tradeoff is valid, if at all, only in the short run, before expectations about future inflation adjust.

A third objective underlying exchange rate regime choice, mentioned but not analyzed in detail in the OCA literature, is microeconomic efficiency. This objective has been addressed by monetary theorists such as Hayek (1977), and it has gained some attention in the debate about the European Monetary Union (EMU). In this debate, factors influencing microeconomic efficiency include transactions costs, uncertainty about prices and returns on investments, and the information value of prices.

Microeconomic efficiency is clearly of great economic relevance, but it is a multifaceted objective. It includes conventional static efficiency and is linked to factors that enhance growth opportunities. Exchange rate policy may enhance static efficiency by reducing transactions costs and uncertainty that is endogenous to exchange rate regimes as opposed to uncertainty caused by exogenous factors, such as preferences, technology, oil price shocks, etc. Static efficiency is also influenced by the exchange rate’s deviation from an equilibrium based on real and monetary factors.

These factors influencing static efficiency are also important for growth opportunities (see, e.g., Baldwin 1989). This aspect of efficiency can also be expected to be influenced by the information value of prices. Uncertainty about the relevance of an observed price, for investment decisions in particular, would affect growth as well as the static efficiency of, for example, consumption choice and international trade patterns. Although a high information value of prices is not conceptually identical to low uncertainty about future prices, we regard reduced uncertainty as a good approximation for increased information value. Thus, to the extent an exchange rate regime reduces uncertainty, it should also increase the information value of prices.

As noted, microeconomic efficiency has played an important role in the debate about the EMU. However, observers such as Eichengreen (1992), Krugman (1995), and Goodhart (1995) have argued that in the case of the EMU such potential gains are likely to be small, although there is some dispute about the importance of reduced exchange rate uncertainty.
economic efficiency aspects may nevertheless be important for developing and transition economies, where macroeconomic conditions are more unstable and unpredictable. Furthermore, the efficiency losses associated with disequilibrium exchange rates are likely to be relatively more serious in such poor economies than in Western Europe.

A fourth objective of exchange rate regime choice could be export promotion and trade-sector expansion with the government consciously manipulating the nominal exchange rate to attain a real exchange rate objective. Economists rarely consider this purpose in normative models, but it is more or less explicitly used by many governments’ policymakers, as is noted in several country studies in this volume. Trade expansion and real exchange rate objectives appear in the development literature, however, where it is assumed that foreign exchange markets are characterized by rationing and that the objective of government policies is to fill a “foreign exchange gap” and a “savings gap.”

Traded sector expansion is often linked to economic growth in popular debate. If trade barriers or specific market failures have hindered the expansion of the traded goods sector, then their removal will clearly enhance economic efficiency. Going beyond this to give direct or indirect subsides to exports enjoys little academic credibility, however. Using exchange rate policy to make the traded goods sector highly competitive may stimulate the movement of factors into this sector, but at the expense of activities in the non-traded goods sector, with a net welfare loss for the country. There is a popular view that export-oriented production somehow is more valuable, but it is hard to pinpoint the external effects of such production that would justify a subsidization of exports across the board. To the extent that such positive externalities exist, they are likely to be associated only with particular industries. In such cases the theory of economic policy suggests that it is less costly to target those industries directly rather than attempt to use exchange rate policy as a second-best strategy. Lack of foreign exchange is often referred to as an argument for favoring export production. However, the “foreign exchange gap” is usually caused by exchange rate and other policies that discourage exports rather than market failure in the exporting sector in particular.

A country’s exchange rate regime and other aspects of monetary policy are generally determined with one or more of these policy objectives explicitly or implicitly in the minds of policymakers. These policy objectives are not generally the primary objectives of economic policy, however. Economic growth, an equitable income distribution and a reduction of risk of loss of income are examples of primary objectives for different aspects of economic policy. It can be expected that exchange rate regime choice is part of an economic strategy to achieve these more general primary objectives.
Regime Objectives in Transition Economies

Are the primary objectives for transition economies different from those of industrialized market economies and, if so, what are the implications for the choice of exchange rate regime? One working hypothesis is that long-run economic growth has relatively greater weight for transition economies. At the same time, their recent history is characterized by strong egalitarianism and little individual risk-taking. Remnants of these objectives are still institutionalized in, for example, financial, labor and housing markets as noted by Goldberg in Part I and by Banaian and Zhukov in Part V of this volume. This legacy of the central planning period has two implications of relevance here. First, the institutional remnants causing rigidities in factor markets increase the short-term costs of growth-oriented policies that require rapid structural change. Second, policy measures to dismantle remaining institutional structures are positive from a growth point of view.

Among the four objectives mentioned above, microeconomic efficiency has the most obvious bearing on long-run growth. Thus, it could be argued that this objective should be of primary importance in the choice of exchange rate regime in transition economies. However, price and output stability also have a strong bearing on microeconomic efficiency. Price-level stability enhances the information content of prices, while output stability provides a more stable environment for economic activities.

Granted the importance of price-level stability, there is a question whether high inflation should be viewed as exogenous relative to the exchange rate regime or whether the regime should be chosen in order to reduce inflation. Different transition economies have chosen different paths with respect to the role of price-level stabilization in the transition process.

Here political economy considerations are paramount. An increasing number of economists and organizations such as the International Monetary Fund have advocated the use of fixed exchange rates to discipline domestic macroeconomic policymakers and thus fight inflation. Ultimately, however, domestic political stability appears to be the most important condition for controlling inflation (see Willett, Burdekin, Sweeney and Wihlborg 1995). Where domestic political conditions are highly unstable, efforts to promote discipline through an exchange rate constraint are likely to succeed only in producing balance of payments crises and economic disruptions. On the other hand, with domestic political stability and a sound institutional framework there is no need for an external constraint. In a middle range of domestic political and institutional situations, however, the use of the exchange rate as an anchor for domestic monetary policy may be helpful. The Czech Republic, Estonia and Lithuania are possible examples. It is crucial, however, that the potential contributions of genuinely fixed exchange rates not be falsely conferred on adjustably pegged exchange rate regimes.
Introduction

If high inflation is so embedded in an economy that exchange rate and monetary policy will not reduce it without high costs in terms of unemployment and growth, then it is necessary to accommodate inflation with a high degree of exchange rate flexibility. For transition economies, this view is backed by the argument that inflation can be reduced at much less cost after state enterprises have been privatized and the banking sector has new incentives to impose budget constraints on large state enterprises. In the absence of such reforms restrictive monetary policy will particularly hinder the expansion of emerging private enterprises. Price-level stabilization could lead to unemployment in exactly the “wrong” sector from an economic growth perspective.5

There are important arguments against delaying stabilization, however. Most Western economists favor stabilization of the price level at an early stage in the transition process, arguing that macroeconomic stabilization is a precondition for long-run growth. Some economists also argue that price-level stability should be given priority at an early stage in the transition because governments will likely enjoy an initial “honeymoon” with the public during which the initial economic costs of stabilization may impose lower political costs on the government initiating such policies. Furthermore, high unemployment will induce policymakers to speed up market-oriented reforms such as privatization and other measures increasing the responsiveness of output to economic incentives. On the other hand, high unemployment in emerging sectors could increase the reluctance of policymakers to expose state enterprises to market forces, slowing down reforms. These conflicting considerations are evident in the country studies in this volume. Experiences in a few transition countries, with Estonia as the primary example, indicate that it is possible both to conduct a restrictive monetary policy and promote privatization and reform of the financial sector (see the contribution by Ross in Chapter 13.) The political conditions in each country will determine the timing of anti-inflation efforts that will best enhance growth objectives. It is important to remember, however, that there is substantial empirical evidence that, contrary to the short-term tradeoffs that may be involved, over the medium term high inflation hurts growth.9 Thus, an anti-inflation policy is an important element in promoting microeconomic efficiency and growth.

We have argued that the objective of output and employment stabilization is consistent with microeconomic efficiency in important respects. It does not necessarily follow, however, that such stabilization should be a factor in choosing the exchange rate regime. The OCA approach emphasizes that exchange rate adjustment may substitute for labor mobility and wage flexibility as an adjustment mechanism after temporary aggregate shocks. By the same token, knowledge in labor markets that exchange rates or macroeconomic policy will be adjusted to reduce unemployment could reduce labor mobility and the incentives to reform institutions, thereby contributing to
factor immobility. This risk seems particularly high under pegged but adjustable exchange rates where exchange rate adjustment is a political decision. The risk could be less under flexible rates. Sweeney discusses in Chapter 12 under what circumstances a currency board may or may not contribute to improved adjustment in an economy.

We conclude that factors influencing output, employment and price-level stabilization should be important considerations in the choice of exchange rate regime, but on grounds of microeconomic efficiency the choice should take into account both that the chosen regime could influence factor mobility and wage adjustment and that inflation in some countries can be seen as exogenous to some extent at early stages in the transition process. The country studies in this volume certainly indicate that policymakers in, for example, Poland and Russia took the latter position in the initial stages of the transition. In these countries trade sector expansion has been a policy objective and therefore contributed to disequilibrium real exchange rates. (See the chapters by Kowalski and Stawarska and by Banaian and Zhukov in Part V of this volume.10) This objective certainly stands in conflict with microeconomic efficiency.

**Microeconomic and Macroeconomic Objectives:**
**Is There a Trade-off?**

Is there a tradeoff between microeconomic efficiency and the other objectives of exchange rate regime choice? Clearly, there is a tradeoff between export promotion and efficiency unless the case for export promotion rests on broad market failures in traded-goods industries. We argued above that such failures are not the common reason for trying to peg the real exchange rate at a disequilibrium level.

The objectives of microeconomic efficiency and a stable price level are more likely to coincide than collide. A stable price level or a stable inflation rate reduces transactions costs and uncertainty, and it enhances the information value of prices. Note also that stable inflation rates are usually associated with low inflation rates. Yet another reason why the two objectives coincide is that attempts to peg a real exchange rate at an export-promoting level are likely to cause imported inflation or direct controls on trade and prices.

The question whether there is a tradeoff between the objectives of microeconomic efficiency and the costs in terms of output and employment to restore external balance in response to shocks is more complex. Output uncertainty caused by uncertainty about the level of aggregate demand is clearly as much a concern from a firm's point of view as is exchange rate uncertainty. Thus, to the extent a flexible and uncertain exchange rate is expected to stabilize demand and output, overall uncertainty may be reduced
by exchange rate flexibility. In this sense, the objective of overall microeconomic efficiency and the macroeconomic objective most commonly assumed in the OCA literature may be reinforcing rather than conflicting.

In some circumstances short-run output stabilization and macroeconomic policies oriented towards external balance are associated with microeconomic costs, however. For example, adjustment to productivity declines, like those induced by the oil price shocks during the 1970s, may require a temporary fall in output and employment as well as a current account deficit to induce the required decline in real wages and the sectoral reallocation of resources. Similarly, demand shifts among sectors will require relative price and wage adjustments, but to the extent such shifts affect output, employment, and inflation, they may induce macroeconomic policy responses that may slow adjustment in relative prices and wages.

In both the above examples there is a conflict between microeconomic efficiency and output stabilization. Macroeconomic output-stabilization policies are likely to contribute to inflationary pressure in the economy. Thus, in these cases inflation can be seen as an indicator of macroeconomic disequilibrium. It follows that the conflict between microeconomic efficiency and economic stabilization coincides in these cases with the conflict between inflation and output stabilization. Therefore, it can be argued that the microeconomic efficiency objective is often subsumed in the analysis of conflicts between output stability and inflation in macroeconomic analyses.

Although the microeconomic efficiency objective is often implicitly taken into account in macroeconomic analyses of exchange rate regime choice based on OCA theory, there are reasons to think of microeconomic efficiency separately and explicitly as an independent and sometime conflicting objective. For example, using the objectives in OCA theory, the analyst may find that limited convertibility of a currency increases the ability of firms and households to obtain financial asset and liability portfolios that optimize their risk-return tradeoffs.

A second important reason to treat microeconomic efficiency as a separate objective is that many governments equate external balance with short-term balance in the current account, or even with a positive balance on this account. Such short-term macroeconomic policy objectives may induce exchange rate and/or macroeconomic policies that are very costly from the perspective of economic growth.

A third reason to think of microeconomic efficiency separately, in transition economies in particular, is that macroeconomic policies may affect incentives for price adjustment and factor mobility. This issue is discussed in the next section. The chapters in this volume demonstrate that all of the objectives of exchange rate regime choice discussed above play a role in the decisions of policymakers. Their weights vary across countries as well as over time, although not necessarily primarily on economic grounds.
Issues in Exchange Rate Policy:
An Overview of this Volume

In this section we provide an overview of issues that appear frequently in the chapters of this volume. The first issue to be discussed is, does exchange rate adjustment work? Domestic and international price and wage adjustment play a crucial role in the answer to this question, regardless of the objective of exchange rate policy. The inflation-discipline issue, which underlies so much of the recent advocacy of fixed rates, is addressed next. Political economy considerations are particularly important for this issue. Finally, we turn to the issue of exchange rate stability, emphasizing foreign exchange-market behavior and expectations formation of market participants.

Do Exchange Rate Adjustments Work?

Some advocates of European Monetary Union have argued that there is little cost to giving up the exchange rate instrument since economies have become so internationalized that a change in the nominal exchange rate will have little effect on the real exchange rate; that is, a devaluation will quickly generate an almost equivalent increase in domestic prices and thus rob exchange rate changes of their usefulness in promoting balance of payments adjustment. The available empirical evidence does not support this view as a general proposition, and the country studies here confirm this view. The OCA literature, however, has long focused on domestic price effects as an important aspect of evaluating exchange rate regimes and demonstrates that the seriousness of this problem should vary substantially across countries depending on their size and openness and on their wage-setting practices. In Part V, Hrnčíř, Gáspár, Kowalski and Stawarska, and Banaian and Zhukov discuss real exchange rate adjustment in the Czech Republic, Hungary, Poland and Russia in the early days of transition.

