

MONETARY POLICY STRATEGIES FOR LATIN AMERICA

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Abstract

The paper examines possible monetary policy strategies for Latin America that may help lock-in the gains in the fight against inflation attained by the region during the 1990s. Instead of focusing the debate about the conduct of monetary policy on whether the nominal exchange rate should be fixed or flexible, the focus should be on whether the monetary policy regime appropriately constrains discretion in monetary policymaking. This focus suggests that there are three basic frameworks that deserve serious discussion as possible, long-run strategies for monetary policy in Latin America: a hard exchange-rate peg, monetary targeting, and inflation targeting. We look at the advantages and disadvantages of each of these strategies in light of the recent track record of monetary policy in several Latin American countries for clues as to which of the three strategies might be best suited to economies in the region.

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I.

Why the Issue is *Not* Fixed Versus Flexible Exchange Rates

The monetary policy experience of Latin America has not been a happy one. Economies in this region have gone through extreme episodes of monetary instability, swinging from very high inflations, to massive capital flight, to collapses in their financial systems. The unsurprising outcome has been low credibility, slow growth, recurrent recessions and even depressions. However, a new era may be dawning in Latin America. In the past decade or so, most countries in the region have become outward looking, and the public, politicians and policymakers have come to recognize the high costs of protectionism and inflation, producing a growing commitment to open markets and price stability. Evidence of this more favorable environment are the successful inflation stabilization programs adopted by many Latin American countries in the early 1990s, and the historically low rates of inflation attained by the region in recent years, falling from an average of over 400% in 1989 to below 10% by 1999. Where should Latin American countries go from here in designing appropriate long-run strategies for the conduct of their monetary policy?

The central issue in addressing this question is whether the countries of the region have a chance of setting up institutions and mechanisms that will effectively and efficiently constrain the discretion of their monetary authorities. Whether the exchange rate is fixed or flexible (and precisely how flexible) follows from the answer one gives to that question. Thus, we believe that there is a need to refocus the debate away from a discussion of whether the nominal exchange rate should be fixed or flexible. One advantage of the alternative approach that focuses on underlying institutions to appropriately constrain monetary policy discretion rather than on the flexibility of the exchange rate is that it allows one to draw on the experiences of countries outside Latin America to a larger extent than what is possible in the present round of the AFix vs. Flex@ debate.¹

In principle, there are four broad monetary policy strategies that can produce a nominal anchor that credibly constrains the discretion of the central bank over the medium term: Ahard@ exchange-rate pegs, Asoft@ exchange-rate pegs, monetary targeting, and inflation targeting.² The

¹For a discussion of two fallacies that arise recurrently in discussions of monetary policy and exchange rate regimes in Latin America. see Mishkin and Savastano (2000).

² A fifth possible strategy that has been suggested by some as best suited for semi-open economies is nominal income targeting (e.g., Frankel, 1995). A major problem with this strategy,

severe shortcomings of soft pegs (in their multiple manifestations) as a *medium-term* strategy for monetary policy have been amply demonstrated by recent experiences in industrial and emerging market economies (including many from Latin America) and need not be repeated here.³ This leaves us with three potential medium-term strategies for monetary policy that we evaluate in the following sections. In each section, we look at the advantages and disadvantages of each strategy, and then examine the recent experience of relevant Latin American countries for clues as to which of the three might be best suited for countries in the region.

II. Hard Pegs

There are essentially two types of Ahard peg@ regimes for monetary policy: a currency board and full dollarization. In a currency board, the domestic currency is backed 100% by a foreign currency (say, U.S. dollars) and the note-issuing authority, whether the central bank or the government, fixes a conversion rate to this currency and stands ready to exchange domestically issued notes for the foreign currency on demand. A currency board is a hard peg because the commitment to the fixed exchange rate has a legal (or even constitutional) backing and because monetary policy is, in effect, put on autopilot and completely taken out of the hands of the central bank and the government. Full dollarization involves eliminating altogether the domestic currency and replacing it with a foreign currency (the U.S. dollar). It represents a stronger commitment to monetary stability than a currency board because it makes it much more costly--though still not impossible--for the government to regain control over monetary policy and/or change the parity of the (non-existent) domestic currency.

however, is that it has never been tried in practice, either in industrial or emerging economies. This, plus the fact that nominal income targeting could be seen as broadly equivalent to inflation targeting under some reasonable assumptions, but with some serious disadvantages, (McCallum, 1996, Mishkin, 1999a), leads us to drop it from the set of monetary policy strategies that we consider relevant for Latin American countries.

³ For a review of the main arguments against soft pegs and of the lessons from recent experience, see Obstfeld and Rogoff (1995), Eichengreen and Masson (1998) and Mishkin (1998, 1999a). Note that we are not ruling out the use of exchange-rate pegs, even if not of the hard peg variety, as a tool in the initial phases of a stabilization program. However, the shortcomings of soft pegs indicate that they will be far less useful as a longer-run strategy for monetary policy.

Advantages of Hard Pegs

The advantages of hard pegs, especially of currency boards, have been discussed extensively in recent years.⁴ Put succinctly, hard pegs can deliver everything that fixed-but-adjustable pegs proved incapable of delivering--with or without capital mobility.

First, they provide a nominal anchor that helps keep inflation under control by tying the prices of domestically-produced tradable goods to those in the anchor country, attenuating (and eventually breaking) the inertial component of inflation that feeds into wages and prices of nontradable goods, and making inflation expectations converge to those prevailing in the anchor country.

Second, hard pegs reduce, and in the limit eliminate, the currency risk component from domestic interest rates thus lowering the cost of funds for the government and the private sector and improving the outlook for financial deepening, investment, and growth.

Third, hard pegs provide an automatic adjustment mechanism for the money supply that helps mitigate (or plainly eliminates) the time-inconsistency problem of monetary policy. A fall in the demand for domestic assets, including domestic currency notes, produces an automatic outflow of hard currency and a rise in interest rates without creating pressures on the peg, while an increase in the demand for domestic assets has the opposite effects. Discretionary, expansionary and time-inconsistent monetary policy, including to finance the government deficit, is not a policy option.

Finally, hard pegs have the advantage of simplicity and clarity, which make them easily understood by the public. A "sound (foreign) currency" policy is an easy-to-understand rallying cry for monetary stability and, according to some, also for fiscal discipline.

Disadvantages of Hard Pegs

The main disadvantage of a hard peg as a medium term monetary regime is that it leaves (almost) no scope for domestic monetary policy because with open capital markets, a hard peg causes domestic interest rates to be closely linked to those in the anchor country to which it is pegged. The country which chooses a hard peg thus loses the ability to use monetary policy to respond to domestic shocks that are independent of those hitting the anchor country. Furthermore, a hard peg means that shocks to the anchor country are directly transmitted to the pegging country because changes in interest rates in the anchor country lead to a corresponding change in domestic interest rates. As long as domestic prices and wages are "sticky" and markets are incomplete, the

⁴ See, for example, Hanke and Schuler (1994), Williamson (1995), and Ghosh et al. (1998).

loss of an independent monetary policy which can help the monetary authorities counter the effects of certain these shocks can be costly.

This point can be illustrated with the simple model outlined in Svensson (1997), which comprises an aggregate supply curve:

$$\pi_t = \pi_{t-1} + \alpha y_{t-1} + \epsilon_t \quad (1)$$

and an aggregate demand curve:

$$y_t = \beta y_{t-1} - \beta^2 (i_{t-1} - i_{t-1}^*) + \eta_t \quad (2)$$

where $\pi_t = p_t - p_{t-1}$ is the inflation rate at time t (with p_t the log of the price level), y_t = the output gap (the log of the actual to potential output), i_t = the nominal interest rate, and ϵ_t and η_t , i.i.d. aggregate supply and demand shocks, respectively.

