Inter-American Development Bank

Office of the Chief Economist

Working Paper Green Series #349

A Decade of Reform in Latin America: Has It Delivered Lower Volatility?

Michael Gavin

Office of the Chief Economist

Inter-American Development Bank

Prepared for discussion at the seminar "Latin America After a Decade of Reform: What Are the Next Steps?" at the Annual Meetings of the Inter-American Development Bank, Barcelona, March 16, 1997. This paper was prepared in the Office of the Chief Economist and does not necessarily represent the views of the Bank's management or its Board of Executive Directors. The author thanks Suzanne Duryea, Eduardo Fernández-Arias, Ricardo Hausmann, Eduardo Lora, Juan Luis Londoño, Carmen Pagés-Serra, Claudia Piras, Antonio Spilimbergo, Ernesto Stein, Miguel Székely, and Ernesto Talvi for helpful comments, and Erik Wachtenheim for indispensable research assistance.

A Decade of Reform in Latin America: Has It delivered Lower Volatility?

Executive Summary

Have the economies of Latin America become less volatile as a result of the economic stabilization and structural reforms implemented during the past decade? The answer is a qualified "yes." The reforms have helped, but more needs to be done to ensure the macroeconomic stability required for accelerated and more equitable long-run growth in the region.

The reforms have reduced volatility: Macroeconomic outcomes in the region as a whole have been less volatile during the 1990s than they were during the pre-reform period. This is probably attributable in part to the somewhat more tranquil international environment; in particular, the volatility of the terms of trade has been low by historical standards in most of the world, though capital flows to the region have remained volatile. But much of the improvement must be also attributed to the substantially lower volatility in measures of monetary and fiscal policy, fruits of the region's economic stabilization and structural reform efforts.

Structural reforms have helped reduce volatility: The evidence suggests that countries in the region that implemented deeper structural reforms experienced greater reductions in macroeconomic volatility than did countries in which reforms were less pronounced. The link between economic reform and stability remains after controlling for the inflation stabilizations that accompanied many of the reform programs. The evidence is strong that tax, trade, and financial reforms have been stabilizing; the evidence on labor market reforms and privatization is more mixed.

But volatility remains high by international standards: Although macroeconomic volatility declined in the 1990s, it remained substantially higher than in the industrial economies and the East Asian "miracle" economies.

And volatility has not declined in all countries: More disturbing, economic volatility during the 1990s was very high by international standards and their own historical standards in several major countries, including Argentina, Mexico, and Peru, all major reformers. We argue that the increased volatility is closely related to the process of adjustment to the countries' economic stabilization and structural reform programs, and that it highlights economic and financial "fault lines" that need to be addressed if the region is to reduce its vulnerability to economic crisis.

A policy agenda: The paper then raises questions for discussion in four areas that our analysis of recent developments suggests are key: (i) How can fiscal management be made more stabilizing? (ii) How can management of domestic financial markets contribute to lower economic volatility? (iii) How should capital flows be managed? (iv) What is the role of the exchange rate regime?

A Decade of Reform in Latin America: Has It Delivered Lower Volatility?

1. Introduction

For the past twenty years, Latin America has been at the forefront of a global move toward outward-oriented and market-oriented approaches to economic policy management. The pace of reform in the region accelerated in the middle 1980s, and by the early 1990s nearly every economy in the region had at least begun a program of economic stabilization and structural reforms in the areas of international trade policy, tax systems, financial market regulation and supervision, privatization, labor markets, and pension systems.[1] In many countries of the region the reforms have been revolutionary, bringing with them radical changes in the macroeconomic environment and in the economic role of the state.

While the reform programs remain young in many countries, and the reform agenda incomplete in important areas, there has been enough experience with the new policy framework to raise important and in many cases troubling questions about the benefits of the reforms. Persistent and in some countries rising

[1] For an account of the progress that has been made in the areas of tax reform, trade liberalization, reform of labor markets, restructuring pension security systems, privatization and financial sector reforms, see Inter-American Development Bank (1996), Part 2. In their review of this move toward global integration, Sachs and Warner (1995) categorize only two Latin American countries as relatively "closed" in 1994, Haiti and the Dominican Republic.

unemployment, and perceptions of rising inequality and poverty, raise the question whether the benefits of reform are being shared by all groups in society. The relatively modest growth rates experienced by the region during the first half of the 1990s has also raised the question whether the economic reforms of the 1980s and 1990s will have the growth payoff that had been ex pected of them. And the economic and financial crisis experienced by Argentina and Mexico in the aftermath of Mexico's 1994 devaluation raises the question whether the reforms, which were primarily directed at improving economic efficiency and prospects for economic growth, have left the region's economies more vulnerable to disruptive economic shocks.

This paper focuses on the last question: Have the Latin American reforms of the 1980s and 1990s made the economies of the region more vulnerable to economic crisis, and thereby increased macroeconomic instability? If so, what are the implications for the region's reform agenda going forward?

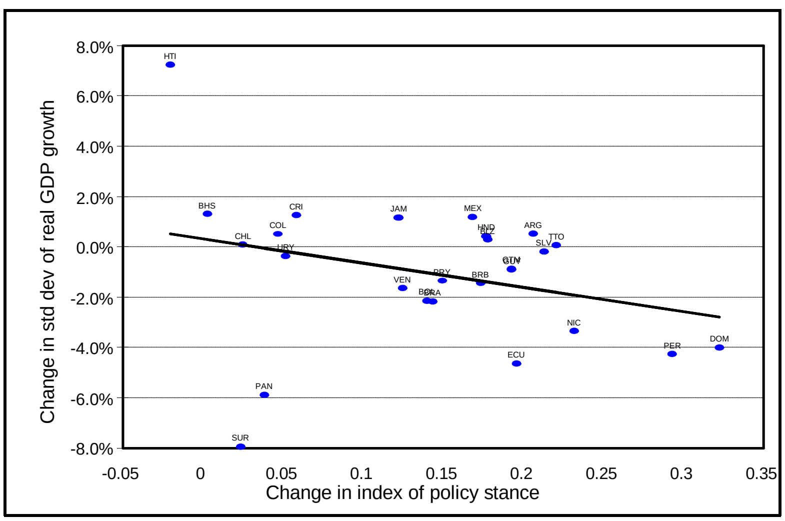
The paper is organized as follows. In the next section we briefly outline why one might care about macroeconomic instability, summarizing the existing evidence on the relationship among economic instability, economic growth, the distribution of income, and poverty. Section 3 then reviews some existing research on the causes of macroeconomic instability in Latin America. This section has two aims: first, to provide a general conceptual framework for the information that follows, and then, more specifically to outline some mechanisms through which the region's reforms might have either alleviated or contributed to the problem of macroeconomic instability.

Section 4 then turns to the recent historical record. We first ask whether the region's economies have become more or less stable during the 1990s, in several key dimensions. These "before and after" comparisons are then supplemented by an exploration of the relationship between changes in the policy stance, as measured by Lora (1997), and changes in macroeconomic volatility. The results of this analysis are encouraging if, perhaps, somewhat surprising. Our evidence suggests that the reform programs of the 1980s were not, on balance, destabilizing. On the contrary, countries with a more improved policy stance ended to experience larger reductions in key indicators of macroeconomic volatility than did countries that reformed less. This association between reform and stability is illustrated in Figure 1, which we discuss in more detail below.

Figure 1

Policy reform and GDP volatility in Latin America

(1991-95 vs. 1986-90)



Moreover, this reduction in macroeconomic volatility appears to be related to the specific structural reforms measured by Lora (1997), and not attributable solely to the inflation stabilizations that often accompanied the structural reforms, though these stabilizations were also associated with, for example, lower volatility in the real exchange rate.