Another type of argument focuses on the possible unresponsiveness of firms to changes in economic incentives. "Elasticity pessimism" was a common criticism of the usefulness of exchange rate adjustments during the early days of the Bretton Woods system. If elasticities were too low, exchange rate changes would have perverse effects on the trade balance. Experience showed, however, that while this effect often operated in the short run, it was not a problem over the medium term. This became characterized as the J-curve effect, with devaluation frequently leading to a small worsening of the trade balance for several quarters before improvements were generated. As Goldberg discusses in Chapter 2 in Part I, low responsiveness is likely to be a particularly serious problem in the initial stages of transition from command to market economies. She points out that this presents a strong case against attempting to use the exchange rate as a direct instrument
for short-run macroeconomic stabilization. Instead, exchange rate arrangements should be designed to support institution building that contributes to price-level stability. The view Goldberg presents here is consistent with the views of those favoring fixed exchange rates such as currency boards (discussed in Part IV). Willett and Wihlborg argue, however, that the evidence suggests that exchange rate adjustments would still be useful to promote balance of payments adjustment over the medium term in most emerging market economies. Prolonged real exchange rate effects of exchange rate policy are, of course, a prerequisite for real exchange rate targeting as discussed by Arndt, and Siklos and Ábel in Part III.

The effectiveness of real exchange rate changes as an adjustment mechanism depends also on the types of disturbances that a country faces. Fixed exchange rates spread out disturbances internationally, while flexible exchange rates tend to confine them to the place of origin. Thus advocates of fixed exchange rates tend to focus on examples of the usefulness of fixed exchange rates in stabilizing the domestic economy by considering cases of domestic fluctuations whose domestic effects can be mitigated by spreading them abroad. Advocates of flexible exchange rates tend more often to discuss cases of foreign disturbances, where flexible exchange rates can help protect the domestic economy from the ravages of foreign inflation or from the need for domestic deflation to correct a balance of payments deficit. In much of the recent technical literature on exchange rate analysis, these source-of-disturbance arguments have received primary emphasis. The difficulty is that most countries are likely to be hit by many different types of shocks that have different implications for optimal exchange rate policies. Statistical studies of past patterns may offer a fairly limited ability to predict future patterns except where these can be linked to underlying structural characteristics such as a concentration of exports in raw materials that are subject to substantial market fluctuations or domestic political instabilities that make high inflation endemic.

The Inflation-Discipline Issue

Judgments differ greatly about the relationship between exchange rate regimes and inflation. The most common view is that flexible exchange rates tend to be inflationary whereas fixed exchange rates help restrain inflation. In particular circumstances this is true, but there are many counterexamples. As Willett and Wihlborg (Chapter 3) and Banaian and Zhukov (Chapter 18) discuss, with the high rates of inflation generated in Russia in the early days after the fall of communism, the only option for the former Soviet republics to protect themselves from quadruple-digit inflation was to adopt flexible exchange rates against the ruble.
The old discipline argument for fixed exchange rates has enjoyed a resurgence of popularity in recent years based on new theoretical models of credibility effects and the success of the members of the European Monetary System in disinflating. As argued in the contributions by Hochreiter (Chapter 1), Sweeney (Chapter 12), and Westbrook and Willett (Chapter 4), in such analysis it is crucial to distinguish between commitments to genuinely fixed exchange rates, i.e., those which would be abandoned only under the most extreme circumstances, and temporarily pegged exchange rates that are likely to be abandoned if pressures arise. No regime can be expected to survive, for example, the dissolution of a country. Nevertheless, if the commitment is strong enough, fixed exchange rates will provide true macroeconomic discipline, and the issue becomes whether this is worth the costs imposed by gearing the domestic economy to the behavior of the external sector. For the emerging market economies, the adoption of such genuinely fixed exchange rates requires stronger institutional arrangements than just pegging the exchange rate. Currency board arrangements, discussed in Part IV by Sweeney, Ross, Dubauskas, and Dubauskas, Wihlborg and Willett, have been adopted by Argentina, Estonia and Lithuania as an approach to the creation of strong institutional arrangements. Bulgaria is in the process of adopting such a scheme. Currency boards have also been recommended for large economies like Russia and Ukraine. Here the optimum currency area approach offers important insights. The attractiveness of seeking to provide macroeconomic discipline through external rather than internal means should be much less attractive for large than for small countries (see Wihlborg and Willett in Chapter 3, and Sweeney in Chapter 12). Such considerations would in turn affect the credibility of less formal commitments to fixed exchange rates (see Chapter 4 by Westbrook and Willett).

The country experiences analyzed in Parts II and V indicate that the record of programs using pegged as opposed to genuinely fixed exchange rates as instruments to fight inflation is quite mixed. In some instances pegging the rate has helped break the momentum of inflation, and in several cases within the European Monetary System commitments to defend the exchange rate developed considerable credibility over time. There are other cases, however, where pegging the rate created greater incentives for politically motivated demand expansions that set back disinflation efforts. Perhaps the strongest conclusion that can be drawn is that the focus of anti-inflation policy must be domestically based and that the key requirement of exchange rate policies is that they not become grossly inconsistent with domestic economic policies. Where there are mild inconsistencies exchange rate commitments can sometimes be used to force domestic economic policies into line. But where the inconsistencies are large, it is almost always exchange rate policies which give way, with the interim efforts to maintain the exchange rate peg ultimately leading to greater instability. The crisis of the Mexican peso in
1994–95 and the plunge of the Russian ruble on Black Tuesday in 1994 are prime examples.

One of the most interesting findings from our country studies in Parts II and V is that the adoption of strong institutional commitments to monetary discipline do appear to have aided the disinflationary process, but that most of the gains in credibility which occurred came gradually rather than instantaneously. For example, the success of Estonia’s disinflationary policies bolstered by the adoption of a currency-board type monetary arrangement was not noticeably different from that of the Czech Republic, until the spring of 1997 when the pegged rate of the Czech Republic came under speculative pressure. The Czech central bank never made an official commitment to keep the parity unchanged, however. Thus it appears that institutional commitments can help countries gain credibility, but they do not substitute for the need to earn it through sustained, prudent, domestic monetary and fiscal policies. The evidence from the Baltic states presented in Parts II and IV by Dubauskas, Dubauskas, Wihlborg and Willett, and Ross indicates that the final judgment on currency boards is still out.

One compromise policy approach which initially received a great deal of favorable attention is the strategy of using a crawling peg to gradually reduce inflation. This strategy is discussed for Poland by Kowalski and Starwaska and for Hungary by Gáspár in Part V. For a country starting with a very high rate of inflation, it would be very difficult to make credible the adoption of a permanent peg. The idea of the crawling peg nominal anchor strategy is to precommit to a downward crawl which is less than the difference between the country’s own rate of inflation and the average of its trading partners. Through this strategy the external sector would generate pressures against above-target wage and price increases and inflation would gradually fall. The historical record suggests that the most difficult part of disinflation policy is to bring inflation down from high to low double-digit (or single-digit) levels. In Mexico this strategy helped bring inflation down into the single-digit range, but ultimately resulted in a substantially overvalued peso which led to a balance of payments crisis. The plunge of the peso when Mexico was forced to let it float undermined much of the government’s hard-earned gains on the inflation front. So far Hungary and Poland have operated their variants of this strategy in a much less disruptive manner, but also without succeeding in bringing their inflation rates down below the 20 percent level. In general we believe that the use of crawling peg regimes are viewed more realistically as methods of reducing the damage caused by high inflation than as effective methods of reducing inflation.

**The Exchange Rate (In)Stability Issue**

Another major source of controversy concerns the behavior of flexible
exchange rates. Critics of flexible rates typically assume that large exchange rate movements are frequently caused by destabilizing speculation that imposes disruptions which could be avoided under pegged exchange rates. Advocates of flexible rates, on the other hand, typically see exchange rate fluctuations as being caused by reasonable market responses to changes in underlying economic fundamentals.

Much of the continuing dispute about speculation is due to the crucial role of expectations in the behavior of financial markets. In efficient financial markets prices are influenced not just by what has happened, but by expectations about what will happen. This makes it difficult to explain the behavior of exchange rate dynamics with ex post statistical data. For example, where a deadlock in the budget process raises fears of an acceleration of inflation, then in an efficient market the exchange rate should depreciate by more than could be explained by past inflation differentials. Likewise, many shocks may cause substantial changes in equilibrium real exchange rates, but with the amount of appropriate change being subject to considerable uncertainty. In such circumstances plausible shifts in expectations may lead to large, rapid exchange rate movements. Such behavior is consistent with both destabilizing speculation and with speculation in efficient markets. Because it is often difficult to clearly discriminate between these hypothesis, there is considerable scope for observers to cling to their prior beliefs.

The history of the fluctuations of the ruble highlights this problem. During the period of exchange rate flexibility the ruble has been substantially undervalued in terms of actual inflation differentials. This undervaluation can be explained by reference to expected future inflation, however. Likewise, many of the large movements in the ruble can be easily explained in terms of changing expectations about election outcomes and prospects for budget deficits and monetary accommodation. Yet it is hard to show that the amounts of these swings were fully justified in relation to the market's expectations or that these expectations did not suffer from excessive optimism or pessimism. To many, the dramatic fall of the ruble by 27 percent against the dollar in a single day, the infamous “Black Tuesday” in the summer of 1994, was a clear illustration of the dangers of destabilizing speculation and market overreaction. More correct is the conclusion drawn by Granville (1995) that Black Tuesday was a “response to serious failings in government policy” (p. 96) and “a proof that markets are working” (p. 93). In other words, the speculators were the messengers that government policy was unsustainable and not the causes of the crisis. The same conclusion applies to the Mexican peso crisis of 1994–95 and the Asian financial crisis of 1997–98.

More of a problem than overt destabilizing speculation is the thinness of financial and foreign exchange markets in the initial stages of transitions from command to market economies. For floating exchange rates to be
reasonably stable in the short run, one needs not only the absence of destabilizing speculation but the presence of stabilizing speculation. Otherwise factors such as J-curve effects can cause short-term exchange rate movements that magnify the longer term effects of shocks. This is not an argument for pegged over flexible exchange rates but rather an argument for a managed rather than a free float; government’s role here would be that of the missing stabilizing speculators. A crawling peg with wide enough bands could also be an intermediate regime solution. It is possible, however, that the fears of thinness for a floating exchange rate have been exaggerated. Kranjec (1995) argues that such a regime has worked well for Slovenia without seemingly excessive exchange rate volatility.

When recommending policies to compensate for such “market failures,” it is also important to recognize the potential dangers of “government failures.” While the magnitude of the drop of the ruble on Black Tuesday was due primarily to concerns about domestic economic policies, the timing and speed of the drop was due to bad management of exchange rate policy. The Russian authorities attempted to counter worsening expectations by increasingly heavy exchange market intervention to prop up the ruble. Reserve losses became unsustainable, forcing the authorities to pull out of the market and resulting in the sharp plunge of the ruble. Predictably, Russian officials blamed the plunge on greedy speculators who were destabilizing the market.

A virtually identical episode occurred in Bulgaria earlier in 1994. In several workshops connected with this project we heard reports from knowledgeable Bulgarian officials and members of the press that there had been a serious case of destabilizing private speculation which had brought down the lev. Upon investigation, however, we discovered that the Bulgarian authorities had been holding the nominal value of the lev virtually constant for well over a year while their inflation continued to run at levels well above the average of their trading partners. Not surprisingly, Bulgaria’s international reserves began to fall. By the end of 1993 the government was virtually out of reserves and in early 1994 had to pull out of the market. A plunge of the lev followed. Under such circumstances it would not be surprising if the fall of the market rate overshot the equilibrium level, but clearly in this case the culprit was not market overreaction but a badly conceived government intervention policy.11

When overshooting is discussed, the “equilibrium” exchange rate is often defined by purchasing power parity (PPP). This parity holds when exchange rate changes over time compensate for inflation differentials among countries. When exchange rates deviate from PPP, exchange rate changes are “real.” There are substantial disagreements about how to measure real exchange rates and about the long-run behavior of these rates.

Since the late 1970s, much empirical work, focused mainly on developed countries, has supported the view that countries do not have constant long-
run equilibrium real rates to which the actual rates tend to return. This empirical work suggests instead that real exchange rates tend to wander aimlessly over time. In Chapter 9 Sweeney discusses recent evidence that real exchange rates do in fact have long-run equilibrium values to which they tend to return, but that these equilibrium values are also subject to change. This later evidence suggests that displacements of a real exchange rate from its equilibrium value are, ceteris paribus, eliminated gradually over time. Sweeney emphasizes that because the equilibrium real rate is itself subject to shocks, the signs of adjustment are often obscured in the data.

In transition economies the problems of measuring real exchange rates are particularly severe as discussed by Dubauskas (Chapter 14), Kowalski and Stawarska (Chapter 17), and Hrnčíř (Chapter 15). These chapters illustrate the difficulties of finding a sustainable level for a pegged rate and the problems of identifying cases of over- and undervalued currencies. In some cases there have been substantial differences in indices of real exchange rates as measured by wholesale versus consumer prices. This presented particularly great problems in Bulgaria. There is also strong reason to believe that many transition economies will enjoy above average rates of productivity growth and that this will lead to a gradual appreciation of their equilibrium real exchange rates over time. The magnitude of these trends is difficult to assess, however, and in several cases countries have faced severe exchange rate crises because their governments were overly optimistic about the amount of appreciation of the equilibrium real rate. Mexico is a prime example.

In recent years there has been considerable debate not only about the desirability of discretionary exchange rate management but also about its feasibility. Where international capital mobility is high, then under pegged exchange rates central banks cannot sterilize, i.e., neutralize, the effects of balance of payments surpluses or deficits on the domestic money supply. Thus, pegged rates would imply the loss of control over domestic monetary policy even in the short run. Similarly, sterilized intervention in the foreign exchange market would not affect the exchange rate. Under such circumstances, even if the authorities could easily identify cases of destabilizing private speculation, they could prevent undesirable exchange rate movements only at the cost of directing monetary policy to exchange rate rather than domestic objectives.

Recent analysis suggests that these policy ineffectiveness conclusions are too strong, however. Despite the growth in international capital mobility, empirical studies have found that many developing and industrial countries have the ability to sterilize a substantial portion of the domestic monetary effects of payments imbalances, at least in the short run. The analysis by Siklos and Ábel of the Hungarian experience presented in Chapter 11 suggests that this conclusion holds for many emerging market economies as well.
Introduction

We are not aware of any studies which have been undertaken on the effectiveness of sterilized exchange market intervention by governments of emerging market economies, but in Chapter 9 Sweeney presents evidence that such intervention has had some degree of effectiveness for the industrial countries. This suggests that at present the best assumption to make is that, for better or worse, many governments in emerging market economies do have some scope for short-term discretionary exchange rate management. Thus, how management should be conducted is a relevant issue.

Conclusion

A major lesson we draw from the analysis presented in this volume is that it is difficult to do a good job of directing management of the exchange rate even when one is considering economic factors alone. When political pressures are added in, the job becomes even more difficult. Based on the experiences reviewed in the chapters in Parts II and V, it is difficult to draw conclusions about a clear ranking of desirability between heavily managed floating and adjustable or crawling peg systems. The key differences to date appear to have come primarily from how governments actually operate exchange rate policy rather than which of these regimes is adopted. In general, however, these compromise systems have not worked as well as many of their advocates had hoped.