In this setup, optimal monetary policy involves setting the interest rate each period to minimize the intertemporal loss function:

$$E_t \sum_{\tau=t}^{\infty} \beta^{\tau-t} L_{\tau} \quad (3)$$

where $\beta < 1$ is the authorities' discount rate and where the period-by-period loss function is:

$$L_{\tau} = (\pi_{\tau} - \pi_{\tau}^*)^2/2 + \alpha y_{\tau}^2/2 \quad (4)$$

The optimal setting of the interest rate is then a "Taylor rule",

$$i_t = i_t^* + b_1(\pi_t - \pi_t^*) + b_2 y_t \quad (5)$$

in which the interest rate responds to both the inflation gap, $\pi_t - \pi_t^*$, and the output gap, y_t .⁵

⁵As Svensson (1997) indicates, the Taylor rule in equation (5) above is only optimal if inflation and the output gap are sufficient statistics for the model, i.e., if no other variables enter the aggregate supply and demand functions. If other variables do affect aggregate demand and supply, the

With a hard peg, the interest rate is in effect set by the anchor country and it will differ from the optimal setting of the interest rate given in (5). The loss from having a hard peg will be small only if the pegging country is so integrated with the anchor country that its inflation and output gaps are highly correlated since in those circumstances setting the interest rate on the basis of the conditions prevailing in the anchor country will also be optimal for the domestic economy. However, this requirement is unlikely to be met in practice, particularly if the anchor country is the United States.⁶

The key message from this analysis is that hard pegs will (almost) always represent a second best solution for most Latin American economies -- especially the large ones, so that these countries are better off having some scope for "good" monetary policy than having no monetary policy at all. Of course advocates of hard pegs for Latin America point out that having no monetary policy is better than having "bad" -- i.e., discretionary and inflationary -- monetary policy. However, although Latin America's dismal monetary history is full of episodes of mismanaged monetary policy, it is not clear why the past should serve as a predictor for the future, especially when one considers the great strides that most countries in the region have made in lowering inflation in recent years.

Another disadvantage of hard pegs is that the central bank, when it exists, loses its ability to act as a lender of last resort. This may turn out not to be a major drawback of those regimes in the short run. As discussed in Mishkin (1999b), central banks of emerging economies typically have very limited scope to act as lenders of last resort, even under flexible rates. The main reason for this is lack of credibility. Central bank lending to the banking system in the wake of a financial crisis is likely to unleash fears of an inflationary explosion and produce a sharp exchange rate depreciation. Given the substantial liability dollarization[@] of households, firms and banks in those economies, the depreciation will tend to have a major negative impact on the net worth of the private sector,

optimal rule would need to be modified to have the interest rate respond to these variables as well. Note that in practice, a Taylor rule like (5) would never be followed slavishly in practice because central banks use judgement in setting policy instruments. Thus a Taylor rule is better thought of providing a useful benchmark for policymakers, but should not be characterized as a rule which solve the time-inconsistency problem. The use of the word "rule" in Taylor rule can therefore be somewhat misleading.

⁶Clarida, Gali and Gertler (1998) give a nice illustration of how unlikely this can be by demonstrating that the Taylor rules estimated for countries like Italy, France and the United Kingdom would have led to very different settings of interest rates during the period of the ERM than those generated by Germany.

including banks, which will then amplify asymmetric information problems in financial markets and exacerbate the financial crisis. Over the longer run, however, as central banks demonstrate their commitment to price stability and banking supervision is strengthened, those problems will tend to disappear and the central banks' scope for acting as lenders of last resort will increase. This is something that hard peg regimes can never count on having.

Currency Board Versus Full Dollarization

The main disadvantage of a currency board relative to full dollarization is that the former does not eliminate completely the possibility of a devaluation. If investors' sentiment turns against a country with a currency board and speculators launch an attack, they are presented with a one-way bet because the only direction the value of the currency can go is down. The probability of this event is embedded in domestic interest rates, even in calm periods, making those rates higher and more volatile than the ones in the anchor country. These problems are mitigated under full dollarization. Since there is no uncertainty about the value of the currency circulating in the country (dollars will always be dollars) the currency risk component of domestic interest rates will necessarily disappear, and interest rates will be lower.

However, this does not mean that under full dollarization domestic interest rates will converge to those prevailing in the U.S., as has been argued by some--e.g., Schuler (1999). Domestic interest rates will continue to carry a country-risk premium. One important reason for this, but by no means the only one, is that interest rates will continue to reflect a confiscation risk, at least for a while. Confiscation of assets (denominated in both domestic and foreign currency) has a long tradition in Latin America. In the early 1980s, Bolivia, Mexico and Peru forcedly converted dollar deposits held in domestic banks into domestic currency deposits at below market exchange rates in a desperate--and failed--attempt to arrest capital flight (Savastano, 1992). In the late 1980s, Argentina and Brazil forcedly converted short-term bank deposits into long-term bonds to lower the government's interest bill and pave the way for a rapid disinflation. Ecuador's freeze of bank deposits in March 1999, a year before the abolition of the domestic currency, makes it difficult to argue that the region has abandoned completely those confiscatory practices. The logic here is not just that if it happened (more than) once, it may happen again. Confiscation may be forced upon the authorities.

Consider the following example. Suppose that there is a sudden loss of confidence in a fully dollarized country that leads to a massive withdrawal of bank deposits, a severe squeeze of banks' liquidity and a sharp decline in economic activity. A country fully committed to preserve full dollarization may be willing and able to withstand the outflow and the ensuing economic downturn,

but only under some conditions. In particular, if the attack is driven by perceptions, let alone evidence, of fiscal insolvency, confiscation of dollar assets to secure resources for the government and prevent a meltdown of the banking system may become a self-fulfilling prophecy. Of course, this could happen under both types of hard pegs, and in both cases the confiscation of assets would cause the collapse of the regime and have catastrophic consequences for the financial system and the real economy. Under full dollarization, however, the damage is likely to be far more serious because the domestic currency and monetary policy that will have to be created from scratch in the aftermath will have no credibility. A small probability of this catastrophic event occurring sometime in the future is more than sufficient reason to expect a country risk premium in domestic interest rates under full dollarization.

Lessons from Recent Experience

The two prime examples of hard pegs in Latin America are Argentina and Panama. Both hard pegs were created under special, and quite different, historical circumstances. In the case of Argentina, the hard peg of a currency board was the cornerstone of the stabilization program of 1990-91 that ended the hyperinflation episodes of the 1980s. Up until 1999, Panama was the only fully dollarized country in Latin America, i.e., it was the only country which had decided to adopt the U.S. dollar as the legal tender and to eschew the creation of a central bank, a decision it made in 1904, the year after the country was founded.

The experiences of these two countries suggest a number of conclusions (see Mishkin and Savastano (2000) for detailed case studies of the two experiences.) First, hard pegs do deliver low inflation rates. The first four years of Argentina's currency board were highly successful and have become the textbook example of the benefits of a currency board for stopping high inflation (Hanke and Schuler, 1994). Inflation in Argentina fell from an 800% annual rate in 1990, to less than 5% by 1994 and declined even more after the Tequila crisis of 1995. Panama's inflation from 1960 to 1998 averaged 2.8% per year, which is significantly lower than in any other country in Latin America, and is even lower than the 4.6% average over the same period for the United States.

Second, there are two necessary conditions for the success of a hard peg: a solid banking and financial system, and sound and sustainable fiscal policies. The sole adoption of a hard peg does not ensure that these two conditions will be met, at least not rapidly or automatically.

For example, despite its currency board, the weakness of Argentina's banking system almost brought down its (quasi-) currency board during the Tequila crisis of 1995. From December 1994 until March 1995, the prices of Argentine stocks and bonds plummeted, the banking system lost 17% of its total deposits, the central bank lost more than a third of its international reserves

(\$5.5 billion), the money supply contracted, interest rates shot up--with the interbank rate briefly exceeding 70%, and external credit lines vanished. The Argentine central bank had its lender of last resort role constrained by the Convertibility Law, yet it mitigated the adverse effects of the run on bank deposits by lowering reserve requirements, providing direct credit via rediscounts and swaps, and participating actively in the restructuring, privatization and liquidation of troubled banks. By the end of April, the central bank had managed to provide over \$5 billion of liquidity to the banking system, more than a third of it in the form of direct loans, and was able to avert a large scale collapse of the banking system. Despite all these efforts, and substantial assistance from the multilaterals (the IMF, the World Bank and the Interamerican Development) the real economy took a nose dive; the May unemployment rate shot up to 18% and 1995 real GDP fell by more than 3%. It was not until 1996 that the Argentine economy began to recover.

