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MANAGING FISCAL POLICY
IN LATIN AMERICA AND THE CARIBBEAN:
VOLATILITY, PROCYCLICALITY, AND
LIMITED CREDITWORTHINESS

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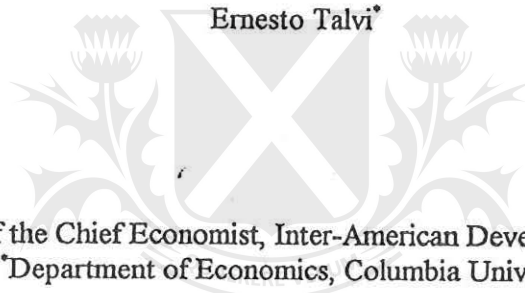
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**Managing Fiscal Policy in Latin America and the Caribbean:
Volatility, Procyclicality, and Limited Creditworthiness**

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Abstract

Latin America is volatile, about two to three times as volatile as the industrial economies, and more volatile than any region other than Africa and the Middle East. Latin America's access to international financial markets is sporadic, and often disappears just when it would be most valuable. Latin American fiscal outcomes are both volatile and procyclical. The paper documents these facts, and argues that they are intimately related.

- *Volatility:* Latin American fiscal outcomes are substantially more volatile than observed in the OECD, particularly if measured in relation to the domestic financial markets that must finance deficits, or the size of the budgets that must be adjusted to achieve fiscal equilibrium.
- *Procyclicality:* This volatility does not reflect a passive fiscal response to Latin America's volatile macroeconomic environment; instead, Latin American fiscal has been highly procyclical, and therefore destabilizing. In sharp contrast to the OECD, where we find that fiscal responses are much more stabilizing in downturns than in upturns, the procyclicality of Latin American fiscal policy is most pronounced during economic downturns, when a stabilizing response would be most valuable.
- *Precarious creditworthiness:* The destabilizing fiscal response to downturns is required by the fact that, all too often, access to international financial markets vanishes during the downturn, just when it is most needed to finance a stabilizing fiscal policy. But the loss of market access is largely due to mismanagement of fiscal policy in good times, which leaves public finances in a state weak enough to leave doubts in the minds of investors about the capacity to adjust to the large adverse shocks that hit the region.

The paper concludes with an agenda for reform of fiscal management that would help break the vicious circle of volatility, procyclicality, and precarious creditworthiness.

SanAndrés

**Managing Fiscal Policy in Latin America and the Caribbean:
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Introduction

Latin America is volatile, about two to three times as volatile as the industrial economies, and more volatile than any region other than Africa and the Middle East.¹ Latin America's access to international capital markets is sporadic, and often disappears just when it would be most valuable. Latin American fiscal outcomes are both volatile and procyclical. This paper argues that these three facts are intimately related.

- The volatility of macroeconomic outcomes in Latin America is greatly augmented by the highly procyclical fiscal response that is all too typical in the region.
- This procyclical fiscal response is most pronounced during recessions, and it stems from the fact that the region's ability to access international capital markets often vanishes in the face of adverse shocks, forcing a fiscal contraction in an already weakening economy.
- But this tenuous relationship with international capital markets is itself due to the volatility of the macroeconomic environment in Latin America, which creates the need for fiscal adjustments that are so large as to raise doubts about governments' ability to effect them, thus reducing creditworthiness and prompting investors to head for the exits at the first sign of trouble.

Volatility, procyclicality, and precarious creditworthiness thus form a mutually reinforcing, vicious circle, which is related to basic structural characteristics of Latin American economies and public sectors. Inefficient tax systems and small public sectors reduce the capacity for fiscal adjustment, while a highly volatile revenue base makes frequent, very large fiscal adjustments necessary. The resulting fragility of public finances is reflected in the region's precarious relationship with international financial markets, which creates the frequent need for destabilizing, procyclical fiscal adjustments, thus aggravating the underlying problem of macroeconomic instability. In this paper we argue that breaking out of this vicious circle requires deep reforms to the structure of the region's public finances, that reduce the vulnerability of fiscal outcomes to economic shocks and that adapt fiscal management to the demands placed upon it by the volatile macroeconomic environment.

The paper is organized as follows. In Section 2 we review stylized facts about the structure of Latin America budgets, using OECD figures as a comparative point of reference. In Section 3 we document the fragile nature of Latin America's relationship with international financial markets. In Section 4 we show that fiscal outcomes in Latin America are very volatile, and in Section 5 we show that this volatility is not merely a passive response to volatility in the underlying macroeconomic environment, but instead

¹ See Inter-American Development Bank (1995) for a discussion of causes, consequences, and policy responses to macroeconomic volatility in Latin America.

that Latin American fiscal outcomes have been highly procyclical. Section 6 argues that the problems of volatility, procyclicality, and precarious creditworthiness are linked, and that solving these problems requires deep reforms to fiscal structure and public financial management. Section 7 concludes by outlining some of the reforms that would, in our view, serve this end.

2. Fiscal structure in Latin America: Stylized facts and some implications

The fiscal response to economic shocks is importantly affected by the structure of a government's revenue streams and spending commitments, and these differ importantly both within Latin America and between Latin America and the OECD. Here we briefly document some key differences between the "typical" Latin American budget and its counterpart in the OECD.

Latin American fiscal deficits have not been large on average... or have they?

In Table 1 we compare average deficits over the 1970-1994 period. Have deficits tended to be larger in Latin America than in the OECD? The answer, perhaps surprisingly, is that it very much depends upon how the deficits are measured, or more precisely, with what they are compared, and upon the time period considered.

	1970-1994		1970-79		1980-89		1990-94	
	OECD	Latin America	OECD	Latin America	OECD	Latin America	OECD	Latin America
<i>Overall surplus</i>								
Relative to GDP	-3.8	-3.9	-3.0	-1.7	-4.5	-6.3	-3.8	-1.6
Relative to financial depth	-5.1	-14.9	-4.0	-6.5	-5.4	-21.0	-4.1	-4.5
Relative to fiscal revenue	-15.0	-21.0	-13.1	-10.1	-17.1	-32.5	-13.5	-8.0
<i>Primary surplus</i>								
Relative to GDP	-1.1	0.6	-1.6	-0.5	-1.1	-0.0	-0.0	7.5
Relative to financial depth	-1.5	2.2	-2.1	-1.9	-1.4	-0.0	-0.0	20.6
Relative to fiscal revenue	-4.5	3.1	-6.8	-3.0	-4.3	-0.0	-0.0	36.6

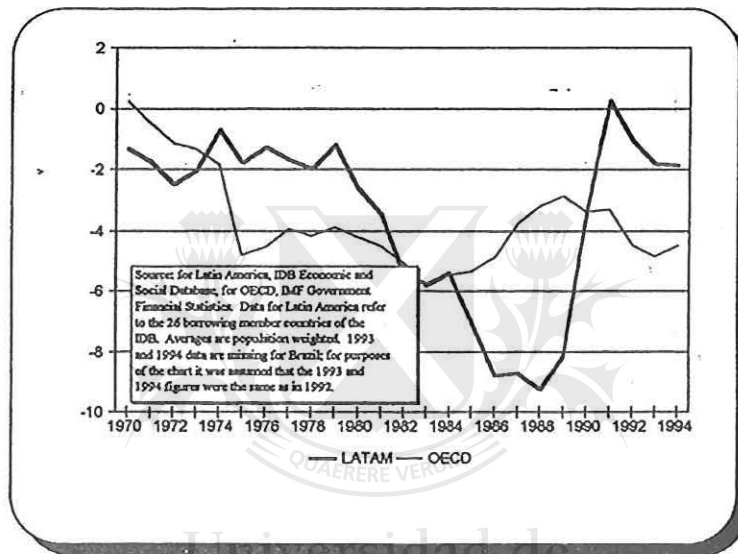
Source: IMF *Government Financial Statistics*. All figures refer to population-weighted averages of underlying country data. Regional definitions are given in footnote 2. In some countries data are missing for some years, in which case we used all available observations in the relevant time period.