But, while deeper structural reforms have been associated with reduced economic instability, the reductions in volatility have been modest. And, while the general association between reform and stability is important, major and illuminating exceptions to the general rule exist, the most spectacular cases being Argentina and Mexico, where macroeconomic volatility, as measured by fluctuations in real output, was higher during the 1990s than it had been in any of the three previous decades. We argue that this turbulence is directly related to the process of adjustment to the reform programs implemented by these countries, and that it highlights economic and financial "fault lines" common to many countries in the region, that need to be addressed if the region is to reduce its vulnerability to economic crisis.

Section 5 concludes with some questions for discussion about some of these reform areas, including the management of fiscal policy, the attainment of more robust and stabilizing financial systems, the management of capital flows, and the role of the exchange rate regime.

2. Why should we worry about economic instability?

Although most people share a general sense that economic volatility is a bad thing best avoided, the costs of a volatile macroeconomic environment have only recently come into clear focus. Recent economic research suggests that macroeconomic instability imposes a heavy burden, leading to lower rates of investment and economic growth, undermining educational attainment, worsening the distribution of income, and increasing poverty.

Volatility, investment, and economic growth

It is becoming increasingly clear that a volatile macroeconomic environment—as measured by the variance or standard deviation of some economically significant quantity such as the terms of trade, the real exchange rate, the rate of economic growth, or measures of the policy stance—is associated with significantly lower rates of economic growth. Some impressionistic evidence is presented in Figure 2. Each circular point in that figure represents the average experience for a quartile from a sample of about 132 countries. The chart suggests a negative relationship between volatility and economic growth. This relationship is also visible when data are grouped by region, and when individual country data are presented.

Figure 2

Volatility and economic growth

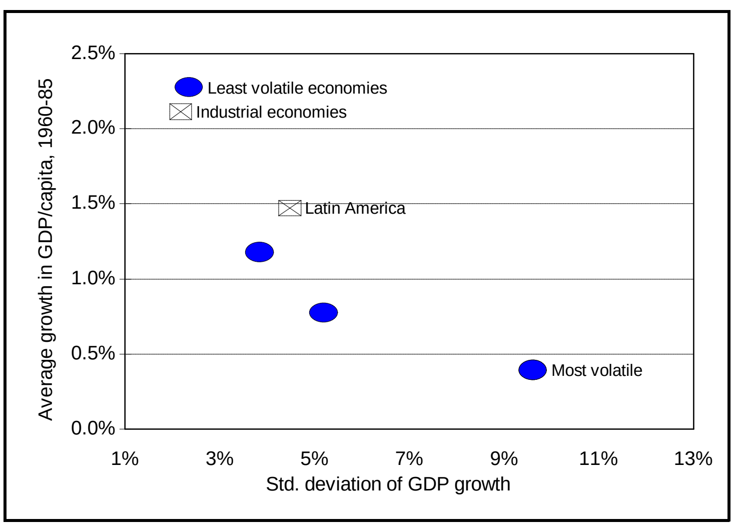


Figure 2 also shows that the volatility of real GDP growth has been roughly twice as large in Latin America as in the industrial economies, and leaves the impression that this greater volatility has led to a significant decline in the region's average rate of growth.

A number of recent studies have conducted more sophisticated tests of the relationship between macroeconomic volatility and long-run growth, to quantify the relationship more precisely and to control for other determinants of growth such as the rate of human capital accumulation. These studies have found that the link between volatility and growth is significant both in the statistical and in the economic senses. In fact, the estimates presented in Inter-American Development Bank (1995) suggest that the costs for Latin America have been enormous: if the region had experienced the volatility of the terms of trade, the real exchange rate, and the macroeconomic policies registered in the industrial economies, rather than the much higher volatilities that they experienced, the region's growth rate could have been a full percentage point per year higher than it actually was.

Existing studies have little to say about exactly which forms of economic volatility are most damaging, though the evidence suggests that instability in the terms of trade, the real exchange rate, real GDP growth, and in measures of monetary and fiscal policy are highly damaging for investment and economic growth.[2]

Accordingly, we will focus on the volatility of the real exchange rate and real GDP growth as key indicators of the volatility of the underlying macroeconomic environment.

Volatility and the distribution of income

One might expect that the poor would suffer most from an unstable macroeconomic environment, since they lack mechanisms for coping with economic shocks—access to savings or loans from financial institutions, a network of relatively wealthy family and friends—that are available to the middle classes and the wealthy. Temporary shocks may, for example, force the children of poor families out of school, thus having a permanent impact on human capital accumulation and reinforcing the income gap in the next generation of workers.[3]

The direct evidence suggests that the poor are in fact most vulnerable to a volatile macroeconomic environment. Inter-American Development Bank (1995) studied trends in the distribution of income in about 60 countries, and found that macroeconomic instability was associated a worsened distribution of income. Indeed, the estimates presented there suggest that roughly one quarter of the difference between the region's distribution of income and that of the industrial countries can be explained by Latin America's much higher degree of economic instability. The study also found direct evidence that poverty rates in Latin America are positively associated with macroeconomic instability, as one would expect if such instability undermines both economic growth and the distribution of income.

In short, while the extended discussion of macroeconomic volatility that follows may seem remote from the realities of everyday life in the region, the macroeconomic instability that the measures of volatily reflect, and that has afflicted Latin America in recent decades, has enormous implications for economic growth, welfare, and equity.

3. Sources of macroeconomic instability

Latin America experiences substantial macroeconomic volatility, and this volatility has been costly for the region. But what are the causes of this instability? Why is Latin America such a volatile region? And how might Latin America's economic reforms have affected economic stability in the region?

Why are Latin American economies so volatile?

The volatility of broad macroeconomic aggregates such as real output or the real exchange rate is determined by an interaction of the exogenous shocks that hit the economy and the macroeconomic policy response, which is, in turn, partly determined by institutions and policy regimes such as the exchange rate regime, the structure of fiscal policy making, and so on. Volatily also depends upon the strength of private institutions, including, in particular, the domestic banking system. An economy may be able to weather a shock with minimal macroeconomic fallout if the banks are sound, but the same shock may create a highly disruptive economic and financial crisis if it is perceived that the banks are not strong enough to survive it.

Many of these factors are hard to quantify, but Gavin and Hausmann (1996c) make an attempt to gauge the importance of some factors that can be quantified. Using a panel of data on about 100 countries, they try to explain the volatility of real GDP growth and the real exchange rated (two variables which previous

---

[2] Hausmann (1995) and Mendoza (forthcoming) document a negative relationship between growth and the variance of the terms of trade. Corbo (1996) and Cottani, Cavallo and Khan (1990) show that real exchange rate volatility is also associated with slower economic growth. Ramey and Ramey (1995) show that variability in the rate of output growth is associated with slower economic growth, while Cavallo and Mondino (1995) attribute the Argentine recovery of the early 1990s to the more stable economic environment. Aizenman and Marion (1993) show that investment and economic growth are adversely affected by volatility in measures of monetary and fiscal policy. Inter-American Development Bank (1995) explores the role of all these sources of volatility. It is somewhat difficult to disentangle the relative importance of real exchange rate volatility and volatility in macroeconomic policy because the two are very closely associated. A large number of studies have explored links between economic instability and investment. Aizenman and Marion (1993), Pindyck and Solimano (1993), Inter-American Development Bank (1995), and Leahy and Whited (1995) all find that macroeconomic volatility is associated with lower investment.

[3] Flug, Spilimbergo and Wachtenheim (forthcoming) show that macroeconomic volatility is associated with lower educational attainment.

research has suggested can, if they are unstable, be highly damaging for the real economy) with variables that summarize the volatility of the external environment, of domestic macroeconomic policy, and of measures that characterize the exchange regime. The paper finds that:

. Large external shocks are one explanation for Latin America's high degree of macroeconomic instability; the region experiences large shocks in the terms of trade and in capital flows, and these are reflected in the volatility of real GDP growth and the real exchange rate;

. But the volatility of the domestic policy environment, as reflected in the magnitude of short-run uncertainty about monetary growth and fiscal deficits, has been quantitatively more important. To the extent that the policy reforms of the 1980s and 1990s led to less erratic and more stabilizing monetary and fiscal policies, they should be reflected in a more stable macroeconomic environment; and

. The nominal exchange rate regime also exerts an important influence. Fixed exchange rates are associated with significantly lower volatility in the real exchange rate, but with a cost in the form of higher volatility in real GDP growth. Changes in the exchange rate regime appear to be highly destabilizing.