Panama's banking system, on the other hand, has earned a reputation of strength and sophistication. However, although the low inflation environment produced by full dollarization contributed to this outcome, the strength of Panama's banking system cannot be attributed to full dollarization. The take-off of Panama's financial system only began in 1970 with the passage of a banking law--Cabinet Decree 238--that eased licensing and portfolio allocation requirements on foreign banks, strengthened secrecy provisions, and allowed unrestricted movements of capital (Moreno, 1999). The goal of transforming Panama into an offshore banking center was achieved fairly quickly. By 1987 there were more than 120 banks located in the country, the majority foreign-owned, and broad money and private sector credit as a share of GDP had risen by more than 15 percentage points (to 40% and 54% respectively). Except for a banking crisis in 1988-1989 which occurred as a result of economic sanctions imposed on Panama in 1988, including a freezing of the deposits held in the United States by the Banco Nacional de Panama, the Panamanian banking system has fared well.⁷ One result is that private sector borrowers in Panama have access to international financial markets and can borrow at low interest rates. Indeed, Panamanian firms and banks do not face a "sovereign ceiling" and can often borrow at lower rates than the government.

⁷The U.S. economic warfare against Panama sparked a series of bank runs that nearly caused the collapse of the Panamanian payments system (see Garber, 1999). When the standstill ended, after almost two years, a number of small banks had disappeared, the money supply had shrunk by 30%, and real output had fallen by 18%. This episode illustrates that a country with a hard peg is not exempt from bank runs and panics, whatever their origin may be. The fact that the United States also had frequent bank panics in the nineteenth and early twentieth century even when it had a hard peg (the gold standard) also illustrates this point--e.g., see Mishkin (1991).

However, the small spread between domestic and foreign interest rates is probably more a reflection of Panama's sound and internationally-oriented banking system than the result of full dollarization.

On the fiscal requirements, small fiscal deficits were key to the early success of Argentina's currency board but persistent fiscal imbalances in the second half of the 1990s, which averaged 2.7% from 1996 to 1998 despite a pick-up in growth, raised recurrent concerns about the sustainability of the hard peg. The fiscal problems of Panama, on the other hand, have been as entrenched and protracted as those of the typical (non-dollarized) Latin American country. Panama has had fiscal deficits jumping from 2% of GDP in the 1960s to over 7% in the 1970s, and averaging 5% in the 1980s. A reflection of its fiscal profligacy is that fact that Panama has requested thirteen IMF programs from 1973 to 1997, more than any country in Latin America during that period. The claim that hard pegs ensure fiscal discipline and prevent fiscal dominance receives little support from these two experiences.

The third conclusion borne out by these experiences is that hard pegs remain subject to speculative attacks and bank runs, as evidenced by the spillovers of the Tequila crisis on Argentina and the runs on Panama's banks in the late 1980s.

The fourth conclusion is that hard pegs are ill-equipped to counter country-specific shocks and so can lead to increased output volatility. Although Panama's real GDP growth has been about one percentage point higher than the average for Latin America from 1960 to 1998, output volatility in Panama has been among the highest in the region (e.g. see Hausmann and Gavin, 1995). The two recessions that Argentina has suffered in less than five years -- the first after the Tequila crisis which sent the unemployment rate to 18%, and the second following the Brazilian devaluation in 1999 -- illustrate even more graphically the consequences for output volatility that a hard peg can bring.

Another problem of hard pegs is that they do not have an easy exit strategy, not even when changes in the country's political and economic institutions make it possible and desirable to have a monetary policy able to focus on domestic considerations. Exiting from a currency board is highly dangerous unless the currency is likely to appreciate, but this is exactly when things are going well and so the political will to exit is likely to be weak, or nonexistent. Exiting from a fully dollarized economy is even more troublesome because the (new) monetary authorities, and the new currency, are likely to encounter a serious problem of lack of credibility.

These shortcomings, notwithstanding, we are of the view that hard pegs may be the only sustainable monetary policy strategy for those Latin American countries whose political and economic institutions cannot support an independent central bank focused on preserving price stability. In particular, countries that cannot find ways of locking-in the gains from their recent fight

against (high) inflation, or those that have not yet started that fight, may find in hard pegs a reasonable second best strategy for monetary policy.

III.

Monetary Targeting

A monetary targeting strategy focused on controlling inflation comprises three key elements: 1) reliance on information conveyed by a monetary aggregate to conduct monetary policy, 2) announcement of targets on a monetary aggregate to guide the public's inflation expectations, and 3) some accountability mechanism that precludes large and systematic deviations from the monetary targets. In addition, the strategy presupposes that monetary policy is not dictated by fiscal considerations--i.e., lack of fiscal dominance--and that the exchange rate is flexible.

Advantages of Monetary Targeting

The two major advantages of monetary targeting over exchange-rate pegs (hard and soft) are that it enables the central bank to choose goals for inflation that may differ from those of other countries, and that it allows some scope for monetary policy to deal with transitory output fluctuations and certain external shocks. Also, like an exchange-rate peg, the strategy is easy to monitor since information on whether the central bank is complying with its target is readily available -- actual figures for monetary aggregates are typically reported within a couple of weeks. Thus, comparisons between targeted and actual monetary aggregates might send timely and periodic signals to the public and markets about the stance of monetary policy and the intentions of the authorities to keep inflation in check. In turn, these signals might help consolidate inflation expectations and produce less inflation. Targets on money aggregates might also be conducive to making the central bank accountable for meeting its low inflation objective, helping to mitigate the time-inconsistency problem of monetary policy.

Disadvantages of Monetary Targeting

All the above advantages of monetary targeting depend on a big *if*: there must be a strong and reliable relationship between the goal variable (inflation) and the monetary aggregate chosen as target. If the relationship between the monetary aggregate and the goal variable is or becomes weak, monetary targeting will produce poor outcomes. This is easily seen by adding a money demand equation to the simple model sketched in Section II.

$$m_t - p_t = \alpha y_t - \beta i_t + \varepsilon_t \quad (6)$$

where m_t = the log of money balances and ε_t is an error term. To the extent that shocks to the money demand error term are large and unpredictable (or that the parameters of the money demand equation are unstable), the relationship between the monetary aggregate and output and inflation will weaken. In those circumstances, targeting the monetary aggregate will lead to large deviations of the interest rate from the optimal policy as represented by the optimal rule in (5). The result will be larger volatility of output, inflation and interest rates, (see Clarida, Gali and Gertler, 1999).

As is well-known and amply documented, a weak and unstable relationship between monetary aggregates and the rate of inflation was the main problem with this strategy in industrialized countries.⁸ Though the existing evidence is not nearly as conclusive, the problem is likely to be just as bad if not worse for the emerging economies of Latin America. The main reason for this is that in the new environment of low inflation and increasing financial integration it will be highly unlikely that the relationship between monetary aggregates and inflation in those countries remains, or becomes, stable. A weak and unstable relationship between money and inflation will give rise to situations where hitting the monetary target will not produce the desired inflation outcome, where monetary aggregates will fail to provide reliable signals of the stance of monetary policy, and where there will be no effective anchor for inflation expectations. Furthermore, a weak relationship between the targeted monetary aggregate and inflation will make it difficult for the central bank to be transparent and accountable to the public. Although this does not necessarily imply that monetary policy will be expansionary or irresponsible, it will complicate greatly the central bank's communication with the public and the markets, and impair its credibility.