The table shows that, measured relative to GDP, central government deficits have not been much larger in Latin America than in the OECD; during the 1970-1994 period, the ratio of the central government deficit to GDP was almost exactly the same in both regions.² However, the table suggests, and Figure 1 confirms, that deficits have been substantially more volatile in Latin America. While Latin American deficits were actually a lower share of GDP in the 1970s and early 1990s, they were considerably larger

² Except for data in Figure 1, all fiscal data are from the IMF *Government Finance Statistics*. The consolidated central government was chosen as the unit of analysis for reasons of data availability, and because it comprises a political unit that can sensibly be viewed as making decisions on fiscal policy. Adequate data could be compiled for 13 Latin American economies, including Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Mexico, Panama, Paraguay, Peru, Uruguay, and Venezuela. The OECD sample comprises 21 countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Great Britain, Iceland, Ireland, Italy, Greece, Japan, the Netherlands, Portugal, Spain, Sweden, Switzerland, and the United States. We tested for the sensitivity of our results to the inclusion of Ireland, Greece, and Portugal in the OECD sample, and results were not highly sensitive, although there is some evidence that these countries behave in some respects somewhat more like Latin American countries than the other OECD countries.

during the 1980s. This volatility imposes important costs on the economy, and is related to creditworthiness; actual or potential creditors of Latin America governments are, after all, worried less about the average size of deficits than they are about the probability that the deficits will get so large as to become unmanageable, a probability that clearly depends upon the volatility as well as the typical level of the deficit.

Figure 1
Fiscal surplus of consolidated central government
Latin America and the OECD
(Percent of GDP)



We have so far focused on fiscal deficits relative to GDP. But, while conventional, this may provide a quite misleading metric for many purposes. In Table 1 we therefore provide two alternative measures that may be more illuminating for some purposes. In the first we measure average fiscal deficits relative to the domestic financial system that will be called upon to finance them.³ We see that, if measured relative to the size of the domestic financial system, Latin American deficits were three times as large as the OECD average over the 1970-1994 period, and roughly four times the OECD average in the 1980s. The message is that apparently moderate deficits can be, and in Latin America have been, large relative to the domestic financial system that is called upon to finance them.

A second important metric against which to measure deficits is their size in comparison with the ability to effect a fiscal adjustment. Because Latin American central governments are generally smaller than industrial-country governments, eliminating a fiscal deficit of a given share of GDP will involve larger percentage changes in revenue and/or spending, with proportionately more wrenching adjustments in the structure of taxes or spending commitments. Table 1 shows that, measured in relation to total tax revenue, deficits in Latin America have been large during the past several decades, and even larger during subperiods. During the 1980s, for example, the deficit in Latin America averaged nearly a third of average revenue, a statistic that provides a much better sense of the magnitude of the adjustment required during that decade than does the much smaller deficit-GDP ratio.

³ Our measure of financial depth is the share of M2 in GDP, which provides a rough estimate of the size of the domestic banking system relative to GDP. Gavin and Hausmann (1996) provide empirical evidence that the disproportionately large monetary instability observed in Latin America is related to the small financial systems in which volatile fiscal deficits must be financed.

The major improvement in the region's fiscal balance during 1990-1994 period deserves special mention. During that period, fiscal deficits in Latin America were reduced dramatically from the large levels recorded during the 1980s, and were not large in comparison with the OECD by any metric.

The structure of Latin American fiscal revenue

Table 2 provides basic information on the structure of central government revenue in Latin America and the OECD. As noted above, governments in Latin America are generally smaller, and in many cases much smaller than their OECD counterparts. This difference is somewhat obscured in the aggregate figures because each region contains a giant that is in important respects atypical of the region: the OECD contains the United States with an atypically small central government, and Latin America contains Brazil with an unusually large central government. Excluding those two economies, we see that the typical central government in Latin America collects about half the revenue claimed by its OECD counterpart, measured as a share of GDP.

	1970-94				1990-94			
	All countries		Excluding Brazil and the US		All countries		Excluding Brazil and the US	
	OECD	Latin America	OECD	Latin America	OECD	Latin America	OECD	Latin America
<i>Percent of GDP</i>								
Total revenue	25.4	18.6	28.0	15.5	28.0	20.5	31.9	15.3
Nontax revenue	2.0	3.2	2.1	2.1	2.3	3.3	2.6	1.9
Tax revenue	23.2	14.7	25.5	13.3	25.3	14.7	28.6	13.0
Income tax	9.4	4.0	8.8	4.3	9.8	4.2	9.7	4.2
Social security	8.0	4.0	8.9	2.1	9.0	4.8	10.1	2.4
Indirect taxes	5.2	5.4	7.2	5.2	5.7	5.4	8.1	5.8
Trade taxes	0.4	1.6	0.4	2.1	0.3	1.1	0.2	1.4
<i>Percent of total revenue</i>								
Total revenue	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Nontax revenue	7.8	17.1	7.6	13.4	8.1	15.9	8.1	12.3
Tax revenue	91.4	79.1	91.3	85.4	90.2	71.8	89.7	84.8
Income tax	36.9	21.7	31.5	27.6	35.0	20.4	30.4	27.6
Social security	31.5	21.6	31.9	13.3	32.2	23.5	31.6	15.5
Indirect taxes	20.4	29.3	25.7	33.7	20.4	26.3	25.3	37.9
Trade taxes	1.4	8.8	1.4	13.6	1.0	5.2	0.8	9.5

All figures refer to population-weighted averages of underlying country data. Regional definitions are given in footnote 2. In some countries data are missing for some years, in which case we used all available observations in the relevant time period.

Table 2 also documents important differences in the structure of government revenue in Latin America and the OECD. Income taxes and social security contributions are much less important in Latin America than in the OECD, together accounting for about 40 percent of total revenue compared with over 60 percent in the OECD. Interestingly, as a share of GDP, Latin America recovers in income taxes under half the OECD average, despite tax rates comparable to those in the OECD. This fact, due to the region's inefficient tax systems and the larger share of informal activity in the region - caused in part by the taxes themselves - means that Latin American governments may not have much scope to raise

revenue simply by raising tax rates, although deeper tax reforms may succeed in raising tax collection at acceptable efficiency costs.

Latin American governments are more reliant upon nontax and indirect taxation, including in particular trade taxes. The base for these taxes is highly volatile and procyclical; the dependence of Latin American governments on them therefore contributes to the problem of volatility and procyclicality that we describe below.

Latin American spending patterns

In Table 3 we provide some evidence on spending patterns, where there are also important differences between Latin America and the OECD. The first point that emerges from the table is the substantially greater importance of interest, capital expenditure, and wage payments, and the much lower importance of noninterest transfers, in Latin America as compared with the OECD. The high share of interest and wage payments is important because it is difficult to make rapid reductions in these items in response to adverse fiscal shocks. This is because interest payments are the product of previous borrowing decisions and interest rates that may actually rise in bad times, and because of the political difficulty of legislating large reductions in real public-sector wages or public employment. As we shall see below, these items are in fact quite volatile, but the mechanism through which they seem to adjust is not a rational budgeting process, but rather the result of highly procyclical movements in the inflation tax, which erode the real value of nominal budgetary obligations.

	1970-94				1990-94			
	All countries		Excluding Brazil and the US		All countries		Excluding Brazil and the US	
	OECD	Latin America	OECD	Latin America	OECD	Latin America	OECD	Latin America
<i>Percent of GDP</i>								
Total expenditure	28.3	20.5	30.8	18.3	30.9	23.9	34.1	16.0
Capital expenditure	2.2	2.9	2.6	3.7	2.0	1.8	2.3	2.4
Current expenditure	26.1	17.6	28.2	14.6	28.9	22.0	31.8	13.6
Wage payments	4.2	3.7	5.1	4.3	4.0	3.2	5.0	3.5
Other purchases	4.3	1.8	4.4	1.8	4.2	1.6	4.5	1.4
Transfer payments	15.8	7.6	17.6	5.2	17.6	8.4	19.9	4.8
Interest payments	2.8	4.5	2.8	3.2	4.0	8.8	4.1	3.9
<i>Percent of total expenditure</i>								
Total expenditure	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Capital expenditure	7.7	14.2	8.4	20.4	6.5	7.7	6.9	15.1
Current expenditure	92.3	85.8	91.6	79.6	93.5	92.3	93.1	84.9
Wage payments	15.0	17.8	16.5	23.4	13.1	13.5	14.8	21.9
Other purchases	15.2	8.7	14.4	10.1	13.7	6.7	13.1	8.6
Transfer payments	56.0	37.1	57.3	28.5	57.1	35.0	58.2	30.0
Interest payments	9.8	22.0	9.0	17.2	12.8	37.0	12.2	24.4

All figures refer to population-weighted averages of underlying country data. Regional definitions are given in footnote 2. In some countries data are missing for some years, in which case we used all available observations in the relevant time period.

