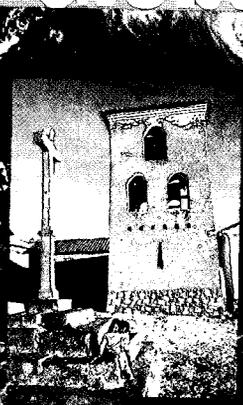




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# Securing Our Future in a Global Economy



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WORLD BANK LATIN AMERICAN  
AND CARIBBEAN STUDIES

*Viewpoints*

SECURING OUR  
FUTURE IN  
A GLOBAL  
ECONOMY

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*by*

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# Acronyms and Abbreviations

ECLAC	Economic Commission for Latin America and the Caribbean
EDS	Encuesta de Desarrollo Social
ENEU	National Urban Employment Survey
ENH	Encuesta Nacional de Hogares
EPH	Permanent Household Survey
FDI	Foreign direct investment
FGTS	Fundo Garantia por Tempo de Servicio
FHIS	Social investment fund
FONASA	Fondo Nacional de Salud (formerly SERMENA)
GDP	Gross domestic product
GNP	Gross national product
IA	Individual savings accounts
IBGE	Brazilian Statistical Institute
IDB	Inter-American Development Bank
IFI	International financial institution
IFPRI	International Food Policy Research Institute
ILO	International Labour Organisation
IMF	International Monetary Fund
ISAPRE	Instituciones de Salud Previsional
LAC	Latin America and the Caribbean
LSMS	Living Standards Measurement Survey
NIC	Newly industrialized country
OECD	Organization for Economic Cooperation and Development
PETI	Programa de Erradicação do Trabalho Infantil
PME	Monthly Employment Survey
PNAD	Pesquisa Nacional de Amostra de Domicilios
PRAF II	Programa de Asignacion Familiar, Second Phase
PW	Public works
SP	Mandatory severance pay
SIMCE	Sistema de Medicion de la Calidad de la Ensenanza
SUS	Sistema Unico de Saude
TG	Training for the unemployed
UI	Unemployment insurance



---

## CHAPTER 1

# Opportunity and Risk in a Globalized Latin America and the Caribbean

### **Latin America and the Caribbean's Performance Improved in the 1990s**

**I**N THE 1990S LATIN AMERICA AND THE CARIBBEAN (LAC) BEGAN TO RESURFACE FROM THE “LOST decade” of the 1980s. Real per capita income, as measured by gross domestic product (GDP) per person, grew at about 1.5 percent per year,<sup>1</sup> after having declined in the 1980s. Granted, the pace of economic expansion in the 1990s was, like in earlier decades, still slower than that of the seven “East Asian miracle” countries. It also fell short of the growth rates achieved in the 1960s and 1970s in Latin America, during which real per capita GDP grew at over 2 percent per year. But this growth decline relative to the pre-1982 performance affected all world regions, industrial and developing—with the exception of only South Asia (see Figure 1.1).

The incipient growth recovery was punctuated by episodes of regionwide financial turmoil—such as Mexico’s Tequila crisis of 1994–95 and the worldwide fallout from the East Asia and Russia crises in 1997 and 1998—and was uneven across the region. As Table 1.1 shows, the majority of Latin America’s larger economies—those with populations above 1 million in 1995—shared in the resumption of growth relative to the 1980s.<sup>2</sup> Chile, the earliest reformer in the region, achieved rapid growth, well above historical levels. Other reforming countries such as Argentina, Bolivia, El Salvador, and Peru also grew faster in the 1990s than in previous decades. At the other extreme, several countries that have lagged behind in structural

reforms (Ecuador, Haiti, Jamaica, Paraguay, and Venezuela) witnessed a decline in per capita GDP relative to the 1980s. Finally, Brazil’s growth rate declined compared to the 1980s, reflecting the adverse effects of macroeconomic imbalances and financial market turbulence during much of the 1990s.

Rising incomes were duly reflected in improving living standards in the majority of LAC economies, as measured by per capita private consumption growth, which rebounded from the negative rates of the 1980s. As with GDP, however, the performance of consumption fell short of the pace witnessed prior to the debt crisis of 1982, and remained considerably behind the pace of the East Asian miracle economies (see Figure 1.2). Nevertheless, the upturn in consumption reached most countries in the region, with Chile and El Salvador the star performers, and

Jamaica and Venezuela the only countries—among those for which the information is available—to experience a decline in private consumption per person relative to the 1980s (see Table 1.2).

### *Opportunities and Risks*

The improvement in LAC’s economic fortunes followed a sustained reform effort by many countries in the region aimed at enhancing the role of market forces and increasing the region’s real and financial integration into the global economy. The incipient economic upturn of the 1990s suggests that this strategy has started to generate new opportunities for LAC in the global scene, especially for earlier and deeper reforming economies. In spite of better opportunities, however, perceptions of economic insecurity run high in the region. Indeed, there is a widely held

FIGURE 1.1

**Per Capita GDP Growth**

(Regional Medians)

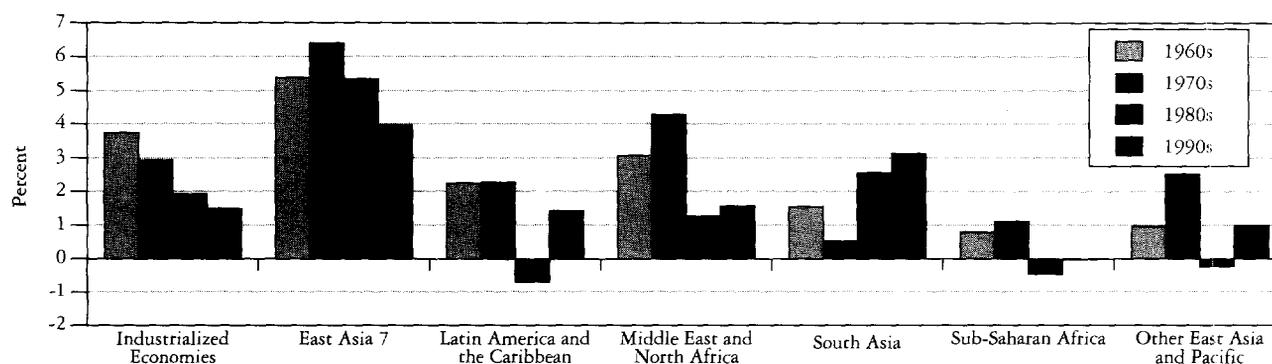


TABLE 1.1

**Per Capita GDP Growth in Latin America**

(Percent)

COUNTRY	1960s	1970s	1980s	1990s
Argentina*	2.4	1.2	-2.4	3.0
Bolivia	0.7	1.7	-2.5	1.8
Brazil	2.9	5.7	0.8	0.4
Chile	2.0	0.6	2.5	4.7
Colombia	2.0	3.3	1.2	0.6
Costa Rica	2.3	3.4	-0.8	2.0
Dominican Republic	1.2	5.2	1.5	2.2
Ecuador	1.0	5.8	-0.3	-0.3
El Salvador	2.4	1.2	-3.2	2.8
Guatemala	2.5	3.0	-1.6	1.4
Honduras	1.6	2.4	-0.7	0.3
Haiti	-1.4	1.8	-1.5	-3.1
Jamaica	2.6	-0.4	0.1	-0.2
Mexico	3.4	3.3	0.0	1.5
Nicaragua	3.9	-3.2	-3.7	-0.5
Panama	4.8	1.9	-1.4	3.3
Paraguay	1.7	4.9	0.8	-0.2
Peru	2.2	1.1	-2.4	1.9
Trinidad and Tobago	4.2	4.7	-1.0	1.3
Uruguay	0.2	2.3	-0.2	3.0
Venezuela	1.2	0.4	-2.8	-0.2
<i>Mean</i>	2.1	2.4	-0.8	1.2
<i>Median</i>	2.2	2.3	-0.8	1.4
<i>Small Countries</i>				
Bahamas	5.3	-0.7	1.5	-2.1
Belize	2.2	4.2	2.6	1.7
Barbados*	5.7	2.9	1.7	0.2
Guyana	1.1	0.8	-3.5	4.0
<i>Mean</i>	3.6	1.8	0.6	1.0
<i>Median</i>	3.7	1.9	1.6	1.0
<i>Unweighted average</i>	2.3	2.3	-0.6	1.2
<i>Overall median</i>	2.2	2.3	-0.7	1.4
<i>Weighted average*</i>	2.5	3.5	-0.1	1.1

\*Weighted averages use 1995 population.

Note: Decades are defined as 1961–69, 1970–79, 1980–89, 1990–99. Sample period is defined as 1961–98. Exceptions: Bahamas (1961–95), Barbados (1961–95), Guyana (1961–95), Peru (1966–99). For Argentina, Brazil, Chile, Colombia, Ecuador, Peru, and Venezuela, figures are updated to 1999.

view that economic insecurity<sup>3</sup> has become so pervasive that it could undermine social and political support for the ongoing reform process, and even bring it to a halt.<sup>4</sup>

That insecurity is a major concern for large segments of LAC's population is vividly illustrated by recent opinion surveys in the region. In a large cross-country survey undertaken in 1999, for example, nearly two-thirds of respondents said that their parents had lived better than them, while less than half thought that their children would have lives better than their own (see Table 1.3). This pessimistic view about the future affected not only countries experiencing major economic and social difficulties, such as Ecuador or Venezuela, but also others that had seen a marked improvement in their economic performance in the 1990s, such as Argentina, Mexico, and Peru. Indeed, even in these countries, a relatively small percentage of respondents—43 percent in Argentina, 30 percent in Mexico, and 37 percent in Peru—anticipated a better future for their children.<sup>5</sup>

Along with this heightened concern about economic insecurity, there are also strong signs of unsatisfied demand for social insurance. The same survey mentioned above found that three-quarters of the respondents favored increased spending on unemployment insurance. An even higher number supported increased spending on social security (see Table 1.4). Moreover, the extent of support for these programs varied little with the respondents' income and education level, or even with the economic performance of the different countries. In high-performing Chile, for example, 85 percent of the respondents favored increased unemployment insurance, and over 90 percent supported greater pension expenditures.

FIGURE 1.2

**Per Capita Private Consumption Growth**

(Regional Medians)

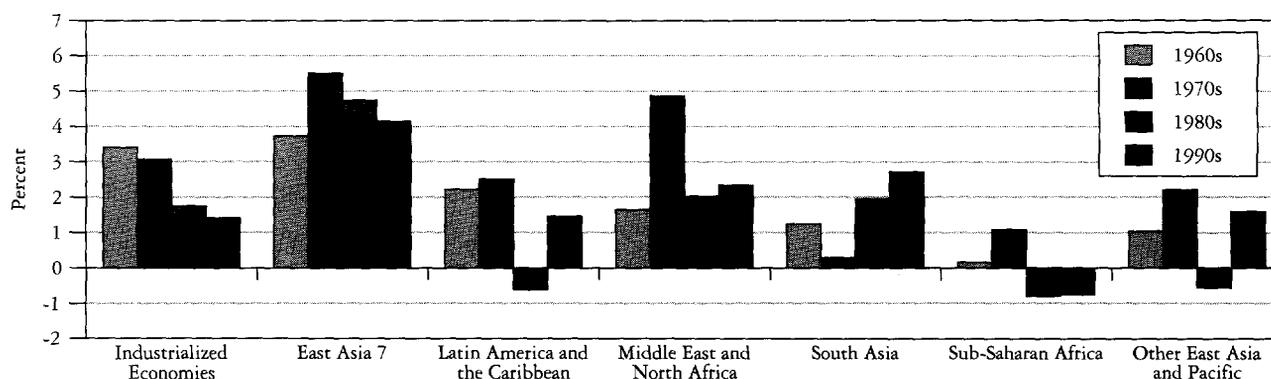


TABLE 1.2

**Per Capita Private Consumption Growth in Latin America**

(Percent)

COUNTRY	1960s	1970s	1980s	1990s
Argentina*	2.2	1.1	-1.7	4.0
Bolivia	..	..	-1.3	1.0
Brazil	2.4	6.4	-0.6	1.9
Chile	4.7	0.2	0.5	5.8
Colombia	2.6	3.2	0.7	1.4
Costa Rica	1.4	2.7	-1.7	1.2
Dominican Republic	3.1	4.6	1.0	0.9
Ecuador	1.8	3.9	-0.1	0.2
El Salvador	1.7	0.9	-3.4	5.2
Guatemala	1.9	2.6	-1.2	1.5
Honduras	1.1	1.6	-0.1	0.2
Haiti	-2.6	1.1	-0.7	..
Jamaica	1.0	-0.3	2.4	-2.8
Mexico	2.8	2.5	0.0	1.1
Nicaragua	3.6	-3.5	-4.6	0.0
Panama	..	..	3.6	3.0
Paraguay	3.3	3.0	1.0	3.2
Peru	4.0	0.9	-2.1	1.5
Trinidad and Tobago	4.6	4.9	-2.1	1.5
Uruguay	-0.4	0.8	0.2	4.1
Venezuela	..	6.1	-1.6	-0.6
<i>Mean</i>	2.2	2.3	-0.6	1.7
<i>Median</i>	2.3	2.5	-0.6	1.4
<i>Small Countries</i>				
Bahamas	..	22.7	2.3	..
Belize	..	..	-2.3	2.1
Barbados*	..	..	..	0.9
Guyana	1.3	-0.3	-3.6	5.8
<i>Mean</i>	1.3	11.2	-1.2	2.9
<i>Median</i>	1.3	11.2	-2.3	2.1
<i>Unweighted average</i>	2.1	3.3	-0.5	1.7
<i>Overall median</i>	2.2	2.5	-0.6	1.5
<i>Weighted average**</i>	2.3	3.7	-0.5	1.7

\*Consumption figures for Argentina and Barbados correspond to total, and not private, consumption. Argentina: 1961–98, Barbados: 1967–94.

\*\*Weighted averages use 1995 population.

Note: Decades are defined as 1961–69, 1970–79, 1980–89, 1990–99. Sample period is defined as 1961–98. Exceptions: Bahamas (1978–87), Barbados (1967–94), Belize (1981–98), Bolivia (1961–79, 1981–98), Guyana (1961–88), Haiti (1966–90), Honduras (1961–97), Nicaragua (1961–96), Panama (1981–98), Peru (1966–98), and Venezuela (1975–98).

**Why Economic Insecurity?**

What lies behind these perceptions of insecurity and social insurance demands? There are several factors. On the one hand, the unprecedented severity and duration of the crisis unleashed in 1982—reflected in a sharp and long-lived decline in per capita incomes from which LAC has taken many years to recover—left a profound imprint across the region's social fabric concerning the dangers of economic instability.

On the other hand, the incipient recovery from the “lost decade” of the 1980s came along with a radical change in economic strategy in many LAC economies—a shift away from the protected government-led development model of previous decades, and toward a new paradigm of strengthened domestic and foreign market forces in the context of a global economy. Barriers sheltering domestic economies from global trade and financial trends were lowered, obstacles to competition in domestic markets were removed or substantially weakened across LAC, and governments reduced considerably their direct involvement in economic activity.

These reforms deserve much of the credit for LAC's expanding economic opportunities in the 1990s. However, while the reforms assigned a greater role to the action of domestic and global market forces, they also led to the weakening of major components of the rudimentary and inequitable traditional social protection system. The weakening of extensive barriers to domestic and foreign competition made it harder to sustain a generous provision of public sector jobs and stringent firing restrictions that had resulted in virtual lifetime employment for formal sector workers.

The removal of these old mechanisms incompatible with the new market-oriented economic model has not been matched by the development of a new social protec-

TABLE 1.3

**Survey Responses in Latin American Countries on Expected Changes in Living Standards**

(Percentages Unless Otherwise Noted)

	WHOLE SAMPLE		COUNTRY				
	N	%	ARGENTINA	BOLIVIA	BRAZIL	CHILE	COLOMBIA
	14,839	100	1,200	794	1,000	1,200	1,200
Taking everything into consideration, would you say that your parents lived better, the same, or worse than how you live today?							
Better	9,081	61.2	63	51	64	45	78
Same	3,261	22	22	31	9	32	14
Worse	2,139	14.4	12	16	25	22	8
No answer	358	2.4	3	3	2	1	1
And regarding your children, do you believe that they will live better, the same, or worse than how you live today?							
Better	6,843	46.1	43	56	58	61	36
Same	3,071	20.7	22	20	12	22	21
Worse	3,261	22	20	13	21	11	38
No answer	1,664	11.2	16	11	9	7	6

Source: Mirror on the Americas poll, 1999, *Wall Street Journal*.

TABLE 1.4

**Survey Responses to Social Insurance-Related Questions in 14 Latin American Countries, by Socioeconomic Category**

(Percentages Unless Otherwise Noted)

	WHOLE SAMPLE		AGE			EMPLOYMENT		
	N	%	18-29	30-49	50+	SELF-EMPLOYED	GOVERNMENT	PRIVATE SECTOR
Unemployment Insurance								
No answer	551	3.7	3	4	4	4	5	3
Spend more	10,088	73.4	74	73	73	74	69	74
Spend less	2,543	17.1	18	18	16	17	19	17
Don't know	857	5.8	5	5	7	5	7	6
Pensions								
No answer	172	1.2	1	1	1	1	2	1
Spend more	12,426	83.7	83	83	86	83	84	84
Spend less	1,861	12.5	13	13	10	13	12	13
Don't know	380	2.6	3	3	3	3	2	2
Defense and the Armed forces								
No answer	623	4.2	4	5	5	4	6	3
Spend more	4,810	32.4	33	31	34	34	28	29
Spend less	8,359	56.3	58	57	53	56	59	60
Don't know	1,047	7.1	5	7	9	6	7	7

Source: Mirror on the Americas poll, 1999, *Wall Street Journal*.

tion and insurance system more suited to the changed economic environment. Thus, while households and workers in LAC's reforming economies have gained access to new economic opportunities, they may have been left more exposed to new risks as well. Growth resumption in the new economic environment entails faster job creation in expanding industries, and thus new opportunities, but also job destruction in declining sectors, and hence new risks.

In addition, the improving economic environment in LAC relative to the 1980s may itself be partly responsible for the heightened social insurance demand. Perhaps paradoxically, economic analysis—this report shows—suggests that in better times, when individuals have more to lose and can afford more of the costs of protecting against risk, they may also demand more effective protection and insurance mechanisms. All these factors make economic insecure

COUNTRY									
COSTA RICA	ECUADOR	GUATEMALA	MEXICO	PANAMA	PARAGUAY	PERU	URUGUAY	VENEZUELA	
1,000	1,200	1,000	1,200	1,000	600	1,045	1,200	1,200	
56	67	57	43	52	75	80	59	70	
26	20	31	35	24	14	12	18	19	
14	10	11	20	21	6	6	20	10	
5	2	1	3	3	5	2	3	2	
52	34	51	30	48	48	37	46	53	
25	21	23	23	20	26	19	22	17	
11	29	17	41	21	13	26	19	19	
12	16	8	6	12	13	19	13	12	

EMPLOYMENT				EDUCATION			INCOME		
UNEMPLOYED	RETIRED	HOUSEWIFE	STUDENT	PRIMARY	HIGH	UNIVERSITY	HIGH	MIDDLE	LOW
3	4	4	3	4	3	4	4	4	3
80	74	73	74	74	75	71	72	73	74
13	16	17	19	16	16	19	19	17	17
3	6	7	5	7	5	6	4	6	6
1	1	1	1	1	1	1	2	1	1
88	88	84	82	83	85	83	83	85	83
9	9	12	15	13	12	14	14	11	13
1	2	3	2	3	2	2	2	2	3
3	5	4	3	4	4	5	5	5	3
36	33	35	32	37	33	27	32	31	34
56	54	52	60	50	57	62	58	56	57
5	8	9	5	8	7	7	6	8	7

rity one of the major unresolved items in LAC's policy agenda.

Inequality stands as the region's other big pending issue. Indeed, as noted earlier, inequality and insecurity are related. Increased economic opportunities tend to enhance income mobility—the chances of moving up or down the distribution ladder. Thus, these added opportunities for economic improvement may come along with greater risks

of moving down or being left behind—hence the concern with insecurity and inequality.

The social costs of insecurity should not be downplayed. Uncertainty about future employment and income has a direct adverse impact on welfare, because most households and workers care not only about the level of their standard of living, but also about its certainty—as the survey evidence above clearly illustrates.

Further, economic uncertainty itself can hamper real income growth, a fact confirmed by extensive empirical research focusing on LAC and other regions.<sup>6</sup> In essence, high degrees of uncertainty tend to discourage growth-enhancing long-term commitments, such as investment in physical and human capital, as individuals attempt to retain extra flexibility in order to deal with a volatile environment.<sup>7</sup> As a result, the choice of investment projects and production technologies is biased by inefficient “short-termism” that leads to a diminished growth potential for income and living standards.

Finally, there are reasons why economic insecurity is particularly damaging for the poorer segments of the population. On the one hand, the poor often lack the means to protect themselves from adverse income and employment shocks—means such as accumulated financial assets or access to credit. For the very poor, this implies that unfavorable temporary shocks may result in drastic declines in consumption, bringing it down below subsistence levels and permanently damaging their well-being. On the other hand, growth in income of the poor is primarily determined by overall economic growth (Dollar and Kraay 2000).<sup>8</sup> As economic volatility hampers aggregate growth, it also hurts the growth of income of the poor and their chances to rise out of poverty. In fact, a 1999 World Bank study shows that economic insecurity ranks high among the concerns expressed by the poor in LAC and across the world (Narayan and others 1999).

## **This Report**

The purpose of this report is to assess the extent, causes, and effects of economic insecurity in LAC and identify policies and institutions that can help reduce the degree of insecurity faced by workers and households in the region, while allowing them to take advantage of the enhanced economic opportunities brought about by the reforms of recent years.

Insecurity is a broad topic, however, and this report cannot cover all of its many aspects. Thus, the report leaves aside issues related to crime and violence and insecurity caused by natural disasters, to focus on the specific issue of insecurity caused by economic fluctuations. Within this narrower area, social security and pensions, which have more to do with life-cycle considerations than economic fluctuations, are also excluded from the discussion.

This still leaves a wide range of issues to be addressed in the chapters that follow. The analysis of how workers and

households react to economic insecurity, the policy challenges these responses present, and the policies that are best suited for countries in the region are based on recent empirical and theoretical research conducted at the World Bank and elsewhere, on economic volatility and social risk management, drawing on the experiences of countries in Latin America and other parts of the world.<sup>9</sup>

This report begins by stating the facts concerning economic insecurity in LAC (Chapter 2). It then sets out a general analytical framework to help organize the various options available to individuals and governments for dealing with economic insecurity (Chapter 3). Using this framework, the remaining chapters focus on measures to deal with risks. First, the causes of macroeconomic or aggregate volatility are examined and some remedies suggested (Chapter 4). This report then examines how these risks affect individuals and households, and their responses to economic shocks (Chapter 5). The risk of becoming unemployed is of concern in the region and elsewhere, and public responses to help workers deal with this risk take up a full chapter (Chapter 6). Finally, the subject of appropriate social insurance and social protection against the risk of poverty is considered in some detail (Chapter 7). We summarize the findings of these chapters here.

### *LAC's Volatility is High—But has not Risen in the 1990s*

Like most developing regions, LAC suffers from high economic volatility, well above the levels experienced by industrial economies. Furthermore, living standards—as measured by per capita consumption—are more volatile than real incomes, a feature shared with much of the developing world but not with most OECD countries. This reflects a lack of adequate instruments for consumption-smoothing in developing countries.

Contrary to a widely held view, however, there is no evidence that volatility has increased following the region-wide shift toward a market-oriented economy and the increased integration of LAC into global markets. On the contrary, the volatility of income growth has declined in most of the region's economies, and in a number of them it has fallen below the levels of the 1970s. To a lesser extent, the volatility of private consumption has also declined. In addition, there is no evidence that the income and employment uncertainty faced by the majority of workers and households in the region has changed for the worse—

although economic insecurity must surely have risen for specific groups of workers adversely affected by the reforms in some countries, especially some elder workers in the formal sector, whose skills may have been rendered obsolete by economic restructuring.

### *Dealing with Economic Insecurity Requires a Comprehensive Insurance Approach*

There are three major options available for dealing with risk: market-type insurance, which involves sharing of risks among individuals (or countries); self-insurance, which typically entails precautionary saving or accumulation of assets in good times to shelter consumption in bad times; and self-protection, which involves the adoption of measures to reduce the likelihood of adverse shocks. In general, effective risk-management strategies should employ all three types of instruments. The more instruments are available, the better the chances of sheltering living standards from economic insecurity.

This general perspective illustrates the role of public policies in dealing with risk. Government interventions are warranted by the presence of incomplete or imperfect domestic insurance markets that lead individuals to costly and inefficient self-insurance or self-protection decisions, such as distress sales of assets or reduced investments in human capital (for example, taking children out of school) at times of crisis. Government interventions, in the form of *social insurance* and *social protection*, attempt to remedy these market failures, augment the availability and scope of market insurance and efficient instruments for self-insurance, and buttress the self-protection efforts by individuals that pay off only if sustained for some time. As with other types of insurance, the design and implementation of these policy interventions must deal with the serious challenges posed by adverse selection and moral hazard.

This conceptual framework also shows how increased demand for social insurance may indeed result from an improvement—rather than a deterioration—in the economic environment, a factor that might be partly behind the results of LAC opinion surveys mentioned above.

### *LAC's Volatility Arises from Multiple Sources—Domestic and Foreign*

LAC's macroeconomic volatility reflects both external disturbances—in international goods and financial markets—and volatile domestic fiscal and monetary policies.

Although the 1990s have witnessed a decline relative to the 1980s in the volatility arising from each of these sources, the region faces larger terms of trade volatility than most other developing regions. Likewise, the volatility of capital inflows and domestic policies is also higher in LAC than in industrial economies and the more stable developing regions, such as the East Asian miracle economies.

Further, the economic impact of disturbances is magnified by the region's weak links with international financial markets and the insufficient development of domestic financial systems, which lag behind those of other world regions. In theory, domestic and foreign financial markets should play a major role in facilitating risk diversification and easing the adjustment to shocks. In practice their imperfections make them have the opposite effect—they amplify aggregate shocks and are themselves a source of volatility.

Thus, for example, developing countries should be able to diversify terms of trade risks by hedging in international financial markets. In practice, however, these markets are not deep enough, and capital flows behave procyclically with respect to trade shocks, amplifying the international business cycle. More generally, in spite of recent progress with the development of new international financial instruments such as contingent credit lines, world markets still offer few possibilities for risk diversification and insurance against aggregate disturbances. Hence, as discussed below, there is a role for supranational policy actions aimed at the creation of missing markets and the enhancement of instruments for international risk diversification.

### *Governments Can Do Much to Reduce Volatility—Even in a Globalized Economy*

Governments possess a broad range of possible measures to reduce aggregate volatility, that can improve risk-sharing, enhance economywide self-insurance, and reduce the likelihood of adverse aggregate shocks. Given the rudimentary state of international insurance markets, the main options left to governments involve self-insurance and self-protection mechanisms. Many such mechanisms have already been adopted by various countries in the region, and all entail economic costs. Thus, the policy mix best suited to each economy is largely dependent on country-specific factors shaping the cost-effectiveness of the various policy options.

### *External Risks Can Be Reduced by Diversification and Liquidity Management*

Nevertheless, some clear general principles emerge from the analysis. To deal effectively with terms of trade volatility, countries can resort to risk diversification and hedging in international commodity markets, self-insurance through commodity stabilization funds, and self-protection through trade diversification. Facilitating foreign direct investment (FDI) is another way of diversifying risks, and FDI also yields other benefits such as innovation spillovers, enhanced corporate governance, and higher investment. Allowing domestic investors to hold foreign assets also improves their own risk diversification strategy and increases the resilience of the economy as a whole.

In turn, facing up to capital flow volatility in a context of limited international insurance possibilities requires holdings of liquid assets and a prudent debt management strategy, and avoiding excessive short-term liabilities, “bunching” of repayments, and currency mismatches between assets and liabilities. Capital controls may offer another self-protection tool to limit exposure to international financial disturbances, but their effectiveness remains under debate. They may affect the composition of flows—discouraging volatile short-run transactions if properly designed—but they seem powerless to alter their volume beyond the near term.

### *Anticyclical Macroeconomic Policies Ease Adjustment to Shocks*

In most LAC economies, fiscal policy has failed to play its intended stabilization role. Governments have generally adopted an expansionary stance in booms and a contractionary stance in recessions. To some extent, this reflects constraints from world and domestic financial markets. It has also resulted, however, both from the failure of governments to provide for bad times by saving in good times, and the lack of a sufficiently diversified fiscal revenue base, which in several countries in the region is excessively biased toward natural resource revenues. Tackling these two issues should be a policy priority, along with the adoption of contingent fiscal rules that can facilitate the response to shocks and make it more transparent, and the implementation of a prudent public debt management strategy along the lines mentioned earlier.

Finally, adequate monetary and exchange rate policies can also make an important contribution to the absorption of shocks. The choice of specific policy rules in this area,

like in others, faces a fundamental tradeoff between credibility and flexibility. Rigid exchange rate pegs without the option of an independent monetary policy may enhance credibility, but can also make adjustment to shocks more painful in the presence of inflexible labor markets or inadequate fiscal policy. Floating exchange rate arrangements with active monetary policy may offer enhanced flexibility to deal with shocks, but can erode credibility unless clear and transparent rules for monetary policy—possibly contingent on developments in world goods and financial markets—are publicly announced and strictly followed by the authorities. Intermediate options such as adjustable pegs, crawling pegs, and exchange rate bands probably offer the worst of both worlds without the advantages of either one.

### *Deeper and Stronger Financial Systems Are a Key Part of Social Protection Policies*

Development of deeper capital markets and strong banking systems is a major priority to allow them to play their intended role of shock absorbers and hence mitigate the economic impact of disturbances. Enhanced capital and liquidity requirements for banks—perhaps set in a procyclical manner—under adequate supervision, and prevention of currency mismatches can go a long way toward strengthening the banks, so that they can contribute effectively to self-insurance against shocks. Strong and deep financial systems are of paramount importance to facilitate savings and market insurance against microeconomic risks.

### *Deep Crises are Particularly Damaging for the Poor*

How are households affected by adverse economic conditions, and how do they respond to crises? To answer these two questions, this report systematically used household panel data for Argentina, Brazil, El Salvador, and Mexico in both rural and urban settings. Several findings emerge that should make us reconsider some commonly held beliefs about how households respond and when, how, and how much governments should help them.

First, economic contractions differ significantly in their effects on poverty and human capital investments: in deep recessions the poor suffer greater proportional losses in income than the wealthy. In moderate recessions, the opposite appears to happen—in many cases, the greatest proportional income losses were borne by the rich, and some groups often thought to suffer disproportionately—such as the elderly or single mothers—do not appear to be espe-

cially badly affected, although this is not true in every crisis and in every setting. For example, the findings differ between countries or, for the same country, between rural and urban areas. On the whole, however, the conventional wisdom that the poor invariably are affected more severely during recessions needs to be qualified.

