Part II

Volatility, Uncertainty, Institutional Instability and Growth

5 Macroeconomic Volatility and Economic Development*

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1 INTRODUCTION

In recent years the economic costs imposed by a volatile macroeconomic environment have come into increasingly clear focus. Recent research suggests that a volatile macroeconomic environment leads to significantly lower rates of investment and economic growth, undermines educational attainment, harms the distribution of income, and increases poverty. While the precise magnitude of these costs and the mechanisms through which they occur should, and undoubtedly will, remain the focus of further research for some time, the evidence is, in our view, compelling enough to justify research efforts directed at understanding why developing economies are so volatile, and what can be done to reduce the costs of this volatility. In this chapter we synthesize several lines of research that have been under way in the Inter-American Development Bank (IADB) on these questions. While none of these research projects has as its explicit focus the role of institutional factors in economic development, taken together we think they provide a preliminary but nevertheless significant message on linkages between governmental institutions, macroeconomic stability, and economic development.

We emphasize the Latin American context, which has for obvious reasons been the focus of our research effort. However, our evidence is for the most part drawn from an international sample of country experience including all regions of the world, and while Latin America is in a few important respects idiosyncratic, our view is that the conclusions we draw for Latin America apply in broad outline to other regions of the world.

The argument is as follows:

1. *Latin America is volatile*   In terms of non-monetary quantities, the region has been two to three times as volatile as have the industrial economies, and has been more volatile than any other region of the world except Africa and the Middle East. The region stands alone in both the level and the volatility of its inflation and monetary growth.

2. *Volatility is bad for economic development*   In cross-country comparisons, measures of macroeconomic volatility are negatively related to long-run economic growth rates, both before and after accounting for standard determinants of growth. This relationship is statistically significant, and economically very large; our estimates suggest that over the 1960–85 period, Latin America's rate of economic growth would have been a full percentage point higher per year if the region had possessed the macroeconomic volatility of the industrial economies, rather than the much higher volatility actually experienced. Volatility also appears to reduce investment, undermine educational attainment and harm the distribution of income.

3. *Source of volatility*   Macroeconomic volatility is caused by the interaction of shocks, both domestic and external in origin, with economic institutions and policy regimes that are ill-adapted to the volatile environment with which they must deal. While terms of trade and other external shocks appear to matter, policy is the most important determinant of the volatility of macroeconomic outcomes. We find that monetary volatility, exchange-rate regimes, and measures of political instability are particularly important determinants of the volatility of real GDP growth and of the real exchange rate. Monetary volatility is, in turn, associated with volatile fiscal deficits and shallow domestic financial markets.

4. *Fiscal policy is destabilizing*   We find that in Latin America fiscal outcomes have been volatile, and that this volatility is not merely the passive response to the underlying macroeconomic volatility, as Latin-American fiscal outcomes have tended to be procyclical, and therefore destabilizing. In sharp contrast with the industrial economies, fiscal policy has been most procyclical during economic downturns, when a stabilizing response would be most valuable. We summarize briefly our explanation for the poor fiscal performance, and argue that stronger budgetary institutions can help to overcome some of the obstacles to a more stabilizing policy.

5. *Institutions matter*   In recent research, Alesina, Hausmann, Hommes

and Stein (1995) have developed a quantitative assessment of the strength of the budgetary institutions in various Latin American countries. They found that countries with stronger budgetary institutions have a significantly lower deficit, on average, paralleling evidence for the industrial economies presented in von Hagen (1991). Using the Alesina-Hausmann-Hommes-Stein index, Gavin, Hausmann, Perotti and Talvi (1996) show that budgetary institutions also influence the cyclicality of fiscal policy: Latin American countries with the weakest budgetary institutions exhibit the most pronounced procyclicality, while in countries with the strongest institutions, fiscal deficits are countercyclical, and therefore stabilizing.

In the end, our message is an optimistic one. While the macroeconomic instability that has long characterized Latin America and other developing regions poses an important obstacle to economic development, there is reason to believe that institutional reforms – even apparently minor and technical revisions of the procedures through which fiscal policy is formulated and implemented – can help governments promote economic stability, not as a substitute for a basic social consensus on the need for stability, but as an important means of instrumenting such a consensus.

