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Monetary Policy and Exchange Rates: Guiding Principles for a Sustainable Regime

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During the past three decades, experiments with alternative exchange rate regimes have not been in short supply in Latin America. Mexico typifies this "search for an optimal regime." Since the beginning of its 1987 International Monetary Fund program, Mexico has moved from a peg, to a crawling peg, to a widening band and, after the tequila crisis of 1994, to a flexible exchange rate system. Brazil is another good example. In the 1990s, the country has tried a peg, a crawling band and, in January 1999, moved to a flexible exchange rate system. Both Brazil and Mexico complemented their move toward increased exchange rate flexibility with inflation targeting. Moreover, in the context of one of the deepest financial crises in recent Latin American history, in early 2002 Argentina abandoned its 10-year-old currency board and moved to a managed floating regime.[1]

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1. In 2002, two other Latin American countries, Venezuela and Uruguay, moved toward increased flexibility in their exchange rate systems; the latter did so following the contagion effects in its financial system from the crisis in Argentina.

This is not to say that all countries have moved in the direction of increased flexibility. Indeed, after trying a variety of pegs, multiple exchange rate systems, and the like during the 1980s and 1990s, Ecuador took the ultimate step in abandoning flexibility: in 2000, the country adopted the US dollar as its medium of exchange. And in 2001, El Salvador joined another Central American country, Panama, and dollarized its economy.

Table 6.1 illustrates the evolution of exchange rate systems in a number of Latin American countries. As the table shows, the region has moved through the entire spectrum of exchange rate regimes from 1970 to 2002. It is noteworthy, however, that while in the 1970s and the 1980s most countries followed a form of peg, the number of countries that are reported by the IMF to be "floaters" has increased significantly during the early 2000s.[2]

Throughout the region, most cases of drastic changes in exchange rate regimes have been accompanied by severe exchange rate crises and (with a few exceptions) severe banking crises.[3] Two interesting questions arise from this fact. After a major devaluation of an exchange rate that had become unsustainable, what led to changing the regime? How was the new regime chosen?

Two main factors appear to explain the choice of a new regime. The first is related to the evolving constraints imposed on Latin American policymakers by international capital markets. The second is the disillusionment with the effectiveness of the existing regime in achieving domestic objectives—in the late 1980s and early 1990s, disillusionment with the performance of central banks in achieving price stability, and in the late 1990s, disillusionment with the capacity of Latin American governments to prevent speculative attacks on their currencies.

The well-known proposition of the Impossible Trinity (i.e., the impossibility of simultaneously fixing the exchange rate, setting domestic interest rates, and having perfect capital mobility) can help to explain the

2. Recent empirical evidence shows that there are significant differences between the exchange rate regime officially reported by countries and the actual system that dominates transactions in foreign exchange (see Calvo and Reinhart 2002; Reinhart and Rogoff 2002). E.g., during the 1980s, in a number of countries classified as having pegs, a large fraction of foreign exchange transactions took place in the parallel exchange rate market. Likewise, in the 1990s, a number of countries that were classified by the International Monetary Fund as having flexible exchange rate regimes displayed significant "smoothing" of exchange rate fluctuations either through central bank intervention in the foreign exchange markets or through the use of interest rate policy. However, though Latin American countries may be "less clean" floaters than industrial economies, in my view the recent movement away from a precommitted exchange rate (or band) has helped countries in the region to avoid speculators' "safe bets" against their currencies.

3. The most important exceptions are Colombia and Chile. Both countries moved from exchange rate bands to flexible exchange rate systems in 1998 without either a currency or a banking crisis. In addition, El Salvador's dollarization in 2000 did not follow an exchange rate crisis. Brazil's devaluation in 1999 was not accompanied by a banking crisis.

Table 6.1 Evolution of exchange rate systems in selected Latin American countries, 1970-2002

	1970-74	1975-79	1980-84	1985-89	1990-94	1995-99	2000-02
Argentina	Peg	Crawling peg	Adjustable peg	Managed float	Peg; currency board	Currency board	Currency board; managed float
Bolivia	Peg	Peg	Peg	Managed float	Managed float	Managed float	Managed float
Brazil	Exchange rate indexed to inflation (real exchange rate targeting)	Exchange rate indexed to inflation (real exchange rate targeting)	Mini devaluations based on price differentials	Mini devaluations based on price differentials	Managed peg	Band; float	Float
Chile	Peg	Crawling peg; peg	Peg; crawling peg	Crawling peg	Crawling peg	Crawling band; float	Float
Colombia	Crawling peg	Crawling peg	Crawling peg	Crawling peg	Crawling peg; exchange rate band	Crawling band	Float
Ecuador	Dual exchange rate system	Dual exchange rate system	Multiple exchange rate markets	Multiple exchange rate markets	Dual exchange rate system	Dual exchange rate system	Dollarization
Mexico	Peg	Peg	Peg; managed peg	Managed peg	Crawling peg; float	Float	Float
Peru	Peg	Peg	Peg	Peg	Float	Float	Managed float
Venezuela	Peg	Peg	Peg	Multiple exchange rate markets	Managed peg	Peg; bands; crawling band	Crawling band; managed float

Note: System reported is the predominant one during the period considered.

Sources: IMF, *International Financial Statistics Exchange Arrangements and Exchange Restrictions* (various issues); Frieden and Stein (2001).

Table 6.2 "Typical" evolution of monetary policy in Latin America

Time frame	Domestically determined monetary policy	Fixed or managed exchange rates	"Freer" capital mobility
1970s debt crisis to mid-1980s	Yes	Yes	No
Late 1980s to mid-1990s	No, in most countries	Yes, in most countries[a]	Some (Brady Plan)
Late 1990s to early 2000s	Many as intermediate target	No	Yes, extensive use of private and public bond issuance in the international capital markets; elimination of restrictions to foreign direct investment, etc.
	No	Dollarization, and Argentina's currency board (abandoned in 2002)	

a. Peru is a notable exception. Departing from the "Latin American consensus" of the early 1990s, the authorities adopted a flexible exchange rate system in 1990. Bolivia adopted flexibility as early as 1985.

evolution of exchange rate regimes and their corresponding monetary policy frameworks (table 6.2).[4] Through the debt crisis of 1982 and up to the implementation of the Brady Plan in 1989-90, a number of countries had in place stringent and comprehensive capital controls on a variety of foreign flows. These included, for example, restrictions on foreign direct investment in domestic banking systems and other sectors of the economy, as well as strict limitations on the investment of domestic residents in foreign assets. A number of other controls on capital outflows during part of the 1980s also attempted to limit the sharp pressures on the exchange rate that developed in the context of inconsistent macroeconomic policies. During this period, fixed exchange rate regimes (or managed pegs) coexisted with domestically determined monetary policies.[5]

However, independent monetary policies—namely, the ability to set domestic interest rates without being restricted by the behavior of international interest rates—by no means implied independent central banks. Indeed, a typical feature of the 1970s and 1980s was the bad management of monetary policies that implied the monetization of fiscal deficits. Although monetary policies were not constrained by the international capital markets, they were slaves of the fiscal authorities. The well-known result was long and repetitive episodes of high inflation or hyperinflation and unsustainable exchange rate parities.

4. Of course, I am using this framework only as an analytical tool to organize stylized facts.

5. See Mathieson and Rojas-Suarez (1993) for a comprehensive discussion of issues related to the liberalization of capital accounts in developing countries.

The Brady Plan, aimed at ending the "paralysis" in Latin America that followed the 1982 debt crisis, imposed new constraints on the region. As part of the newly designed programs to revitalize the region's economies (starting with Mexico in 1989), structural reforms included financial market and capital account liberalization. With renewed access to international capital markets facilitated by the securitization of their external liabilities, many (but not all) countries decided to accept the restrictions of "freer" capital mobility.[6] This meant that a government could no longer have both an independent monetary policy and a fixed exchange rate system.

For many countries, the choice of exchange rate regime in the late 1980s and early 1990s was not difficult (it was even obvious to many). On the basis of the argument that monetary anchors had failed to achieve price stability, the exchange rate was perceived as the best (and only) anchor for inflation. The central idea was that lacking credibility on its own, a central bank could "borrow" the credibility of the currency to which it was pegging.[7] The popularity of exchange-rate-based stabilization programs during the 1980s and early 1990s (i.e., pegs, crawling pegs, and bands) followed.

Conquering inflation (the median inflation rate for the region declined from 32 percent in 1990 to 14 percent in 1994), however, did not prevent the eruption of exchange rate crises and the emergence of significant disturbances in domestic banking systems in the mid- and late 1990s.[8] The severe consequences of the so-called twin crises, in terms of fiscal costs and output losses, led to renewed disillusionment about the ability of policymakers to prevent speculative attacks on announced exchange rate regimes.

Once more, many countries had to rethink the right combination of policies. As the region had become increasingly dependent on portfolio capital inflows, countries discarded either reverting toward (for those who had eliminated them) or increasing (for those who had some in place) capital controls.[9] In the context of continuous developments in securitization tools and techniques, policymakers in Latin America made extensive use of "financial technology" in the international capital markets during the 1990s to actively manage the maturity and currency structure of their external liabilities. In this environment, there was a new

6. Notice that the two countries most cited in Latin America as representatives of the benefits and costs of capital controls are Chile and Colombia; these countries did not have a "Brady Plan."

7. Theoretical papers to support this argument abound. For a discussion on the dynamics of economic activity after the implementation of an exchange rate anchor, see Calvo and Vegh (1999). Central banks in many Latin American countries implemented the prescription; e.g., see Carstens and Werner (1999).

8. During this period, the four larger economies in Latin America experienced a severe exchange rate and/or banking crisis: Mexico, 1994-95; Argentina, 1995; Venezuela, 1994; and Brazil, 1999. For a comprehensive analysis of banking crises in Latin America, see Rojas-Suarez and Weisbrod (1995) and Hausmann and Rojas-Suarez (1996).

