

ESSAYS IN INTERNATIONAL FINANCE

No. 213, April 1999

TRANSITION STRATEGIES AND NOMINAL
ANCHORS ON THE ROAD TO GREATER
EXCHANGE-RATE FLEXIBILITY

BARRY EICHENGREEN, PAUL MASSON, MIGUEL SAVASTANO,
AND SUNIL SHARMA



INTERNATIONAL FINANCE SECTION

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TRANSITION STRATEGIES AND NOMINAL ANCHORS ON THE ROAD TO GREATER EXCHANGE-RATE FLEXIBILITY

1 Introduction

This essay considers strategies that developing and emerging-market economies might use when seeking to exit from currency pegs. An accumulation of evidence now suggests that high capital mobility has led and will continue to lead a growing number of developing and transition economies to move to regimes of greater exchange-rate flexibility. Recent experience, moreover, notably of cases where such transitions have occurred in the context of costly crises, underscores the importance of developing a coherent strategy for engineering this transition. This essay considers techniques for completing the move to greater flexibility, as well as the scope for adopting inflation targeting as a nominal anchor following an exit from a currency peg.

The choice of exchange-rate regime and the factors influencing that choice are the subjects of an immense literature.¹ Our discussion considers recent research and reviews recent experience before discussing strategies for exiting from a regime of limited exchange-rate flexibility. We consider how to move to greater flexibility when the regime is not under stress, what to do when the regime is threatened, and what to do after the exit. In the context of this last question, we address the issue of alternative nominal anchors.

Inflation targeting is only one of a number of alternative monetary-policy regimes, the more transparent of which could also involve targeting some measure of the money supply or nominal income. But the demand for money is less than stable in many countries, and nominal income, besides being a difficult objective to communicate to

This paper draws on Eichengreen, Masson, and others (1998) and Masson, Savastano, and Sharma (1997). We are grateful to a number of our colleagues at the International Monetary Fund (IMF) and to an anonymous referee for helpful comments. The opinions expressed here are those of the authors and do not necessarily represent the views of the IMF.

¹ For an introduction, see Wickham (1985), Genberg (1989), Argy (1990), Aghevli, Khan, and Montiel (1991), Flood and Marion (1991), Frenkel, Goldstein, and Masson (1991), and Mussa et al. (1994).

the public, has the disadvantage of being subject to considerable measurement error and reporting lags. Most industrial countries have consequently abandoned explicit monetary targets, and none has introduced a formal target for nominal income. Meanwhile, inflation targeting has gained an increasing number of industrial-country converts. Our analysis leads us to conclude, however, that elevating an inflation target to the status of the main anchor for monetary policy is unlikely to be viable for most developing countries, although an inflation target may play a useful role as one element of an eclectic post-exit operating framework for monetary policy.

2 The Exchange Rate and Monetary-Policy Operating Strategies

In addressing exit strategies, it is essential to recognize that the exchange rate is only one component of a country's general economic-policy framework and that it needs to be consistent with the other components. In particular, maintenance of a pegged exchange rate requires the ability and the willingness to commit monetary policy to its defense. This leaves little room for monetary policymakers to pursue other objectives. Put another way, all countries, except the largest industrial countries, evince a clear concern, *de jure* or *de facto*, about the size and rapidity of movements in the exchange rate. For such policy concerns to be manifested in a meaningful and credible fashion, they must be supported by a willingness to adjust monetary and fiscal policy, as well as by the existence of adequate foreign-exchange reserves and the use of nonsterilized exchange-market intervention.

A country's economic-policy regime, including its exchange-rate regime, constrains the way in which its government conducts its economic policies. This constraint is not only desirable but essential. Agents at home and abroad need to be able to form reliable expectations about how key government policies will be conducted and how they will respond to changing conditions. A policy regime without firm commitments provides no reliable basis for the formation of expectations and is an invitation to instability. An unexpected shift away from an established policy regime to a new and untested regime, especially in an environment of economic crisis, is likely to undermine the credibility of economic policy and to damage economic performance. The policy regime cannot be the *régime du jour* that is adjusted without constraint to meet the conveniences and political exigencies of the moment. Moreover, no economic-policy regime or exchange-rate arrangement is optimal for all countries, or even for a single country in

all circumstances and conditions. Although the regime must be selected and adhered to on the basis of its expected average long-term performance, it can and should be changed if there are permanent changes in the environment.

The selection of a regime is not the dichotomous choice between fixing and floating. Rather, it involves a spectrum of alternatives (see Table 1). At the fixed end, a currency union with a common central bank represents the ultimate economic, institutional, and political commitment to fix exchange rates among the participating countries. Legislating a currency board that rigidly links the value of domestic money to that of a foreign currency and ties the domestic monetary base firmly to the level of foreign-exchange reserves signals a very firm commitment to a pegged exchange rate.² A pegged-but-occasionally-adjustable exchange-rate regime, such as the Bretton Woods system or the exchange-rate mechanism of the European Monetary System (EMS), is consistent with varying degrees of commitment to exchange-rate stability, depending on the width of the bands within which the exchange rate is allowed to fluctuate, on the determination with which the limits of these bands are defended, and on the frequency and magnitude of changes in the central parities. A crawling peg with fluctuation bands and the possibility of adjustments in the rate of crawl or the central parity generally suggests a lesser commitment to exchange-rate fixity. A tight crawl at low speed with very infrequent adjustments, however, can provide more nominal stability than an adjustable peg with weakly defended wide bands and frequent changes in central parities. A managed float generally eschews any *de jure* commitment to a particular value, band, or path for the exchange rate but involves a *de facto* understanding about how much the exchange rate will be allowed to move or how firmly such movements will be resisted. A managed float, in which the value of the domestic money is tightly linked to a foreign currency (or basket of currencies) over extended periods through exchange-market intervention and adjustments in monetary and other policies, will look and function *de facto* much like a fairly rigid official peg with narrow bands. A free float in which the exchange rate is regularly seen to fluctuate by substantial

² It should be emphasized that signaling such a commitment may not be enough and that acquiring credibility in the eyes of foreign and domestic investors may be a drawn-out process. Argentina, despite subjecting itself to the discipline of the currency board, has, over the 1994–98 period, seen the spread over U.S. treasuries for its floating-rate government debt fluctuate between 200 and 2,100 basis points. In January 1999, the Argentinean government floated a proposal to adopt the U.S. dollar as the official currency.

TABLE 1
CRITERIA FOR CHOICE OF EXCHANGE-RATE REGIME

	Float		Target Band		Peg		Cur- rency Board	Cur- rency Union
	Pure	Managed	Wide	Narrow	Crawling	Fixed		
Inflation								
High	■	■	■	■	■	■		
Low	■	■	■	■	■	■	■	■
Level of reserves								
High	■	■	■	■	■	■	■	■
Low	■	■	■	■			■	■
Capital mobility								
High	■	■	■	■			■	■
Low	■	■	■	■	■	■	■	■
Labor mobility and nominal flexibility								
High	■	■	■	■	■	■	■	■
Low	■	■	■	■	■	■		
Production and export diversification								
High	■	■	■	■	■	■	■	■
Low	■	■			■	■		
Fiscal flexibility and sustainability								
High	■	■	■	■	■	■	■	■
Low	■	■	■	■	■	■		
<i>Relative to Partner Countries</i>								
Trade integration								
High			■	■	■	■	■	■
Low	■	■			■	■	■	■
Political integration (similarity of policy preferences)								
High			■	■	■	■	■	■
Low	■	■	■	■	■	■	■	■
Preponderance of shocks								
Symmetric	■	■	■	■	■	■	■	■
Asymmetric	■	■	■	■				
Type of Shocks								
Real	■	■			■	■	■	■
Nominal			■	■	■	■	■	■

amounts in response to market forces, without sizable official intervention or determined adjustments of monetary and other policies to resist exchange-rate movements, lies closest to an unfettered float along the spectrum of exchange-rate regimes.

Under an absolutely unfettered float, no intervention would be undertaken. Except for countries enduring very rapid inflation, no country pursues such a policy in practice, although the largest industrial countries, and particularly the United States, come close. Intervention in the foreign-exchange market is modest and infrequent, and there is little indication that the Federal Reserve pays much attention to the foreign-exchange value of the dollar when setting U.S. monetary policy. Japan and Germany are close to the United States in their apparent indifference to movements in exchange rates, except to the extent that those movements affect macroeconomic outcomes.³ But many of the smaller European industrial countries (and some of the larger ones) have long regarded their exchange-rate peg as a central component of their monetary-policy regime. Indeed, even countries such as Canada and Switzerland, which allow their exchange rates to float freely in response to market forces, do not regard movements in exchange rates with benign policy indifference—insofar as they affect the tightness or ease of monetary conditions—and hence may warrant offsetting adjustment of interest rates.

Table 1 summarizes the implications for exchange-rate arrangements of a number of criteria on the choice of exchange-rate regimes. The regimes listed at the top span the range from flexible to permanently fixed. The criteria listed on the left are thought to influence positively (though they may not necessarily be prerequisites for) the success of those exchange-rate regimes shown as shaded. Conversely, those same criteria are considered not to be compatible with successful operation of the nonshaded arrangements. For instance, high inflation is likely to be compatible only with a flexible exchange rate or a crawling peg, whereas low inflation would permit a choice of any exchange-rate regime (but would presumably make a crawling peg unnecessary).⁴

An important factor not stressed by the traditional literature in the choice of exchange-rate regime is the authorities' objective function, in particular the tradeoff between a desire to control inflation (that is, to provide a nominal anchor) and a wish to limit fluctuations in competi-

³ Or they were indifferent until the launch of the euro. It remains to be seen whether the European Central Bank (ECB) will continue to treat the dollar/euro exchange rate with benign neglect.

⁴ Although a number of the criteria discussed below are intended to refer to structural characteristics of an economy, even these criteria are to some extent endogenous (Frankel and Rose, 1996b). For instance, a credibly fixed rate may lead to a structural break with inflation inertia, whereas the extent of trade and other links with partner countries may adapt to common exchange-rate arrangements. As a result, countries that initially did not seem to be candidates for a fixed exchange rate could, after a certain amount of time, score high on the relevant criteria.

tiveness or to minimize output losses (Edwards, 1996). For this reason, two economies that have the same structural features may choose different exchange-rate arrangements. Moreover, changes of government may involve different preferences concerning the tradeoff between competing objectives and, thus, a change of exchange-rate regime.

Over time, many developing and transition economies are likely to find it desirable to move toward regimes of greater exchange-rate flexibility. Movement in this direction has been under way for a number of years (IMF, 1997). Developing countries are becoming more open to international capital markets, and this trend will continue, despite the questions about the benefits of capital-account liberalization that may arise in light of recent crises. Experience has shown that an adjustable peg or a tightly managed float with occasional large adjustments is difficult to sustain under high capital mobility (see Eichengreen, 1994; Obstfeld, 1995; Obstfeld and Rogoff, 1995; Collins, 1996; and Leiderman and Bufman, 1996). Because it is known that the exchange rate will be changed if pressures become too intense, such pressures tend to build up when market perceptions shift to the view that the rate is no longer sustainable. In an environment of high capital mobility, therefore, the exchange regime needs to be either a peg that is defended with great determination, with consequent constraints on other economic policies, or a managed float in which the exchange rate moves regularly in response to market forces (albeit with some resistance from intervention and other policy adjustments).

Moreover, developing and transition countries also have become more open to trade, typically on an increasingly diversified basis. As Asia's recent experience has shown, maintaining a tight link to the currency of one country while conducting trade and financial business with other countries (using other currencies) can pose significant difficulties. Growing intraregional trade linkages also pose significant problems for exchange-rate pegs, especially single-currency pegs, as do circumstances when regional partners or competitors are pegged to another currency, are floating, or get pushed off a common peg in a crisis. As trade continues to grow, as exchange rates among the major industrial countries continue to fluctuate, and as regional partners and competitors move away from a common currency peg, developing and transition countries are likely to be attracted to regimes of greater exchange-rate flexibility.⁵

⁵ To be sure, there will be exceptions, particularly among countries with dominant trade and financial linkages to a single major currency area or with a need to maintain very firm monetary-policy discipline, because of a history of extreme instability (for example, Argentina).