The Asian currency crisis of 1997–98 presents the latest example of this problem. It appears that many countries will be better served by adopting either a lightly managed float or a genuinely fixed exchange rate. The compromise systems have great short-run attraction since they allow one to avoid this difficult choice. But too often over time they have tended to generate the worst rather than the best aspects of each extreme.

Notes

1. If capital mobility is high, then a fixed exchange rate will be credible only if the rate is irrevocably fixed. Irrevocability requires, in effect, a currency area, as noted in Goodhart (1995) and Wihlborg and Willett (1991).

2. See the analyses in Krugman (1995).

3. An exception is Minford (1995). Macroeconomic models incorporating a "representative" agent's utility function allow explicit welfare analysis. These models are invariably highly "stylized," with the purpose of analyzing welfare effects of exchange rate regimes under specific assumptions about market imperfections such as a cash-in-advance constraint or information availability. Their relevance for economic policy decisions is questionable, because economic policymakers usually face complex situations and uncertainty about the validity of any particular model.
4. See, for example, Gros and Thygesen (1990) and Emerson et al. (1992); the arguments are reviewed in, for example, de Grauwe (1992), Goodhart (1995) and Wihlborg (1996).

5. Many economists argue that the total uncertainty caused by macroeconomic factors is not related to exchange rate flexibility, because if a particular disturbance does not affect a pegged exchange rate, then it affects other variables. Only short-run exchange rate fluctuations can be considered relatively independent of macroeconomic shocks. There are often cheap ways of hedging such short-term risk, however.

6. See also Chapter 10 by Arndt in this volume.

7. On these issues, see the country studies in Parts II and V and the analysis by Westbrook and Willett in Chapter 4.


9. For evidence and references, see Burdekin et al. (1995). Some have argued that such relationships do not apply to the former communist countries, but the evidence says otherwise.

10. In Hungary, the government has fluctuated between anti-inflation and trade promotion objectives in its exchange rate policy. See Gáspar, Chapter 16.

11. For data and analysis of this experience, see International Monetary Fund (1996).

References


2. Nominal anchors

3. Internal convertibility for firms

4. Internal convertibility for households

5. Capital account convertibility

Slovenia

1. Exchange rate
2. Nominal anchors
3. Internal convertibility for firms
4. Internal convertibility for households
5. Capital account convertibility

<table>
<thead>
<tr>
<th>1. Exchange rate</th>
<th>Slovenian convertible currency</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Nominal anchors</td>
<td>Money supply</td>
</tr>
<tr>
<td>3. Internal convertibility for firms</td>
<td>Yes</td>
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<tr>
<td>4. Internal convertibility for households</td>
<td>Limited</td>
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<tr>
<td>5. Capital account convertibility</td>
<td>Limited</td>
</tr>
</tbody>
</table>

devaluation until July 1993, 1.8%; from August 1993, 1.6%; from September 1994, 1.5%; from November 1994, 4%; from February 1995, 1.2%; from January 1996, 1.0%; revaluation of the zloty by 6% on December 22, 1995.

Yes (exchange rate and most of the time also wages)

Limited

Very limited

Notes

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2. It is quite interesting to see how the Western debate concerning the link between economic growth and price stability has been taken up in the transitioning economies. For example, Bod (1994:55) states that “price stability is the necessary precondition for maximizing output and income growth in the long run.”

3. See also Guitián (1994).

4. Other reforming countries will be analyzed in a future study.

5. See, for example, Borensztein and Masson (1993) or Calvo and Kumar (1993) and the references contained therein.


8. The transmission of monetary policy intentions in the West relies on giving interest rate signals. This in turn requires developed financial markets. Despite all
the efforts undertaken so far in the transitioning economies, money and bond markets remain relatively thin, which continues to hinder the use of indirect instruments of monetary control. Moreover, statistics are still inadequate, which makes it very difficult to track and interpret monetary policy actions. Finally, statistical series, when they exist at all, are rather new and thus brief, and so do not easily lend themselves to econometric investigation because of the lack of degrees of freedom.

9. Incidentally, there might also be a formal reason to argue for a pegged exchange rate in some of the transitioning economies. The central bank acts of Bulgaria and Hungary explicitly call for maintaining internal and external currency stability, while the acts of the Czech Republic, Slovakia and Slovenia call for currency stability in a more general sense that does not exclude a peg. It is only the Polish central bank act which explicitly calls for a "strengthening" of the national currency.

10. Initially, the size of the monetary overhang was also an important consideration. This aspect might still be important for countries from the former Soviet Union.

11. An interesting order of sequencing of various pegging regimes for transitioning economies has been advanced by Rosati (1993:225). He favors a fixed peg initially (about six months), which is to be followed by an exogenous crawling peg (three to four years) and finally he advocates the return to a fixed peg (indefinitely) once the rate of inflation has fallen into a range from 12 to 20 percent.


14. Calvo and Végh (1994) specifically argue that a high degree of currency substitution favors use of the exchange rate as the nominal anchor.

15. Lutkowski (1991:202), while agreeing that a substantial initial devaluation of the Polish zloty was necessary, is of the opinion that the 50 percent devaluation was excessive and thereby contributed to making the cost of stabilization unnecessarily high.

16. For a discussion of the Austrian social partnership, see Handler and Hochreiter (1996), and in the context of transitioning economies see Hochreiter (1995). Basically, what I have in mind pertains to an informal and voluntary institutional forum not regulated by law which brings together the main social groups—e.g., entrepreneurial organizations, industry, agriculture, trade and employees’ organizations, trade unions, etc.—to discuss economic and social policy issues and to devise means to achieve the aims agreed upon.

17. On this issue also see Halpern and Wyplosz (1995).

18. Terms-of-trade shocks may also be important for some economies. Their inclusion would not alter the qualitative arguments developed here.

19. Incidentally, such inflation differentials also exist in Western countries although the (absolute) difference between the two sectors tends to be less than one would expect in transitioning economies or rapidly growing countries (e.g., Portugal and Spain).

20. For a discussion of the divergences between real exchange rate indices based on consumer and producer prices see, for example, Oblath (1993) or Aghevli et al. (1991).
The basket consists of the following currencies (weights in brackets): U.S.
dollar (49 percent), German mark (36 percent), Austrian schilling (8 percent), Swiss
franc (3.8 percent), French franc (2.9 percent).

The basket consists of the following currencies (weights in brackets): U.S.
dollar (45 percent), German mark (35 percent), pound sterling (10 percent), French
franc (5 percent), Swiss franc (5 percent).

There were seven devaluations between 1989 and 1991, of which three
amounted to 10 percent or more.

In addition, the room for maneuver in setting the exchange rate was raised
by increasing the intervention margins from ±0.5 percent to ±1.25 percent in

Note that the IMF classifies these countries as having (de facto) current
account convertibility, while acknowledging that “there continue to be certain

As of mid November 1994, the following annual tourist quotas were applied
(approximate values expressed in US$ and converted at current exchange rates):
Bulgaria, US$ 20; Czech Republic, US$ 430; Hungary, US$ 800, raised to Ft
200,000 (approximately US$ 1,400) on January 1, 1996; Slovakia, US$ 300. No
quotas were in force in Poland and Slovenia. The Czech Republic increased the
quota as of January 1, 1995, from Kc 12,000 to Kc 100,000, which already implied
a de facto full liberalization for tourists, and abolished the quota altogether later in
1995. Slovakia has raised the quota from Sk 9,000 to Sk 16,000, and as of July 1,
1995, to Sk 30,000.

For the same view see also Williamson (1991:379).

This obligation was abolished in November 1995.

On the general issue of the pros and cons of capital controls, see Ries and
Sweeney (1997).

An interesting counterexample up to now (end of 1994) has been Estonia,
which was able—under very adverse initial conditions—to maintain the fixed peg
of the Estonian kroon to the German mark from June 1992 under de facto full con-
vertibility until the beginning of May 1994, and under de jure full convertibility as
of May 4, 1994.

For a dissenting view, see Levcik (1991).

Compare this with the statement by Klaus three years later in early 1994 that
there was no need for a “salto mortale” to achieve immediate (capital account) con-
vertibility. A step-by-step approach is feasible (Austria Presse Agentur, February 10,
1994).

After the first draft of the paper (February 28, 1994) was written, Estonia
(August 1994), Latvia (June 1994), Lithuania (May 1994), Poland (June 1995), Slo-
venia (September 1995), the Czech Republic (October 1995), Slovakia (October
1995) and Hungary (January 1996) formally accepted the obligations of Article VIII
of the IMF Articles of Agreement.
References


Austria Presse Agentur. February 10, 1994.


The Case for Hard Currency Strategies


Notes

The views expressed in this paper are those of the author and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.

1. Quirk (1994) provides a useful and thoughtful discussion of the classification of exchange rate systems into various headings of fixity and flexibility.

2. Willett and Al-Marhubi (1994) argue that the case against independent currencies with flexible rates can be grouped under four broad headings: (1) exchange rate adjustments will not work to promote economic adjustments; (2) fixed exchange rates are needed to provide a nominal anchor for controlling domestic inflation; (3) destabilizing speculation and shifts in capital flows will generate exchange rate misalignments and excessive volatility, thus hurting international trade and distorting resource allocation; and (4) flexible exchange rates promote economic warfare and make economic integration impossible.

3. For insights into which country characteristics are associated with reduced monetary discipline, see the work by Cukierman, Edwards and Tabellini (1992).

4. Alternatively, the initial situation may be one of distinct currencies with non-discretionary monetary policy and fixed exchange rates.

5. Transfers are less likely to be sustained in the event of permanent shocks, and provide more scope for competitive devaluation.

6. Bayoumi (1994), for example, embeds the traditional Mundellian insights into a general equilibrium model with regionally differentiated goods.

7. The exception to this discussion of transition economies is East Germany. Since the former East Germany is stabilized by the former West Germany, this Mundellian criterion suggests that a single currency could exist between East and West Germany.

8. This section draws on material from Goldberg, Ickes, and Ryterman (1994).

9. For a detailed discussion of survival constraints on enterprises and the evolution of interenterprise arrears in Russia see the working paper by Ickes and Ryterman (1993).

10. See Balifto, Dhawan, and Sundarajan (1994).

11. For recent discussions see Edwards (1993), Calvo and Végh (1993), and Chapter 4 in this volume by Westbrook and Willett.

12. Currency boards, wherein there is full foreign exchange backing of the domestic currency, are intended to provide credibility to a fixed exchange rate regime while imposing a strict rule-based monetary policy. Such regimes have been implemented in Argentina (1992), Estonia (1993), and Lithuania (1994). Currency boards provide a country with the symbolism of a national currency, but almost completely eliminate monetary autonomy. Most of the studies of nominal anchors and inflation predate these recent experiences with currency boards.

13. Seignorage is often called the inflation tax because it taxes existing holders of money balances. When a country prints money to pay for its expenditures, it generates inflation, lowering the real value of the payments.


15. See Bennett (1993) and Chapter 13 by Ross and Chapter 14 by Dubaskas in this volume on the operation of currency boards in Estonia and Lithuania.
References


the formulation of macroeconomic policies. The theory of optimum currency areas shows that the ratio of costs to benefits for such freedom varies from one country to another.

While these propositions do not exhaust the list of potentially relevant considerations for the choice of exchange rate regimes, they give us a useful starting point for such analysis.

One of the greatest difficulties in applying the optimum currency area approach is the lack of a large stable trading partner to which small open economies may fix their exchange rates. This has been a particular problem for the Baltic states. Even apart from political considerations, because of its high inflation Russia is not an appropriate anchor despite its large share in the Baltic countries’ trade. One alternative possibility is for the Baltic states to adopt a common currency. Over and above the lack of political and cultural identity which is typically an important requirement for forming a currency union (see Cohen 1994 and Goodhart 1995), there are good economic reasons why such a currency area does not make sense. Despite their geographic proximity, the economies of the three Baltic states are not closely integrated with one another. They rank relatively far down on each other’s list of major trading partners. Not only would they score badly on Mundell’s criteria of cross-national factor mobility, but the differences in these economies’ structures suggests there will be substantial changes in their cross-national real exchange rates. This would require domestic price level movements relative to the group average if they formed a currency area.

Ultimately Estonia chose to fix its currency to the German mark and Lithuania chose to fix to the U.S. dollar. In each case the proportion of their trade flows with their key currency partner is relatively low, and while the United States and Germany are two of the more stable countries in terms of their domestic inflation rates, each has had major real exchange rate variations against other currencies. This in turn subjects a high proportion of Estonia’s and Lithuania’s traded goods sector to considerable exchange rate variability relative to their trading partners.

Perhaps Latvia made a wiser choice by fixing its exchange rate to the SDR—a weighted average of a large number of currencies. While this would be likely to carry less favorable initial credibility effects than fixing to a hard currency (see Willett and Al-Marhubi 1994, and Dubauskas, Wihlborg and Willett in Chapter 6), it would seem likely to subject the domestic economy to fewer international shocks over time.

Notes

1. The term optimum currency area was coined by Robert Mundell (1961). In the 1960s the theory was extended in important ways by McKinnon (1963) and Kenen (1969). For a history of the evolution of the literature on optimum currency areas,

2. See the analysis in Krugman (1992) and (1995).
3. On these issues see the analysis and references in Burdekin et al. (1995).
4. See, for example, the analysis and references in Hibbs (1987), Persson and Tabellini (1994) and Willett (1988).
5. On the first point, see Bofinger, Svidland, and Thanner (1993). On the second, see Bofinger (1991). The literature on the exchange rate as a nominal anchor is reviewed in Chapter 4 by Westbrook and Willett in this volume.
6. See Goldberg, Ickles and Ryterman (1994) and Chapter 2 by Goldberg in this volume.
10. Seigniorage is the profit earned by the central bank as a result of interest-free borrowing when it issues money. It increases with the nominal interest rate and, therefore, with the level of inflation.
12. For a recent discussion of third-country effects, see Bayoumi (1994).
13. See the surveys in Edison and Melvin (1990), Eichengreen (1992) and Willett (1986).
14. Note that the case for the effectiveness of exchange rate adjustment need not rest on money illusion. On these issues see Corden (1993).
15. For an interesting sketch of the outlines of a monetarist approach to optimum currency area theory, see Bofinger et al. (1993). On the relevance of some of the major optimum currency area criteria even in a new classical flexible price model, see Minford (1995).
16. In Part IV of this volume, currency boards are discussed. The point is made by Sweeney in Chapter 12 of this volume that currency board arrangements are not always credible.
18. For an analysis of the global monetarists' view, see Whitman (1975). For recent empirical evidence on this issue, see the analysis and references in Edwards (1994), Mast (1996), and Papell (1994), and specifically on Central Europe see Branson and de Macedo (1995).
19. Unfortunately, some of the former Soviet republics ran even higher rates of inflation than Russia. See Willett, Burdekin, Sweeney and Wihlborg (1995) and Chapter 18 by Banaian and Zhukov in this volume.
20. Of course a flexible exchange rate cannot offer complete insulation from inflationary disturbances occurring abroad. In a world of international capital mobil-
ity, changes in monetary policy may induce substantial movements in real exchange rates which may have direct effects on prices. On this issue see Arndt, Sweeney and Willett (1985), Bordo and Schwartz (1988), and Sweeney and Willett (1977).