9. Even Chile began gradually to dismantle capital controls.

dilemma: How could a country continue advancing with a credible anti-inflationary policy while avoiding speculative attacks? Not much was left in the policymakers' toolbox; the monetary-based anchor had failed in the early and mid-1980s, and the exchange rate anchor proved unsustainable in the mid- and late 1990s.

Facing this realization, this time around, countries did not follow a common prescription. Instead, two polar views emerged in the region. The first view encompassed those who believe that the answer rests in directly targeting the final objective (inflation) while letting the exchange rate fluctuate: the so-called inflation targeters.[10] The second view was held by those who believe that the best way to avoid inflation and speculative attacks is to get rid of the domestic currency altogether (i.e., dollarization). At the time of this writing, the inflation targeters included Brazil and Mexico, the two largest economies in the region, as well as most medium-sized economies. The dollarizers included smaller countries (Ecuador, Panama, and El Salvador).

From 1990 to 2001, there was also a third group, whose only member was Argentina. It chose a currency board, implying that the solution was to get rid of monetary policy but preserve the circulation of the domestic currency together with US dollars. Regardless of the merits of such a regime, the dramatic collapse of Argentina's currency board in early 2002 in the midst of a severe economic, political, and financial crisis (which might rank as the deepest and most costly in Latin American history) essentially has eliminated this regime from the viable alternatives for the region.

But can either of the remaining current regimes be sustainable? Has not the experience of Ecuador since 2000 demonstrated that dollarization is no panacea? Did not the sharp deterioration of Brazil's international creditworthiness in mid-2002 show that increased exchange rate flexibility cannot fully insulate a country from external shocks? Because external and domestic conditions evolve continuously, an exchange rate regime that works in one country at a certain time may prove inappropriate in another country or at a different time.

The central issue is not whether there is an *optimal monetary/exchange rate regime* for all countries in Latin America *at all times*, because there is none.[11] Instead, the relevant question is to identify the regime that is most appropriate at a certain time, given the constraints faced by the country. Identifying constraints on the sustainability of an exchange rate regime is thus the key. Implementing policies to eliminate these constraints would

10. By construction of the framework, inflation targeting along with increased flexibility of exchange rates implies that the central bank is allowed to intervene to control drastic changes in the exchange rate if those changes are deemed to conflict with the targeted inflation rate (or range).

11. This, of course, means that I agree with Frankel's (1999, 1) statement that "no single currency regime is right for all countries or at all times."

increase a country's set of feasible regimes and would prevent the sudden and disruptive forced abandonment of the chosen regime.

The rest of this chapter deals with these issues and provides policy recommendations,[12] in three steps. First, it identifies how the constraints imposed by international capital markets set limits on the effectiveness of alternative monetary and exchange rate policy regimes in Latin America. Second, it identifies the necessary preconditions to make alternative regimes sustainable. Third, policy recommendations are offered, on the basis of whether countries in the region meet the requirements for regime sustainability.

Understanding the External Constraints Facing Latin America in Conducting Monetary Policy

As was stated above, the process of international securitization of government (and private, but to a much more limited extent) debt that started in the late 1980s with the emergence of Brady Bonds has had important consequences for the choices of monetary and exchange rate regimes in Latin America. It is important to note that the process of international "securitization" is explicitly being emphasized here, rather than the more general process of "financial integration." Although reference to the latter is often used to describe the depth of countries' participation in a wide variety of cross-border flows as well as "structural" processes (e.g., the role of foreign banks in the region), increased securitization refers to countries' growing usage of the international bond market rather than more traditional loans from international banks for their financing needs.

Two basic differences between international bank loans and international bonds are key to understanding the influence of the process of international securitization on the conduct of monetary policy. First, in contrast to unsecuritized bank lending, there is a well-developed secondary market for international bonds. Second, in contrast to internationally active banks, there is no syndication or other concerted arrangement among bond holders to deal with collective action problems in case of sovereign default.[13] The first feature of the international bond market implies that

12. A comprehensive analysis of the pros and cons of alternative exchange rate regimes in emerging markets is contained in Goldstein (2002).

13. However, recent default events in some Latin American countries, such as Ecuador and Argentina, have led private creditors in the international capital markets to endorse the general adoption of collective action clauses (CACs) in bond contracts. By imposing a majority rule on bond creditors, CACs would solve the collective action problem that arises when a government decides to default on its debt payments. This problem translates into holdouts by a minority of creditors that can delay debt resolution and prevent sovereign debtors from regaining access to international capital markets. See European, Japanese, Latin American, and US Shadow Financial Regulatory Committees, *Joint Statement: Reforms in the Process of Restructuring International Sovereign Debt*, October 7, 2002; www.claaf.org.

any type of news affecting investors' perceptions of a country's capacity or willingness to service its debt is reflected immediately in the spread between the yield from bonds issued by that country and the yield from US Treasury bonds of corresponding maturity. Because both bonds are denominated in US dollars, the spread is free of exchange rate risk and is considered a typical measure of the "country" or "default" risk. The second feature implies that there could be sharp increases in the spread following deteriorated perceptions of a country's ability to service its debt obligations because collective action problems may impose an additional significant cost that translates into higher spreads.

When investors' perceptions of risk deteriorates significantly for a given country, the spread increases sharply, raising the country's external financing costs and severely limiting the availability of external sources of finance. Because an increase in spreads constitutes a market signal of the increase in the risk of assets issued by a government, higher country risk quickly translates into higher domestic rates. Because the entire financial system is dominated by short-term instruments, domestic interest rates at all existing maturities are affected. This transmission mechanism is reinforced by the very limited supply of domestic sources of finance in Latin America, which cannot offset severely curtailed external finance.[14] Therefore, in countries with "freer" capital mobility, it is likely that domestic interest rates will be strongly influenced by the behavior of spreads on external bonds, namely, by international perceptions of country creditworthiness. Some evidence of this relationship is given below.

The discussion above serves to illustrate how "default" risk can interfere in the conduct of monetary policy by affecting the behavior of domestic interest rates. My argument is that country or default risk matters—quite a bit. However, not everyone agrees that default risk is important. Indeed, one can argue that defenders of fixed and of flexible exchange rates can be divided according to the relative importance they attribute to default risk relative to exchange rate risk in determining domestic interest rates.[15]

14. At a given point in time, a given stock of debt (both domestic and external) becomes riskier if the capacity of the country to roll over maturing debt decreases sharply. If, following a sudden adverse shock, increased perceptions of default lead to an increase in spreads and a severe reduction in market access, the country's overall capacity to service its existing obligations decreases. Domestic interest rates increase as domestic holders of the country's liabilities perceive the deterioration in its capacity to meet payments. Notice that this transmission mechanism of default risk into the domestic interest rates is valid even if the economy follows a flexible exchange rate system. The reason is that even a large depreciation of the exchange rate cannot generate external resources quickly enough to offset a sharp decrease in the availability of foreign sources of finance. This problem is, of course, exacerbated the larger the stock of debt and the shorter the maturity structure.

15. In analyzing why flexible exchange rates have not been able to insulate emerging markets' policy from changes in international interest rates, Frankel, Schmukler, and Serven (2000) recognize that a proper understanding of this empirical finding needs to focus on the separate impact that changes in international rates have on country risk and exchange rate risk.

The proponents of the extreme case of fixity, the dollarizers, argue that default and exchange rate risks are highly correlated. From their perspective, an increase in the risk of large exchange rate depreciations leads to higher default risk. That is, exchange rate risk is the key variable keeping domestic interest rates high. Their argument is based on the so-called structural currency mismatch between the assets and liabilities of the private sector in Latin America (Hausmann 1999). Thus, due to the long history of exchange rate instability in the region, especially sharp devaluations, domestic investors are willing to lend long term only if the contracts are denominated in US dollars.[16] Because many long-term projects are directed to the domestic market, where transactions take place in local currency, the structural currency mismatch ensues. The existence of this mismatch causes extensive corporate bankruptcies if the exchange rate depreciates significantly. As investors become aware of this effect, their perceptions of default risk increase.

While agreeing that default risk and exchange rate risk are correlated, I believe that the causality runs in the opposite direction from that suggested by the defenders of dollarization. The problem with the dollarizers' argument is that it ignores the initial source of the problem, which rests on the presence of domestic policy inconsistencies. In a number of recent emerging-market crises, large stocks of short-term debt (either domestic or external), sometimes inherited from previous administrations and sometimes fueled by large government deficits, raised doubts about the capacity of these countries to service their debts.[17] As perceptions of default deteriorated, countries found it more difficult to roll over maturing external debt.[18] Large net external amortization payments followed, calling into question the sustainability of the exchange rate and thus deteriorating perceptions of exchange rate risk.

Dollarization does not prevent the deterioration of country risk arising from these policy inconsistencies, because dollarization per se cannot gen-

16. Fears of a sudden sharp depreciation of the exchange rate are also often cited to explain the lack of development of capital markets denominated in the domestic currency. As expectations of large changes in the exchange rate emerge, liquidity in local-currency securities dries up quickly.

17. Notice that a large inherited stock of debt is a problem in itself, even if the government is running fiscal surpluses. The reason is that a sudden adverse shock, by impairing the country's capacity to service its obligations, may require further fiscal adjustments to avoid a deterioration in creditworthiness. If the needed fiscal adjustment is significantly large, the market may believe that it is unlikely that the country will make those adjustments. The Brazilian experience in mid-2002 is a case in point.