Second, the poor seem to have gained more during growth periods than is generally acknowledged. This does not mean that the poor should not be helped; it merely implies that from the perspective of poverty alleviation, growth-oriented policies must be given a high priority, regardless of concerns of high inequality in the region.

#### *The Poor Try to Protect Their Long-Term Welfare in Crises—As Long as Their Assets Permit*

Third, the poor—like those with more wealth—are reluctant to permanently compromise their family's future during economic crises perceived to be temporary. This is especially true of parental decisions about their children. The poor do not, for example, frequently pull their children out of school during bad times—although they do when the recession is severe. But the fact that some educational and health outcomes are hurt during especially bad times may be as much the result of the government's inability to maintain the quality of social services as the household's decision to invest less during crises.

Finally and unsurprisingly, access to "reserves"—such as assets and underused family labor—reduces a household's vulnerability to shocks, in the sense of having to adjust through reduced consumption or critical investments such as schooling and health. Assets may be the key factor for explaining differences in the responses of poor versus rich households in large versus moderate economic contractions. In brief or mild contractions, even the limited assets of the poor can help weather the crisis; in more severe or recurring crises, the poor may eventually exhaust their assets and be forced to suffer drastic declines in their well-being, with adverse long-term effects. Hence policies aimed at strengthening the human capital of the poor (education, health) can enhance their self-insurance and self-protection efforts.

#### *New Income Support Programs for the Unemployed Need to be Established*

The common form of public unemployment support in much of LAC has been mandatory severance pay provisions

in employment contracts. In the old economic environment, these schemes effectively pooled unemployment risks over a greater population because consumers actually subsidized potentially bankrupt firms through higher prices. But with globalization and reduced barriers to trade, this is no longer possible: prices are determined by world markets, so the pooling of unemployment risk becomes restricted to the firm. These provisions have also proved to be contentious, complicated to enforce, and judicially burdensome.

With neither economic efficiency nor administrative ease to recommend mandated severance pay, some countries in the region have moved away from it, and others are contemplating change. This report considers the experience of both reformers and nonreformers in this regard, and also employs theoretical principles to provide guidance to countries in the region. In deciding whether to move toward government-mandated self-insurance—through schemes such as individual savings accounts to be accessed in case of unemployment—or to forms of unemployment insurance that involve the pooling of risk, several factors must be considered.

#### *Administrative Capacity and Labor Policies are Key in the Choice of Instruments*

The first critical issue is the administrative capacity of government. While administrative capacity can always be built over time, it does limit the options of government in the immediate future. However, a blend of practicality and analytical rigor can help countries devise strategies that efficiently bridge immediate action and long-term vision.

The second critical issue is the nature of labor markets, which influences the level and nature of risks faced by workers. The logical first step is to do more to reduce the likelihood of adverse employment shocks. Most LAC economies have high levels of informal employment, and many have high rates of formal unemployment as well. While these phenomena have diverse causes (for example, high rates of taxation, overregulated labor markets, poor macroeconomic policies that impede growth), labor policy changes are widely regarded as lagging other economic reforms in the region. For governments that wish to facilitate comprehensive insurance decisions by their workers and households in a rapidly changing global economy, labor policies should receive a high priority on the reform agenda.

***Self-Insurance for Slow-Reforming Economies***

Countries that have not yet pursued comprehensive economic—especially labor market—reforms may be better advised to rely more on self-insurance-type schemes such as individual capitalization funds. Their “insurance fundamentals” favor such schemes: self-insurance is the preferred option when losses are frequent, it is less demanding in terms of administrative capacity, and the schemes entail low labor market efficiency costs and low fiscal costs. The weakness of these schemes is their low attractiveness to poorer workers, for whom forced saving may have high costs, some of which could be lowered through risk-pooling or government subsidies.

***Unemployment Insurance for Advanced Reforming Economies***

LAC economies that have reduced the risk of unemployment through comprehensive economic and labor reforms should consider conventional unemployment insurance. While administrative considerations are always important, this capacity can generally be built. Carefully designed unemployment insurance schemes that involve pooling but keep efficiency losses low—for example, by keeping benefits frugal and mimicking the market as much as possible—are likely to increase welfare. Besides helping workers deal with idiosyncratic risk, insurance schemes that involve pooling of risk have—when designed well—also shown their worth as “automatic fiscal stabilizers,” which governments in the region have lacked.

Political opposition to labor market flexibilization is almost always related to the perception of higher unemployment risks in downturns. Hence, a sequencing option to overcome political constraints may be to adopt labor market reforms simultaneously with efforts to strengthen unemployment insurance.

***Public Works Programs Provide Insurance Support for Informal Sector Workers***

Those who cannot be reached through such contributory schemes should be assisted through programs that implicitly pool risks such as public works programs, and share some other characteristics with good unemployment insurance, principally keeping benefits frugal. Such schemes should be thought of as insurance—not emergency—programs, the difference being that insurance programs are permanent while emergency programs are temporary.

***Targeted Programs for the Poor Need to be Better Protected in Downturns***

The region has improved the poverty impact of social spending through reform over the last decade by, for example, replacing generalized subsidies with programs specifically designed to help the poor. However, during crises, spending on tightly targeted programs for the poor does appear to suffer more than general social expenditures. Governments could do better to protect these programs from cuts. Experience in the region and in the U.S. shows that a successful strategy requires explicitly accounting for political economy factors that make programs resilient to both political and economic changes. Such factors may include deliberately building in some features that have been associated with long-lived government interventions.

***Save in Good Times to Finance Social Spending in Bad Times***

Governments in the region do appear to have behaved in a pro-poor manner in the most general terms, especially since the return of democracy to the region. While authoritarian and democratic regimes in LAC appear to have responded similarly to economic crises—both cut social spending sharply and about equally—greater increases in social spending take place under democratic regimes. In fact, social spending increases only when there is both democratic rule and a nonshrinking economy. But this is also where governments run the greatest danger of adding policy risk to economic risk. Well-intentioned governments or those under political pressure to sharply increase spending on social programs during growth episodes only to have to reduce spending in the next contraction both raise risk and sow the seeds of social discontent.

There is considerable room for improving the design of targeted programs, especially how they relate to the economic cycle. While meeting many of the goals they were designed to accomplish in both rural and urban settings, targeted conditional transfer programs such as Mexico's *Progres*a and Brazil's *Bolsa Escola* may not be particularly well suited to assist those who become poor during economic downturns. Through their innovative links with human capital accumulation, these programs may be better suited than earlier interventions for addressing structural poverty concerns. However, the broad political support they enjoy make them a resilient policy instrument to offset cyclical swings in the quality of education and health services. Even

if more conventional instruments such as public works programs—when designed well—are better safety nets, targeted conditional transfer programs offer a strong option to form the third leg of a comprehensive social safety net—along with social security for the aged and income support for the unemployed.

### *Supranational Action and the Role of the International Financial Institutions*

The global economy also poses risks that cannot be effectively addressed by individual countries on their own. Imperfections in international insurance and financial markets prevent national economies from properly diversifying terms of trade risks, and typically lead to a withdrawal of financial support when it is most needed—that is, at the time of adverse shocks. In this context, just as national governments have a major role to play because of incomplete or imperfect domestic insurance markets, the imperfections of international markets provide a rationale for supranational action. It would aim at improving the self-insurance and self-protection choices available to individual countries that may entail too high a cost in terms of economic efficiency and growth, and provide insurance by making available financing during bad times. IFIs can help developing economies efficiently deal with risk by leading the way in developing new financial markets and instruments, such as contingent credit lines and borrowing guarantees. In addition, by deploying their financial resources anticyclically, that is, reducing their lending in good times and increasing it in bad times, they can partially counteract the procyclical behavior of private capital flows and cushion the adjustment to disturbances.

### *Myths and Realities About Economic Volatility*

In the light of the report's analysis, Table 1.5 shows how some widely held notions about economic volatility and its effects in LAC should be reassessed and qualified. In a nutshell, volatility, though still high, does not seem to have worsened, governments can do much to reduce it even in a global economy, and closer scrutiny reveals that households and governments do not always respond to economic shocks in stereotypical ways.

## **Securing Our Future**

We hope this report will succeed in calling to the attention of policymakers the problem of economic insecurity in

Latin America and the Caribbean. Uncertainty about future living standards is a major concern for workers and households in the region, and the report shows that there are good reasons for this. LAC, like other developing regions, is subject to much larger economic fluctuations than industrial economies, and has fewer instruments available to protect consumption levels from economic shocks.

However, contrary perhaps to popular perception, the trend toward globalization in the 1990s has not made matters worse. Growth has risen and volatility has declined in the majority of economies in the region, and several that pursued strong reform policies have enjoyed both higher growth and lower volatility than in earlier decades, while countries whose reform drive lagged behind have been among the worst performers in the 1990s. The lesson is that with globalization, good policies can reap larger rewards than before, but bad policies may be more severely punished.

This report shows that to face the new situation, adequate macroeconomic policies and structural reforms need to be matched with the development of a social protection and insurance system suited to LAC's changed economic environment.

## **Notes**

1. The figures mentioned in this section refer to the regional median growth rate—that is the rate of per capita GDP or consumption growth in the region's "typical" economy.

2. It is important to note that available GDP growth data reach up to 1999 for the major eight Latin American economies (Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, and Venezuela). The discussion in the text and the figures in the tables are based on this updated information. In contrast, private consumption growth information only reaches up to 1998. Preliminary forecasts for 1999 alter somewhat the performance of specific countries, but paint a broadly similar regional picture.

3. These concerns with insecurity may reflect in part concerns with (in)equity, as not all groups of economic actors have shared equally in the upturn, and some specific groups may have lost out with the reforms, at least in the short term.

4. The following discussion draws from Rodrik (1999).

5. The just-released 1999–2000 poll from Latinbarometer shows a slightly less pessimistic picture, with 58 percent of the respondents regionwide expressing the view that their parents lived better, and 52 percent anticipating a better future for their children.

6. The Inter-American Development Bank (1995) presents a comprehensive study of the causes and consequences of volatility in Latin America, as part of which the GDP growth cost of the region's "excessive" volatility (relative to industrial economies) is estimated at over 1 percent per year. Empirical studies with a cross-regional focus include Ramey and Ramey (1995) and Aizenmann and Marion (1993).

TABLE 1.5

**Economic Insecurity: Twelve Myths**

MYTH	REALITY
1. Aggregate volatility has increased in LAC.	Volatility of output and consumption is still much higher in LAC than in industrial countries, but it appears to have declined in the 1990s in many of the economies in the region.
2. Workers in LAC face higher uncertainty now than ever before.	Microeconomic data show no conclusive pattern—likely a general improvement, but a possible deterioration for some groups of workers in specific countries.
3. A greater demand for social insurance is unequivocal proof of greater economic risks.	As countries become wealthier, demand for overall insurance may go up even if risk does not. Demand for insurance involving risk-pooling may rise even if overall risk declines.
4. Globalization means that countries are powerless to reduce aggregate risk.	Governments can do a lot to reduce volatility through policies such as trade diversification, commodity stabilization funds, precautionary fiscal targets, deepening of the financial sector, and strengthening banking systems.
5. Expanding global financial markets leave no room for supranational action.	IFIs have a major role to play in the development of instruments and markets to facilitate international diversification of risks, and to ease the adjustment to shocks through countercyclical financing and contingent credit lines.
6. The rise of democracy in the region has not helped the poor much.	Both autocratic and democratic governments in LAC reduce spending during economic downturns. However, poverty-related programs have expanded much more under democratic governments.
7. Governments in the region have not been pro-poor.	Governments have not been successful at protecting social spending in downturns. In part the reason is that poverty-related programs may have grown too quickly in good times, to levels difficult to maintain in bad times.
8. The poor are always hurt more than the rich during economic contractions.	The poor are hurt more than the rich when economic contractions are deep and persistent. Moderate fluctuations usually hurt the rich more than the poor, although even these smaller losses suffered by the poor may be socially troublesome.
9. Poorer families respond to economic crises in ways that are harmful to their longer-term well-being.	The poor adjust to crises by trying to protect their long-term interests to the extent that their assets—including human capital—permit. In particular, they do not pull their children out of school during contractions, except when the downturns are long or deep.
10. OECD-type unemployment insurance is unsuitable for all LAC economies.	Countries that have raised growth and lowered unemployment through comprehensive economic reforms should seriously consider these schemes; countries that are only beginning labor reform should view them as a longer-term goal.
11. The informal sector is a safety net for unemployed formal workers. Informal workers never become unemployed.	The intersectoral flow goes both ways. Informal sector workers often join the pool of the unemployed.
12. Public works programs are just an emergency device for times of crisis.	Public works programs should be viewed as insurance for informal sector workers, and should be maintained in good times—but their nonlabor content should be strongly procyclical.

7. For example, regarding physical investment in developing countries, the adverse impact of uncertainty is documented by Servén and Solimano (1993), Pindyck and Solimano (1993), Aizenmann and Marion (1993), and Servén (1999).

8. It is worth noting that this applies both to upturns and downturns, and to recent years as well as the 1970s and 1980s.

9. Much of this research was carried out in the context of a World Bank regional study on “Social Risk Management in Latin America,” conducted at the Office of the Chief Economist of the Latin America and the Caribbean region under the supervision of Indermit Gill. Other major contributions to this report include Rodrik (1999), Caballero (2000), and Snyder and Yackovlev (2000).

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## CHAPTER 2

# Economic Insecurity in Latin America and the Caribbean: The Stylized Facts

**L**ATIN AMERICA SUFFERS FROM A HIGH DEGREE OF ECONOMIC VOLATILITY. A HISTORY OF repeated booms and busts has made economic insecurity a major concern for workers and households across the region, and especially for the poorer segments of the population, who are more exposed to the consequences of income and employment variability.

Drawing on both macroeconomic and microeconomic information, this chapter sets the stage for the analysis in the rest of the report by reviewing the major trends in economic volatility in Latin America over the last three decades. The objective is to establish the facts concerning (a) Latin America's performance over time and relative to the international experience in terms of aggregate volatility—that is, the variability of key economic variables such as consumption and income; and (b) economic insecurity from the perspective of individual workers and households—that is, the fluctuations in employment, unemployment, and labor earnings.

### **Methodological Considerations**

How does the economic risk faced by workers and households arise? The answer to this question provides the organizing framework for this chapter. Here, risk may be measured by the variability of the real earnings of employed workers; the level, incidence, and duration of unemployment; the rate of turnover in jobs

or, inversely, the average job tenure; and the quality or precariousness of available jobs (a concept often related by observers to informality). In addition, the inequality of income distribution could be seen as a measure of the risk of faring poorly relative to others in society. This deserves mention here because increased inequality may lie behind the concern with economic insecurity that appears to have spread across the region.

The risks faced by households arise from two sources. First, they may reflect just aggregate volatility—itsself due to external shocks from global goods or financial markets, volatile fiscal or monetary policies, and other factors. The speed and extent with which aggregate shocks are transmitted to household income and employment outcomes depends on factors including the sensitivity of labor demand to wages, and labor market policies and institu-

tions. Second, risk faced by households may arise from microeconomic or sectoral volatility—namely, such factors as the changing allocation of resources across economic sectors and the rapid obsolescence of skills—unrelated to aggregate disturbances (see Box 2.1). This chapter is organized around the following three factors: aggregate risk, the transmission of aggregate risk to households, and microeconomic risk.

Assessing Latin America's performance along these three dimensions poses serious methodological challenges. Beyond basic national income aggregates, there are few broadly available labor market and microeconomic indicators that permit comparisons across countries or that can give a regional perspective on the key issues. Some, such as unemployment rates, differ sharply in magnitudes in ways that suggest differences in data collection or definitions.

## BOX 2.1

**Defining and Measuring Insecurity**

In this report we extensively use terms such as *economic insecurity*, *uncertainty*, *variability*, and *volatility*. In theory, these concepts are not identical, but in practice they are closely related.

*Definitions*

Economic insecurity refers to the uncertain environment faced by workers and households due to erratic movements in key economic quantities and prices, such as employment, income, and real wages. These variables change, sometimes abruptly, from one month or year to the next, and the uncertainty surrounding their future values is the essence of economic insecurity. In the economics literature, this is commonly referred to as *uncertainty* or *risk*.

It is important to distinguish between two kinds of risks. *Aggregate* or *common* risks affect equally most or all economic actors. For example, the risk posed by fluctuations in worldwide economic activity is common to all developing countries, while that posed by fluctuations in domestic economic activity is common to all workers and firms in the national economy. In contrast, other risks are *individual* (equivalently, *microeconomic*) or *idiosyncratic*—they affect only specific individuals or particular groups of economic actors. For example, fluctuating demand for steel is primarily a risk specific to the steel industry and its workers; uncertain world coffee prices are a source of idiosyncratic risk for coffee-exporting countries but not for the rest.

*Volatility*—or *variability*—refers in turn to the variation of a magnitude around some central trend (typically its average or median value), for example, the movement of oil prices relative to their historical average. In some cases, part of the variation of certain economic variables may be predictable; for example, prices of agricultural goods typically rise before the harvest and fall afterward.

Strictly speaking, then, volatility and uncertainty are not exactly synonymous: the former refers to the overall variation of a variable, while the latter refers only to the unpredictable part of that variation. In practice, however, the two usually go hand in hand: volatile variables are also hard to predict. For this reason, this report focuses on measuring volatility as a rough approximation to uncertainty and insecurity.

*Measurement*

How should volatility be measured? Ideally, we need some summary indicator of the extent and frequency with which a variable tends to depart from its central trend. A number of such measures are available from statistical theory, and in this report we use the *standard deviation* most often, which quantifies the extent to which a variable typically departs from its average or mean value. Since our variables of interest are in many cases expressed as percentages, their standard deviation is also a percentage.

While the standard deviation is the most commonly used measure of dispersion, it is by no means the only one, and other measures may be more appropriate in specific contexts. For example, the coefficient of variation—defined as the standard deviation of a variable divided by its mean—might be preferable when the mean and standard deviation tend to move together, as is usually the case with variables that display rising or falling trends. Other “robust” measures (such as the interquartile range) may be superior in the presence of infrequent, large deviations of a variable from its central value. Using some of these alternatives rather than the standard deviation to measure volatility would change quantitatively some of the empirical findings in the report, but would leave them qualitatively unchanged.

Others, such as labor turnover, are available only for a few countries. In many cases, therefore, the discussion has to be guided by what can be learned from a few case studies.

It is likewise difficult to identify the links between the evolution of economic insecurity in Latin America over the last two decades and the process of economic and institutional reform undergone by many of the region's

economies. In our framework, households could face increased risk due to larger aggregate shocks, strengthened channels of transmission, higher microeconomic risks, or a combination of all three. Reforms may have affected all three of these ingredients, but disentangling their impact is no easy matter. In many dimensions, the postreform history is too short to allow distinction between transitional

effects derived from intersectoral resource reallocation and permanent impacts on economic volatility faced by households—a distinction that is critical for the design of social safety nets. Moreover, radical reform policies are often implemented along with stabilization measures, so that the permanent effects of the former are difficult to separate from the largely temporary consequences of the latter.

### Aggregate Volatility in Latin America

Like other developing regions, Latin America faces a high degree of volatility of the major economic aggregates related to national income, expenditure, and consumption.

#### Volatility in Aggregate Output

Over the last four decades, the volatility of real output growth as measured by the standard deviation of the growth rate of real GDP<sup>1</sup> in Latin America has been twice as high as in industrial economies. Figure 2.1 shows that

the volatility of GDP growth in the typical (median) industrial country over the last four decades was just above 2 percent. In contrast, it exceeded 4 percent in Latin America, higher than the levels seen in the most stable developing regions—the seven East Asian miracle economies and South Asia. Sub-Saharan Africa (which comprises mainly low-income economies), the Middle East, and North Africa (largely consisting of oil-exporting economies whose performance tracks closely the vagaries of world oil prices), and the rest of East Asia<sup>2</sup> experienced even higher GDP growth volatility than Latin America.

#### Volatility in Aggregate Consumption

Latin America also suffers high volatility in real private consumption growth—an aggregate which provides a more accurate measure of the change in the standard of living of the population of each region. Using the standard deviation of consumption growth as the yardstick, Figure 2.2 shows

FIGURE 2.1

#### Long-Term Volatility of Real GDP Growth

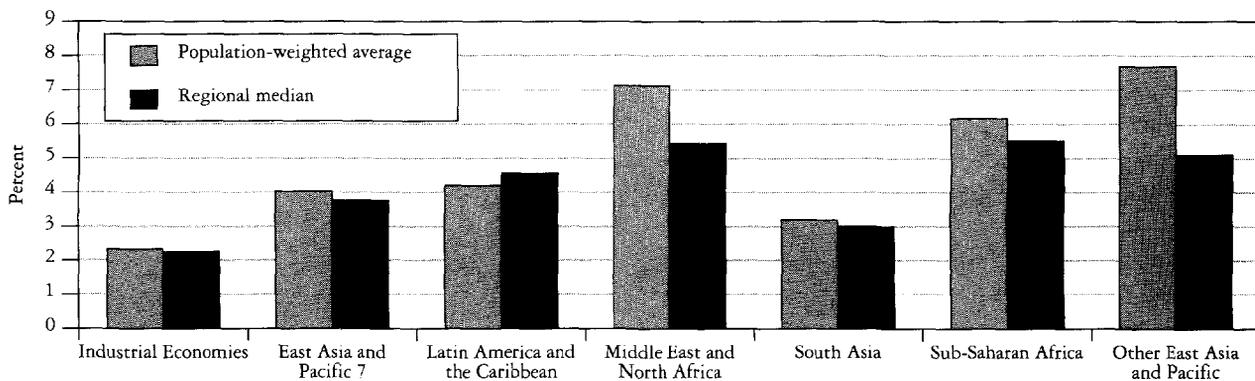
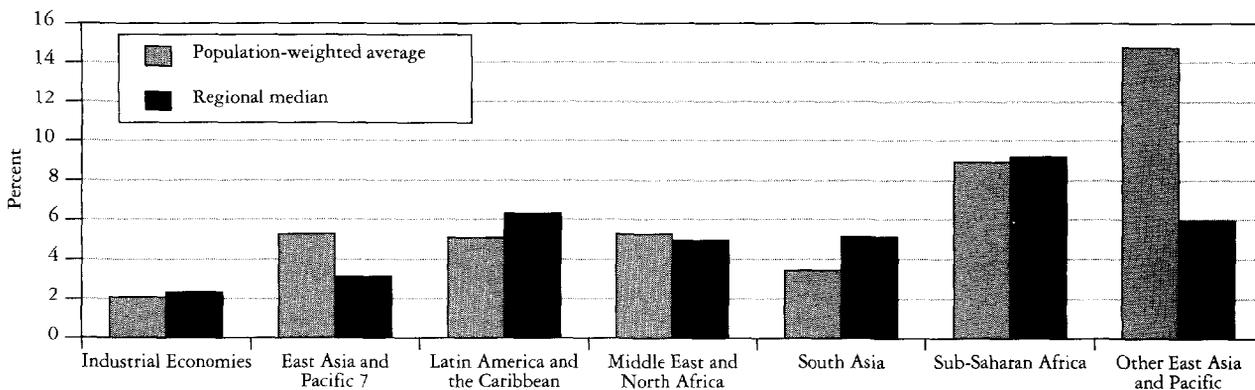


FIGURE 2.2

#### Long-Term Volatility of Real Private Consumption Growth



that volatility in Latin America is three times higher than in industrial economies, well above the levels of South Asia and on par with those witnessed in the Middle East and North Africa.

### Differences in Volatility Across Countries Within the Region

The LAC region comprises a large number of different economies, and their respective performance from the point of view of economic volatility has been equally diverse (Table 2.1). The volatility of annual GDP growth has been highest in Nicaragua (with a standard deviation exceeding 7 percent) and the Bahamas (8 percent), and lowest in Guatemala and Colombia (with standard deviations around 2 percent). These two countries, along with Bolivia and Ecuador, the data of which do not yet reflect the 1999–2000 crisis, also possess the best record in terms of long-term stability of real private consumption growth. At the other extreme, the largest variability in consumption growth rates, in excess of 10 percent, was suffered by several of the smaller economies in the region—the Bahamas, Belize, Guyana, Nicaragua, and Trinidad and Tobago—as well as Chile.

The regional and country experiences in Figures 2.1 and 2.2 and Table 2.1 illustrate three general points. First, lower-income economies typically suffer from higher macroeconomic volatility. This is apparent from the fact that in all developing regions volatility is considerably higher than in industrial economies. This largely reflects the fact that lower-income economies often possess less diversified productive structures than more advanced economies, which increases their exposure to risk; moreover, once shocks happen, lower-income countries are less able to weather them than richer countries, due to their more limited access to external financing and their less-developed domestic financial systems.

The second stylized fact, apparent from Table 2.1, is that with few exceptions smaller economies tend to suffer higher volatility than bigger economies. Smaller economies are typically much more open to trade than larger ones, and yet they cannot diversify their production as much as the latter. This makes them more vulnerable to terms of trade shocks (Easterly and Kraay 1999). Moreover, many of them are located in regions prone to hurricanes and other natural disasters, as is the case of the Caribbean subregion.

TABLE 2.1

### Long-Term Volatility in Latin America

(Standard Deviations of Growth Rates, Percent)

COUNTRY	GDP	PRIVATE CONSUMPTION
Argentina*	5.4	5.5
Bolivia	4.0	2.7
Brazil	4.3	5.1
Chile	5.2	11.5
Colombia	2.4	2.7
Costa Rica	3.4	4.7
Dominican Republic	5.5	7.8
Ecuador	4.8	2.7
El Salvador	4.7	6.8
Guatemala	2.7	2.2
Haiti	4.6	4.5
Honduras	3.0	3.8
Jamaica	4.6	10.1
Mexico	3.7	4.0
Nicaragua	7.5	12.4
Panama	4.6	10.4
Paraguay	3.7	8.5
Peru	5.5	6.3
Trinidad and Tobago	5.6	12.3
Uruguay	4.2	6.3
Venezuela	4.4	5.2
<i>Mean</i>	4.5	6.5
<i>Median</i>	4.6	5.5
<i>Smaller countries</i>		
Bahamas	8.1	13.3
Belize	3.7	11.8
Barbados*	4.6	4.8
Guyana	5.8	19.5
<i>Mean</i>	5.5	12.4
<i>Median</i>	5.2	12.6
<i>Unweighted Average</i>	4.6	7.4
<i>Overall median</i>	4.6	6.3
<i>Weighted Average**</i>	4.2	5.1

\*Consumption figures for Argentina and Barbados correspond to total, and not private, consumption. Argentina: 1961–98; Barbados: 1967–94.

\*\*Weighted averages use 1995 population.

Note: Sample Period: 1961–98. Exceptions: GDP: Bahamas (1961–95), Barbados (1961–95), Guyana (1961–95), Peru (1966–99). For Argentina, Brazil, Chile, Colombia, Ecuador, Peru, and Venezuela, figures are updated to 1999. For consumption: Bahamas (1978–87); Barbados (1967).

These two facts are summarized by Figures 2.3 and 2.4, which plot the volatility of GDP growth against per capita income and country size (as measured by the logarithm of population) for a large number of countries. As can be seen, in each case a negative relation emerges. It is worth noting that for industrial countries actual volatility tends to fall short of what could be expected on the basis of their income and size alone—that is, in the figures they tend to cluster below the line of best fit.



These relationships between volatility and country size and volatility and per capita income are weak, however. Together, the latter two variables account for less than 10 percent of the observed variation in volatility across countries, which implies that its causes have to be found elsewhere. Indeed, Chapter 4 will show that the main roots of volatility lie in trade and financial shocks, policy volatility, and underdeveloped financial systems. These factors account for the bulk of macroeconomic volatility and—once they are taken into consideration—income level and country size are no longer significantly associated with aggregate volatility.

The third fact apparent from the region and country comparisons above is that in LAC, as in almost all developing regions, the volatility of consumption is typically larger than that of income or production (this is the case in 21 of the 25 economies in Table 2.1). This is in contrast with more developed economies, where the volatility of consumption growth is similar to or smaller than that of real income growth. This phenomenon is summarized by Figure 2.5, which presents volatility measures for both developing and industrial countries. Industrial countries typically cluster on or above the 45-degree line along which private consumption and real GDP growth are equally volatile. Developing economies, however, tend to cluster below the 45-degree line, reflecting their higher consumption volatility, and LAC economies are no exception to this rule.

This regional contrast reflects the more limited ability of consumers in developing economies, relative to those in the

industrial world, to protect their consumption from fluctuations in income through mechanisms such as asset depletion, borrowing, or countercyclical public sector policies. The result is that the impact of economic fluctuations on the welfare of households is likely much more severe in Latin America and other developing regions than in OECD economies.

### Regional Trends in Economic Volatility

World regions experienced marked changes in economic volatility over the last four decades, and LAC has been no exception (see Figure 2.6). In industrial countries (as well as Sub-Saharan Africa), median GDP and consumption growth volatility peaked in the 1970s, largely a reflection of the global impact of the oil shocks of the 1970s. In LAC, in turn, volatility increased further in the 1980s—as the debt crisis and the ensuing macroeconomic and financial turmoil threw many of the region’s economies into disarray. The rise in the variability of macroeconomic aggregates was significant for LAC: the median standard deviation of real GDP growth rose from 3.5 percent in the 1970s to just under 5 percent in the 1980s, while that of private consumption growth rose to 6.1 percent, a level surpassed in that decade by only the low-income economies of Sub-Saharan Africa.