This work suggests that Latin America's record of economic instability, as measured by real output growth and changes in the real exchange rate, can be explained by instability in the external environment, including the terms of trade and the capital flows that it receives; by unstable monetary and fiscal policies; and by some aspects of the policy regime.

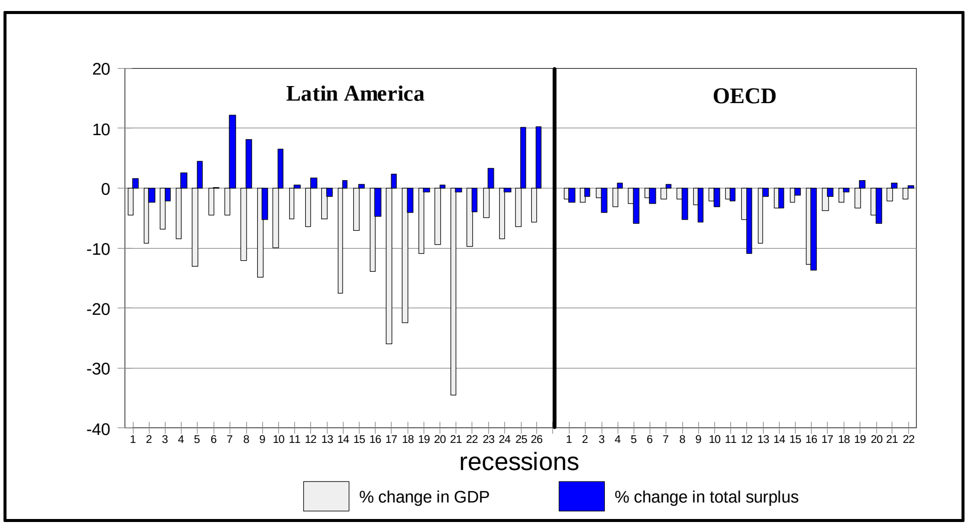
Fiscal policy and macroeconomic instability in Latin America

The role of fiscal policy deserves a closer look. Gavin, Hausmann, Perotti and Talvi (1996) examined the behavior of fiscal policy in Latin America over the 1972-1994 period, comparing it with the behavior been typical of the industrial economies. They found that fiscal policy has tended to be procyclical in Latin America, and particularly so in bad times, when a more stabilizing fiscal response would have been most valuable. This pattern contrasts sharply with the industrial economies, where fiscal policy tends to be countercyclical, and thus stabilizing, and has been especially countercyclical in bad macroeconomic times.

These patterns are illustrated in Figure 3, taken from Gavin, Hausmann, Perotti and Talvi (1996). In the industrial economies, deep recessions are consistently associated with a large decline in the fiscal balance. In Latin America, however, no such relationship is apparent—indeed, on average the fiscal balance moved toward *surplus* during the recession episodes illustrated in Figure 3, involving a major fiscal contraction in the midst of the recession.

Figure 3

Fiscal response to major recessions



Fiscal policy has tended to be destabilizing in Latin America because policymakers have been unable to maintain the fiscal surpluses in good times that would permit the budget to weather an adverse macroeconomic shock without falling into a deficit large enough to generate fears about the government's solvency. When the boom ends or an adverse shock arrives, governments have thus been forced by panic-stricken investors into a sharp fiscal contraction, just when the economy can least afford it. One important question, about which we shall have more to say below, is whether the region's economic reforms have eliminated this destabilizing fiscal management.

Policy regimes and macroeconomic volatility

There is very little evidence on the relationship between specific policy regimes and macroeconomic stability that would provide a basis for estimating the impact of the reforms on economic stability in Latin America. Here we discuss some of the mechanisms through which the region's recent "structural" reforms may have affected economic stability.

Openness: A key element of the Latin American reforms has been a reduction of barriers to international trade, with the aim of improving economic efficiency by ensuring that resources are allocated to the production of goods in which the economy has a comparative advantage, and exposing domestic producers to international competition. In this area of reform, progress has been prompt and dramatic (Inter-American Development Bank 1996).

Sachs (1985) and Sachs and Warner (1995) have argued that open economies tend to be less crisis prone than closed economies because (i) closed economies resort to debt to overcome the economic stagnation created by their lack of openness; (ii) closed economies tend to allocate a large share of investment to nontradeables, so that the capacity to generate foreign exchange may not be there when it is needed; and (iii) closed economies tend to have a higher degree of state involvement in the economy. The authors support their hypothesis with data showing that economies that were, by their definition, "open" have had far fewer macroeconomic crises than have "closed" economies. The experiences of Argentina and Mexico in 1995 also suggest that openness to international trade may facilitate recovery from a crisis once it occurs; in the absence of the enormous increase in exports that both countries achieved in 1995, the drop in domestic demand created by their financial crises would have been economically much more devastating.

However, it might also be argued that greater involvement in the world economy exposes the domestic economy to shocks from abroad. This is likely to be particularly problematic if trade liberalization creates a tendency for the economy to specialize in the production of a few primary commodities, the prices of which fluctuate dramatically. On the other hand, it may also be that concentration in a few primary commodities is the consequence of the anti-export bias of trade policy, in which case a more outward-oriented policy would lead to greater diversification. The impact of greater openness on economic stability is thus an empirical question.

Role of the state: A second objective of the reforms of the past decade was to limit the scope of the state's involvement in the economy by privatizing activities that could be undertaken by private producers, streamlining fiscal systems to minimize their impact on private decisions, and downsizing governments to improve the efficiency of their own operations. The implications of all this for economic stability has not been widely studied. As noted above, Sachs and Warner (1995) suggest that a high degree of state involvement in the economy is likely to be associated with more frequent economic crises. But Gali (1994) suggests the opposite and presents evidence that, in industrial countries, those countries with a higher share of government purchases in total demand have tended to be more stable than countries with smaller governments.

Financial liberalization: It is perhaps in regard to financial liberalization that concerns about the potentially destabilizing nature of the region's reforms have been most frequently expressed. Financial liberalization has at least two dimensions; the reduction of barriers to international capital flows, and the relaxation of restrictions on the activities of domestic financial intermediaries. With respect to the former, the fear is that the economy will become vulnerable to destabilizing inflows and outflows of internationally footloose "hot money", which may wash in and out of the domestic economy in response to changes in world interest rates or growth prospects in some remote part of the world, on to rumors, capricious changes in investor sentiment, self-fulfilling panics, or any number of considerations wholly unrelated to the interests of the recipient economy.[4]

Concern about the liberalization of domestic financial markets stems from the information and incentive problems that face banks, given limited liability and uninformed depositors and aggravated by the possibility

[4] Calvo (1996) provides a formal model of some of these issues.

of an official bailout. The danger is that domestic banks will tend to take excessive risks, profiting when the gamble pays off and shifting the costs to depositors and taxpayers when it does not. This danger is particularly grave when banks' ability to assess and manage risk is low and the regulatory and supervisory framework is weak, as is likely to be the case in the immediate aftermath of a financial liberalization. This has made some observers skeptical of the wisdom of financial liberalization in general, and has caused others to emphasize that it should only be undertaken after the requisite regulatory and supervisory framework is in place.[5]

Though these concerns about the potentially destabilizing nature of the region's financial reforms are real, they are not the end of the story. To the extent that they are not wholly capricious, capital inflows will help to stabilize some economic disturbances, and the discipline imposed by foreign investors may promote more stable macroeconomic policy. There is also some theory and evidence (King and Levine 1993) to suggest that deeper domestic financial markets promote effective economic adjustment, and may therefore contribute to economic stability over the long term.