2   LATIN AMERICA IS VOLATILE

Table 5.1 provides evidence on the volatility of macroeconomic outcomes in Latin America and other regions of the world. It presents population-weighted averages of measures of macroeconomic volatility in various regions of the world over the period 1970–92. The table shows that, in terms of non-monetary quantities, Latin America has been two to three times as volatile as the industrial economies.

Most regions of the developing world have also experienced substantial macroeconomic volatility, although some – notably in South-East Asian and the Asian 'miracle' economies – have been less volatile, and others – such as Africa and the Middle East – considerably more volatile than Latin America. In the volatility of nominal quantities such as inflation and monetary growth, Latin America stands alone. At 460 per cent, the standard deviation of the inflation in Latin America has exceeded that recorded in the industrial economies by a factor of more than 100. The highly volatile rate of GDP growth in Latin America reflects the impact of the deep recessions that are commonly experienced

Table 5.1 Latin America volatility compared

	Latin America & Caribbean	Industrial countries	East Asian miracle	South Asia	Other East Asia and Pacific	Sub-Saharan Africa	Middle East & North Africa
Macroeconomic outcomes							
Standard deviation of:							
Real GDP growth	4.7	2.2	3.0	3.4	4.1	5.3	7.9
Private consumption growth	5.6	2.1	4.1	5.4	4.0	10.3	8.2
Domestic investment growth	16.1	8.3	16.4	11.0	15.3	28.7	20.3
Change in real exchange rate	13.4	4.8	6.2	na	8.9	19.4	5.5
Annual inflation rate	463.5	3.9	6.2	7.9	10.8	88.7	7.0
Policy							
Standard deviation of:							
Fiscal deficit (% of GDP)	4.7	2.4	2.4	4.2	3.5	4.5	8.5
Public consumption (% of GDP)	2.5	1.6	1.1	2.1	4.1	3.7	5.5
Monetary growth	211.1	5.6	13.6	7.4	13.3	93.7	13.1
External shocks							
Standard deviation of:							
Terms of trade (growth rate)	15.1	8.9	8.0	7.9	11.4	22.1	25.6
International capital flows (% of GDP)	2.8	1.7	1.5	1.1	3.9	4.4	6.1

Notes
1. Standard deviations are computed over the 1970–92 period.
2. All statistics are weighted by 1992 population.

Source: Inter-American Development Bank (1995) p. 192.

Table 5.2 Latin America: deep recessions (1970–92)

	Number of recessions	Average length of recession (years)	Average depth of recession (%)
Industrial countries	2.1	1.3	−2.0
Latin America	2.7	1.9	−8.0
East Asian miracle	0.7	1.0	−1.6
South Asia	1.8	1.2	−3.5
Other East Asia & Pacific	3.7	1.5	−8.7
Sub-Saharan Africa	3.9	1.5	−6.0
Middle East & North Africa	3.2	1.7	−11.7
Other	2.0	2.2	−18.3

Notes
1. A recession is defined as a period in which real GDP declines.
2. Regional figures are population-weighted averages of individual country experience.

Source: Inter-American Development Bank (1995) p. 192.

in the region. Table 5.2 summarizes regional experience with recessions during the period 1970–92, where a recession is defined as a time during which output growth is negative. The table shows that the typical Latin American country has experienced a greater number of recessions than has the typical industrial economy, and that these recessions have lasted somewhat longer. But the really striking feature of the Latin American experience is the depth of the typical recession which, at 8 per cent of GDP, is four times that recorded in the industrial economies.

3 VOLATILITY IS BAD FOR ECONOMIC DEVELOPMENT

Why should we care about this volatility? Volatility matters because it adversely affects investment, growth, educational attainment and the distribution of income. Space constraints permit only a brief overview of the evidence on this assertion; for a more detailed exposition see Inter American Development Bank (1995). Hausmann and Gavin (1996), Flug Spilimbergo and Wachtenheim (1996).
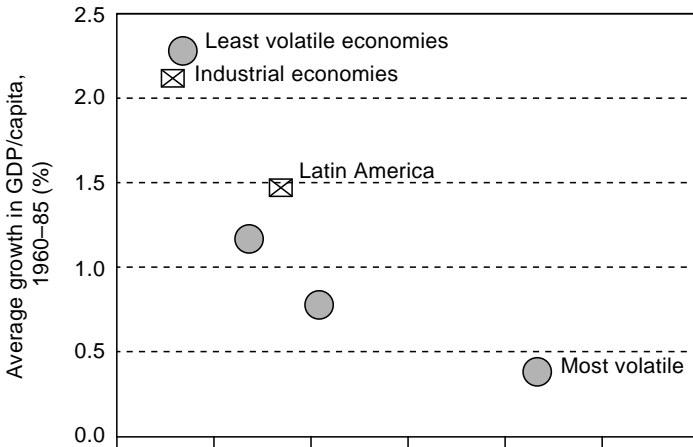
Figure 5.1   Volatility and GDP growth by volatility quartile