In the 1990s, however, the rising trend in aggregate volatility in Latin America was partially reversed. Contrary perhaps to popular perception, the available information on GDP (that reaches up to 1999 for the region’s largest economies<sup>3</sup>) shows that the variability of real GDP growth

FIGURE 2.5  
GDP Growth Volatility and Private Consumption Growth Volatility

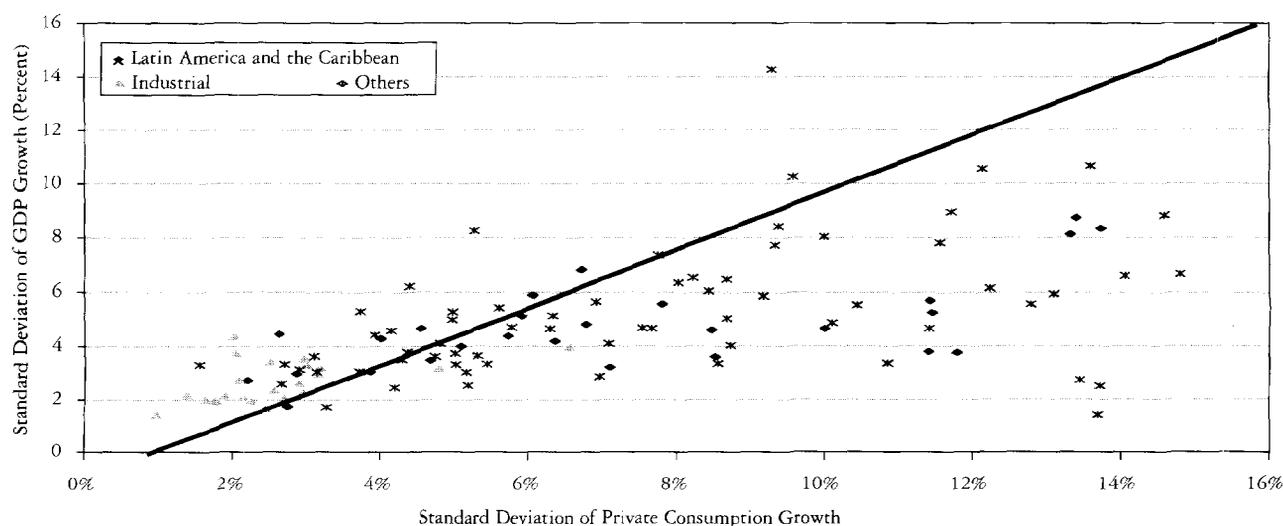


FIGURE 2.6

**Volatility of Real GDP Growth by Decade**  
(Regional Medians)

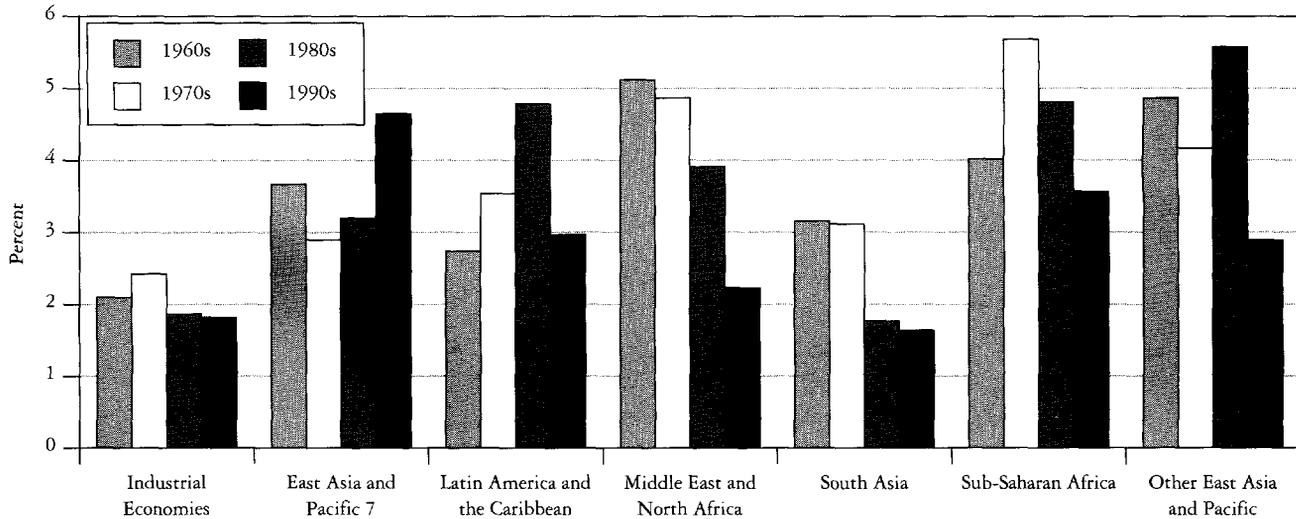
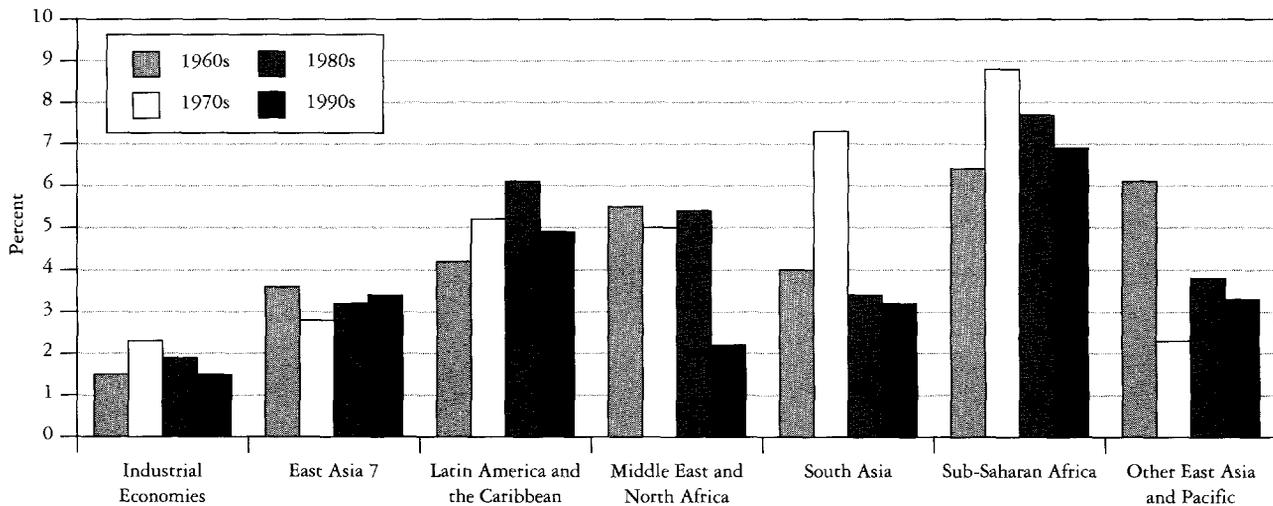


FIGURE 2.7

**Volatility of Real Private Consumption Growth by Decade**  
(Regional Medians)



declined substantially across the region, to levels comparable to (and in a number of countries, lower than) those witnessed in the 1970s. This decline in growth volatility was shared by other developing regions, with the major exception of the East Asian miracle economies. In turn, the volatility of private consumption growth (on which data are only available though 1988) declined as well relative to the 1980s, but to a more limited extent than that of GDP growth.

It is worth emphasizing that this cycle of rising economic instability followed by declining economic instability in Latin America is readily apparent in the macroeconomic data, and is not a result of the breakdown of the period of analysis into subperiods (decades) used here. The same pattern arises with alternative period definitions,<sup>4</sup> and even if annual rather than decade-based measures of volatility are used, as shown in Box 2.2.

BOX 2.2

**Trends in Aggregate Volatility in Latin America and the Caribbean**

The discussion in the text assesses the time pattern of macroeconomic volatility by comparing the variability of GDP and private consumption growth during each of the last four decades. This choice of subperiods is, like any other, unavoidably arbitrary, and it is important to verify the robustness of any conclusions drawn from it. With this purpose, Figure 2.8 provides another perspective on the trends in volatility in the LAC region, based on a different method.

Rather than computing the volatility indicators for fixed 10-year periods, they are computed each year over the current year and the preceding nine years—that is, using a moving 10-year window. Thus, for example, the figure reported in the graph for 1995 refers to the standard deviation of the relevant macroeconomic variable

during 1986–95. Since the available data start in 1961, they do not permit calculation of such measures prior to 1970. In addition, volatility measures constructed in this manner tend to move slowly over time. Nevertheless, they are useful to identify not only trends, but also turning points in economic volatility.

The graphs confirm the volatility cycle in Latin America identified in the text. The variabilities of GDP and private consumption growth remain roughly stable until the late 1970s, and then rise sharply during the early 1980s. Median GDP volatility peaks in the late 1980s and declines steadily thereafter; consumption volatility follows a similar trend with some delay, peaking in 1991. At the end of the sample period, both measures attain levels similar to those of the late 1970s.

The decline in GDP growth volatility in the 1990s affected most countries in the region (20 out of the 25 shown in Table 2.2) with the exception of a few Caribbean economies (the Dominican Republic, Haiti, and Trinidad and Tobago), and Colombia and Venezuela. Further, 13 of the 25 economies in the table experienced lower GDP growth volatility in the 1990s than in the 1970s.

Regarding private consumption growth, performance was more mixed. In a number of countries in the region (13 out of the 25 in Table 2.2), volatility declined in 1990–98 relative to the 1980s, but rose in some of the largest economies—for example, Brazil, Mexico, and Venezuela. As a result, the decline in the region’s population-weighted average consumption volatility was much more modest

FIGURE 2.8  
**Volatility of Growth of GDP and Private Consumption in Latin America**  
(Ten-Year Window, Regional Median)

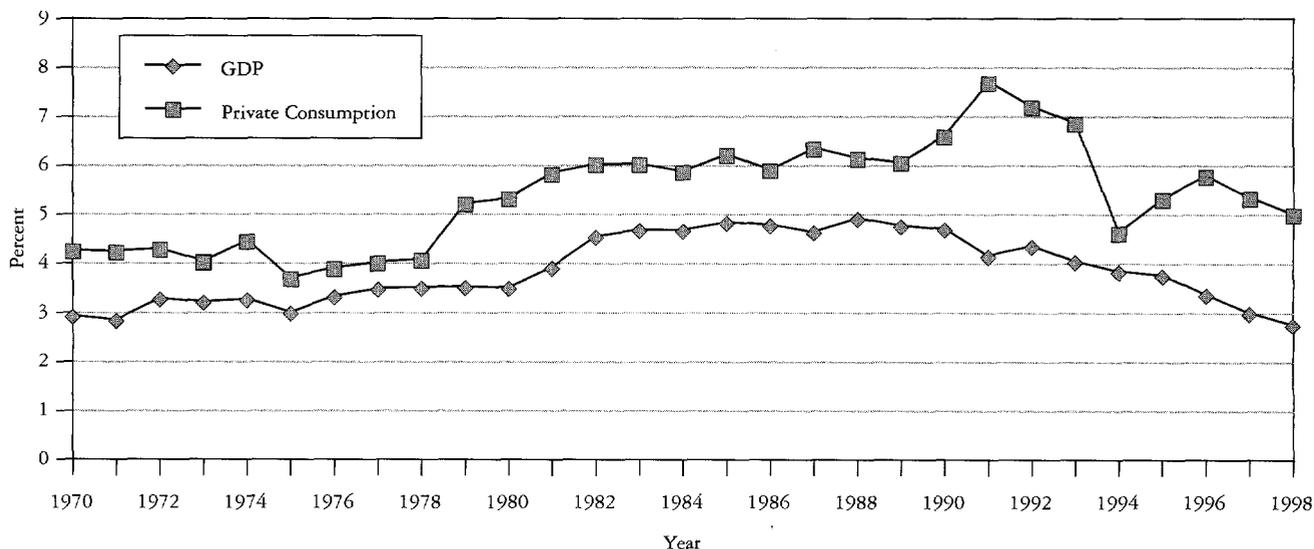


TABLE 2.2

**Volatility in Latin America Over Time**

(Standard Deviations of Growth Rates by Decade, Percent)

COUNTRY	GDP				PRIVATE CONSUMPTION			
	1960s	1970s	1980s	1990s	1960s	1970s	1980s	1990s
Argentina*	5.4	4.3	5.6	5.5	4.3	5.2	5.9	5.7
Bolivia	6.2	2.5	2.9	1.0	..	..	3.3	0.5
Brazil	3.5	3.2	4.6	3.0	3.6	4.9	4.4	4.9
Chile	2.5	6.7	6.4	3.5	12.0	16.8	9.4	3.4
Colombia	1.4	1.7	1.5	3.3	4.1	1.8	1.2	1.9
Costa Rica	3.1	1.9	4.5	2.4	4.5	3.7	6.1	3.2
Dominican Republic	8.8	4.4	2.7	4.4	10.8	6.7	4.5	8.7
Ecuador	2.0	5.3	4.5	3.4	2.1	2.0	2.5	0.3
El Salvador	2.8	3.1	5.7	1.9	4.2	6.3	6.0	6.9
Guatemala	2.0	1.6	2.7	0.8	1.1	1.4	2.4	1.0
Honduras	2.4	3.7	2.5	2.4	2.4	6.3	3.1	1.9
Haiti	4.3	3.8	2.9	6.4	4.3	4.8	4.4	..
Jamaica	2.3	7.1	4.3	2.2	3.9	9.5	7.6	16.5
Mexico	2.4	2.1	4.4	3.6	1.9	1.8	4.9	5.1
Nicaragua	3.3	12.2	5.4	2.3	4.9	11.7	15.8	14.4
Panama	1.6	3.0	6.5	2.6	..	..	11.3	10.2
Paraguay	2.3	2.3	5.3	1.5	3.8	4.5	11.2	12.5
Peru	2.5	2.6	8.4	5.2	2.8	6.7	8.3	4.6
Trinidad and Tobago	3.5	4.8	5.7	6.8	6.6	8.7	14.0	17.6
Uruguay	2.7	2.6	6.6	2.8	5.6	3.1	9.4	5.4
Venezuela	3.3	2.8	4.8	5.0	..	3.4	3.5	4.7
Mean	3.3	3.9	4.7	3.3	4.6	5.8	6.6	6.5
Median	2.7	3.1	4.6	3.0	4.1	4.9	5.9	5.0
<i>Smaller countries</i>								
Bahamas	0.8	12.9	5.7	1.8	..	15.8	9.7	..
Belize	0.8	3.5	5.8	3.0	..	..	16.1	4.9
Barbados*	4.8	4.0	4.3	4.0	..	..	..	4.8
Guyana	7.0	4.1	5.2	4.2	30.3	12.4	19.5	8.6
Mean	3.3	6.1	5.2	3.2	30.3	14.1	15.1	6.1
Median	2.8	4.1	5.4	3.5	30.3	14.1	16.1	4.9
<i>Unweighted Average</i>	3.3	4.3	4.8	3.3	6.0	6.6	7.7	6.4
<i>Overall median</i>	2.7	3.5	4.8	3.0	4.2	5.2	6.1	4.9
<i>Weighted Average**</i>	3.2	3.1	4.6	3.5	3.5	4.4	4.9	4.7

Notes: See Table 2.1. Decades are defined as 1961–69, 1970–79, 1980–89, 1990–99. Weighted averages use 1995 population.

than that in median consumption volatility. In over half the countries, consumption volatility remained in the 1990s above the levels of the 1960s and 1970s.

### Transmission of Aggregate Volatility to the Labor Market

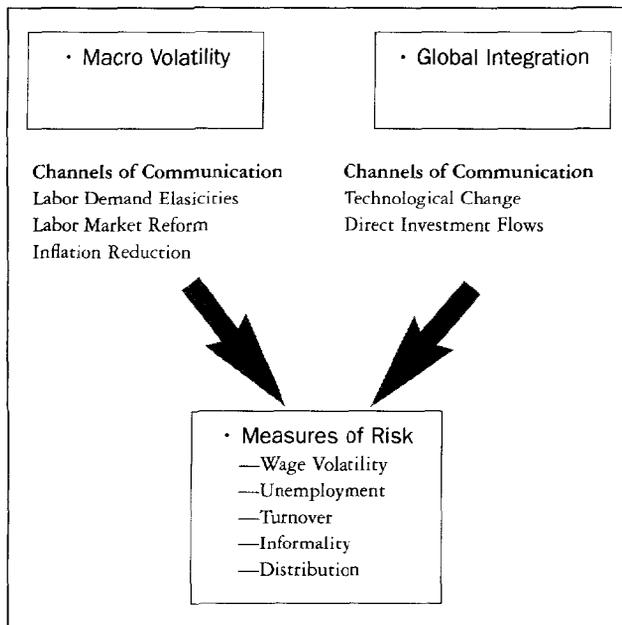
Even if aggregate volatility had remained unchanged, reform and stabilization measures may have led to tighter linkages between macroeconomic shocks and labor markets through multiple channels, some of which appear on the left-hand side of Figure 2.9.

Increased product competition brought about by market-oriented reforms may increase the sensitivity of

goods demand to product prices and, as a result, also the sensitivity of labor demand to wages (see Rodrik 1997, for example). This would imply that any given aggregate shock would lead to larger movements in wages or employment than previously. Estimates of labor demand equations for Brazil, Chile, Colombia, Mexico, Peru, and Uruguay, however, do not suggest that this has been a strong effect to date.<sup>5</sup> As an example, Figure 2.10 plots the own wage elasticities for blue- and white-collar workers for Chile during 1980–1995, a period of increased protection (1984–87) and then increasing integration. Although the series is volatile, neither casual observation nor statistical tests suggest any trend

FIGURE 2.9

**The Links Between Aggregate and Microeconomic Volatility**



increase during the period of study (see Fajnzylber and Maloney 2000).

Trade liberalization, and the labor market reform measures thought to be a necessary complement to it, have loosened the relationship between firm and employee. To start, in a highly competitive environment, the traditional promise of a lifetime labor contract is simply less realistic than in the past. More generally, competing firms need greater flexibility to reallocate or reduce their work forces

when economic conditions demand it. Recent research on labor market reform suggests that government-mandated reductions in firing costs had a negligible impact on *labor demand* in Brazil, Colombia, Peru, and Uruguay, but did reduce *tenure* to a greater or lesser degree.<sup>6</sup> Though in all cases overall employment may rise as a result of these reforms, workers may be more exposed to layoffs than previously. The ambiguous impact on risk also arises from the diminished power of labor unions that has occurred either because of greater competition or the political evolution of the 1970s and 1980s. Weaker collective bargaining in Uruguay, for example, is associated with lower unemployment, but also more wage volatility and higher labor demand elasticities than in the past (Allen, Cassoni, and Labadie 1997; Cassoni 1999).

The successful fight against high inflation rates in the region, and the resulting reduction in the ability to adjust real wages through inflation, have led labor markets to adjust through employment instead. Given the absence of unemployment insurance in most countries, workers may feel more at risk, even if the shocks to labor demand are no larger than before. Figure 2.11 suggests an inverse relation between how much real wages fall with a shock to GDP and how much unemployment rises with the same GDP shock (Gonzalez 1999). Studying the impact over the last 20 years reveals ambiguous although broadly similar results. As inflation falls, Argentina, Mexico, Peru, and Venezuela do appear to adjust less through wages, but only Colombia and Mexico adjust more through unemployment as predicted.

FIGURE 2.10

**Long-Run Own Wage Elasticities, 1980–95, Chile**

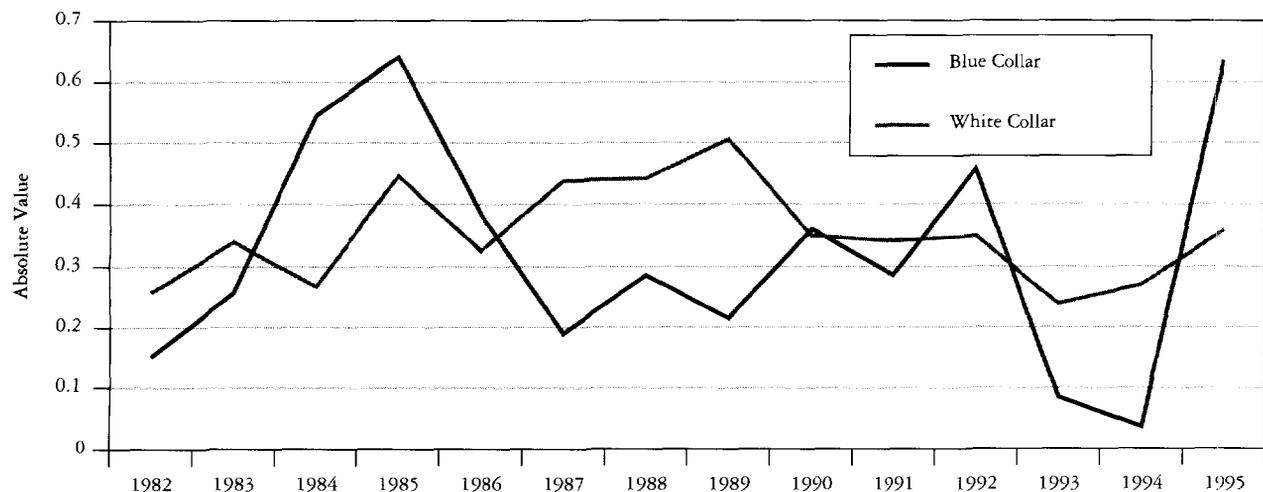
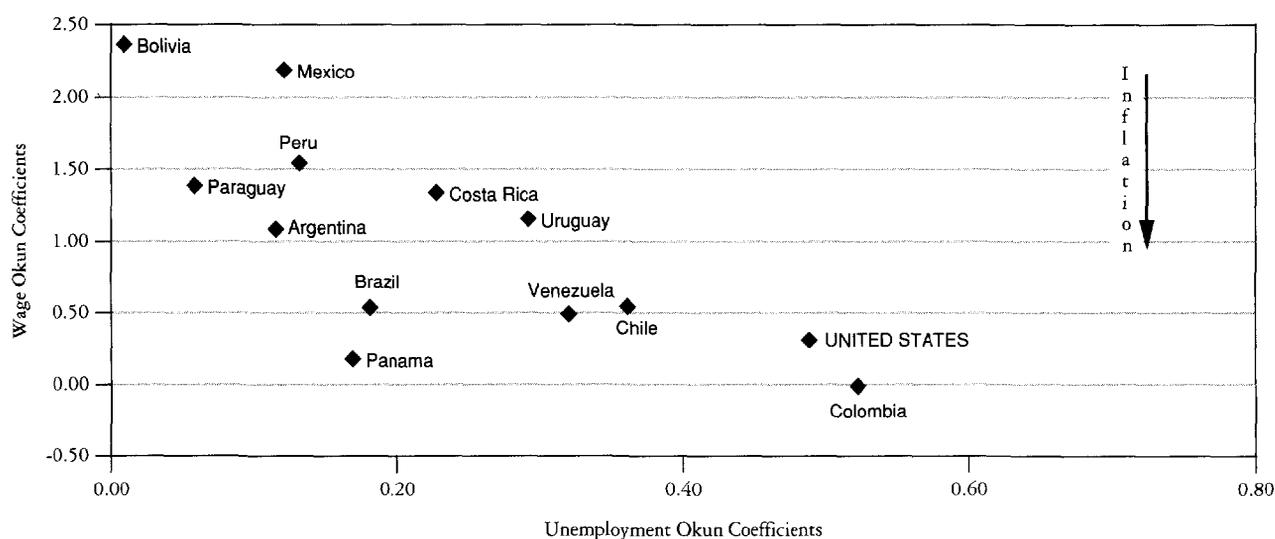


FIGURE 2.11

**Wage and Unemployment Okun Coefficients**

Brazil, Bolivia, and Uruguay show either counterintuitive or insignificant coefficients (Galindo and Maloney 2000).

Finally, as depicted by the right side of Figure 2.9, the general reduction in global barriers to direct foreign investment may also make it easier for foreign investors to relocate production in response to modest movements in wages.<sup>7</sup> There is ample anecdotal evidence of such footloose industries, particularly in Central America, though the findings of research on firm entry and exit behavior in Chile and Colombia are ambiguous.<sup>8</sup> More generally, being more tightly linked to the process of technological advance may create more dynamic industrial sectors in the region, but also require workers to retrain and find new jobs more frequently.

**Are Latin American Workers Facing More Risk?**

Despite the falling trend in macroeconomic volatility, the mixed evidence on changes in transmission mechanisms, and the possibility of direct microlinkages, the question remains as to whether, overall, workers are facing more risk than in the past.

*Changes in Earnings Volatility*

Wage or earnings volatility captures a central dimension of income volatility. At the aggregate level, Table 2.3 presents this information for 14 countries in the region. The cycle of rise and fall in volatility tracks closely that found in the macroeconomic aggregates. This is mainly a reflec-

tion of the inflationary surge experienced by many Latin American economies in the 1980s, which resulted in a generalized rise in the variability of real wages during that decade, followed by a decline derived from the success of inflation stabilization. As a result, in the 1990s real wage volatility was broadly similar to, or even lower than, in the 1970s. The decline in the variability of real wages in the 1990s was particularly marked in Argentina, Bolivia, and Chile. Brazil and Peru also witnessed a substantial decline in wage volatility, although its average level in the 1990s was still high, reflecting the persistence of inflation in the early years of the decade.

It could be possible, however, that individual workers face higher idiosyncratic wage risk than disappears in aggregation. Calculating the variance of individual wages across a year from panel labor force data, Arango and Maloney (2000a) find no trend in Mexico since 1987, and a downward trend in Argentina, consistent with the aggregate data above. Since workers may be particularly concerned about negative shocks, Figure 2.12 transforms the changes (by taking the squared values), but again does not reveal a worsening trend. In Mexico, the size of negative shocks for skilled workers rose and then fell. In Argentina it is difficult to tell because of cyclical fluctuations, but there appears to be an upward trend.

Still, it may happen that even if income shocks for the mean or median worker change little or not at all, workers could be more exposed to large catastrophic shocks that

TABLE 2.3  
**Real Wage Growth Volatility in Latin America and the Caribbean, Percent**

COUNTRY	1970s	1980s	1990s	ENTIRE PERIOD
Argentina	15.8	15.0	2.1	12.2
Bolivia	14.5	31.9	3.9	20.3
Brazil	8.7	26.2	10.2	16.8
Chile	20.6	6.0	1.1	12.0
Colombia	6.7	3.1	2.5	3.9
Costa Rica	6.9	16.3	3.3	11.2
Ecuador	6.1	10.7	6.4	8.6
El Salvador	7.1	14.1	13.0	11.7
Guyana	5.9	15.4	13.3	11.8
Mexico	3.2	10.2	7.9	8.1
Paraguay	4.3	5.1	6.6	5.1
Peru (CEPAL)	7.0	23.5	9.3	16.1
Peru (ILO)	11.2	28.9	10.2	19.3
Uruguay	6.4	9.1	4.3	7.5
Venezuela	3.3	6.2	10.6	8.0
LAC Mean	8.5	14.8	7.0	11.5
LAC Median	6.9	14.1	6.6	11.7

such measures will miss. One way to rectify this is to examine changes in the shape of the full distribution of income shocks, and not just those at some average such as the median. When we examine the 25th quantile (the point at which 25 percent of income shocks are lower and 75 percent higher), we find trends similar to those found at the median for Mexico, and no significant trend in Argentina

(see Figure 2.13). This evidence suggests that workers are not being hit particularly harder by catastrophic shocks than prior to the reforms.

**Trends in Unemployment Rates**

In sum, workers are not facing higher volatility in real wages. However, as suggested above, this may only reflect a new reality in that, because of a fall in inflation without deep reforms of labor market institutions, adjustments occur largely through fluctuations in unemployment. Since, in the absence of insurance, unemployment implies a catastrophic fall in income, this is clearly a central dimension of the risk that workers face. Table 2.4 presents decade averages of the unemployment rate for 13 Latin American economies. The trend that the table reveals is broadly similar to that already identified from the macro-economic aggregates. Unemployment rates rose in the 1980s in almost all the countries in the table, with the exception of only Brazil and Mexico. In the 1990s, however, the rise was partially reversed: average unemployment declined in 7 out of 13 economies, although it did increase in some major economies such as Argentina.

The net result is that in the 1990s average unemployment rates still remained above the levels of the 1970s in 7 of 12 economies. The increase was substantial in Argentina, Paraguay, and Venezuela, and the data for

FIGURE 2.12  
**White- and Blue-Collar Wage Volatility, Mexico**

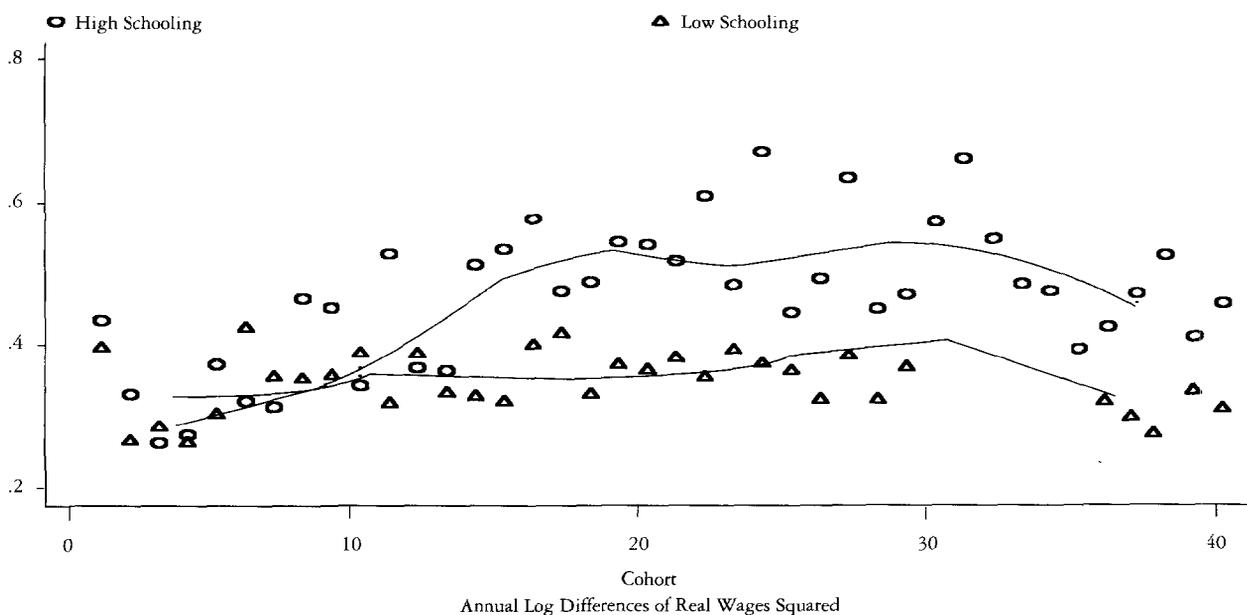
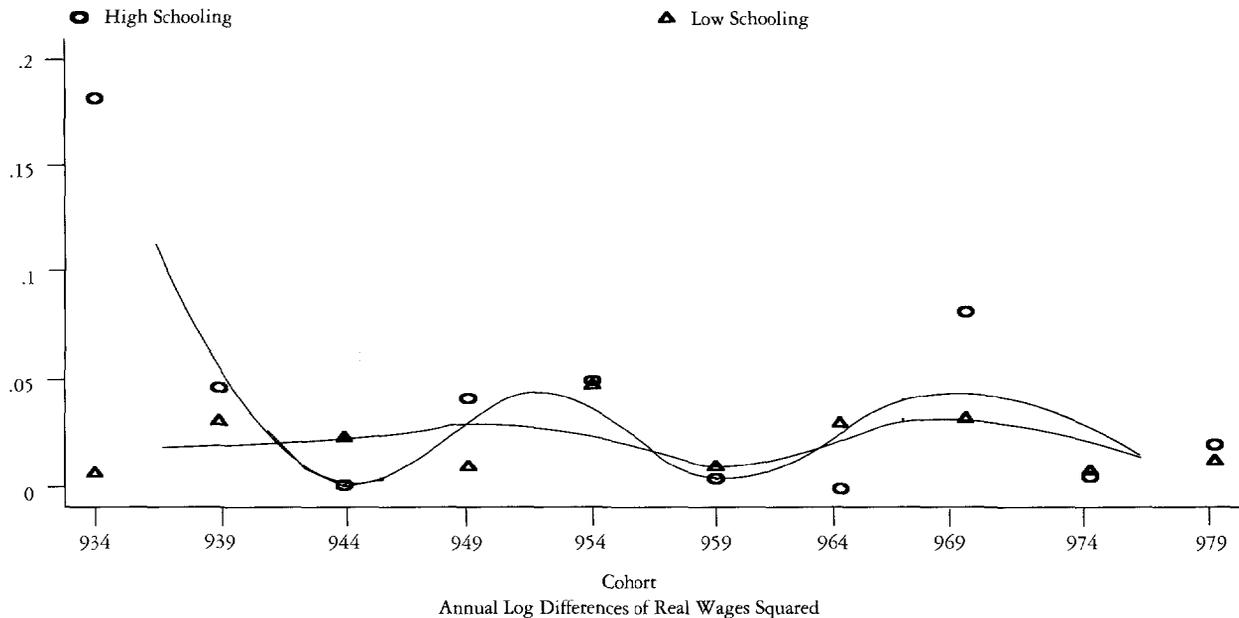


FIGURE 2.13

**White- and Blue-Collar Wage Volatility, Argentina**

Colombia and Uruguay conceal falls in the early 1990s that were dramatically reversed by the end of the decade: booms in the nontradables sector, particularly construction, absorbed labor and partially obscured the dislocations in the restructuring tradables sector. The end of these booms both displaced workers, and revealed the higher industrial sector unemployment. More generally—and perhaps central to the stated feeling of insecurity in the region—

TABLE 2.4

**Average Unemployment Rates in Latin America and the Caribbean, Percent**

COUNTRY	1970s	1980s	1990s	ENTIRE PERIOD
Argentina	4.1	4.8	12.3	6.9
Bolivia	6.3	7.7	4.8	6.3
Brazil	6.6	5.4	5.4	5.7
Chile	10.5	14.4	7.0	10.7
Colombia	9.6	11.3	10.7	10.6
Costa Rica	5.0	6.9	5.3	5.9
Guyana	0.5	0.3	n.a.	0.4
Honduras	n.a.	4.5	3.4	3.7
Mexico	7.0	4.7	3.8	5.0
Paraguay	7.3	11.8	14.2	10.7
Peru	7.4	7.4	8.5	7.7
Uruguay	9.2	10.6	9.8	9.9
Venezuela	5.7	8.8	9.7	8.0
LAC Mean	6.6	7.6	7.9	7.0
LAC Median	6.8	7.4	7.8	6.9

Argentina, Brazil, Mexico, and Uruguay experienced historically unusual periods of growth with limited formal sector employment creation.<sup>9</sup> This is especially striking in Uruguay in the late 1990s, where unemployment was at levels similar to those of the debt crisis years in the early 1980s, despite apparently healthy economic growth.