21. For a small open economy, much of the effectiveness of an exogenous change in the nominal exchange rate would be lost due to induced changes in domestic prices, resulting in little change in the real exchange rate. This is one of the most powerful facets of the case for fixed exchange rates for small open economies.

22. It is interesting to note that Keynes himself formulated the case for exchange rate flexibility in this way in his *Tract on Monetary Reform* (1923).


25. See also the contribution by Goldberg in this volume.


27. See Guitián (1994).

28. See Yeager (1996, Ch. 8).

29. While arguments that emerging market economies are particularly likely to be subject to destabilizing speculation do not appear to have been confirmed by recent experience, there are reasons to be concerned about possible shortages of stabilizing speculation while financial markets are in early stages of development. As is discussed in Willett and Al-Marhubi (1994), such conditions present a strong case against the use of completely freely floating exchange rates, but not against a considerable degree of exchange rate flexibility. They do point to a potential need for greater official financing in the early stages of transition.

30. Note that if the long-run elasticity conditions are not met, this implies that instability would result not just from exchange rate changes, but also from price level changes under fixed exchange rates.

31. See, for example, the analysis and references in Anderson (1995) and Carrington (1992).


33. See Friedman and Schwartz (1986).

34. Again, see, for example, Anderson (1995).

35. See Willett and Banaian (1996).

36. See the analysis and references in Mahdavi and Kazemi (1996).


References


Thomas D. Willett and Clas Wihlborg


use of exchange rate pegs. While a number of economists have pointed to the short-term advantages of a temporary peg in helping to break inflationary inertia, less attention has been paid to the substantial difficulties involved in moving from a pegged to a more flexible exchange rate regime. There are substantial political pressures to delay the transition for much longer than would be consistent with a smooth transition. As Sachs (1995:185) has noted,

moving from an initially pegged rate to a flexible rate (e.g., a crawling band) is easier said than done. We still don’t have an agreed approach to announcing, at the start of stabilization, that a peg will be temporary, to be followed by some sort of band or float.

In general, strategies based on central bank independence combined with inflation or nominal income targeting appear much more attractive than using the exchange rate as the centerpiece of anti-inflation policy. 52

Notes

1. On the tendency of the IMF to recommend pegging on anti-inflation grounds, see Edwards (1993) and for an earlier expression see Frenkel et al. (1991). After (inappropriately in our view) advising the continuation of the fixed exchange rate based ruble zone for the countries of the former Soviet Union, the IMF did switch to advocating flexible exchange rates for a number of former communist countries. See Sachs (1996b).
2. See also Bruno (1991b) and Rebelo and Végh (1995).
3. Our analysis assumes that exchange rate adjustments do work to correct the balance of payments. Typically, observers are no longer concerned that elasticities in the foreign exchange market are too low to promote adjustment; see, however, the discussion by Linda Goldberg in this volume concerning the possibility of low elasticities for economies in the initial stages of transition from central planning to the market. More frequently, criticisms of the effectiveness of exchange rate adjustments focus on arguments that induced inflation will keep changes in nominal exchange rates from having policy relevant effects on real exchange rates. While this is likely true for very small open economies—a point emphasized in the theory of optimum currency areas—the empirical evidence suggests that nominal exchange rate changes are generally an effective method of changing real exchange rates: see Edwards (1994), Mast (1996), Papell (1994) and, for specific evidence in the case of Central Europe, see Branson and de Macedo (1995).
4. By credibility we mean the extent to which government announcements of policy intentions are believed by the public. According to this definition, a government is also credible if the public believes a policy change has occurred after the government announces it, even if the government has no intention of following through. That government will quickly lose credibility, however.
5. As Maurice Obstfeld has recently argued, “A pegged or even fixed exchange rate may be useful in the early stages of disinflation...But leaving an exchange rate
in place for long...invites trouble" (1995:171). Sachs, Tornell, and Velasco (1996:19) argue similarly that "pegged exchange rates are often helpful in ending very high inflation...but they become dangerous if they are maintained long after stabilization has been achieved."

6. For a valuable review of the Israeli experience which dramatically demonstrated the differences in effects when pegging-based stabilization programs were backed by fundamental changes in monetary and fiscal policies and when they were not see, see Bruno (1993) and Leiderman (1993), and on the Latin American experiences, see Chapter 7 by Martin, Westbrook, and Willett.

7. Végh (1992) argues that stabilization efforts under hyperinflation will be much more credible than those under chronic inflation, so that in the former case inflation can be quickly eliminated with little cost in terms of employment and output. On the imperfect credibility explanation of initial booms under exchange rate based stabilization, see also Rebele and Vég (1995).

8. In the Polish case, see the analysis and references in Chapter 5 by Burdekin, Nelson, and Willett, and Chapter 17 by Kawalski and Stawarska in this volume.

9. In these cases there was a strong interaction between perceptions of the credibility of the exchange rate commitment and the reputation earned by governments following conservative monetary policies. There is an important question concerning whether the markets, often characterized as being too pessimistic about the credibility of government policies, in these cases became too optimistic. We are inclined to believe that this was so, at least in the Mexican case.

10. The credibility costs imposed on the countries which dropped out of the exchange rate mechanism of the EMS in the early 1990s was much less than in the Mexican case. Several of the Southeast Asian countries forced off of their pegs in 1997 also appeared to face substantial credibility costs.


12. The presumption that one nation can borrow another's reputation is based upon it relinquishing control of domestic monetary policy. A nation can certainly choose to do so, but rarely have there been cases where a nation permanently chooses to relinquish control of this policy tool. For a valuable discussion of the political economy characteristics that led countries to stick to the gold standard for a longer or shorter time period, see Simmons (1994).


14. On the Israeli stabilization efforts see also Bruno (1993). On the key role of fiscal adjustments, see also Burdekin (1995) and Sargent (1986) and the discussion in the following section on the EMS experience.

15. See, for example, Calvo and Mendoza (1996), Gil-Diaz and Carstens (1996), Sachs, Tornell and Velasco (1996), and Willett (1995a).

16. On the selection bias involved in simple correlations of inflation and exchange rate regime, see also Begg (1977). Buina and Wijnbergen (1997) find that once the sustainability of fiscal policy is taken into account, "the eastern European experience...suggest no clear link between exchange-rate regime and inflation track record" (p. 53). The recent statistical literature on the association between exchange rate regimes and inflation reaches mixed results. See also Edwards (1993), Ghosh et al. (1996), Quirk (1994, 1996) and Siklos (1997). Indeed, in a recent empirical study
of the industrial countries, Al-Marhubi and Willett (1997) find that the association between exchange rate regimes and inflation depends strongly on the countries' degree of openness—one of the major variables in optimum currency area theory. Fixed rates are associated with lower rates of inflation in more open economies and higher rates of inflation in less open ones. Across all countries there is a strong positive simple correlation between pegged exchange rates and lower inflation, but clearly this is due in part to the infeasibility of maintaining pegged rates in the face of high inflation. When attempts are made to take casual factors into account, the results are mixed. See Al-Marhubi (1996), Edwards (1993), Ghosh et al. (1996), Quirk (1994) and Siklos (1997).

17. A number of contending hypotheses have been offered to explain this pattern. After a detailed examination, Rebelo and Végh (1995) conclude that the most promising explanations require wage and price stickiness and expectations that the exchange rate peg and overall stabilization program will prove to be only temporary. For questions about the frequency of such delayed recessions see Easterly (1996) and Gould (1996). Khamis (1996) finds that in the Argentine, Chilean and Mexican, but not the Israeli, stabilization programs reductions in inflation were associated with substantial increases in private sector credit and suggests that this may be one of the factors generating initial booms often associated with exchange rate based stabilizations.

18. As Balerowicz et al. (1997:135) note, “Gradual reform would also mean wasting political capital...This sort of political capital is a typical benefit of any large scale political breakthrough, but it quickly vanishes, giving way instead to ‘normal’ politics conducted by political parties, a game of special interests.” The same point applies to the output and employment costs associated with disinflation. See also the discussion by Boone and Fedorov (1997).

19. In order to minimize the output costs of disinflation, one would ideally combine a reduction in the rate of money growth with a one-time increase in the level of the money supply, since lower inflation rates will lead to increases in demand for real money balances. Such a strategy is difficult to make credible, however. In some circumstances the adoption of a non-sterilization policy with a pegged exchange rate could bring about the desired pattern of behavior of the money supply. See Bruno (1991a), Fischer (1986) and Pikoulakis (1990). Bini-Smaggi and Micossi (1990) argue that to minimize output costs, disinflation should be accompanied by both fixed rates and capital controls.

20. See Martin, Westbrook and Willett in this volume for further discussion of this issue.

21. For a valuable analysis of capital inflow problems in Central and Eastern Europe, see Calvo et al. (1995).


23. For further analysis of this issue, see also Giavazzi and Spaventa (1990) and Bini-Smaghi and Micossi (1990).

24. Step devaluations are also an option, but one which does not appear to work well. Reporting on a study of 15 developing countries in the Caribbean and Latin America between 1960 and 1990, Quirk (1996:44) concludes that step devaluations as “exchange rate anchor policies were not successful in the region.”
25. Strictly speaking one should refer to the ERM (Exchange Rate Mechanism) since European Union members such as the U.K. were by definition members of the EMS even when not pegging their exchange rates.

26. See the analysis in Chapter 18 by Banaian and Zhukov in this volume.


32. See Rose (1993).

33. See also Burdekin (1995).


35. The evidence on the loss of credibility generated by countries dropping out of the EMS in 1992 and the substantial widening of the band of permissible exchange rate fluctuations in 1993 was less clear. Masera argues that for Italy, “the traumatic steps to more flexible exchange rates in the EMS have caused a significant loss in the central bank’s credibility” (1994:285). For the U.K., however, any loss of credibility was insufficient to keep long-term bond rates from falling from 10 to 7 percent over the following year. See Gilibert (1994).

36. This potential advantage of exchange rate anchors has been stressed by a number of writers. See, for example, Bruno (1991b) and Bofinger et al. (1997). If devaluation is expected to be contractionary rather than expansionary, then this should also increase the credibility of a peg. See the analysis and references in Welch and McLeod (1993).

37. See also Bofinger et al. (1997). On the role of international currency substitution in increasing the case for exchange rate anchors, see Calvo and Végh (1994).

38. On the role of political instability in reducing the credibility of exchange rate commitments, see Al-Marhubi (1996) and Edwards (1996).

39. See, for example, Bean (1992) and Corden (1994). Somewhat surprisingly, Bloomberg and Hess (1997) find that exchange rate movements have no systematic effect on government approval ratings in Germany, the United Kingdom and the United States over the last two decades. Of course, devaluations would likely have greater political costs than depreciations under flexible rates.

40. See Chapter 7 by Martin, Westbrook and Willett.

41. Citing Poland as a successful case, Sachs (1996a) has criticized the IMF for not doing more to provide currency stabilization loans for other former communist countries. On the IMF’s external assistance in the former Soviet Union, see Brau (1995). On the role of external assistance in stabilization policy see also Karagodin (1996) and on the successful role of the League of Nations in the 1920s, see Santabello (1993).

42. The political economy of these issues is a fertile area for future research. See, for example, Kahler (1992).
43. See, for example, Flood and Mussa (1994).
44. See Willett (1987) and (1995b).
45. See the analysis and references in Burdekin and Willett (1995).
46. Blanchard et al. (1991:5) make an important related point. "A tough package would seem more credible, but the effects on economic activity may be so drastic as to be unnecessarily painful, and more important, to force withdrawal of the program. This implies that tough programs may not be politically sustainable, and hence risk not being credible."
48. On the importance of clear explanations of policy to the public, see also Bruno (1993) and Leiderman (1993).
49. See, for example, Saavalainen (1995) and the following chapters by Dubauskas, Wihlborg and Willett. Some currency board advocates might argue that this is because these were not true full-fledged currency boards. On this issue, see the chapters in Part IV of this volume.
50. Williamson (1991) offers an interesting explanation for this. He argues that continuing inflationary pressures may be due more to the inconsistency of real income claims, stressed by writers such as Hirsch and Goldthorpe (1978), rather than to rational inflationary expectations and that the former cause is less influenced by precommitment strategies. Thus he is critical of the use of exchange rates as nominal anchors. For a recent treatment of the inconsistent claims approach, see Burdekin and Burkett (1996).
51. On the issues involved in selecting a basket versus a single-currency peg, see Argy (1990). Bofinger et al. (1997) emphasize that the published figures suggest that the output cost of stabilization was considerably higher for Latvia under flexible rates than for Estonia under fixed rates, and criticize Zettelmeyer and Citrin's (1995) conclusion that the published figures overstate the actual difference. On the other hand, Begg (1996:16) concludes that "comparison of Estonia and Latvia offers no easy confirmation of the general superiority of exchange rate based stabilization," while Saavalainen (1995:14) argues that "the Baltic experience does not appear to support the commonly held hypothesis that the use of a fixed exchange rate is more successful in reducing inflation than the use of money-based stabilization policies." This is obviously an important topic for further research.

References


Exchange Rates as Nominal Anchors: An Overview of the Issues


experience demonstrates, pegged exchange rates or exchange rate targets provide little protection against this harsh fact.

Notes

The authors thank Pierre Siklos and the editors for helpful comments and are grateful to Ida Huang for research assistance.

1. See, for example, Bélanger (1994) and Wolf (1994).

2. For more detailed treatments of the Czech, Hungarian, and Polish experiences, see the later chapters by Hrnčíř, Gáspár, Siklos and Ábel, and Kowalski and Stawarska. For overviews of the experiences of the Slovak koruna after the Czechoslovakia divorce, and of the managed float of Slovenia’s tolar, see Radzyner and Riesinger (1996).