3 Recent Experience with Pegged Rates

The trend toward greater exchange-rate flexibility among developing and transition countries is the dominant theme in the recent evolution of the international monetary system.⁶ According to the official classification, 87 percent of developing countries had some type of pegged exchange rate in 1975, while only 10 percent had flexible rates (the remaining 3 percent fell into the “limited-flexibility” category); by 1985, the proportions were 71 percent and 25 percent, respectively; by 1996, they were 45 percent and 52 percent.⁷

To be sure, pegged exchange rates have not disappeared in developing and transition countries. Single-currency pegs are used by countries such as Argentina, Bulgaria, and Estonia as a bulwark against inflation; by small open economies in the Caribbean and the Pacific, for which trade and tourism with industrial countries are particularly important; by the Hong Kong Special Administrative Region, where the merchandise and financial sectors are exceptionally open to international transactions; and by the members of the Central and West African monetary unions, which depend on France for trade and official assistance and were pegged to the French franc until January 1, 1999, at which time the CFA franc was fixed in terms of the euro.⁸

A number of these pegs are long lived. During all but one of the fifty years that members of the two Francophone African monetary unions have been pegging to the French franc, there has been no significant change in the bilateral rate. But these are the exceptions, not the rule. Most developing-country pegs are short lived. For example, Klein and Marion ([1994] 1997) find that for eighty-seven episodes of pegged regimes among Latin American and Caribbean countries for the 1957–90 period, the average duration of a peg was about ten months. One-third had been abandoned by the seventh month, and

⁶ The shift away from single-currency pegs since the early 1980s has been documented, for instance, by the IMF (1997).

⁷ This official classification distinguishes between pegged rates, limited flexibility, and more flexible arrangements. It is important to note that a number of countries that officially report their exchange rate as “flexible” have exhibited remarkable exchange-rate stability against the U.S. dollar, including a number of Southeast Asian currencies prior to the recent crisis in the region. In other words, the movement to *de facto* exchange-rate flexibility has been more gradual than the movement *de jure*.

⁸ As of September 30, 1998, forty-seven of the 182 members of the IMF officially pegged their currencies to a single currency. In addition, seventeen countries pegged to the special drawing right (SDR) rate or to another currency composite (IMF, 1999, p. 8).

more than half had been abandoned by the end of the first year. In the majority of cases, the end of a peg involved a devaluation and the adoption of a new peg, rather than a move to a flexible-rate system. Overall, because exit from currency pegs is anything but an infrequent event, the need for contingency planning is heightened.

Developing countries that have abandoned pegged rates have generally waited to do so until their currency was under pressure.⁹ International reserves in these countries were already declining (relative to their behavior in two country control groups), and output and export growth had already slowed. And if the setting was less than propitious, the aftermath was less than smooth. Real and nominal exchange-rate volatility typically increased for an extended period, and the value of the currency dropped sharply. Output also remained depressed for an extended period. This did not occur in every country, but it was the average experience.

Figures 1 through 4 summarize the behavior of key macroeconomic (and financial) variables centered on the month or year of the exit in a representative sample of developing countries (see Appendix).¹⁰ Figures 1a and 1b show that exits from currency pegs have typically been preceded by gradual nominal and real appreciation and followed by a step depreciation (and, in the case of the nominal exchange rate, by further depreciation over time). Thus, although the definition of exits includes, in principle, cases of both appreciation and depreciation, the latter have dominated in fact (see Table A2, page 41). The figures also show that the volatility of both real and nominal exchange rates increases close to the time of the exit and remains an order of magnitude higher than before for several months after the event.¹¹

Exits have been associated with a weak macroeconomic performance (Figures 2a through 2c). Typically, economic growth slowed in the period prior to the exit. In the year of the event, the average rate of output growth is actually negative and significantly below the rates of output growth in the two control groups (that is, nonexit cases and countries that have lasting pegs). The growth of exports (measured in current dollars) also slows, falling significantly below that in both control groups in the

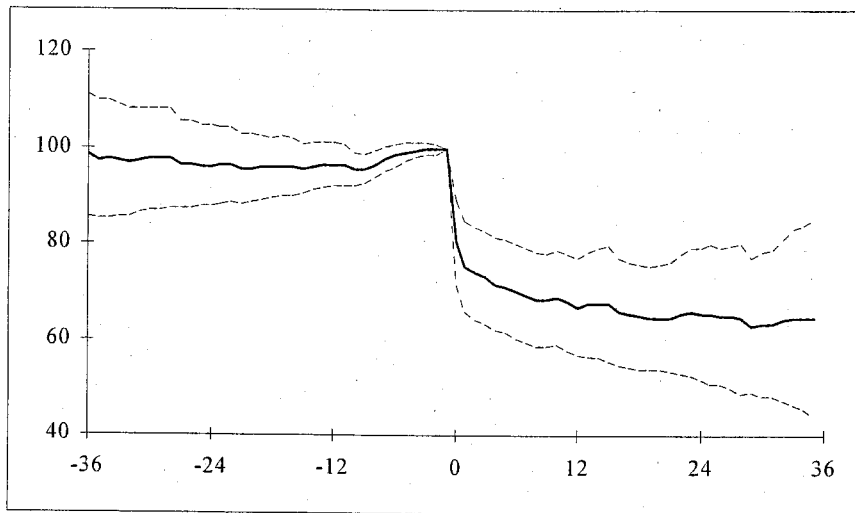
⁹ See the Appendix for details on the sample of countries and sources of the data used in the analysis that follows.

¹⁰ In each case, the observations for the “exit cases” are surrounded by bands located at two standard deviations from the estimated average: the month of the exit, in the case of real and nominal exchange rates, and the year of exit, in the case of other variables.

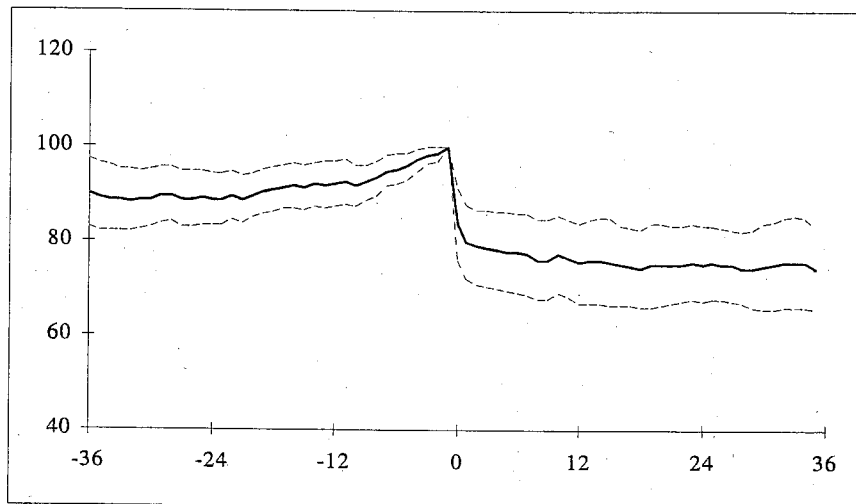
¹¹ That the standard deviation of the real and nominal exchange rates remains noticeably higher after the exit is consistent with the evidence from the switch to floating exchange rates in industrial countries reported, for example, by Mussa (1986) and Rose (1994).

FIGURE 1a
EXCHANGE-RATE INDICATORS
(centered on month of exit)

Level of Nominal Effective Exchange Rate



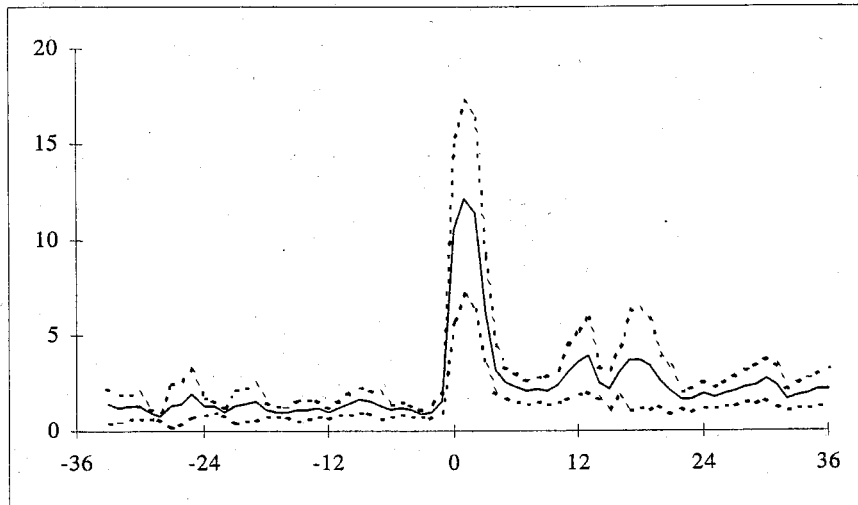
Level of Real Effective Exchange Rate



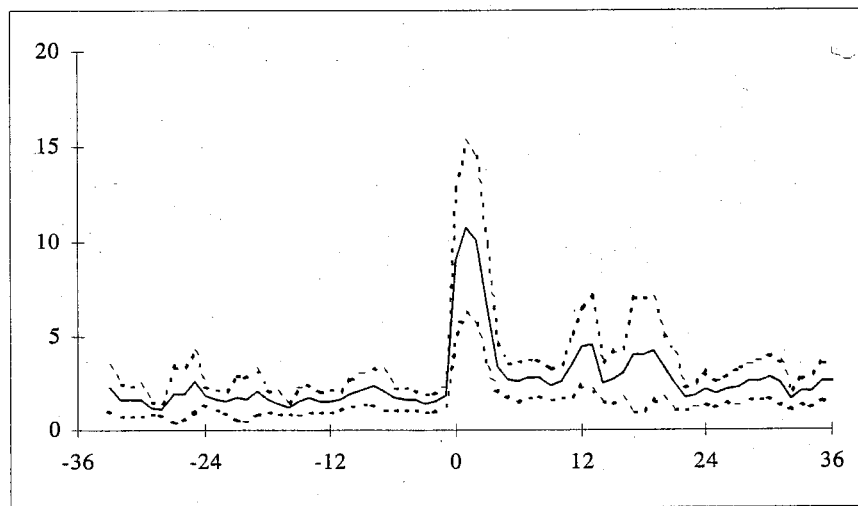
KEY: — average of exit cases; - - - two-standard-deviation band for average of exit cases.
NOTE: The base of the index is 100 for the month prior to exit.

FIGURE 1b
EXCHANGE-RATE INDICATORS
(centered on month of exit)

Volatility of Nominal Effective Exchange Rate

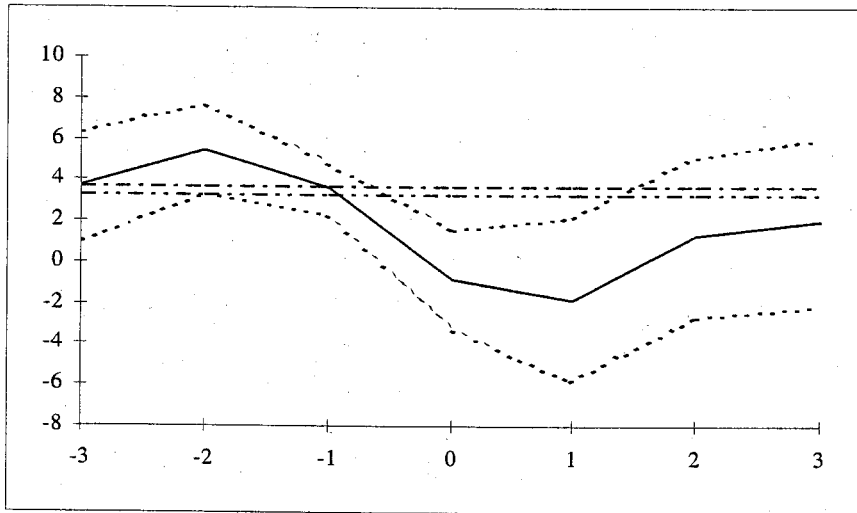


Volatility of Real Effective Exchange Rate

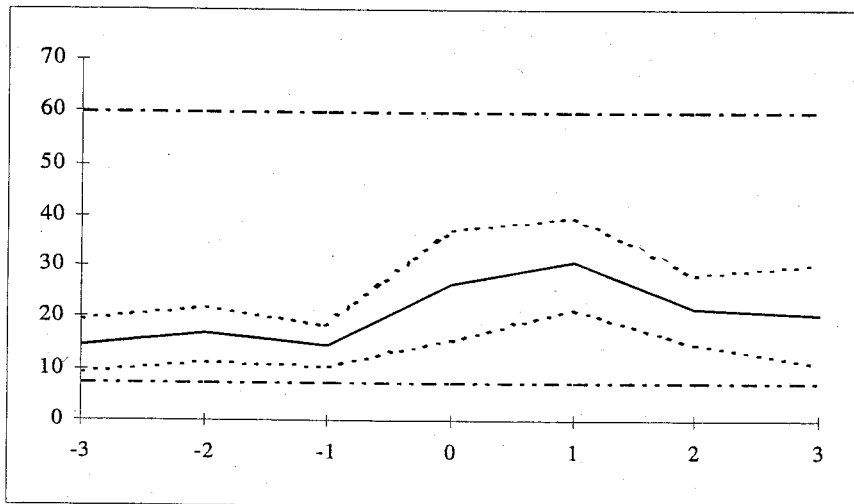


KEY: — average of exit cases; - - - two-standard-deviation band for average of exit cases.
NOTE: Volatility is measured as the standard deviation of the monthly growth rate of the exchange rate over the last three months, averaged across exit cases.