18. The problem of overindebtedness cannot be solely attributed to the government. In a number of cases, the problem originated in private-sector debt. However, the experience also shows that, in Latin America, private debt can be considered a contingent liability of the government because, in cases of severe difficulties by the private sector, governments have often "absorbed" private-sector liabilities into the public-sector accounts.

erate additional resources to restore confidence in a country's capacity to service its debt. Moreover, a "dollarized" economy cannot print dollars. In contrast, in some crisis episodes, such as Mexico 1994 and South Korea 1997, depreciating the exchange rate was part of the solution as improved competitiveness allowed for an increase in exports and consequently in needed resources. While exchange rate depreciation was essential, however, it was certainly not enough (see footnote 14). A crucial component of crisis resolution was the large financial packages made available to these countries by multilateral organizations. The immediate availability of liquidity provided assurances to external investors that debt obligations could be met on a timely basis. Perceptions of default were, therefore, contained.

To illustrate the role of default risk, figure 6.1 shows an (albeit casual) indicator of the importance of default risk on the behavior of domestic real interest rates in Argentina, Brazil, and Mexico.[19] The figure suggests a key feature of the relationship between these two variables, namely that in all three countries, domestic real interest rates and yields on sovereign external debt tend to converge.[20] While the domestic real interest rate "jumps" at times of large expected changes in the real exchange rate (mostly led by expected changes in the nominal exchange rate), these deviations seem to be transitory. In other words, drastic changes in the perception of exchange rate risk do affect domestic real interest rates and, at times, may become the dominant explanatory variable, but these effects appear to be temporary. In contrast, perceptions of default risk appear to maintain a more stable and permanent relationship with domestic real interest rates. The three countries in the sample clearly exemplify this observation. Of course, these observations are only illustrative because they are based on casual observations derived from a graphic relationship. Definite conclusions would need more strict statistical analysis.

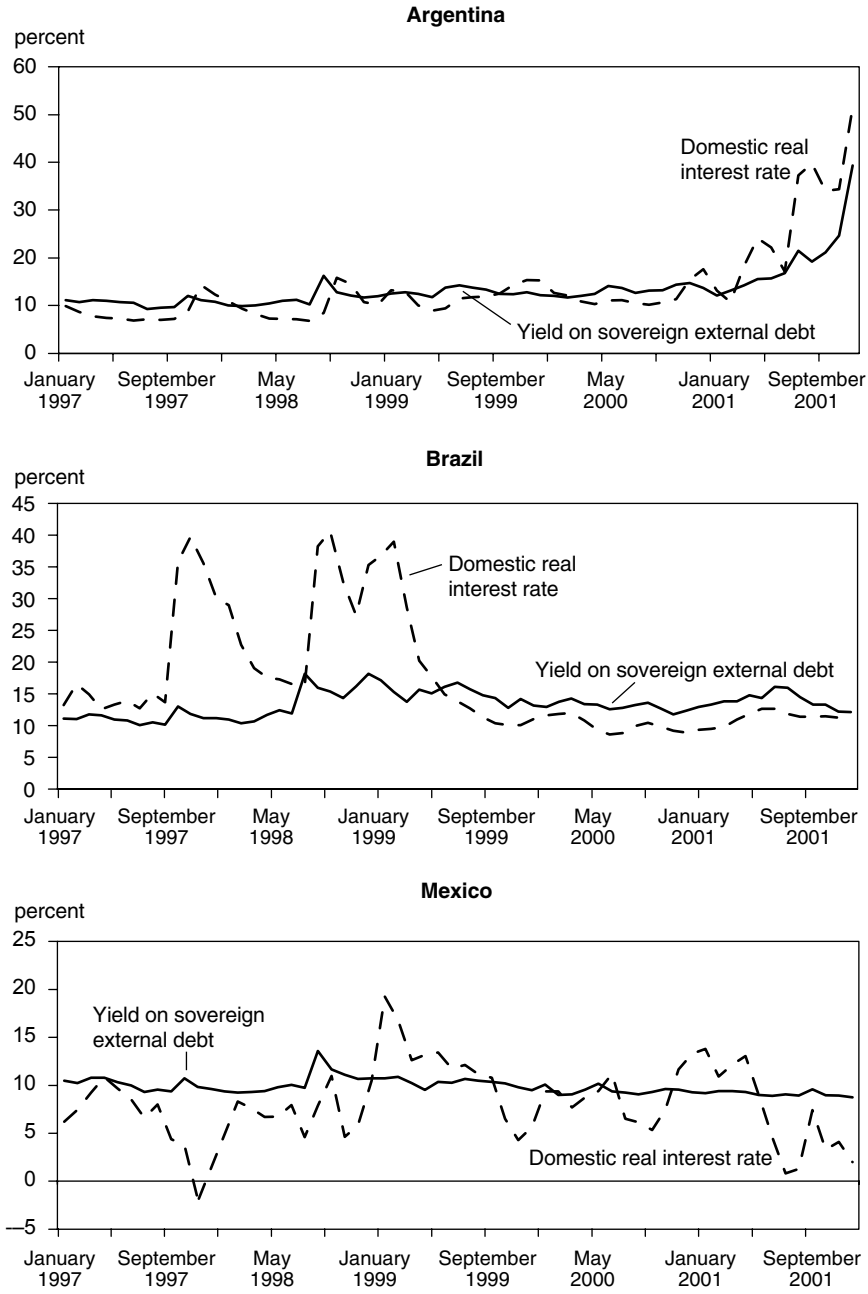
Yet two important lessons can be derived from the casual relationships depicted in figure 6.1. The first is that the importance of country risk on the permanent behavior of domestic real interest rates does not seem to depend on the exchange rate regime. The convergence of the two variables is apparent in Argentina, where a fixed exchange rate system (currency board) was in place during the period considered, as well as during the flexible exchange rate periods in both Mexico (throughout the entire period) and Brazil (after early 1999).[21] As was discussed above, temporary deviations occurred in periods of high pressure on the exchange rate

19. Real interest rates are defined on an ex ante basis; i.e., nominal interest rates minus expected inflation. One-period-ahead realized inflation was taken as a proxy for current-period expected inflation.

20. Strictly speaking, the interest arbitrage condition implies that: domestic real interest rate = yield on sovereign debt + expected rate of change of the real exchange rate.

21. Favero and Giavazzi (2002) formally demonstrate the effect of spreads on external bonds on domestic interest rates in Brazil.

Figure 6.1 Domestic real interest rates and sovereign yield for selected Latin American countries, 1997-2001



Source: Bloomberg Professional Services.

(Argentina in late 2001; Mexico after the Brazil crises; and Brazil following the East Asian crisis in late 1997, the Russian crisis in mid-1998, and Brazil's own change in exchange rate regime in early 1999).[22]

The second lesson is that, on the basis of Argentina's experience, a currency board does not bring about the expected convergence between domestic interest rates and US rates. Real (and nominal) interest rates in Argentina remained well above those in the United States throughout the entire period under consideration.

In a nutshell, therefore, the effectiveness of interest rate policy in Latin America is strongly influenced by international perceptions of country risk. The main reason is that, in contrast to industrial countries, liberalizing the capital account has not meant continuous access to international capital markets. Sudden and frequent stops of capital inflows are a well-known feature of the region.

Latin American Features That Further Constrain the Choice of Exchange Rate Regimes/ Monetary Policy

Having identified investors' perceptions of default risk as a central external constraint on the behavior of interest rates, it is important to ask what additional features of the Latin American economies need to be taken into account when considering alternative monetary and exchange rate regimes.[23] Two features deserve particular consideration. The first is that many countries in the region are subject to large terms of trade shocks. The second is that the region is not free of "stock problems," as manifested in either actual or contingent liabilities of the public sector. Let us look at each of these features in turn.

In some countries, large and long-lasting terms of trade shocks reflect countries' dependence on commodity exports. To the extent that these shocks bring about a sudden reduction in the net transfer of real resources from abroad, the adjustment to the shock requires an adjustment in relative prices, implying a reduction in the price of nontradable goods relative to the price of tradable goods; namely, a depreciation of the real exchange rate. This adjustment can take place via depreciation of the nominal exchange rate (in a more flexible exchange rate system) or a slowdown or recession of economic activity (in a system with fixed or quasi-fixed ex-

22. The case of Mexico is clearly interesting and deserves further analysis. In spite of the significant volatility of real interest rates, the variable seems to fluctuate "around" the yield on sovereign debt.

23. This chapter focuses only on unilateral decisions of countries to adopt alternative exchange rate systems. Currency unions, which imply policy coordination among a group of countries, are not discussed here.

change rates or one that is dollarized). Which adjustment is more costly? In theory, there is no single answer.[24] However, on the basis of the analysis developed in the previous section, the most costly response is the one that, following the shock, causes international perceptions of a country's capacity to repay its obligations to deteriorate.

Consider first the adjustment to a long-lasting adverse terms of trade shock in an economy under a fixed exchange rate or dollarized system. If the exchange rate cannot adjust, the adjustment will take place by contractions in output and employment and/or reductions in real wages. Consistent with my view that country risk is the most important factor determining investors' attitudes toward emerging markets, long and deep recessions do nothing but exacerbate the perception of a country's reduced capacity to service its debt.

By contrast, in a more flexible exchange rate system, the needed adjustment following the shock can take place through nominal depreciation of the exchange rate. This could at least partly increase competitiveness, mitigating the negative impact on output and employment. This is the well-known "shock-absorber" advantage of flexible exchange rates.[25]

The more open and trade diversified an economy, both in products and markets, the greater its ability to choose among alternative exchange rate regimes. This is because the greater the degree of trade diversification (especially on exports), the less vulnerable will the economy be to terms of trade shocks. In addition, the more open the economy, the smaller the needed depreciation of the real exchange rate to compensate for the shock.