3. For discussion of the initial conditions and early stages of the stabilization policies in the countries under review, see Sachs (1993) and the contributions in Blanchard, Froot and Sachs (1994) and Herr, Tober and Westphal (1994).

4. The size of the economy also plays an important role in OCA theory. On this count, the larger size of the Polish economy again points toward flexible exchange rates, whereas the smaller size of the Czech economy strengthens the case for a fixed exchange rate.

5. See, for example, Bruno (1993:223)—who also concludes that Czechoslovakia and Hungary initially devalued by about the right amount.

6. Mexico is one of the rare examples of success by this criterion over a period of several years. The experiment ultimately ended in the forced devaluation of 1994 and renewed inflationary pressures, however.

7. See Burdekin et al. (1995). Specifically on the growth depressing effects of inflation in the former communist countries, see Fischer et al. (1996) and Loungani and Sheets (1997).

8. See also Bruno (1993:Chapter 7).

9. The Czech unemployment rate was 3.2 percent in 1994, for example. Slovakia has not fared as well and, influenced by its disproportionate share of Czechoslovakia’s old heavy industry and contracting sectors, measured unemployment there stood at 14.8 percent in 1994—falling between Hungary’s 10.8 percent level and Poland’s 16 percent level (see Åslund, Boone and Johnson 1996). Slovakia, however, has achieved an even lower inflation rate than the Czech Republic.

10. For an analysis of capital inflows into the Central European economies and the implications for monetary and exchange rate policy, see Calvo, Sahay and Végh (1995).

11. In September 1995, the new Czech foreign exchange law “practically fully liberalized capital flows” (OECD 1996a:40). Note that, while yielding greater short-run domestic monetary autonomy, capital controls—for this very reason—tend to undermine the use of the exchange rate peg as a nominal anchor.

12. Perhaps somewhat surprisingly, despite having a managed float Slovenia also engaged in a considerable amount of sterilization. This implies very heavy management of the exchange rate, which may be quite justified given the small, open nature of Slovenia’s economy.
13. The major exception to this correlation is the Slovak Republic, which quite surprisingly—given its substantial budget deficits, slowness of movement toward a full market system and inability or lack of desire to attract sizeable amounts of direct foreign investment—still recorded in 1996 the lowest rate of inflation of any of the former communist countries (5.8 percent). As OECD (1996b:26) notes, despite their unfavorable underlying conditions, "The NBS [National Bank of Slovakia] appears to have obtained a high level of credibility in the domestic and international financial community, with its independence and policy stance widely respected and supported." How this has come about should be a fruitful topic for research.


References


of disinflation were much lower in countries using exchange-rate based stabilization strategies. Saavalainen (1995) focuses on the three Baltic states and finds that both the initial output losses and sacrifice ratios were much lower in Estonia. While noting that differential policy credibility cannot be excluded as an explanation, Saavalainen notes that a number of other factors many also have been at work. Zettermeyer and Citrin (1996) also note that the data on output for Estonia and Latvia are not comparable. The official national accounts data for Estonia include an estimate of private sector activity, while the Latvian numbers do not contain any such estimate. Therefore, the stated difference in output performance almost certainly overstates the actual difference.

Our analysis casts some doubts on the conclusions of, for example, Bofinger et al. (1997) who argue that by enhancing the credibility of government policies, “exchange rate based stabilization as in Estonia tends to be less costly in terms of output than money based stabilization” as in Latvia, and in Lithuania (before the currency board arrangement was introduced in April 1994).

Notes

1. For additional details, see Chapters 13 and 14 in this volume, Lainelu and Sutela (1994), and Viksnins and Rimshevitchs (1995).

2. The foreign currency interest rates in each country are averages of interest rates in different foreign currencies. Thus, for exact comparability across countries the portfolios of foreign currency deposits should be the same.

3. For limitations on the use of interest differentials to measure exchange rate expectations even among the industrial countries, see the analysis and references in Burdekin, Westbrook and Willett (1994).

4. Interestingly, while Baliño and Enoch (1997) report that “the Lithuanian CBA [currency board arrangement] came under attack at the end of 1994 and beginning of 1995, following rumors of an impending devaluation and incipient banking system difficulties” (p. 9), we find no substantial widening of the domestic versus foreign interest rate differential on Lithuanian bank deposits (nor increase in the level of Lithuanian interest rates).

References


condition for success. Despite the recent successes of Argentina and Brazil, a substantial majority of stabilization efforts based on fixed exchange rates were clear failures. The success rate of crawling peg systems (whether acting as an anchor or not) was much higher. These clearly are a type of regime which deserves serious consideration, but to make them operate effectively is not easy. The initial years of the Mexican crawling peg system illustrate the potential usefulness of this approach, just as its breakdown in 1994 equally well illustrates its perils.

Given the frequency with which exchange rate flexibility is criticized as being incompatible with the control of inflation, perhaps the most surprising conclusion of our analysis is that flexible exchange rates—floating rates or non-anchor crawling pegs—were associated with the highest success rate in our sample. Taken as a group, these two types of flexible regimes had a slightly higher success rate than the exchange rate based stabilization plans—three to three in the tight definition groups and three to two in the looser definition group, or seven to four overall. More revealingly, the overwhelming majority of failures involved a fixed rate or a nominal anchor crawling peg.

This, of course, does not show that exchange rate based stabilization strategies are always inappropriate. For example, a recent review of countries with IMF sterilization programs between 1988 and 1991 found a much better comparative rate of success for exchange rate based anchor programs than occurred in our sample (see Mecagni 1995). We strongly agree with the conclusions drawn by Mecagni, however, that while exchange rate anchors likely can provide some enhancement of credibility where domestic monetary and fiscal policy already has a good deal of credibility, where these conditions are absent, they are more likely to end in crisis than in stability. This suggests that exchange rates should be used as nominal anchors only with great care. The recent flirtation of President Suharto with the idea of establishing a currency board for Indonesia provides a good example of a case where the necessary preconditions for the successful establishment of an exchange rate anchor were not present. Exchange rates do sometimes provide useful nominal anchors, but they don’t produce miracles.

Notes

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1. See the discussions and references in Bruno (1993, 1990); Helpman, Leiderman and Bufman (1994); Koragodin (1996); and Fanelli and McMahon (1996). Sachs, Tornell and Velasco (1996b) also argue that a pegged exchange rate is helpful
in the early stages of stabilization from high inflation, but express some reservations about its use over the medium or longer term. They advocate a crawling band or crawl based on expected inflation, noting the need to leave some flexibility to respond to shocks (p. 52).

2. See the analysis and references in Chapter 4 by Westbrook and Willett in this volume.

3. Major cross-country comparisons include Calvo and Végh (1994), Corden (1993) and Little et al. (1993). The latter study, based on 18 developing countries across a number of regions, concludes, as do we, that the case for using exchange rates as a nominal anchor for stabilization programs has been overstated, as does Corden (1993). Large-scale statistical comparisons include Edwards (1993), Ghosh et al. (1995) and Quirk (1994). Ghosh et al. (1996) interpret their results as supporting the view that pegged rates help reduce inflation while Quirk (1996) stresses the limited success of pegged relative to flexible rates.

4. See also the study by Karagodin (1996) on which their analysis draws and Rodrik (1995).

5. Doing so is an important area for future research.


7. See Burdekin, Salamun and Willett (1995) for a discussion and calculations of the threshold level at which inflation begins to adversely affect economic growth for developing and industrial counties.

8. Our classification differs from the IMF’s, which calls exchange rate bands and other crawling peg arrangements a managed float. In many cases this covers regimes in which the exchange rate clearly was meant to serve as a nominal anchor, for instance Mexico in the mid and late 1980s. We prefer not to call these regimes floating rates in this chapter, reserving the term floating for market-based rates or rates determined by rules that mimic market forces.

9. See Dornbusch (1997) and the comment by William Cline for a discussion of the strengths and vulnerabilities of the Plano Real. Since January 1996 the real has floated within a narrow band. Although the IMF calls this a managed float, we call it a crawling peg, although a fluctuating peg might be more accurate.

10. Bernholz (1995:247). One of the first steps in Bolivia’s 1985 stabilization program was to unify the foreign exchange market. This was accomplished by legalizing the black foreign exchange market and then letting the exchange rate float, which resulted in a huge de facto devaluation of the currency. The currency was made fully convertible and the official rate is now determined by a daily auction. Prior to the sale, the central bank decides the amount of Bolivianos to be auctioned and sets a price floor below which bids will not be accepted. Peru also scrapped a multi-tier exchange system in its 1990 reforms and let the unified exchange rate float, with the government intervening to smooth currency movements and speculation. As in Bolivia, inflation has somewhat exceeded currency depreciation resulting in some real appreciation. See the IMF’s Exchange Arrangements and Exchange Restrictions for details of exchange rate regimes.
11. Uruguay’s annual inflation rate has stabilized in the range of 40–50 percent.
15. Faced with reserve losses, countries have sometimes taken recourse to tightened currency controls, as Brazil did in 1990. So did Chile in September 1982 in the face of continued reserve losses following devaluation.
18. Such research should also consider the output costs of alternative strategies and the extent to which exchange rate regimes may themselves influence domestic monetary and fiscal policies through discipline effects. Also of importance appear to be the removal of indexation, the extent of trade liberalization, and possibly also the degree of privatization. On these issues see the analysis and references in Chapter 4 by Westbrook and Willett in this section.
19. As, for example, in the quote from Fanelli and McMahon (1996) in the introduction to this chapter.
20. See also Begg (1997).

**References**


Exchange Rate Based Stabilization Policy in Latin America


Notes

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1. In this paper "East Asia" includes the more advanced newly industrialized economies (Korea, Hong Kong, Singapore, and Taiwan), as well as economies in Southeast Asia (Indonesia, Malaysia, the Philippines, and Thailand).

2. The Hong Kong dollar has been pegged at HK$7.80 to the U.S. dollar since 1983.

3. Analogously, much of the trend appreciation of the yen against the U.S. dollar in the past 30 years can be attributed to relatively greater productivity growth in Japan’s tradable goods sector.

4. This section draws heavily on Glick and Moreno (1995).


6. The data come from the IMF’s *International Financial Statistics* or from national sources in the case of Taiwan. For further details about all data presented in this section, see Glick and Moreno (1995). Hong Kong is excluded from Figure 8.2 because of only partial availability of current account and capital account data.

7. Balance of payments accounting implies that the capital account surplus (i.e. net capital inflows) equals the current account deficit (i.e. the excess of domestic expenditures over income) plus the increase in official reserve assets.

8. Hong Kong had very large trade balance surpluses beginning in 1989, with reserve accumulation reaching 9 percent of GDP in that year.

9. Hong Kong also experienced capital inflow surges in 1987 and 1988, as speculators anticipated appreciation against the U.S. dollar. Hong Kong authorities ended the speculation by adopting a scheme that paid negative interest rates on foreign deposits. See Moreno (1990).

10. Frankel (1994) discusses how the success of sterilization depends on the nature of the shocks inducing capital inflows. Sterilization is likely to be more effective, he argues, at least in the short run, when shocks take the form of lower foreign interest rates, as in the case of East Asia, than when they take the form of increased domestic money demand, as in the case of inflation stabilization programs in Latin America.

11. Broad money is defined as the sum of “money” (currency and demand deposits held by the private sector) and “quasi-money” (time and savings deposits), both as measured by the IMF. It is equivalent to the M2 concept of money.

12. In Hong Kong’s case, the determination of the general price level and real exchange rate is complicated by changes in the demand for nontraded goods and assets such as real estate arising from political and economic factors associated with its impending reunification with China.
13. This discussion draws on World Bank (1993) and Moreno (1994b).

14. One difficulty is that the objectives of monetary policy in East Asian economies are not limited exclusively to controlling inflation (with the possible exception of Singapore). Like many other central banks (including the Federal Reserve System), East Asian central banks must reconcile a mix of policy objectives, including growth, low inflation, and balance of payments stability.

15. More generally, these observations are consistent with Cukierman et al.’s (1992) failure to find a negative association between independence and inflation for the group of developing countries. The positive association seems only to hold among the group of industrialized countries.

References


Notes

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1. See, for example, Dominguez and Frankel (1993a) and Edison (1993) for surveys of the pre-1993 literature.

2. See for example Marston (1988) and Willett (1982) for critical surveys of exchange-rate management and targeting.

3. Or, technically, the real rate is not trend stationary because of discrete breaks in the level of time trend in the real rate process; on this see Frankel and Rose (1995), Froot and Rogoff (1995), Perron (1989), Perron and Vogelsang (1992), Jorion and Sweeney (1996), Taylor (1982).

4. See Dominguez and Frankel (1993a) and Edison (1993) for reviews of this literature.

5. It is well understood that a government may have asymmetric, superior information about its coming policies as compared to market participants. It is also possible that, aside from the government’s own policies, it has superior information about economic fundamentals that it signals with its sterilized interventions.

6. In the related literature on whether government foreign-exchange intervention is profitable, researchers sometimes use data on changes in reserves rather than on intervention (Taylor 1982). Szakmary and Mathur (1997) use reserve changes to explain private profits from technical trading systems as arising from Fed losses on its intervention. Sjöö and Sweeney (1996b) discuss how reserve changes can be substantially and misleadingly different from intervention.

7. See Sweeney (1996a) for discussion of results from using intervention or the (1, 0, -1) indicator variable.

8. Sweeney (1996a) discusses the distributions of statistics, including the circumstances under which they are N(0, 1).

9. Sweeney (1996a) also presents tests with multiple lags of $CI_p$ with the significance of the $CI_p$ terms judged with $t$-tests on individual coefficients and with $\chi^2$ tests of the restrictions either that $\sum_{j=1}^n d_j = 0$ or that all $d_j = 0$. Across calendar years, the results are much the same mutatis mutandis as for the tests in Table 9.3.

10. In other models using the monetary approach to the balance of payments, substantial deviations from long-run PPP may occur, for example, in Dornbusch’s (1976) overshooting model.