FIGURE 2a
 MACROECONOMIC INDICATORS
 (centered on year of exit; percent)
 Real Output Growth

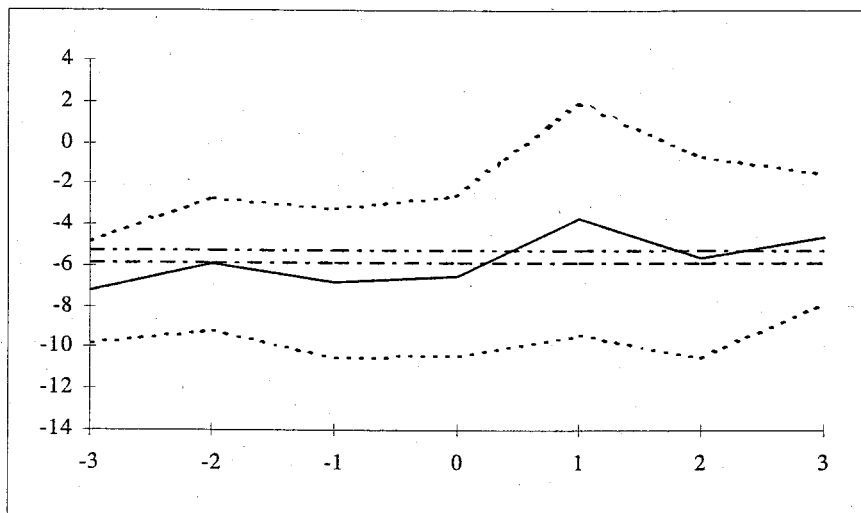


Inflation

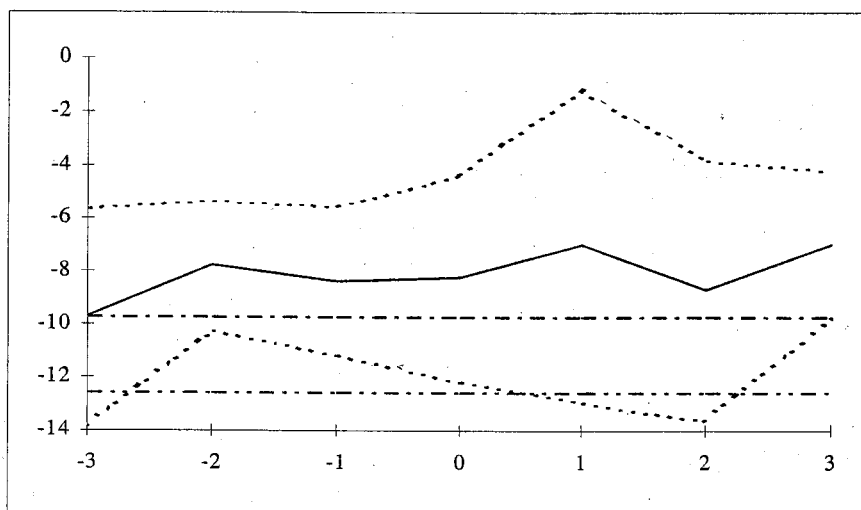


KEY: — average of exit cases; - - - two-standard-deviation band for average of exit cases; - · - average for nonexit cases; - - - average for countries with lasting pegs.

FIGURE 2b
 MACROECONOMIC INDICATORS
(centered on year of exit; percent of GDP)
 Current Account

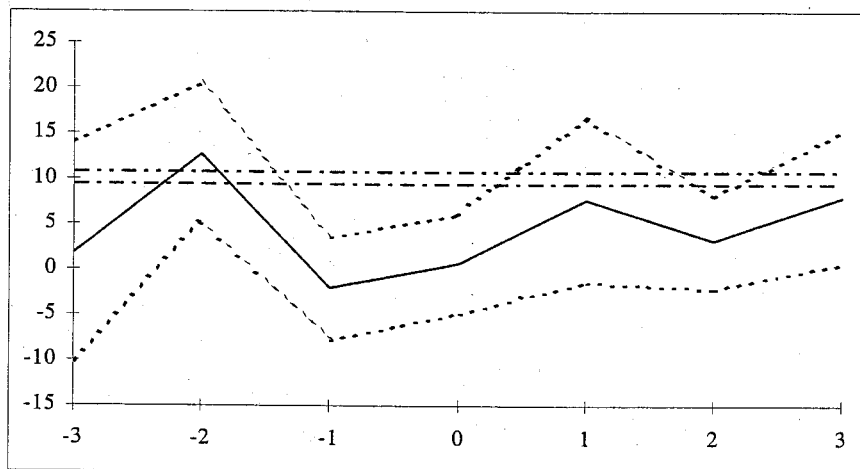


Current Account Excluding Transfers

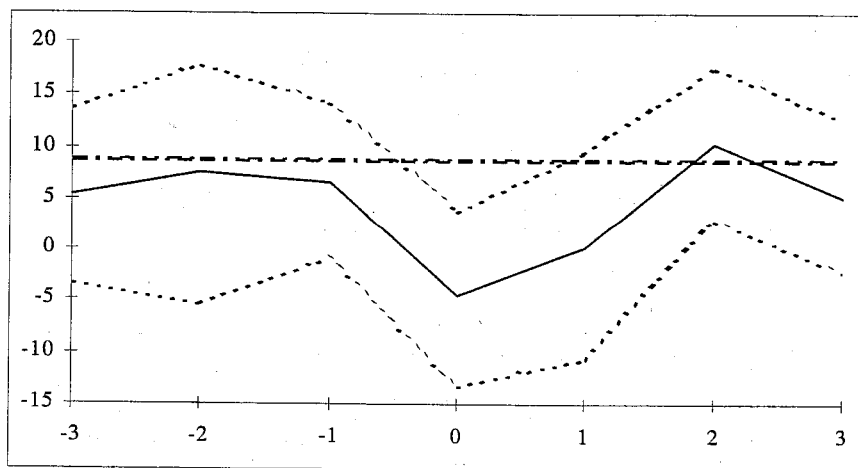


KEY: — average of exit cases; - - - two-standard-deviation band for average of exit cases; - · - average for nonexit cases; · · · average for countries with lasting pegs.

FIGURE 2c
 MACROECONOMIC INDICATORS
(centered on year of exit, percent)
 Growth of Exports in U.S. Dollars



Growth of Imports in U.S. Dollars



KEY: — average of exit cases; - - - two-standard-deviation band for average of exit cases; ··· average for nonexit cases; - · - average for countries with lasting pegs.

year preceding the exit. Following exit, both output and exports start to recover. Exports respond first, reacting to the change in the exchange rate; output growth, however, begins to revive only in the second post-exit year.

In the case of inflation and money growth (Figures 3a through 3c), the choice of control group is important. Countries that exit from a peg exhibit higher rates of inflation and money growth than countries that have lasting pegs both prior and subsequent to exit. This result simply reflects the fact that countries with lasting pegs have adhered to the requirement of maintaining their inflation and money-growth rates at the levels consistent with those prevailing in the industrial countries to which they peg. In contrast, inflation and money growth in countries exiting from a currency peg have been significantly lower around the time of exits than they have been in all nonexiting countries, a control group that is dominated by high-inflation countries with flexible rates. These contrasts suggest that countries that have opted for pegs, temporary as well as lasting ones, have either a preference or the ability to maintain relatively low rates of inflation (by developing-country standards).

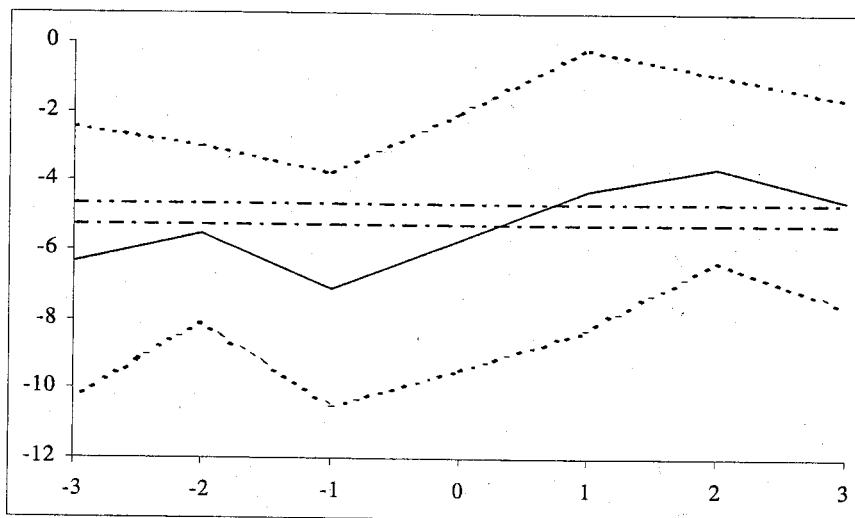
The remaining macroeconomic indicators—the government budget deficit, the current-account deficit, and international reserves—behave as predicted by “first-generation” models of balance-of-payments crises (Krugman, 1979). Countries abandoning a currency peg display relatively large budget and current-account deficits in the years leading up to the exit and run down their stock of international reserves.¹²

As shown in Figure 3c, countries that exit from a currency peg have tended to maintain relatively few capital-account restrictions. Although this result should be regarded with caution, because there are shortcomings and potential biases in the restriction index, the evidence is consistent with the view that countries that undergo capital-account liberalization either tend to adopt more flexible rates to cope with their greater exposure to international capital flows or are more susceptible to being forced off their pegs.¹³

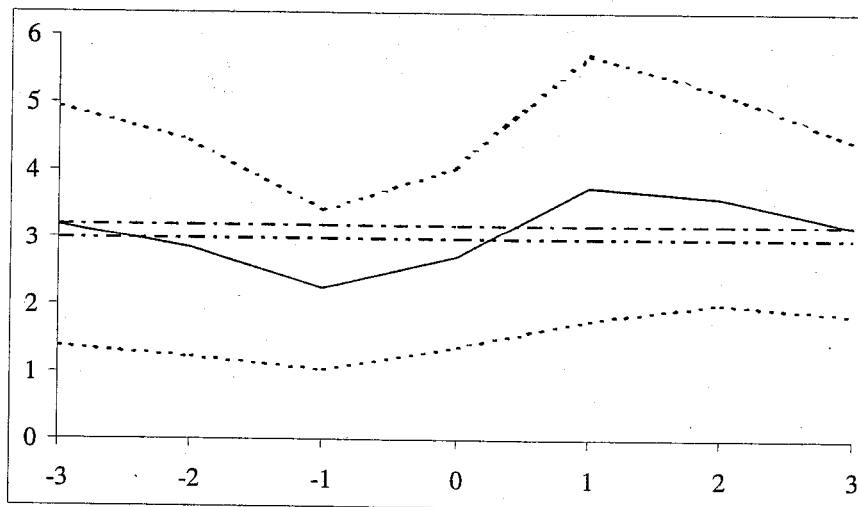
¹² The level of these three variables in the exit countries is not significantly different, however, from their average level in the countries with lasting pegs or in the control group of nonexiting countries. Similarly, an indicator of the condition of the banking system (liquidity as measured by the ratio of liquid reserves to total assets) is little different in the exit cases from either control group of countries. It would be desirable to have information on the spread between deposit and loan rates, which tends to move in tandem with the level of nonperforming loans and thus to signal future banking problems, but data on this variable were not available for many of the countries in our sample.