To illustrate this further, consider an economy that has a flexible exchange regime and suffers an external shock to trade (either through a decrease in the demand for its exports or an adverse change in relative prices). The needed nominal exchange rate depreciation to correct for the shock will be lower the more open and trade diversified the economy.[26] Likewise, if the economy has a fixed exchange rate, the impact of a shock

24. Some researchers have argued that, due to wealth effects, a sharp depreciation of the exchange rate is recessionary in emerging markets (e.g., see Edwards 1986). From that perspective, a severe adverse shock will be followed by a recession in both a fixed and a flexible exchange rate regime, reducing the differences in adjustment costs between the two regimes. In addition, some researchers have argued against large exchange rate depreciations in open economies with weak independent central banks. The argument is that large exchange rate depreciations may result in an important pass-through into the domestic price level. E.g., if pressures to increase nominal wages develop (to avoid a sharp decease in real wages), the government may force the central bank to increase the rate of growth of the money supply. A cycle of inflation-devaluation-inflation may develop, rendering the initial exchange rate depreciation inefficient and extremely costly.

25. For further discussion of this issue, see Sachs and Larraín (1999).

26. With a larger and more diversified set of exports and imports, the net revenue elasticity of an exchange rate depreciation would tend to be larger.

to the terms of trade will be lower the less dependent the economy is on a small set of export products (especially commodities). Once again, this implies that the necessary adjustment in terms of output and employment would tend to be lower the more trade diversified the economy. Trade openness and diversification, therefore, may help countries alleviate the constraints that limit their choice of exchange rate regime.

The second feature of Latin America that affects countries' choice of exchange rate regimes is what I call "stock problems." In many countries, a large stock of domestic debt and/or a weak banking system (implying contingent liabilities to the government) impose important constraints on the choice of exchange rate regime.[27] Under any kind of managed peg, speculators would perceive a "one-sided bet" when pressures on the exchange rate develop. The bet is that governments will eventually choose to abandon the announced parity (be it fixed or managed) rather than defend it by keeping interest rates very high for a prolonged period. This is because the defense would aggravate existing fragility in the banking sector or increase the fiscal cost of servicing the existing large stock of domestic debt (or both).[28] As a result, speculators exacerbate the attack on the exchange rate when governments attempt to defend the parity.

Will stock problems be less severe if the economy is fully dollarized? This is unlikely. Although no bet against the exchange rate is possible, unexpected shocks that reduce a government's capacity to service its debt and/or deal with a banking problem (e.g., a sharp, adverse, long-lasting terms of trade shock leading to a reduction in output growth) will increase investors' perceptions of default even more than in a nondollarized economy as investors assume that the government lacks sufficient tools (i.e., changes in the exchange rate) to generate the needed additional resources to deal with the shock.

Among stock problems, the issue of liability dollarization deserves special attention. To some analysts, liability dollarization lies at the origin of the problem of currency mismatch discussed above.[29] A number of analysts have claimed that, in highly (but not fully) dollarized economies, the

27. Mexico (in both the 1982 and 1994 crises) is a good example of the restrictions imposed by a weak banking system on the conduct of monetary policy.

28. This is also true if most of the debt is external. Increasing the interest rate to defend the parity would lead to reduced economic activity, aggravating the risk of default. Speculators—aware of the dilemma—exacerbate the attack on the exchange rate, betting that the country would prefer to abandon the parity than be forced to default.

29. Liability dollarization refers to the public's preference to keep a large proportion of its deposits (a bank's liability) in dollars. To avoid a currency mismatch between assets and liabilities in their balance sheets, banks receiving deposits in dollars also lend in dollars, often to borrowers with revenues denominated in the domestic currency. Some analysts argue that though the currency mismatch on banks' balance sheets can be prevented, the overall economy's currency mismatch is much more difficult to prevent. As I explain below, there are certain policy tools available to deal with this problem.

currency mismatch between bank loans (dollars) and borrowers' sources of revenues (domestic currency) calls for avoiding depreciation of the exchange rate because it would aggravate the capacity of borrowers to service their dollar-denominated obligations. Although it is true that depreciation will exacerbate the mismatch, it is not clear that the nondevaluation strategy can do something to improve borrowers' capacity to service their obligations.

Consider a situation where an adverse shock calls for a depreciation of the real exchange rate. Assume that such an economy chooses not to depreciate the exchange rate, but instead goes the recession-deflation route. Is the economy better off? Not likely! Recession will decrease even further the capacity of borrowers to service their debt. The situation will get even worse if the country is facing large external obligations as recession leads foreign investors to also perceive a deterioration of the country's capacity to service its external obligations. As was explained in the previous section, this will keep domestic interest rates high, further aggravating the recession.

Does this story sound familiar? Yes—it is the story of Argentina, which, after a long period (3 consecutive years) of recession, in late 2001 found itself unable to generate additional sources of funding and defaulted on its debt obligations. Shortly thereafter, in January 2002, it officially abandoned the convertibility law it had adopted 10 years earlier.

My view is that many analysts have not focused on the true problem generated by the presence of liability dollarization. Having a fixed exchange rate regime while maintaining policy inconsistencies (e.g., large and unsustainable external debts) is equivalent to the government extending an underpriced guarantee that induces banks to take excessive risks when lending to the nontradable sector. The reason is that the guarantee (i.e., the promise of a fixed exchange rate) discourages banks from internalizing the risks associated with lending in dollars to the nontradable sector. The risk is that were the government to devalue (in spite of its promise not to), the exchange rate risk would be transformed into a credit risk in the nontradable sector.

Because the banking system will attribute the consequent balance sheet problem as generated by unfulfilled government promises, it will de facto exercise the guarantee, demanding the use of fiscal resources to solve the banking difficulties. That is, the combination of a fixed exchange rate and policy inconsistencies in economies facing the liability dollarization problem implies the accumulation of fiscal contingencies that will materialize if the government is forced to abandon the promised parity. At the time of this writing, the Argentinean government was facing precisely this problem.

For semidollarized economies that are willing to maintain the circulation of both dollars and domestic currency, the right issue is how to induce banks to correctly price the ex ante risk of lending to the private sector and avoid offering free guarantees. Although liability dollarization can certainly become a problem and place additional constraints on poli-

cymakers, this does not need to occur if banks correctly internalize the risk of their exposure to the nontradable sector.

Can full dollarization help in the situation described above? Dollarization ex post can help to prevent a bank run but cannot solve the fundamental problem of excessive indebtedness because it cannot generate the additional resources needed to restore creditworthiness.[30] In the last section, I offer a proposal to deal with the problem of liability dollarization that focuses on bank regulation and other alternatives.

Pairing Constraints and Countries: What Works Best for Latin America?

The discussion above has identified important constraints limiting a country's capacity to choose among alternative monetary and exchange rate systems. In particular, the analysis suggests that there are strong preconditions for any form of managed peg to work on a sustainable basis. The most important are a strong banking system, the absence of an actual or potential government debt problem, and limited dependence on commodity exports.

The first part of this section provides a preliminary assessment of whether a selected group of countries in the region satisfies conditions for engaging in managed pegs, or even dollarization. The second part considers alternative monetary systems involving more flexibility in exchange rate management for those countries that do not satisfy the necessary conditions for a peg (in any of its forms). The obvious candidate, and an increasingly popular one these days, is the combination of floating or managed floating exchange rates with inflation targeting.

Do Countries Satisfy Conditions for Managed Pegs or Dollarization?

To provide a tentative answer to this question, I divide the countries in two categories: the large and medium-sized economies in South America plus Mexico, and the small economies in Central America and the Caribbean. Empirical evidence for the large and medium-sized economies is provided in table 6.3 and figures 6.2, 6.3, and 6.4. Table 6.3 and figures 6.2

30. One can draw a parallel between the prescription of "dollarization" and "full deposit insurance." By now, it is well known that badly designed deposit insurance "invites" rather than "avoids" a banking crisis. However, when a systemic banking crisis hits, most countries choose to offer a full guarantee to minimize bank runs. Similarly, liability dollarization becomes a problem when it is associated with a free guarantee (the promise of a fixed exchange rate system) offered by the government. This guarantee, however, is risky because the probability of a devaluation remains. As in the case of deposit insurance, when the probability of a systemic crisis increases significantly, full dollarization is proposed as a way to avoid bank panics.

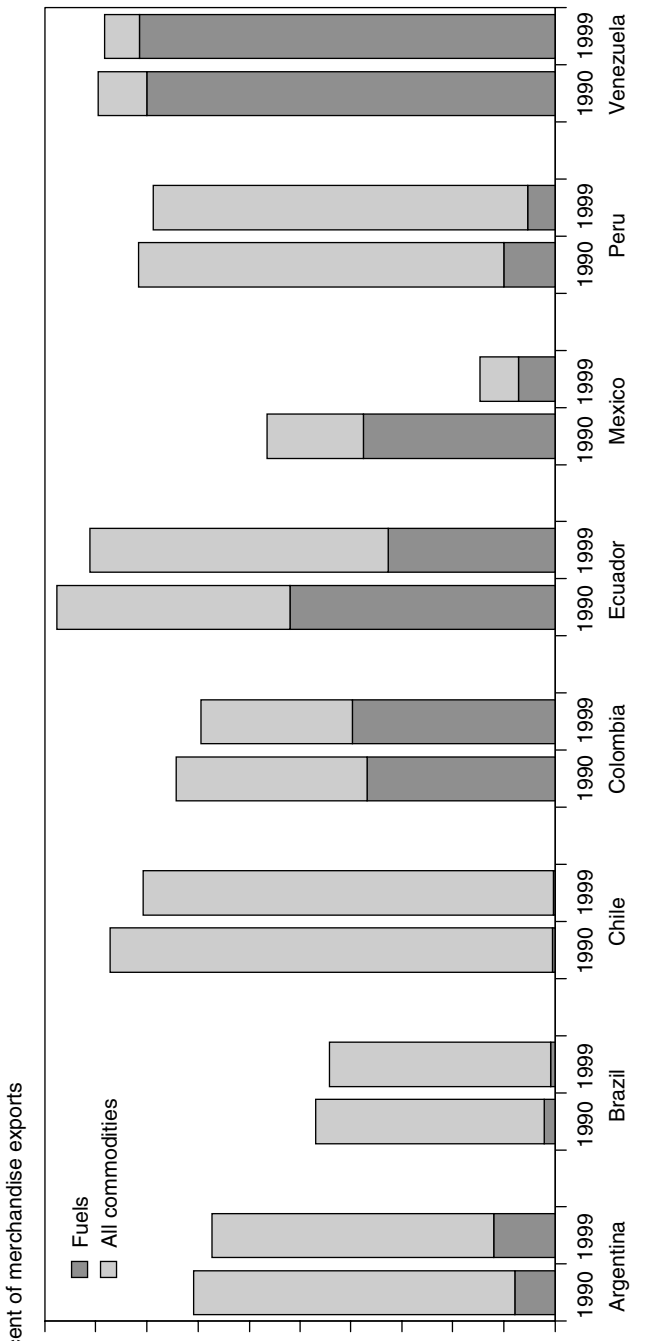
Table 6.3 Direction of trade of Latin American countries, 2000 (as percent of exports of country listed in left column)