11. In terms of the model in (3), but with $\alpha = \gamma_i = 0$, the equilibrium long-run (log) real exchange rate for country $i$ is $R^* = \hat{\alpha}_i / (1 - \hat{\beta}_i)$, where the hats indicate estimated values. $R^*$ is typically close to the sample mean $R'$ when the model is fit with OLS over the sample $(1, T)$. Differences between the two depend on $T$ and the values of $R_T$ and $R_1$ (with the true values of $R^*$ and $R'$ equal if $R_T = R_1$), and on truncation error in calculating $R'$, $\hat{\alpha}_i$ and $\hat{\beta}_i$. 
12. In fact, they use the Group of Ten but with Norway in place of Sweden.
13. Tests of the null in a range of models are discussed below.
14. The results in Abuaf and Jorion (1990), as opposed to other results in the literature on single currencies during the current floating rate regime, arise from simultaneous estimation of the system, including off-diagonal variances, and restriction of the speed of adjustment to be the same across countries. Restricting the covariance matrix to be diagonal appears to have little effect on results.
15. All intercepts are arbitrarily assumed to shift at the mid-point of the time series, in order to avoid data mining arising from search for the "best" common shift point or shift point for each country individually.
16. One other paper has used the German mark as the base currency for European rates: Edison and Fisher (1991) analyze bilateral EMS real exchange rates, using univariate tests, but cannot find evidence against the null of no mean reversion.
17. Note that the null of no mean reversion ($\beta = 1$) cannot be rejected for the G10 countries. One interpretation is that this arises because there are not enough observations relative to the complexities of the model's fit.
18. If the alternative of mean reversion is taken to hold provisionally for the Group of Ten, in both models Japan is the country with either a significant intercept shift or time trend.
19. This is an approximation that ignores continuous compounding and the fact that the gap between the current and long-run real rate diminishes with adjustment.
20. Many of the European countries were in the European Monetary System or its predecessor snake arrangements for much of the sample period, but Sweden pursued different policies. In particular, in the mid 1980s to early 1990s, Sweden targeted a weighted average of its trading partners' currencies, with non-EMS countries having important weights.
22. With $\alpha_i$ important, random walks approach the new $R^*$ eventually, but SUR and OLS $R^*$s are constant over the forecast period; if $\gamma_i$ is important, random walks with drift will tend to pick this up, though at the danger of estimation error, while the other models cannot pick this up. Even with $\alpha_i = \gamma_i = 0$, it is likely that for some $i$, $\beta_i \neq \bar{\beta}$. In this case, OLS may be superior to SUR, though at the cost of potentially greater estimation error.

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tradables prices—including prices of a variety of public goods and services—must be made to rise less rapidly than similar prices abroad, whenever the pressures emanating from the restructuring program call for real currency depreciation. That may be a requirement that is beyond the reach of many governments.

The current account, too, is subject to cycles over the course of a restructuring program. The importance of current account deficits is that they provide access to foreign resources, thereby expanding the range of restructuring options. But current account deficits need capital inflows to finance them and hence touch on the question of convertibility.

Many policymakers in Eastern Europe have expressed concerns about the possibility that capital inflows may "cause" real appreciation. The foregoing analysis suggests that capital inflows cannot be a cause of appreciation: the cause is to be found in movements in nontradables demand and supply and those movements are governed by the details of the restructuring program. Capital inflows merely facilitate the implementation of a transformation program. Hence, policy decisions about capital controls and convertibility cannot be made independently of the restructuring strategy.

Notes

I am indebted to Richard Sweeney, Clas Wihlborg, Thomas Willett and participants of conferences at Georgetown University, at the University of Konstanz, and at the Institute for Advanced Studies in Vienna for valuable comments on earlier drafts.


2. See Arndt (1990) for an application of this approach. For a model of fiscal policy and capital accumulation, see Barry (1987).

3. See Bergsten and Williamson (1990), Hanke and Schuler (1992), and Montiel and Ostry (1992) for related discussions.

4. See Adams and Gros (1986), Aghevli, Khan, and Montiel (1991), and Hochreiter and Backé (1992) for related discussions.

References


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NOTE: Test is the augmented Dickey-Fuller test with the number of lags reported selected by first estimating the test equation for 5 lags and then running the test with the final lag length found by choosing the longest statistically significant lag term in the AR correction portion of the test equation. All test equations include an intercept and a trend except for the ε-PPI basis which includes an intercept only (the results were highly sensitive to lag length and the inclusion of a trend term for this series alone).

Notes

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1. Data on foreign direct investment is contained in the National Bank of Hungary’s Monthly Report (various issues), the National Bank of Poland’s Information Bulletin (various issues) and the Czech National Bank’s Financial Statistical Information (various issues). Thus, for example, in 1992 the flow of foreign direct investment (in millions of U.S. dollars) into Hungary was $1337, $1210 for the Czech Republic and $830 for Poland. In the previous year, Hungary had attracted $1338 in foreign direct investment while the Czech Republic received only $200 and Poland $470.

2. It is inappropriate to go into details here but political considerations led to numerous delays in privatizing certain sectors of the Polish economy. The Czech government (as has the Polish government since) chose the approach of issuing coupons or shares widely distributed among the public. By contrast, Hungary has opted for the case-by-case approach. In Hungary, it is estimated that while 80 percent of foreign direct investment in 1990 was due to privatization, this percentage had fallen to around 50 percent in 1993.

3. A word of caution is in order here. According to Classens, Dooley and Warner (1995), "labels" such as long-term and short-term capital flows (or foreign direct investment for that matter) do not provide much information about the time series properties of these flows (i.e., volatility, persistence and predictability) in a sample of industrialized and emerging market economies.
4. This may be a slight exaggeration to the extent that the legislation enabling the National Bank of Hungary to carry out central banking functions came into effect somewhat later (1990). Nevertheless, in all aspects but the legal one, the National Bank of Hungary functioned as a central bank when two-tier banking was introduced in 1987. As Várhegyi (1995: 17) points out, two years earlier the Hungarian government had begun preparations for the introduction of two-tier banking and in effect “simulated” the new system for one year before its formal introduction.

5. Bulgaria, by contrast, chose a fully flexible exchange rate regime. It is reasonable, of course, to ask why the transitioning economies chose exchange rate based monetary policies as opposed to monetary or interest-rate or price-level targeting. The immaturity of the financial systems in the transitioning economies and the inability to identify a stable money demand function are some of the reasons given. See Siklos and Ábel (1995b) for a discussion of monetary policy strategies in Hungary and the Czech Republic.

6. The seeming clarity of the policy goal stated here is contradicted by the National Bank of Hungary itself. For example, National Bank of Hungary (1995a: 5) states: “The main goals of monetary policy in 1994—a current account deficit substantially lower than in the preceding year...” while not inconsistent with a policy of real exchange rate targeting need also not be congruent with such an objective. Obláth (1995) also suggests that the National Bank of Hungary’s exchange rate policy gave mixed signals.

7. It has not always been the case that the decision to devalue was agreed to by the government. The June 10, 1994 devaluation, in particular, coming soon after the return of the former Communists in the May 1994 elections, was publicly opposed by the new government. In part to demonstrate its independence and its determination to target the real exchange rate, the National Bank of Hungary proceeded to announce the devaluation. Such devaluations were not taken lightly, as these created by law a non-interest bearing claim on the National Bank of Hungary. By 1994, these claims were gradually turned into interest-bearing state debt as a result of National Bank of Hungary initiatives with significant consequences for the state budget which was already experiencing a growing deficit by then.

8. Until December 8, 1991, the exchange rate was pegged to a basket of currencies, the contents weighed according to trading patterns in the preceding year. Between December 9, 1991, and August 1, 1993, the basket weights were 50 percent ECUs and 50 percent U.S. dollars. From August 2, 1993, to May 15, 1994, the basket was 50 percent U.S. dollars and 50 percent DM. Since May 16, 1994, the basket’s composition was redefined as 70 percent ECUs and 30 percent U.S. dollars. A comparison with Bank for International Settlements (1995) data, which calculates real exchange rates using a basket of currencies for 21 industrial countries, reveals patterns almost identical to those shown in Figure 11.1.

9. Among the various reasons cited by Hochreiter (1995a) for transitioning economies in general and by Sándor (1994) for Hungary, in particular, are the following: the CPI includes services, usually a nontradable good whose prices behave rather differently from those for tradeable goods and the level and scope of price liberalization affects the CPI and PPI measures differently. Thus, the CPI may reflect more the impact of exchange rate movements on aggregate demand and inflation rather than the true state of competitiveness.
10. Other versions of the real exchange rate (e.g., IMF, Bank for International Settlements—see Hochreiter 1995b) reveal similar patterns.

11. Siklos and Ábel (1995a) also confirm this statistically.

12. For example, the March 1995 issue of the National Bank of Hungary’s *Monthly Report* (page 18) uses the so-called domestic sales price index. Previous issues also report calculations based on the CPI and the PPI.

13. The National Bank of Hungary’s (1995a) figures reveal that net debt as a percent of GDP was as follows (with years in parenthesis): 48.5 (1990), 46.6 (1991), 35.8 (1992), 39.0 (1993), and 45.9 (1994). Meanwhile, however, the import coverage ratio has improved substantially. The data are as follows: 2.3 (1990), 5.3 (1991), 5.2 (1992), 7.1 (1993), and 7.2 (1994). The latter indicator is expressed in months.


15. The ratio calculation for 1993–94 omits an outlier for the month of June 1993. The high value for the ratio in 1991–92 (.98) means that attempts to control the monetary base were essentially nonexistent.


17. Sahay and Végh (1995) develop a very appealing model, based on the cash-in-advance methodology, to show that inflation following the end of central planning in transitioning economies is a function of the choice of nominal anchors following price liberalization. In particular, they note the importance of wage policies in such countries relative to market economies, again a peculiar legacy of the era of central planning.

18. An important and unresolved question in this respect is, what is the appropriate level of inflation at which steady economic growth will be maximized? See “World Bank Discussion on Second-Generation Transition Issues,” *Transitions* 6 (May/June 1995:1-6), Bruno and Easterly (1995), and Burdekin, Salamun and Willett (1995).

19. Ábel, Bonin and Siklos (1994) explain how, in a financial system with weak banks and a narrow set of financial instruments, government bonds which paid positive real ex post interest rates were especially attractive to the public.

20. Given inflation rates of 20 to 30 percent and nominal interest rates of 25 to 35 percent during the period in question, interest rates of 28 percent on forint reserves and 11 to 18 percent on foreign exchange rate reserves clearly implied a substantial opportunity cost to the banking sector.

21. The following data give the required reserves as a percent of nominal GDP in Hungary with the years in parenthesis: 4.7 percent (1991), 6.4 percent (1992), 4.8 percent (1993), 3.7 percent (1994). By way of comparison, these figures are higher than in all the EU countries with the exception of Greece and Italy. Data are from the Bank for International Settlements, *Economic Indicators for Eastern Europe*, the National Bank of Hungary’s *Monthly Reports* (various issues), and the European Monetary Institute’s *Annual Report 1994* (Table 15).

22. These repos proved especially popular in September 1993 when, for “technical reasons,” repo rates were lower than the return on government Treasury bills.
This, of course, produced an excess demand (relative to the daily limits) for use of the repo facility. See Mosolygó (1994).

23. Moreover, savings rates in Hungary have been declining so that this does not appear to be a potential remedy (via the reduction in interest rates it would create) for Hungary, at least in the short-run.


25. Equation (1) can also be related to a structural model of the type developed by, say, Obstfeld (1983).

26. For simplicity we have assumed that the base reserve ratio and the current reserve ratio are the same in (2). See Cumby and Obstfeld (1983:252). Clearly, for $\Delta BA^*$ to be different from zero there would have to be a change in the reserve ratio between time $t - 1$ and $t$.

27. This series takes on a positive value (i.e., the size of the devaluation in percent) in the month when a devaluation takes place and zero otherwise. In months when more than one devaluation took place we simply summed the devaluations for that month. We also tried a dummy variable which captures political instability in Hungary (see Siklos and Ábel 1995a). This variable proved to be statistically insignificant and was dropped from the final specification.

28. Frenkel (1983) points out that OLS estimates of (4) may be biased but that the direction of the bias is unknown.

29. A structural model might be more appropriate, but the short length of the sample justifies resort to single equation methods. Obstfeld (1983) uses nonlinear least squares (with a correction for serial correlation) although he also points out that a more “thorough” analysis requires the application of two-stage least squares (Obstfeld 1983:173, n. 17).

30. To the extent that it is monetized, a far more likely occurrence among transitional economics than in, say, industrialized economies.

31. When domestic credit proxies monetary policy, no adjustment could be made for the impact of changing reserve requirements due to data limitations.

32. For additional details on the relationship between cointegration and error correction, see Banerjee, Dolado, Gabraith and Hendry (1993), and Hendry (1995).

33. At a slightly more generous significance level there is evidence of two cointegrating vectors but subsequent testing (results not shown) rejects the presence of a second vector.

34. Note that $MP$ and $FA$ are measured in billions of forint.

35. We did experiment with the list of instruments such as trying longer lags but none of these attempts altered our conclusions.

36. The $EC$ term was included in both the Ordinary Least Squares and 2SLS versions of the model with no impact on the conclusions.

37. Obstfeld (1983) and Cumby and Obstfeld (1983) also adjust for first-order serial correlation in their applications to German and Mexican data. In the present study, we also experimented with versions of (4) with an AR(1) correction factor estimated via maximum likelihood but found little impact on the coefficient estimates for sterilization. In any event, we did not find much support for serial correlation in the residuals. Finally, we also produced estimates using the Newey-West (1987) procedure with no impact on the conclusions.
38. Given the date of the election (May 1994) we were unable to perform a structural test for a "break" in the relationship.

39. We did try estimates of (4) with the addition of an electoral dummy variable, but this proved to be statistically insignificant. See also Siklos and Ábel (1995b) for the view that the events of the second half of 1994 were a reflection of the growing independence of the National Bank of Hungary vis-à-vis the government.

40. The statistical significance of the \( DEC \) variable may also be capturing fiscal influences as this is the year end when the deficit seems to experience a seasonally induced increase reflecting year-end spending of allocated budgets.

References


of international reserves, but only at the cost of making it easier for the government to avoid the board’s anti-inflation discipline. On discipline grounds, an orthodox currency board supplemented by only a weak monetary agency is desirable. On grounds of resisting disequilibrating exchange rate pressures, a strong monetary agency is desirable. If the observer believes that a substantial share of pressures for exchange rate changes arise from exchange market bubbles or fads rather than from changes in fundamentals that imply a changed equilibrium exchange rate, the case for a strong monetary agency is strengthened: the strong monetary agency is able to resist changes in the nominal exchange rate that would cause disequilibrating changes in the real rate. If the observer believes that the pressures arise mainly from shifts in equilibrium real rates and the economy adjusts prices, wages and resource allocation only sluggishly, the case for a weak monetary agency is strengthened; the monetary agency and the board will then have relatively little power to avoid nominal exchange rate changes that serve to re-equilibrate the real exchange rate.