Behind these numbers lie numerous phenomena that are fundamentally transitory: the dislocations due to industrial restructuring, the temporary real exchange rate overvaluations accompanying necessary stabilization plans, contamination effects from the Tequila, Asian, and Brazilian crises, and in Colombia's case, a rise in rural violence. Neither theory, nor the experiences of the Asian newly industrialized countries and of Chile suggest that openness implies higher long-term rates of unemployment. However, lower inflation rates may imply more frequent adjustment through quantities that push up unemployment rates during downturns, and hence imply more risk for workers.

In addition, the nature of unemployment may change even if the level stays the same—either a higher propensity to become unemployed or longer unemployment spells may be interpreted as riskier by workers. Neither effect enjoys strong empirical support. Probit analysis using the Argentine and Mexican panel data, for example, does not suggest secular increases in the probability of becoming

unemployed. In both countries, skilled workers in non-tradable or protected sectors show lower probabilities of becoming unemployed, but also more difficulty in being rehired after job loss. Colombia shows more substantial swings in hiring and firing with given movements in GDP, and exit rates out of employment and unemployment rose by 1 percent (Kugler 1999).

Neither Mexican nor Brazilian panel data suggest an increase in duration across the 1990s. However, using aggregate labor flow data, Figures 2.14 and 2.15 suggest a possible rise in duration of unemployment in the interior of Uruguay<sup>10</sup> relative to the early 1990s, and maybe a rise in Montevideo. However, duration is always inversely cor-

related with rising unemployment, which makes it difficult to postulate a permanent movement. Further, in Chile, the duration of unemployment increases during the restructuring period, but then falls essentially to its 1960s levels (Figure 2.16a).<sup>11</sup>

**Changes in Turnover Rates**

More generally, turnover among jobs, while a necessary byproduct of the creative destruction that offers new opportunities to some workers, may also represent more uncertainty for others. As Table 2.5 shows, turnover is higher (or the length of tenure lower) in LAC countries compared to OECD countries. However, turnover depends

FIGURE 2.14  
**Unemployment Rate and Expected Duration, Montevideo**

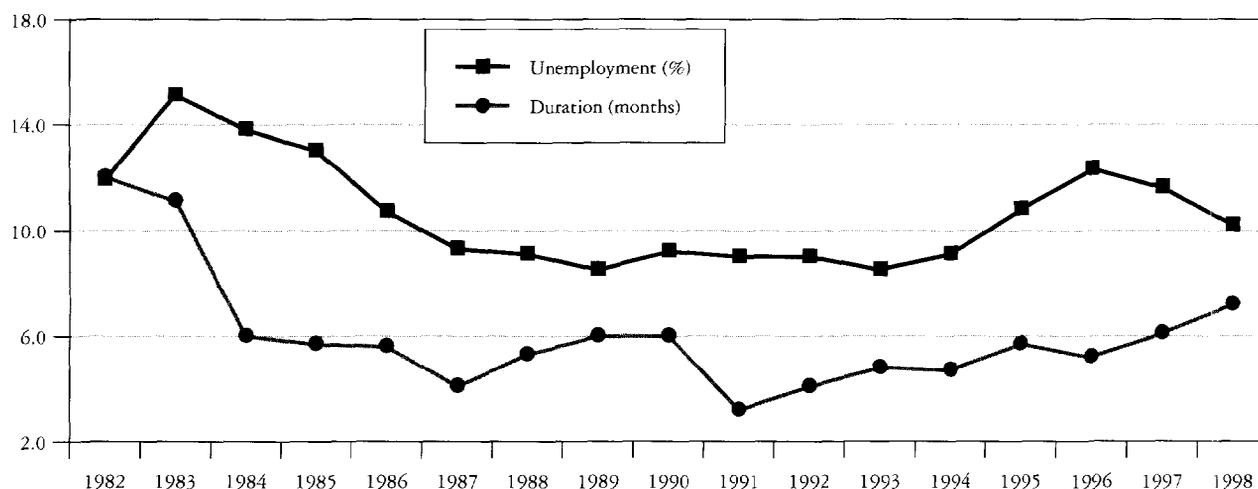


FIGURE 2.15  
**Unemployment Rate and Expected Duration, Interior Uruguay**

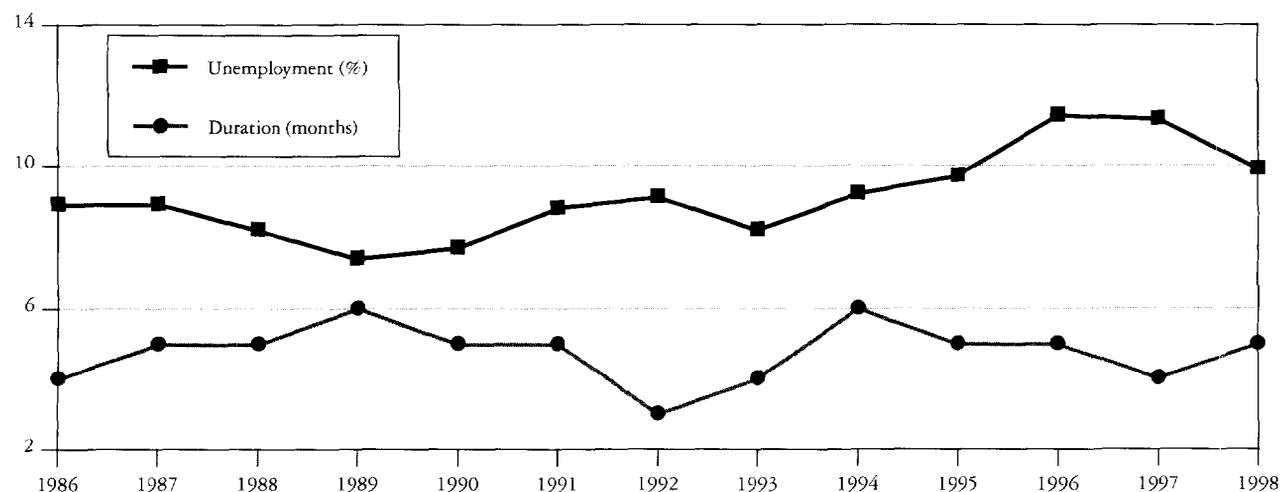
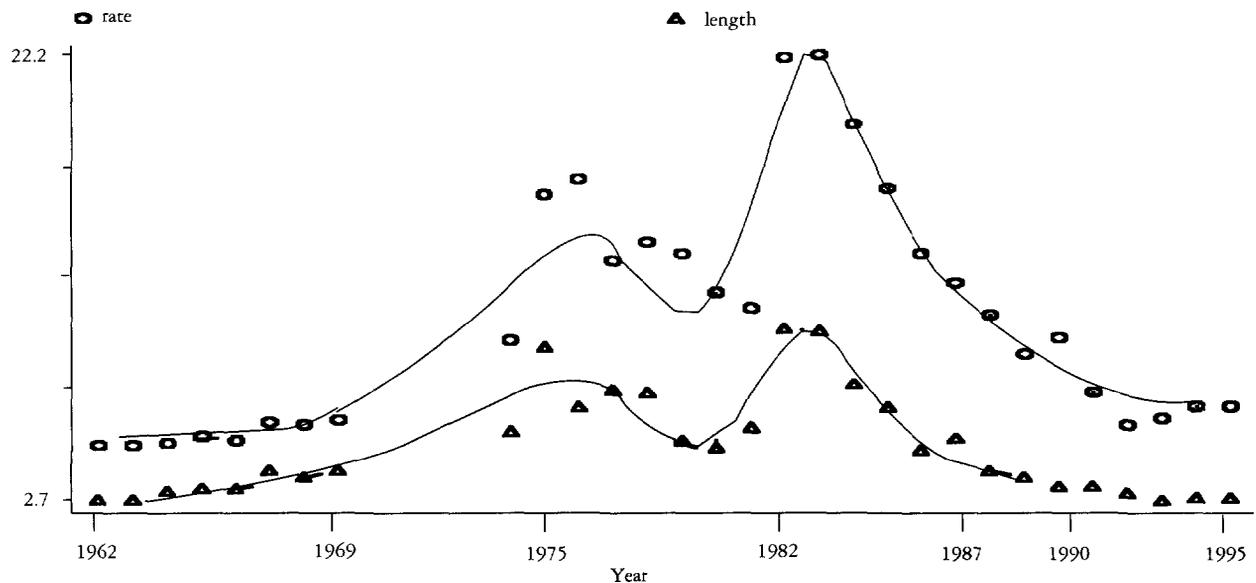


FIGURE 2.16A

**Unemployment Rate and Expected Duration, Greater Santiago**

on education, per capita income, and other demographic/growth variables. Thus, for example, younger workers change jobs more frequently, and lower levels of education can imply lower levels of firm specific capital, and hence higher voluntary separations. In fact, in Mexican enterprise surveys, over 80 percent of separations were reported to be quits, not fires (Maloney 1999; Maloney and Ribeiro 1999). As Figure 2.16b suggests, once we adjust for these factors, the region does not show “conditionally” higher turnover.<sup>12</sup>

However, a finding of increased turnover across the period of liberalization may imply increased risk. But, as in the industrial country literature, there is only mixed evidence that either greater trade liberalization or exposure to technological change leads to greater turnover overall, beyond that discussed on the impact of firing cost reductions mentioned earlier.<sup>13</sup> Figures 2.17 and 2.18 plot the evolution of turnover in the manufacturing sector in Colombia during 1980–91, and Chile during 1980–95, in both countries periods of increased trade protection and then liberalization.<sup>14</sup> Disaggregated into turnover due to birth and death of firms (BD) and turnover due to readjustments by continuing firms (Cont), there is no obvious pattern across time in either country (Fajnzylber, Ribeiro, and Maloney 2000). However, as with involuntary separations in Argentina and

Mexico, tradables industries show higher rates of turnover in Chile (Levensohn 1999). This suggests that, to the degree that trade liberalization expands the share of tradables in total output, it may lead to more churning in the job market.

The aggregate labor flows data do find evidence of decreasing tenure in Uruguay (Figures 2.19 and 2.20). However, these movements again parallel the sharp rise in unemployment, and therefore it is difficult to argue that they are permanent: a sharp reduction in tenure also appeared during the 1973–87 restructuring period in Chile that, by 1995, had largely although not completely reversed (Figure 2.21).

**Rise in Informality**

Even if all the above indicators of stability and employment showed no change, there is a concern that the quality of jobs available has fallen. In particular, the share of workers unprotected by labor legislation or benefits has risen as a share of Latin America’s workforce. International Labour Organisation and Inter-American Development Bank studies suggest that 80 out of 100 jobs created in the 1990s were in the informal sector, and the Economic Commission for Latin America and the Caribbean (ECLAC) reports that the share of informal employment in the workforce rose from 52 percent in 1990 to 58 percent in 1997.

TABLE 2.5

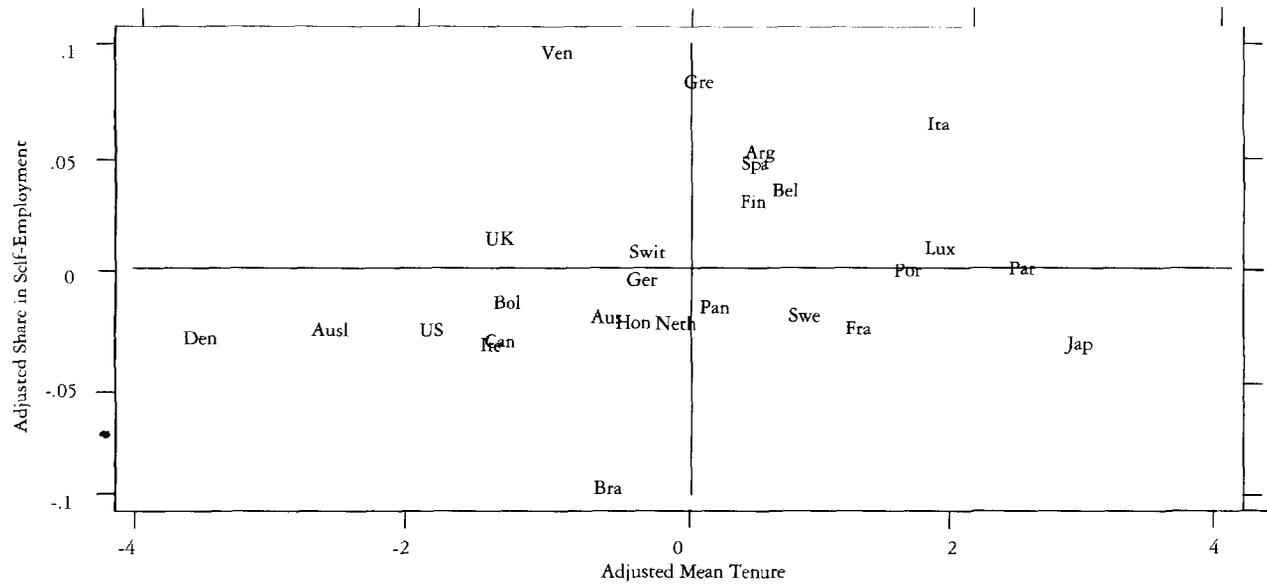
**Labor Turnover, LAC and OECD Countries**

	LAC	OECD
% < 2 Years Seniority (Manufactures)	38.1	24.5
Average Tenure (Manufactures)	7.61	10.5

Source: Maloney (1999b).

FIGURE 2.16B

**Labor Turnover, LAC and OECD Countries**



Source: Maloney 1999b.

FIGURE 2.17

**Evolution of Turnover in Chile, 1980-95**

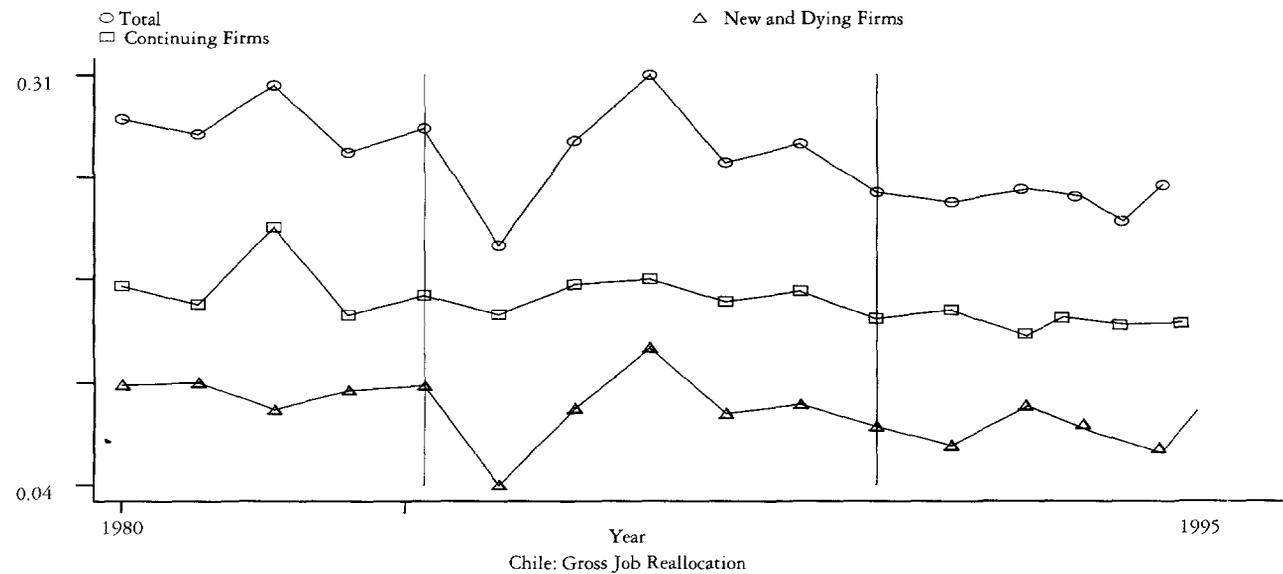
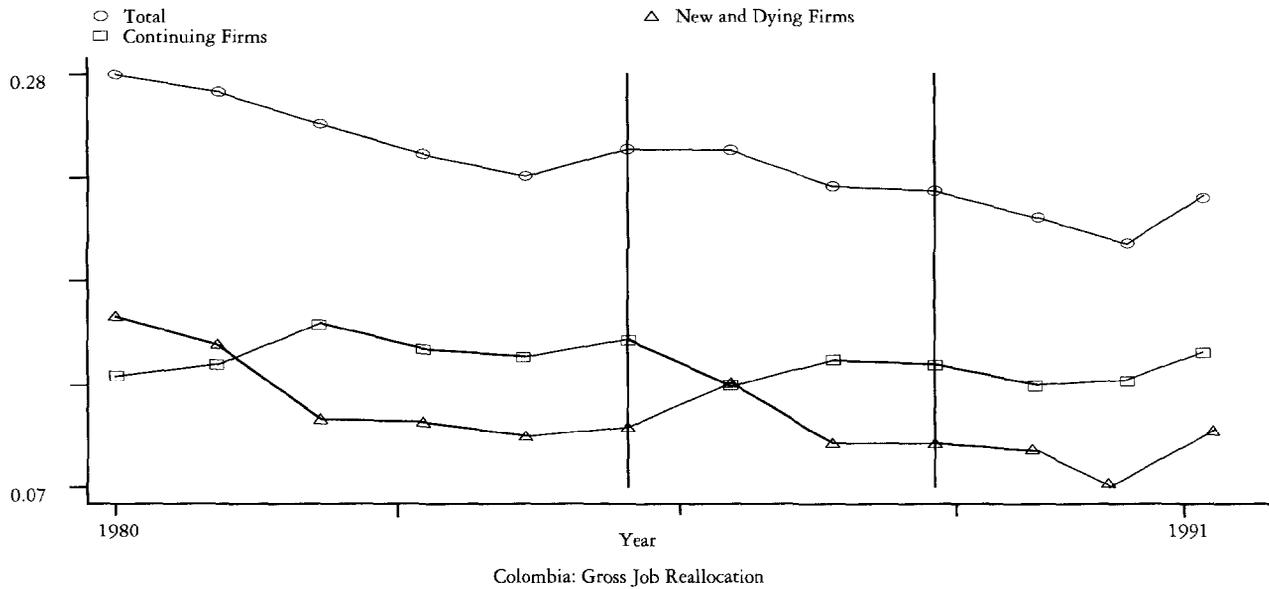


FIGURE 2.18

**Evolution of Turnover in Colombia, 1980-91**



Some subtlety is necessary in interpreting these trends. Recent work at the World Bank suggests that the conventional view of the sector as a residual for displaced formal sector workers is probably incomplete. In many ways informal self-employment behaves more like an unregulated entrepreneurial sector where, as in industrial countries, the risks of entrepreneurship and lack of protection under individual labor codes are voluntarily taken on (see Box 2.3).<sup>15</sup> After economic reforms, for example, informal self-employment as a share of the work force rose procyclically

from 18 percent to 22 percent from 1987 to 1990 in Mexico, and 23 percent to 27 percent from 1988 to 1993 in Argentina, at the same time that the premium self-employment enjoyed over formal salaried work rose from 0 percent to 25 percent and 4 percent to 13 percent, respectively. The expansion of the sector makes sense if we believe that entrepreneurs prefer good times, such as the construction booms in both countries, to start new businesses.<sup>16</sup> This is fully consistent with interview data from both countries that suggest that roughly 70 percent choose

FIGURE 2.19

**Expected Tenure in Current Job, Montevideo (Months)**

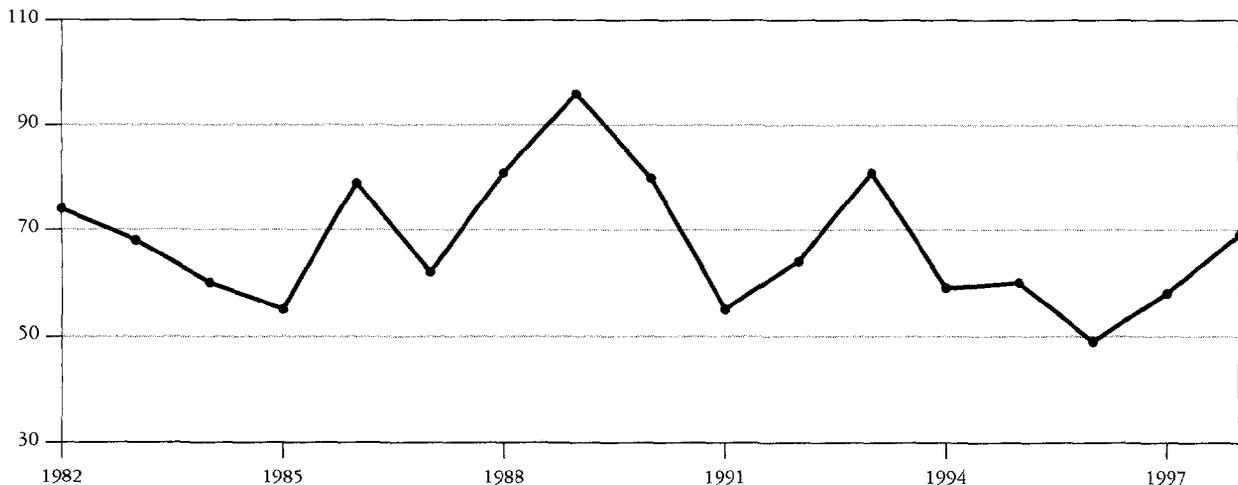


FIGURE 2.20

**Expected Tenure in Current Job, Interior Uruguay (Months)**

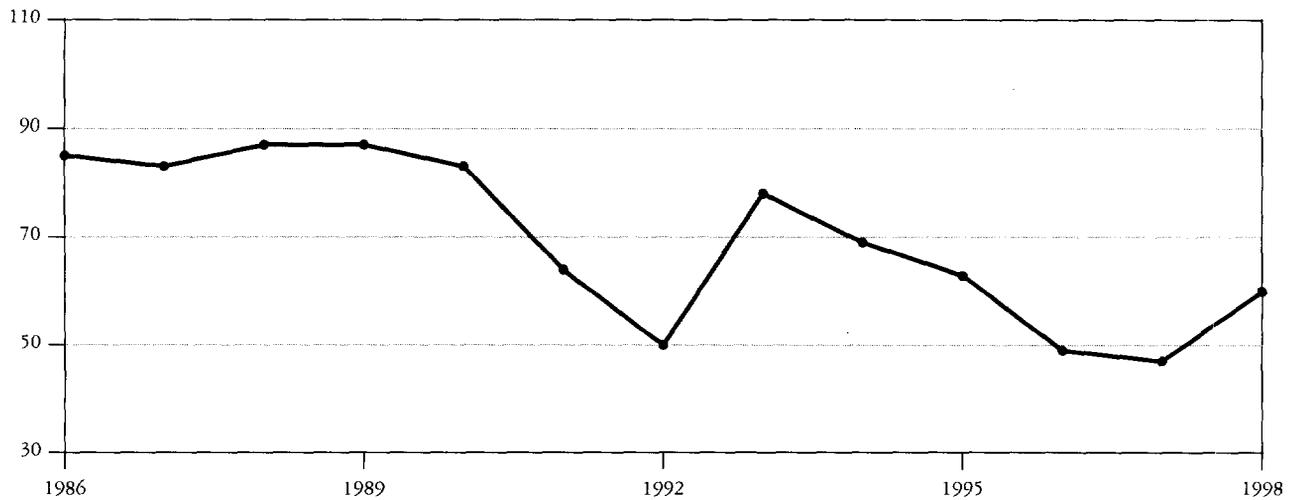
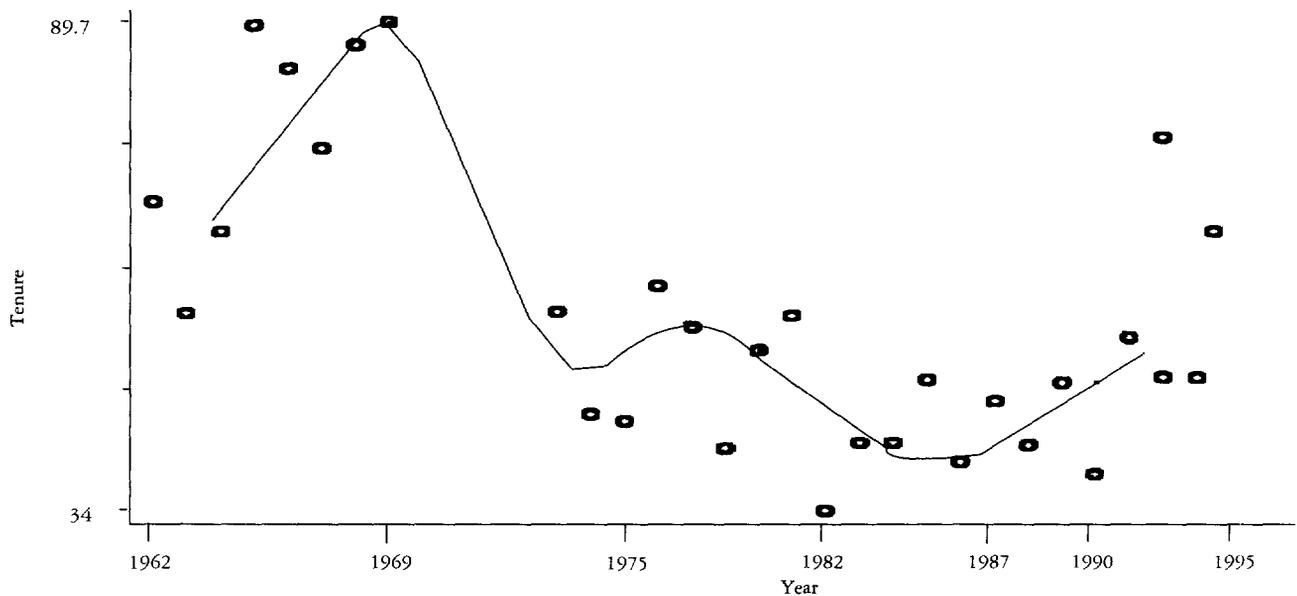


FIGURE 2.21

**Expected Tenure on Job, Greater Santiago**



to be in the sector for reasons of independence and higher earnings, and are not looking for other jobs (Arango and Maloney 2000).

This also suggests that the strong negative relationship between formal sector productivity and the share of the workforce in self-employment (Figure 2.22) is due to the growing attractiveness of salaried jobs relative to self-employment over the course of development. When adjusted for income and other demographic variables, Figure 2.16b again suggests that the LAC region's labor

share in self-employment, most of which is unprotected, is no higher than that of OECD countries or other regions.

But developments in the sector in the later 1990s may also reflect undesirable increases in uncertainty. Informal self-employment shows countercyclical behavior in Uruguay and perhaps in Peru and Mexico after 1992.<sup>17</sup> Further, there is a secular increase in the share of informal salaried workers in Mexico after 1992, and in Argentina and Uruguay after 1995, at the same time that their relative incomes were

BOX 2.3

**Why Might Workers Prefer to be Precarious or Unprotected?**

It is rational for many workers to desire to be “unprotected” if they do not value the provided benefits as much as the implicit tax paid for them. Workers’ benefits are financed either through explicit taxes on workers, or implicitly as lower wages. Inefficiently provided benefits—poor medical services, a social security system seen as bankrupt and unreliable, or an unemployment insurance system substantially different from one workers would choose—provide incentives for workers to work off the books. In his interviews with workers in Guadalajara Mexico, Roberts (1989) finds that, “Many informants cited the deduction made for welfare as a disadvantage of formal employment, particularly since the services they received were poor.” In addition to avoiding nonlabor taxes and regulation, informal workers may be avoiding inefficient “protection” (see Amadeo, Gill, and Neri (2000), and Maloney (1999).

falling. Uruguay also experienced a rise in what workers termed “unstable employment” during the 1990s.