The much lower share of transfer payments in Latin America reflects social welfare systems that are relatively undeveloped in comparison with the OECD. In the OECD these transfer programs, many of which are means-tested or unemployment based, respond automatically to cyclical fluctuations in the economy, and as we shall see below are an important reason why OECD budgets are countercyclical. In Latin America, such transfer payments are both smaller than in the OECD and are procyclical, rather than countercyclical, reflecting the operation of revenue sharing with state and local governments.

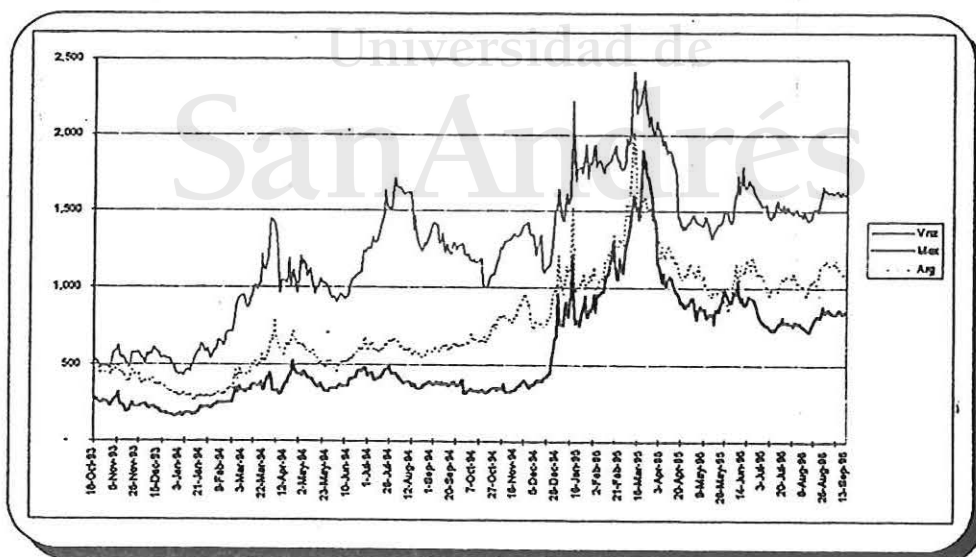
3. Latin America's access to international financial markets is precarious

We have alluded to the tenuous nature of Latin American governments' relationship to international financial markets, and the fragility of their creditworthiness. Here we outline in more detail some dimensions of this fragility.

Perceived creditworthiness of Latin American governments is low and fluctuates widely

Direct measures of creditworthiness are of course hard to find. One such measure is provided by country-risk evaluations by major credit rating agencies. By this metric, the creditworthiness of Latin American governments is quite limited; only two of the region's more than 30 nations possess an investment-grade rating. Another index of creditworthiness is provided by the risk premia demanded by international investors who hold foreign-currency claims on Latin American governments. Figure 2 charts the stripped yield on representative Brady bonds for Argentina, Mexico, and Venezuela, which provides a reasonable indication of investors' assessment of the credit risk associated with each country.⁴

Figure 2
Stripped spread over US Treasury rate
Representative Brady bonds for Argentina, Mexico, and Venezuela
(basis points)



The figure indicates that perceived credit risk of these three countries is on average high; even before the crisis triggered by the December 1994 Mexican devaluation, investors demanded to be paid a risk premium of roughly 300 basis points on Mexican promises to pay, around 700 basis points on Argentine

⁴ A significant portion of the value of Brady bonds derives from collateralized, and therefore essentially riskless, cash flows. The "stripped yield" subtracts the value of the collateralized cash flows from the Brady bond, and computes the rate of return on the remaining, unguaranteed promises to pay. The difference between this yield and the rate of return on US government obligations provides a measure of the credit risk investors associate with the country's debt obligations.

obligations, and around 1,300 basis points on Venezuelan obligations. Figure 2 also illustrates that investors' assessments of Latin American creditworthiness are highly volatile, changing dramatically over time, and not only in response to major crises. Over the course of 1994, for example, the stripped yield on Argentine Brady bonds rose from around 400 to more than 700 basis points. During the months of international financial chaos that followed the Mexican devaluation, these risk premia jumped to a peak of around 2,000 basis points in Argentina and Mexico, and well over that in Venezuela. Since then, a major recovery of confidence in prospects for the region has led to a very significant decline in risk premia so measured.

Table 4 summarizes some of this information. It shows that the standard deviation of the stripped spread is more than 350 basis points in Argentina and Mexico, and even higher for Venezuela, as compared with a standard deviation for the US long-term bond yield of about 50 basis points during this time period. The volatility of investors' perception of Latin American credit risk is thus roughly 7 times the volatility of the international interest rate.

	Average spread (basis pts)	Std deviation of spread or rate (basis pts)	Sensitivity of stripped yield to changes in US interest rates
Argentina	749	355	3.0
Mexico	497	360	2.0
Venezuela	1270	474	5.2
United States (long term bond yield)	---	55	---

Source: Study calculations. Column 3 provides a statistical estimate of the typical change in the stripped yield of the Brady bond when US interest rates change by one percentage point.

Changes in perceived creditworthiness lead to large fluctuations in international capital flows

These swings in perceived creditworthiness affect much more than the price of outstanding debt obligations - they affect the willingness of participants in international financial markets to invest in Latin America and therefore the ability of private and public borrowers to finance deficits. As investors turned pessimistic about Latin America in early 1995, the ability of governments and private firms to issue debt or equity essentially vanished, as the market for securities from Latin America - and many other emerging-market economies - was paralyzed. When debt was short term, as with the Mexican *tesobonos*, investors took the opportunity to rid themselves of their exposure to the region in which they had lost confidence, creating the need in Mexico for an emergency package of official support of unprecedented magnitude. Even when outstanding public debt was longer term, as in Argentina, new financing largely disappeared, with implications for fiscal adjustment that will be discussed in more detail below.

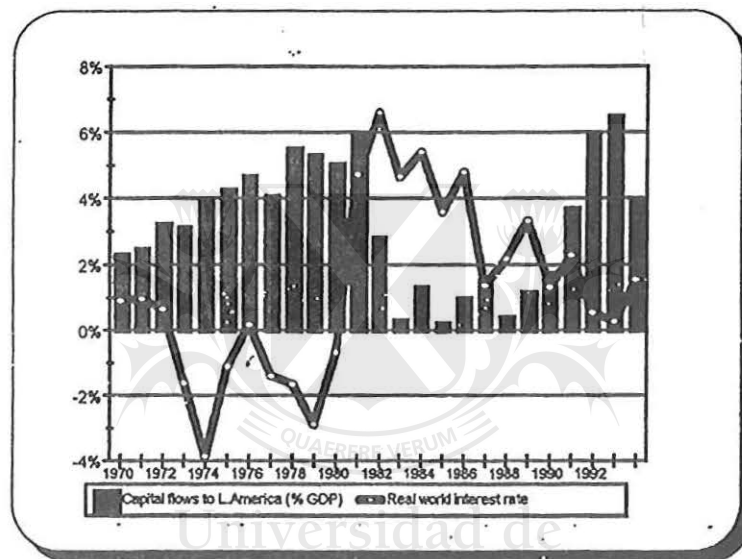
While the volatility of international capital flows was extreme in the early months of 1995, it is a much more general phenomenon. As Figure 3 (below) illustrates, international capital flows to the region have swung dramatically during the past several decades, dropping from a peak of roughly 6 percent of the region's GDP during the inflows episode of the late 1970s and early 1980s to negligible amounts in the remainder of the 1980s, only to surge once again to over 6 percent of GDP in the early 1990s.⁵

Figure 3 also suggests that capital flows to the region are highly sensitive to international interest rates. What, then, explains the volatility of capital flows to the region, volatile international interest rates, or

⁵ Figure 3 is from Gavin, Hausmann, and Leiderman (1995). See also Calvo, Leiderman, and Reinhart (1993).

frequent fluctuations in investors' assessment of the region's creditworthiness? There is of course no need to choose, and in reality both factors are probably important. More to the point, there is evidence that both factors are related, that the creditworthiness of Latin American governments is highly correlated with movements in international interest rates. The third column of Table 4 reports the statistical relationship between the stripped yields on the Brady bonds depicted in Figure 2 and the US long-term interest rate. We found that a one percentage point increase in the US interest rate is associated with an increase in the stripped yield of 2 percentage points in Mexico, 3 percentage points in Argentina, and more than 5 percentage points in Venezuela.