Lessons from Recent Experience

Despite what is often said, no central bank in Latin America has truly practiced monetary targeting. In their relatively recent experience with low(er) inflation and flexible exchange rates, the monetary policy frameworks of many Latin American central banks have contained the first of the three key elements mentioned earlier --i.e., using the information conveyed by a monetary aggregate to conduct monetary policy-- but the other two elements (public announcements of the targets and some type of accountability mechanism) rarely have been present at the same time (see Cottarelli

⁸See, for instance, Goodhart (1989), Bernanke and Mishkin (1992), and Estrella and Mishkin (1997).

and Giannini, 1997). Regimes where monetary targets are not announced, or are announced but not given a chance to perform as the main nominal anchor, are not monetary targeting regimes. A case in point is Peru, which has been often characterized as having undertaken a "money-based stabilization" (e.g., Calvo and Vegh, 1994, 1999) and relied on a monetary anchor to reduce inflation (Corbo, 1999, and Favaro, 1996).⁹ Peru's central bank did not pursue a monetary targeting strategy during the 1990s: it did not make its monetary targets public, nor was it accountable for meeting its targets. Instead the central bank used the information contained in a monetary aggregate (specifically, base money) to guide the setting of its policy instruments, as in many (non-monetary targeting) industrial countries. Those central banks in Latin America that have been regarded as monetary targeters should instead be seen as having followed a discretionary monetary policy with a focus on price stability. Even if that approach proves to be successful for a period of time, as has been the case in Peru, it is a highly dangerous strategy. Two crippling shortcomings of the approach are that it depends too much on the preferences, skills and credibility of the individuals running the central bank, and that it does not lend itself to make monetary policy transparent and accountable.¹⁰

The instability of the money-inflation relationship has also been very visible in Latin America. For example, Peru's central bank did not make its targets for money base growth public during the 1990s because it was highly aware of the uncertainties surrounding the demand for this aggregate in a dollarized economy (80% of bank deposits and loans in Peru are dollar-denominated.) Mexico's central bank also has found the monetary base target it adopted as part of its program with the IMF in the aftermath of the Tequila crisis to be highly problematic. In 1997, the monetary base exceeded its target by 4.1%, yet inflation fell to 15.7%, close to its year-end objective of 15%, while in 1998, inflation exceeded the year-end objective of 12% by almost 7 percentage points, even though base money ended up 1.5% below its forecast. The opposite problem occurred in 1999, when the inflation rate fell below the year-end target (12.3% vs. 13%) while base money exceeded its target by more than 21%. Not surprisingly, with this record, the Bank of Mexico under Guillermo Ortiz has backed off from its flirtation with monetary targeting, downplaying publicly

⁹See Mishkin and Savastano (2000) for a fuller discussion of the monetary policy strategy of Peru and Mexico during the 1990s.

¹⁰ One of us has argued elsewhere that even the discretionary monetary policy regime in the United States, which has been so successful, may not produce desirable outcomes over the long run and needs to be modified, even though the environment for *Agood@* discretion in the United States is far more favorable than in Latin America (see Mishkin, 1999a).

the role that money base forecasts play in the setting of monetary policy. Indeed, as we will argue in the next section, the Bank of Mexico has been gradually moving in the direction of inflation targeting.

The recent experiences of Mexico and Peru illustrate the difficulties that the instability of the money-inflation relationship creates for monetary targeting as a strategy for monetary policy in Latin America. This does not mean that monetary aggregates have no role to play in the conduct of monetary policy in the region. The signal-to-noise ratio of monetary aggregates in many countries is likely to be high owing to their history of high inflation and large swings in money growth. However, as inflation falls to single digit levels and remains there, money growth rates are likely to lose informational content and become less useful indicators of monetary policy, as occurred in industrial countries (see Estrella and Mishkin, 1997). As money aggregates become less reliable indicators of future inflation, central banks will be forced to downplay the importance of monetary targets, and search for alternative nominal anchors and communication devices.

In sum, monetary targeting is a strategy for monetary policy that has not been used by Latin American countries in the recent past, and is probably not an advisable medium-term strategy for the future. This is so because the problems that led to the abandonment of this strategy in industrialized countries (Bernanke and Mishkin, 1992) are also likely to arise in Latin America as low inflation becomes a more permanent feature. Indeed, even Germany, the quintessential monetary targeter, encountered problems with the money-inflation relationship which led the Bundesbank to miss the target ranges for its monetary targets on the order of half the time.¹¹ The secret to the Bundesbank's success was its long-term adherence to a monetarist framework to communicate to the public its commitment to price stability, along with the credibility it earned over the years which made its explanations of target misses believable to the public. Germany's relative success with monetary targeting is not a model for Latin America, where central banks need to assert their credibility over the next few years. In fact, the Bundesbank's success may not even be a model for how the European Central Bank should conduct monetary policy (see Bernanke et al., 1999 and Mishkin, 1999a).

IV. Inflation Targeting

¹¹ Partly because of this a number of researchers regard Germany's monetary policy as being closer to an inflation targeting regime than to a monetary targeting regime. See for example, Clarida and Gertler (1998), Bernanke, et al. (1999) and Mishkin (1999a).

Inflation targeting is a monetary policy strategy that involves five main elements: 1) the public announcement of medium-term numerical targets for inflation; 2) an institutional commitment to price stability as the primary goal of monetary policy, to which other goals are subordinated; 3) an information-inclusive strategy in which many variables, and not just monetary aggregates or the exchange rate, are used for deciding the setting of policy instruments; 4) a transparent monetary policy strategy that ascribes a central role to communicating to the public and the markets the plans, objectives, and rationale for the decisions of the central bank; and 5) mechanisms that make the central bank accountable for attaining its inflation objectives. The list should clarify one crucial point about inflation targeting: it entails *much more* than a public announcement of numerical targets for inflation for the year ahead. This is important in the Latin American context, because many countries in the region have routinely reported numerical inflation targets or objectives as part of the government's economic plan for the coming year (see Fry, et al., 1999) and yet they *have not* been pursuing an inflation targeting strategy. The monetary policy strategy must contain the other four elements listed above for it to be consistent with inflation targeting and, hence, sustainable over the medium term.

Advantages of Inflation Targeting

Inflation targeting has several advantages over hard pegs and monetary targeting as a medium-term strategy for monetary policy. In contrast to a hard peg, inflation targeting enables monetary policy to focus on domestic considerations and to respond to shocks of both domestic and foreign origin. Inflation targeting also has the advantage that stability in the relationship between money and inflation is not critical to its success because it does not depend on such a relationship. Indeed, an inflation targeting strategy allows the monetary authorities to use all available information, and not just the information contained in one or two variables, to determine the best settings for the instruments of monetary policy. This is also illustrated by the model sketched in Section II (equations (1) to (5)). If the weight on output fluctuations in the period loss function is zero, i.e., $\lambda=0$ in equation (4), then Svensson (1997) has shown that setting the interest rate instrument according to the optimal rule in equation (5) is equivalent to making the expected value of the inflation rate two periods ahead equal to the inflation target, i.e.,

$$E_t \pi_{t+2} = \pi^* \quad (7)$$

In other words, setting monetary policy so as to attain the inflation target two periods (years) ahead

is an optimal policy under these conditions. If $\beta > 0$, i.e., if policymakers are also concerned about output fluctuations, then the interest rate instrument is also set according to equation (5), but now optimal policy implies that the approach to the inflation target is more gradual, i.e.,

$$E_t \pi_{t+2}^* = c(E_t \pi_{t+1}^*) \quad (8)$$

Svensson calls this type of policy reaction "flexible inflation targeting", and the evidence discussed in Bernanke et al. (1999) suggests that it is a realistic approximation of what inflation targeting countries do in practice.

Because an explicit numerical target for inflation increases the accountability of the central bank relative to a discretionary regime, inflation targeting also has the potential to reduce the likelihood that the central bank will fall into the time-inconsistency trap. Moreover, since the source of time-inconsistency is often found in (covert or open) political pressures on the central bank to engage in expansionary monetary policy, inflation targeting has the advantage of focusing the political debate on what a central bank can do on a sustainable basis--i.e., control inflation--rather on than what it cannot do through monetary policy--e.g., raise output growth, lower unemployment, or increase external competitiveness.

For inflation targeting to deliver these outcomes, there must exist a strong institutional commitment to make price stability the primary goal of the central bank. This is particularly important in Latin America, given its history of monetary mismanagement. The institutional commitment involves legislative support for an independent central bank whose charter ought to contain two key features: 1) sufficient insulation of the decision-making board of the central bank from the political process and the politicians--with the members of the board appointed to long terms and protected from arbitrary dismissal; and 2) giving the central bank full and exclusive control over the setting of monetary policy instruments. The institutional commitment to price stability also requires that the central bank be given a mandate to have price stability as its primary goal, making it clear that when there is a (perceived or actual) conflict with other goals, such as exchange rate stability or promotion of high employment, price stability must be accorded the higher priority.