¹³ More surprisingly, Figure 3c suggests that countries that exit tend to reimpose cur-

FIGURE 3a
 POLICY INDICATORS
(centered on year of exit)
 Government Budget (*percent of GDP*)

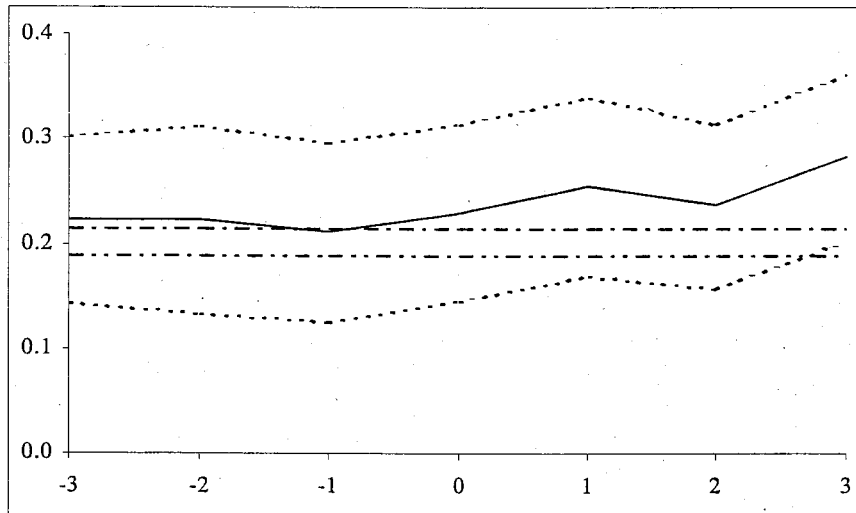


International Reserves (*months of imports*)

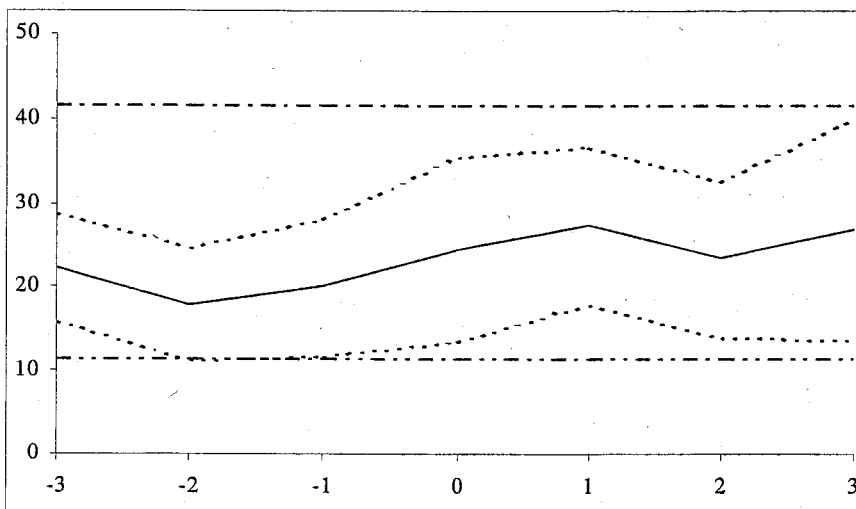


KEY: — average of exit cases; - - - two-standard-deviation band for average of exit cases; . . . average for nonexit cases; - . - . average for countries with lasting pegs.

FIGURE 3b
 POLICY INDICATORS
(centered on year of exit)
 Liquidity of Banking System



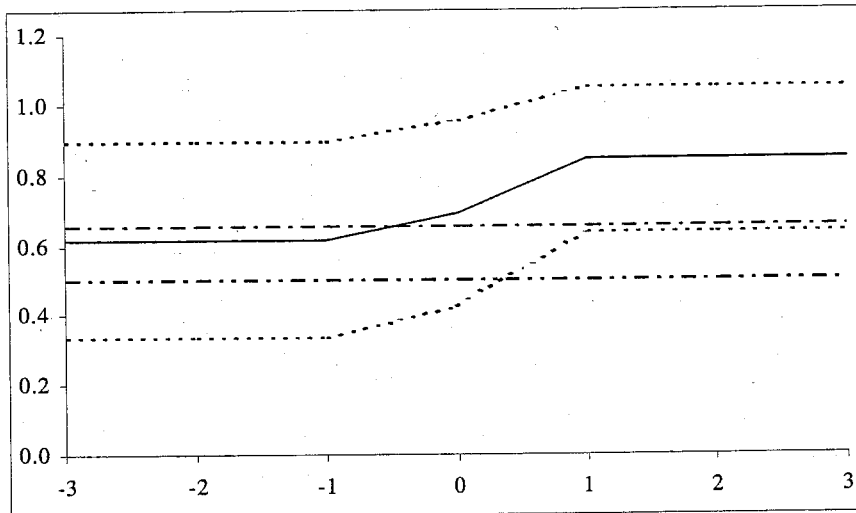
M1 Growth (percent)



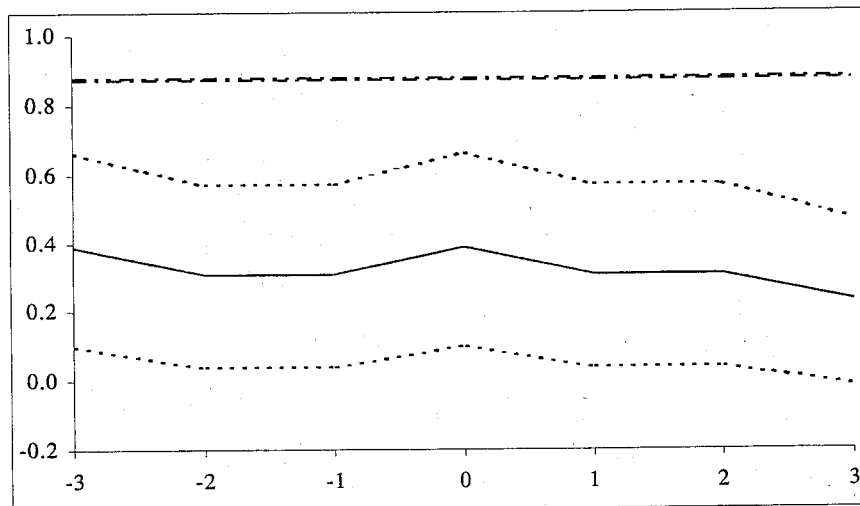
KEY: — average of exit cases; - - - two-standard-deviation band for average of exit cases; - - - average for nonexit cases; . . . average for countries with lasting pegs.

FIGURE 3c
POLICY INDICATORS
(centered on year of exit)

Current-Account Restrictions



Capital-Account Restrictions



KEY: — average of exit cases; - - - two-standard-deviation band for average of exit cases; - . - . - average for nonexit cases; average for countries with lasting pegs.

NOTE: The restriction index for a given country takes the value of 1 if there are payment restrictions, and 0 if there are no payment restrictions (as reported in the IMF *Annual Report on Exchange Arrangements and Exchange Restrictions*).

Figures 4a through 4c, which depict a number of indicators of the countries' external position, provide some support to the latter view, because they show that exits typically have been forced on countries that have a fragile external sector. In fact, developing countries that exit from their pegs tend to have more external debt than developing countries in the two control groups have and to receive less direct foreign investment. Also, they tend to have more variable-rate external debt than countries that have lasting pegs. Overall, the composition of the capital account indicates a degree of external fragility on the part of countries that are forced or choose to exit from their pegs.

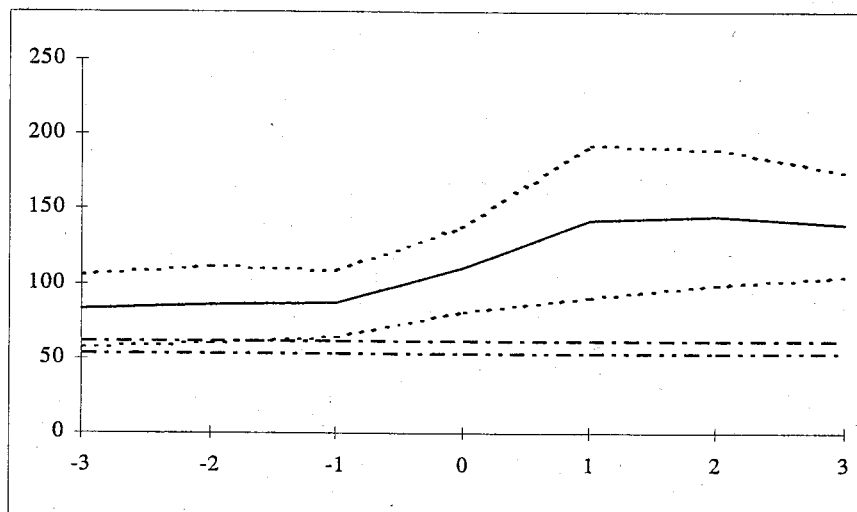
Exit from a pegged-rate arrangement has often been involuntary, the result of a speculative attack. The recent literature has gone a long way toward identifying factors that increase the probability of this event.¹⁴ Speculative attacks tend to occur after periods of expansionary monetary and fiscal policies that produce high inflation, overvaluation, and large external imbalances. Although it may be possible to finance temporarily the resulting current-account deficits through foreign-capital inflows and the use of international reserves, these sources of finance will eventually be depleted. Typically, the end comes abruptly, as international capital flows reverse direction and currency traders, anticipating the need for a downward adjustment in the exchange rate, sell the currency short and exhaust the authorities' remaining reserves.

These patterns, which are detectable in the cross-country evidence presented in Figures 1 through 4, are interpretable in terms of what have become known as "first-generation models" of currency crises (Krugman, 1979; Flood and Garber, 1984). Speculative crises are also associated, however, with low growth, high unemployment, weak banking systems, and high ratios of public debt to gross domestic product (GDP). These facts, which are also present in Figures 1 through 4, are more consistent with the "second-generation models" of currency crises. In second-generation models, speculative attacks occur, not when official reserves fall to some (low) threshold, but when domestic conditions are such that it becomes too costly for the authorities to

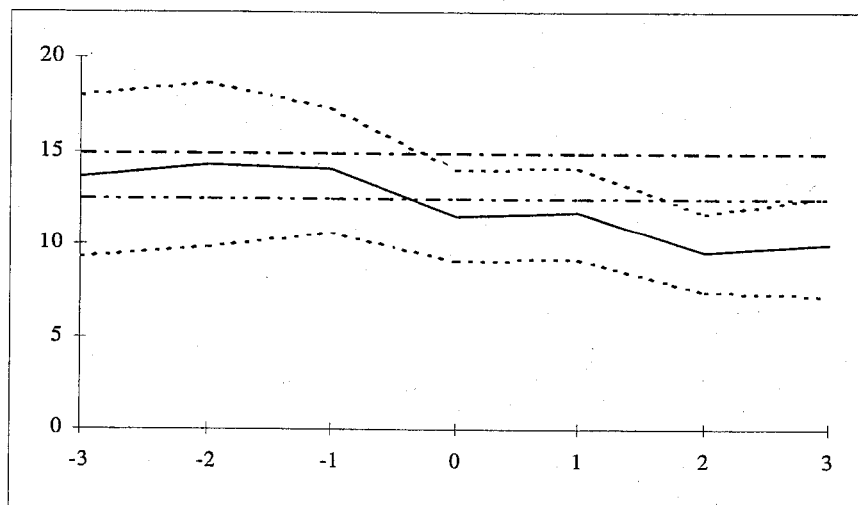
rent-account restrictions. This could be another indication that a number of countries exited under severe duress and responded to the trauma by rolling back earlier liberalization measures. Again, the poor quality of the data suggest that this finding should be treated with caution.

¹⁴ For recent theoretical and empirical surveys of this literature, see Agénor, Bhandari, and Flood (1992), Eichengreen, Rose, and Wyplosz (1995), Frankel and Rose (1996a), Flood and Marion (1997), and IMF (1997, chap. 4).