Notes

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1. High inflation is often associated with variable inflation and also fluctuations in real growth rates. See, for example, Logue and Willett (1976), Logue and Sweeney (1981) and Burdekin et al. (1995).

2. This conceptual distinction between a currency board and a parallel monetary authority is owed to Osband and Villanueva (1992).

3. The Lithuanian currency board described in this volume has done all of these. Although this board cannot by law buy or sell government securities, it carries out open-market operations in its own liabilities.

4. Observers note that a credible currency board is likely to discourage such exchange rate pressures from arising by reducing the likelihood of exchange rate realignment. The same deterrent effect also arises from a central bank that is credibly and single-mindedly devoted to price level stability. Other observers argue that speculative pressures are less likely to arise under fixed exchange rates; this view is more problematical. Surely the timings of speculative pressures are different for fixed and flexible rates. Under flexible rates, the exchange rate is likely to move each day, and the exchange rate authority—in practice the central bank in most countries—may have to intervene quite frequently; between 1986 and 1990 the Swedish
central bank intervened on approximately 60 percent of days. Under a fixed-rate system, there are often long patches with little speculative activity, but punctuated with crises. These crises are more frequent and perhaps involve more speculation per crisis if the exchange rate authority, currency board, or central bank is recognized to have overly expansionary policies or to be unable to restrain other governmental actors from such policies; but this gets back to the merits of a strong currency board versus a strong central bank devoted to price-level stability.

5. Countries that meet criteria for a fixed-rate regime in the optimum currency area literature are the best candidates for a currency board. Among the conditions that make a country a better candidate for fixed rates, the literature cites being small and open, having a large share of its trade with the country to which it pegs, and having symmetric shocks with the other country.

6. As Osband and Villanueva (1992) and Schwartz (1993) point out, some currency boards have reserves in excess of the value of their outstanding cash; further, a board may have variations on the 100 percent marginal backing principle. The observer must decide how far a board may be from the orthodox model before the arrangement does not merit the name of currency board. Alternatively, any actual currency board can be viewed as a pure currency board supplemented by a monetary authority, as discussed below.

Some observers distinguish between an orthodox currency board that pegs "once-and-for-all" to a given currency and less orthodox currency boards that, for example, may allow for a crawling peg (Osband and Villanueva 1992). For further discussion of currency boards, see Eichengreen (1993, 1994), papers in Liviatan (1993), and Williamson (1995).

7. In a blurb on the cover of Hanke, Jonung and Shuler (1992), Friedman says, "A currency board such as that proposed ... is an excellent system for a country in Estonia's position."

8. Some less strict currency boards can be thought of as running policies analogous to the gold standard, where international reserves served as an overall, long-term constraint on the amount of money issue but in the short and intermediate runs there was a good deal of room for sterilization.

9. Historically, currency boards have had no or only very limited formal, de jure powers to change the peg. Of course, the currency board can be abolished, the establishing statute or constitutional provision can be changed, or the government can force a peg change without regard for legalities. As noted above, in this case the institutional form of the exchange rate authority is likely to change to some kind of central bank. Nothing prevents the government from continuing to call the exchange rate authority a currency board. In the case under discussion, the nominal peg change in response to a shock to the real exchange rate may enhance the credibility of an ongoing currency board; if a currency board changes the peg in response to home-made inflationary pressures, the currency board surely loses much of the credibility it has left after the domestic inflation pressures have occurred.

10. Congress passed an act in the 1980s to apologize to those interned and to pay them modest compensation over time.

11. Sweden has six large commercial banks (and several large savings banks). When a number of these banks were in danger of going under, starting in 1992, the
government bailed them out. There was no constitutional mandate for doing so, and a number of observers argued against these bailouts.

Though Swedish government intervention may have reduced short-term instability, or its probability, the intervention might have been unnecessary and might in the longer run be counterproductive by leading to less dependence on market forces than otherwise.

Canada has six large banks. Pattison (1992) argues that there is negligible danger to the Canadian payments system because these banks have the flexibility to act quickly to preserve the system.

12. Of course different pegging regimes and countries have different, often very different, expectations for how long the peg will endure.

13. If the country rebuilds its reserves to the pre-crisis level, then a rough measure of the central bank’s losses is the amount of reserves it must reacquire times the new, higher exchange rate (in home country terms) less the previous rate. Central banks are loathe to report losses on their exchange market intervention (Sweeney 1996; Sjöö and Sweeney 1996a, 1996b).

14. Corporations adopt various strategies to avoid having to announce poor earnings (Baber et al. 1991).

15. Increases in the extent to which a central bank focuses on maintaining a peg or to which a currency board follows a strict one-to-one cash-stock supply rule may reduce the real economy’s flexibility. Political pressure groups may succeed in making it more difficult for firms to reduce current employment and in increasing government programs to reduce unemployment. Predictions that a currency board will induce greater real-sector flexibility are implicitly based on the view that domestic actors take the existence of the currency board as exogenous, but it is not. For economic actors the relative net benefits of adopting greater flexibility versus taking action to revise the terms of the exchange rate authority will differ across countries. The correct view is that a currency board will stimulate flexibility in some cases, inflexibility and political pressures in others, with the difference depending in part on the country’s political and economic institutional structure.

16. A country that joins a currency union with the reserve currency country, instead of creating a currency board that pegs to the same currency, relies on the reserve currency country to inject liquidity; presumably the reserve currency country has appropriate incentives to stabilize the unified economy. Under a currency board the problem is a differential change in demand for liquidity between holders of assets denominated in the reserve currency versus assets denominated in the board’s currency.

17. See Sweeney (1994) for an elaboration of this view.

18. That is, some observers argue that bond/deficit financing of the increased spending was more inflationary than if taxation were used.

19. I am grateful to Eduard Hochreiter for discussion on this point.


21. Alternatively, French interest rates rose less than otherwise.

22. Estonia was in a fortunate position with its new currency board (which went into effect in June 1992). Estonian authorities explicitly recognized that nontradables
prices would rise to catch up with tradables prices that were now pegged to German tradables prices. Deflationary pressures from the peg to the German mark could be met in substantial part simply by lower inflation in nontradables prices, not cuts in these prices and associated wages.

23. As footnote 15 above discusses, existence of a strict currency board may induce political pressures that change institutions in ways that reduce flexibility of prices, wages and resource allocation.

24. Some observers agree that fundamentals required a real exchange rate change but argue that French opposition to ERM realignment was sensible in that French policymakers were trying to preserve hard-won credibility gains. In terms of Types I and II errors, this can be thought of as sticking to a peg when it would be better to change it, or making a Type II error; the government establishes credibility about not making Type I errors by holding to the peg when the probability looks high that it is making a Type II error. It might be better to establish a credible record of resisting peg changes when the probability of a Type I error looks high, but altering the peg when the probability of a Type II error looks high. A major problem is that a government might talk itself into assessments of probabilities of Types I and II errors that differ substantially from market assessments.

25. As discussed below, calculating the real exchange rate relative to the U.S. dollar can result in substantially larger volatility than calculating the real rate relative to some other major currency.

26. If pegging the rate led only to the same real-rate fluctuations as under floating, but through price-level changes, pegging would not help very much. Of course, prices and wages are not flexible enough in any economy for observed real exchange rates to fluctuate to the same extent under a peg as under floating. Under a pegged rate regime, exchange rate pressures are manifested in higher unemployment and lower output. If pegging requires capital controls and other distorting or discriminatory policies, such as were used under the Bretton Woods system, the stability gained in the real rate might be more than offset by the costs on these other policies.

27. The analysis here makes no important distinction between bubbles and fads. The currency board that restrains a government from bad policies in some cases restrains it from wise policies in other cases. A well-designed currency board, however, is less likely than other pegging regimes to persist in a nominal peg that leaves the real exchange rate importantly different from equilibrium values. As price rises, investors might believe there will be further price rises, setting off a bubble. Thus, an episode thought of as a fad might be a bubble with a particular start, whereas bubbles in general might arise from a variety of causes.

28. The same sort of mechanism may allow a central bank to pursue excessively expansionary policy for a time. Speculative runs that force equilibrating change in the exchange rate may rely on one speculator seeing others making a run. A central bank may not face a run until many investors have some confidence that an important fraction of other investors believe a run would succeed.

29. After drafts of this section were written, I came across Anna Schwartz's (1993) somewhat similar views. Lanjouw (1996) gives an interesting discussion of the course of the Estonian real exchange rate.
References


easily from external sources, mainly in the form of direct loans from international organizations. The government issued long-term paper with a 10 percent coupon rate with a maturity of six to ten years at the beginning of 1993 to help resolve the banking crisis mentioned above. The outstanding amount of these instruments is moderate, equaling only 300 million kroon. Since May 1993, the Bank of Estonia has auctioned very limited amounts of its CDs (Certificates of Deposit) with a maturity of 28 days. The rationale behind this issue was that the lack of a low-risk instrument hampered the development of the money market. In no way are the CDs meant to be used as an active monetary policy instrument.

Conclusions

By 1997, the Estonian currency board arrangement had been in operation for five years without any exchange rate realignments taking place. Many observers in the early 1990s were pessimistic about the future of the arrangements because of the rapid price increases in Estonia. It was thought that the initial undervaluation of the kroon would not be sufficient to maintain competitiveness. The pessimists have been proven wrong, however, and the kroon peg has achieved substantial credibility. Credibility has been achieved even though the Estonian currency board arrangement is not an orthodox one, where the foreign exchange reserves correspond exactly to the amount of domestic currency and commercial banks cannot hold reserves in a central bank. Under the Estonian arrangement there are ways for the central bank to legally influence the money supply. For example, the central bank is able to conduct open market operations and thereby evade the automatic restrictions of a currency board. The Estonian central bank has not behaved this way, however. Rather, its actions during the banking crisis and notes issues have contributed to the maintenance and enhancement of its credibility.

Notes

1. This law is stronger than a legal tender law that simply establishes that the legal tender cannot be refused for payment. As stated, the law establishes that transactions in other currencies do not have legal protection.
2. The president is automatically a member of the board from the moment of his or her appointment. The membership terminates upon resignation.
3. It should be noted that a new Parliament is elected every four years.
4. Both laws were passed by the Parliament on May 20, 1992.
5. The Bank of Estonia had the right to prolong that period for each economic agent separately.
6. The Bank of Estonia is also responsible for supervising the banking system.
7. As a comparison, the Lithuanian government has issued several series of treasury bills as noted in Chapter 14.
8. See empirical evidence in Chapter 6 by Dubauskas, Wihlborg and Willett.
10. See Chapter 14 by Dubauskas for a discussion of currency boards with different degrees of strictness on the money supply process.
Resolution No. 213 of the Republic of Lithuania on Establishment of the Official Exchange Rate of the Litas and the Anchor Currency
March 30, 1994, Vilnius

Subject to article 3 of the Law on the Credibility of the Litas the Government of the Republic of Lithuania upon co-ordination with the Bank of Lithuania hereby resolves:

1. to establish that the U.S. dollar shall be the anchor currency,
2. to establish that the official exchange rate of the litas shall be four litas against one U.S. dollar.

Prime Minister
Adolfas Slezevicius

Minister of Finance
Eduardas Vilkelis

October 12, 1994

Law of the Republic of Lithuania No. 1-603
On the Amendment to Article 4 of the Law of the Republic of Lithuania Currency

Second paragraph of article 4 of the Law of the Republic of Lithuania on currency was amended to read as follows:

“The Bank of Lithuania shall establish the anchor currency and the official litas exchange rate following the procedure set by the Law on the Credibility of the Litas.”

Notes
1. Also see Chapter 12 by Sweeney in this volume.
2. The appendix contains excerpts from the relevant laws for Lithuania. Chapter 13 by Ross in this volume describes how the Estonian currency board has functioned.
3. Based on interview with Jonas Niaura.
4. During all of 1994, the net issue was 577.8 million litas.
7. From an interview with Jonas Niaura, then deputy chairperson of the Bank of Lithuania.
9. There are few such banks. The three main ones are jointly owned by the state (51 percent of shares) and private investors. These are the Savings Bank of Lithuania, the Agricultural Bank, and the Commercial State Bank.

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*Baltic Independent*, various issues.


*Statistical sources:*


reaching the unsustainable ratio of 8.2 percent of GDP in 1996. The positive productivity differential linked to the process of catching up was not high enough to correct for the inflation differential and, consequently, the Czech fundamentals became increasingly misaligned, given the existing pegged rate. As a result, the koruna became vulnerable to the changing perceptions of market participants. In May 1997, it became target of speculative attacks, leading to the abandonment of the pegged regime and a depreciation of the koruna in the range of 10 percent with respect to the previous central parity.

Notes

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1. The Commonwealth of Independent States is the institutional framework linking the majority of republics of the former USSR.

2. This conclusion is broadly in line with the findings of some other studies which have pointed out the relative advantages of fixed rates in fostering macroeconomic stabilization. Among the studies covering exchange rate regimes in central and eastern Europe, see Fischer, Sahay and Végh (1997). Nevertheless, the arguments may be turned around: the more favorable inflation and stabilization records made it possible to maintain fixed rates. Whichever the implied causality may be, the feedback effects are relevant.

3. Austria and Switzerland, for example, are small open economies, closely integrated in real terms with their neighbor Germany, and subject to similar external factors. Although a similar degree of price stability and of macroeconomic performance was achieved in the past, their exchange rate regimes remained persistently entirely different.

4. “Which is better, a fixed exchange rate or a flexible one? No question in economics has been debated more fiercely or more inconclusively. The reason is that neither system is without its flaws, and nobody has been able to quantify the trade-off” (Krugman 1995:17).

5. This concept reflects the conditions in which residents acquire assets and liabilities in foreign currencies and non-residents operate in the given country’s financial markets. Accordingly, the degree of financial openness reflects the ease for both inward and outward transactions, as well as for domestic transactions in foreign currencies.

6. In the case of former Czechoslovakia, the diversity of exchange rate ratios was as follows at the end of 1989, i.e., just before the start of the transition:

- official exchange rate of koruna: 7.20 per $US
- so-called commercial rate of koruna: 14.30 per $US
- parallel market rates fell in the range of 40–45 koruna per $US
It should be noted, however, that both exchange rate extremes were of only marginal relevance. The official rate was maintained unchanged during the entire postwar period (since the currency reform of 1953) despite its growing overvaluation and was of almost no real importance. Such rigidity was possible only due to administrative regulation. Parallel market rates, i.e., unofficial koruna rates quoted by some foreign banks, were heavily biased as they reflected only a very narrow and specific market segment.