Figure 3
Capital Flows to Latin America



The fact that the interest rate rises more than one-for-one with the US rate suggests that increases in world interest rates raise the perceived riskiness of Latin American debt. One reason for this is the fact that many Latin American governments rely upon international markets to finance their debts. When world interest rates rise, the cost of servicing this debt rises as well, and if the cost rises enough it may threaten the solvency of the public sector. Also, since capital flows to all emerging markets are highly sensitive to international interest rates, higher interest rates may raise "rollover risk", creating a liquidity crisis that may threaten a government's ability to service its debt obligations on schedule.

4. Latin American fiscal outcomes are volatile

Fiscal deficits are volatile in Latin America

We argued above that not only the average level, but also the volatility of fiscal deficits affects the probability that a government will have problems servicing its debt. We are therefore interested in the volatility of fiscal deficits, but our interest in fiscal volatility is more general than this. A basic precept of public finance is that fiscal authorities should aim for a rough stability of tax rates, rather than adjusting tax rates with the aim of stabilizing tax revenue in the face of a fluctuating tax base.⁶ Similarly, highly volatile public spending is likely to generate waste, for example as the effectiveness of a public investment program suffers from a "stop and go" pattern of implementation dictated by fast-changing political priorities or transitory shocks to the availability of budgetary resources, rather than considerations of long-run cost effectiveness.

⁶ Barro (1979). See also Barro (1995).

Table 5 documents the volatility of the fiscal balance in Latin America. We see that the change in the Latin American fiscal balance has been about twice as volatile as in the OECD, if measured relative to GDP; three to four times as volatile if measured as a share of total fiscal revenue; and 5 to 10 times as volatile if measured in relation to the size of the domestic financial system.

How much of this volatility is due to the volatility of the underlying macroeconomic environment in Latin America? After all, if Latin American deficits were volatile merely because they respond passively to fluctuations in output and other determinants of tax revenue, there may be little to worry about. However, macroeconomic fluctuations are not the primary reason for the higher volatility of Latin American fiscal deficits. To show this, we constructed a measure of fiscal "shocks", which is the standard deviation of changes in the primary deficit after accounting for the typical impact on the deficit of fluctuations in real output, the terms of trade, private consumption, and the lagged deficit. As Table 5 indicates, these factors explain only a small fraction of the volatility of the primary deficit in Latin America, and the remaining volatility is still three times as large in Latin America as in the OECD, when measured relative to GDP.

	All countries		Excluding Brazil and the US	
	OECD	Latin America	OECD	Latin America
<i>Percent of GDP</i>				
Change in total surplus	1.5	3.0	1.5	2.9
Change in primary surplus	1.4	3.6	1.5	3.0
Fiscal shock	1.0	3.3	1.2	2.5
<i>Percent of fiscal revenue</i>				
Change in total surplus	5.7	16.4	5.5	18.8
Change in primary surplus	5.5	19.4	5.3	19.4
Fiscal shock	4.1	17.4	4.2	15.9
<i>Percent of M2</i>				
Change in total surplus	1.8	10.3	1.8	10.3
Change in primary surplus	1.7	12.2	1.7	10.7
Fiscal shock	1.3	11.0	1.3	8.7
All figures refer to population-weighted averages of underlying country data. Regional definitions are given in footnote 2. In some countries data are missing for some years, in which case we used all available observations in the relevant time period.				

Table 5 also shows that fiscal volatility is even larger when measured relative to the domestic financial system that is called upon to absorb fiscal shocks, or relative to the central government's revenue base. By these measures, the volatility of fiscal deficits in the region is around three to ten times as volatile as in the OECD.

Revenue and spending are even more volatile than deficits

The volatility of Latin American fiscal deficits reflects an even greater volatility in the underlying fiscal aggregates. In Table 6 we present measures of the volatility of major revenue and spending categories in Latin America and the OECD. The differences are striking. In the OECD, the standard deviation of annual percentage changes in real fiscal revenue is about 5 percentage points. In Latin America the figure is more than 15 percentage points. The figures for spending are even more striking; the volatility of total

expenditure in Latin America is nearly 16 percentage points per year, four times that recorded in the OECD.

The volatility of tax revenue is in part attributable to the Latin America's greater reliance on volatile nontax and indirect tax revenue, which are more volatile than income taxes and social security contributions in both regions. But it also reflects a larger volatility of every major form of revenue, suggesting that greater volatility in revenue bases and tax rates are also important.

	All countries		Excluding Brazil and the US	
	OECD	Latin America	OECD	Latin America
Total revenue	5.2	15.2	5.8	13.2
Nontax revenue	19.6	40.6	23.4	35.3
Tax revenue	5.0	16.7	5.6	12.6
Income tax	7.4	18.2	8.3	23.0
Social security	5.6	18.5	6.7	22.5
Indirect taxes	9.9	24.8	8.4	30.6
Trade taxes	30.1	32.4	38.7	36.9
Total expenditure	3.9	15.7	4.3	16.2
Capital expenditure	17.6	34.6	14.7	35.2
Current expenditure	3.8	15.3	4.2	32.2
Wage payments	4.5	17.0	5.6	14.3
Other purchases	7.4	45.4	7.6	39.5
Transfer payments	5.4	46.9	6.0	44.6
Interest payments	11.9	30.8	13.1	54.4

Variables are standard deviations of percentage changes in the real value of the indicated variable. All variables are deflated using the GDP deflator. All figures refer to population-weighted averages of underlying country data. Regional definitions are given in footnote 2. In some countries data are missing for some years, in which case we used all available observations in the relevant time period.

The volatility of Latin American fiscal expenditure is striking. Capital spending is twice, wage payments are four times, nonwage purchases of goods and services are six times, and transfer payments are nearly nine times as volatile as in the OECD. It is very hard to believe that the extremely high volatilities of real wage and transfer payments are the result of explicit fiscal decisions. It seems more likely that the very high volatility of real payments reflects the inflationary erosion of nominal budgetary allocations due to unexpectedly high inflation. And indeed, the inflation tax rate⁷ has not only been much higher in Latin America - averaging nearly 40 percent to the OECD's 6 percent - but also much more volatile, with a standard deviation of more than 20 percentage points in comparison with only 3 percentage points in the OECD. We have more to say on the role of inflation in Latin American fiscal adjustment below.

How much is too much volatility in public spending?. There are no precise answers, but the rough guidelines available suggest that the very high volatility that we observe in Latin American public

⁷ The inflation tax rate is $\hat{\epsilon}/(1+\hat{\epsilon})$, where $\hat{\epsilon}$ is the inflation rate, defined here as the December over December change in the consumer price index.

spending is cause for concern. For example, under plausible conditions one should expect current public expenditure to adjust in line with permanent national income, implying a volatility not much greater than that of permanent income.⁸ And indeed, in the OECD the volatility of current expenditure is not much higher than that of GDP growth. The 15 percentage point standard deviation in Latin America's current expenditure - roughly four times the volatility of GDP growth - would seem excessive by this standard. As noted above, it also seems plausible that these extreme fluctuations in public spending have an adverse effect on the efficiency of public spending programs.

These costs might be worth paying if the fluctuations in public spending represented countercyclical movements that stabilize and therefore reduce the macroeconomic costs of shocks to the economy as a whole. However, the evidence suggests that the opposite is true; public spending in Latin America has in fact been highly procyclical, thus amplifying rather than absorbing shocks. To document this fact and draw out some implications, we now turn to some evidence on the cyclical properties of fiscal policy in Latin America.

5. Latin American fiscal outcomes are procyclical

A well-managed fiscal policy needs to bear several considerations in mind. If shocks to the tax base are at least partly transitory, it is good public finance to maintain rough stability in tax rates, thus generating fiscal surpluses in good times and deficits in bad. The optimal mix between financing and fiscal adjustment would depend upon the permanence of typical shocks to the tax base, with more transitory shocks eliciting larger countercyclical movements in the deficit. If there are costs of very rapid fiscal adjustment, one would also expect to see transitory deficits in the aftermath of adverse shocks, and surpluses after favorable shocks, even if the disturbances are permanent. And if Keynesian considerations are important, the case for a countercyclical policy is strengthened, and indeed an optimal policy may involve tax cuts or increased spending during recessions, thus amplifying the countercyclical relationship between the deficit and the level of economic activity that is justified on pure public finance grounds.