3.1   Macroeconomic Volatility is Bad for Growth and Investment

In Figure 5.1 we illustrate the simple relationship between macroeconomic volatility, as measured by the standard deviation of real GDP growth, and the long-run rate of economic growth. Each circle on the chart represents averages for a quartile of our sample of about 132 countries, categorized by volatility.

We see a strong negative correlation between volatility and growth. This relationship is also visible when the data are grouped by region, and when individual country data are graphed, although there is, of course, more noise in the data in this case. Figure 5.1 leaves the impression that volatility is negatively associated with economic growth, and that one reason for Latin America's disappointing record of economic growth is its highly volatile macroeconomic environment. In Table 5.3 we show that this impression is, if anything, strengthened if one controls for standard determinants of economic growth.[1]

In Table 5.3 we summarize the results of augmenting a standard Barro (1991) growth regression to include various measures of economic volatility. In column (2) we added both the average growth and the standard deviation of the terms of trade to Barro's benchmark regression[2] and found that terms-of-trade volatility is strongly negatively correlated with economic growth. This negative relationship is robust

Table 5.3 Volatility and economic growth – evidence from cross-country comparisons

	(1)	(2)	(3)	(4)	(5)
Initial (1960) level of real GDP	-.0067 (-5.2)	-.0065 (-5.4)	-.0058 (-5.1)	-.0060 (-5.3)	-.0061 (-5.3)
Primary school enrolment	.0167 (2.4)	.0199 (3.2)	.0161 (2.7)	.0159 (2.6)	.0164 (2.7)
Secondary school enrolment	.0240 (2.0)	.0141 (1.3)	.0125 (1.2)	.0112 (1.1)	.0094 (0.9)
Ratio of domestic investment to GDP	.0982 (4.0)	.0774 (3.4)	.0702 (3.3)	.0793 (3.5)	.0803 (3.6)
Ratio of government consumption to GDP	-.1140 (-4.0)	-.0916 (-3.5)	-.0788 (-3.1)	-.0736 (-2.7)	-.0723 (-2.7)
Average growth in the terms of trade, 1960–85		.2526 (5.0)	.1983 (4.1)	.2017 (4.0)	.2000 (3.9)
Volatility of changes in the terms of trade		-.0899 (-4.7)	-.0698 (-3.65)	-.0709 (-3.7)	-.06589 (-3.6)
Volatility of changes in the real exchange rate			-.0647 (-3.6)	-.0429 (-1.9)	-.0453 (-2.1)
Volatility of real GDP			.0266 (0.4)	.0645 (0.4)	
Volatility of monetary policy				-.00146 (-1.0)	-.0128 (-0.9)
Volatility of fiscal policy				-.0721 (-1.2)	-.0625 (-1.1)
Number of observations	98	88	88	80	80
Adjusted R-squared	0.4702	0.6283	0.6349	0.6470	0.6479

Note
1. Dependent variable is the average growth rate from 1960–85.

Source: Inter-American Development Bank (1995) p. 248.

to the inclusion of a larger number of alternative explanatory variables that have been proposed in the literature, including, for example, Barro's measure of revolutions and coups, his measure of price distortions, measures of income inequality, measure of domestic financial depth, measure of the economy's openness, and dummy variables for Latin America and Africa.[3] Note that we can be fairly confident in this case that the causality runs from macroeconomic volatility to growth, because for almost every country in our sample the terms of trade are largely exogenous to macroeconomic developments within the domestic economy.

Column (3) adds the standard deviation of percentage changes in the real exchange rate and in real GDP growth to the growth regression; it indicates that real exchange-rate volatility has a separate and highly significant adverse effect on economic growth. Following Aizenman and Marion (1993), we add measures of volatility in domestic monetary and fiscal policy to the regression in columns (5) and (6). The results suggest that policy volatility matters, though it is a little difficult to separate the influence of policy volatility and real exchange-rate volatility because, as we discuss below, they are so highly correlated.