In sum, there is evidence of an increase in uncovered work in the region that may imply a degree of lack of protection for a segment of the workforce. As with falls in job

turnover, only time will tell whether these are permanent increases or related to the low rates of job creation and high rates of unemployment experienced during restructuring.

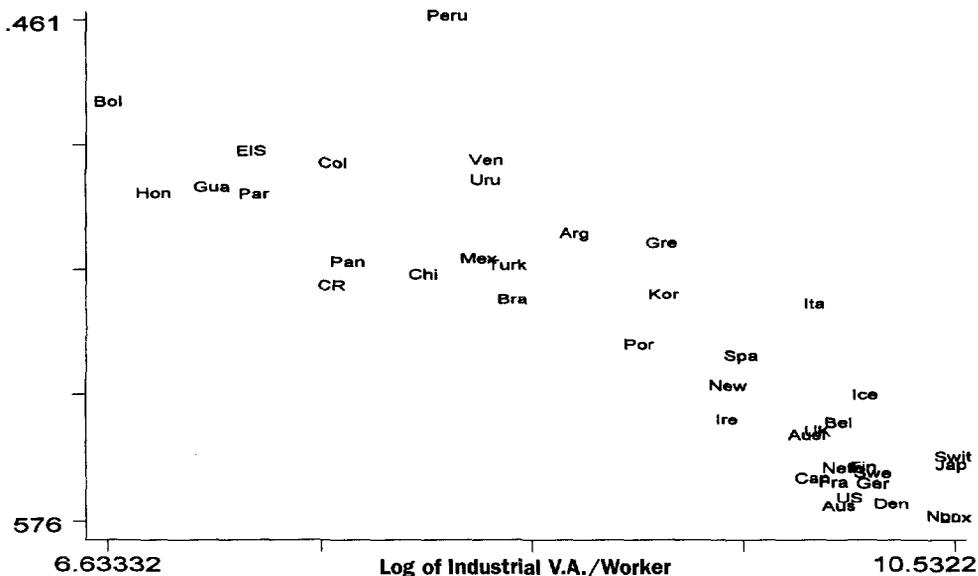
*The Deterioration in Prospects of Older Workers*

Much of the reported dissatisfaction in the region may be due to workers laid off in the restructuring process and who have suffered substantial falls in income, or are experiencing difficulty finding jobs. The privatization process has led to a fall in often privileged jobs in public employment from 15 percent of the labor force in 1990 to 13 percent in 1998. More generally, restructuring of the private sector, both in tradables and nontradables, may have had the same effect. Studies find an increase in subcontracting across the period that could be due to restructuring of firms where they now put their cleaning and security services out to unprotected employees. Mexico, for example, experienced a once-and-for-all 3 percentage point increase in the share of the workforce in subcontracting in the mid-1990s. This was accompanied by a fall in relative incomes that suggests a deterioration in “job quality.”

Older displaced workers may be particularly affected by their inability to requalify themselves or by the unwillingness of firms to employ them. While in both the formal and informal sectors, workers with primary education gained during the 1990s in Argentina, Brazil, and Costa Rica relative to those with more schooling, there are two notable exceptions in the case of Argentina (Arias 1999 in

FIGURE 2.22

**Self-Employment versus Industrial Productivity, OECD and LAC**



Cunningham and Artecona 2000). The first is that of those starting new informal businesses; many are older workers displaced from previous jobs. The second group is older informal sector workers who may have lost their market niche; repairing, for example, domestically produced cars or working in small print shops due to imports of new cars and technologies. In Peru in the 1990s, older workers experienced an increased probability of becoming informal due to reduced restrictions on firing workers, and in both Argentina and Uruguay, older workers suffered from lengthening spells of unemployment.<sup>18</sup> In the bottom income quintile group, the share of unemployed Uruguayan workers over 40 years of age with unemployment duration of over a year rose from 28 percent during 1982–86 to about 40 percent during 1999–2000, a period with similar aggregate unemployment rates. In sum, for a sizable segment of older displaced workers, the loss in value of their human capital may have been substantial.

To a lesser degree, these difficult adjustments for mature workers are likely to become a permanent feature of the postreform landscape in Latin America. In the industrial countries, the rapid pace of innovation is thought to require that workers retrain more than once during their lifetime. The design of training and pension programs will need to reflect this reality.

### *Changes in Income Distribution*

It is also possible that it is not uncertainty per se, but changes in income distribution, that are creating the perception of insecurity. In broad terms, inequality increased during the 1990s (see Table 2.6), though there is a wide range of country experience. Inequality in Brazil and Mexico increased between 1986 and 1989 before leveling off or decreasing until the late 1990s. Chile and Paraguay experienced increasing inequality, although in Chile the low baseline for 1986 may compromise comparability. In Argentina, Colombia, Ecuador, Uruguay, and Venezuela inequality has been relatively stable, with some indexes suggesting an increase, others a decrease. And in Bolivia, the Dominican Republic, and Honduras there is a decrease in inequality over time. Overall, from the aggregate indexes, it would be hard to argue that opening the economy, as in Argentina, Brazil, Colombia, and Mexico, led to a permanent worsening of aggregate inequality.

The ILO and ECLAC find evidence of increased wage dispersion throughout the region, but again, the evidence

is mixed. In Argentina (1988–97) and Brazil (1989–95)—both liberalizing economies—and in Costa Rica (1989–95), the gap between educated and primary school workers declined, especially for women. Further, Chile, the bellwether country for the region, experienced a harsh deterioration in wage dispersion in the late 1980s, but a reversal in the 1990s as returns to higher education fell to historically normal levels.<sup>19</sup>

What has not been carefully studied to date is whether, despite relatively constant inequality measures, there may be more movement of individuals within the distribution. Thus, for example, there may be increased earnings mobility or—looking at the other side of the coin—greater risk, as a more open economy generates job opportunities in new industries and causes other industries to close. Box 2.4 suggests that this probably is not the case in Argentina or Mexico across their periods of trade liberalization: there was little or no trend increase in labor income mobility during the 1990s. What does emerge is that adjustment to crises through unemployment exacerbated by wage rigidity in Argentina leads to greater downward mobility than adjustment through real wages in Mexico made possible by leaving the exchange rate peg. A generalized fall in wages leaves the relative positions of individuals in the income distribution the same, whereas unemployment experienced by a few radically changes their position.

### **Conclusion**

As in other developing regions, macroeconomic volatility is high in LAC, and this translates into volatility in aggregate wage measures and unemployment rates. In most countries in the region growth volatility is lower today than it was in the 1980s, and major labor market aggregates, particularly wage volatility, and to a lesser extent unemployment, appear to follow this trend. The evidence is mixed, however, on whether volatility has become higher today than it was in the relatively normal 1970s, because the 1980s are rightly viewed as an unusually turbulent decade.

What may be a central issue is the slow rate of job growth that has coexisted for relatively long periods with healthy economic growth rates, most clearly in Argentina, Colombia, Mexico, and Uruguay. This phenomenon is associated with lower job tenure, higher unemployment duration, growing levels of informality and insecure jobs, and difficulty of reinsertion of laid-off older workers. Taken together, these developments suggest that employment-

TABLE 2.6

**Income Inequality Measures by Country, 1986–96**

	THEIL	GINI	ATKINSON		THEIL	GINI	ATKINSON
<b>Argentina</b>				<b>Ecuador</b>			
1986	0.51	0.50	0.68	1986	0.47	0.49	0.46
1989	0.68	0.58	0.73	1989	0.36	0.44	0.33
1992	0.48	0.51	0.65	1992	0.48	0.50	0.44
1995	0.52	0.52	0.61	1995	0.53	0.51	0.46
1996	0.53	0.53	0.64	1996	0.50	0.51	0.54
<b>Bolivia</b>				<b>Honduras</b>			
1986	0.56	0.54	0.60	1986	0.64	0.59	0.62
1989	0.76	0.63	0.64	1989	0.8	0.6	0.58
1992	0.49	0.50	0.41	1992	0.63	0.57	0.58
1995	0.58	0.53	0.41	1995	0.67	0.58	0.57
1996	0.52	0.51	0.40	1996	0.62	0.55	0.53
<b>Brazil</b>				<b>Mexico</b>			
1986	0.74	0.59	0.52	1984	0.42	0.47	0.33
1989	0.89	0.64	0.59	1989	0.61	0.52	0.39
1992	0.71	0.59	0.59	1992	0.56	0.53	0.39
1995	0.74	0.61	0.59	1994	0.58	0.53	0.39
1996	0.75	0.61	0.60	1996	0.55	0.52	0.38
<b>Chile</b>				<b>Paraguay</b>			
1986	0.36	0.44	0.30	1986	0.41	0.47	0.33
1989	0.83	0.59	0.46	1989	0.32	0.43	0.27
1992	0.58	0.53	0.43	1992	0.35	0.44	0.34
1995	0.75	0.57	0.47	1995	0.45	0.49	0.35
1996	0.83	0.58	0.47	1996	0.47	0.47	0.32
<b>Colombia</b>				<b>Uruguay</b>			
1986	0.64	0.57	0.68	1981	0.35	0.43	0.29
1989	0.55	0.54	0.54	1989	0.36	0.42	0.27
1992	0.63	0.57	0.67	1992	0.33	0.42	0.27
1995	0.75	0.56	0.57	1995	0.33	0.43	0.29
1996	0.69	0.56	0.58	1996	0.35	0.44	0.30
<b>Dominican Republic</b>				<b>Venezuela</b>			
1986	0.53	0.53	0.66	1986	0.49	0.50	0.57
1989	0.53	0.52	0.43	1989	0.41	0.47	0.51
1992	0.54	0.51	0.41	1992	0.38	0.46	0.49
1995	0.62	0.55	0.62	1995	0.43	0.48	0.40
1996	0.42	0.48	0.35	1996	0.48	0.50	0.47

Source: Wodon (2000).

related uncertainty might have risen in some countries in the region, and this may be a factor in the perceptions of economic insecurity alluded to in Chapter 1. It is difficult to establish whether these and other adverse developments documented here represent a permanent rise in economic risks faced by workers and households, or are merely the transitional costs of the extensive restructuring and stabilization policies implemented in the 1990s.

However, even if these developments are transitory, and if aggregate volatility were to remain unchanged, there is some evidence that the magnitude of labor market risk may have risen—or its form may have changed—for certain groups of workers. The need to adjust to shocks through unemployment rather than through falling real wages in a

low-inflation environment leaves workers exposed to both catastrophic falls in income against which they are not well insured, and downward mobility relative to the rest of society. The growing infeasibility of lifetime labor contracts in the face of global competition, labor market reforms that reduce firing costs, and weakening union power, all have led to higher turnover rates. Workers in more exposed tradables sectors face higher probabilities of displacement, more turnover, and more wage volatility than in the past. However, the data do not suggest that such risks affect the labor force as a whole. In addition, they are likely to be higher in the short term, while the economy completes its adjustment to the increased role of global market forces, than in the long term.

**BOX 2.4**

**Income Mobility and Risk in Two Countries**

Income mobility can be used as a measure of risk which takes into account not only the absolute level of income of individuals, but also their ranking in the overall distribution of income; that is, their relative deprivation. Figures 2.23 and 2.24 give the trend in the Gini index of labor income mobility for adult men in Argentina and Mexico using panel data. The main findings are:

- Labor income mobility as measured by this index is high in both countries, at about 0.3 in Mexico and 0.4 in Argentina. It is higher in Argentina, in part because the length of time separating observations for the individuals in the panels is greater (a semester versus a quarter). In both countries, the level of mobility suggests that traditional one-period measures of inequality are overestimated. The results also suggest that short-term safety nets should help to offset frequent income losses.
- There is no trend toward higher or lower mobility over time. That is, contrary to what popular beliefs would suggest, the results do not suggest a large increase in risk over time.

- Mobility is negatively associated with growth in Argentina, and positively associated with growth in Mexico. The positive correlation in Mexico is as expected in that growth provides opportunities, and thus results in a more dynamic and mobile labor market. The negative correlation in Argentina may be due to the fact that the Argentine labor market adjusts to shocks through quantities (unemployment) rather than prices (real wages). In Mexico, adjustments take place through prices. Employment losses result in more rerankings in the distribution of income, and therefore higher mobility than wage losses. The differences between Argentina and Mexico may alternatively or additionally be due to different exchange rate regimes, with pegged exchange rates leading to employment losses, while flexible exchange rates lead to real wages losses.
- Finally, although this is not shown in Figures 2.23 and 2.24, it can be shown that income mobility is associated with individual-level characteristics such as age (the young are more mobile) and education (the less educated are more mobile, at least in Mexico).

FIGURE 2.23

**Growth and Income Mobility in Argentina**

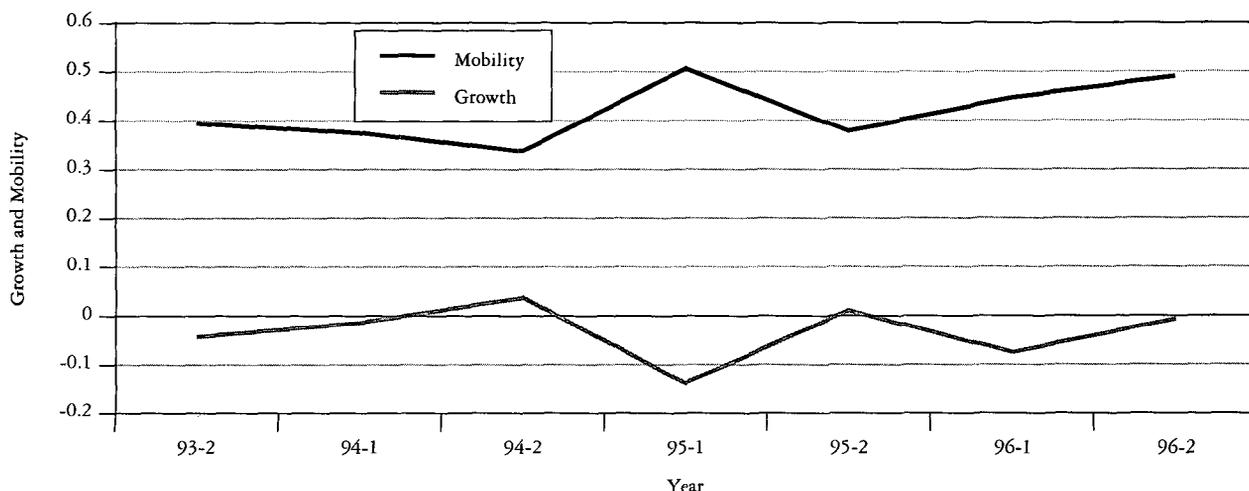
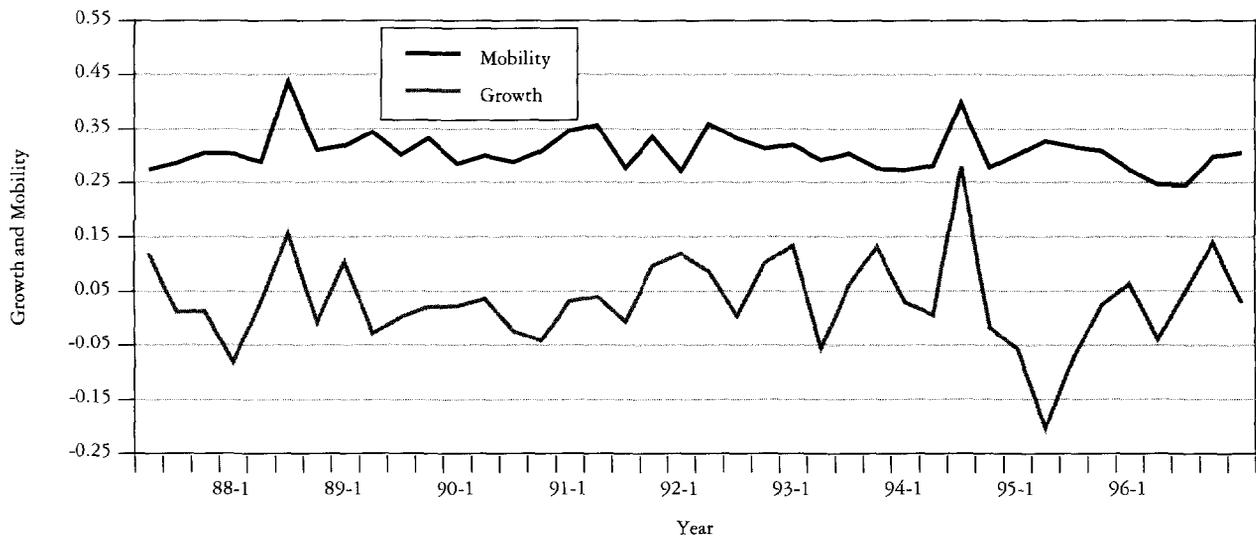


FIGURE 2.24

**Growth and Income Mobility in Mexico**

As Chapter 1 showed, many countries in LAC are facing an incipient recovery, offering enhanced economic opportunities. These may entail increased risks for some groups of workers and households—but the available evidence does not show a generalized increase in economic insecurity in the 1990s. Nevertheless, both the increased economic risks that those groups may be facing, and the still high levels of aggregate volatility in the region, provide ample justification for rethinking and strengthening social protection measures.

**Notes**

1. Gross national product (GNP) is in principle a better measure of national income than GDP. However, we use the latter because of greater availability of data. Using GNP instead would make the contrast between Latin America and other regions even starker, but would force us to work with a smaller country sample. For this reason, we focus on GDP.

2. In Figure 2.1, as well as in other figures below, East Asia shows a large discrepancy between the regional median and the population-weighted value. This reflects the large weight of China in the latter value, and the fact that China experienced extremely large volatility in the 1960s.

3. Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, and Venezuela.

4. For example, the qualitative results are similar when using instead an alternative breakdown guided by developments in the world economy: 1960–72 (pre-oil shock); 1973–81 (oil shocks); 1982–90 (debt crisis and its aftermath); and 1991–present (postdebt crisis and reform period).

5. Fajnzylber and Maloney (2000) find only mixed evidence of an impact of trade variables in Chile, Colombia, and Mexico. Paes de Barros, Corseuil, and Gonzaga (1999) find no impact in Brazil; and Cassoni, Allen, and Labadie (1999) find a *reduction* in long-run elasticities (absolute value) in Uruguay.

6. Cassoni, Allen, and Labadie (1999, 2000) for Uruguay; Paes de Barros and others (1999) for Brazil; Cardenas and Bernal (1999), and Kugler (1999) for Colombia; Saavedra (1999), and Saavedra and Torero (2000) for Peru.

7. In the U.K. and Germany there is evidence of strong effects on labor demand from the falling barriers to direct foreign investment in Europe.

8. Hatzius (2000) finds evidence that the long-run labor demand elasticity may have risen substantially across the period of increased direct foreign investment. Fajnzylber, Ribeiro, and Maloney (1999), however, find limited evidence that the own wage elasticity of firm entry and exit, a component of which is foreign, has increased in Chile and Colombia with liberalization.

9. For Brazil, see Gonzaga (1998); for others, World Bank calculations.

10. Kugler (1999) for Colombia; Cassoni, Allen, and Labadie (2000) in World Bank poverty assessment for Uruguay.

11. Derived by Gill, Haindl, Montenegro, and Sapelli (2000) using Haindl's (1996) methodology for generating labor flows from repeated cross-sectional data.

12. See Maloney (1999). Plot is of residuals of regressions of share of self-employment and job tenure on industrial productivity, share of young people in the work force, the level of education, and the level of interest rates.

13. Dunne, Roberts, and Samuelson (1989) found no strong trend in plant-level turnover in U.S. manufacturing from 1963–82, a period of substantial tariff reduction and technological progress.

Davis, Haltiwanger, and Schuh (1996) found no relationship between U.S. job flows and either import penetration or export share, although Klein, Schuh, and Triest (2000) found that the responsiveness of job flows to the real exchange rate varies with the industries' openness to international trade.

14. Using firm level panel data for Latin America, Roberts and Tybout (1996) found high turnover in Chile, Colombia, and Morocco relative to the U.S. (Davis and Haltiwanger 1992), but no obvious relation with trade reform. Tybout (1996) did find very high exit rates following the Chilean liberalization. However, Roberts (1996) found that in Colombia during 1983–85, average entry and exit actually rose with trade restrictions, compared to the previous period of relative openness.

15. It might also explain why, with the exception of women in Brazil, wage gains of informal workers in Argentina, Brazil, and

Mexico outstripped those of formal sector workers during 1987–96. See Arias (1999), Saavedra (1999), and Cunningham and Artecona (2000).

16. Cassoni, Allen, and Labadie (2000) for Uruguay; and discussions with Jaime Saavedra (Peru).

17. Arias (1999) for Argentina; Saavedra (1998) for Peru; and Cassoni, Allen, and Labadie (1999) for Uruguay.

18. Arias and Saavedra in Cunningham and Artecona (2000); Montenegro (1998) for Chile.

19. These figures are from Wodon (2000). Most measures of income mobility in the literature have been developed independently of the concept of inequality. Yet, there are links between mobility and inequality. Yitzhaki and Wodon (2000) have proposed a Gini index of mobility to provide for an explicit link between inequality and mobility.

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## CHAPTER 3

# Designing Social Policy When People Face Risk: A Conceptual Framework

**A**S ALREADY DISCUSSED, DURING THE 1990S THERE WERE ECONOMIC REFORMS IN LATIN America and the Caribbean which resulted in its rapid integration into world markets. There appears to be growing concern, however, that the social insurance and social protection mechanisms existing in most LAC economies are inadequate to deal with heightened economic insecurity.<sup>1</sup> In the popular press and opinion polls, there are sentiments voiced in favor of expanding the role of government in countering growing economic insecurity through, for example, introduction or expansion of formal unemployment insurance programs, government-sponsored health insurance, and safety nets for those not covered by labor market-related programs. Governments appear to be puzzled about how best to help people manage the risks they face.

In examining these claims more systematically, Chapter 2 found that, in many LAC countries, aggregate risk actually appeared to have *declined* in the 1990s relative to the 1980s, and even relative to the 1970s. Microeconomic risk also shows no clear trend; some indicators of volatility, such as real wage fluctuations, have indeed registered sharp declines. In most countries economic growth has picked up over the last decade.

These developments—falling economic risk and increased wealth, combined with a clamor for greater social insurance—may appear to be contradictory. More careful study using a structured analytical framework, however, shows that this is not so. The economics of insurance indicate that, other things being equal,

the demand for all types of insurance will rise as incomes rise. The overall demand will also rise as the potential loss faced by individuals becomes greater, and the demand for certain types of insurance may rise even when the world becomes less risky. This chapter provides an overview of this approach and illustrates its usefulness in formulating effective but minimalistic social policy strategies to deal with socioeconomic risks.

### **The Need for Sound Analysis**

The main danger of approaching the problem of risk without sound analysis is that it results in serious confusion about the role of government policy.<sup>2</sup> There is considerable analytical work on the economics of insurance, which studies how individuals and families react when faced with risk. This report relies on the work of Ehrlich and Becker

(1972), which provides an elegant treatment of an *individual's* optimal insurance decisions when faced with the options of market insurance, self-insurance, and self protection. This report attempts to systematically derive from solid economic foundations the public policy implications of the potential inability of individuals to insure or protect themselves effectively (see Gill and Ilahi 2000).

The framework used here allows us to address problems that preoccupy policymakers around the world; that is, changes in the demand for insurance due to globalization, economic growth, or increased uncertainty, and the likely effects of social safety nets created in response to these changes. The approach is versatile enough to distinguish between the policy implications of economywide (aggregate) and idiosyncratic (microeconomic) shocks, between *catastrophic* (large and rare) and *noncatastrophic* (small and

frequent) losses, and between *good* and *bad* instruments for insurance and protection against these shocks. The approach yields insights that can—with some additional work—lead to rigorous strategy formulation at the country level.<sup>3</sup>

In this chapter, we illustrate how a theory of individual insurance and self-protection can be extended to identify “market-augmenting” roles of government (Olson 2000). Under one rather strict interpretation, the public policy analogs of the individual’s insurance and self-protection problem are *social insurance* (government actions to augment market insurance and self-insurance) and *social protection* (government actions to augment self-protection).

### Approach and Implications

A systematic approach to social policy formulation should begin by understanding how *individuals* or families behave when confronted with risk. Fundamentally, there are two actions that an individual or family can take: *insure*, that is, transfer incomes from good to bad states; and *self-protect*, that is, lower the likelihood that the bad state occurs. Neither is without cost. A comprehensive framework would allow for all types of insurance and self-protection decisions. Any constraints on individuals taking these actions effectively would be of social policy interest, and the problem then becomes one of deciding whether and how governments can help remove these constraints.

In addition to clarifying basic concepts, a good analytical framework for risk management should have three attributes. First, it should cover all the major instruments for managing risk and be sensitive to the relationships between these instruments. Second, it should afford guidance on how individual efforts to insure and protect against risk can be improved; that is, the circumstances that provide cause for governments to intervene. Third, working through the structured framework should formalize existing thinking about the subject of risk but—even more important—yield insights additional to those that we began with.

The “comprehensive insurance” approach is especially well suited for these goals. As formalized by Ehrlich and Becker (1972), the insurance problem of the individual is characterized as one of determining the levels of expenditure on market insurance, self-insurance, and self-protection (see Box 3.1). The premise is that individuals can either insure against loss or lower the probability of the

loss. Both involve expenditures. Market and self-insurance serve to transfer income from the good to the bad state of the world, but do not reduce the *likelihood* that these transfers will be required. Self-protection, on the other hand, only reduces the *probability* of the bad state of the world, doing nothing to the size of the loss in the event it occurs anyway. The critical difference between market insurance and self-insurance is that the former uses pooling to spread risk across individuals.

Individuals or families attempt to smooth consumption over the good and bad states of the world. If both market insurance and self-insurance opportunities are present, the individual sees them as substitutes (see Box 3.2). The provision of market insurance likely will reduce *self-insurance*; thus, for example, the availability of unemployment insurance will reduce precautionary saving. The problem of “moral hazard” results if the purchase of market insurance reduces *self-protection*; thus, for example, if unemployment insurance is available, people may become more likely to shirk.<sup>4</sup> The most common outcome if moral hazard is acute is that private insurance markets may not exist, or may involve prohibitively high premiums.

The key features of and insights obtained from this framework are:

- Levels of risk, incomes, and prices or costs of risk-management instruments all are important in determining how much individuals spend on insurance and protection.
- Market insurance and self-insurance are substitutes, in that greater availability or lower prices of one lead to reduced expenditures on the other. Self-insurance and self-protection are also substitutes.
- Market insurance and self-protection may be substitutes or complements; a lower price of self-protection increases self-protection and lowers risks, hence reducing demand for both insurance and self-insurance. In overall equilibrium, however, lower risks may also reduce the price of market insurance and, thus, lead to an increase in the demand for market insurance.
- An increase in the difference between crisis and non-crisis income levels (the “income at risk”) could lead to an increase in demand for insurance. Thus, individuals may be richer (in that their expected incomes are higher) but may still demand more insurance.

## BOX 3.1

**Market Insurance, Self-Insurance, and Self-Protection: Distinguishing Features and Examples**

*Market insurance* transfers income or resources from a good state to bad but does not change probabilities of good and bad states, it is available at an observable (market) price, and always involves pooling of risks.

*Self-insurance*, like market insurance, also transfers resources from a good state to bad, and does not change probabilities of good and bad states. It differs from market insurance in two ways: it has an imputed, not actual, price (called a “shadow price” by economists), and it does not involve risk-pooling.

*Self-protection* is different from both market and self-insurance in that it does not transfer resources from a good state to bad, but lowers the probability of the bad state.

It is often difficult to determine whether a decision should be classified as self-insurance or self-protection, since many instruments do both. It can sometimes be difficult even to classify informal insurance measures as market insurance or self-insurance. In such cases, the key distinguishing feature should be the absence or existence of pooling.

Two examples may help clarify these concepts. An individual, faced with the likelihood of damage to his car in an accident, may purchase automobile insurance (market insurance); he may buy a stronger—hence more expensive but otherwise identical—car (self-insurance); or he may drive more cautiously, even though this increases travel time (self-protection). Again, faced with a higher probability of being unemployed, a person may try to purchase market insurance, may self-insure by increasing savings over and above what she saves for relatively certain needs such as education of children and retirement, or engage in self-protection by studying to qualify for a profession in which unemployment rates are lower.

Note, however, that all three types of actions involve costs: market insurance requires a premium to be paid; self-insurance implies costs (because, for example, a stronger car costs more whether or not the accident occurs); and self-protection involves monetary or other costs (for example, schooling involves tuition fees, and driving slowly or attending classes implies less time for other activities).

- Relatively rare (and large) losses may be better insured through market insurance, and relatively frequent (and moderate) losses through self-insurance. Thus, for example, as individuals face lower probabilities of becoming unemployed, they may demand less insurance overall, but may also choose to have relatively more market insurance and less self-insurance. At the level of the aggregate economy, as countries improve their economic management and regulations and reduce the likelihood of crises, there will be a shift away from self-insurance (for example, fiscal stabilization funds) toward market insurance (contingent credit arrangements with world financial markets or the international financial institutions).
- Individuals enjoy higher welfare when all three instruments (market insurance, self-insurance, and self-protection) are available than when one is missing. This can be best explained by two examples. First, consider the case where market insurance and

self-protection are available but no self-insurance is possible. The individual would be worse off in this case than where all three are available. The reason is that for losses that are not rare, the individual would still have to use market insurance. However, we know from the framework that market insurance is a less-preferred instrument than self-insurance for losses that occur frequently. Second, suppose that market insurance and self-insurance are available, but it is not possible to invest in self-protection. Individuals who are relatively efficient at self-protection would be worse off because they cannot reduce the premium paid for market insurance by reducing the risk they face through expenditures on self-protection. (See Box 3.3 for a fuller discussion of these issues.)

**Advantages of a Disciplined Approach**

There are three advantages of a disciplined, organized, comprehensive approach to the problem of risk. First, it

BOX 3.2

**A Theory of Comprehensive Insurance**

In the Ehrlich and Becker (1972) characterization, there are two states of the world: bad (state 0) and good (state 1). The bad state occurs with probability  $p$ , and the good state with probability  $1-p$ . The endowed incomes (and hence the consumption) of the individual in the two states are, respectively,  $I_0^e$  and  $I_1^e$ . Thus, the expected utility of the individual is

$$U = (1-p)U(I_1^e) + pU(I_0^e) \tag{1}$$

However, faced with risk, the individual may purchase market insurance that involves paying a premium for  $\pi$  for every peso of coverage, and paying  $s$  pesos if the bad state occurs. The individual also spends resources on self-insurance ( $c$ ), and self-protection ( $r$ ) to smooth income over states. Each peso spent on self-insurance reduces the loss in the bad state according to a "loss function"  $L(L^e, c)$ , where  $L^e$  is the difference between endowed incomes in the two states. Each peso allocated to self-protection lowers the probability of the bad state according to the function  $p(r)$ . Just as a lower  $\pi$  allows the individual to buy more market insurance with a given budget, increased marginal productivity of self-insurance and self-protection allows the individual to get more at a given cost.