Fiscal surpluses are highly stabilizing in the OECD, much less so in Latin America

For a number of reasons, one would therefore hope to see favorable shocks to the economy associated with increased surpluses, and adverse shocks to the economy associated with reduced fiscal surpluses. And Table 7 (below) shows that this is exactly what happens in the OECD. The first two rows of that table report the results of a statistical analysis in which changes in the fiscal surplus, measured as percent of GDP, are explained by changes in real GDP, and other explanatory variables (some of which are discussed below).⁹

In the OECD, a one percentage point increase in the GDP growth rate is associated with an increase in the fiscal surplus of about .25 percentage points of GDP,¹⁰ implying that of each dollar by which domestic income increases, approximately 25 cents is absorbed in the form of a larger fiscal surplus. This

⁸ See Wildavsky (1986). A more complete analysis would separate military from nonmilitary expenditures, since the former category is clearly subject to political shocks exogenous to the domestic economy. However, this has not been important in Latin America.

⁹ The methodology is essentially the same as in the Bayoumi and Eichengreen (1995) analysis of fiscal policy in US states, except that we analyzed the impact on fiscal outcomes of variables other than real GDP growth, and also investigated the cyclicity of spending and revenue in addition to the fiscal balance.

¹⁰ The coefficient is precisely estimated, with a t-statistic of 6.2. In the statistical analysis summarized in Table 7, data are pooled for the 21 OECD and 13 Latin American countries, respectively, and country dummies are included in all regressions. The lagged surplus-GDP ratio is always included as an explanatory variable, as discussed below. In some specifications of the model, the growth rate of the terms of trade and of real private consumption are included as well. The conclusions discussed in this paper are not sensitive to inclusion of these variables. See Gavin and Perotti (1996) for a more detailed description of the statistical work.

would be even more stabilizing. Instead, the less stabilizing fiscal response is due to a strongly procyclical response of public spending. Our estimate is that a one percentage point increase in real GDP growth increases real spending of the consolidated central government by about 0.61 percent. All major spending categories are strongly procyclical, including in particular capital expenditure, wage payments, other purchases, and transfers.¹³ It is generally accepted that an increase in government purchases of goods and services is more expansionary than an equal increase in government transfers or reduction in taxes; the roughly noncyclical pattern for the deficit combined with the strongly procyclical pattern of government purchases therefore means that Latin American fiscal policy has on average been procyclical, and thus destabilizing, during the past 25 years.

In Latin America, fiscal outcomes are particularly contractionary during recessions

We have argued that fiscal outcomes are procyclical in Latin America. Not only is this true on average, but there is in addition good reason to believe that fiscal policy has amplified output fluctuations most during recessions, when a stabilizing policy would be most valuable. To investigate this, we extended the statistical analysis described above to distinguish between the impact of output fluctuations on fiscal outcomes in good times and bad.¹⁴ The results are summarized in Table 8.

	High growth periods		Low growth periods	
	OECD	Latin America	OECD	Latin America
	Total surplus	0.174	0.154	0.611
Primary surplus	0.136	0.123	0.580	-0.049

Source: Statistical analysis as described in Gavin and Perotti (1996). Numbers give the typical impact of a one percentage point increase in real GDP on the ratio of the surplus to GDP. A positive number for the surplus implies that it moves in a stabilizing direction.

In the OECD the fiscal response to GDP growth is much stronger in low-growth periods than in high-growth periods.¹⁵ In times of rapid growth, the surplus increases by about 17 cents for every dollar of increased GDP growth. But in recessions, a shock to real GDP elicits a much stronger fiscal response, moving by more than 60 cents for every dollar of change in real GDP. This describes a region in which recessions are economically and/or politically more costly than booms, and in which the deficits generated by a strong countercyclical response to recessions can be financed.

In Latin America, the opposite pattern emerges. Although the response of the fiscal surplus to output during good times is similar to that observed in the OECD, there is no detectable tendency for deficits to increase in response to declining output during recessions - indeed, the statistical results suggest that Latin American fiscal balances move in the "wrong", procyclical direction during bad times.

Figure 2 sheds more light on this tendency by comparing the fiscal response to major recessions in Latin America and the OECD. For purposes of this chart, a major recession is defined as one in which real GDP experiences a cumulative decline of more than 4 percent (Latin America) or 1.5 percent (OECD).

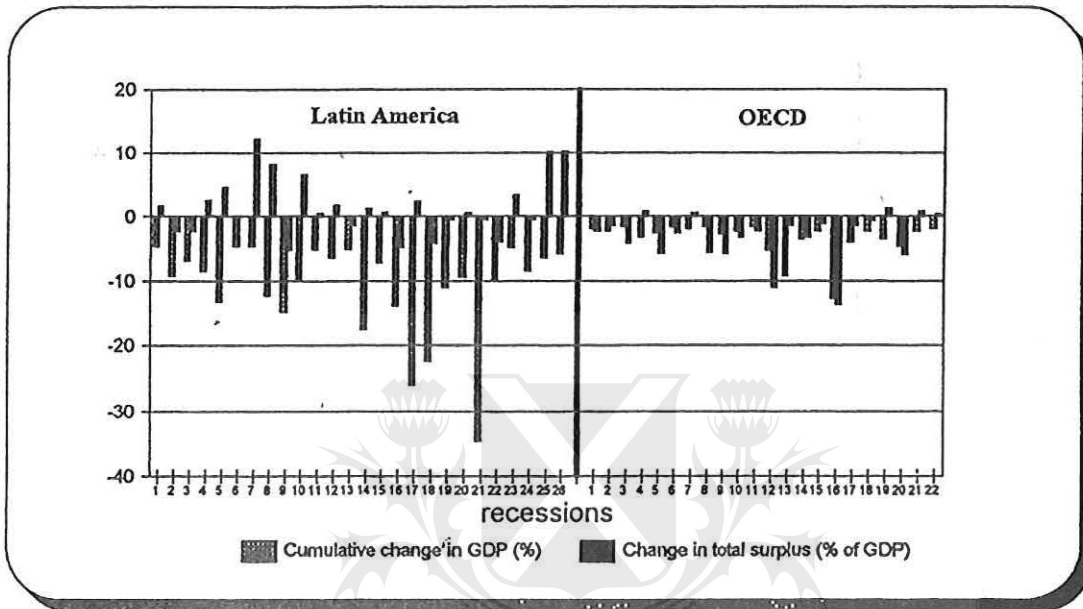
¹³ Note that even (inflation-adjusted) interest payments also behave in a procyclical manner. This apparently counterintuitive result will be explained when we discuss the role of the inflation tax in fiscal adjustment, below.

¹⁴ "Bad" times are defined as years in which GDP growth was lower than one standard deviation below its average. "Good" times were defined as other periods. Similar results were obtained when we defined "bad" periods as periods of negative real GDP growth.

¹⁵ The difference is statistically significant.

The chart plots, for each such recession,¹⁶ the cumulative decline in real GDP and the change in the surplus-GDP ratio over the course of the recession.

Figure 4
Fiscal response to major recessions
Latin America and the OECD



Two points emerge clearly from the figure. The first is the fact that during the past 25 years Latin America has had to cope with much larger recessions than has the OECD. As can be seen in Table 9, which summarizes the data in Figure 2, "major" recessions in the OECD involved an average decline in real GDP of only 3.3 percent, against an average decline of more than 10 percent in Latin America. Second, there is a very consistent and strong tendency for OECD fiscal balances to move toward deficit during recessions. Indeed, the move into deficit was on average approximately as large as the typical decline in real GDP.

Table 9
Fiscal response to major recessions - Latin America and the OECD

	OECD			Latin America		
	Cumulative change in real GDP (%)	Change in total surplus (% of GDP)	Change in primary surplus (% of GDP)	Cumulative change in real GDP (%)	Change in total surplus (% of GDP)	Change in primary surplus (% of GDP)
Average change	-3.3	-3.0	-2.3	-10.7	1.6	1.8
Standard deviation	2.6	3.6	3.3	7.2	4.5	4.3

Major recessions are defined as recessions in which the cumulative decline in real GDP is larger than 4.0 percent (Latin America) and 1.5 percent (OECD). Underlying data are presented in Appendix Tables 1 and 2.

¹⁶ For Latin America there were a few major recessions for which we did not have the corresponding fiscal data. These are not shown in Figure 2. The data summarized in Figure 2 and Table 9 are described in more detail in Appendix Tables 1 and 2.

In Latin America no such tendency is apparent. Indeed, as Table 9 indicates, fiscal balances have on average moved toward *surplus* during the large recessions depicted in Figure 2.¹⁷

Mechanisms of adjustment in Latin America: is fiscal adjustment a monetary phenomenon?