	Partner country															
Exporting country	Argentina	Bolivia	Brazil	Chile	Co-lombia	Ecuador	Mexico	Paraguay	Peru	Uruguay	Vene-zuela	Central America	Carib-bean countries	United States	Canada	Rest of the world
Argentina	—	0.79	26.30	6.38	0.37	0.42	1.08	1.89	0.48	2.64	0.50	0.25	0.11	15.67	0.80	42.32
Bolivia	13.31	—	19.54	7.54	8.26	3.53	1.54	0.21	5.58	0.13	0.12	0.08	0.02	16.36	0.73	23.04
Brazil	11.66	0.44	—	1.96	0.82	0.13	2.15	1.03	0.50	1.22	1.88	0.35	0.39	23.46	1.49	52.51
Chile	10.06	0.56	6.55	—	1.27	1.16	4.07	0.33	1.96	0.35	1.33	0.49	0.15	18.38	2.11	51.23
Colombia	0.82	0.99	3.20	1.81	—	3.16	3.15	0.02	2.09	0.09	9.10	2.05	1.68	42.80	1.79	27.25
Ecuador	2.23	1.10	1.72	4.17	8.32	—	2.03	0.05	2.42	0.12	3.73	3.54	0.32	34.87	1.62	33.76
Mexico	0.16	0.01	0.70	0.39	0.21	0.05	—	0.00	0.11	0.06	0.27	0.60	0.25	80.36	2.17	14.65
Paraguay	24.37	0.14	30.44	2.73	0.13	0.11	0.29	—	0.29	2.50	0.27	0.01	0.01	12.86	0.13	25.71
Peru	1.81	1.01	3.87	5.59	3.52	1.58	2.56	0.09	—	0.33	3.35	1.59	0.46	28.83	2.20	43.20
Uruguay	21.64	0.06	20.77	2.00	0.25	0.22	2.19	1.69	0.36	—	2.87	0.26	0.35	9.22	1.45	36.66
Venezuela	0.56	0.01	3.90	0.86	3.90	0.69	1.86	0.02	1.36	0.14	—	1.70	0.00	46.05	1.41	37.54

— = not relevant

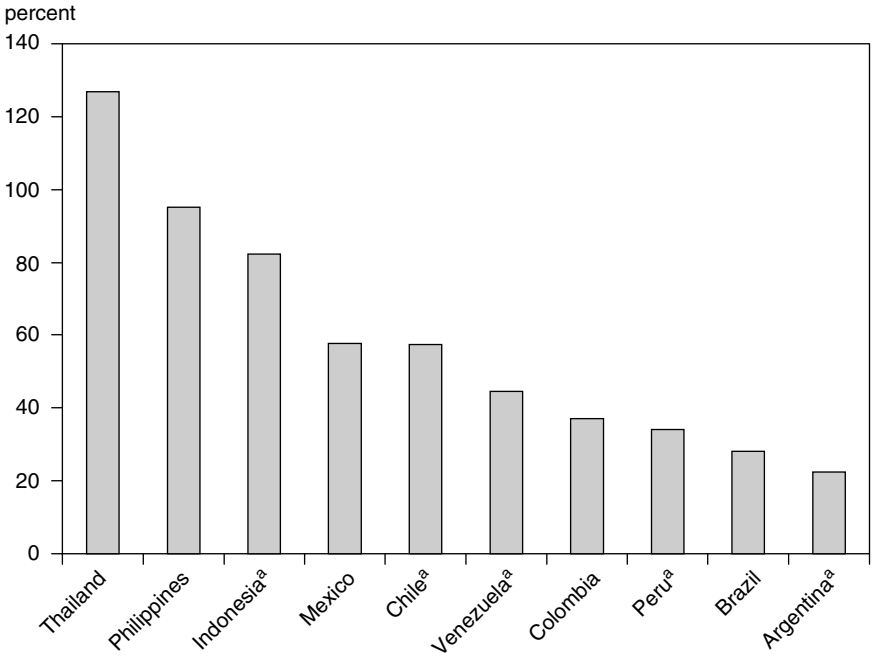
Source: IMF, *Direction of Trade Statistics,* December 2001.

Figure 6.2 Commodity exports as a percent of total merchandise exports, selected Latin American countries, 1990 and 1999



Source: World Bank, *World Development Indicators* (2001).

Figure 6.3 Trade openness of selected East Asian and Latin American countries, 2001 (exports and imports of goods and services as a percent of GDP)



a. For 2000.

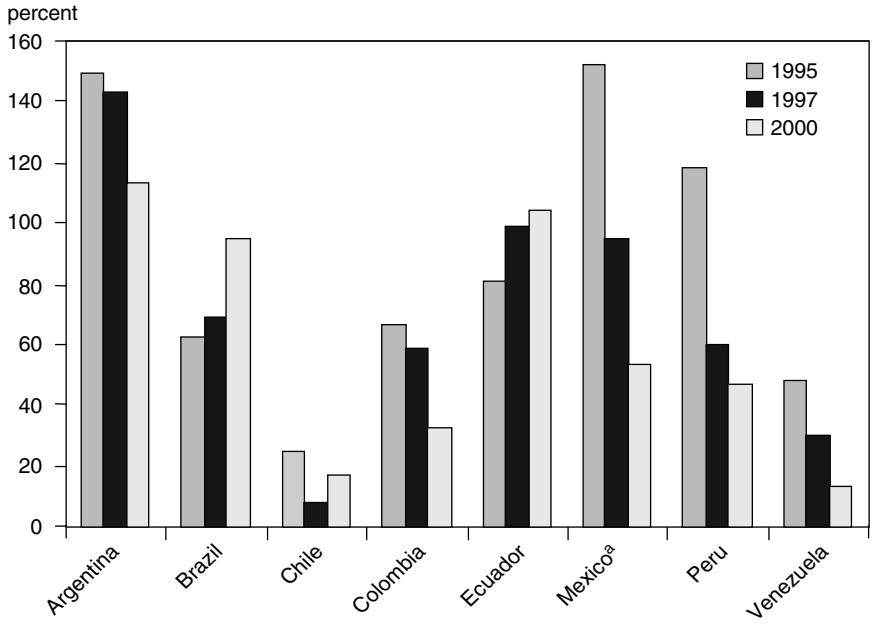
Source: IMF, *International Financial Statistics*, June 2002.

and 6.3 deal with trade features: the direction of trade, dependence on commodity exports, and degree of openness. Figure 6.4 deals with the recent evolution of external debt.

With respect to the direction of trade, it is evident from table 6.3 that trade patterns vary significantly between countries. For example, trade between the Mercosur partners (Argentina, Brazil, Chile, Paraguay, and Uruguay) is quite significant. Moreover, for this group of countries, trade with Europe has a larger share in total trade than trade with the United States. In contrast, trade between countries in the Andean Community (Bolivia, Colombia, Ecuador, Peru, and Venezuela) is very small (less than 10 percent of total trade in the community takes place between partners). The bulk of trade of these countries is with Asia, Europe, and the United States. Mexico stands out as the country in the region with the most concentrated trade pattern: its trade with the United States is 80 percent. Moreover, the share of Latin American countries in Mexico's total trade is less than 5 percent.

Analyzed solely from the perspective of the direction of trade, most countries do not qualify for an exchange rate system in which the domes-

Figure 6.4 Short-term external debt for selected Latin American countries, 1995, 1997, and 2000 (percent of international reserves)



a. First column: 1996, not 1995.

Source: World Bank, *Global Development Finance, 2002.*

tic currency is pegged to the US dollar or for dollarization. The reason is that changes in the exchange rate of a major trading partner relative to the dollar might bring unexpected and undesirable changes in the domestic real exchange rate. The best illustration of this issue is Argentina in the late 1990s, when a convergence of adverse shocks hit Argentina. Two of these shocks are strictly related to the issue at hand. First, the Argentinean peso, pegged one to one to the US dollar, experienced a large real appreciation when the dollar appreciated relative to European currencies (and since 1999 to the euro). This hurt Argentina's competitiveness with Europe, its major trading partner. Partly due to the loss of international competitiveness, Argentina entered a recession and domestic investment declined significantly.

Second, in the midst of Argentina's recession, Brazil devalued against the US dollar. This devaluation implied that Brazilian consumers found imports from Argentina relatively more expensive, while Brazilian products became relatively cheaper to Argentinean consumers. Because Brazil is Argentina's most important trading partner, the Brazilian devaluation hit Argentina by further curtailing its sources of growth and exacerbating

its recession. These factors argue against the maintenance of the Argentinean peg to the US dollar in the late 1990s.

Indeed, focusing on the direction of trade statistics, Mexico seems to be the only country that would qualify for a form of peg with the US dollar. However, it is not sufficient to look at direction of trade data to reach any significant conclusion about the appropriateness of a given exchange rate regime. As was discussed above, other key features of the current and capital accounts of the balance of payments also need to be considered. We now turn to these features.