Inflation-targeting regimes also put great stress on the need to make monetary policy transparent and to maintain regular channels of communication with the public; in fact, these features are central to the strategy's success. Inflation-targeting central banks have frequent communications with the government, some mandated by law and some in response to informal inquiries, and their officials take every opportunity to make public speeches on their monetary policy strategy. While these practices are also commonly used in countries that have not adopted

inflation targeting (prominent examples being Germany and the United States), inflation-targeting central banks have taken public outreach a step further: not only do they engage in extended public information campaigns, but they publish *Inflation Report*-type documents (originated by the Bank of England) to present their views about the past and *future* performance of inflation and monetary policy. The publication of these documents is noteworthy because they represent a departure from the traditional, more formal reports of central banks and introduce new design elements that help enhance communication with the public.

The rationale for ascribing a central role to communication under inflation targeting is to keep the general public, financial markets and the politicians permanently informed about: 1) the goals and limitations of monetary policy, including the rationale for inflation targets; 2) the numerical values of the inflation targets and how they were determined, 3) how the inflation targets are to be achieved, given current economic conditions--i.e., baseline inflation forecasts; and 4) reasons for any deviations from targets. In countries that have adopted inflation targeting this emphasis on communication has improved private-sector planning by reducing uncertainty about monetary policy, interest rates and inflation; has promoted public debate of monetary policy, in part by educating the public about what a central bank can and cannot achieve; and has helped clarify the responsibilities of the central bank and of politicians in the conduct of monetary policy (see Bernanke et al., 1999).

Another key feature of inflation-targeting regimes is the tendency toward increased accountability of the central bank. Indeed, transparency and communication go hand in hand with increased accountability. The strongest case of accountability of a central bank in an inflation-targeting regime is that of New Zealand, where the government has the right to dismiss the Reserve Bank's governor if the inflation targets are breached, even for one quarter. In other inflation-targeting countries, the central bank's accountability is less formalized. Nevertheless, the transparency of policy associated with inflation targeting has tended to make the central bank highly accountable to the public and the government. Sustained success in the conduct of monetary policy as measured against a pre-announced and well-defined inflation target can be instrumental in building public support for an independent central bank, even in the absence of a rigid standard of performance evaluation and penalties.

Disadvantages of Inflation Targeting

Critics of inflation targeting have noted at least seven major disadvantages of this monetary policy strategy. Four of those disadvantages--that inflation targeting is too rigid, that it is tantamount to full discretion, that it necessarily increases output instability, and that it hurts

economic growth-- we believe are misplaced. The fifth disadvantage, that inflation targeting can only produce weak central bank accountability because inflation is hard to control and because there are long lags from the monetary policy instruments to the inflation outcome, is a serious one indeed. This disadvantage is particularly important in the Latin American context because the question of inflation controllability in an environment of low inflation and flexible exchange rates is fairly new for the region and hence central banks cannot draw on minimally robust findings and regularities, and because the accountability and credibility of public institutions, including the central bank, are quite low by international standards. The sixth and seventh disadvantages, that inflation targeting cannot prevent fiscal dominance, and that the exchange rate flexibility required by inflation targeting might cause financial instability, especially when there is partial dollarization, are also very relevant in the Latin American context.

Some economists, most notably Friedman and Kuttner (1996), have criticized inflation targeting because they see it as imposing a rigid rule on the monetary authorities that does not allow them enough discretion to respond to unforeseen circumstances. For example, the central banks of the industrial countries that adopted monetary targeting in the 1970s and 1980s did not foresee the breakdown of the relationship between monetary aggregates and goal variables such as nominal spending or inflation. With rigid adherence to a monetary rule, that breakdown could have had disastrous consequences. But this is not what happened. The point here is that the useful analytical distinction between rules and discretion can be highly misleading when translated into practical policy advice. There exist useful policy strategies that are "rule-like" in that they involve forward-looking behavior that limits policymakers from *systematically* engaging in policies with undesirable long-run consequences. For the case of monetary policy, such policies avoid the time-inconsistency problem and can be suitably described as providing the monetary authorities with *A constrained discretion* (see Bernanke and Mishkin, 1997).

Inflation targeting can be described exactly in this way. Inflation targeting, as actually practiced, is far from a rigid rule. It does not imply simple or mechanical instructions as to how the central bank should conduct monetary policy. Rather, as illustrated in the equations (7) and (8) above, inflation targeting requires that the central bank uses all the information available at a given point in time to determine what are the appropriate policy actions to achieve its preannounced inflation target. Unlike simple policy rules, inflation targeting mitigates the risk that the central bank ignores important information by focusing exclusively on a reduced set of variables. In fact, it gives the central bank considerable room for choosing what weight to assign to the information it receives, for changing the setting of its policy instruments and, under certain well-defined circumstances, for modifying or even breaching the inflation targets (Bernanke, et al., 1999).

Other critics of inflation targeting, (e.g., Calvo 1999, Calvo and Mendoza, 2000) have raised the exact opposite criticism and argue that inflation targeting allows too much discretion to monetary policy making and, thus, is a harbinger for a myriad of undesirable outcomes. As explained in Bernanke et al., 1999, this criticism is also unwarranted. The increased transparency and accountability to which all central banks that adopt inflation targeting become subject substantially constrains their discretion and scope for making systematic policy mistakes. Transparent discussions of the conduct of monetary policy make it very difficult for the central bank to follow an overly expansionary monetary policy without it being noticed, while accountability means that the central bank pays a high price if it engages in discretionary policy that leads to high inflation or to excessive output instability (see below). The incentives and scope for central banks to adopt a purely discretionary monetary policy are thus greatly reduced.

A third criticism of inflation targeting is that by focusing monetary policy on lowering inflation it necessarily exacerbates output instability. The counter to this argument is that inflation targeting does not require an exclusive focus on inflation, but simply makes inflation the primary goal of monetary policy. In fact, experience has shown that inflation targeters do display substantial concern about output fluctuations. For example, all the industrialized countries that follow this strategy have set their inflation targets above zero:¹² at present, New Zealand has the lowest midpoint for an inflation target, 1.5%, Canada and Sweden have set the midpoint of their inflation target at 2%; while the United Kingdom and Australia have them at 2.5%. The decision by inflation targeters to choose inflation targets above zero reflects the monetary authorities' concerns that (de-facto) deflation can have substantial negative effects on real economic activity. More generally, central bankers in inflation-targeting countries continue to express their concern about fluctuations in output and employment, and the ability to accommodate short-run stabilization goals to some degree is built into all inflation-targeting regimes; one manifestation of this is that the behavior of inflation targeters is better captured by equation (8), than by equation (7), and have lowered inflation targets quite gradually toward the long-run inflation goal.

Furthermore, many inflation targeters have stressed that the floor of the target range should be considered every bit as binding as the ceiling (which is what equation (8) suggests should be the optimal policy to follow), thus helping to stabilize the real economy when there are negative shocks

¹² CPI indices typically contain an upward bias in the measurement of true inflation and so it is not surprising that the chosen inflation targets were all above zero. However, the point is that these countries have chosen targets for inflation that exceed zero even after taking account of measurement bias.

to aggregate demand. Inflation targets can in fact increase the central bank's ability to respond to those types of shocks; declines in aggregate demand that may cause the (future) rate of inflation to fall below the floor of the target range will automatically induce the central bank to erase monetary policy without fearing that its action will trigger a rise in inflation expectations. Another element of flexibility in an inflation targeting strategy is that deviations from inflation targets are routinely allowed in response to supply shocks that could have large adverse effects on output. There are two ways in which this is done in practice: excluding certain items from the price index on which the official inflation targets are defined (for example, excluding some combination of food and energy prices from the officially targeted price index); or accommodating the first-round effects on inflation of an observable supply shock (e.g., a rise in the value-added tax or a natural disaster that raises agricultural prices) and then explaining to the public the reasons for the deviations and its implications for the attainment of the inflation target.