The above estimates imply very wrenching fiscal adjustments in the aftermath of typical recessions, and go some way toward explaining the extreme volatility of inflation-adjusted public spending discussed in the previous section. To see this, consider that the typical Latin American recession lasts a little longer than two years, and involves a cumulative decline in real GDP of about 8 percent.¹⁸ With trend growth of about 3.5 percent per year, a typical recession thus represents a reduction in output, relative to trend, of about 15 percent. The estimates in Table 7 suggest that this 15 percent decline in real GDP would be associated, for example, with a reduction in the real wage bill of the consolidated central government of more than 13 percent, and a decline in real interest payments of about 16 percent.

How has this been achieved? Legislating a double-digit reduction in real wage rates or employment levels over the roughly two-year period in question would be very difficult, and is hardly typical behavior of governments in the region. And it is even harder to think of mechanisms through which governments can legislate lower interest payments during recessions; explicit default is a technical possibility, but it is rare, and cannot explain the procyclical pattern for interest expenditure visible in data.

Less rare, however, is erosion of the real value of nominal fiscal commitments through a burst of inflation. To investigate the importance of this mechanism, we analyzed the cyclical behavior of the inflation tax rate in Latin America and the OECD. We found that in the OECD, there is a very weak positive relationship between the inflation tax rate and real GDP growth. In Latin America, on the other hand, there is a very strong negative correlation; large declines in real GDP growth are associated with large increases in inflation. In Latin America the inflation tax rate also tends to increase when the previous year's fiscal deficit was large, something that does not occur in the OECD.

While more detailed work remains to be done, both of these findings suggest that inflation is an important mechanism of fiscal adjustment in Latin America: adverse shocks are associated with sharp increases in inflation, which erode the real value of nominal spending commitments and help to effect the highly procyclical behavior of inflation-adjusted government spending that is apparent in the data.

Fiscal adjustment takes place more rapidly in Latin America

If very rapid fiscal adjustment is costly in economic or political terms, we would expect policymakers to eliminate undesirable or unsustainable fiscal imbalances gradually. In this case, deficits would be quite persistent, and the current year's deficit would be closely related to the previous year's. Taking advantage of this insight, we investigated the typical speed of fiscal adjustment in Latin America. Our work suggests that the speed of fiscal adjustment has been higher in Latin America than in the OECD, in the sense that the previous year's fiscal surplus is, other things equal, associated with a larger subsequent decline in the current year's budget surplus in Latin America than is the case in the OECD. This means that budget surpluses and deficits tend to vanish more rapidly in Latin America than in the OECD. The differences are substantial; the estimates suggest that in the OECD it would take about 5-1/2 years for an existing fiscal deficit to be cut to 25 percent of its existing level, while the same adjustment would typically be achieved in Latin America in about 3 years. One plausible interpretation of this finding is that Latin American governments have had a reduced opportunity to finance gradual budgetary adjustments, and have therefore had to adjust more rapidly than have OECD countries.

¹⁷ The increase in the average total and primary surpluses are statistically significantly different from zero at conventional confidence levels.

¹⁸ See Inter-American Development Bank (1995).

6. Volatility, precarious creditworthiness and procyclicality

We have made the following three points: Latin America is volatile, Latin America is precariously creditworthy, and Latin American fiscal outcomes are volatile and procyclical. We now expand upon the relationships among these facts.

Procyclical international financing enforces procyclical fiscal policy, which contributes to macroeconomic volatility

The precarious nature of Latin America's access to international financing means that international financing can and often does disappear just when it is most needed to finance a countercyclical fiscal policy. This presents a dilemma for governments in the region: although it would be desirable temporarily to respond to recession countercyclically, the financing required to do so has vanished. Recent experiences in Argentina and Mexico provide vivid illustrations of the dilemma. In 1995 both countries found themselves in the midst of severe recessions. Despite this, both countries implemented strongly contractionary fiscal policies, almost certainly contributing to the depth of the recession and postponing recovery. This was not done because officials in the two countries would not have liked to implement a more countercyclical policy. It was done because, in light of investors' loss of confidence in short-term prospects, financing of the deficits that would have been implied by a countercyclical policy was simply not available. Furthermore, aggressive fiscal adjustment was a crucial signal of continued commitment to sound policies, and in the absence of this adjustment there was a real danger that capital flight by already nervous international and domestic investors would have intensified, further deepening the economic crisis. *Given their precarious access to international financial markets, the procyclical fiscal response was the best response available to the fiscal authorities.*

While these recent experiences are extreme, they are not isolated and there is good reason to believe that the problem is much more general, and that sudden interruptions in the availability of finance are a key reason for the procyclicality of fiscal policy in the region. This is supported by the finding that procyclicality is most severe during economic downturns, when running a stabilizing fiscal policy would require larger deficits. In short, all too often a sudden interruption of access to international finance has enforced a highly destabilizing fiscal response, contributing to costly macroeconomic volatility. Making a more stabilizing fiscal response feasible thus requires that the problem of precarious market access be addressed. To do so, we need to understand the sources of Latin America's fragile relationship with international financial markets.

Precarious creditworthiness is rooted in weak fiscal structures in the context of a volatile macroeconomic environment

Why this tendency of investors to flee in the aftermath of adverse shocks? And what can be done about it? In all democracies, fiscal policy is determined by a time-consuming political process that can generate important delays in fiscal response to adverse shocks. Latin America is similar to the OECD in this respect, but its room for fiscal maneuver is much smaller because the fiscal shocks with which it must cope are so much larger, particularly if measured relative to the size of the budgets that have to be adjusted in response to shocks.

It is worth dwelling on this point for a moment. A "typical" recession lasts roughly two years, and involves a decline in real GDP of 8 percent in Latin America and 2 percent in the industrial economies.¹⁹ With long-run growth rates averaging about 3.5 percent per year, the typical Latin American recession thus represents a decline in output of about 15 percentage points, relative to normal growth over a two year period. The corresponding figure for the OECD is roughly 7 percent. The revenue elasticities presented in Table 7 imply that these reductions in output would generate declines in real fiscal revenue

¹⁹ Inter-American Development Bank (1995).

of roughly 20 percent in Latin America and 6 percent in the OECD. These reductions would, in turn, amount to about 3.7 percent of GDP in Latin America and 1.5 percent in the OECD.

Fiscal authorities in a typical OECD country could, if they so desired, eliminate the deficit by cutting real noninterest spending by 6 percent, a very large but not extremely disruptive adjustment. But in Latin America the required reduction in noninterest spending would be nearly 25 percent. Total elimination of public investment would not suffice to compensate for the loss of revenue. It would require a 50 percent reduction in wages and transfers to eliminate the deficit, a 20 percent increase in total revenue, or a 45 percent increase in income taxes and social security contributions.

The sheer magnitude of the fiscal adjustment required by a typical recession makes it economically and politically costly, which may help to explain why the inflation tax appears to be such an important fiscal instrument. It is not that inflation is a less costly way to achieve the required fiscal adjustment, but rather that it does not require explicit legislative approval, and indeed may be the end result of a financial crisis caused by failure of the political system to achieve an explicit fiscal response to the crisis.

In an important sense the small room for fiscal maneuver is also a reflection of long-term deficit bias in fiscal policy, because if required debt service were lower, the tax capacity now dedicated to actual debt service could form a reserve of unused fiscal capacity to draw upon when required.

In short, the fragility of Latin America's access to international credit markets is rooted in the fact that the size of fiscal shocks in the region is very large relative to its fiscal capacity to adjust. This fiscal capacity is relatively low for structural reasons, such as the importance of untaxed informal economic activity in many countries. It is low because deficits have tended to be too large, perhaps not in comparison with those recorded in the OECD, but certainly in comparison with the demands placed upon fiscal policy in Latin America. Fiscal capacity is low because, as we shall emphasize in the next section, fiscal policy during good times has not been set with a view to ensuring that public finances remain in a sufficiently strong position to weather a macroeconomic storm without threatening the perceived creditworthiness of the public sector. And it is low because normal, democratic processes and institutions may lead to gridlock in the aftermath of a very large shock, raising the possibility that a required fiscal adjustment will not occur in a timely, efficient manner, particularly when budgetary institutions are weak. Fearing this gridlock, and the financial crisis with which it may be associated, investors may head for the exits at the first sign of trouble, forcing the government into economically disruptive fiscal contraction.