The individual chooses  $s$ ,  $c$ , and  $r$  to maximize the expected utility function before the state of the world is revealed (that is, the framework is *ex ante*):

$$U = [1 - p(p^e, r)]U[I_1^e - c - \pi s - r] + p(p^e, r)U[I_1^e - c + s - L(L^e, c) - r] \tag{2}$$

In the absence of market insurance,  $s$  is constrained to zero, and the individual's choice is restricted to  $c$  and  $r$ . Analogously, the model can accommodate situations where self-insurance or self-protection are not possible, that is, where  $c=0$  or  $r=0$ , respectively.

The individual chooses the levels of market insurance ( $s^*$ ) and self-insurance ( $c^*$ ) where the price of market insurance equals the shadow price of self-insurance, and they both equal the probability-weighted marginal rate

of substitution:

$$\pi = \frac{-1}{L'(c^*) + 1} = \frac{pU'_0(c^*, s^*, r^*)}{(1-p)U'_1(c^*, s^*, r^*)} \tag{3}$$

Expenditures on self-protection reduce the probability of the bad state. These expenditures are optimized at level  $r^*$  where the marginal gain from reducing the probability of loss equals the marginal loss in utility from having to pay  $r^*$  for it in each period:

$$-p'(r^*)[U_1(c^*, s^*, r^*) - U_0(c^*, s^*, r^*)] = [1 - p(r^*)]U'_1(c^*, s^*, r^*) + p(r^*)U'_0(c^*, s^*, r^*) \tag{4}$$

There are three main results of this characterization of the individual's risk management decisions within a comprehensive insurance model, which would be absent in treatments that either take a piecemeal approach (for example, examine only market insurance) or neglect to include prices. First, market insurance and self-insurance are substitutes; for example, an increase in the price of market insurance lowers the demand for it and increases the demand for self-insurance. Second, the individual is likely to prefer market insurance over self-insurance for insuring relatively rare losses because the "shadow price" of self-insurance does not fall as the probability of loss decreases, while the price of market insurance does. Third, market insurance does not inevitably cause "moral hazard," that is, reduce self-protection, because of two countervailing effects. On the one hand, market insurance reduces the *prospective loss*, and therefore, creates a tendency toward lower self-protection. On the other hand, by reducing the *probability of the bad state*, self-protection makes market insurance cheaper and, hence, increases the tendency to use the market for insurance.

Since the 1970s the literature on insurance has concentrated mostly on the problem of moral hazard. For social policy, however, the *comprehensive insurance* aspects of the theory—which have been largely neglected—may be as or even more relevant.

places individuals, households, and firms—not government—at the center and provides rationales for government action that are not ad hoc but are based on the

absence of well-functioning markets (for example, prohibitively high prices) or the inability of some to use these instruments even at relatively low prices (for example,

## BOX 3.3

**The Framework in "Real Life" Situations***Increased Risk: Heightened Economic Insecurity*

Consider the case where only the probability of the individual being in the bad state ( $p$ ) goes up. This may characterize the concerns in Latin America and East Asia, where it is believed that there is now greater economic insecurity. The effect would be to increase the demand for overall insurance in absolute terms, but also to change the mix between market insurance, self-insurance, and self-protection. Following our framework, an increase in  $p$  results in a relative decline in market insurance, no relative change in self-protection, and an increase in self-insurance. This exercise shows the importance of prices: what happens to the demand for market insurance and self-insurance depends on whether the market price of insurance adjusts to the increase in probability. If it does, then the optimal level of market insurance would be lower and self-insurance higher. But if the price does not increase to reflect increases in  $p$ , an "excess demand" for market insurance results, and demand for self-insurance does not increase as much.

*Increased Expected Income During Crises: Provision of Safety Nets*

Suppose that the expected income in the bad state increases because of, for example, a guarantee by the government that everyone will get a minimum income in the bad state which is higher than  $I_o^e$ . This reduces the demand for market insurance because the prospective loss decreases, expenditures on self-protection fall for the same reason, but its effect on self-insurance is uncertain because the fall in self-insurance due to the reduced tendency to insure may be offset by an increase in self-insurance because it is preferred over market insurance as losses become less "catastrophic." This example illustrates that individuals will not necessarily reduce self-insurance when such a "safety net" is available, but it is more likely that they will reduce self-protection. Thus, the provision of a public works program will not necessarily reduce precautionary saving by individuals, but would lower the effort to reduce the probability of being in the bad state by, for example, reducing investments in health and work skills.

*Proportional Increases in Incomes in all States: Economic Growth*

Economic growth can be simplistically characterized by a proportionate increase in  $I^g$  and  $I_o^e$ ; hence, the prospective loss rises in the same proportion. Under quite general conditions, the demand for market insurance and self-protection will increase. This example illustrates that—somewhat counterintuitively—an improvement in wealth where incomes in both states go up proportionally will result in an increase in the demand for insurance. Better income prospects in the good state will have the same effect. The environment not becoming riskier and economic growth taking place—an unmistakably positive combination—should result in an increased demand for insurance, often associated with matters becoming worse.

*Increases in Noncrisis Income Levels and Likelihood of Crises: Globalization*

Finally, consider the case of "globalization" as it is commonly stereotyped—when prospective income in the good state increases (viewed somewhat pessimistically, losses become more catastrophic), but so does the probability of the bad state (losses become more frequent)—that is, both  $I^g$  and  $p$  increase. Assuming that the price of insurance adjusts to changes in prospective probabilities, the outcome for market insurance would be ambiguous because increases in probabilities of crises weakens the tendency toward market insurance, but increases in income in good times strengthens it. The effect on self-protection would be ambiguous, but probably positive. This example illustrates the difficulty of predicting how complex phenomena such as globalization affect the demand for insurance. Note also that it is more likely—given the findings of Chapter 2—that globalization implies that  $p$  is no higher than before (or even lower), but losses are larger when crises in fact do occur. Viewed this way, globalization is essentially the opposite of the "safety nets" example given above.

poverty or low budgets). The analysis also yields not just a menu of policies, but also some rules for establishing priorities that are necessary for strategy formulation. Second, the relationships between instruments to deal with risk are not arbitrary, but are derived from structured analysis, yielding clearer insights into how changes in the economic environment affect the demand for insurance. Third, the approach provides a logical framework for organizing the tools of social risk management and their likely effects.

### *Clearer Rationale for Government Action*

With an approach that is individual-centered, the need for government arises only where markets fail and social policy formulation is based on minimalistic and not ad hoc principles. The role of government here—driven by efficiency concerns in an environment of risk—is to augment markets; that is, to facilitate insurance and self-protection by providing instruments if markets for them do not exist (for example, in the case of unemployment insurance), or through interventions to improve the quality of instruments if individuals are using inferior modes of insurance (for example, savings in the form of one or two assets instead of a diversified portfolio). Following this line of reasoning:

- “Social insurance” can be viewed as a policy to augment market insurance. Failure of markets to efficiently insure because some risks are uninsurable or cannot be diversified, for example, or because moral hazard problems are insurmountable for private insurers, creates the rationale for social insurance policies. Government actions that help individuals and families deal better with risk by facilitating transfers from good states to bad through risk-pooling would be classified as social insurance. This would include income-support programs for the unemployed (such as unemployment insurance) and disability insurance.
- Mandated savings schemes are policies to augment self-insurance. The failure of markets to provide “good” instruments for self-insurance is one rationale for governments to intervene. Moral hazard problems, such as the failure to save enough for retirement in anticipation of a government bailout of the old-age poor, provide another justification for compulsory saving. Again, the feature that distinguishes these policies from “social insurance” of the type

described above is the lack of pooling. This category would include mandatory saving schemes such as employee provident funds in Singapore and Malaysia, and individual severance funds in countries such as Brazil and Colombia.

- “Social protection” can be viewed as policies to augment self-protection. The failure of markets to facilitate self-protection by individuals or families that is optimal provides the rationale for government to intervene. The feature that distinguishes these interventions from the above two sets of policies is that the aim of social protection policies would be to reduce the probability of occurrence of the loss, and not simply insure against it. Policies to facilitate the acquisition of human capital (better health, education, and training) may constitute the core of social protection.

### *Useful Insights*

The framework yields useful insights into questions central to determining the scope and design of government policy. Three sets of implications are especially important.

*Welfare is higher when more and better options for insurance are available to individuals.* As discussed above, the availability of all three “insurance” instruments (market insurance, self-insurance, and self-protection) will improve welfare over a situation where one or more instruments are not available. For example, making available income support programs for the unemployed is likely to be welfare-improving even when there are efficiency losses (though the magnitude of such losses can be reduced using adequate instruments—see below). Making market insurance available would lower self-insurance, but would still result in welfare improvements.

*Moral hazard may not be an insurmountable problem if social insurance mimics the market as much as possible.* The introduction of market insurance is usually thought to lower self-protection and raise the probability of occurrence of the bad state (“moral hazard”), but our framework and common sense indicate that much can be done to limit this adverse side effect. For example, unemployment insurance that successfully discriminates among workers by their risk factors (for example, using information on employment history, skill, or sector of occupation to set insurance premiums) can lower this negative relationship between market insurance and self-protection,

and even reverse it under certain circumstances. Therefore, the appropriate policy question may not be whether to provide unemployment insurance—especially as governments implement reforms that make these risks less frequent—but how to best design it and to determine how governments can most effectively develop the capacity to implement it.

*Financial market strengthening should be a central component of social policy, because it can augment self-insurance, market insurance, and self-protection.* Financial sector strengthening is one of the most important—but relatively underemphasized—policies for balanced, market-augmenting social risk management. There are four reasons.

First, financial markets facilitate risk-sharing. In well-developed financial markets, individuals and firms can buy and sell assets with different risk profiles, diversifying their sources of income, and thus reducing their exposure to adverse shocks affecting their particular industry or firm. Financial markets also provide the most efficient channel to promptly redirect resources toward those firms and sectors temporarily hit by adverse disturbances, easing their impact on income, employment, and welfare.

Second, self-insurance involves precautionary saving. Without a strong financial sector, the poor may end up saving through “bad” instruments such as cattle and land, which are highly illiquid and the prices of which may fall sharply if the bad state of the world (“crisis”) occurs.<sup>5</sup> Financial sector strengthening can encourage the use of “good” instruments by savers; this is especially crucial where social insurance mechanisms such as unemployment benefits are difficult to establish.

Third, financial sector strengthening can result in lowering the probability of a crisis occurring, thus augmenting self-protection efforts by individuals and families. In the countries of East Asia where the financial sector weaknesses were a primary cause of the crises in the 1990s, this self-protection augmenting role of financial sector strengthening is especially important.<sup>6</sup>

Fourth, financial sector strengthening will help create (more efficient) markets for insurance against catastrophic losses such as those due to poor health or natural disasters. Thus, private financial markets can provide life insurance, disability insurance instruments, and insurance against natural disasters, and can even contribute to insuring against macroeconomic crises.

### *A Powerful Tool for Organization*

The framework described above also helps in obtaining a structured view of government policies and programs. The policies and programs discussed in Chapters 4 to 7 should be viewed as government-sponsored actions to assist individuals and families attain insurance that is as comprehensive as possible under the circumstances that exist in LAC countries. Table 3.1 shows how some of these policies can be classified according to whether they help individuals attain more efficient insurance (through pooling), self-insurance, or self-protection.

### **Conclusion**

This chapter proposes a relatively simple approach to the problem of risk, both in terms of individual decisionmaking and the possible role of government. The approach is quite general in that it includes the three major options available to individuals for dealing with risk: purchasing market insurance, self-insuring, and taking steps to lower the probability of incurring losses (self-protecting). The role of government policy arises when some markets are missing and individuals cannot reach optimal levels of insurance and self-protection. The government can augment individual or household efforts by providing market-type insurance where markets fail (for example, unemployment insurance), by facilitating individual insurance efforts through more efficient forms of self-insurance (for example, financial sector development and regulation), or by assisting or subsidizing self-protection (for example, public education and health services).

Using this approach, the chapter traced the implications of changes in the environment, such as increased risk or increased wealth, on the demand for market insurance, self-insurance, and self-protection. Combined with the possibility that markets are missing or do not operate efficiently, these findings suggest how the demand for social insurance and social protection may arise when such changes take place as countries grow or face more or less risky external environments. Some of the findings were expected. Others run counter to widely held views. Three of these findings deserve mention.

First, the demand for social insurance can increase even when the environment becomes *less* risky and countries become *more* prosperous. This finding is surprising when market- or government-provided insurance is analyzed in isolation, but is a natural outcome of analysis using a more

TABLE 3.1

**Government Policies and Their Effect on Individual Comprehensive Insurance**

	MARKET INSURANCE	SELF-INSURANCE	SELF-PROTECTION	
			REDUCING MICRO RISK	REDUCING AGGREGATE RISK
Economywide Risks				
Stable macro policies				√
Fiscal stabilization funds <sup>a</sup>				√
Foreign reserve holdings <sup>a</sup>				√
Financial sector reform	√	√		√
Deposit insurance		√		
Risk of Becoming Unemployed				
Unemployment insurance	√			
Mandated severance	√			
Individual severance funds		√		
Public works programs	√			
Training programs <sup>b</sup>	√		√	
Risk of Becoming Poor				
Cash transfers	√			
Conditional cash transfers <sup>c</sup>	√		√	
Education reform			√	
Health insurance	√		√	
Financial sector reform		√		

a. Policies that augment self-protection for individuals may be self-insurance or market insurance at the *country* level. For example, fiscal stabilization funds are self-insurance (because they transfer resources from good states to bad) for countries, though they qualify as self-protection augmentation here (because they reduce aggregate risk for individuals). Access to International Monetary Fund credit during bad times is market insurance for countries (international risk-pooling), but is again self-protection augmentation at the individual level.

b. Although in theory training programs for the unemployed involve an element of self-protection, this element appears modest according to the available evidence, so that these programs operate mainly as insurance mechanisms.

c. Examples include *Bolsa Escola* in Brazil and *Progreso* in Mexico.

comprehensive (and more realistic) framework where individuals self-insure and self-protect.

Second, ideally social policy should aim to facilitate all three types of actions that individuals take when confronted with risk. This finding should help reassess the pros and cons of policies such as income support programs for the unemployed (and among them, unemployment insurance) in developing countries, focusing the debate on their likely efficiency cost and the capacity of governments to contain it.

Third, the role of policies in facilitating precautionary saving in financial assets (such as financial sector strengthening) has been underemphasized as a *social* policy instrument. This finding is a natural outcome of an approach that begins with the individual and derives the problem of government as a residual, but can easily be missed by analyses where this order is reversed.

## Notes

1. This chapter is based on Gill and Ilahi (2000), a background paper commissioned for this report.

2. See Holzmann and Jorgensen (1999) for an excellent effort to reduce this confusion.

3. The framework also lends itself to analysis of risk reduction policies at the multilateral level, and the possible role of international agencies such as the World Bank and International Monetary Fund.

4. The presence of moral hazard can prevent private insurance markets from emerging for some risks, such as business failures or loss of employment. Ehrlich and Becker (1972) reason that moral hazard is not inevitable, because in one aspect market insurance and self-protection are complements—increased self-protection increases the marginal product of market insurance. That is, if self-protection or a lowered probability of the bad state is rewarded by market insurance (in the form of lower premiums), market insurance and self-protection can indeed become complements, and moral hazard could be eliminated.

5. It also follows that illiquidity of savers' assets hampers the reallocation of financial resources toward sound firms in distress in times of crisis, which augments the disruptive effects of shocks.

6. The combination of weak interlinkages with international capital markets and lack of depth in Latin America's domestic capital markets represent a source of adverse shocks to the region (in our framework, a higher probability of the bad state,  $p$ ), and an amplification mechanism for other shocks.

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## CHAPTER 4

# Macroeconomic Volatility in Latin America and the Caribbean: Causes and Remedies

### Sources of Aggregate Volatility in LAC

**A**GGREGATE VOLATILITY IN LATIN AMERICA AND THE CARIBBEAN REFLECTS TWO MAIN FORCES: real and financial external shocks and macroeconomic policy instability.<sup>1</sup>

#### *External Shocks*

LAC is subject to large external disturbances from world goods and financial markets. These can be broadly classified as volatility in the terms of trade and in international capital flows. Figure 4.1 graphs the standard deviation of the rate of growth of the terms of trade across world regions over the last four decades. The figure shows that over the last two decades, LAC suffered terms of trade disturbances that were much greater than those affecting industrial economies and the East Asian miracle countries, and on par with those experienced by South Asia and the Middle East and North Africa.

A key factor behind the large terms of trade variability is the high share of a few primary commodities—such as oil (Colombia, Ecuador, Mexico, Trinidad and Tobago, and Venezuela) and metals (Bolivia and Chile)—in the total exports of many of the region's economies. World commodity prices are highly volatile, and this volatility translates into large terms of trade fluctuations for commodity-exporting countries. Figure 4.2 shows the share of the four most important commodities<sup>2</sup> in the total exports of selected LAC countries in 1995 and

1999 (or the latest available year). Export concentration remains high in a number of countries, although a few—notably Mexico—have succeeded in reducing it over the last decade.

Terms of trade volatility was particularly high during the 1970s (largely reflecting the first oil crisis), and declined somewhat in the 1980s and more so in the 1990s, both in the LAC region and other world regions. The economic impact of terms of trade fluctuations, however, is determined not only by their magnitude, but also by the degree of openness to international trade of the economies. Like other parts of the world, LAC has considerably increased its openness to global trade over time, and this trend—unless matched by a parallel increase in diversification of trade—could have raised the exposure of the region's economies to external trade disturbances.

This factor can be taken into consideration by looking at the volatility of terms of trade shocks, a concept that reflects both the changes in the terms of trade and the degree of openness of the economy.<sup>3</sup> Figure 4.3 offers a comparative perspective across regions and decades on the volatility of terms of trade shocks. The pattern that emerges is similar to that in Figure 4.1, although Latin America now ranks higher than South Asia due to greater openness to trade.

Table 4.1 shows the standard deviation of terms of trade shocks for the major LAC economies over the last four decades.<sup>4</sup> The table shows that this magnitude is generally higher in smaller commodity-exporting economies (for example, the Dominican Republic, Jamaica, Nicaragua, and Trinidad and Tobago). By this measure, volatility declined since the 1970s in a majority of economies, although for some, such as the Dominican Republic, Jamaica, Paraguay,

FIGURE 4.1

**Volatility in Terms of Trade Growth**  
(Regional Medians)

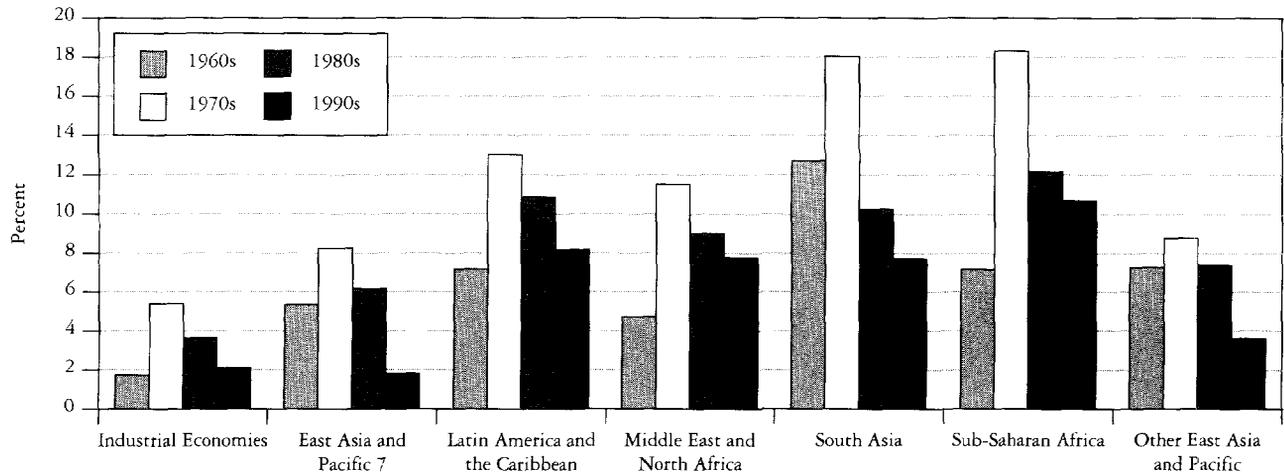


FIGURE 4.2

**Share in Total Exports of Four Most Important Commodities**  
(Selected LAC Countries)

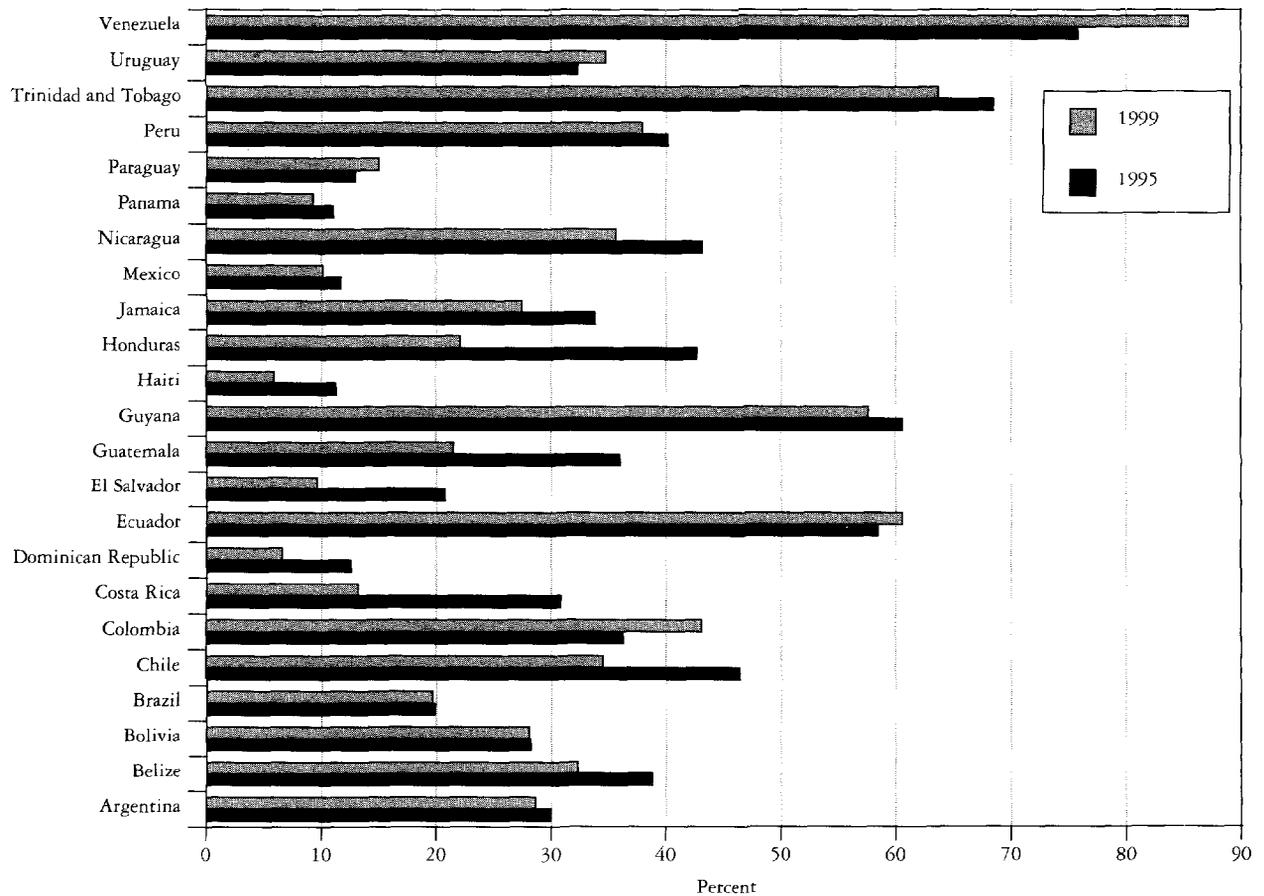
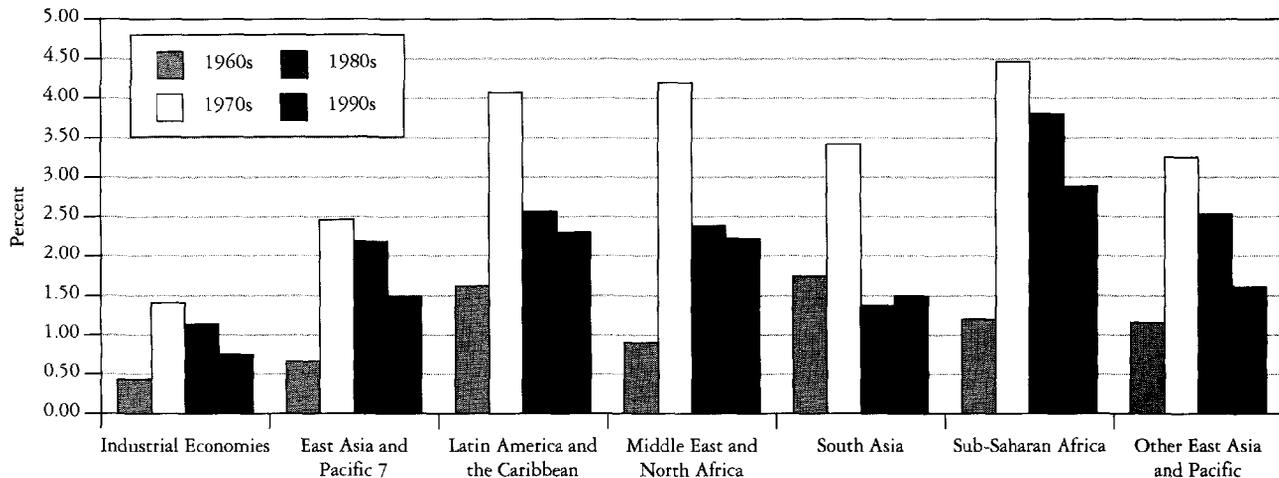


FIGURE 4.3

**Volatility in Terms of Trade Shocks by Decade**

(Regional Medians)



and Trinidad and Tobago, volatility was actually higher in the 1990s than in the 1980s.

In addition to the real external shocks represented by terms of trade changes, LAC, like other developing regions,

TABLE 4.1

**Volatility in Terms of Trade Shocks for Selected Latin American Countries**

	1960s (%)	1970s (%)	1980s (%)	1990s (%)
Argentina	1.8	0.7	1.0	0.4
Belize	—	—	11.5	2.3
Bolivia	3.0	5.6	3.5	1.6
Brazil	0.5	1.4	1.0	0.7
Chile	1.9	5.4	2.4	2.5
Colombia	0.8	2.1	1.7	0.7
Costa Rica	0.9	4.4	4.1	1.8
Dominican Republic	1.8	2.8	3.7	6.5
Ecuador	0.4	7.2	3.3	3.7
El Salvador	1.7	9.5	3.2	1.5
Guatemala	0.7	2.7	1.5	1.1
Guyana	6.4	9.5	6.2	7.9
Haiti	3.3	2.5	1.1	5.8
Honduras	1.3	4.4	2.5	3.1
Jamaica	2.6	3.0	4.8	9.0
Mexico	0.3	0.9	2.0	0.9
Nicaragua	1.5	5.1	18.1	6.2
Panama	—	—	0.9	0.9
Paraguay	0.8	4.9	2.6	7.1
Peru	1.5	4.1	1.5	1.1
Trinidad and Tobago	3.2	12.0	4.0	7.3
Uruguay	2.5	3.0	2.0	1.2
Venezuela	—	3.6	6.8	3.7
<i>LAC Medians</i>	<i>1.6</i>	<i>4.1</i>	<i>2.6</i>	<i>2.3</i>
<i>LAC Averages</i>	<i>1.8</i>	<i>4.5</i>	<i>3.9</i>	<i>3.4</i>

is also subject to external financial shocks, reflected in wide swings in the volume and cost of foreign capital inflows. Figure 4.4 shows the annual pattern of private capital inflows to Latin America as a percent of GDP. Capital inflows rose steadily in the late 1970s to peak at over 5 percent of GDP in the early 1980s, declining sharply to 2 percent in the late 1980s, followed by a strong recovery in the 1990s that was interrupted only by the Tequila Crisis in 1995 and the East Asian Crisis in 1998.

These large fluctuations in capital flow volumes are accompanied by similarly large fluctuations in their prices. Figure 4.5 shows the spreads on external public borrowing by four major Latin American economies, defined as the differential over world interest rates.<sup>5</sup> The spreads display huge fluctuations, with strong surges at times of external crises (for example, Mexico's Tequila Crisis during 1994–95), which signaled a generalized withdrawal of financing for LAC economies.

The swings in the volume and cost of external financing to LAC reflect a combination of external and domestic factors,<sup>6</sup> which affect both the decisions of nonresidents to supply financing to the domestic economy, and the decisions of residents (including the public sector) regarding whether to borrow or lend abroad. The two critical ingredients are the expected return from holding assets domestically, relative to holding them abroad, and the perceived riskiness of that return.