A fourth concern about inflation targeting is that it will lead to low growth in output and employment. This is the age-old concern about the output costs of disinflation (from low inflation levels). Although inflation reduction has been associated with below-normal output during disinflationary phases in inflation-targeting regimes, particularly in industrialized countries, evidence shows that once low inflation was achieved, output and employment returned to their pre-disinflation levels. Hence a conservative conclusion is that inflation targeting is not harmful to the real economy after the disinflation has occurred. Given the strong economic growth experienced by many inflation targeting countries once they attained their medium-term inflation goal, however, a case could be made that inflation targeting in fact fosters output growth in addition to controlling inflation.

The last three disadvantages that have been noted in the current debate--that inflation targeting does little for central bank accountability because inflation is hard to control, that it does not cure or prevent fiscal dominance, and that it might expose the economy to financial instability, especially when there is partial dollarization--deserve, in our view, more serious consideration.

In contrast to exchange rates and monetary aggregates, the inflation rate can not be easily controlled by the central bank; furthermore, inflation outcomes that incorporate the effects of changes in instruments settings are revealed only after a substantial lag. To address this problem an inflation targeting strategy should place a high value on transparency; periodic releases of the central bank's inflation forecasts and explanations of its policy decisions, for example, become crucial for guiding inflation expectations and building credibility in the regime (see Svensson, 1997). However, the difficulty of controlling inflation creates a particularly severe problem for those countries in Latin America where inflation is being brought down from relatively high levels. In those

circumstances, inflation forecast errors are likely to be large, inflation targets will tend to be missed more often, and it will be difficult for the central bank to gain credibility from an inflation targeting strategy, and for the public to ascertain the reasons for the deviations. This suggests that, as noted by Masson et al. (1997), inflation targeting is likely to be a more effective strategy if it is phased in only after there has been some successful disinflation.

Two other factors affecting inflation controllability that are especially relevant in the Latin American context are the (at times large) incidence of government-controlled prices on the index used to compute headline inflation, and the historically high passthrough from exchange rate depreciations. The former suggests that inflation targeting may demand a high degree of coordination between monetary and fiscal authorities on the timing and magnitude of future changes in controlled prices, while the latter suggests that the central banks of the region probably can not afford an attitude of *Abenign neglect* towards exchange rate depreciations, at least until low inflation induces a change in the expectations-formation process and in the price-setting practices of households and firms (more on this below).

A sixth shortcoming of inflation targeting is that it may not be sufficient to ensure fiscal discipline or prevent fiscal dominance. Governments can still pursue irresponsible fiscal policy with an inflation targeting regime in place. In the long run, large fiscal deficits will cause an inflation targeting regime to break down: the fiscal deficits will eventually have to be monetized or the public debt eroded by a large devaluation, and high inflation will follow. Absence of outright fiscal dominance is a therefore key prerequisite for inflation targeting, and the setting up of institutions that help keep fiscal policy in check are crucial to the success of the strategy (Masson et al., 1997). However, as we have seen, absence of fiscal dominance is also crucial to the success of a full dollarization strategy, and it is not at all clear that full dollarization is more effective than inflation targeting to prevent its occurrence. In fact, inflation targeting may help constrain fiscal policy to the extent that the government is actively involved in setting the inflation target (including through the coordination on future adjustments to government-controlled prices).

Finally, a high degree of (partial) dollarization may create a potentially serious problem for inflation targeting. In fact, in many Latin American countries the balance sheets of firms, households and banks are substantially dollarized, on both sides, and the bulk of long-term debt is denominated in dollars (Calvo 1999). Because inflation targeting necessarily requires nominal exchange rate flexibility and because the economies of the region are highly open and dependent on external financing, exchange rate shocks are unavoidable. However, large and abrupt depreciations may increase the burden of dollar-denominated debt, produce a massive deterioration of balance sheets, and increase the risks of a financial crisis along the lines discussed in Mishkin (1996).

The importance of these effects can be appreciated by incorporating an exchange rate term into the aggregate demand and supply equations (1) and (2) as in Ball (1999).

$$p_t = p_{t-1} + \alpha_1 y_{t-1} + \alpha_2 e_{t-1} + \alpha_3 \quad (1')$$

$$y_t = \beta_1 y_{t-1} - \beta_2 (\dot{i}_{t-1} - i_{t-1}) + \beta_3 (e_{t-1} - e_{t-2}) + \beta_4 \quad (2')$$

with the exchange rate determined by:

$$e_t = \gamma i_t + u_t \quad (9)$$

where e_t = the log of the real exchange rate expressed as a deviation from a normal level, u_t is an error term, and γ captures the positive relation that exists between interest rates and the value of the currency (e.g., through capital flows and appreciation).

The optimal policy for setting the interest rate in this modified system then becomes:

$$\dot{i}_t = i_t + b_1 (i_t - i_t^*) + b_2 y_t + b_3 e_t \quad (5')$$

This modification of the Taylor rule to take explicit account of the exchange rate in setting the monetary policy instrument is consistent with an inflation targeting regime. As we have seen before, in the case of $\gamma = 0$, monetary policy tries to achieve the long-run inflation target in two periods, while if $\gamma > 0$, the long-run inflation target is approached more gradually.

The view that in Latin America exchange rate fluctuations are likely to have a bigger affect on aggregate demand and aggregate supply (because the pass-through may be larger), just indicates that the weight on the exchange rate in the modified Taylor-rule, b_3 , may be relatively larger. However, this is in no way inconsistent with inflation targeting. It just implies that an inflation targeting regime will care about exchange rate fluctuations, just as it should care about output fluctuations. It also suggests that inflation targeting in partially dollarized economies may not be viable unless there are stringent prudential regulations on, and strict supervision of, financial institutions that ensure that the system is capable of withstanding exchange rate shocks.

Lessons from Recent Experience

Inflation targeting is often in the eyes of the beholder. The monetary policy frameworks of several countries in Latin America -- Chile, Colombia, Peru, Mexico and Brazil -- contain some of

the elements of inflation targeting that we have outlined earlier. However, this does not mean that all these countries should be regarded as following an inflation targeting strategy. (For a more detailed discussion of the inflation targeting experiences in these countries the reader is again referred to Mishkin and Savastano, 2000).

The Chilean experience with inflation targeting is possibly the most important to highlight because Chile was the pioneer in the region with this type of monetary policy strategy. After enacting new central bank legislation in 1989, which gave independence to the monetary authority and mandated price stability as one of its primary objectives, the central bank announced its first inflation objective in September 1990 for the twelve-month inflation rate as of December 1991. Since then the (December to December) inflation objective for the following year has been announced every year in the first fifteen days of September. However, because of the uncertainty about inflation control, the inflation objective was initially treated more as an official inflation projection rather than as a formal or "hard" target (Morandé and Schmidt-Hebbel, 1997). In fact, Chile's central bank pursued a very gradualist approach to lowering its inflation objectives, starting with targets of over 20% for 1991 and lowering them slowly to below 5%. Over time, the central bank put greater emphasis on the price stability objective and with its success in both disinflating and meeting its inflation objectives, the public began to interpret those objectives as "hard" targets for which the central bank could be made accountable. As part of this process of hardening the targets, in September 1994 the central bank started to announce point targets rather than target ranges for its inflation objective for the following year. However, it was only in 1999 when the central bank explicitly announced a multi-year target for inflation-- consisting of a target of 3.5% for the year 2000, and a longer-term target of 2 to 4% for 2001 onwards.

The Chilean experience with inflation targeting looks quite successful.¹³ Inflation has fallen from levels above 20% when inflation projections were first introduced to a level around 3% at present. Over the same period, output growth was very high, averaging almost over 8.5% per year from 1991 to 1997, a level comparable to those exhibited by the (former) Asian tigers. This success suggests that inflation targeting can be used to promote gradual disinflation, even when inflation starts from double digit levels, and that the gradual hardening of targets as inflation falls is an appropriate strategy to deal with the controllability problems when inflation is initially high. Indeed, not only has this strategy been used by Chile, but it is also the strategy that was followed by the many of the industrialized countries that adopted inflation targeting, as is documented in

¹³ Corbo (1998) and Landerretche, et al. (1999) analyze the factors behind Chile's successful disinflation of the 1990s; For a critical view of the disinflation, see Calvo and Mendoza (1999).