Better budgetary institutions can improve creditworthiness, and permit a more stabilizing fiscal response

This last point suggests that strong budgetary institutions may increase a government's financial room for maneuver; by raising the probability of an appropriate medium-term fiscal response, they may provide the reassurance required to persuade participants in international financial markets to finance the deficits associated with a countercyclical fiscal response to economic shocks. To see whether there is any evidence for this, we divided our sample of countries into groups with weak, moderate, and strong budgetary institutions, as defined by the indices presented in Alesina et. al. (1995) for Latin America and von Hagen and Harden (1994) for the OECD. The results are summarized in Table 10, below.

Taking Latin America first, we see that the countries with the weakest budgetary institutions display a highly procyclical and thus destabilizing fiscal response to recessions. Countries with an intermediate ranking display a substantially smaller tendency to behave procyclically, and in countries with the strongest index of fiscal institutions movements in fiscal balances have been countercyclical, and thus stabilizing in both good times and bad.

Similarly, OECD countries with the strongest budgetary institutions exhibit the most stabilizing response to economic downturns, although all country groupings display a fairly strong countercyclical response,

suggesting that creditworthiness is not a key constraint on OECD countries' ability to implement countercyclical fiscal policies, even in countries with relatively weak budgetary institutions.

	Latin America		OECD	
	Low growth	High growth	Low growth	High growth
<i>Index of budgetary institutions</i>				
Lowest index	-0.163	.279	.524	.237
Intermediate index	-0.087	.037	.216	.338
Highest index	0.127	.191	.917	.169

Source: Statistical analysis as described in Gavin and Perotti (1996) using the indices of fiscal institutions developed in Alesina et. al. (1995) and von Hagen and Harden (1994). Numbers give the typical impact of a one percentage point increase in real GDP on the fiscal balance in periods of low growth and high growth, respectively. A positive number for the surplus implies that it moves in a stabilizing direction.

On balance, this evidence lends support to the idea that better budgetary institutions may provide creditors with greater confidence in fiscal performance over the medium term, thus inducing them to make available the financing required to implement a countercyclical fiscal response to adverse shocks.

7. Policy implications

We have documented the volatility and procyclicality of fiscal policy and the precarious creditworthiness that has afflicted Latin American. We have also argued that these three elements constitute a vicious circle which imposes very significant social costs. We have found that the way in which the region conducts fiscal policy is troublesome: when hit by adverse shocks to the tax base caused by severe contractions in national income, access to international credit markets is often sharply curtailed, forcing the region into a contractionary fiscal response which may be very disruptive and amplify the initial decline in income. We have also found that this response involves major cuts in real spending, cuts that are often achieved through inflation acceleration. This behavior is in stark contrast with both optimal public finance theory, which would argue in favor of tax smoothing and stable expenditures, and with observed OECD performance. The relevant policy question is what can be done about the situation.

To break out of this vicious circle, policymakers in the region need to work on all fronts. Creditworthiness needs to be increased, the underlying macroeconomic volatility needs to be reduced, and cyclical management needs to be made more stabilizing. Naturally, improvements in one area will have positive effects on the others.

Enhancing creditworthiness

Creditworthiness is related to the ability, and the market's perception of the willingness, to service debt. Debts are serviced out of the gap between tax revenues and other public expenditures. While fiscal revenue in Latin America is half the share of GDP that OECD governments can lay claim to, the region's debt service represents the same share of GDP as in the OECD. This means that interest payments in Latin America consume twice the share of revenue consumed in the OECD, and represent a quarter of the region's budget. Strengthening tax policy and administration is therefore an important element of an agenda to improve the region's creditworthiness.

In particular, the capacity of the tax system to generate revenues has to be improved, but not fully utilized. The improvement is required to increase the capacity to raise taxes when necessary, thus

reducing the likelihood that fiscal adjustment will be brought about through the disruptive inflationary process that markets fear. The tax capacity should not be fully utilized, to leave enough room for fiscal maneuver to respond to negative shocks, whether permanent or transitory. The perception by financial markets that the fiscal capacity to adjust has increased, and the cost of adjustment has declined, will promote confidence and encourage market participants to provide financing during downturns.

This strategy requires sufficient fiscal discipline to leave some tax capacity unutilized. This may require a strengthening of budgetary institutions, to offset the deficit bias inherent in collective decisionmaking (Eichengreen *et al.*, 1996), so that accumulated debts do not become excessive. More generally, creditworthiness is related to the market's perception of the ability of the political system to react to shocks. The evidence presented above indicates that the strength of their budgetary institutions has affected the ability of Latin American countries to play a stabilizing role during recessions.

Reducing the volatility of tax revenues

The volatility of tax revenues is the consequence of the interaction of two factors: the underlying volatility of the economic environment and the tax structure. Policies to reduce the underlying volatility of the economic environment are the topic of Inter-American Development Bank (1995) and Hausmann and Reisen (1996) and we will not elaborate on them in this paper. We merely highlight the recommendation that the tax system should rely on relatively few taxes levied on broad-based aggregates - such as total spending or income - rather than on taxes on highly volatile flows such as exports of primary commodities and import duties.

Improving cyclical management

We have argued that Latin American countries are often forced into highly disruptive, procyclical adjustments to severe economic contractions because they lose access to international credit markets. But a key reason for this loss of access during bad times is the mismanagement of monetary and fiscal policy during the good times that preceded them. It is during booms that the seeds of crisis often are sown, although the crisis becomes evident only when the boom subsides.

This is true for a number of reasons. Inadequate monetary management of economic booms can create hidden but very real contingent fiscal liabilities, thus disguising the underlying fiscal weakness. A particularly important example is the contingent fiscal liabilities created by implicit or explicit guarantees of commercial bank liabilities. Latin American governments have repeatedly found themselves in the midst of major banking crises, in which commercial bank losses are often transformed into huge increases in public debt, not infrequently amounting to double-digit percentages of GDP. The crises are typically preceded by major lending booms, and there is good reason to believe that the lending booms play a causal role in the determination of banking crises (Gavin and Hausmann, 1995). To prevent an expensive banking crisis, liquidity requirements of the banking system should therefore be managed countercyclically, to "lean against the wind" of credit booms. And the possibility that a banking crisis will unexpectedly emerge should be factored into judgments about the appropriate level of public debt.

Second, as Talvi (1995 and 1996) has pointed out, the fiscal implications of macroeconomic booms mean that the observed fiscal surplus may exaggerate the underlying strength of the fiscal position. Because of a misguided focus on the actual fiscal position, transitory increases in government revenue often result in hard-to-reverse spending commitments; the money seems to be there, and the political process provides few inhibitions against spending it.

The problem is that the resulting fiscal position is very vulnerable to the decline in revenue that will occur once the temporary macroeconomic boom comes to an end. In fact, when the contraction actually occurs the fiscal deterioration can be so abrupt and so large that the capacity to finance a gradual adjustment may be absent, thus creating the need for a sudden and procyclical fiscal adjustment. The sudden reversal

of fiscal fortune becomes evident during the contraction, but the seeds had already been planted during the boom. The likelihood that this scenario will play itself out will be minimized if policymakers manage macroeconomic booms with as much care as they manage crises. Some guidelines are:

- The fiscal deficit should be balanced - or, more precisely, be made consistent with a gradual movement toward desired debt levels - over the medium term. This means that fiscal surpluses should be accumulated and net public debt reduced during economic booms, and the fiscal balance allowed to move into deficit during contractions.
- Hard-to-reverse changes in public spending commitments and tax rates should be made only in response to changes in long-run fundamentals, with the fiscal deficit and the debt adjusting in response to transitory shocks.
- Because of the difficulties in reversing tax cuts and expanded public spending programs, it is in general more costly to err on the side of expansion than on the side of caution. The adjustment to favorable shocks whose permanence is uncertain should be conservative, which is to say gradual.
- To implement fiscal policy, the operational target should be a cyclically adjusted fiscal deficit, rather than the actual deficit. The actual fiscal deficit should be adjusted for differences between the current and long-run expectations about the following variables: i) the level of output; ii) the level of domestic absorption, an important tax base in Latin America; iii) the terms of trade; and iv) the real exchange rate, which has important fiscal implications in many countries.²⁰ Other variables may also be relevant depending on the fiscal structure and macroeconomic environment of a country.

Better management of fiscal policy is not a panacea; it alone will not solve the region's economic problems. But if it is only one element of a policy agenda for stability and sustained growth in the region, it is a particularly important one, and one that is manifestly under the control, and the direct responsibility, of governments in the region. The region's economic challenges demand a policy response along a broad front, but there is no better place to begin than with the institutional and policy reforms required to achieve a better management of fiscal policy.