FIGURE 4a
 EXTERNAL DEBT AND OTHER INDICATORS
 (centered on year of exit)
 Total Debt (percent of GDP)

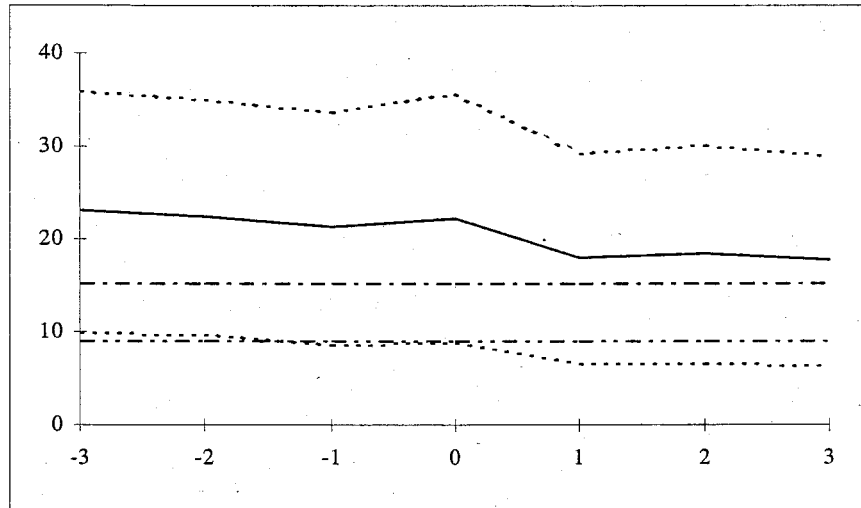


Short-Term Debt (percent of total debt)

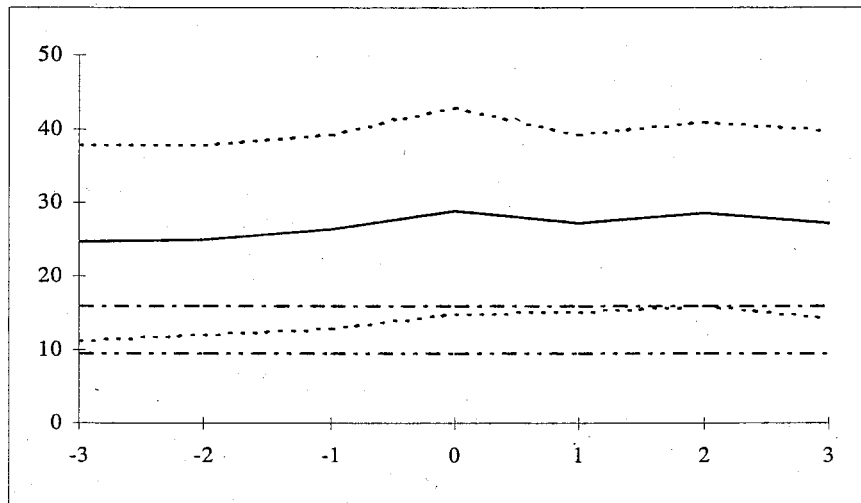


KEY: — average of exit cases; - - - two-standard-deviation band for average of exit cases; - - - average for nonexit cases; - . - . - average for countries with lasting pegs.

FIGURE 4b
 EXTERNAL DEBT AND OTHER INDICATORS
(centered on year of exit)
 Commercial Debt (percent of total debt)

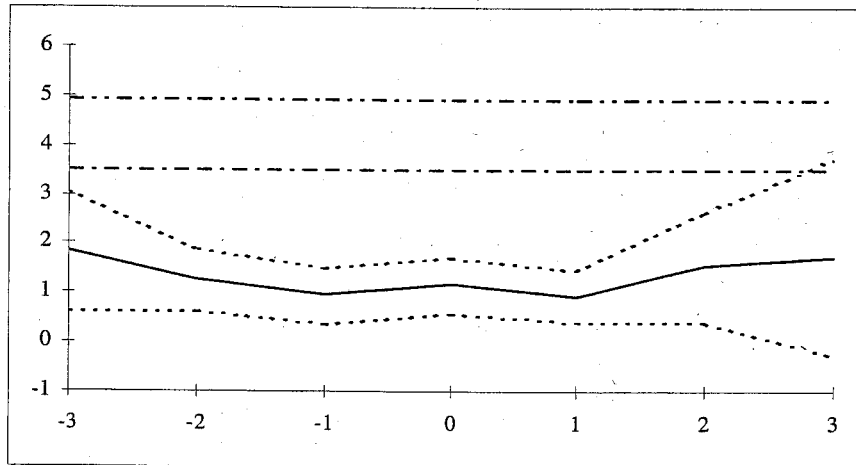


Variable Debt (percent of total debt)

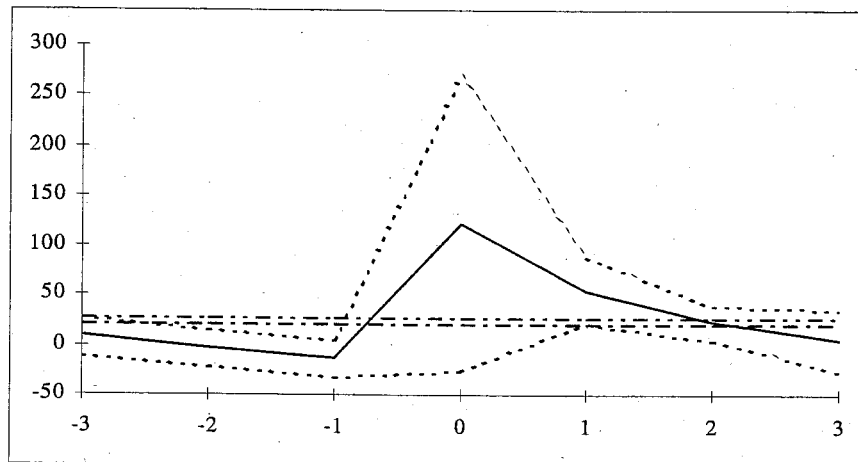


KEY: — average of exit cases; - - - two-standard-deviation band for average of exit cases; - . - . - average for nonexit cases; average for countries with lasting pegs.

FIGURE 4c
 EXTERNAL DEBT AND OTHER INDICATORS
 (centered on year of exit)
 Foreign Investment (percent of total debt)



Growth of International Reserves (percent)



KEY: — average of exit cases; - - - two-standard-deviation band for average of exit cases; . . . average for nonexit cases; - . - . average for countries with lasting pegs.

pursue the policies necessary to defend the exchange-rate peg.¹⁵ Indeed, when unemployment is high or growth is slow, the costs of raising interest rates and risking further declines in economic activity may be too high. When the banking system is weak, interest-rate hikes run the risk of pushing banks and borrowers into insolvency; and when the public-debt burden is heavy, the higher interest rates needed to defend the currency may so increase the costs of debt service as to be unsustainable.¹⁶

A reality first made clear in the EMS crises of 1992–93, and more recently in several crises in emerging markets, is the growing power private capital markets have for betting against a misaligned exchange rate—or a noncredible exchange-rate commitment—and for eventually winning that bet. Markets’ perceptions of the vulnerability of a peg are heightened by understandings that the cost of a defense is high when the economy and the financial system are weak.¹⁷ In both Mexico and Thailand, for instance, problems affecting banks and finance companies were widely perceived as reducing the likelihood that the authorities would maintain an extended period of high interest rates. Moreover, not only is the timing of speculative attacks unpredictable and their force hard to resist, but in recent years exchange-rate crises have tended to bunch together, countries with relatively good fundamentals being attacked along with those whose currencies are more clearly misaligned.

Unequivocal commitments to pegged rates are therefore wise only when the authorities are fully prepared to subordinate all other goals of economic policy to the exchange-rate commitment. In other cases, exchange-rate commitments and, more importantly, the strategy employed

¹⁵ Contrary to their first-generation predecessors, these second-generation models do not rely on the exhaustion of international reserves to explain the speculative attack, a mechanism that is less plausible in a world of high capital mobility where governments and central banks are able to borrow reserves abroad; see Buiter (1987) and Ozkan and Sutherland (1994).

¹⁶ These relationships have been invoked to motivate the idea that speculative attacks can be self-fulfilling—that their very occurrence can shift an economy from one equilibrium to another. The idea is not that speculative attacks can occur and currencies can collapse for any reason; rather, it is that self-fulfilling attacks are possible when a country enters a danger zone in which unemployment is too high, debt is too heavy, or the banking system is too weak for the authorities to persist credibly in the policies needed to defend the currency; see Obstfeld (1994).

¹⁷ Vulnerability to this kind of self-fulfilling attack seems to be especially great when the country is exposed to a large amount of short-term foreign-currency debt. Liabilities of this sort were an important factor in precipitating the recent crises in Mexico and Thailand.

in defending a currency under pressure should embody an appropriate degree of flexibility that takes account of the limits on the ability and willingness of the authorities to adjust economic policies, as well as to use (non)sterilized intervention, to maintain the exchange-rate peg. Moreover, even a willingness to raise interest rates to high levels may not succeed in defending a pegged exchange rate if economic fundamentals (growth, the health of the banking system) are weak.¹⁸ The possibility that circumstances for the defense of a pegged rate may not prove to be favorable should be taken into account when choosing the exchange-rate regime.

4 An Orderly Exit

The evidence that the majority of exits from currency pegs in developing countries have taken place in periods of pressure and have been associated with adverse economic outcomes and a loss of credibility by the authorities suggests that it is desirable for countries that are not prepared to meet the requirements of sustaining a pegged-exchange-rate regime to introduce greater flexibility during a period of relative tranquility in the foreign-exchange market. In these circumstances, there will be no reason for markets to conclude that the change was forced on the authorities. There will be less risk of a loss of credibility.¹⁹

It is unrealistic, however, to assume that periods of tranquility in the foreign-exchange market will prevail for long or that the authorities will necessarily avail themselves of the window of opportunity. Failing this, the next best time for a country to undertake a move to a more flexible exchange rate is when there are pressures for appreciation, especially when the country is encountering difficulties contending with large capital inflows.

There is now an accumulation of evidence indicating that capital flows to developing and transition economies occur in surges (Chuhan, Claessens, and Mamingi, 1993; Fernandez-Arias, 1994; World Bank, 1997). One explanation for this pattern is that foreign investment by the advanced industrial countries responds to the level of interest rates

¹⁸ See Drazen and Masson (1994), who argue that signaling a determination to defend a peg will not be sufficient to make that commitment credible.

¹⁹ If there are reasons to think that the exchange rate might weaken with the shift to a more discretionary monetary policy, then there may be a case for tightening monetary policy to avert this outcome. The alternative is to establish a clear alternative framework for policy to supersede the exchange-rate anchor, as described below.

in the major international financial centers. History points to a series of episodes in which large-scale capital inflows associated with relatively low interest rates and asset yields in the major financial centers have been followed by periods of relatively little net lending to developing countries and even, as in the early 1980s, by net resource transfers in the opposite direction (Eichengreen and Fishlow, 1996).

Moving toward greater exchange-rate flexibility during a period characterized by a surge of capital flows means that the exchange rate will begin its more flexible life by appreciating. Although appreciation could have an impact on export performance, this will be less damaging to confidence than the depreciation that typically accompanies a move to a more flexible exchange rate when the currency is under downward pressure. Moreover, currency appreciation helps to deal with the economic-policy problems that arise when a country is experiencing large capital inflows (see Schadler et al., 1993, and IMF, 1995, chap. 4, for a summary). To inaugurate a more flexible exchange-rate regime in these circumstances, it is important to announce that the currency will be allowed to move down, as well as up, in response to market forces, and it is important to demonstrate this two-sided flexibility at an early stage.

Steps might be taken to limit the extent of the appreciation, because appreciation alone is unlikely to discourage capital inflows and thereby to mitigate unfavorable effects on exports. Fiscal retrenchment would allow an easing of domestic monetary conditions and reduce the incentives for inflows. Transitional controls and taxes on capital inflows might also be considered. It is possible, though, that the removal of the one-way bet implied by the pegged exchange rate will suffice to raise uncertainty about the expected foreign-currency return from investing in the country to reduce short-term capital inflows and offset pressures for appreciation.