Bernanke et al. (1999).

Mexico also appears to be following a gradual approach to implementing inflation targeting. In fact, senior officials of the Bank of Mexico have recently characterized Mexico's monetary policy framework as being in "a transition period towards a clear-cut inflation targeting scheme" (Carstens and Werner, 1999). For a number of years Mexico has made public an explicit inflation objective at the time the Minister of Finance submitted to Congress the government's economic program for the following year. However, the Bank of Mexico has increasingly placed an emphasis on the inflation goal as the central objective of its monetary policy. In 1999, after annual inflation came in at 12.3%, below the 13% target, the central bank for the first time announced the (10%) inflation target for the year 2000 before the Ministry of Finance submitted to Congress the economic program for the year. Also for the first time, the Bank of Mexico announced a multi-year target for inflation by stating that it intended to lower inflation to "international levels," (i.e., somewhere in the 2 to 3% range) by 2003. Starting in April of 2000, the Bank of Mexico has been issuing an *Inflation Report*, which documents what has been happening on the inflation front and how the Bank of Mexico intends to achieve its inflation objective. These developments are likely to contribute to raise the accountability of the Bank of Mexico for complying with its inflation objectives.

In contrast, and despite the central bank's announcement since 1991 of explicit numerical targets for one-year ahead inflation as part of the government's economic program, Colombia did not make a serious commitment to lowering inflation during the 1990s. Reducing inflation from the 20-25% range was not a priority of monetary policy: Colombia's central bank continued to give priority to other objectives, especially output stability, whenever those goals seemed to be put in jeopardy by the inflation target (see Cardenas and Partow, 1998). Not surprisingly, Colombia's anti-inflation strategy was a failure: average annual inflation in the period 1991-1998 (22.7%) was essentially the same as the average for the 1980s (23.6%), and from 1991 to 1996 the central bank consistently exceeded its always modest inflation targets. The inflation target was met for the first time in 1997 --with inflation ending slightly below the 18% target-- but the target was breached again in 1998 (16.7% vs. 16%). In that year, investors' concerns about Colombia's large fiscal and external deficits (in the order of 4% and 5% of GDP, respectively) and about its political situation led to a string of speculative attacks on the peso. In response, the central bank first raised interest rates to record-high levels and then, in September 1998, depreciated both edges of the exchange rate band by 9%. The response did not arrest the speculative pressures and induced a sharp slowdown in activity. In 1999 the pressures on the peso continued and Colombia suffered its first recession in seven decades. By mid-year it was apparent that the inflation target of 15% would be undershot by a large margin, but it was also clear that this was not a desired policy outcome. However, an

inflation rate below the target level of 10% in 2000 suggests that there is an opportunity for Colombia to strengthen its inflation-targeting regime.

Fiscal discipline and a sound and well-regulated banking system are crucial for the viability and success of inflation targeting, just as they are for the success of hard pegs, and the experience in Chile supports this view. The fiscal balance in Chile ended in surplus every year from 1991 to 1998, and during 1991-97 the surplus averaged 2.8% of GDP, clear indications that fiscal policy was kept under control. In addition, due largely to the measures taken in the aftermath of the severe banking crisis of the early 1980s, Chile's standards and practices in the areas of banking regulation and supervision during the 1990s have been of a quality comparable to those found in industrialized countries and far superior to those found in the rest of Latin America (with the possible exception of Argentina since 1995). The resulting solidity of the Chilean financial system has meant that the ability of the central bank to take steps to defend the currency and the banks has never been in question, which may have helped Chile experience less pressures on its currency than other countries of the region at the time of the Tequila crisis (see IMF, 1996). The controls on short-term capital inflows have also been cited often as another important factor behind the low vulnerability and relative stability of the Chilean economy in the 1990s. However, the controls are highly controversial and their contribution is difficult to ascertain.¹⁴ Our reading of the evidence suggests that, from the perspective of monetary policy and inflation control, strict prudential supervision was probably more important.

Chile seems to be way ahead of the other countries who have adopted some form of inflation targeting in Latin America in terms of broad compliance with the basic requirements. Lack of fiscal discipline is a particularly serious concern in Brazil and Colombia, whereas weaknesses in the banking system are the big question mark in Mexico, and, to a lesser extent, Peru. Inflation targeting alone will not solve these problems; neither will hard pegs. Setting *multi-year* inflation targets in coordination with the government (including on the issue of government-controlled prices) may help reduce the risk of fiscal profligacy, but it is not enough. Setting up institutions that help keep fiscal policy in check and others that promote and enforce sound banking practices, seem to be the only solutions that may prove lasting and workable in the region.

The Chilean experience in 1998-99, when the economy entered a recession (with output growth falling to 3.4% in 1998 and by an estimated -1.3% in 1999) illustrates the tricky issues that arise when the exchange rate is an important consideration in the conduct of monetary policy. As

¹⁴ For a recent overview of the debate surrounding Chile's capital controls, see Edwards (1999).

part of its monetary policy regime, from the mid-1980s until August 1999, Chile had an exchange rate band around a crawling peg which was (loosely) tied to *lagged* domestic inflation. The central bank stressed that the purpose of the exchange rate band *was not* inflation control, and this was the reason why, for most of the period, the rate of crawl was set on a backward-looking rather than a forward-looking basis. Rather the central bank argued that the purpose of the exchange rate band was to keep the real exchange rate in a range consistent with medium- and long-term external equilibrium and, thus, preclude an excessive current account deficit. Over time, the central bank also made it clear through its actions that the inflation target would take precedence over the exchange rate band when there was a potential conflict between the two objectives. Thus, for example, in various instances from 1992 to 1997 when large capital inflows pushed the exchange rate close to the appreciated edge of the band, the central bank widened the band and even revalued the central parity while keeping the inflation target unchanged, thus signaling to the public that it attached a higher weight to lowering inflation than to resisting a real appreciation that seemed warranted by the fundamental determinants of the real exchange rate.

The focus on the exchange rate did help lead to a serious policy mistake in 1998. In the aftermath of the Asian crisis and then the meltdown in Russia, the Chilean central bank was reluctant to ease monetary policy and let the exchange rate depreciate in order to cushion the effects of a substantial negative terms of trade shock. Instead, the central bank raised interest rates sharply and narrowed its exchange rate band. As a result, the inflation target was undershot and the economy entered a recession for the first time under the inflation targeting regime. Not surprisingly given these outcomes, the central bank came under strong criticism.¹⁵ During 1999 the central bank reversed course, eased monetary policy by lowering interest rates, and allowed the peso to depreciate.

The other countries in Latin America that are moving toward inflation targeting, also have been reluctant to adopt an attitude of "benign neglect" of exchange rate movements (i.e., a "pure float"). Although some focus on the exchange rate seems broadly appropriate -- especially while they were undertaking a disinflation-- all of them probably went too far for too long in the direction

15 In contrast, during this same period, Australia eased monetary policy, thereby allowing the currency to depreciate to cushion the effects of its own negative terms of trade shock. This policy met with great success, resulting in an economy that remained strong while the inflation target continued to be met. One reason why Chile's central bank did not react in a similar manner to a comparable shock may have been its (unwarranted) concern that a large peso depreciation would lead to inflation exceeding the target and, hence, erode its credibility.

of limiting exchange rate flexibility--not only through the explicit use of exchange rate bands, employed by all countries, except Peru, for a good part of the 1990s, but also through frequent direct and indirect intervention in the foreign exchange market. The main problem with responding too heavily and too frequently to movements in a flexible exchange rate is, of course, that the strategy runs the risk of transforming the exchange rate into a nominal anchor for monetary policy that takes precedence over the inflation target, at least in the eyes of the public. With time, this practice may become observationally equivalent with a strategy of nominal exchange rate targeting.