For given risk perceptions, private capital inflows tend to move in a direction opposite to OECD interest rates, declin-

FIGURE 4.4  
**Median Private Gross Capital Flows in Latin America**  
 (Percent of GDP)

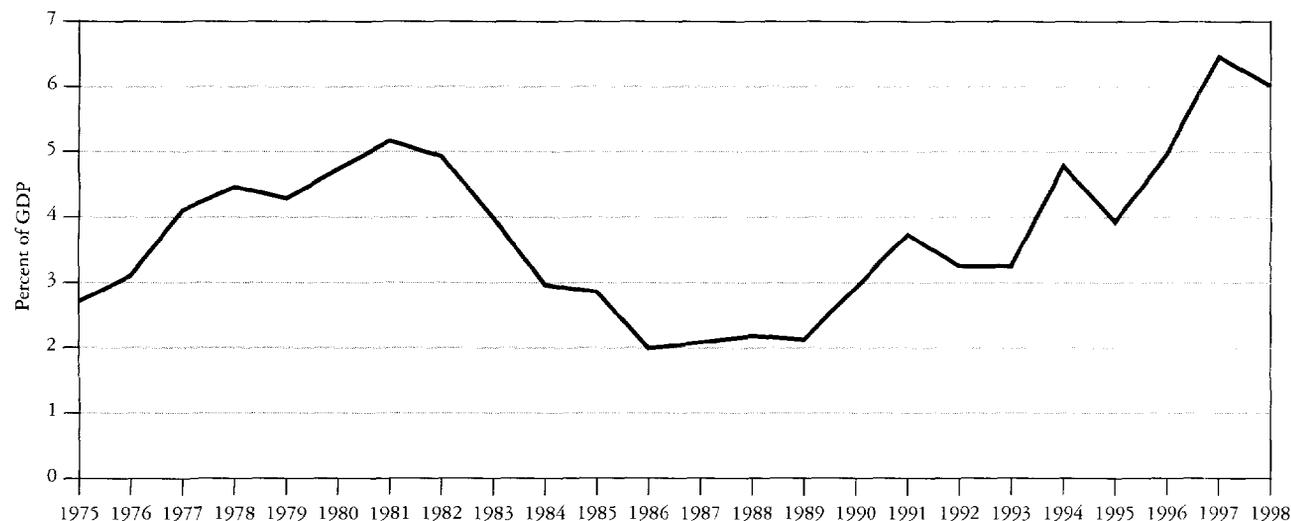
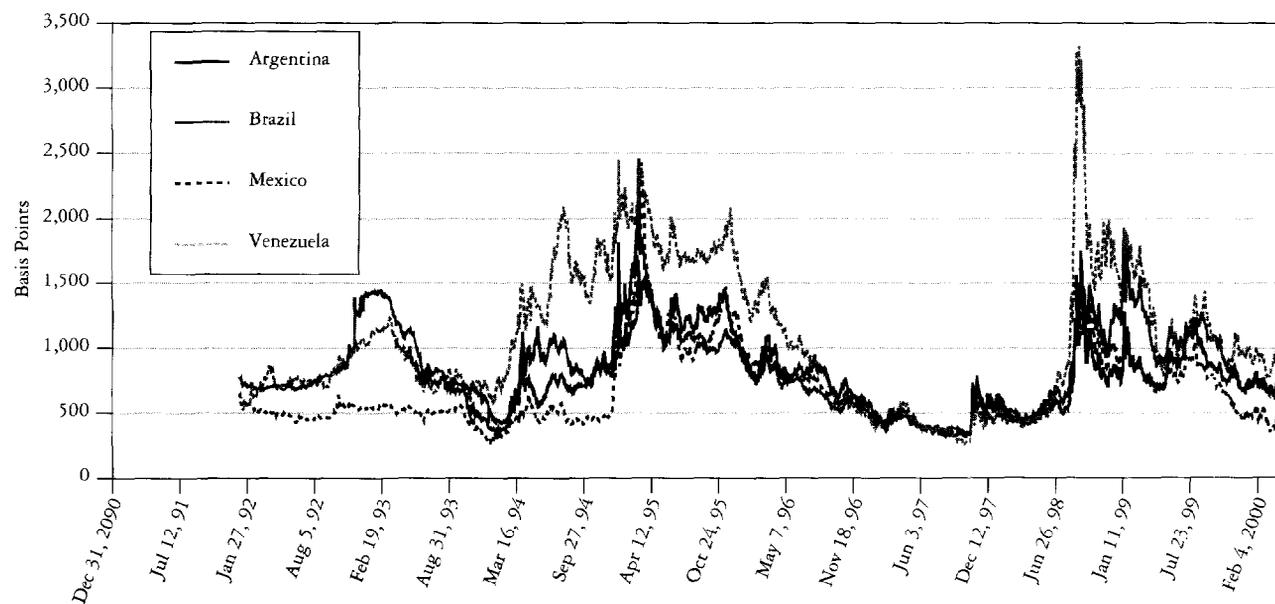


FIGURE 4.5  
**Spread of Foreign-Currency-Denominated Sovereign Debt Instruments (bps)**  
 (Selected Major Latin American Countries)



ing at times of high rates (as in the early 1980s), and rising when interest rates decline (as in the early 1990s). Inflows also react strongly to payments crises in specific countries, such as Mexico, which cause investors to reassess risk and often leads to a generalized drop in inflows across emerging markets, in what has been judged as evidence of “financial contagion.”<sup>7</sup>

Importantly, however, the flows also reflect developments in the destination economies, because both risk and return are affected by domestic economic policies. The variability of capital flows does not reflect just external shocks, but is in part governed by forces endogenous to the receiving economies.<sup>8</sup> With this important caveat in mind, Figure 4.6 shows the variability of gross private capital flows, as mea-

sured by their coefficient of variation,<sup>9</sup> across world regions and time periods. By this measure, volatility of capital flows has risen relative to the 1970s in all world regions, although in most of them it peaked in the 1980s and declined in the 1990s. In all three decades, LAC ranks above the industrial countries and the East Asian miracle countries in terms of capital flow volatility, although the difference between LAC and these regions has narrowed in the 1990s.

### *Macroeconomic Policy Volatility*

External factors are not the only cause of volatility in Latin America. Macroeconomic policies must share some of the blame. Policy volatility partly reflects mistakes by policy-makers, but to a greater extent it is the result of large external shocks in the presence of weak insurance and financial markets and policy institutions, which constrain room to maneuver in macroeconomic management.<sup>10</sup>

Monetary policy volatility has been consistently high in LAC. Over the last two decades, the region has stood out for the recurrence of extreme inflation episodes driven by monetary financing of unsustainable fiscal imbalances. Since the 1970s, as Figure 4.7 shows, the standard deviation of base money growth has been higher in LAC than in most other world regions. It peaked in the 1980s at over 20 percent annually, and declined in the 1990s to just under 16 percent. The latter figure, which reflects the extreme inflation episodes of the early part of the decade in a few countries— notably Argentina, Brazil, and Peru—is far above the levels

observed in industrial economies (7 percent) and the East Asian miracle countries (10 percent), and was surpassed only by Sub-Saharan Africa. It should be noted, however, that in the second half of the 1990s monetary volatility has continued on a declining trend in Latin America.

Fiscal policy is also volatile in LAC. Figure 4.8 shows the volatility of real public consumption growth (as measured by its standard deviation) across decades and world regions.<sup>11</sup> As in previous cases, LAC displays higher volatility than industrial countries and the East Asian miracle countries—but less than most other developing regions.

Fiscal volatility is also related to monetary instability, because inflationary responses to unsustainable fiscal imbalances has traditionally been one of the primary causes of volatile monetary aggregates in the developing world—including Latin America until the early 1990s. Figure 4.9 plots the volatility of money against that of public consumption—both policy variables—for a large sample of countries.<sup>12</sup> A clear positive association between both variables emerges.

As noted earlier, however, macroeconomic policy volatility also reflects the effect of external shocks hitting domestic economies. This is especially so in developing countries where public sectors are heavily dependent on commodity revenues, as in many LAC economies. Terms of trade disturbances have an immediate impact on public revenues and are clearly reflected in fiscal aggregates. This can be seen in Figure 4.10, which plots fiscal volatility against terms of trade volatility for over 100 countries.<sup>13</sup> Terms of trade fluctuations

FIGURE 4.6

### **Coefficient of Variation of Gross Private Capital Flows** (Percent of GDP, Regional Medians)

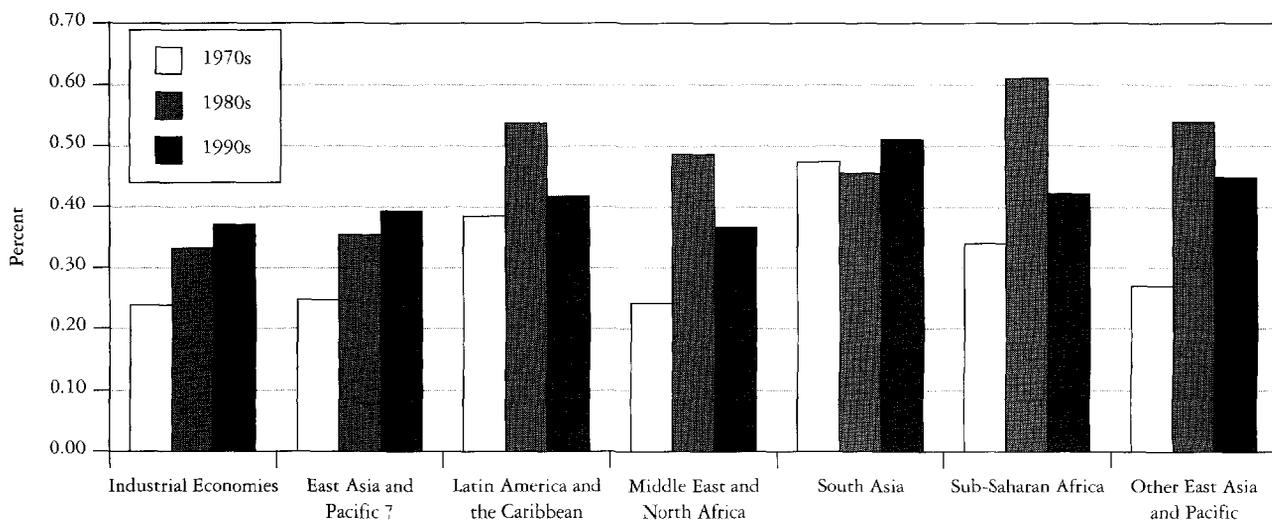


FIGURE 4.7

**Volatility of Reserve Money Growth**  
(Regional Medians)

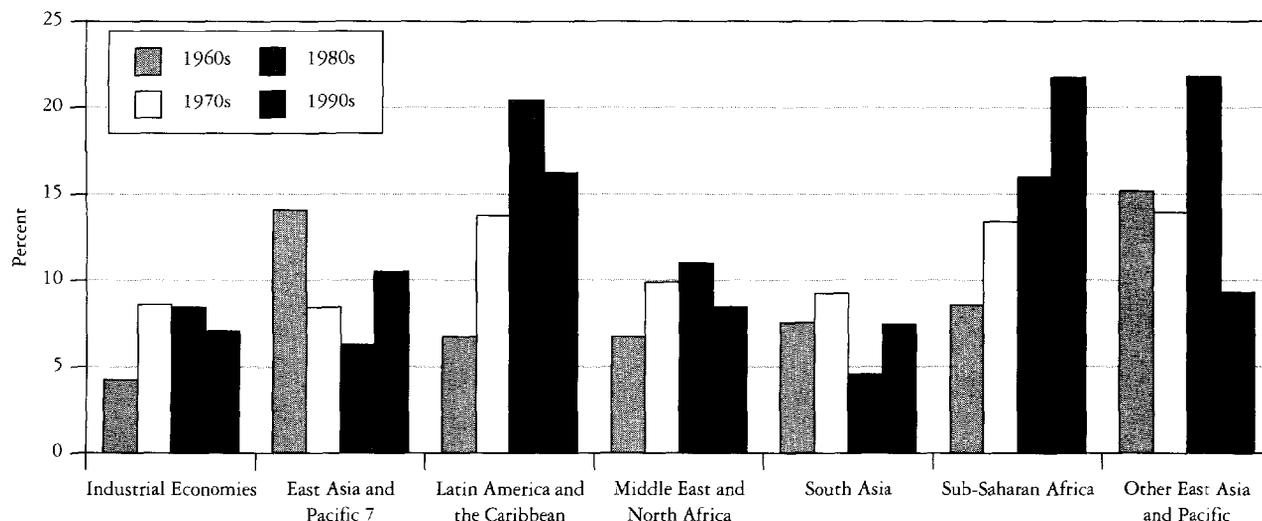
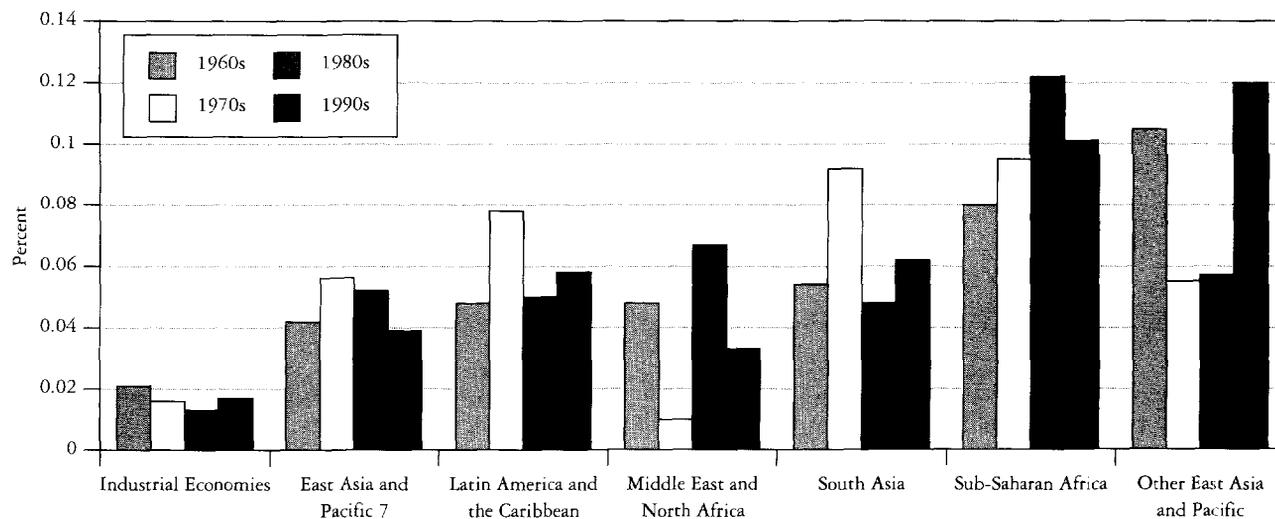


FIGURE 4.8

**Volatility of Public Consumption Growth**  
(Regional Medians)



appear to be a major force behind fiscal volatility, accounting for a full one-third of the cross-country variation.

**Absorption and Amplification of Shocks: The Importance of Financial Markets**

The magnitude of the impact of major economic shocks discussed above on aggregate income and employment in LAC is determined by the functioning of markets, institutions,

and policies that play an instrumental role in absorbing or amplifying shocks. Among these shock absorbers and amplifiers, the domestic and world financial markets are perhaps the most important.

International financial markets allow domestic agents to sell risky income-generating instruments such as stocks and bonds of domestic firms. In this manner, domestic agents can reduce their exposure to risks associated with income volatil-

FIGURE 4.9  
Monetary Volatility and Fiscal Volatility

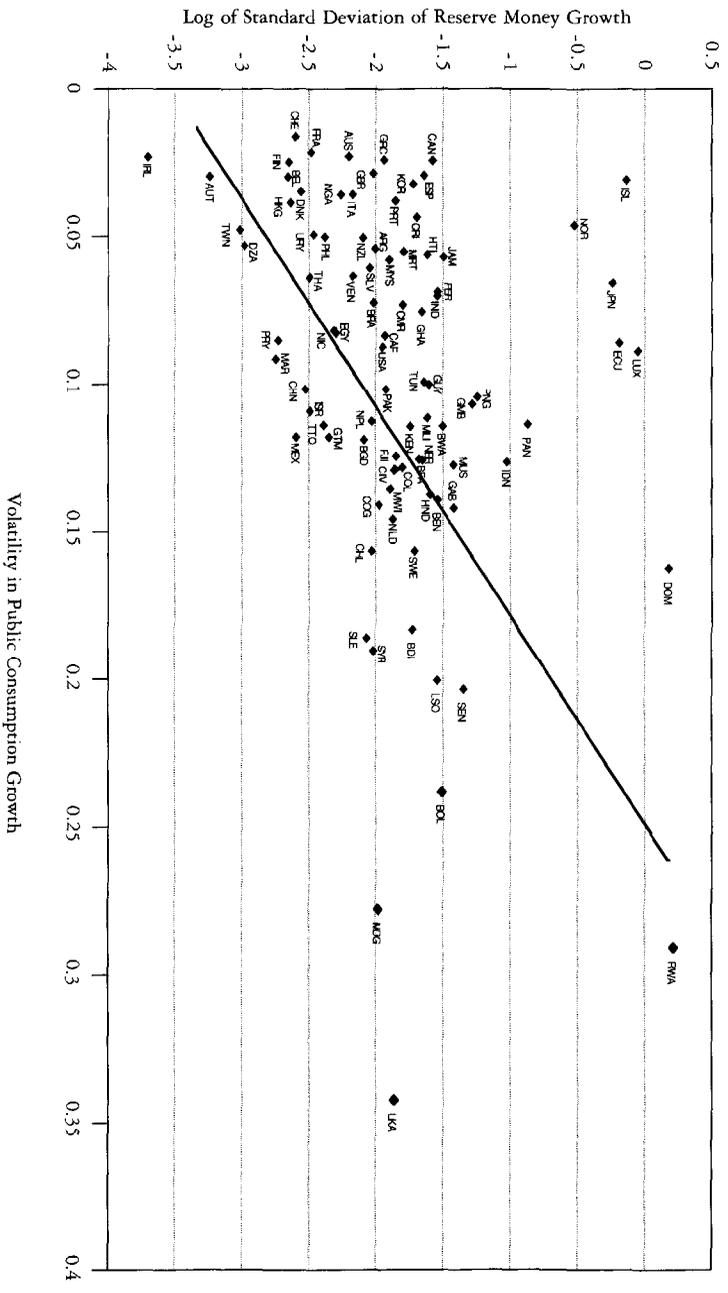
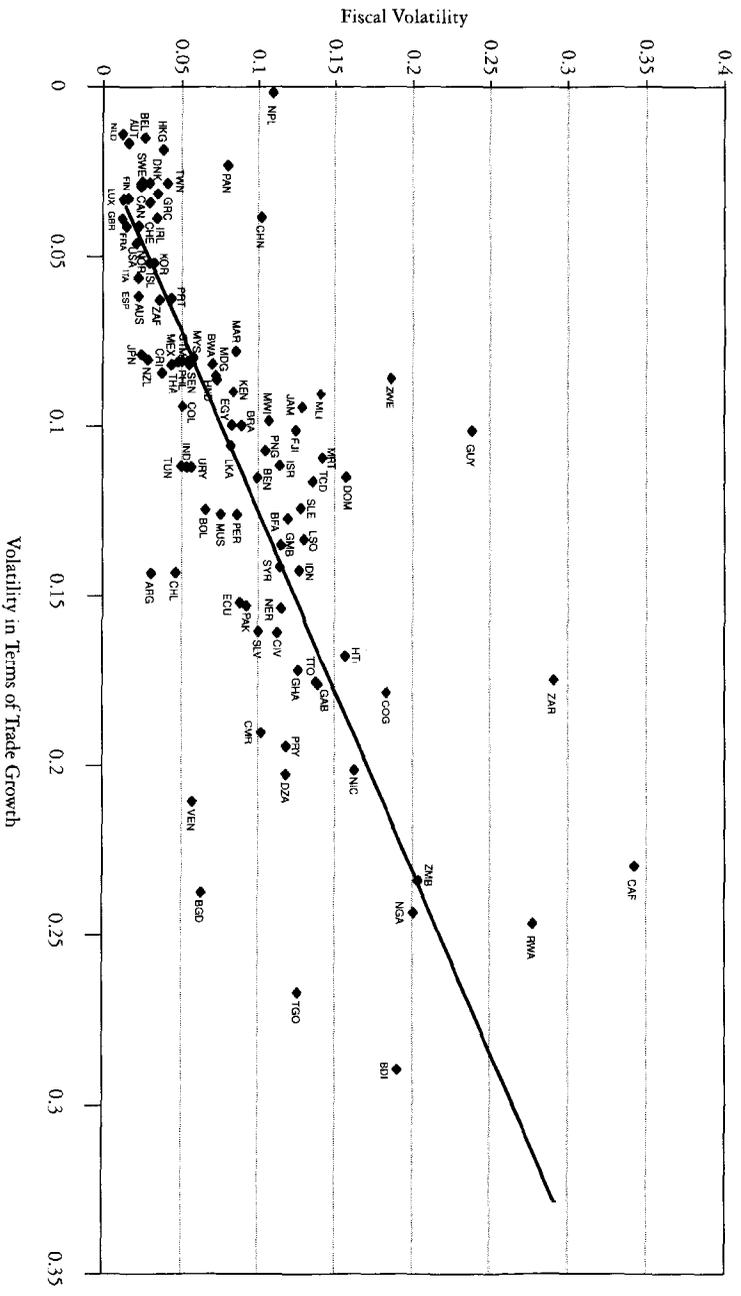


FIGURE 4.10  
Fiscal Volatility and Terms of Trade Volatility



ity, diminishing the latter and thereby reducing aggregate volatility. Further, world financial markets also play an important role by supplying financing to ease adjustment to shocks after they have occurred so that, for example, a temporary worsening of the terms of trade, such as a fall in the price of oil or copper, does not force the economy into a sharp recession. Instead, such financing allows the shock to be weathered through a temporary increase in the current account deficit.

Domestic financial markets also play a key role in the adjustment to shocks, fulfilling the dual purpose of facilitating both ex ante risk diversification among domestic agents in the capital market—hence the diversification is limited to individual, not aggregate, risks<sup>14</sup>—and ex post channeling of resources toward sound firms and sectors hurt by shocks.

Thus, well-functioning domestic financial markets provide the efficient means for economywide self-insurance against aggregate risk—efficiency in the sense that it can achieve relatively quick reallocation of financing and avoid unduly long or widespread disruptions in production and consumption.

In most LAC economies, however, weak links with world financial markets and poorly functioning or shallow domestic financial markets greatly contribute to amplifying shocks rather than helping absorb them. This dual financial weakness is at the core of LAC's macroeconomic volatility.<sup>15</sup>

*Weak Links with World Financial Markets*

That links to international financial markets are weak follows from LAC's modest volume and large swings in private capi-

BOX 4.1

**Excess Sensitivity to Disturbances: The Case of Chile**

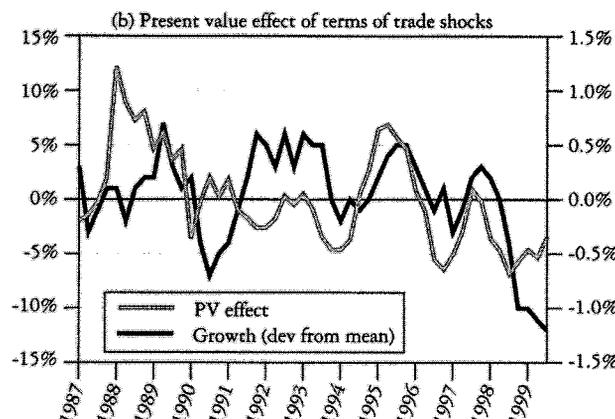
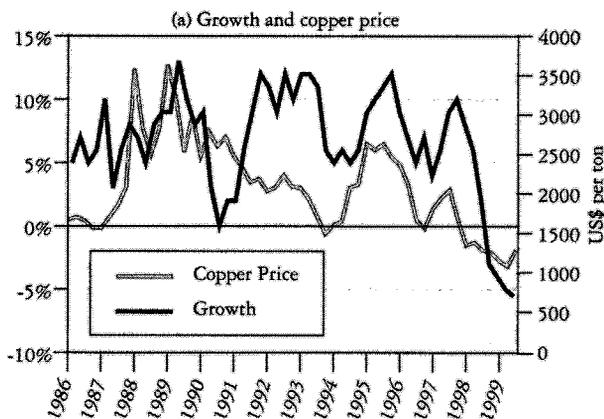
The weakness of the financial links of LAC economies to world markets makes them overly sensitive to disturbances. Here we document the case of Chile, the economic fortunes of which fluctuate widely with world copper prices.

Panel (a) in Figure 4.11 plots the spot price of copper from the London Metal Exchange and Chile's quarterly GDP growth. The resemblance between the two is striking, with the only important exception being the 1990 growth slowdown and subsequent recovery, which had a purely domestic origin.

With unhampered access to external financing, Chile would be able to smooth out temporary copper price fluctuations, and the swings in growth rates would be more muted than those of copper prices. However, panel (b) shows that the opposite happens. The panel compares the fluctuations in GDP actually observed with those that would be dictated from perfect smoothing (specifically, the annuity value of the present value impact of the change in copper prices, as a share of GDP).<sup>18</sup> It is apparent from the figure (from the different scales in the axes, in particular) that fluctuations in GDP are an order of magnitude larger

FIGURE 4.11

**Chile's Excess Sensitivity to Shocks**



Sources: Growth from IMF; copper prices (London Metal Exchange) from Datastream.

tal flows, and the volatile interest rate spreads on sovereign debt discussed earlier. Even more striking is the fact that LAC borrowers tend to face much higher premiums, and higher return volatility, than private U.S. borrowers of similar rating.<sup>16</sup> All these facts suggest that LAC's integration in world financial markets is still limited, which hampers the ability of the region's economies—even the economically well-integrated ones such as Chile—to smooth the effects of temporary disturbances (see Box 4.1).

*Shallow Domestic Financial Markets*

Despite the considerable progress made since the 1980s, LAC financial markets remain shallow, and financial systems are still weak in many countries in the region.<sup>17</sup> The poor func-

tioning of domestic financial markets in most LAC countries makes them part of the economic instability problem rather than a solution to it. This is true both of banks and other financial institutions.

Figure 4.13 shows that LAC still lags behind most world regions in terms of banking system development, as measured by the ratio of credit to the private sector to GDP.<sup>19</sup> While there is a great deal of variation across countries in the region,<sup>20</sup> on the whole the ability of LAC's banking systems to efficiently intermediate financial resources remains rather limited.<sup>21</sup>

Capital markets, in turn, have experienced a rapid expansion in Latin America over the last decade, but they remain small and illiquid relative to those in other regions. Figure 4.14 provides a comparative perspective on the size and

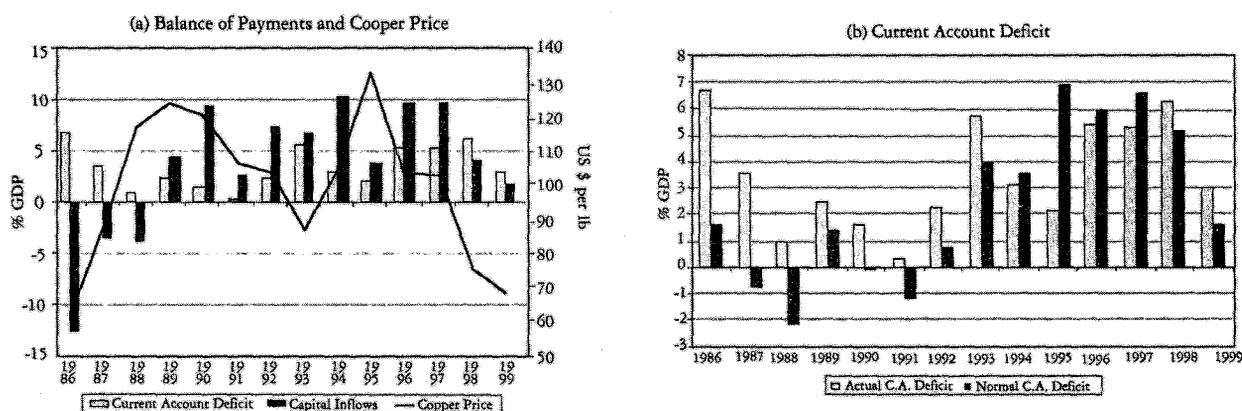
than would be observed if Chile were able to resort to international financial markets to navigate the disturbances.

Figure 4.12 reinforces the conclusion that the fundamental problem is one of restricted access to international financial markets. Panel (a) shows that the price of copper and Chile's current account deficit are positively associated—exactly the reverse of what would be observed under smoothing of disturbances.

The 1995 Tequila Crisis appears to be the exception that proves the rule because high copper prices gave the Chilean economy enough “liquidity” to ride through the

crisis and experience fast domestic growth despite the large international credit crunch suffered by emerging economies. This is confirmed in panel (b), which demonstrates that Chile used a large fraction of the “liquidity” given by the high price of copper to offset the decline in capital inflows, as the current account deficit at “normal” copper prices reached its highest level during that year. Most important, exactly the opposite occurred during the 1998–99 episode, as the price of copper plummeted (erasing Chile's liquidity) at the precise time that international financial markets tightened.

FIGURE 4.12  
**Copper Prices and Chile's Current Account**



Sources: Instituto Nacional de Estadística and Banco Central de Chile.