In addition, fiscal reform can assist in achieving a smooth transition to a regime of greater exchange-rate flexibility. Although fiscal discipline is essential to stability under any exchange-rate regime, it is of particular importance when there is a change in the fundamental character of the exchange-rate regime. Recent research suggests that more centralized budgetary institutions that vest responsibility and authority for budgetary policy and outcomes in the prime minister or finance minister, that give less discretion to spending ministries, and that require parliament to vote on the overall size of the budget are associated with smaller deficits and lower public debts (Alesina, Hausmann, and Stein, 1995; Alesina and Perotti, 1996). Reforms that move in the direction suggested by this research should, in principle, give

markets greater confidence that fiscal policy will deliver smaller deficits, implying less pressure on the current account and on the central bank for inflationary finance.

Preparing the financial system for the new, more flexible exchange-rate regime will be important. If financial institutions, business enterprises, and households have been accustomed to a regime characterized by exchange-rate stability, they may be ill prepared for the risks of operating under a more flexible exchange rate, especially with respect to the management of their foreign-exchange liabilities (see Basle Committee, 1997). In addition to implementing proper prudential regulation and supervision for foreign-exchange risks undertaken by financial institutions (and by other enterprises), it may be desirable to move gradually on a preannounced schedule to increase the flexibility of the exchange rate.²⁰ This could be done, for example, by widening the bands for exchange-rate fluctuations in stages, rather than all at once, and by gradually reducing the aggressiveness with which the authorities intervene and adjust economic policies to limit fluctuations in the exchange rate.²¹

It is tempting to argue that the move to a more flexible exchange rate should be done gradually in order to assure that all conditions for the successful operation of the new regime are in place in advance of its arrival. This argument is dangerous if pushed too far. Clearly, it is desirable to prepare the ground for a regime of greater exchange-rate flexibility by strengthening financial-sector regulation and supervision, especially as it relates to foreign-exchange risks for financial institutions and their customers. This implies that the need to consider an auspicious exit should accelerate efforts to prepare the financial system for this move. It does not imply that delays in addressing financial-sector issues should delay desirable adjustments in the exchange-rate regime beyond the point where such regime adjustments can be achieved in a comparatively nondisruptive manner. Specifically, if there are weaknesses in the management of exchange risk by financial institutions

²⁰ If the exchange rate is immediately under substantial upward pressure, it is difficult to allow only gradual appreciation, because this will create expectations of further appreciation that will motivate strong capital inflows (absent a significant and probably undesirable reduction in domestic interest rates). Some step appreciation is generally necessary in such situations.

²¹ For example, if a country should want to exit from a currency-board arrangement, an initial move to a currency peg merits serious consideration. And, as was the case in Chile and Poland, the gradual approach to greater exchange-rate flexibility may usefully be combined with efforts to strengthen the financial sector.

(including inadequate recognition of and preparation for exchange risks undertaken by the borrowers), these problems are unlikely to manifest themselves in intense and immediate difficulties when the exchange rate is stable or appreciating. Experience suggests, however, that problems of inadequate foreign-exchange-risk management manifest themselves aggressively when the exchange rate comes under downward pressure. Thus, it is important to take advantage of the opportunity for a relatively orderly regime shift and, in that context, to press forward with maximum speed with a financial reform in areas that are most sensitive to exchange-rate fluctuations.

Above all, when the exchange rate is removed as the anchor for monetary policy and inflation expectations, it is important to substitute a new anchor and make that anchor credible. This is the subject of sections 6 and 7. Before turning to that question, however, realism requires that we first say a few words about exiting in a crisis.

5 Exiting in a Crisis

For countries that fail to take advantage of a period of financial tranquility or capital inflows to move to a more flexible exchange-rate regime, the transition will be more difficult. Almost certainly, the economy and the financial system will be under strain. Private-capital inflows that have been financing a substantial current-account deficit will be abating or reversing. Businesses and banks (and perhaps the government) will have significant unhedged foreign-currency liabilities, and the credibility of government policy will be suspect both at home and abroad. Although there is no easy way to make a smooth transition to a regime of greater exchange-rate flexibility in such circumstances, there are some steps that can be taken to lessen the pain and disruption.

As discussed earlier, the situation in the financial sector and the financial situation of enterprises with respect to their foreign-currency liabilities merit particular attention. If there are already problems in this area, it is all but inevitable that they will worsen when the peg is abandoned and policies are tightened to reduce the external payments deficit and contain the adverse credibility effects of the change in regime. A careful assessment of the situation in the financial sector, therefore, should rapidly be initiated when the exchange rate comes under pressure, and measures should be taken to strengthen the financial system to reduce the strains that will inevitably accompany either a successful or an ultimately unsuccessful defense of the exchange-rate regime. This does not mean extending blanket government

guarantees to depositors and other creditors of financial institutions or of private enterprises. Such guarantees have the effect of transferring to the general taxpayer risks that have been undertaken by private economic agents or losses that have been incurred by such agents. Instead of public guarantees and bailouts, the most sensible approach to dealing with problems in the financial sector is to assure, to the greatest extent feasible, that the risks and the losses are borne by the equity holders who have made the investments and, if equity is insufficient to cover losses, by the creditors of the insolvent enterprises and institutions. This means avoiding open-ended support to individual financial institutions facing difficulties, assistance that can exacerbate downward pressures on the exchange rate and increase the ultimate cost of the crisis to the taxpayer. This approach will not avoid all expenditures of public funds, because governments will want to protect at least smaller depositors and to avoid a general collapse of the financial system.

Everything that was said about the need to buttress the credibility of monetary and fiscal policies in the context of orderly exits applies even more to exiting in a crisis. Monetary-policy credibility will have to be reinforced by strengthening the independence of the central bank and giving it a clear mandate to pursue a price-stability objective. Fiscal policy will need to be given additional credibility by reforming budgeting procedures and institutions. The issue is not just whether and by how much policies need to be tightened to maintain investor confidence, for this will vary from case to case. It is to give investors confidence that policies will be put on a stable and sustainable footing by reforming the manner in which they are made.

There is a sense in which this discussion boils down to a conundrum: if a country is not in good-enough shape to exit, it may not be in good-enough shape to go on pegging. What, then, should it do: exit dangerously or peg precariously?

Given the long list of failed attempts to defend fragile currency pegs, it is tempting to conclude that countries should give up the ghost and move to greater flexibility as soon as possible. Exiting in a crisis will be costly, this argument goes, but putting off the day of reckoning will only delay the inevitable, which will then take place in the context of an even more costly, devastating crisis.

But giving up without a fight is unlikely to enhance credibility. A government that does not defend its *de jure* or *de facto* commitment to an established exchange-rate regime (or any other monetary regime) is likely to suffer some loss of credibility regarding its other policy commitments. A policy regime should not be adopted lightly and should

not be abandoned except in circumstances in which there is a clear perception that the balance of costs and benefits of a particular choice has changed.²² There will still be cases where the best policy is to take quick, concerted steps to strengthen macroeconomic and financial policies and institutions in order to maintain the currency peg.

For countries where that balance of costs and benefits has in fact changed, there may still be an argument for delaying the exit until some progress has been made toward strengthening policies and institutions. An exit that takes place in the presence of a large budget deficit, a weak financial system, and weak supporting institutions for monetary and fiscal policy will almost certainly alarm the markets, which will have reason to fear that abandonment of the currency peg opens the door to even more serious monetary, fiscal, and financial excesses. As a calculated gamble, there is therefore a case for using reserves (and international assistance) to continue supporting the exchange rate for a limited period while cutting the budget deficit, strengthening the balance sheets and regulation of domestic financial intermediaries, and reforming monetary and fiscal institutions. With these reforms in place, the country can exit from a position of greater strength, and the shift to greater exchange-rate flexibility is less likely to be badly received by the markets.

To repeat, however, this strategy is a gamble. There is no guarantee that the country will or can adopt the requisite reforms within the short window of time available. And if those reforms are not adopted, the inevitable exit will take place not just from a position of weakness, but most likely after reserves have been depleted, thereby reducing the authorities' capacity to intervene to damp fluctuations in the now more flexible exchange rate.

6 Inflation Targeting as a Post-Exit Operating Strategy

When the exchange rate is removed as the anchor for monetary policy, it will be important to define clearly and communicate credibly the nature of the new anchor. Establishing low inflation as a key objective of monetary policy and granting operational independence to the central bank can be helpful in this connection, as suggested by the recent experiences of Chile, Israel, Sweden, and the United Kingdom (see Bernanke et al., 1998). Adopting inflation targeting as an explicit

²² Those circumstances are likely to be different from country to country, but as argued above, with the increase in capital mobility, the balance has for many countries shifted in the direction of greater exchange-rate flexibility.

monetary-policy framework, however, requires a degree of central-bank independence and a number of other demanding prerequisites.

Indeed, there are a number of reasons to question whether a policy framework in which inflation is the primary goal of monetary policy is feasible, advisable, or credible for many developing and transition economies. Such countries are subject to substantially larger domestic and external shocks than are industrial countries. The mechanisms through which monetary policy affects economic activity and the price level in these countries tend to be less certain and reliable. Inflation may simply be less predictable or controllable than in industrial countries.

Moreover, the institutional prerequisites for credible inflation targeting may be difficult to meet. The first such prerequisite is a central bank capable of conducting its monetary policy with a degree of independence. This does not imply that the central bank must necessarily be fully independent in the sense defined by Alex Cukierman (1992), Stanley Fischer (1994), and others, but the monetary authorities must be able to direct the instruments of monetary policy toward the attainment of a nominal objective; that is, there should be a degree of instrument independence but not necessarily goal independence.²³

A country committing to inflation targeting will thus have to be free of the symptoms of fiscal dominance. Monetary policy cannot be dictated or severely constrained by developments of a fiscal nature. Public-sector direct borrowing from the central bank (and the banking system) must be low or nonexistent. The government must have a broad revenue base and therefore not rely systematically and significantly on the revenues from seigniorage. Domestic financial markets must be deep enough to absorb placements of public debt, and the accumulation of public debt must not give rise to explosive dynamics (Sargent and Wallace, 1981). When these conditions are not met, fiscally driven inflation will oblige the central bank to follow an increasingly accommodative monetary policy. It may also lead to the creation of formal and informal indexation mechanisms (especially in labor and capital markets) and impart a high degree of persistence to nominal variables.²⁴

A second precondition for viable inflation targeting is the absence of any firm commitment by the authorities to target the level or path of

²³ Although compliance with this requirement is taken for granted in analyses of monetary policy in industrial countries, the same assumption is not appropriate when assessing the applicability of a given monetary-policy framework to less-developed economies. Admittedly, this requirement is not specific to inflation targeting; it is a precondition for formulating monetary policy separately from other policies—especially fiscal policy.

²⁴ The threshold inflation rate at which monetary policy loses its role as a nominal

other nominal variables, such as wages or the exchange rate. As discussed earlier, in an environment of high capital mobility, a country that seeks to peg the exchange rate must subordinate its monetary policy to that goal, leaving it incapable of targeting other nominal variables.²⁵ Crawling pegs or target zones relax these strictures, but only partially.

A country that satisfies these two prerequisites and wants to adopt inflation targeting would then need to establish a framework for monetary policy that has four essential elements: (1) explicit quantitative targets for the rate of inflation some period(s) ahead, (2) clear and unambiguous indications that the attainment of the inflation target constitutes the overriding objective of monetary policy, (3) a methodology (“model”) for producing inflation forecasts that uses a number of variables and indicators containing information on future inflation, and (4) a forward-looking operating procedure in which the setting of policy instruments depends on the assessment of inflationary pressures and in which the inflation forecasts are used as the main intermediate target.²⁶

This assumes, of course, that the monetary authorities possess the technical and institutional capacity to model and forecast domestic inflation, have some knowledge or estimate of the time it takes for the “inflation determinants” to have their full effect on the inflation rate, and have a well-informed view of the way in which monetary impulses affect the main macroeconomic variables, as well as of the relative effectiveness of the various policy instruments at their disposal. In particular, the authorities will need to develop the expertise to make greater use of indirect instruments of monetary management in an

anchor and becomes fully accommodative is not well defined, but there is some agreement that a country that has experienced annual inflation rates in the 15 to 25 percent range for a number of years (say, three to five) will be unable to rely on monetary policy *alone* to target any significant and lasting reduction in the rate of inflation. See, for example, Dornbusch (1982), Bruno (1991, 1993, 1995), Dornbusch and Fischer (1993), and Heymann and Leijonhufvud (1995).

²⁵ This is a feature that is particularly relevant for the more advanced developing countries, which are also the most likely candidates to adopt an inflation-targeting framework. This is not to say that pegging the exchange rate may not be inspired by the ultimate objective of price stability, but simply that the stated exchange-rate objective necessarily becomes the main intermediate target of monetary policy.