To mitigate the risk that the exchange rate might replace the inflation target as the economy's main nominal anchor, central banks can increase the transparency of the role of the exchange rate by emphasizing that concerns about exchange rate effects on aggregate demand and supply imply that the setting of interest rates would necessarily reflect exchange rate movements, as is illustrated by equation (5'). What this means in practice is that the central bank would be smoothing exchange rate fluctuations, but would not involve attempting to prevent the exchange rate from reaching its market-determined level over longer horizons. Exchange rate smoothing via foreign exchange market interventions might be necessary at times to prevent or arrest large and abrupt exchange rate fluctuations that are clearly divorced from fundamentals. However, persistent exchange market interventions, particularly unsterilized ones, are likely to be counterproductive because they are not transparent. Instead, exchange rate smoothing via changes in the interest rate instrument will tend to be more transparent and help signal that the inflation targets, and not the exchange rate remains the primary nominal anchor of the economy.

Central banks should also explain to the public the rationale for exchange rate intervention in a manner analogous to that for interest-rate smoothing, i.e., as a policy aimed not at resisting market-determined movements in an asset price, but at mitigating potentially destabilizing effects of abrupt and sustained changes in that price. More generally, we think it is important that central banks understand that there are no 'good floats' or 'bad floats', but that there is such a thing as 'good' and 'bad' monetary policy under flexible exchange rates. Letting the exchange rate become the de-facto nominal anchor of the economy through excessive intervention in a quasi-inflation targeting regime is an example of the latter.

It is also important that central banks in Latin America recognize that, as is the case for most economic relationships, the passthrough from exchange rate changes to prices is likely to be regime-dependent. After a sustained period of low inflation with effective, as opposed to fictional, exchange rate flexibility, the informational content of the exchange rate in the expectations-formation process and price-setting practices of households and firms is likely to fall. Thus, the widespread view that a currently high passthrough from exchange rate changes to prices is a barrier to successful inflation

targeting is probably overdone. Indeed, the low pass-through that occurred after the Brazilian devaluation in 1999, which might have been reduced by the adoption of an inflation targeting regime (as well as by the slack in the economy), suggests that a high pass-through is not a permanent feature of Latin American economies.

Another lesson from the Chilean experience is that a key requirement for inflation-targeting regimes in Latin America, as elsewhere is the recognition that undershooting inflation targets, which occurred recently not only in Chile but also Peru, is just as costly as overshooting the targets. Support for an independent central bank which is pursuing price stability can erode if the central bank is perceived as focusing too narrowly on lowering inflation to the detriment of other objectives, especially output stability. By just as readily admitting their mistakes when an inflation target is undershot as when it is overshot, and continuously refining their technical expertise to minimize the occurrence of such events, central banks may increase support for their independence and for the inflation targeting regime.

Brazil's inflation targeting regime is too recent to evaluate fully, although so far the results have been encouraging, with Brazil able to keep inflation within the target range of 8-10% and 6-8% in 1999 and 2000. Brazil decided to adopt an inflation targeting regime shortly after the collapse of the real, when the new governor of the central bank, Arminio Fraga, announced its intention to enact such a framework for monetary policy. On June 21, 1999 the President of Brazil issued a decree instituting an inflation targeting framework for the conduct of monetary policy. The regime contemplated in the decree contains all the key elements of an inflation targeting strategy, namely :

- 1) the announcement of multi-year inflation targets (with explicit numerical targets for the 12-month rate of inflation in the years 1999, 2000 and 2001, and a commitment to announce the targets for 2002 onwards two years in advance);
- 2) assigning to the National Monetary Council the responsibility for setting the inflation targets and tolerance ranges based on a proposal by the Minister of Finance;
- 3) giving to the central bank of Brazil full responsibility to implement the policies needed to attain the inflation targets;
- 4) establishing procedures to increase the central bank's accountability (specifically, if the target range is breached, the central bank president would have to issue an open letter to the Minister of Finance explaining the causes of the deviation, the measures that will be taken to eliminate it, and the time it will take to get inflation back inside the tolerance range) and
- 5) taking actions to improve the transparency of monetary policy (concretely, the central bank was requested to issue a quarterly *Inflation Report* modeled after that produced by the Bank of England).

The Brazilian framework has all the bells and whistles of an inflation targeting regime, and is clearly the most comprehensive attempt to establish a regime of this type in Latin America. What

is especially striking about Brazil's move to inflation targeting is how fast it occurred. The first inflation report was issued in July 1999, just a few months after Fraga was confirmed, with the second, right on schedule in September. The reports not only discuss clearly the conditions prevailing in the economy and the prospects for inflation, but also provide the central bank's inflation forecasts under different scenarios--including through the use of "fan charts" depicting the probabilities of different inflation paths. Many central bankers in Latin the region have been concerned that it might take them a long time to acquire the technical capability to issue an inflation report of this type. Brazil has shown the way, indicating that an inflation targeting regime, with a high degree of transparency and accountability can indeed be implemented quickly.

The other three countries in the region mentioned here have lagged behind in adopting other key elements of inflation targeting, with Colombia being the furthest one out. Even, Chile, with the success of its inflation targeting regime in reducing inflation, was slow to adopt a full-fledged inflation targeting regime: it was not until May 2000 that the Chilean central bank began to produce an *Inflation Report*-type of document in which it publishes its baseline inflation forecasts.

V.

Conclusion

We have taken the view that the real debate over monetary policy regimes in Latin America should not be over whether the exchange rate regime should be fixed or flexible. Instead, the debate should be over what is the best way to constrain discretion over monetary policy in Latin American countries. Like most economists, we come up with the answer that "it depends," in particular, we think that the key to the answer lies on the institutional environment in each country. There are some countries in Latin America which do not appear to have the political and other institutions to constrain monetary policy if it is allowed some discretion. In these countries there is a strong argument for hard pegs, including full dollarization, which allow little or no discretion to the monetary authorities. On the other hand, there are countries in Latin America that seem to have the ability to constrain discretion, with Chile being the clearest example, and for these cases we believe that inflation targeting is likely to produce a monetary policy which keeps inflation low and yet appropriately copes with domestic and foreign shocks.

Monetary targeting as a strategy for Latin America is not viable because of the likely instability of the relationship between monetary aggregates and inflation, of which there is ample international evidence. Therefore, it is not surprising that no Latin American country has truly followed a monetary targeting strategy, and those that have tried or have been regarded as trying, have instead conducted a highly discretionary monetary policy which is, of necessity, non-transparent and has the potential of breaking down at any point.

Proponents of different strategies for the conduct of monetary policy often have a tendency to argue that their preferred strategy will be a panacea that will help resolve hard problems such as fiscal dominance. The experience in Latin America suggests that these arguments are quite problematic because a monetary policy strategy, no matter whether it involves a hard peg or an inflation target, will not be successful in maintaining low inflation over the medium term unless government policies create the right institutional environment. Rigorous prudential supervision, which ensures the safety and soundness of the financial system, is crucial to the success of an inflation targeting regime just as it is for hard pegs. Also, sound and sustainable fiscal policy is as essential to the success of inflation targeting regimes as it is to the viability of hard pegs. Large fiscal deficits and the ensuing buildup of government debt will eventually lead to the failure of both types of regime.

The bottom line is that adopting a strategy for monetary policy, whether it be a hard peg or a regime with greater flexibility of exchange rates, like inflation targeting, cannot solve the basic problems that have existed in Latin American economies for a long time. Successful monetary policy in Latin America cannot be done in a vacuum. Design of the basic institutional infrastructure in those economies must be addressed and improved in order to attain and preserve low and stable inflation.

A number of economists (e.g., Eichengreen and Hausmann, 1999) have become convinced that Latin America is subject to some type of *original sin* and thus is unlikely to grow up and develop institutions which would promote good monetary policy. With this view, it seems sensible to effectively close down central banks and adopt a currency board or to go for (unilateral) full dollarization. We are quite skeptical of the *original sin* argument. The recent successes in bringing down inflation in many countries of the region suggests to us that it is possible for Latin America to develop institutions which would allow its central banks to follow a monetary policy focused on keeping inflation low while preserving some scope to mitigate output fluctuations. We are thus not convinced that it is time to give up on the maturation of Latin America, and believe that the move towards inflation targeting that has started in the region will continue and make further inroads in the years ahead.

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