What has this meant for Latin America? Table 5.4 uses the empirical estimates provided by columns (5) of Table 5.3 to answer the question: how much faster would Latin America's growth have been if it had been as volatile as the industrial economies? The results are striking. As the table indicates, over the period 1960–85 Latin America grew about one percentage point per year less than did the industrial economies. The neoclassical 'catchup' or 'conditional convergence' term suggests that, other determinants of growth being equal, the region should have grown roughly two percentage points more rapidly than the industrial economies. This means that the Latin American 'growth gap' is about 3 percentage points per year. If the regression is taken literally, it suggests that Latin America's volatile macroeconomic environment reduced the region's rate of economic growth by a full percentage point a year, explaining roughly a third of this gap, more than can be accounted for by low rates of investment, and about the same as can be attributed to the region's low rates of primary and secondary schooling.

This result holds the rate of domestic investment constant. We also find evidence that macroeconomic volatility has reduced the rate of domestic investment in Latin America, suggesting even larger effects on economic growth. And we find evidence that macroeconomic volatility has undermined domestic educational attainment, with unfavourable implications for both growth and the distribution of income.

Table 5.4 How has volatility affected growth in Latin America?

Determinant of growth	Impact on predicted growth rate
Difference in average growth rates	−0.92
Minus predicted neoclassical 'catch-up'	−1.96
Latin American 'growth gap'	−2.88
Estimate of difference attributable to:	
Lower initial school enrolments	−0.92
Lower domestic investment	−0.44
Higher macroeconomic volatility*	−1.06
Other factors considered	0.04
Unexplained	−0.49
Estimated impact of:	
Terms of trade volatility	−0.41
Real exchange rate volatility	−0.23
Monetary policy volatility	−0.29
Fiscal policy volatility	−0.14
TOTAL	−1.06

Notes
* Includes effects of volatility in the terms of trade, the real exchange rate, monetary and fiscal policy.
1. In each case, numerical estimates give the predicted increase in the growth rate that would have resulted if the indicated determinant of growth had taken the value observed in the industrial economies, rather than the one that was actually observed in the region.

Source: Hausmann and Gavin (1996a).

The direct evidence on the distribution of income suggests that it really is the poor who suffer most from macroeconomic volatility. In a sample of about sixty countries we found that the volatility of real GDP is an important predictor of income inequality; indeed, once we conditioned on lagged income inequality, it was the only macroeconomic variable that helped to explain inequality. And the estimated effect was significant not only in statistical but also in economic terms. We found that the greater GDP volatility the more income differences were explained – roughly a quarter of the very large difference between the levels of income inequality in Latin America and the industrial economies. The link between volatility and income inequality makes some sense once it is realized that the relatively well-to-do have means to weather transitory shocks – through access to savings or loans from

formal financial institutions, or a network of relatively wealthy family and friends – that are not available to the poor. Whereas a spell of unemployment or very low income may be manageable for the wealthy and middle classes, the poor may be forced to remove their children from school or take other steps that deepen and perpetuate their poverty, and transmit that poverty to yet another generation.

4   SOURCES OF VOLATILITY

Volatility seems to matter. Is it an inevitable fact of life in the tropics, or can policy reduce the problem? Before answering that question we should know a bit more about the sources of volatility in developing economies. On this there seems to be surprisingly little hard evidence, and surprisingly strong opinions. In order to provide some evidence uncontaminated by controversial assumptions about economic structure we took a non-structural approach, collecting a panel of data on macroeconomic volatility and potential determinants from as many countries from which we could obtain information, and asking whether the data suggested that variously proposed determinants seemed to lead to higher or lower volatility. The potential determinants included measures of domestic policy volatility, political instability, external instability, the exchange-rate regime, and the depth of the financial system.

Space constraints preclude a full description of the analysis, which is given in Gavin and Hausmann (1996a). Tables 5.5 and 5.6 provide a summary of the results. In these tables we attempt to assess the relative importance of 'home-grown' and external shocks, and of policy regimes in the creation of macroeconomic volatility in developing countries. As before, the benchmark is the industrial countries, so that the tables answer the question: how different would the region's macroeconomic volatility have been if the specified determinants of volatility had taken the values observed in the industrial economies?