Reform as a shock: economic instability in transition

We have been discussing longer-term relationships between economic policies and macroeconomic stability. But a change in the policy regime, especially a change of the magnitude experienced in many countries of the region, itself comprises an enormous shock, which may temporarily destabilize the economy even if, over the longer term, the reformed policy framework will be stabilizing.

In other work, the Office of the Chief Economist has studied the dynamics of adjustment to the region's economic reforms[6] and has found that, while there are important variations in country experience, there is also a well-defined cycle associated with the adjustment. The cycle includes phases of boom, stress, correction or crisis, followed by recovery. During the boom, domestic spending and production typically rise recover quickly. Economic stabilization often leads an increase in the demand for money, providing the domestic financial system with resources to lend to investors and consumers, thus amplifying the spending boom. As the boom proceeds, it often generates economic and financial vulnerabilities as the banking system becomes overextended, and external imbalances accumulate. Fiscal vulnerabilities often develop as well, though they are typically hidden by the transitory fiscal revenue generated by the boom in private spending.

The boom phase gives way, as eventually it must, to a period of more moderate growth in domestic spending and bank lending, at which point the vulnerabilities generated by the boom become more visible. This deceleration exposes previously hidden economic fault lines. As credit growth slows, real interest rates rise, putting pressure on already overextended borrowers. Previously hidden problems of credit quality may come to the surface, which may reduce confidence in the stability of the banking system, thus rendering the financial system increasingly fragile. The slowdown in private spending is typically accompanied by a deterioration in the fiscal situation; investors may begin to lose confidence in the ability of the political system to generate the fiscal adjustment required to maintain fiscal solvency, putting additional pressure on domestic interest rates as nervous investors begin to look for the exits.

What comes next depends upon the magnitude of the vulnerabilities that developed during the boom, the nature of the policy response to the economic and financial stresses, and luck. In Mexico, to take a particularly dramatic example, the vulnerabilities generated by the enormous lending boom of the early 1990s were large and the country had the bad luck to experience a series of political disturbances while the economy was coping with the stresses generated by these vulnerabilities. With the benefit of hindsight it might also be argued that the authorities could have responded earlier and more forcefully to the stresses that were becoming apparent by early 1994. The result was the major economic and financial crisis from which the country is now emerging. Argentina also experienced a major crisis in 1995, as did Chile in 1982. In many other countries, however, the economic and financial landing has been gentler.

These dynamics have some important implications for the data that we now begin to review, because most of the region's reforms are relatively young, and recent experience is thus likely to be heavily influenced by the dynamics of adjustment to reform. This means at least two things. First, it should be borne in mind that economic instability associated with the reforms may be a temporary phenomenon. The Chilean

---

[5] Though it is now part of the conventional wisdom that countries should delay financial liberalization until after the regulatory apparatus is in place, it is not clear whether this sequencing is feasible. If, as is probably the case, supervision involves some learning by doing, it is hard to know how supervisory capacity can be put into place before the financial system is allowed to function in a reasonably unrestricted manner.
[6] See Inter-American Development Bank (1996), Part 1.

case is relevant here; while the reforms of the late 1970s clearly contributed to the spectacular crash of the early 1980s, the policy framework that was largely established largely by those reforms has also been associated with a dramatic improvement in economic stability. And, by the same token, a temporary period of smooth sailing after implementation of reforms may not be the end of the short-term story. There is no way of being sure whether another crisis might be on the way in some country or other. With those caveats in mind, we now turn to the recent Latin American experience.

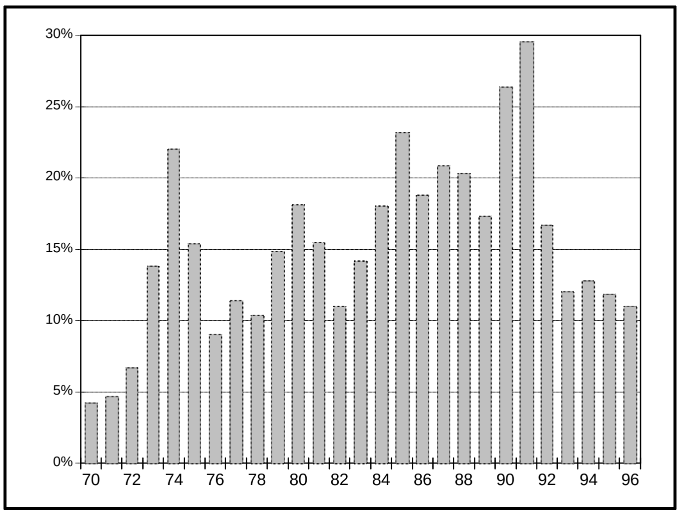
4. Is Latin America becoming less volatile?

Inflation stabilization and fiscal consolidation

One conventional use of the term “economic stabilization” refers to the reduction of the inflation rate, and to the fiscal consolidation required to make this reduction sustainable. In this sense of the term there is no ambiguity: Latin America is a more stable continent than it was before the reforms. Over the course of the 1990s the median rate of inflation has fallen to nearly single digit levels, and by 1996 only four countries had a rate of inflation higher than 25 percent, a rate that was in the fairly recent past considered moderate.

Figure 4

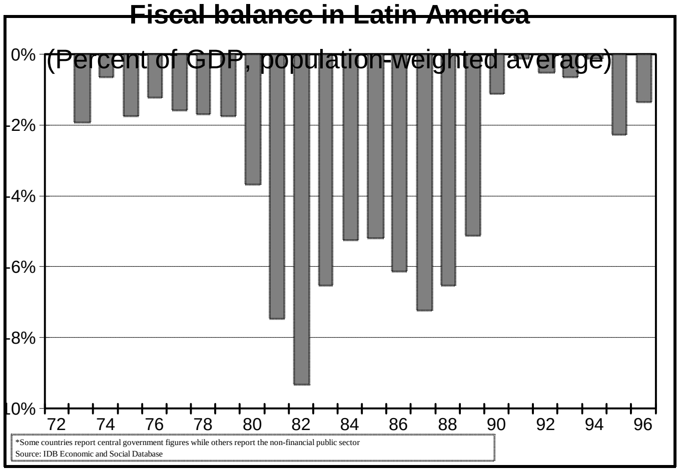
Median inflation rate in Latin America



The fiscal consolidation required to support this disinflation has been achieved; the region’s fiscal accounts were, on average, close to balance in the early 1990s, and the region’s deficit now stands at roughly 2 percent of GDP. While many countries in the region face important medium-term fiscal challenges, the 1990s have not been an era of large and destabilizing fiscal deficits.

Figure 5

Fiscal balance in Latin America



Macroeconomic volatility

Have Latin American economies also become less volatile? Table 1 summarizes the recent history of instability in real output growth in the region, and puts it in an international context. The volatility of the real economy, as measured by the standard deviation of real GDP growth, did decline somewhat in the 1990s from the very high level reached in the turbulent 1980s, and returned to roughly the level of instability that prevailed in the 1960s and 1970s.

Table 1

The volatility of real GDP growth

	1960s	1970s	1980s	1990s
Latin America	2.9	3.2	4.4	3.2
Industrial economies	1.8	2.3	1.8	2.1
Asian “miracle” economies	na	4.3	3.3	2.0
Argentina	5.2	3.9	4.7	5.5
Brazil	3.4	3.2	4.6	3.6
Chile	2.5	7.0	6.2	2.4
Colombia	1.4	1.7	1.5	1.5
Ecuador	2.1	5.4	4.4	1.2
Mexico	1.9	2.1	3.8	4.3
Peru	2.4	2.9	8.5	5.4
Venezuela	3.2	3.5	5.1	5.1
Other countries	3.5	4.0	3.8	2.5

Note: Data represent the standard deviation of percentage changes in real GDP.