First, consider the sensitivity of the group of countries under analysis to large terms of trade shocks. Clearly, the greater a country's dependence on commodity exports, the larger its exposure to variations in terms of trade. Figure 6.2 reveals two important stylized facts. The first one is that many large and medium-sized countries are extremely dependent on commodity exports. In some countries, such as Ecuador and Venezuela, the ratio of commodity exports to total exports is close to 90 percent. The second fact is that Mexico is the only country in the region that has significantly reduced its dependence on commodity exports during the past decade. Indeed, with a ratio of about 15 percent, Mexico is now much less vulnerable to terms of trade shocks than it was in the early 1990s.[31]

This first observation suggests that most countries in this group are quite vulnerable to terms of trade shocks. Depreciating the real exchange rate will, therefore, be a desirable part of the adjustment process. Given the discussion in the previous section, this indicator calls for more rather than less flexibility in the design of exchange rate systems.

However, can these countries fully exploit the benefits of exchange rate depreciation following an adverse terms of trade shock? Figure 6.3 provides a mixed answer. Certainly, no country in this group can benefit as much as some of the East Asian countries, where the degree of openness (measured as the ratio of exports plus imports of goods and services to GDP) reaches or exceeds 100 percent. However, Mexico and Chile stand out as the two Latin American countries in the sample that have achieved important successes in their efforts to open their economies to trade. By 2001, the ratio of exports plus imports to GDP was close to 60 percent in these two countries. It is expected that this ratio will rise even further given these two countries' current aggressive initiatives toward bilateral and multilateral trade agreements.

The conclusion so far is that although there are good reasons, from the trade side, to prefer more rather than less flexibility in exchange rate systems, few large and medium-sized countries in the region are ready to

31. These conclusions do not change significantly if commodity exports are calculated as a ratio of total exports of goods and services (rather than as a ratio of merchandise exports). This is because merchandise exports constitute the bulk of total exports in most Latin American countries (an average of 84 percent for the countries shown in figure 6.2).

exploit the benefits of such flexibility. Countries should, therefore, follow the example of Mexico and Chile in their efforts to achieve a higher degree of trade integration.

Next, let us consider the extent of stock problems by analyzing the short-term indebtedness of the region's large and medium-sized countries. Figure 6.4 shows short-term external debt as a percentage of international reserves. This ratio is illustrative of a country's capacity to service its immediate obligations.[32] Once again, the results are mixed. On the basis of this ratio, Chile is in better shape to choose among exchange rate regimes.[33] Mexico has achieved impressive progress toward reducing the ratio, and therefore it has gained more freedom to choose between exchange rate systems.

In contrast, Brazil's increasing short-term indebtedness does not allow room for fixed exchange rates and instead supports flexibility in exchange rate management. As recent experience has already shown, Argentina's high level of external debt did not serve the country well in maintaining its currency board. The country now follows a managed float. From the perspective of short-term indebtedness, the current situation in Ecuador does not lend support to the country's decision to dollarize its economy.[34]

Although more extensive analysis is needed, a safe preliminary conclusion is that few large and medium-sized countries in the region fully satisfy conditions for successful pegs or dollarization. Increased flexibility appears to be the sensible (and only?) choice because any form of fixity may be quite vulnerable to a sudden loss of credibility. Indeed, the only country that seems to be able to choose between exchange rate systems in a sustainable and credible way is Mexico, which (1) has significantly reduced its dependence on commodity exports, (2) has dramatically opened its economy to trade, and (3) has made important progress toward reducing the fragility of its external debt profile.

Let us now turn to the small countries in Central America and the Caribbean. Some empirical evidence is summarized in table 6.4. With respect to the direction of trade data, this group of countries trades more on average with the United States than do the large and medium-sized countries in Latin America. The smallest countries, especially those in the Caribbean, are also highly open to trade, with indicators of openness sim-

32. This, of course, does not mean that countries with a long-term debt structure are protected from default risk. Indeed, Argentina had a long-term debt structure before its default in early 2002.

33. Although Venezuela's ratio of short-term to international reserves was low in 2000, the Venezuelan situation deteriorated in the 2001-02 period, when the country lost a significant amount of reserves and the government considerably increased its financial needs. According to market estimates, short-term external debt as a proportion of GDP would reach more than 30 percent by the end of 2002, a ratio almost twice as large as the one attained in 2000.

34. Debt ratios for Ecuador did not improve in 2001 and remained high in 2002.

Table 6.4 Trade and debt indicators of small Latin American and Caribbean countries, 2000[a]

Country	Commodity exports (percent of merchandise exports)	Total trade (percent of GDP)	Trade with United States (percent of total trade)	Short-term external debt (percent of international reserves)
Barbados	48.3	105.8	36.8	n.a
Belize	87.3	107.3	39.7	40.7
Costa Rica	34.4	100.9	41.5	72.5
Dominican Republic	20.2	69.3	68.5	186.9
El Salvador	51.6	61.7	48.9	55.5
Grenada	86.6	125.4	32.7	44.8
Guatemala	68.0	46.4	43.6	73.9
Honduras	67.3	99.6	61.6	28.4
Jamaica	27.2	107.4	42.2	71.2
Nicaragua	92.2	122.3	35.2	201.0
Panama	84.1	74.2	36.5	64.1
Saint Kitts and Nevis	26.8	118.1	50.1	4.9
Saint Lucia	81.2	126.2	22.8	86.0
Saint Vincent and Grenadines	87.1	122.8	12.4	56.9
Trinidad and Tobago	71.2	93.4	50.6	61.3

a. Or closest year available.

Sources: World Bank, *World Development Indicators 2002;* World Bank, *Global Development Finance 2002*; IMF, *Direction of Trade Statistics*, October 2002.

ilar to those of East Asian countries. This is, of course, not surprising because the sheer size of these economies makes it infeasible for them to function as closed economies.

However, many of the smaller countries display a relatively high dependence on commodity exports. The picture is less clear when analyzing their debt situation, because some countries show very low short-term external debt ratios and others present ratios as high as those prevailing in the large Latin American countries that have recently defaulted on their external obligations. It is therefore not possible to reach a uniform conclusion for all countries in this group regarding the sustainability of exchange rate alternatives.

Some countries in the group, such as Panama and El Salvador, have chosen to dollarize their economies. For their dollarization to be sustainable, they need to improve their debt ratios and diversify their export baskets. On an overall basis, however, the indicators suggest that El Salvador will be better able than Panama to sustain dollarization.[35]

35. Does the case of Panama count as a successful experience of dollarization? It is difficult to say. On the one hand, this regime has been kept in place for a long time. On the other hand, Panama is the country with the largest number of IMF programs during the past 20 years (13 in total!). Is the choice of a regime sustainable if it depends on continuous transfers of resources from multilateral organizations?

More Flexible Exchange Rates and Inflation Targeting: Fad or Sensible Alternative?

When considering alternatives involving more flexibility in exchange rate systems, it is still essential to keep in mind a major constraint facing Latin American countries: in contrast to industrial countries, open capital accounts have not meant continuous access to international capital markets. For many countries in the region, opening the economies to capital flows has involved excessive indebtedness in "good times" (when economic growth has improved international perceptions of creditworthiness and spreads thus have been low) and a sharp reversal of inflows in "bad times" (when adverse shocks caused severe deterioration of international perceptions of creditworthiness).

In spite of the economic and financial volatility associated with the behavior of capital flows to Latin America, most countries in the region have not chosen to restrict the movement of capital. The clear exception has been Argentina in the midst of its massive 2002 financial crisis. A noteworthy feature about Argentina is that from 1990 to 2001 it was classified as one of the region's most financially open economies. Whether this experience will induce countries to rethink the desirability of free capital mobility remains to be seen. We will examine this issue further in the next section.

The restrictions imposed by the volatility of capital flows to the region imply that a *pure* flexible exchange rate system cannot adequately contribute to economic and financial stability. A major reason is that if inflows were to suddenly cease, a sharp depreciation of the exchange rate would not be able to generate sufficient resources quickly enough to meet due external amortization and interest payments. Without sufficient ex ante accumulation of foreign exchange reserves, both in the public and the private sectors, as well as access to additional sources of liquidity, sudden stops of capital inflows can result in defaults on external obligations and deep economic crises, even if the exchange rate is allowed to float freely after the shock to the capital account.[36]

Because of the need to manage the availability of foreign liquidity, managed floating is a better alternative than pure floating for most countries in Latin America. This of course implies a certain degree of discretion, but this is inevitable in countries that lack continuous access to international capital markets. To be exact, the policy involves a combination of rules and

36. The benefits of accumulating foreign liquidity as a buffer to unexpected shocks need to be balanced against the cost of holding these assets, which are characterized by low returns. Indeed, an important problem showing in the consolidated government and quasi-government balances (including the central bank) of a number of countries is the large interest rate differential between their debt liabilities and their liquid assets. Choosing the optimal level of liquidity is, therefore, no simple problem because it entails important public costs.

limited discretion. An important rule is that central banks cannot intervene to continuously smooth exchange rate fluctuations.[37] The discretion is that, sporadically, central banks can intervene—either directly in the foreign exchange market or through changes in interest rates—to manage their international liquidity position.[38] This policy prescription has been advanced and fully developed in Goldstein (2002). Consistent with the discussion above, it is important to stress that, in addition to the foreign exchange reserves at the central bank, large holdings of liquid foreign assets are also necessary for those institutions that may be required to "show liquidity" at times of difficulty. They are usually banks and the government.

In addition to the problem of volatile capital flows, many countries in Latin America face additional constraints that prevent the achievement of an independent monetary policy in the context of flexible exchange rates. Two of these constraints, generally absent in most industrial countries, are (1) the "effective" lack of independence of most central banks from political interference and (2) significant (albeit lesser than in the 1970s and 1980s) pass-through effects from changes in the exchange rate to the inflation rate. In the face of these constraints, a small but increasing number of the region's countries have chosen to combine more flexible exchange rate regimes with inflation targeting.