Table 5.5 presents the results for real exchange-rate volatility – specifically, the standard deviation of percentage changes in the real exchange rate. The most striking finding is the importance of fiscal, and particularly monetary, volatility in all regions, and especially in Latin America. Real exchange-rate volatility is in large part a monetary phenomenon. In contrast, we find that measures of volatility in terms of trade and capital flows have essentially no correlation with volatility in the real exchange rate. This should, of course, be interpreted carefully – under fixed exchange rates the money supply adjusts endogenously to exter-

Table 5.5   What explains volatility in the real exchange rate?
A comparison with the industrial economies

	Latin America	Africa	Middle East	Other
Difference in real exchange volatility (percentage points)	8.76	5.92	1.80	1.40
Estimated effect of:				
Monetary volatility	2.61	1.78	0.24	0.80
Fiscal volatility	0.72	0.68	0.94	0.29
Revolutions and coups	2.60	2.40	1.90	2.28
Exchange-rate peg	−1.15	−1.55	−1.55	−0.58
Exchange-rate switches	1.83	0.72	0.28	0.84
Unexplained	2.15	1.90	−0.02	−2.23

Note

1. Each row provides an estimate of how much lower would have been the region's real exchange-rate volatility if the indicated explanatory variable had taken on the value recorded in the industrial economies rather than that actually experienced, on average, in the region in question.

Source: Gavin and Hausmann (1996b).

nal shocks. This was vividly illustrated in Argentina during the early months of 1995, when the domestic money supply fell abruptly, not because the central bank decided it wanted to engineer a sudden price deflation, but rather because of a shock to the capital account of the balance of payments. A proper interpretation of the results would seem to be that, in most countries, external factors are relatively unimportant determinants of volatility in the real exchange rate, unless they lead to monetary or fiscal volatility.

Political instability, as measured by the incidence of revolutions and coups, is also an important determinant of real exchange-rate volatility. This is not hard to understand: when there is political trouble, money is the first thing to fly across the border. This puts pressure on both the nominal and the real exchange rates.

The impact of nominal exchange-rate regimes on real exchange-rate volatility is more subtle and interesting. First, we found that pegged exchange rates are associated with significantly less real exchange-rate volatility than are more flexible regimes, confirming the results of many previous studies. However, we also found that this is true only if the exchange-rate peg is sustained over time; switches from one exchange-rate regime to another appear to be highly destabilizing. We interpret

Table 5.6   What explains volatility in real GDP?
A comparison with the industrial economies

	Latin America	Africa	Middle East	Other
Difference in real GDP volatility (percentage points)	2.31	2.69	2.65	1.26
Estimated effect of:				
Monetary volatility	0.64	0.44	0.06	0.20
Terms of trade volatility	0.14	0.12	0.14	0.06
Capital flows	0.20	0.29	0.35	0.19
Revolutions and coups	0.33	0.31	0.24	0.29
Financial depth	0.15	0.18	–0.02	0.09
Exchange-rate peg	0.50	0.67	0.67	0.25
Unexplained	0.35	0.69	1.21	0.18

Note
1. Each row provides an estimate of how much lower would have been the region's real GDP volatility if the indicated explanatory variable had taken on the value recorded in the industrial economies rather than that actually experienced, on average, in the region in question.

Source: Gavin and Hausmann (1996b).

this second finding as follows. Countries that make frequent switches among regimes do so because they have tended to choose a regime which is unsustainable in light of the shocks that hit the economy, or of the supporting policy environment. They are then forced periodically to abandon the unsustainable regime. This forced abandonment of an unsustainable regime, and particularly the anticipation of such an abandonment, is highly destabilizing.

In Table 5.6 above we show the results of a similar exercise we conducted on the volatility of real GDP growth. In contrast to the results for the real exchange rate, we find that external instability from terms-of-trade and capital-account shocks is associated with higher output volatility. However, monetary volatility remains statistically and economically significant, and in Latin America is economically more important than external volatility. We also find that pegged exchange rates are associated with higher GDP volatility, and the result is both economically and statistically significant. Our results suggest that a country that pegs continually would, other things being equal, increase its GDP volatility by over one percentage point, compared with a country that continually operated under a more flexible arrangement. Because countries in Latin America have tended to operate under fixed exchange

rates to a greater degree than have the industrial economies, we find that their choice of exchange rate regime has contributed to GDP volatility. Notice the unfortunate result that, in its tendency to choose pegged exchange rates but also to switch regimes frequently, Latin America appears to have had the worst of both worlds, destabilizing both output and the real exchange rate.