All regional averages are weighted by population.

However, the region’s volatility remained high in comparison with both the industrial economies and the “miracle” economies of East Asia. And country experiences varied greatly. For Argentina, Mexico, Peru, and Venezuela the 1990s have been a period of greater volatility than almost any of the past three decades.

In several countries, however, the 1990s have been a relatively stable period. Especially notable here is Chile, where the volatility of real GDP growth has declined steadily since the 1970s, and now roughly matches industrial country levels. Colombia maintained its record of impressive economic stability through 1995, while Ecuador and the smaller countries of the region also experienced a substantial decline in the volatility of real production.

The real exchange rate has been somewhat more stable during the 1990s than during the 1980s, but it remained more volatile than in the 1960s and 1970s, and was more than three times as volatile as in the industrial economies.

Table 2

Volatility of the real exchange rate

	1960s	1970s	1980s	1990s
Latin America	6.0	9.4	16.5	12.7
Industrial economies	2.3	5.5	6.9	4.0
Asian “miracle” economies	1.1	6.3	9.3	n/a
Argentina	11.2	28.8	22.9	14.4
Brazil	8.8	6.1	12.8	16.5
Chile	10.5	25.4	10.6	2.2
Colombia	5.0	6.7	9.0	4.3
Ecuador	6.5	6.2	15.6	6.5
Mexico	1.6	8.9	18.9	14.6
Peru	5.7	10.2	27.5	13.4
Venezuela	1.2	4.7	17.2	10.9
Other	3.6	7.7	20.0	4.6

Note: Data represent the standard deviation of percentage changes in the real exchange rate. Calculations are based on annual data. All regional averages are weighted by population.

Real exchange rate volatility was particularly high in Argentina, Brazil, Mexico, Peru and Venezuela, though in all cases except Brazil the instability was lower than in the extremely turbulent 1980s. Again, the steady decline in the volatility of the Chilean real exchange rate has been impressive; from its extraordinary level of instability in the 1970s, the volatility of the real exchange rate in Chile has fallen to well below industrial-country levels.

Averaging over the 1990s as we do in Table 2 provides an incomplete and somewhat misleading impression here, because in some countries there have been abrupt changes in the behavior of the real exchange rate during the course of the 1990s, generally associated with inflation stabilizations. This can be seen in Table 3, below, which presents the variability of monthly changes in the real exchange rate for each year of the 1990s. The dramatic declines in exchange rate violability that followed the inflation stabilizations in Argentina (1991), Brazil (1994), and Peru (1991) are readily apparent, as is the sudden increase in real exchange rate volatility that occurs when monetary instability returns, as in Mexico (1995) and Venezuela (1994).

In summary, the real exchange rate has in most countries of the region become substantially more stable than it was in the 1980s, with dramatic increases in stability being associated with inflation stabilizations. A few countries, notably Chile and Argentina in recent years, have experienced real exchange rate stability that compares favorably with that in industrial economies, but in most of the region real exchange rate volatility remains substantially above industrial country levels.

Table 3
Volatility of the real exchange rate

	1980s	1990	1991	1992	1993	1994	1995	1996
Latin America	7.6	6.4	6.8	2.1	5.2	3.2	4.6	1.8
Argentina	14.5	15.5	8.6	1.5	1.4	0.9	1.3	0.5
Brazil	7.4	8.0	8.8	2.1	11.6	4.0	2.7	1.4
Chile	2.9	2.1	2.4	3.0	1.6	1.7	2.3	1.0
Colombia	1.7	1.2	2.6	2.2	1.4	1.4	1.8	0.9
Ecuador	5.8	1.8	3.1	5.0	1.7	1.9	1.8	1.1
Mexico	6.0	1.3	1.2	1.1	0.9	3.7	11.6	2.0
Peru	12.1	19.4	27.3	5.7	1.8	2.0	1.9	0.8
Venezuela	5.7	2.3	2.3	1.3	1.2	7.2	10.4	10.8
Other	12.6	5.6	6.1	1.6	1.4	1.4	1.1	0.7

Note: Data represent the standard deviation of percentage changes in the real exchange rate. Calculations are based on monthly data. Data for 1996 include the first nine or ten months of the year. All regional averages are weighted by population.

It bears mention that the 1990s have been a relatively tranquil period in the world economy, as reflected in the terms of trade. Latin America's terms of trade have been more stable during the 1990s than in any period of its recent history, as has been the case in other regions of the world.

Table 4
Volatility of the terms of trade

	1960s	1970s	1980s	1990s
Latin America	7.0	12.9	13.2	4.9
Industrial countries	2.6	6.9	4.9	1.3
Asian "miracle" economies	5.3	9.0	7.0	1.4

Note: Figures represent the standard deviation of percentage changes in the terms of trade during the indicated time period. All regional averages are population weighted.

This relatively tranquil international environment may help explain the somewhat more stable macroeconomic outcomes in Latin America during the 1990s. But policy determinants of macroeconomic volatility have also shown improvement. Not only did fiscal deficits decline on average during the 1990s, but they also became less volatile. From the very high levels seen in the 1980s, the standard deviation of the fiscal balance in Latin America declined to industrial country levels during the 1990s. International experience suggests that fiscal volatility is destabilizing for both the real exchange rate and real output, and that fiscal instability is an important cause of monetary instability in Latin America; this reduction in the variability of fiscal policy is thus likely to have been a stabilizing factor.

Table 5
Volatility of the fiscal balance

	1960s	1970s	1980s	1990s
Latin America	1.0	1.5	4.2	1.8
Industrial economies	0.8	1.7	1.5	1.6
Asian “miracle” economies	1.1	2.2	0.7	0.4
Argentina	n/a	3.0	2.3	0.3
Brazil	n/a	0.9	5.3	2.4
Chile	1.3	5.8	1.9	0.8
Colombia	0.8	1.3	2.5	2.0
Ecuador	1.2	1.4	2.5	1.5
Mexico	n/a	0.8	3.6	0.9
Peru	1.3	1.7	1.5	1.8
Venezuela	1.3	2.4	3.2	3.7
Other	0.9	1.8	6.4	1.7

Note: Figures represent the standard deviation of the fiscal surplus, measured as percent of GDP, during the indicated time period. All regional averages are weighted by population.

Monetary instability, as measured by the variability of monetary growth, has also declined during the 1990s, though the regional average was heavily affected by unstable monetary conditions in Brazil until fairly late in the period. In most countries monetary instability is substantially below the levels recorded in the 1980s.

Table 6

Volatility of monetary growth

	1980s	1990	1991	1992	1993	1994	1995	1996
Latin America	9.0	16.4	6.7	7.3	7.3	9.1	7.4	4.7
Argentina	15.3	13.1	5.7	4.6	4.6	4.3	6.0	2.9
Brazil	12.6	31.4	8.6	11.5	11.5	17.8	10.7	5.5
Chile	5.9	9.9	11.8	8.4	8.4	6.2	7.1	3.7
Colombia	4.0	0.1	6.3	6.7	6.7	4.7	6.9	5.9
Ecuador	4.8	4.6	7.5	5.8	5.8	6.1	4.9	n/a
Mexico	6.2	8.1	4.2	4.1	4.1	2.9	6.6	2.8
Peru	8.8	24.1	9.6	3.5	3.5	6.5	2.7	3.2
Venezuela	4.7	6.9	4.2	6.8	6.8	5.8	5.5	4.8
Other	6.7	5.8	4.7	4.6	4.6	4.9	4.6	7.7

Note: Data represent the standard deviation of percentage changes in the narrow money supply. Calculations are based on monthly data. All regional averages are weighted by population.