As was mentioned above, a regime involving more flexibility in the management of exchange rates and inflation targeting was chosen to send a credible message of central banks' commitment to keep inflation low while avoiding speculative attacks on the exchange rate. The choice of inflation targeting has the advantage of dealing with both the central bank independence problem and the pass-through problem.

With respect to the absence of adequate independence of central banks, this feature constitutes an important limitation on the credibility of any announced monetary/exchange rate policy. Inflation targeting helps be-

37. Continuous intervention would be inconsistent with a managed floating regime.

38. A number of analysts argue that an important cause of speculative attacks against the exchange rate has been large and sustained misalignments of the real exchange rate (sharp deviations of the real exchange rate relative to its long-run "equilibrium" level). In this regard, avoiding such misalignments is viewed as an important role of monetary/exchange rate policy. Supporters of this view argue for some form of announced foreign exchange intervention to prevent real exchange rate disequilibria; see Williamson (2000).

It would certainly be beneficial for Latin American countries to prevent significant exchange rate misalignments. However, I believe there are a number of reasons that do not support the implementation in the region of a policy aiming at keeping the real exchange rate at or around its equilibrium level. To give two of these reasons: First, estimates of the "equilibrium" real exchange rate for countries in the region have varied widely across empirical studies; see Edwards and Savastano (1999) for an analysis of the difficulties in estimating equilibrium real exchange rates in emerging markets. Second, because of the problems associated with identifying the true value of the equilibrium real exchange rate, the policy lacks the credibility and transparency needed by central banks in the region.

cause by posting the inflation target directly, central banks' decisions become more transparent and central bankers gain more "power" to justify their policy actions.[39]

With respect to the pass-through problem, this feature still remains important in a number of countries. This element favors a managed floating exchange rate regime over pure floating. The reason is that letting the exchange rate fully float at all times could conflict with achieving the inflation target. The framework of inflation targeting allows for some exchange rate intervention when indicators of "expected inflation" signal a significant deterioration arising from exchange rate depreciations. As was indicated by Svensson (1999), the inflation targeting framework allows central banks to exercise "constrained discretion": while goals for monetary policy are clear and transparent, the framework gives central banks the freedom to choose what instrument to use and when to use it to reach the target.

The degree of pass-through varies significantly among countries. Figure 6.5 shows some casual evidence of selected episodes of exchange rate devaluations and the accompanying behavior of inflation. The figure, which of course serves only for illustrative purposes, indicates that during the 1980s and early 1990s, there was a close association between sharp devaluation and high inflation in most countries. A feature of the late 1990s is that crisis periods were characterized by much smaller exchange rate depreciations. Notwithstanding, pass-through continued to be important in most countries, albeit to a lesser degree, as the crises in Brazil (1999) and Argentina (2002) demonstrated.[40] Even if declining, pass-through is significantly higher in Latin American countries than in industrial countries and in other emerging markets, as has been confirmed by recent statistical analyses.[41]

The experience with inflation targeting in (an increasing number of) Latin American countries has been extensively examined in a number of academic and policy papers.[42] So far, the group of countries that call themselves "inflation targeters" are Brazil, Chile, Colombia, Mexico, and

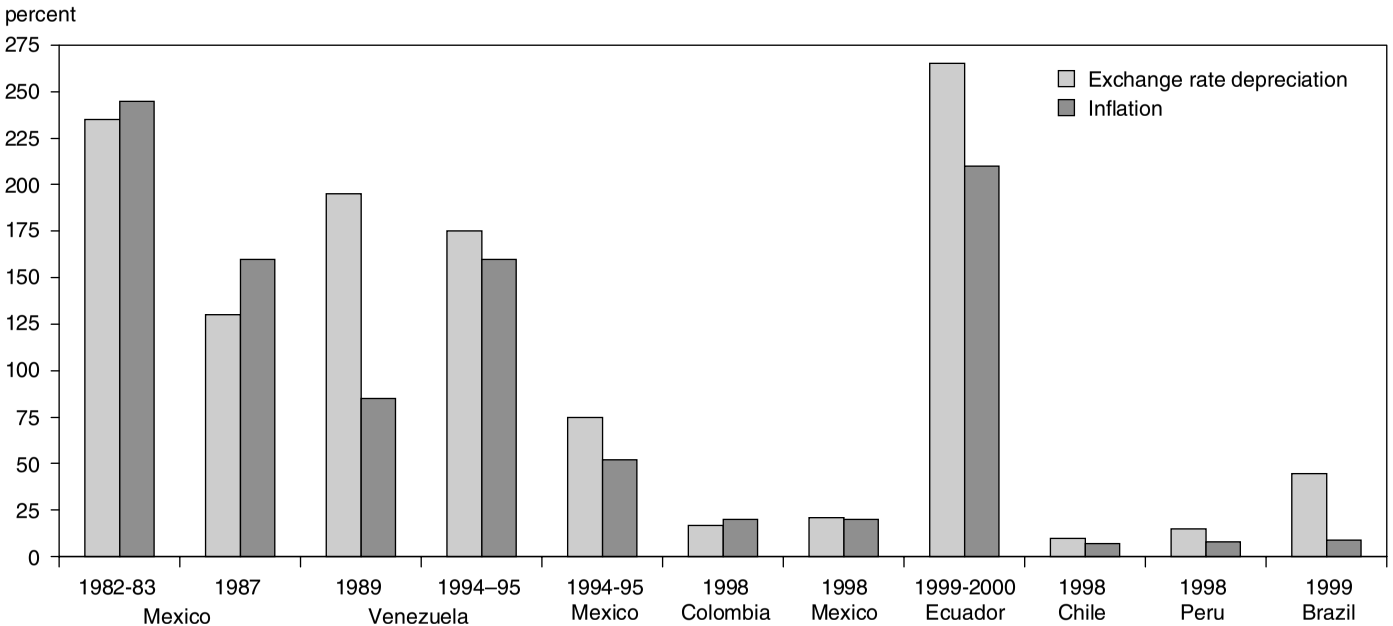
39. I think that Brazil's 1999-2002 period illustrates this situation clearly. By targeting inflation at low levels, the president of the Central Bank was able (most of the time) to conduct a tight monetary policy, even at times when political pressures demanded an easing of monetary policy. Inflation targeting increased the de facto independence of the central bank.

40. Brazil was a noticeable exception at the beginning of 1999, when the country sharply devalued its currency. In mid-2002, however, there were concerns about the "revival" of pass-through problems.

41. See Carstens and Werner (1999), Goldfajn and Werlang (2000), Gonzalez-Anaya (2000), and Mihaljek and Klau (2001).

42. E.g., see Eichengreen (2002), Truman (2002), Goldstein (2002), Mishkin and Schmidt-Hebbel (2001), Schaechter, Stone, and Zelmer (2000), Bernanke et al. (1999), and Cottarelli and Giannini (1997).

Figure 6.5 Exchange rate pass-through: Exchange rate depreciation, and inflation during the 12-month period after a significant exchange rate depreciation, selected Latin American countries, selected periods



Source: IMF data.

Peru (a small number of countries, but together they account for more than 60 percent of the region's GDP). Although the experience with inflation targeting in industrial countries is generally assessed to be successful, the Latin American experience is still too recent to allow definite conclusions (see Truman 2002).

To summarize the conclusions thus far: Most Latin American countries face serious constraints in implementing their monetary and exchange rate policies. A lack of continuous access to international capital markets, a lack of central bank credibility, and a history of significant pass-through from exchange rate changes to the inflation rate together call for a combination of policies that involve both managed floating and inflation targeting and a balance of rules and discretion. The rule is that the inflation target becomes the main goal of the central bank. The discretion is that the central bank can intervene in the foreign exchange market (including indirectly, through changes in the interest rate) when changes in the exchange rate conflict with the inflation target (or, sporadically, to increase its holdings of international liquidity).

Further Policy Recommendations

Let us return to the question implied in the title of this chapter: Is there an optimal monetary/exchange rate system for Latin America? An analysis of the evidence leads us to conclude that "one size does not fit all," but that with the exception of a few countries, more rather than less exchange rate flexibility is desired. However, facing a set of constraints particular to Latin America, "pure flexibility" is not the right choice. Inflation targeting combined with managed floating, involving clear and limited instances for intervention in the foreign exchange market, appears to be an appropriate choice for most of the region's countries, at least in the short run. Accumulation of foreign liquidity in the banking sector and in government-managed funds is also a necessary complement.

The true long-term challenge, however, lies in removing the constraints that limit the options of viable exchange rate regimes. Not doing so may bring about yet another bout of disillusionment with exchange rate management. As has been noted, Latin American countries need to deal with two broad sets of constraints. The first includes the external constraints imposed by the volatility of capital flows. The second comprises structural and policy-determined constraints related to the independence of central banks, the degree of trade openness, the concentration of exports in commodities, the fragility of banking systems, and the extent of external indebtedness.

With respect to the first set of constraints, Latin America in general has chosen a path toward freer capital mobility. However, at the time of this

writing, discontent with this choice has been increasing. By mid-2002, the brutal crisis in Argentina, the increasing problems with debt sustainability in Brazil, and the high cost and volatility associated with the access of most countries in the region to international capital markets were fueling these concerns. Indeed, a new impetus toward finding a more stable motor of growth is developing in the region. Proposals for renewing efforts toward the development of domestic sources of finance (e.g., domestic capital markets) as well as an emphasis on trade integration arrangements (bilateral and multilateral) are being considered as a complement to the instability of sources of funding provided by international capital markets.