To summarize briefly, we find that macroeconomic volatility is, at least in part, explicable. External shocks and domestic political unrest, about which conventional instruments of macroeconomic policy can do relatively little, are important. But volatility in fiscal and monetary outcomes and exchange-rate regimes have also been highly destabilizing in Latin America and other developing regions. This suggests that policy can do much to reduce the volatility of the macroeconomic environment.

Particularly striking is the role of monetary instability in generating volatility of both the real exchange rate and real output. A question arises: why have Latin America's monetary outcomes been so unstable? An answer must begin with the volatile fiscal outcomes in the region, but it cannot end there, for the region's monetary volatility is disproportionate to its fiscal volatility, indeed, it is much higher than in several regions that have similar fiscal volatilities. In Gavin and Hausmann (1996b) we explore this puzzle. We argue that fiscal volatility, as measured by short-run uncertainty in fiscal deficits, goes a long way towards explaining monetary volatility, if one measures the volatility of fiscal outcomes relative to the size of the domestic financial system, rather than relative to the size of the economy. But we also find that monetary volatility tends to reduce financial depth. This suggests the presence of a multiplier, and perhaps even a 'volatility trap', in which high fiscal volatility is amplified because it generates monetary volatility which undermines the financial system, thus rendering the economy even more sensitive to the underlying fiscal volatility.

5   FISCAL POLICY IS DESTABILIZING

Improved management of fiscal policy is thus a fundamental ingredient in the search for stability. This justifies a much closer look at how fiscal policy have contributed to macroeconomic volatility in the region, and what might be done to obtain a systematic improvement in the management of fiscal policy. Gavin *et al*. (1996) reviewed the experience of the period since the early 1970s with fiscal management in

Table 5.7   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

Note
1. Major recessions are defined as recessions in which the cumulative decline in real GDP is
   larger than 4.0 per cent (Latin America) and 1.5 per cent (OECD).

Source: Gavin, Hausmann, Perotti and Talvi (1996).

Latin America and the industrial economies, and found striking differ-
ences.[4] Not only are fiscal outcomes much more volatile in Latin America
than in the industrial economies, but in contrast to the industrial countries,
fiscal outcomes have tended to be procyclical, and thus destabilizing.

This procyclicity is most pronounced during economic downturns,
as can be seen from Figure 5.2, which compares the fiscal response to
major recessions in Latin America and the industrial economies. Ma-
jor recessions are defined as episodes in which real GDP declines by
more than 1.5 per cent for the industrial economies and 4 per cent for
Latin America. There were twenty-six such episodes in Latin America,
and twenty-two in the industrial economies.[5] The figure illustrates a
strong and consistent counter-cyclical fiscal response to recession in
the industrial economies; in nearly every such episode the fiscal sur-
plus declined substantially. Inspection of the Latin American experi-
ence illustrates, first, that recessions are much larger there than in the
industrial economies, and also that the stabilizing fiscal response that
characterizes the industrial economies is not present in Latin America.
Indeed, as Table 5.7 above documents, on average over the twenty-six
experiences illustrated in Figure 5.2, the fiscal surplus in fact moved
towards *surplus* during the recession, which must have involved an
extremely procyclical discretionary fiscal contraction. This is in sharp
contrast to the industrial economies, where on average during the twenty-
two recessions illustrated in Figure 5.2, the fiscal balance moved towards
deficit in an amount nearly equal to the decline in real GDP.