Recent history thus suggests, at least in some key dimensions and with some important exceptions, discussed in more detail below, the region’s economies have become somewhat more stable in the 1990s. The increased stability of key macroeconomic outcomes such as the real exchange rate and real GDP growth is probably attributable in part to a somewhat more tranquil international environment than the region faced in the 1980s, but it is also attributable to more stable macroeconomic policymaking. This leaves unanswered the question whether the far-reaching structural reforms of the 1980s and 1990s have influenced macroeconomic stability in the region for better or worse. We now turn to this question.

4. Have policy reforms affected economic stability?

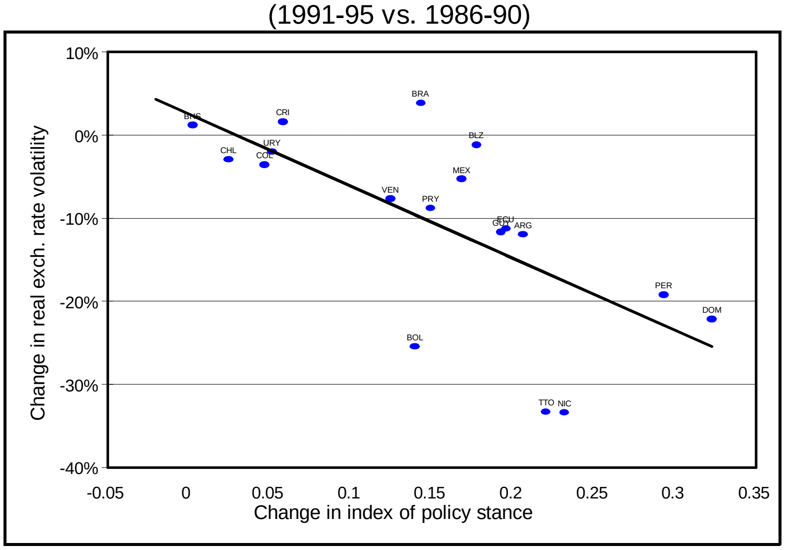
Previous attempts to measure the economic impact of the region's economic reforms have been hampered by the difficulty of measuring the magnitude of the reforms in areas as diverse as trade policy, tax systems, financial regulation and supervision, and privatization in ways that permit meaningful comparisons over time and across countries. Most analyses of policy reform and economic outcomes are forced to use, as proxies for reform, measurable economic outcomes such as the rate of inflation or average budget deficits. This is interesting as far as it goes, but it falls well short of documenting a link between specific structural reforms and economic outcomes.

Lora (1997) has recently provided indices of policy stance for Latin American countries in five key areas—tax policy, privatization, international trade policy, financial policy, and labor market regulation—over the 1985-1995 period. The indices are designed to capture the efficiency of the specific policies, in the limited sense of minimizing the distortions created for private decisionmakers. Thus, countries with low marginal tax rates would, other things equal, receive a higher score than would countries with high marginal tax rates. (See Lora 1997 for a more detailed description of the indexes.)

Though the data impose some limitations—with only 10 years of data it is hard to obtain reasonable estimates of economic volatility for a large number of subperiods, and comparions with countries outside the region are not possible—they nevertheless permit, for the first time, a meaningful investigation of the relationship between the structural reforms undertaken by countries in the region and subsequent economic developments.

Did major reformers become more stable?
The answer appears to be yes—countries in which the index of structural policies improved significantly from 1986-1990 to 1991-1995 tended to experience substantial reductions in economic volatility over the same time period. Figure 1 (page 3, above) plots the change in the index of policy stance[7] against the change in the standard deviation of output growth; the association between reform and stability is readily apparent. There are some major outliers in the chart—Haiti, Panama, and Suriname—but it is not hard to think of factors that may explain them, and the association between reform and stability is stronger if they are dropped from the sample. And the association between reform and stability is even more striking for the real exchange rate.

Figure 6
Policy reform and real exchange rate volatility in Latin America
(1991-95 vs. 1986-90)



In order to verify the statistical significance of these results and check their robustness, we performed more formal statistical tests of the empirical relationship between measures of macroeconomic volatility and

[7] Except where otherwise noted we use a simple average of the five subindices in the analysis that follows.

the index of structural reform. (These are described in more detail in the appendix to this paper.) We found that the relationship is statistically very significant and very robust to alternative econometric specifications. We also found that most of the information in the data is contained in the variation in the data over time within countries, rather than in the cross-country variation, suggesting that the index of policy stance may be more informative about changes in policy over time in a given country than about comparisons of policy across countries.

Was it the structural reforms or just the inflation stabilization?
In most countries the structural reforms that are quantified in the Lora indices were part of a policy package that included a more or less contemporaneous inflation stabilization. The question arises whether the association that we uncover between economic reform and stability is a result of the inflation stabilization alone, or if there remains a relationship between structural reform and stability even after one accounts for the effects of the inflation stabilization. To investigate this we examined the relationship between macroeconomic volatility and (i) the Lora index of policy stance, (ii) the recent level of inflation, and (iii) the variability of inflation in recent years.[8]

The measures of inflation and its variability had little explanatory power for the volatility of real GDP growth, and their inclusion had little effect on the estimated relationship between the index of policy reform and macroeconomic volatility. Both the level and the volatility of inflation were strongly and positively correlated with real exchange rate volatility, as one would expect. But inclusion of these factors actually strengthened slightly the estimated relationship between the index of structural reform and real exchange rate stability. It thus appears that the structural reforms undertaken by the region were themselves stabilizing.

What policies were most stabilizing?
To see which structural reforms seem to have been most stabilizing, we examined the relationship between economic volatility and each of the five subindexes representing policies in the areas of tax structure, domestic financial markets, inernational trade, privatization, and labor market regulation. We found that the volatility of both real GDP and the real exchange rate were strongly negatively associated with the indexes representing tax policy, trade policy, and financial policy. More efficient labor market policies were also negatively related to the volatility of real GDP and the real exchange rate, but the association was not statistically significant. This probably reflects the fact that there was not much movement in the index of labor market policies over the sample period. Privatization was negatively and signficantly associated with real exchange rate volatility, but not with volatility in the growth rate of real GDP.

What was the payoff of reform?
While the empirical association between structural reforms and macroeconomic stability is interesting and important, one should interpret the relationship with some caution, as it may not reflect a purely causal relationship going from reform to stability. It is possible, for example, that reform efforts were interrupted in some countries by some external or domestic shock that at the same time destabilized the economy; in this case the observed association between weak reforms and economic volatility would reflect the impact of a third, unmeasured factor rather than a causal relationship between reform and stability.

Having said this, it is useful for illustrative purposes to obtain some quantitative sense of the economic as well as the statistical significance of the relationship between the Lora index of policy stance and economic stability. So we have asked the following question: if we were to interpret the statistical relationship between policies and stability as a causal one, how much would an improvement in the index of 0.1 be expected to reduce macroeconomic volatility?[9]

Our estimate is that such an improvement in the policy stance would have reduced the standard deviation of GDP growth from the 4.4 percent observed in the 1980s to about 3.8 percent, and would have reduced the volatility of the real exchange rate from the 16.5 percent standard deviation recorded in the

[8] All three explanatory variables were entered with a lag, to minimize the problem of reverse causality between the measure of macroeconomic volatility that is being explained and the explanatory variables. See the appendix for more details.
[9] The Lora index ranges from 0 to 1, and the (population-weighted) average improvement in the index between the second half the 1980s and the first half of the 1990s was about 0.15.

1980s to about 7 percent. In both cases the reductions are economically important, though not enough to bring macroeconomic volatility to industrial economy levels.

5. Questions for discussion

Have the reforms been stabilizing? The evidence appears to be mixed. On the one hand, evidence from the region as a whole suggests that the economies of Latin America have been somewhat less volatile during the the post-reform period than they were in the pre-reform period, and there is strong evidence that countries that enacted deeper reforms experienced more substantial declines in the volatility of both the real exchange rate and real output. This association between structural reform and stability persists after controlling for the inflation stabilizations that took place in some countries at about the same time as the structural reforms.