What about capital controls? Highly volatile capital flows justify the imposition of some controls on the inflows to those countries in the region that have inadequate systems to appropriately assess risks. For example, financial systems that do not have adequate risk management systems (including capabilities to assess, manage, and supervise financial risks) may not be able to efficiently and safely intermediate large inflows of capital. The experience of Chile during the 1990s provides an excellent example of how a sequential approach to liberalization of the capital account can prevent the emergence of severe debt problems.[43]

In line with the discussion above concerning the limitations on monetary/exchange rate policies imposed by international perceptions of country risk (i.e., perceptions of default), overindebtedness by both the public and private sectors needs to be avoided. Well-defined capital controls on inflows combined with prudential regulations in the financial system can go a long way to prevent the overindebtedness (and its devastating consequences) that has infected many Latin American countries during the past three decades.[44] Indeed, as long as deficiencies in assessing financial risks (particularly credit and market risks) remain in banks, corporations, and the government, capital controls on inflows can be an effective temporary countercyclical tool when the supply of inflows is "too large" (relative to

43. Chile's experience with capital controls has been widely analyzed in the literature; e.g., see Agosin and Ffrench-Davis (2001); De Gregorio, Edwards, and Valdés (1998); and Williamson (2000). Capital controls on inflows during the 1990s in Chile took two forms. First, a nonremunerated 20 percent reserve requirement to be deposited at the central bank for 1 year on liabilities in foreign currency for direct borrowing by firms. The rate of reserve requirement was raised to 30 percent in 1992, and in 1998 it was lowered first to 10 percent and then to zero. Second, foreign direct investment (FDI) was subject to a minimum stay in the country. Until 1992, the requirement was a 3-year minimum stay; the stay was then reduced to 1 year. There were no restrictions on the repatriation of profits from FDI. Further analysis on the effects of capital controls in other emerging markets can be found in Reinhart and Smith (1998).

44. Capital controls in a number of countries have taken a variety of forms, including taxes, reserve requirements discriminating against short-term deposits denominated in foreign currency, and quantitative restrictions.

what the economy could have safely absorbed if there had been no deficiencies in the valuation of risks).[45]

It is appropriate to recommend temporary controls on capital inflows to countries that can use such a policy as a prudential device to avoid the intermediation of large quantities of short-term capital inflows through banking systems that do not adequately assess and manage risks. But it would not be advisable to control capital outflows, especially when they are imposed in the midst of financial difficulties. Controls on capital outflows amount to default because they impose nonmarket losses on holders of assets in the domestic financial system. The experience in Latin America is full of examples when the imposition of controls on capital outflows brought sharp disintermediation from domestic financial systems.[46]

We now turn to structural and policy-determined constraints.[47] With respect to the trade constraint, the policy prescription is quite straightforward. To gain freedom in their choice of monetary/exchange rate arrangements, countries in the region need to open and further diversify their trade patterns. But this goes beyond unilateral reductions in tariffs and other nonprice restrictions to imports. An aggressive approach to both bilateral and multilateral trade integration is urgently needed.

As was discussed above, avoiding a path toward unsustainable external indebtedness is central to allowing countries greater freedom in their choice of viable and sustainable monetary and exchange rate systems. Although temporary capital controls to the inflows can help, the policy is certainly by no means sufficient. The key to preventing debt sustainability problems is the buildup of fiscal institutions that ensure the maintenance

45. The emphasis on the temporary nature of capital controls to the inflows is because this device should be in place only as long as the true deficiencies to avoid overindebtedness—including a lack of adequate mechanisms to correctly assess risks by banks, corporations, and the government—remain in place. This is so because capital controls to the inflows also bring costs to society as they prevent the optimal allocation of external resources into profitable domestic investments. Having said that, however, it is important to recognize that it could be a long time before countries in the region establish and utilize effective risk management practices. In the foreseeable future, therefore, it is a good idea to have in place a mechanism of capital controls for the inflows. Chile's decision to keep the reserve requirements associated with capital controls in place, but equal to zero (in the current adverse international environment with limited access to international capital markets), was an excellent policy choice.

46. Some cases of sharp financial disintermediation associated with capital controls for the outflows are Argentina, Peru, and Mexico in the 1980s and Argentina in the early 2000s.

47. I will not expand further on the constraint imposed by the lack of independence of the central bank because (1) it is largely a political decision and (2) the discussion above illustrates how inflation targeting may be a mechanism to gain greater de facto central bank independence.

of fiscal discipline.[48] It is especially important to avoid contingent liabilities to the fiscal sector. Hidden problems in the banking sector and underpriced government guarantees eventually lead to large fiscal expenditures.

In this regard, we now come back to the problem of liability dollarization discussed above. This feature of many countries in the region has led a number of analysts to one of two extremes. Some argue for full official dollarization of the economy because no currency mismatch can occur if all transactions (real and financial) take place using the dollar. Others, however, argue for exactly the opposite prescription: dedollarize the economy to avoid the problem. My view is that regardless of the government's decision about the circulation of dollars in the domestic economy, important regulatory measures can be taken to minimize the problems associated with liability dollarization. Indeed, this problem is aggravated because of a lack of adequate bank provisioning systems.

The problem of liability dollarization presumes that a sharp depreciation of the exchange rate brings about a reduction in the capacity of the nontradable sector to service its dollar-denominated loans. This is correct; the evidence substantiates this view. The evidence also reveals that sharp depreciations of the exchange rate are a recurrent feature of many markets.

Taken together, these two sets of evidence seem to imply that, ceteris paribus, expected losses from loans to the nontradable sector would tend be larger on average than those resulting from loans to the tradable sector.[49] Exchange rate risk is transformed into credit risk for the nontradable sector. Why, then, do banks in emerging markets not have distinct provisioning requirements for these two kinds of loans? The main reason is that emerging-market countries do not have clear regulations about provisioning, and certainly no risk-based regulations.

This example needs to be taken simply as an illustration of the severity of the problem associated with inadequate loan loss reserves in Latin America. A proper analysis needs to estimate the probabilities of default for different categories of loans in various countries. By providing information about expected losses, the mean of the frequency distribution of loan losses for separate classes of loans should guide the appropriate design of provisioning requirements. The key message, however, is that the problem of liability dollarization can be alleviated by adequate provisioning rules that reflect the risks specific to Latin America.

48. Moreover, comprehensive tax reforms, including establishing institutional changes that minimize tax evasion, are badly needed in many countries in the region. This and other central aspects of fiscal reform are discussed in chapter 4 of this volume.

49. Likewise, a sharp appreciation of the real exchange rate hurts the tradable sector. However, these appreciations tend to occur at times when foreign capital is flowing into the economy and therefore a financing constraint to the tradable sector is not binding. The central message is that provisioning needs to take into account the expected risk features of different sectors of the economy. This involves different provisioning for different sectors.

However, what about the proposal for dedollarization as a way to solve the liability dollarization problem?[50] Is it desirable to induce a dedollarization of financial assets? In considering this question, it is important to clarify that I am discarding forced dedollarization. The experience of Argentina with forced pesofication should provide sufficient arguments against such a policy alternative.[51]

In contrast, creating nondistortionary incentives for increasing the demand for assets denominated in domestic currency needs to be considered seriously. This, however, is not an easy task. In many Latin American countries, creditors are only willing to lend long term if the assets are denominated in US dollars and depositors are only willing to save in US-dollar-denominated instruments.

Two factors affecting countries in the region have contributed to this attitude. The first is the long history of sharp depreciations and episodes of high inflation or hyperinflation in many countries. The second and more recent development is related to the establishment of foreign banks. There is a common belief that, in difficult times, the region's subsidiaries of foreign banks will find it easier than domestic banks to access funds in dollars because of their links to the center.[52] That is, holding dollar-denominated deposits in foreign banks is viewed by depositors as protection against both exchange rate (inflation) risk and default risk.

It may take a very long time before economic agents perceive assets that are denominated in domestic currency as safe assets. The challenge for the short and medium terms, therefore, is to create incentives for savers to diversify their portfolios by increasing their holdings of assets denominated in domestic currency. Alternatives to consider include inflation-indexed deposits and the development of local capital markets with transparent laws on bankruptcy and on minority bond holders. Incentives for offering inflation-indexed bonds may be considered once an adequate, well-functioning capital market is established.

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50. I have already discussed extensively the opposite alternative, i.e., full dollarization (see the chapter's second and third sections).

51. Although some argue that the problem with forced pesofication in Argentina was that it was asymmetric (i.e., that the conversion of dollar assets into pesos took place at a less favorable exchange rate than that applied to the pesofication of liabilities), I would argue that any form of forced pesofication would have been disastrous for the financial system because it involved a default on preestablished contracts. Indeed, another experience of forced pesofication (without asymmetries), that of Mexico in 1982, ended in a severe banking crisis and in the nationalization of private banks.

52. The validity of this belief needs empirical research. Although the crisis in Argentina brought doubts about the behavior of foreign banks during trying periods, this experience cannot be taken as a representative example of foreign banks' attitudes because the Argentinean government imposed a number of measures that forced foreign banks into decapitalization.

Issues related to the development of capital markets are examined extensively in chapter 5 of this volume. Here, however, it is essential to emphasize that capital markets cannot develop in Latin American countries where uncertainties regarding the soundness of banks persist—for two reasons. The first is that banks, through their access to the central bank's discount window, are the ultimate providers of the liquidity that enables capital markets to function. The second is that bank deposits need to serve the function of "safe" assets relative to the riskier assets traded on capital markets. As in industrial countries, savers need to feel confident that if capital markets become turbulent, they can "flee to quality" by shifting their funds toward bank deposits.[53] If safe deposits need to be denominated in US dollars, so be it. It may be precisely the existence of such safe assets that allows for the expansion of riskier currency-denominated assets.

53. In a sound banking system with fractional reserve requirements, the shift into dollar-denominated deposits implies that the central bank would have to increase its dollar-denominated liabilities (the central bank item: banks' deposits in dollars). Immediately, this transaction reduces the central bank's net holdings of foreign exchange reserves. The final extent of the reduction of net foreign exchange reserves would depend on the degree of flexibility of the exchange rate. For a detailed explanation of the changes in banking system balance sheets following a shift of wealth into dollar-denominated deposits, see Rojas-Suarez and Weisbrod (1995).