²⁶ Despite some differences in emphasis, a large majority of studies on inflation targeting mention these four elements as key ingredients of the framework; see Haldane (1995a, 1995b), Freedman (1996), Green (1996), Bernanke and Mishkin (1997), Svensson (1997b), and Bernanke et al. (1998).

environment where strong capital flows prevail.²⁷ Improving the accuracy and timeliness of data on inflation and other key economic variables can also be helpful for making the transition smoother. Doing so upgrades the information base for the conduct of economic policy and also enhances public understanding of economic policy goals.

For some developing countries, the basic prerequisites for viable inflation targeting are clearly not in place. Where inflation has been above 30 to 40 percent per annum for a number of years, nominal variables will tend to display a high degree of inertia, and monetary policy will be largely accommodative; in fact, monetary policy will be only as good as fiscal policy and will have short-lived and unpredictable effects on the rate of inflation. In those cases, the priority for policymakers should be to attain a lasting reduction in inflation through a comprehensive stabilization program comprising fiscal consolidation, a break in monetary financing of the government, and the choice of one or more nominal variables to anchor inflation expectations (see Bruno, 1993, 1995; Dornbusch and Fischer, 1993; and Heymann and Leijonhufvud, 1995). Conducting monetary policy in a manner consistent with inflation targeting will only be possible once the fiscal problem has been eradicated and inflation falls to the low double digits.

For other developing countries, compliance with the basic prerequisites of inflation targeting is more difficult to assess. Fiscal dominance does not always lead to unsustainably high or rapidly rising rates of inflation; the extent to which monetary policy accommodates other nominal variables becomes apparent only at high rates of inflation and is influenced by a host of country-specific factors (for example, formal and informal indexation practices); and the middle-of-the-road exchange-rate arrangements currently in place in many of these countries (that is, managed floats, crawling bands) afford the monetary authorities considerable discretion for ranking their external and domestic objectives in a less-than-transparent manner, sometimes for relatively long periods.

²⁷ This requirement should not be taken lightly. In Thailand, for example, use of indirect monetary instruments was limited until very recently, and the need to maintain stable exchange rates under strong inflows of capital brought challenges to monetary policy in an environment of progressive financial and capital-account liberalization. The central bank relied considerably on foreign-exchange swaps to manage liquidity effects of capital inflows, and this involved setting a forward exchange rate that, in the context of a fixed exchange rate, did not deviate significantly from the spot rate. This strategy turned out to be quite costly for the authorities following the floating of the baht in July 1997.

Recent attempts to extend research on central-bank independence to developing countries have had to confront these problems (see Cukierman, 1992; Mas, 1995; Willett et al., 1995; and Fry, Goodhart, and Almeida, 1996). Central banks in developing countries face environments that differ radically from those faced by central banks in industrial countries. Thus, many of the insights and implications of the literature on central-bank independence have only limited applicability in a developing-country setting because the central bank's scope for conducting an independent monetary policy tends to be hampered by heavy reliance on seigniorage, shallow capital markets, and fragile banking systems.

Reliance on seigniorage is perhaps the simplest and most common manifestation of fiscal dominance. The link between the government's ability to raise revenues from conventional sources and its recourse to revenues from seigniorage and the inflation tax is well documented both analytically and empirically (Phelps, 1973; Fischer, 1982). This link is typically stronger in developing countries, and the reliance on seigniorage greater, than in industrial countries, because sources of tax revenue are concentrated and volatile, tax-collection procedures are poor, income distribution is skewed, and the political environment may be unstable. In addition, developing countries tend to abuse this source of revenue during times of crisis, rather than issue debt or cut government expenditures (Easterly, Rodríguez, and Schmidt-Hebbel, 1994).

Shallow capital markets are another common manifestation of fiscal dominance. They are often a by-product of government schemes to extract revenue from the financial system by using interest-rate ceilings, high reserve requirements, sectoral credit policies, and compulsory placements of public debt (McKinnon, 1991; Fry, Goodhart, and Almeida, 1996).²⁸ In some low-income countries, however, undeveloped capital markets may be a cause as much as a consequence of fiscal dominance. Imperfect access to international capital markets, limited fiscal flexibility, low levels of domestic wealth, and a small financial system constrain the government's capacity to issue domestic debt to finance transitory revenue shortfalls, leaving seigniorage and other forms of financial repression as the only options. Regardless of the causality, however, the evidence on the adverse effects of financial repression on the development of domestic capital markets and overall economic

²⁸ Government revenues from these sources are particularly difficult to detect and quantify, but the few estimates available suggest that they can often be sizable; see, for example, Giovannini and de Melo (1993).

performance is indisputable (McKinnon, 1991; Levine, 1997), and so is the fact that the conduct of monetary policy in contexts of severe financial repression becomes essentially a quasi-fiscal activity (Fry, 1993).

Fragile banking systems are one obvious consequence of prolonged periods of financial repression. It is in this context that the conflicts between the objectives of attaining price stability and restoring (and preserving) banking-sector profitability reach proportions rarely observed in advanced economies. A number of recent studies have found that banking crises have been more severe in developing than in industrial countries—with estimates of resolution costs reaching 25 percent of GDP (Goldstein and Turner, 1996)—and have often been associated with balance-of-payments problems (Kaminsky and Reinhart, 1996). Without question, proper sequencing and a clear ranking of policy objectives are paramount in the early stages of financial liberalization, when central banks have limited scope for a monetary stance based on high real interest rates (McKinnon, 1991).

What is clear is that in a large number of developing and transition economies, fiscal dominance and poor financial-market infrastructure constrain the scope for an independent monetary policy. In fact, in most of these economies, effective instrument independence by the central bank will most likely not occur without (1) a comprehensive public-sector reform that broadens the tax base and reduces the government's reliance on seigniorage and other revenues from financial repression, (2) the abatement of inflation to at least low-double-digit levels, and (3) the revamping of the infrastructure of the banking and financial systems (Begg, 1996; Fry, Goodhart, and Almeida, 1996).

Nonetheless, it is also true that the constraints on monetary policy imposed by fiscal dominance, high inflation, and financial repression are less severe for some high-middle-income developing countries, especially in the 1990s (Masson, Savastano, and Sharma, 1997). For those countries, the obstacles to conducting monetary policy in a manner consistent with inflation targeting seem less related to considerations of feasibility and more related to the authorities' willingness to give priority to inflation reduction over other objectives of monetary policy.

7 Inflation Targeting as Part of an Eclectic Operating Strategy?

In countries that have reasonably well-functioning financial markets, no more than moderate levels of inflation, and no clear symptoms of fiscal dominance, there is scope for conducting an independent monetary policy oriented to targeting the rate of inflation. Doing so is conditional,

however, on accepting an exchange-rate regime in which exchange-rate fluctuations matter mainly to the extent that they influence the inflation outcome over the horizon contemplated by the inflation target (for instance, through their effect on import prices or interest rates), rather than being an explicit target of policy.

It is unlikely, however, that many emerging-market economies moving toward greater exchange-rate flexibility would accept benign neglect of the exchange rate. The exchange rate is the single most important asset price for a small open economy. Policymakers in such countries are understandably reluctant to eschew all foreign-exchange-market intervention and subordinate all exchange-rate policy to other targets.

It is tempting to argue that an inflation target should be articulated as part of an eclectic monetary-policy operating strategy in which the relative stability of the exchange rate also plays a role. In theory, a nominal exchange-rate target could coexist with an inflation target “as long as it is clear that the inflation target has priority if a conflict arises” (Leiderman and Svensson, 1995, p. 1). In practice, however, such coexistence could be problematic, because the authorities would be unable to convey *ex ante* those priorities to the public in a credible manner. The public would have to *infer* the authorities’ priorities from their actual responses in instances when the nominal-exchange-rate target had come under pressure. But therein lies the problem: there is no assurance that either of the two main courses of action open to the authorities in situations of exchange-rate pressure—that is, to adjust the instrument settings to preserve the nominal exchange-rate target or to allow the exchange rate to move beyond the preestablished range—would convey the appropriate signal to the public or increase the credibility of the authorities. Without question, the surest way of avoiding these problems is to refrain from making strong commitments about the time path of the nominal exchange rate.

Making effective use of the inflation-targeting strategy thus requires an unequivocal indication that the inflation target takes priority over other monetary-policy objectives as well as a forward-looking operating procedure that uses inflation forecasts as the main intermediate target of monetary policy. These conditions are difficult to satisfy in countries where nominal- or real-exchange-rate stability is also a stated or implicit objective of monetary policy (as, for example, where the authorities announce or adopt *de facto* a target level, path, or band for the exchange rate), and where understanding of the empirical links between instruments and targets of monetary policy is rudimentary (as a result of frequent changes in the underlying policy regime).

The first of these problems is probably the hardest to overcome. The main difficulties stem from the lack of means for credibly conveying to the public the authorities' ranking of policy objectives and from the different degrees of visibility of exchange-rate and inflation targets. The former implies that the authorities will be able to reveal their priorities only under the pressure of circumstances—for instance, through their policy response to situations in which the nominal exchange rate approaches an edge of the exchange-rate band. The latter difficulty is related to the lack of consensus in the appropriate way of modeling the transmission mechanism of monetary policy in developing countries, and therefore to the rudimentary understanding of the link between instruments and targets of monetary policy. Even in countries that have accomplished a successful transition to a more flexible exchange rate, there is a tendency for the easily monitored exchange rate to become the focal point of private-sector expectations, to the detriment of the less visible, and more medium-term, inflation target. Israel's experience is instructive in this regard. The country has used both inflation and exchange-rate targets in the formulation of monetary policy. Since late 1991, the Bank of Israel has announced a year in advance a rate of crawl of the central parity of the exchange-rate band that is approximately equal to the difference between the authorities' inflation target for that year and an estimate of the inflation rate of Israel's main trading partners over the same horizon. The *ex ante* consistency between the inflation and exchange-rate targets, however, has come under strain on many occasions, owing, in particular, to unexpectedly large inflows of foreign capital. Because the scope for sterilized intervention is limited by its high fiscal cost, pressures for exchange-rate appreciation have forced the Bank of Israel to confront the tradeoff between easing the stance of monetary policy to arrest the appreciation or maintaining interest rates at the levels deemed consistent with the inflation target. Most of the time, this policy dilemma has been resolved in favor of the inflation targets and the exchange-rate band has been widened, sometimes only after a period of heavy intervention. Thus, the record so far has been mixed, both in terms of inflation reduction and of the overall credibility of the monetary-policy framework. See Bufman, Leiderman, and Sokoler (1995) and Leiderman and Bufman (1996).

Despite the advantages that targeting a single variable, such as the rate of inflation, has for the credibility of monetary policy, retaining significant flexibility for monetary policy to serve other objectives is important for most emerging-market economies. Limiting exchange-

rate fluctuations relative to those that would occur if market forces were allowed free rein may be a crucial objective that requires some support from monetary policy apart from its pursuit of an inflation target. In the presence of large shocks, relatively thin markets, and poorly developed institutions, and absent a long track record for stable policies, there may not be an adequate basis for reasonably stable behavior of the exchange rate, unless the authorities provide some guidance and support to the market. In this situation, a fundamental ambiguity about the objectives of the authorities' exchange rate and monetary policies is likely to remain. Accordingly, there cannot be the same clarity of commitment of economic policy as under a pure fix, in which policy is fully dedicated to the exchange-rate objective, or as under inflation targeting as practiced by industrial countries.

In practice, then, those developing countries wanting to move to an inflation-targeting framework after exiting from some form of exchange-rate peg are more likely to adopt a transitional regime in which neither the weight given to inflation nor the effects of the central bank's instruments on the target are going to be known and invariant. Those central banks (and their governments) will probably have to gauge progressively the importance of low inflation relative to other objectives and the strain the economy can bear in the achievement of that goal. Central banks will not regain credibility overnight. Over time, and with the strengthening of domestic institutions, some of those emerging economies will likely be in a better position to adopt a full-fledged inflation-targeting framework that resembles those in place in a number of industrial countries.

8 Conclusion

The dramatic expansion of capital flows to emerging markets has made far more difficult the defense of fixed parities and crawling bands, has precipitated exits to greater exchange-rate flexibility, and has encouraged the search for alternative anchors for monetary policy. In this essay, we have considered strategies for the transition and examined the strengths and weaknesses of inflation targeting as an alternative monetary-policy framework.