Having said that, in a number of countries the first half of the 1990s was in some key respects a more volatile period than any of the past three decades. This volatility cannot be explained by weak reform efforts—Argentina, Mexico, and Peru were, after all, major reformers; nor can it be explained by shocks unrelated to the reforms. We have argued, briefly here and at more length in Inter-American Development Bank (1996), that these economic fluctuations—including the recent crises in Argentina and Mexico—are very closely related to the way in which these economies adjusted to the package of economic reforms introduced in the 1980s and 1990s, and in particular to the fiscal and financial vulnerabilities that were generated during the process of adjustment.

These episodes are very similar to the earlier case of Chile where, as in the more recent experiences, adjustment to the economic reforms that began in the mid 1970s was interrupted by a major economic crisis, after which the economy entered a period of sustained growth and became increasingly stable. One response to this history would be to view the instabilities created by adjustment to stabilization and reform programs as fundamentally transitory problems, the importance of which will vanish as the period of adjustment to the reforms passes.

This is probably not the right response. While our analysis of the cycle created by adjustment to stabilization and reform does describe transition dynamics, these result from fault lines in fiscal and financial structures that will be destabilizing over the longer term. The Chilean experience supports this view, for the impressive macroeconomic stability that has been achieved since that country's crisis did not happen automatically, but resulted from implementation of a policy framework that emphasizes stability in ways that its pre-crisis policies did not, and that differs in key respects from the policy framework now in place in much of the region.

To promote discussion about what policy changes, if any, are required to achieve greater macroeconomic stability in Latin America, we now pose questions in three crucial areas: the management of fiscal policy, policy toward domestic financial systems, and exchange rate policy.

How can a more stabilizing fiscal policy be achieved?

As we have noted, fiscal policy has tended to be procyclical in Latin America, particularly in bad times. While fiscal imbalances have declined in the 1990s, this destabilizing pattern has continued, as exemplified by the fact that in both Argentina and Mexico policymakers were forced during the deep recessions of 1995 to implement sharply contractionary fiscal policies. How can this be avoided in the future?

There is substantial consensus about the economics of the problem.[10] Policymakers need to work toward the creation of more efficient tax systems, and leave some of the expanded "fiscal capacity" unused so that it will be available in case it is needed when a transitory boom ends or in the aftermath of an adverse shock. Policymakers need to adjust fiscal targets for transitory factors, including, for example, private spending booms and trade shocks, and be prepared to run surpluses during good times so there will be no need to raise taxes when the good times end. Hard-to-reverse changes in spending commitments and tax rates should be made only in response to changes in long-run fundamentals, and because of the difficulties in reversing tax cuts and expanding public spending programs, policymakers should be prepared to err on the side of caution. We would argue that such cautions behavior has been a crucial element of Chile's

[10] Gavin, Hausmann, Perotti and Talvi (1996) expand on these points.

macroeconomic stability in the past decade. Chile is the only country in the region that has consistently run substantial fiscal surpluses during the past decade, which has allowed the country to weather fiscal shocks without economic or financial disruption.

What stands in the way of such policies? While there are technical difficulties, the key problems are political. As Eichengreen, Hausmann and von Hagen (1996) argue, the politics of fiscal policymaking in a democracy introduces a number of distortions that contribute to the problem of deficit bias:

- Fiscal policy is decided collectively, which means that participants do not recognize the full social cost of the spending programs they support;

- This "commons problem" also affects the dynamic response to fiscal shocks: surpluses are spent almost before they arrive, because each interest group has reason to fear that his agreement to save them for times of shortage will only increase another group's opportunity to enjoy them today.[11] By the same token, adjustment to adverse shocks is often delayed because different constituencies attempt to shift the burden of adjustment onto other groups;

- Problems of time commitment limit the ability of governments to run deficits in bad times, because lenders have reason to fear that, once the financial resources have been provided to the government, the government may not have an incentive to raise taxes as required to service the higher debt; and,

- Governments may use fiscal policy strategically, adjusting it to the election calendar or to influence the behavior of future governments, and distorting fiscal projections and estimates in an attempt to gain advantage in the over fiscal policy debate.

In other contexts, such as the determination of monetary policy, distortions such as these have been used as an argument for delegating substantial decisionmaking power to an authority that is accountable to but maintains some short-run independence from the political process; or at leastas an argument for strengthening the role of political actors that represent broad constituencies, such as the Ministry of Finance vis-a-vis individual spending ministries, the Executive vis-a-vis the Congress or (when nationally-generated fiscal resources are involved) the national government vis a vis subnational levels of government. It is probably not accidental that Chile has one of the most centralized fiscal decisionmaking processes in the region, in which the Congress and subnational governments have very little leverage over aggregate spending and borrowing decisions.

These considerations raise the following questions:

- After the impressive fiscal consolidation achieved by countries of the region, has enough been done, or could better management of fiscal policy contribute to economic stability in the region?

- If there is room for improvement, what are the key shortcomings of the existing policy framework? And what are key obstacles to better fiscal management?

- Is there a case for institutional reform of budgetary procedures? What sorts of reforms are called for? How can institutions and procedures be structured to combine insulation from day-to-day political pressures with the required accountability to the political system? How can the trend toward fiscal decentralization be made consistent with fiscal discipline?

How can domestic financial systems be strengthened?

Fragile banking systems have for a long time been the Achilles heel of many Latin American economies, and our analysis of the process of adjustment to the region's recent stabilization and reform programs suggests that they continue to comprise a weak, destabilizing link in many economies. Bank lending booms amplify economic booms, and leave the financial system in a highly vulnerable state when the economy decelerates. The result has all too often been a financial crash that greatly amplifies the downside of the economic cycle. This was, of course, an important part of the Chilean story, and since the 1982 crash that

[11] Talvi and Végh (1996) provide an interesting argument that the tendency of the political process to waste surpluses creates a link between volatility in the tax base and the procyclicality of optimal fiscal policy.

country has made important progress in building a more robust banking system.There is now a consensus in the region on the urgency of improving the regulatory and supervisory framework within which domestic financial intermediaries operate. How this can be accomplished remains an open question. The following questions arise:

- C Has financial liberalization been oversold? Are the risks generated by more liberal financial market structures justified by the gains in economic efficiency?
- C How should bank regulatory structures be tailored to the macroeconomic and financial realities of Latin America? For example: should the volatile environment in which Latin American banks are forced to operate be reflected in higher capital requirements for credit and market risk than the minimum standards of the Basel accord? Should the volatility of capital flows to the banking system and of domestic money demand be reflected in higher liquidity requirements?
- C Is supervision and regulation enough? In a world of volatile international capital flows and demand for domestic money, the conditions to support a bank lending boom are likely to emerge periodically over time. International evidence suggests that the lending booms likely to result are dangerous even in the relatively well-supervised financial systems of the industrial economies.[12] If conventional mechanisms of bank supervision and regulation are unable to prevent lending booms or offset their effects on financial stability, should monetary and financial policy be directed at "leaning agains the wind" of bank lending booms?
- C Can internationalization promote a more stable financial system? Internationally diversified banks are less exposed to country-specific macroeconomic shocks, and are therefore less likely to amplify economic and financial disturbances. Foreign banks from well-supervised home markets may also permit the importation of regulatory and supervisory services and best accounting, risk management, and disclosure standards from abroad. (See Gavin and Hausmann 1996 for a more extended discussion.)
- C Should capital markets be promoted?