Why this procyclical response? Space constraints prevent an extended
discussion, which can be found in Gavin, *et al*. (1996), but in sum-
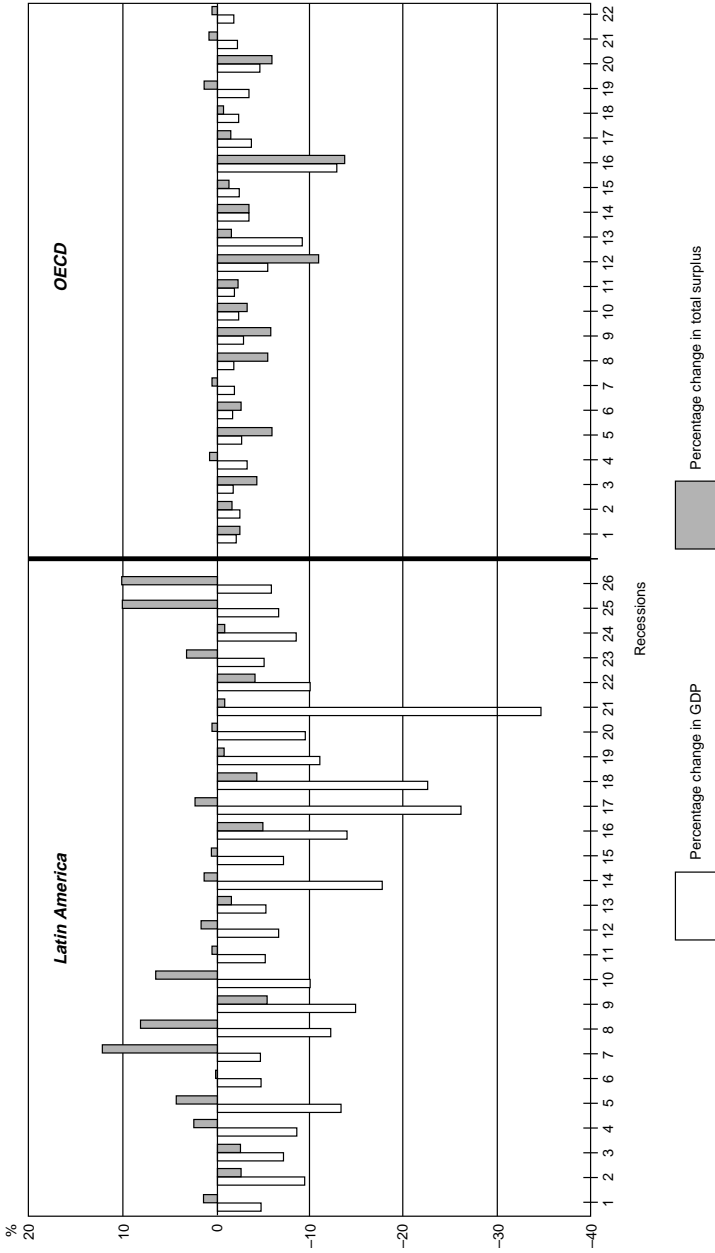
Figure 5.2 Fiscal response to a major recession

Source: Alesina, Hausmann, Hommes and Stein (1995).

mary we argue that the procyclical response during downturns results from the fact that the access to financial markets by Latin American governments vanishes in bad times, just when it is most needed to finance a stabilizing fiscal policy. The loss of market access is, in turn, caused by an insufficiently conservative fiscal management of booms, which leaves public finances in a state weak enough to raise doubts in investors' minds about the likelihood that the political system would be able to cope with the very large fiscal imbalances generated by an adverse macroeconomic shock, without resort to a burst of inflation or some other crisis.

6   INSTITUTIONS MATTER

The shortcomings in fiscal and monetary policy that help to create a volatile macroeconomic environment are persistent, although there is substantial, pervasive country variation in Latin America. This suggests that they result not from random 'mistakes' or lack of knowledge, to which exhortation might be an adequate response, but from systematic flaws in the incentive structure surrounding the interaction of bureaucracy and politics that determine macroeconomic policy outcomes. If so, it might be hoped that institutional reform could, by improving the incentive structure, lead to systematically better budgetary outcomes. OECD research suggests that this is the case: countries with 'stronger' budgetary institutions do seem better able to sustain low budget deficits (von Hagen, 1991).