San Andrés

²⁰ An appreciation of the real exchange rate will improve the fiscal balance of a country if the public sector runs a current account deficit, i.e; if its revenues from export activities are below its imports and foreign-currency debt service.

References

- Aizenman, Joshua, Michael Gavin and Ricardo Hausmann (1996) "Optimal Tax Policy with Endogenous Borrowing Constraints", mimeo, Inter-American Development Bank.
- Alesina, Alberto, Ricardo Hausmann, Rudolf Hommes and Ernesto Stein (1995) "Budget Institutions and Fiscal Performance in Latin America", mimeo, Inter-American Development Bank.
- Alesina, Alberto and Roberto Perotti (1995) "Fiscal Adjustment: Fiscal Expansions and Adjustments in OECD countries", *Economic Policy*, 21, 205-248.
- Alesina, Alberto and Roberto Perotti (1994) "Budget Deficits and Budget Institutions", mimeo, Columbia University.
- Barro, Robert J. (1979) "On the Determination of the Public Debt", *Journal of Political Economy*, 87 (October), 940-971.
- Barro, Robert J. (1995) "Optimal Debt Management", NBER working paper no. 5327.
- Bayoumi, Tamin and Barry Eichengreen (1995) "Restraining Yourself: Fiscal Rules and Stabilization", *IMF Staff Papers*, 42 (1):32-48.
- Bohn, Henning (1991) "Budget Balance through Revenue or Spending Adjustments?", *Journal of Monetary Economics*.
- Buiter, Willem (1985) "A Guide to Public Sector Deficits", *Economic Policy*.
- Calvo, Guillermo, Leonardo Leiderman and Carmen Reinhart (1993) "Capital Inflows to Latin America: The Role of External Factors", *IMF Staff Papers*.
- Easterly, William, Carlos A. Rodriguez and Klaus Schmidt-Hebbel (1994) *Public Sector Deficits and Macroeconomic Performance*, Washington, DC: Oxford University Press for the World Bank.
- Eichengreen, Barry, Ricardo Hausmann and Jürgen von Hagen (1996) "Reforming Fiscal Institutions in Latin America: The Case for a National Fiscal Council", mimeo, Inter-American Development Bank.
- Gavin, Michael and Ricardo Hausmann (1996) "Fiscal shocks, financial depth and monetary volatility: Why are monetary outcomes in Latin America so disproportionately volatile?", mimeo, Inter-American Development Bank.
- Gavin, Michael and Ricardo Hausmann (forthcoming) "The Roots of Banking Crises: The Macroeconomic Context", in Inter-American Development Bank and Group of 30, *Banking Crises in Latin America*, Washington, DC: Inter-American Development Bank.
- Gavin, Michael, Ricardo Hausmann and Leonardo Leiderman (1995) "The Macroeconomics of Capital Flows to Latin America: Experience and Policy Issues", in R. Hausmann and L. Rojas-Suarez (eds.) *Volatile Capital Flows: Taming their Impact on Latin America*, Washington, DC: Inter-American Development Bank.

- Gavin, Michael, and Roberto Perotti (1996) "Fiscal Policy in Latin America: Volatility, Cyclicity and Modes of Adjustment", OCE working paper, Inter-American Development Bank.
- Giavazzi, Francesco and Marco Pagano (1990) "Confidence Crises and Public Debt Management", in R. Dornbusch and M. Draghi (eds.) *Public Debt Management: Theory and History*, Cambridge: Cambridge University Press.
- Hausmann, Ricardo and Michael Gavin (1996) "Securing Stability and Growth in a Shock-Prone Region: The Policy Challenge for Latin America", in Hausmann and Reisen (eds) *Securing Stability and Growth in Latin America: Policy Issues and Prospects for Shock-Prone Economies*.
- Hausmann, Ricardo and Helmut Reisen (eds) (1996) *Securing Stability and Growth in Latin America: Policy Issues and Prospects for Shock-Prone Economies*, OECD and Inter-American Development Bank.
- Inter-American Development Bank (1995) "Overcoming Volatility in Latin America", in *Report on Economic and Social Progress in Latin America: 1995*, Johns Hopkins University Press for the Inter-American Development Bank.
- Poterba, James "State Responses to Fiscal Crises: The Effects of Budgetary Institutions and Policies", *Journal of Political Economy*, 102(4), 799-821.
- Talvi, Ernesto (1995) "Fiscal Policy and the Business Cycle Associated with Exchange-Rate Based Stabilization: Evidence from Uruguay's 1991 and 1978 Programs", OCE working paper no. 313, Inter-American Development Bank.
- Talvi, Ernesto (1996) "Exchange-Rate Based Stabilization with Endogenous Fiscal Response", OCE working paper no. 222, Inter-American Development Bank.
- von Hagen, Jürgen and Ian Harden (1994) "National Budget Processes and Fiscal Performance", *European Economy*, Reports and Studies, no. 3: 311-418.
- Wildavsky, Aaron (1986) *Budgeting: A Comparative Theory of Budgetary Processes*, New Brunswick: Transaction Books.

Appendix Table 1				
Fiscal response to major recessions - OECD				
Country	Time-Period	Change in GDP	Change in total surplus	Change in primary surplus
USA	1974-1975	-1.7	-2.3	-1.6
USA	1982	-2.2	-1.3	-0.9
GBR	1974-1975	-1.5	-4.0	-3.6
GBR	1980-1981	-3.0	0.8	1.2
GBR	1991-1992	-2.5	-5.7	-6.1
BEL	1975	-1.5	-2.5	-2.5
BEL	1993	-1.7	0.6	0.3
DNK	1974-1975	-1.6	-5.3	-5.3
ITA	1975	-2.7	-5.6	-4.8
NED	1981-1982	-2.1	-3.0	-1.8
SWE	1977	-1.6	-2.1	-1.1
SWE	1993	-5.2	-10.8	-9.8
CHE	1975-1976	-9.0	-1.4	-1.3
CAN	1982	-3.3	-3.2	-2.9
CAN	1990-1991	-2.2	-1.1	-1.3
FIN	1991-1993	-12.6	-13.6	-10.8
GRE	1974	-3.7	-1.4	-1.0
ICE	1983	-2.2	-0.5	0.0
ICE	1992	-3.3	1.3	1.2
POR	1975	-4.4	-5.8	na
POR	1983-1984	-2.1	0.8	2.6
AUS	1982	-1.7	0.4	0.3
Average		-3.3	-3.0	-2.3

Major recessions are defined as recessions in which the cumulative decline in real GDP is larger than 1.5 percent.

Appendix Table 2
Fiscal response to major recessions - Latin America

Country	Time-Period	Change in GDP	Change in total surplus	Change in primary surplus
ARG	1975-1978	-4.5	1.6	4.7
ARG	1981-1982	-9.1	-2.2	-0.3
ARG	1985	-6.8	-2.1	-1.6
ARG	1988-1989	-8.3	2.5	1.9
BOL	1982-1986	-13.1	4.5	4.2
BRA	1981	-4.5	0.1	0.1
BRA	1990-1992	-4.5	12.2	4.3
CHI	1972-1975	-12.1	8.1	na
CHI	1982-1983	-14.8	-5.2	-4.4
CRA	1981-1982	-9.9	6.5	6.0
DOM	1990	-4.9	0.5	0.1
HAI	1981-1982	-6.3	1.7	na
MEX	1982-1983	-5.0	-1.2	4.9
PAN	1988-1989	-17.4	1.3	-1.3
PAR	1982-1983	-6.9	0.6	0.6
PER	1982-1983	-13.8	-4.6	-3.7
PER	1988-1990	-25.8	2.3	3.9
URU	1982-1984	-22.3	-4.1	-2.3
VNZ	1980-1983	-10.8	-0.4	-0.3
VNZ	1989	-9.3	0.5	0.6
BAH	1974-1975	-34.4	-0.4	0.0
BAH	1981	-9.7	-3.8	-3.9
BRB	1974	-4.8	3.3	4.6
BRB	1981-1982	-8.4	-0.4	na
GUY	1977-1979	-6.3	10.1	12.3
JAM	1984-1985	-5.6	10.2	11.6
Average		-10.7	1.6	1.8

Major recessions are defined as recessions in which the cumulative decline in real GDP is larger than 4.0 percent. Some such recessions are not listed because fiscal data were not available.