The best way to ensure a smooth transition to greater exchange-rate flexibility is to modify the exchange-rate regime when there are still pressures for appreciation, rather than waiting until there is downward pressure on the currency. It is important, moreover, to put in place a transparent framework for the conduct of monetary policy in order to

avoid concerns that policy will become rudderless in the new regime. If an exit is nonetheless taken in a crisis, then it is important to reinforce monetary institutions, so as not to suffer a disastrous loss of policy credibility, and to strengthen financial-sector supervision, budgetary transparency, and fiscal discipline.

We have identified two essential prerequisites for adopting inflation targeting as an alternative monetary anchor following the exit: (1) independence for monetary policy, in particular as concerns freedom from fiscal dominance, and (2) the absence of a commitment to a particular level or path for the exchange rate (or for any other nominal variable such as wages). We have argued that these requirements are not present in many developing countries, either because seigniorage remains an important source of government financing, or because there is no consensus on low inflation as an overriding policy priority.

The stringent technical and institutional requirements for inflation targeting and its still tentative record in just a handful of industrial countries lead us to conclude that many developing countries exiting from pegs may have to continue giving considerable weight to the exchange rate in the conduct of their monetary policies. Nonetheless, an inflation target may be a useful component of the more eclectic operating strategy that the monetary authorities in such countries will necessarily have to pursue. And ultimately, the strengthening of these countries' institutions over time may render inflation targeting an increasingly attractive option.

Appendix: The Experience with Exits

This appendix summarizes the historical experience with exits from currency pegs in developing countries (see section 3). We assembled a comprehensive list of exits from currency pegs in developing countries and collected data for a number of macroeconomic and financial indicators. Exits were defined as movements from a (single-currency or basket) peg to a more flexible exchange-rate policy.²⁹ Because the problem of devising an exit strategy is particularly pressing for developing countries operating in an environment of high international capital mobility, we limited the sample to the last two decades (generally, 1977 to 1995, although for some variables, the data end in 1992) and to

²⁹ The sample of exits was constructed by checking the arrangements given in the IMF's *Annual Report on Exchange Arrangements* against exchange-rate data to confirm that the exits led to an appreciable movement of the exchange rate.

countries considered in the World Bank's *World Development Indicators* and *Global Development Finance* data tables.³⁰ Short-lived experiences were eliminated (to be categorized as an exit, the exchange-rate-peg regime and the subsequent period of flexibility each had to last at least two years),³¹ along with unrepresentative economic and political cases (specifically, cases of hyperinflation and civil war in which the behavior of macroeconomic and financial variables were clear outliers).

These criteria left a total of twenty-nine exits in which countries moved from single currency pegs or basket pegs to managed exchange rates or an independent float.³² Table A1 summarizes the exit cases that we were able to include in the analysis of each of the variables examined. Table A2 summarizes the countries in the sample, the size of any devaluation both before and after the exit, the nature of the exchange-rate regime before and after the exit, and the date of exit.³³ The relatively small number of exit cases is reason for regarding the results with caution. In addition, the relatively small number of exits in the sample prevented detailed comparisons of countries that exit in an orderly fashion and countries that exit as a result of a crisis.³⁴

³⁰ It can be argued that exit strategies are not an issue for the majority of high-income countries, either because they are already committed to a floating exchange rate or because, as in Europe, they are moving toward permanent fixing and then elimination of the exchange rate through the process of monetary unification.

³¹ The data used to construct the exit cases were nonoverlapping. Countries had to continue to peg for the entire sample period to be included in the control group of peggers that did not exit.

³² Because crawling pegs and crawling bands were already included in the "greater flexibility" category of exchange-rate arrangements in the official IMF taxonomy, cases of movements from crawling pegs and crawling bands to managed floating and free floating were not included here in the list of exits. Thus, the definition of exits is relatively restrictive.

³³ Most of the data were taken from the Frankel and Rose (1996a) database, which in turn, is based on World Bank data. We also added, completed, and updated some of the series with information from the World Bank's *World Development Indicators* and *Global Development Finance*, and the IMF's *International Financial Statistics* databases. The data on exchange rates is from the IMF's Effective Exchange Rate Facility.

³⁴ Twenty-three of the twenty-nine cases of exits occurred in periods of crisis as defined by the Frankel-Rose criterion. This criterion defines a crisis as a period during which there is a large fall in the exchange rate that is also significantly larger than any decline in the currency's value in the preceding period. It was possible to replicate the analysis that follows, not for the full sample of twenty-nine exits, but for the twenty-three exits in times of crisis only. The results were virtually the same.

TABLE A1
DATA INCLUDED FOR THE ANALYSIS OF EXIT CASES

Country	Year of Exit	Growth of Real GDP	Growth of Int'l. Reserves	Liquidity of Bank System	Deficit (As % of GDP)	Current Account	Debt (As % of GDP)	Reserves (As % of Imports)	Short-Term Debt (As % of GDP)	Commercial Debt (As % of GDP)	Variable Debt (As % of Total Debt)	Foreign Investment
Chile	1982	X	X	X	X	X	X	X	X	X	X	X
Costa Rica	1981	X	X	X	X	X	X	X	X	X	X	X
Ecuador	1983	X	X		X	X	X	X	X	X	X	X
Egypt	1985	X	X	X	X	X	X	X	X	X	X	X
El Salvador (I)	1982	X	X		X	X	X	X	X	X	X	X
El Salvador (II)	1989	X	X	X	X	X	X	X	X	X	X	X
Ethiopia	1992			X								
Gambia, The	1986	X	X	X	X	X	X	X	X	X	X	X
Guatemala	1985	X	X	X	X	X	X	X	X	X	X	
Guinea	1986								X	X	X	
Guinea-Bissau	1983						X		X	X		
Guyana	1990	X	X	X	X				X			
Honduras	1990	X	X	X	X	X	X		X			X
Jamaica (I)	1983	X	X	X	X	X	X	X	X	X	X	X
Jamaica (II)	1989	X	X	X		X	X		X	X	X	X
Jordan	1988	X	X	X	X	X	X	X	X	X	X	
Kenya	1993			X								
Madagascar	1982	X	X	X		X	X	X	X	X	X	X
Maldives	1987		X	X	X	X	X	X				
Mauritius	1994					X						
Pakistan	1982	X	X	X	X	X	X	X	X	X	X	X
Paraguay	1982	X	X		X	X	X	X	X	X	X	X
Tanzania	1993			X								
Trinidad	1993			X								
Tunisia	1986	X	X	X	X	X	X	X	X	X	X	X
Uganda	1981	X	X	X	X			X	X	X	X	
Venezuela	1989	X	X		X	X	X	X	X	X	X	X
Yemen	1983	X		X					X			X
Zambia	1985	X	X	X	X	X	X	X	X	X	X	X
Total observations		21	21	22	19	20	20	18	24	20	19	17

TABLE A1 *continued*

Country	Year of Exit	M1 Growth	M2 Growth	CPI	Ex- port Growth	Im- port Growth	Capital- Account Restric- tions	Current- Account Restric- tions	Nominal Ex- change Rate	Real Effective Exchange Rate
Chile	1982	X	X	X	X	X	X	X	X	X
Costa Rica	1981	X	X	X	X	X	X	X		
Ecuador	1983	X	X	X	X	X	X	X	X	X
Egypt	1985	X	X	X	X	X	X	X	X	X
El Salvador (I)	1982	X	X	X	X	X	X	X	X	X
El Salvador (II)	1989	X	X	X	X	X			X	X
Ethiopia	1992	X	X	X					X	X
Gambia, The	1986	X	X	X	X	X	X	X	X	X
Guatemala	1985	X	X	X	X	X	X	X	X	X
Guinea	1986						X	X	X	
Guinea-Bissau	1983						X	X	X	
Guyana	1990	X	X							
Honduras	1990	X	X	X	X	X			X	X
Jamaica (I)	1983	X	X	X	X	X	X	X	X	X
Jamaica (II)	1989	X	X	X	X	X			X	X
Jordan	1988	X	X	X	X	X			X	X
Kenya	1993	X	X	X					X	X
Madagascar	1982	X	X	X	X	X	X	X	X	X
Maldives	1987	X	X		X	X			X	
Mauritius	1994								X	X
Pakistan	1982	X	X	X	X	X	X	X	X	
Paraguay	1982	X	X	X	X	X	X	X	X	X
Tanzania	1993	X	X	X					X	X
Trinidad	1993	X	X	X					X	X
Tunisia	1986	X	X	X	X	X	X	X	X	X
Uganda	1981	X	X		X	X	X	X		
Venezuela	1989	X	X	X	X	X			X	X
Yemen	1983	X	X				X	X	X	
Zambia	1985	X	X	X	X	X	X	X	X	X
Total observations		26	26	22	20	20	17	17	26	21

We managed, however, to compare countries exiting from a peg with two control groups of countries: (1) those that continued to peg without

exiting, and (2) other developing countries in the World Bank data base, aside from our exit cases.

Continuing peggers are countries that had lasting pegged-exchange-rate regimes between 1977 and 1996 (we accepted countries that showed

TABLE A2
EXIT CASES IN THE SAMPLE

Country	From	To	Peg	Month of Exit	12-Month Devaluation	
					Before Exit	After Exit
Chile	A	C	U.S. dollar	June 1982	0.00	92.56
Costa Rica	A	D	U.S. dollar	January 1981	0.00	319.60
Ecuador	A'	C	U.S. dollar	March 1983	32.60	81.70
Egypt	A	C	U.S. dollar	January 1985	0.00	62.33
El Salvador I	A	C	U.S. dollar	August 1982	0.00	9.20
El Salvador II	A	C	U.S. dollar	January 1989	0.00	21.00
Ethiopia	A	C	U.S. dollar	October 1992	0.00	71.00
The Gambia	A	C	Pound sterling	January 1986	-17.96	39.12
Guatemala	A	C	U.S. dollar	December 1984	7.00	94.39
Guinea	A	C	SDR	January 1986	-9.38	1621.70
Guinea-Bissau	A	C	SDR	December 1983	1.45	190.67
Guyana	A'	C	U.S. dollar	January 1991	99.59	85.65
Honduras	A	C	U.S. dollar	March 1990	0.00	165.00
Jamaica I	A	C	U.S. dollar	January 1983	0.00	76.81
Jamaica II	A	C	U.S. dollar	May 1989	0.11	26.62
Jordan	A	D	SDR	October 1988	10.03	62.63
Kenya	B'	D	Composite	March 1993	25.79	84.40
Madagascar	A	C	French franc	June 1982	20.02	24.25
Maldives	B	D	Composite	March 1987	0.85	25.47
Mauritius	B	C	Composite	August 1994	-2.74	1.28
Pakistan	A	C	U.S. dollar	January 1982	0.00	29.90
Paraguay	A	D	U.S. dollar	January 1982	0.00	46.47
Tanzania	B	C	Composite	June 1993	21.64	39.09
Trinidad and Tobago	A	C	U.S. dollar	April 1993	0.00	37.70
Tunisia	B	C	Composite	August 1986	-2.88	10.12
Uganda	A'	C	SDR	June 1981	9.65	973.30
Venezuela	A'	C	Composite	March 1989	8.12	161.56
Yemen Arab Republic	A	C	U.S. dollar	November 1983	0.00	25.81
Zambia	B	D	Composite	October 1985	11.86	199.77

NOTE: A = currency peg, B = basket peg, C = managed exchange rate, D = independent float. Primes denote peg with occasional devaluations.

SOURCES: Frankel and Rose, "Currency Crashes in Emerging Markets," 1996a; IMF, *International Financial Statistics* and data from the Effective Exchange Rate Facility.

occasional adjustments of the level of the peg). By examining the IMF's sources described above, we identified fifty-one such countries (of which thirty-six were in the Frankel-Rose [1996a] database). We included information for the period from 1977 to 1995 for five of the variables examined: output growth, inflation, real interest rate, growth in export value, and growth in import value. For the remaining variables, we included information only for the period from 1977 to 1992.

Non-exits correspond to the data available in the Frankel-Rose (1996a) database for the 1977–92 period, excluding the exit cases in the above sample and adding data for 1993–95 for five of the variables under examination: output growth, inflation, real interest rate, growth in export value, and growth in import value.

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