To see whether this was the case for Latin America, Alesina *et al*. (1995) conducted a survey of budgetary institutions in the region, and constructed an index of the 'quality' of institutions in each country. Figure 5.3, taken from their paper, charts the index of budgetary institutions against the average primary deficit. The figure suggests, and the authors' econometric work confirms, that countries with stronger budgetary institutions appear to be less subject to deficit bias. In Gavin *et al*. (1996) this index of budgetary institutions is used to investigate whether countries with stronger budgetary institutions are able to avoid the extreme procyclicality that has characterized fiscal policy in the region as a whole. They split the sample into Latin American countries with the weakest, intermediate and strongest budgetary institutions. It was found that countries with the weakest institutions were most procyclical in bad times. Countries with an intermediate index of institutional quality still exhibited procyclicality, but less than did coun-
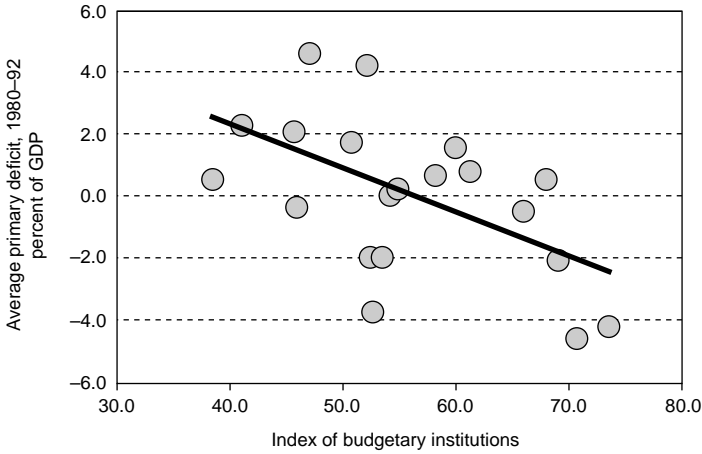
Figure. 5.3 Budgetary institutions and deficit bias

tries with the weakest institutions. In countries with the strongest fiscal institutions, the fiscal balance was counter-cyclical, rather than procyclical. This evidence supports 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 counter-cyclical response to adverse shocks.

7 VOLATILITY AND ECONOMIC DEVELOPMENT: THE INSTITUTIONAL DIMENSION

The argument runs as follows. Developing economies are volatile. This volatility interferes with economic development, and the most vulnerable members of society appear to be the worst affected. Macroeconomic volatility is in large part attributable to systematic shortcomings in the determination of macroeconomic policy. The persistence and pervasiveness of these shortcomings suggests that they reflect in part incentive problems created by the bureaucratic and political processes that determine policy. If so, then bringing about sustained improvements in macroeconomic policy management will require an improvement in the 'rules of the game' – that is, some type of institutional reform. Supporting this idea, we have evidence that even rather limited and technical variations in budgetary procedures are associated,

both in Latin America and the OECD, with improved fiscal performance. More imaginative and deeper reforms may just possibly make an even bigger difference.

Institutions are, of course, endogenous, and are as much a reflection of a political and social commitment to careful macroeconomic management as they are a cause of it. This means that the evidence summarized in Figure 5.3 should not be interpreted as providing empirical estimates of the impact of an exogenous change in institutions on the anticipated fiscal deficit.

The endogeneity of institutions does not, however, mean that they are a sideshow. After all, political systems would be very unlikely to engage in the uncertain and difficult process of institutional adaptation and reform if those reforms were not useful mechanisms for the institutionalization – it is hard to avoid the word – of better economic policies. Stronger institutions, simply deposited in a society that lacks a basic consensus on the desirability of better policy outcomes, or that is riven by unresolved differences over the nature of such policies, are unlikely to make a difference. But once a rough social consensus is reached, institutional reform is an important and perhaps indispensable means of implementing the consensus. Development banks and agencies, and the researchers upon whose ideas they will necessarily rely, can contribute little more to this process than a better understanding of what institutional structures appear to have worked in other contexts, and perhaps a glimmer of insight as to why. It will be up to each country to forge a political consensus on the desirability of institutional reform, and to adapt these general lessons to its own political and economic context.

Notes

* This chapter has benefited from comments received at the IEA conference, particularly from Robert Bates. Some of our research has appeared in a chapter of Hausmann and Reisen (1996), and other portions in Inter-American Development Bank (1995). We are grateful to the OECD and the Inter-American Development Bank for granting permission to reproduce these portions.
1. During the past few years several rather similar studies have attempted to assess the impact of macroeconomic volatility on economic growth. Considerations of space preclude a review here, but several are discussed in Inter-American Development Bank (1995).
2. This replicates the results in Hausmann (1995).

3. Except for the regional dummy variables, coefficients on all these variables were not statistically significantly different from zero when measures of volatility were introduced into the growth equation. The regional dummies remained statistically significant, but were smaller in magnitude after the measures of volatility were included in the regression, suggesting that part, though not all, of the Latin American and African growth 'puzzle' is explained by the volatility of these regions.
4. The statistical basis for the analysis is laid out in more detail in Gavin and Perotti (1996).
5. There were, in fact, several recessions in Latin America for which we had no fiscal data; these episodes are not represented in Figure 5.2. Data limitations forced us work with a sample of only thirteen Latin American economies.

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