How should international capital flows be managed?
Capital flows have remained very volatile in the 1990s, and are likely to remain an important source of potential economic disturbance in the future. International capital carries with it many benefits, but sudden surges or outflows can also be highly disruptive. The danger presented by short-term capital flows is essentially one of liquidity or "rollover" risk; if the financial resources provided by capital inflows are invested in the long-term projects required to promote economic development, the economy is exposed to the danger that the inflows will be reversed more rapidly than the investments can mature. But if the inflows do not finance such investments, their contribution to economic development is likely to be negligible. This raises the following questions:

- C Should capital inflows be discouraged, and if so, should certain types of flows be particularly discouraged?
- C Is the underlying problem created by short-term capital flows with the international nature of the flows, or the fact that they are typically intermediated through the domestic banking system? Intermediation through the banking system implies a transformation of maturity and of risk, which permits the provider of the funds to demand them back even if the investment that the funds financed has not yet matured. This creates a policy problem because in many cases taxpayers, rather than the bank owners, pick up the tab when a sudden withdrawal of funds creates a liquidity crisis. Under this view, it is the process of financial intermediation that creates the policy problem, and the problems created by the intermediation of international flows are not necessarily more serious than those created by the intermediation of domestically generated financial resources. If capital flows are channelled directly to domestic investors, through the stock market or via a bond market transaction in which investors contractually agree to share the risks, the policy problem does not arise because the international investor and his domestic counterpart bear all the risks of the transaction. The message of this view is not to avoid discriminating against foreign savings as a source of finance for domestic investment, but to ensure that capital inflows do not create a potentially destabilizing bank lending boom.

[12] See Gavin and Hausmann (1996c) for a discussion of this and other issues

The role of exchange rate regimes

One important revision made to the Chilean policy framework after the 1982 economic and financial crisis was in the exchange rate regime. Before the crisis the nominal exchange rate was managed with the aim of reducing inflation, with relatively little thought given to implications for the real economy. After the crisis the exchange rate has been managed more flexibly, with substantial attention being paid to nonmonetary objectives such as the maintainence of a reasonably competitive real exchange rate. Since monetary and exchange rate policy can have no permanent impact on nonmonetary outcomes such as the real exchange rate or the current account balance, such a policy requires the active support of fiscal policy, and this seems to have been feasible in Chile.

No consensus has emerged from the 1995 crisis on the relative merits of fixed and flexible exchange rates. Proponents of flexible exchange rates point to the deflationary consequences of Argentina's convertibility regime, while advocates of fixed exchange rates point to the economic and financial fallout of the Mexican devaluation as support for their position. These uncertainties raise the following questions:

C Does nominal exchange rate flexibility make it easier to prevent the development of economic vulnerabilities that may culminate in a crisis? If so, how should exchange rates be managed to achieve this end?

C Monetary and exchange rate policies can have only transitory effects on nonmonetary outcomes. Is this enough to avoid economic crisis, or will some other policy instrument, such as fiscal policy, need to be utilized to reinforce the exchange rate policy? If fiscal policy is required, how should exchange rate and fiscal policy be coordinated? If fiscal policy cannot be relied upon to support monetary and exchange rate policy as required, what are the implications for the choice of exchange rate regime?

References

Aizenman, Joshua and Nancy P. Marion (1993) "Policy Uncertainty, Persistence, and Growt," *Review of International Economics,* 1:145-163.

Alesina, Alberto, Ricardo Hausmann, Rudolf Hommes and Ernesto Stein (1995) "Budget Institutions and Fiscal Performance in Latin America," mimeo, Office of the Chief Economist, IDB.

Calvo, Guillermo (1996) "Varieties of Financial Crisis," Office of the Chief Economist, IDB, Working Paper No. 306

Cavallo, Domingo and Guillermo Mondino (1995) "Argentina's Miracle? From Hyperinflation to Sustained Growth," mimeo, *Fundación Mediterranea*, Argentina.

Corbo, Vittorio (1996) "Real Exchange Rate Volatility and Economic Growth," mimeo, Santiago, Chile.

Cottani, Joaquin, Domingo Cavallo, and M. Shabaz Khan (1990) "Real Exchange Rate Behavior and Economic Performance in LDCs," *Economic Development and Cultural Change,* 39:61-76.

Easterly, William and Norman Loayza (1996) "Has Latin American Post-Reform Economic Growth been Disappointing?" mimeo, World Bank.

Eichengreen, Barry, Ricardo Hausmann, and Jürgen von Hagen (1996) "Reforming Budgetary Institutions in Latin America: The Case for a National Fiscal Council," Office of the Chief Economist, IDB, Working Paper no. WP-011.

Flug, Karnit, Antonio Spilimbergo, and Erik Wachtenheim (forthcoming) "Investment in Education: Do Economic Volatility and Credit Constraints Matter?" *Journal of Development Economics.*

Gali, Jordi (1994) "Government Size and Macroeconomic Stability" *European Economic Review,* 38(1), 117-32.

Gavin, Michael and Ricardo Hausmann (1996a) "Sources of Macroeconomic Volatility in Developing Economies," mimeo, Office of the Chief Economist, IDB.

Gavin, Michael and Ricardo Hausmann (1996b) "Macroeconomic Volatility and Economic Development: Institutional Dimensions," mimeo, Office of the Chief Economist, IDB.

Gavin, Michael and Ricardo Hausmann (1996c) "The Roots of Banking Crises: The Macroeconomic Context," in Ricardo Hausmann and Liliana Rojas-Suárez (eds) *Banking Crises in Latin America,* IDB.

Gavin, Michael and Ricardo Hausmann (1996d) "Make or Buy: A Case for Deep Financial Integration," mimeo, Office of the Chief Economist, IDB.

Gavin, Michael, Ricardo Hausmann, Roberto Perotti and Ernesto Talvi (1996) "Managing Fiscal Policy in Latin America: Volatility, Procyclicality and Limited Creditworthiness," Office of the Chief Economist, IDB, Working Paper no. 326.

Hausmann, Ricardo (1995) *"En Camino Hacia una Mayor Integración con el Norte"*, in Mónica Aparicio and William Easterly (eds), *Crecimiento Económico: Teoria, Instituciones y Experiencia Internacional,* Bogotá: Banco de la República Colombiana and World Bank.

Inter-American Development Bank (1995) "Overcoming Volatility in Latin America," in *Economic and Social Progress in Latin America: 1995, IDB.*

Inter-American Development Bank (1996) *Economic and Social Progress in Latin America: 1996*, IDB.

King, Robert and Ross Levine (1993) "Finance, Entrepreneurship and Growth: Theory and Evidence," *Journal of Monetary Economics.*

Leahy, John and Toni Whited (1995) "The Effect of Uncertainty on Investment: Some Stylized Facts," NBER Working Paper no. 4986, Cambridge, MA.

Lora, Eduardo (1997) "*Una Década de Reformas Estructurales en América Latina"*mimeo, Office of the Chief Economist, IDB.

Mendoza, Enrique (forthcoming) "Terms of Trade Uncertainty and Economic Growth: Are Risk Indicators Significant in Growth Regressions?" *Journal of Development Economics*.

Pindyck, Robert and Andrés Solimano (1993) "Economic Instability and Aggregate Investment", in O. Blanchard and S. Fischer (eds), *NBER Macroeconomics Annual*. 1993, MIT Press.

Ramey, Garey and Valerie Ramey (1995) "Cross-Country Evidence on the Link between Volatility and Growth," *American Economic Review*, 85(5), 1138-1151.

Sachs, Jeffrey D. (1985) "External Debt and Macroeconomic Performance in Latin America and East Asia," *Brookings Papers on Economic Activity*, 1985:2, 523-64.

Sachs, Jeffrey D. and Andrew Warner (1995) "Economic Reform and the Process of Global Integration," *Brookings Papers on Economic Activity*, (1995:1) pp. 1-118.

Talvi, Ernesto and Carlos Végh (1996) "Can Optimal Fiscal Policy be Procyclical?," mimeo, Office of the Chief Economist, IDB.