7. The argument followed Friedman’s (1976) logic about extracting information on relative prices in conditions of volatile inflation. “The broadcast about relative prices is, as it were, being jammed by the noise coming from the inflation broadcast” (p. 20).

8. However, the programs for some other countries in transition which started later opted for more flexible exchange rate arrangements.

9. The extent of potential error in assessing macroeconomic developments in the first transition year is demonstrated by a comparison of the predicted and actual magnitudes for 1991. For instance, a current account surplus of US$ .3 billion was achieved instead of the envisioned deficit of US$ 2.5 billion, estimated by both the government and the IMF, and the government predicted a drop of 5 to 6 percent in GDP but the actual fall was almost 15 percent, three times greater than expected. Obviously, the opposite deviations in the financial and real spheres were related; the deeper fall in GDP was “counterbalanced” by the more favorable current account result.

10. The Bank for International Settlements’s Annual Report (1993) claimed “the Czech and Slovak Republics maintained remarkable macroeconomic stability last year...To a large extent this stability must be ascribed to the fixed exchange rate policy, which contained inflationary pressures despite a relaxation of macroeconomic policies” (pp. 39–40).


12. By mid 1996 the Czech koruna had depreciated by about 5 percent against the U.S. dollar, but gained about 2 percent against the German mark compared to the beginning of the year.

13. In the 1980s, several countries in Latin America were hit by such failures, among them Chile. Learning from this experience, Chile made a competitive exchange rate and and export-oriented development its policy priorities, and it has become one of Latin America’s success stories in the 1990s.

References


Thus, the long-term success of Hungary’s crawling peg regime hinges on two crucial factors. First, it depends on the success of incomes policies. Can real wages be kept under control in order to reduce pressure on domestic inflation? Second, macroeconomic policies must focus on controlling inflation. One thing this will require is that the Hungarian government carry out long-postponed fiscal adjustments and reduce its public sector borrowing requirements. Successful fiscal adjustment is the critical test for the credibility of macroeconomic policies and the crawling peg regime.

Notes

1. Due to the reforms of the 1980s, about 40 percent of both prices and imports had been liberalized by 1988.

2. The stabilization programs in other transition economies generally used the exchange rate as the basic anchor, supplemented by strict incomes policies.

3. In comparison with many developing countries, trade liberalization in Hungary was rapid and radical, but compared to other transition economies (such as the former Czechoslovakia or Poland) it was gradual.

4. While the speed of import liberalization was relatively slow, its impact on domestic production, prices, and wage changes was substantial and rapid.

5. In this period the national currency was devalued against a basket of currencies representing the currency composition of foreign trade in the previous year. After December 1991, the composition of the basket changed to the U.S. dollar and the ECU, equally weighted.

6. By the end of 1991 more than 90 percent of prices and imports were liberalized.

7. Council for Mutual Economic Assistance—this was a trading system consisting roughly of the Soviet Union and its satellites.

8. The change in the dynamics of inflation was due to price liberalization, the shift in the stance of monetary policy, and the emergence of a significant fiscal deficit reaching 5 percent of GDP.

9. Price increases reached their highest monthly level in June 1991 when the CPI index grew by 35.6 percent per annum. After that the CPI inflation rate started to decline, approaching 20 percent in mid 1992.

10. Besides the exchange rate policy, this gap was also related to the increase in the share of the service sector in the national economy and to the increasing role of indirect taxes that had differential impacts on the growth of producer and consumer prices. The differences in the changes in the consumer and producer price indices were also related to the opening of the economy, as the producer price index reflected the growth of prices in the tradables sector restrained by import competition while the consumer price index was more determined by price changes in the nontradables sector.

11. According to the Olivera-Tanzi effect, real tax revenues decline with growing inflation due to collection lags.

12. The share of interest expenditures among all expenditures of the central government increased from 13 percent in 1991 to 30 percent in 1994.
13. The supply side problems arose from the drop in agricultural production, which had formerly accounted for 25 percent of exports. The institutional aspect of the export decline is related to the adoption of tough bankruptcy procedures, leading to the liquidation of thousands of state-owned and private enterprises. It is estimated that the enterprises in bankruptcy produced 30 percent of Hungarian exports in 1992 and 1993. The liquidation of these unviable firms led to decreasing exports.

14. The latter reflected the excess of public sector borrowing requirements over the amount of available household savings, while the former was the result of the strong crowding-out effect of the fiscal deficit.

15. The prime rate reached 25 and 28 percent when forecast inflation was around 20 percent.
is difficult since the Polish currency was highly undervalued in the pre-stabilization period. It should be noted, however, that since 1990 there has been a sharp rise in productivity levels in both tradable and nontradable sectors.

Introduction of a stronger link between the zloty and the ECU would help better reflect the current geographic structure of Poland's foreign trade—about 70 percent of turnover is generated by transactions with the European Union. Despite improvements in market access resulting from the Europe Agreement, Polish exports are still subject to nontariff barriers and contingent protection.

Poland has expressed its willingness to join the European Union. Full membership will require sustainable monetary and fiscal policies oriented at meeting all the convergence criteria of the Maastricht Treaty. The experience of member states of the European Union indicates, however, that in order to stabilize the exchange rate of the zloty it will be necessary to proceed with caution, considering existing structural incompatibilities and the limitations of available instruments of economic policy.

Notes

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1. In 1989 attempts by the Rakowski government to accelerate economic reforms without changing the political system resulted in the withdrawal of subsidies and introduction of market economy rules into the food sector. This led to hyperinflation and increased economic chaos. See Ekonomista (1990: 523).

2. The growth in real wages is estimated using the official GNP deflator; the real level of inflation under shortages, currency substitution (in 1989 84.2 percent of households' deposits were held in foreign currencies), and the black market exchange rate (for imports) was undoubtedly higher.

3. Agreements concluded with the Paris Club and the London Club make it possible to write off nearly half of the Polish foreign debt. Servicing the remaining debt might be a serious burden for the economy. The agreements introduced stability that favors the inflow of foreign direct investment. See Morgan Stanley (1994).

4. The problem of the ruble balance (expressed in transfer rubles) was combined with unsettled questions of global payments and liabilities between Poland and the former USSR. In 1985 above 50 percent of Polish foreign trade was carried out with the Soviet Union and COMECON countries.

5. According to other authors the program was based on "orthodox" elements (monetary and fiscal contractions) and "non-orthodox" elements in the form of nominal "anchors." See Calvo and Coricelli (1992).
6. The price Poland has paid for implementing convertibility in the early stages of reform is increased unemployment. "Gradualists" maintain that this fact confirms the validity of their approach. An often-quoted case is that of Western European countries which deferred the introduction of convertibility until the end of the 1950s and initially instituted only internal convertibility after the Second World War.

7. As stated in the initial declarations, each of the 12 donor-states confirmed in a separate agreement the amount to be contributed to the stabilization fund and approved the rules to be followed in accounting for the financial resources used.

8. The Polish program can be classified as a heterodox approach based on the exchange rate.

9. Cf. Solarz (1990). At the beginning many observers believed the extent of devaluation was insufficient and that it would not be possible to maintain a fixed rate for the planned period of three months.

10. Views expressed by Jeffrey Sachs, among others.

11. The January 1st devaluation was preceded by preparatory devaluations during the last quarter of 1989.

12. Special duties were temporarily introduced on imports such as alcohol, tobacco, and household electronics.

13. The Council of Ministers set the regulations for fixing the exchange rate. An obligation that "payments in foreign currencies should be made immediately to the country and resold at foreign exchange banks" was introduced.

14. At the end of 1989 the share of hard currencies in households’ total deposits was above 80 percent.

15. The following examples of price rises in January 1990 testify to the scale of changes in officially set prices introduced within the stabilization program: electricity rose by 200 percent, transportation fares by 200 percent, coal for private consumers by 600 percent.

16. Devaluation of the zloty was accompanied by a serious deterioration in Poland’s terms of trade. In 1990 the index fell to 83.7 from 116.6 in 1989 and 102.7 in 1988.

17. From 1991 all Polish foreign trade was carried out in hard currencies.

18. The zloty rate of exchange in relation to other currencies in the basket fluctuated together with the changes of these currencies in relation to the U.S. dollar. Bilateral rates were published five times a week by the National Bank of Poland.

19. The degree of protection might be measured as the ratio of the value of customs duties collected to the value of imports; by the end of 1990 it was about 5 percent. See Marczewski (1992).

20. Further changes in the required reserve ratios took place in April 1992. Rates of 25 percent for savings deposits and 30 percent for demand deposits were replaced by a uniform rate of 25 percent.

21. Moderate budget deficits seem to be a persistent feature of the Polish economy. The growing public debt has, to a certain degree, limited the government’s options with regard to fiscal and monetary policy. See Stawarska (1994).

22. It meant the adoption of a real exchange rate anchor, which is more appropriate in a situation of high inflation differentials. See Fry and Nutti (1992).

23. Certain changes (including language and emphasis) can be seen in the goals and intermediate targets for 1994 formulated by the coalition government (Demo-
24. Since 1992 the exchange rate on the interbank market in transactions between banks and non-bank firms could deviate by \( \pm 2 \) percent from the official rate. The spread between the buy/sell rate of the National Bank was only 1 percent.

25. It is worth noting that the 8 percent devaluation of August was three times lower than that urged by some industrial organizations.

26. Growing credit risk led commercial banks to tighten criteria in assessing loan applications. As a result, the availability of credit was reduced.

27. Trade unrecorded in official statistics (mainly along the borders with Germany, the Czech Republic and the Slovak Republic) and massive purchases of consumer goods by citizens of the former Soviet Union, especially since 1994, contributed to the growth of foreign currency reserves.

28. The Ministry of Finance proposed to lower the National Bank’s interest rates. The Bank rightly argued that such a move would contribute to increasing inflationary pressures. One proposed solution was to temporarily introduce a tax on T-bill purchases by foreign entities. In the end, this solution was not adopted.

29. The influx of speculative capital was also encouraged by an optimistic evaluation of the Polish economy in 1995 by Moody’s and Standard and Poor’s investment rating services. In April 1996, Standard and Poor’s raised the rating of Poland’s long-term foreign-currency denominated debt from BB to BBB-minus and assigned an A minus rating to long-term debt denominated in złotys.

30. The Ministry of Finance allowed foreign investors to purchase T-bills and T-bonds as early as 1993. During the first months of 1995, foreigners bought approximately $US 0.5 billion worth of T-bills which accounted for approximately 8 percent of the market. According to the National Bank’s estimates, during all of 1995, nonresidents invested about $US 800 million (net) in the primary and secondary T-bill markets. This amount accounted for 9 percent of the increase in gross official reserves (Kowalski 1995; National Bank of Poland 1996).

31. The National Bank intervened at approximately 5 percent thus preventing excessive appreciation of the złoty. The shallow foreign exchange market made it possible to avoid a massive intervention with transactions of approximately $US 30–50 million allowing the National Bank to effectively manage the market. Data about the extent of the National Bank’s interventions in the market are not published in the Bank’s *NBP Bulletin*. For more information on the subject, see Slawinski and Osinski (1996) and Rzeszutek (1995).


33. In 1994, average monthly absorption under reverse repurchase agreements was about $US 2.2 billion. In that year maximum absorption reached $US 3.3 billion in November and a minimum of $US 0.9 billion in April. Source: *NBP Monthly Bulletin*.

34. On May 29, the annual lombard credit rate was lowered from 34 percent to 30 percent while the rediscount credit rate was reduced from 31 percent to 27 percent.

35. According to the National Bank of Poland, purchases of foreign currencies from cross-border trade amounted to more than $US 3.4 billion in the same period.
36. In June 1996, the average deviation of the fixing rate from the parity rate was only 1.8 percent.

References


to decide that the costs of monetary union were not worth the benefits, and repudiated the Soviet ruble. Unable to make a new agreement with Russia, the remaining countries, except Tajikstan, created their own currencies within six months.

One should not underestimate the importance of an independent currency as a national symbol that drives political decisions. Exchange rate regimes, after all, are not made in central banks but by legislatures and executives. Given the history of the area, political considerations reinforce economic ones to make it difficult to imagine the Commonwealth of Independent States embracing the Russian ruble in an EMU-style zone.

Notes

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1. We use the phrase Soviet ruble to refer to the pre-1993 currency and to the Russian ruble up to the time that Russia ceased to honor its Soviet predecessor. Russian ruble refers to the current legal tender of the Russian Federation.


3. The Commonwealth consists of Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, the Kyrgyz Republic, Moldova, Russia, Tajikstan, Turkmenstan, Ukraine, Uzbekistan and the Baltic states of Estonia, Lativia and Lithuania.

4. The model predicts trade volumes among countries as a positive function of GDP, a negative function of distance between countries, and also depends on resource endowment, common borders, and membership in the same trade organization (such as the Common Market).

5. Existing official data on unemployment in the former Soviet Union greatly understate the true levels of unemployment. In Ukraine, for example, surveys in Ukrainian Economic Trends show that the average Ukrainian only works 16 days per month, although the reported unemployment rate is 0.4–0.6 percent of the labor force.

6. This type of argument was behind the IMF’s recommendations in 1992 aimed at the preservation of a ruble zone encompassing most of the Commonwealth countries. See Conway (1995) and Sachs (1996).

7. A fourth aspect is whether shocks are nominal or real. Nominal exchange rate changes are likely to be more effective in insulating the domestic economy from foreign monetary shocks than from real shocks, as argued by Willett and Wihlborg in Chapter 3 of this volume.

8. For an argument that this rate ignores important uncertainty costs, and references to more recent literature, see Banaian, McClure and Willett (1994) and Banaian (1995). For evidence that these uncertainty costs can be quite large, see Burdekin et al. (1995).
9. For instance, assume a money demand function of $m/y = a \times \exp(-\beta i)$, where $m$ is money, $y$ is output, $i$ is the nominal interest rate, and $a$ and $\beta$ are parameters (the latter being the interest semi-elasticity of demand). If $\beta = 1$ and the marginal cost of taxation were 0.5 per unit of revenue raised, the revenue-maximizing inflation rate would be 100 percent, and the optimal rate would be 33.3 percent. Note that the tax rate and velocity are not factors when there are no uncertainty costs.

10. Winckler (1993) describes the situation in the ruble zone using a game theory "prisoner dilemma": Although a cooperative solution would be beneficial to all the former Soviet states, mutual mistrust and information problems make them behave in an uncooperative way.

References


Optimal Currency Areas for the Commonwealth of Independent States