FIGURE 4.13

**Average Private Domestic Credit**  
(Percent of GDP, Regional Medians)

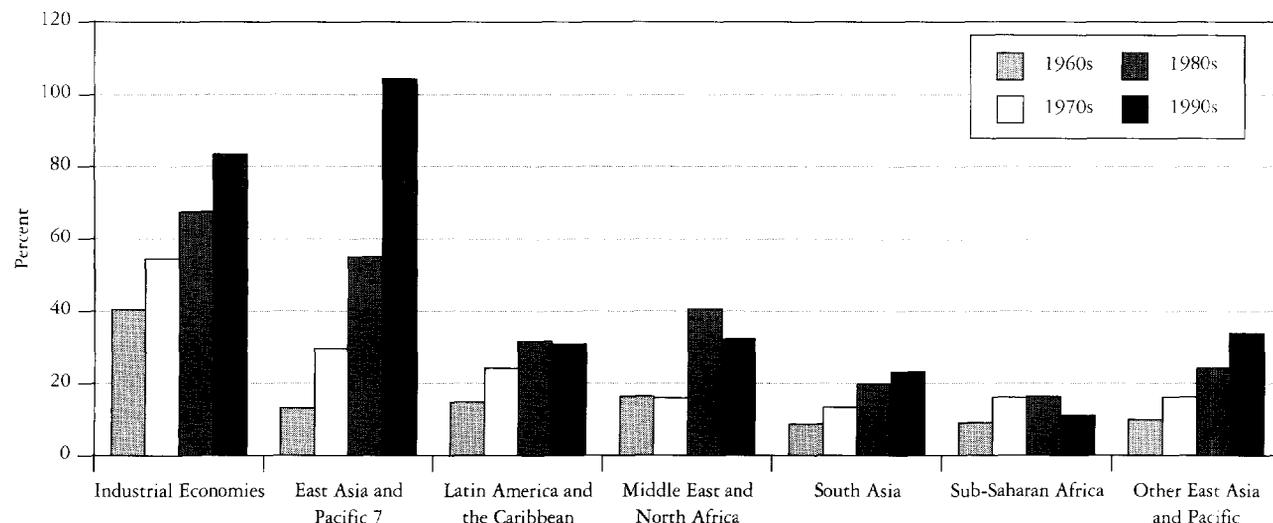
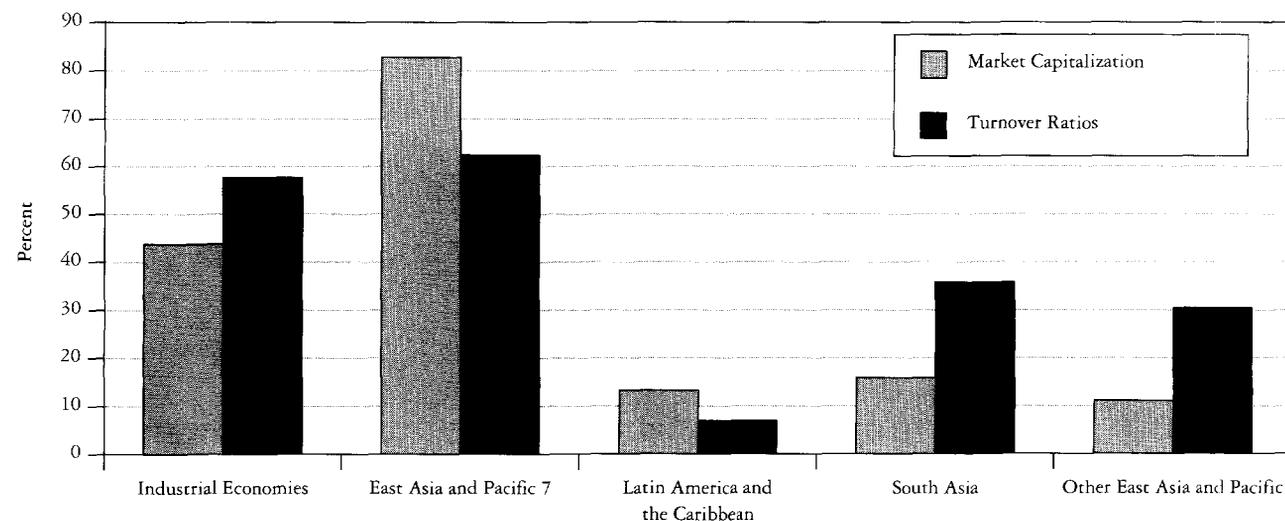


FIGURE 4.14

**Stock Market Capitalization and Turnover Ratios**  
(Regional Medians in Percent, 1990–98)



turnover (measured respectively by market capitalization as percent of GDP, and the ratio of value traded to market capitalization) of equity markets across world regions.<sup>22</sup> The clear message is that LAC is lagging behind the rest of the world in both dimensions. Figure 4.15 shows that there is considerable diversity among the major economies in the region. At one extreme, Chile's market size is at or above industrial-country levels, but its market liquidity is extremely low. At the other

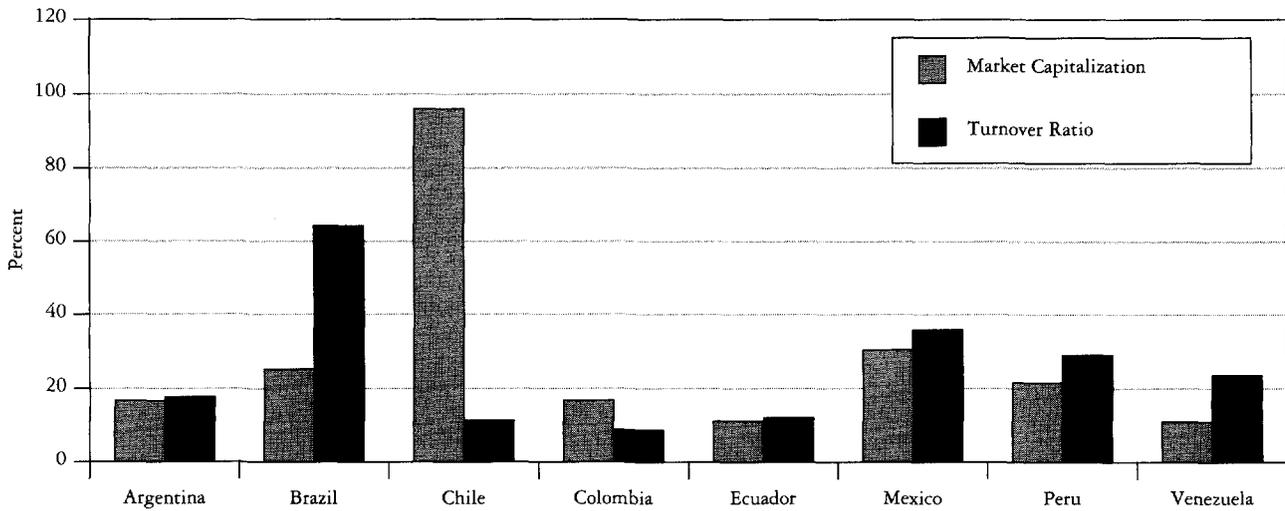
end, Brazil possesses a fairly liquid market, but its overall size is modest by international standards.

***The Combination Increases the Likelihood of Economic Crises***

The imperfections of LAC's financial markets severely limit their ability to diversify risk and reallocate financial resources at times of distress. This tends to amplify and propagate

FIGURE 4.15

**Stock Market Capitalization and Turnover Ratios for Selected LAC Countries, 1995–98, Averages**



adverse disturbances by creating wasteful contractions in sectors most affected by shocks or relatively poorly connected to domestic and international financial pipelines. This propagation effect is particularly evident in the case of the banking system. As adverse shocks put domestic firms in distress, leading some of them to bankruptcy, the credit portfolio of the banking system deteriorates, lowering the ability and willingness of banks to bear risk and channel financial resources efficiently. Some borrowers may be completely excluded from the credit market, exacerbating the magnitude of the downturn. When the banking system's balance sheet is already weak, this sequence of events can bring banks to the verge of financial collapse, and take sound borrowers along with them.

Weak capital markets also amplify the effects of shocks. In a manner similar to the credit rationing effect of weak banking systems just described, they result in what may be termed "equity rationing"; that is, the inability of firms to raise funds in the equity market without incurring prohibitively high costs. Moreover, thin markets also result in large fluctuations in equity prices, as shown by Figure 4.16, which compares the sensitivity of equity prices to trading volume in Chile<sup>23</sup>—the LAC economy with the largest stock market—and three industrial economies. The result is that firms are unable to diversify their risks well through equity markets.<sup>24</sup>

The association between underdeveloped financial markets and economic instability is clearly brought out by international evidence. As an illustration, Figure 4.17 plots the stock of private sector credit as a ratio to GDP against GDP growth volatility for a large number of countries. The vari-

ables are measured by their averages over the last three decades. A negative association between both variables is obvious from the figure.<sup>25</sup> The relationship, however, appears nonlinear, as indicated by the solid line-of-best-fit.<sup>26</sup> Thus, increased size of financial systems is associated with reduced economic volatility, but the association becomes less strong as the financial system becomes very large.<sup>27</sup>

This implies a qualification regarding the stability-enhancing role of financial markets—the danger posed by excessive indebtedness. As financial systems expand, so does leverage, and with it the vulnerability of the financial system to shocks also increases. Rapid expansion of financial systems, particularly if inadequately regulated and supervised, can also contribute to economic volatility, a factor that played a cru-

FIGURE 4.16

**Stock Market Illiquidity**

(Regression Coefficient of Absolute Price Changes on Trade Volume)

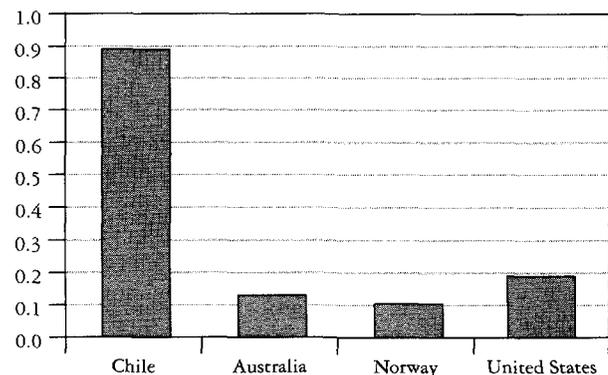
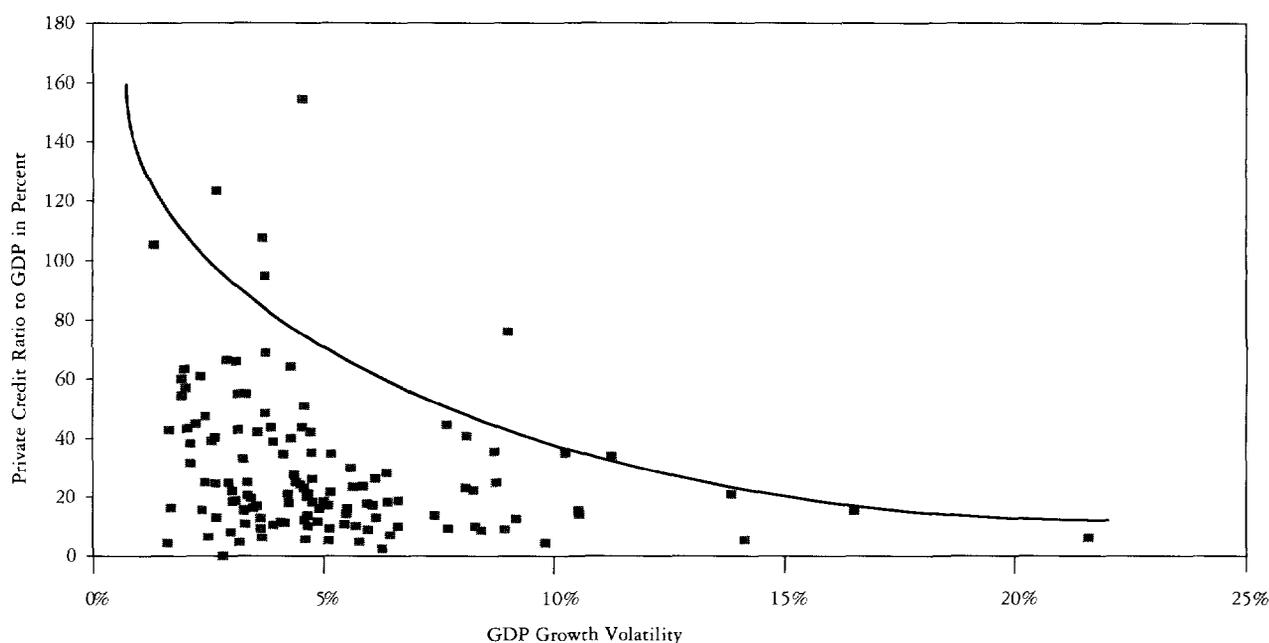


FIGURE 4.17

**GDP Volatility and Credit Depth**

cial role in the East Asian crisis of 1997–98. It is ironic that several LAC economies have suffered at both ends of the spectrum of financial development: chronic financial repression and underdevelopment first, followed by accelerated expansion and collapse of the banking system later. Deficient bank monitoring and supervision played a major role in these boom–bust episodes.

A second important qualification is that the causation may run the other way too: high economic volatility itself tends to hamper financial market development. In a highly volatile environment, firms may not be willing to undertake the risks associated with extensive borrowing, nor may households wish to save in financial assets (at least those available domestically). Without appropriate policy action, the economy may get stuck in a self-perpetuating vicious circle characterized by weak financial markets that amplify volatility, which in turn prevents further financial market development.

In the LAC context, the interplay between weak links with international financial markets and underdeveloped domestic financial systems may be key to the region's aggregate volatility (see Box 4.2). A closer look at recent crises in the region may help illustrate this. Figures 4.18, 4.19, and 4.20 show credit crunches in three major countries in the region that have followed episodes of external distress. Most striking is the case of Mexico (Figure 4.20), which experi-

enced a severe credit crunch following the 1995 Tequila Crisis. Loans—especially new loans—collapsed early in the crisis, especially as the peso went into free fall, dragging down the already weak balance sheets of Mexican banks. The severe credit crunch amplified the magnitude of the crisis, and the collapse of the banking system imposed massive costs on the economy and the public sector accounts.

In Argentina, in contrast, the amplification developed from the other side of banks' balance sheets. Figure 4.18 shows that in Argentina the major force behind the credit crunch was the run on bank deposits, driven by depositors' fears that tight external conditions would eventually result in the collapse of the system of convertibility between Argentina's peso and the U.S. dollar. The figures also illustrate how the financial turmoil in world markets during 1998–99 resulted in new credit slowdowns in Argentina, Brazil, and Mexico.

Beyond their shock magnification effect, however, domestic and external financial weaknesses are also sources of instability themselves, because they raise the likelihood that as-yet unrealized disturbances will have a major disruptive effect on the economy, triggering precautionary responses by the government or the private sector that anticipate the crisis. An example of this is the case in which policymakers foresee a tightening of external financing, which leads them to contract monetary and/or fiscal policy,

FIGURE 4.18

**Credit Crunches in Argentina**

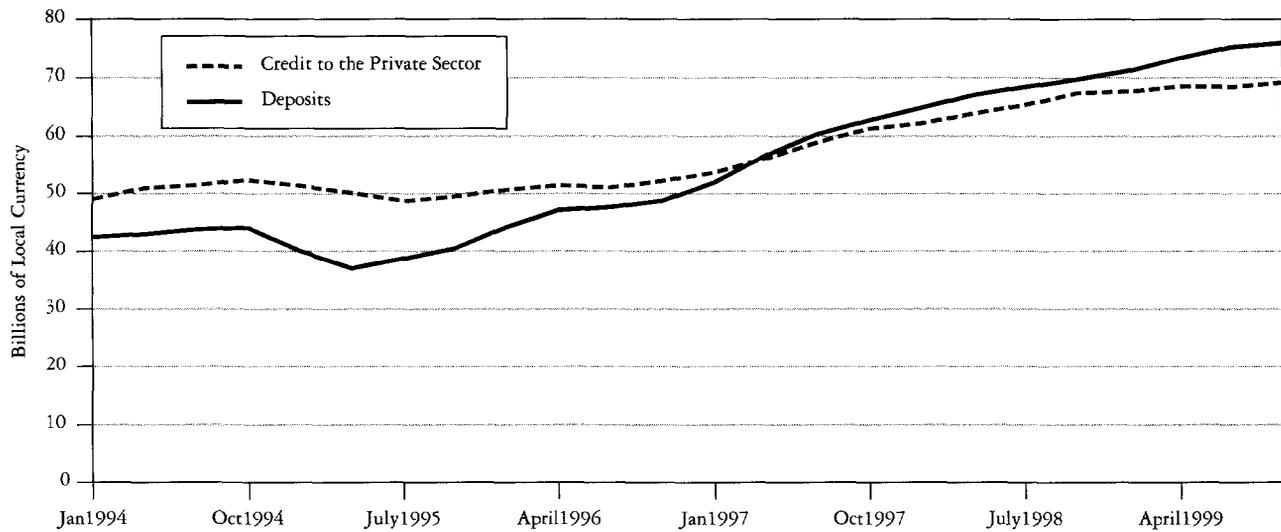
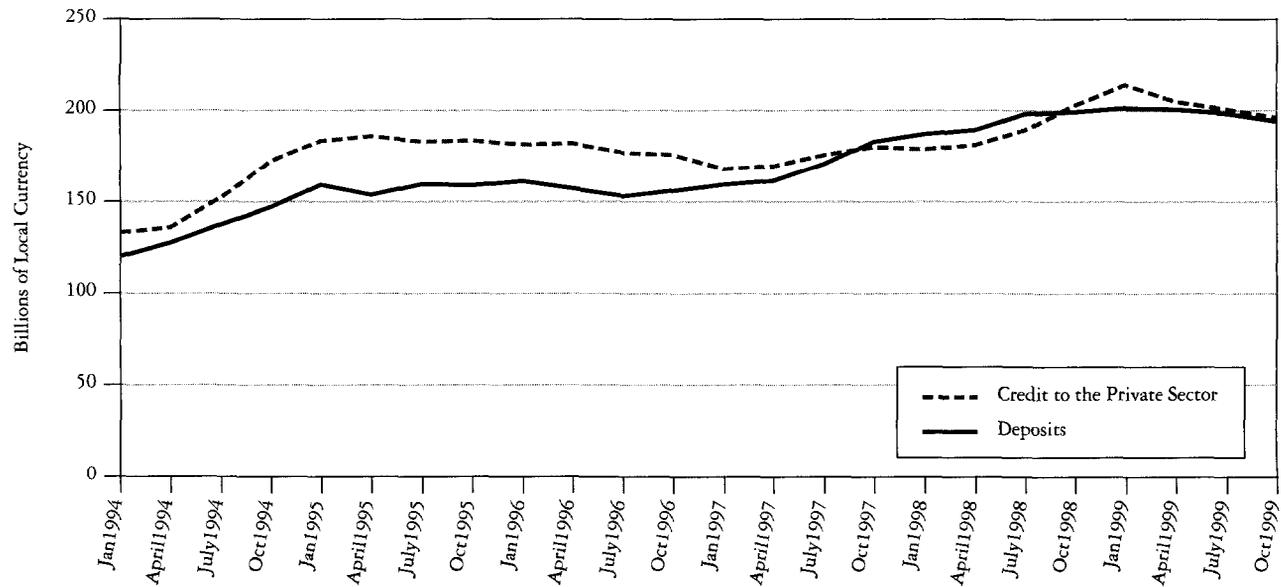


FIGURE 4.19

**Credit Crunches in Brazil**



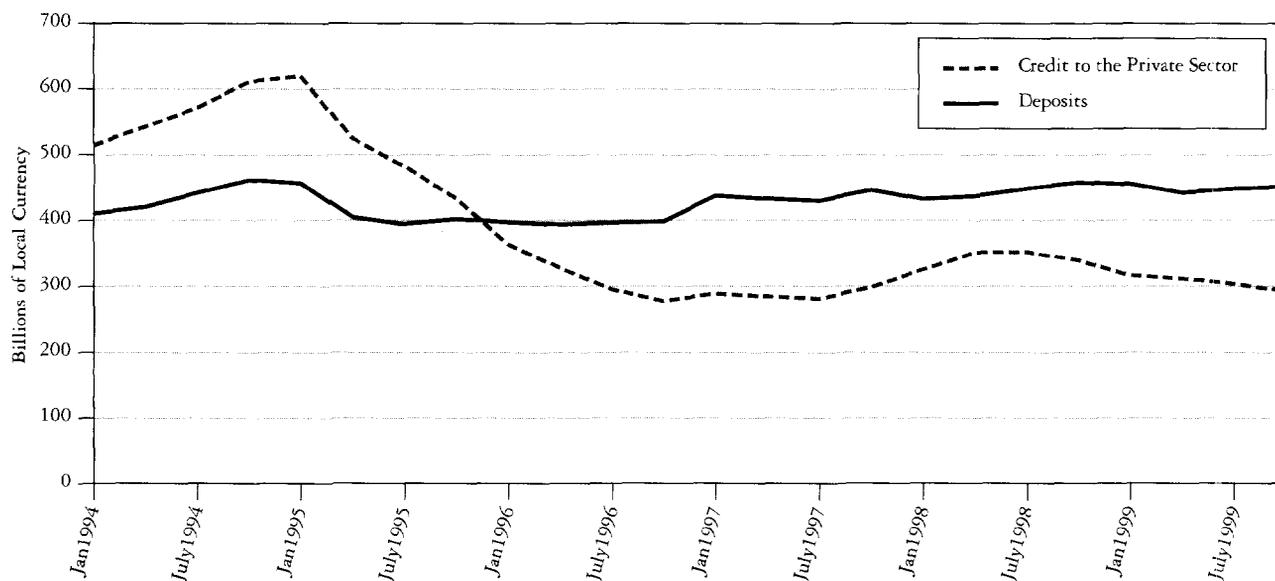
driving the economy into recession ahead of the feared external tightening. Likewise, the private sector often reacts to an anticipated tightening of the external financial bottleneck by running against domestic assets, thus driving down asset prices and forcing a tightening of macroeconomic policies—a scenario similar to the Argentine episode of 1995. Needless to say, a weak domestic financial

system considerably raises the likelihood of success of such speculative attacks and their economic cost.

**Other Amplification Mechanisms**

Beyond the financial system, other policy and institutional factors also play an important role in magnifying or containing the economic impact of shocks.

FIGURE 4.20

**Credit Crunches in Mexico**

- Fiscal policy* has traditionally been assigned an “automatic stabilizer” function, which consists of offsetting shocks by expanding aggregate demand in the face of contractionary disturbances and, conversely, in the case of expansionary disturbances. In LAC (and in much of the developing world), however, fiscal policy is often procyclical, adding to the expansion during booms and to the contraction during recessions.<sup>28</sup> Thus, a policy risk is inadvertently added to economic risk, amplifying the effects of economic shocks rather than offsetting them. To some extent this again reflects the operation of financing constraints, since at times of adverse shocks governments face sharp reductions in their access to external financing or large increases in its cost.<sup>29</sup> Procyclicality also reflects the failure of governments to provide for bad times by increasing their saving during good times, when revenues are high. A stark example of this failure has been the frequent mismanagement of resource booms in countries whose public sector is heavily dependent on natural resource revenues.
- Exchange rate and monetary policy* also shape the economy’s ability to weather shocks. The conventional prescription is that pegged exchange rates provide the best insulation against financial shocks, and flex-

ible rates allow monetary independence and are best for protecting the economy from real disturbances.<sup>30</sup> In recent years, LAC has witnessed a shift toward both ends of the exchange regime spectrum: rigid pegs (for example, currency boards as in Argentina, and proposals for outright dollarization in Argentina and Ecuador), and freely floating arrangements (Brazil, Chile, Colombia, Mexico, and Peru). The experience of developing countries, notably in LAC and East Asia, over the last decade or so has added some important qualifications to this conventional wisdom. First, the degree of monetary independence allowed by flexible exchange rates may be limited in practice if firms and banks hold large unhedged liabilities in foreign currency, because under such conditions exchange rate fluctuations can have large effects on firms and banks’ net worth, as in the East Asia crisis.<sup>31</sup> Second, the ability of flexible rates to ease the adjustment to real disturbances depends on the credibility attached by the private sector to monetary policy and on the extent of inflationary inertia due, for example, to formal or informal indexation. Lack of credibility and widespread indexation may erode much of the real effect of nominal devaluation through additional inflation.<sup>32</sup> Third, hard pegs may enhance financial stability and policy credibility.

## BOX 4.2

**Weak Financial Markets and Volatility: A Framework**

The interplay between weak international financial links and underdeveloped domestic financial systems may be at the root of much of LAC's aggregate volatility. Here we present a stylized framework outlining the key mechanism, drawing from work by Caballero and Krishnamurthy (1999).

*The Basic Setup*

Consider a schematic timeline such that at date 0, which corresponds to "normal" times, investment decisions are made and agents plan toward the "bright future" of date 2. Much of this planning has to do with anticipating and preventing a crisis that can happen in the near future at period 1. Weak international links imply that the country may have a hard time persuading foreign financiers that they will share the gains in a relatively bright future (period 2) if they help to avert the period 1 crisis.

In this context, a crisis is a situation in which the economy needs substantial external funds (to repay debt or undertake new investments) but does not have sufficient international collateral to obtain them. To make this insufficiency of collateral clear, assume that nontradable date 2 assets (for example, buildings that would be completed at date 2), denoted  $A_n$ , are of no interest to foreigners—they cannot be used as collateral abroad. However, they can be used as collateral to borrow domestically, at a discount factor  $L$ , a maximum of  $A_n/L$ . This collateral is held by the "distressed" firms.

In turn, other domestic firms or individuals hold internationally acceptable collateral, denoted  $A_f$ , which includes items like the output of firms in the tradable goods sector at date 2, plus foreign currency assets, plus perhaps some domestic assets attractive to foreigners, such as telecom firms. Assuming that the international discount factor equals 1—or the interest rate equals 0—the most the country can borrow abroad at date 1 is  $\lambda_f A_f$ , where  $\lambda_f < 1$ , because of imperfect access to the world capital market.

*Weak International Links and Fire Sales*

Figure 4.21 shows the equilibrium in the economy's financial market. In panel (a), the supply of international

financing (flat at the discount factor 1 until the maximum amount  $\lambda_f A_f$  is reached, at which point supply becomes vertical), is enough to meet the needs of distressed firms (the solid line that becomes vertical at the economy's total number of projects, set at unity). Thus, equilibrium is reached at  $L = 1$ , so that the domestic cost of funds equals the world interest rate, and distressed firms pledge only a fraction of their assets to the "intermediaries" holding the internationally acceptable collateral. In panel (b), however, international collateral falls short of the needs of distressed firms. The result is a fire sale of domestic assets, with the cost of domestic funds jumping to  $L > 1$ , and only a fraction  $\lambda_f A_f$  of all projects getting financed.

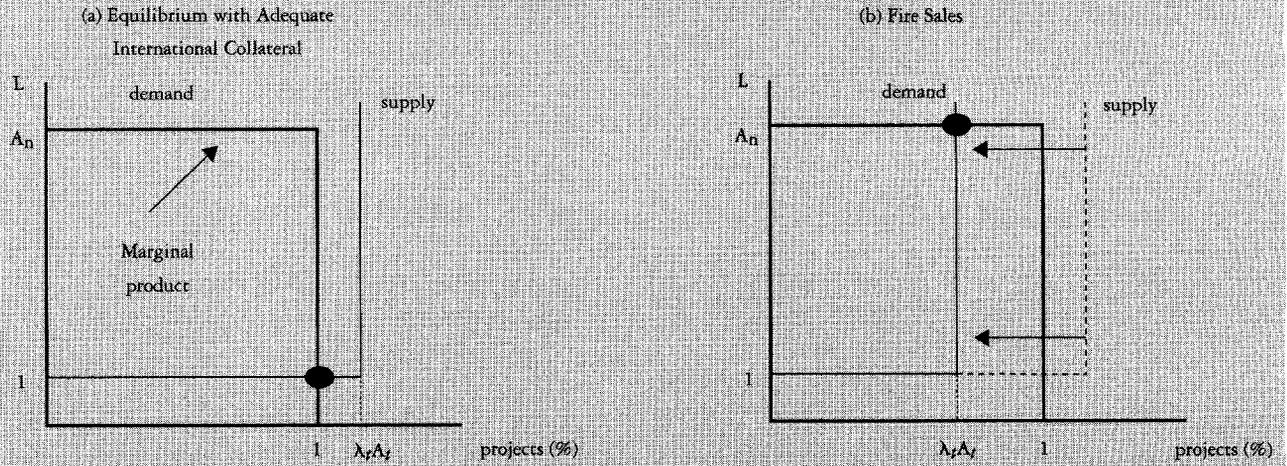
*Weak International Links, Shallow Domestic Markets, and Excess Vulnerability*

If, unlike in Figure 4.21, domestic financial markets are also imperfect—in the sense that distressed firms cannot fully pledge their assets to the domestic intermediaries holding the internationally acceptable collateral—the latter's incentive to hoard and supply international liquidity is lessened. In the model, the domestic price of this liquidity  $L$  falls. This situation is shown in Figure 4.22 by assuming that only a fraction  $\lambda_n < 1$  of domestic collateral can be pledged. This shifts down the effective demand schedule (solid line) in panel (a), leading to a decline in  $L$  relative to Figure 4.21. Frictions in domestic financial markets now distort the return to holding international collateral, and as a result less will be held by the intermediaries supplying international liquidity.

This is shown in panel (b) of Figure 4.22 as an inward shift in the supply of international liquidity. The reduced supply means that the economy will experience more frequent fire sales and more severe distress in the face of international disturbances. The economy becomes too vulnerable to external shocks due to the undervaluation of international liquidity created by domestic financial market imperfections.

FIGURE 4.21

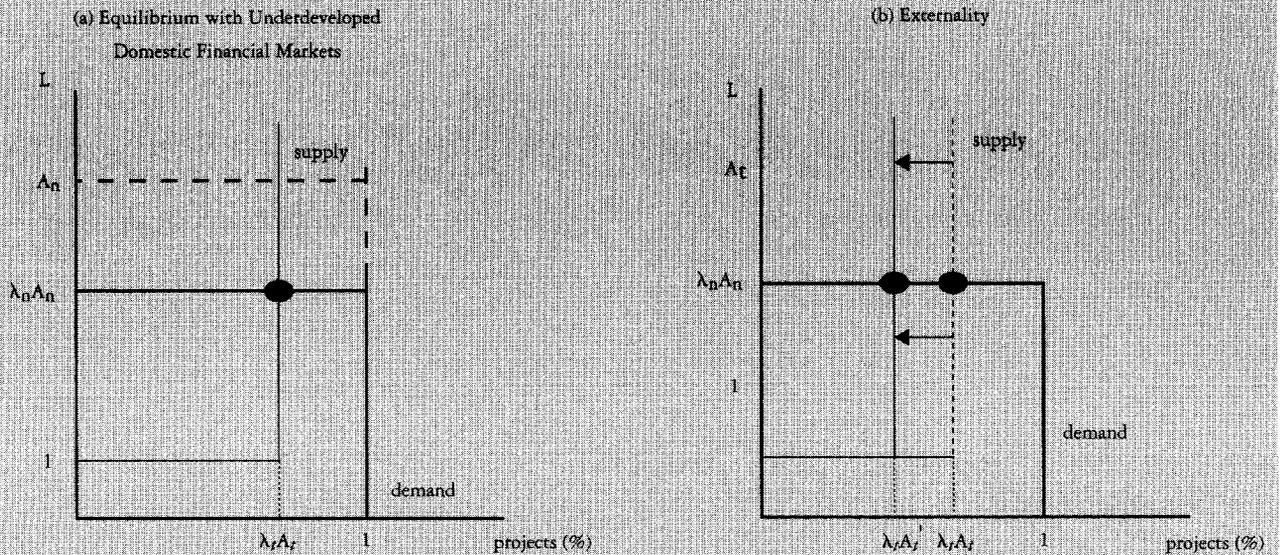
**Fire Sales**



- Limited number of profitable projects.
- Scarcity of international collateral limits the transfer of funds to distressed firms.
- A decline in the quality of a country's international collateral can cause a fire sale.

FIGURE 4.22

**Excess Vulnerability**



- Limited number of profitable projects.
- Scarcity of international collateral limits the transfer of funds to distressed firms.
- A decline in the quality of a country's international collateral can cause a fire sale.

However, when combined with nominal rigidities (in wages or other prices) they can make adjustment to real disturbances slow and costly, as shown by Argentina's experience.

- *Labor market rigidities* tend to magnify the cost of real disturbances, by forcing the labor market to adjust through unemployment rather than real wages and sectoral redeployment of the labor force. The notable example is again Argentina, where lack of adjustment of real wages has in effect created another source of pressure on firms in addition to the credit squeeze that they suffered from financial markets.

**Summary**

The preceding discussion has identified a number of key factors behind aggregate volatility in LAC. How important is the contribution of each to the region's overall economic instability? To answer this question, we combine those factors into an empirical quantitative model aimed at explaining long-term volatility. The results are briefly discussed here; the model is described in more detail in Annex 1.<sup>33</sup> The empirical model characterizes the relationships between external volatility, policy volatility, and financial depth. In spite of its simplicity, the model does a good job of explaining observed growth volatility, and accounts for close to 60 percent of the variation in the latter across countries.

The role of the various sources of volatility is described in Figure 4.23, which identifies the factors that make the average LAC country more volatile than other world

regions. It uses industrial countries and the East Asia miracle economies as a benchmark for the comparison. As has been shown, LAC's GDP volatility exceeds that in each of these regions by a considerable margin.<sup>34</sup>

The results show that LAC's higher growth volatility relative to industrial and East Asian miracle countries arises from three main sources: the region's higher terms-of-trade volatility, the higher volatility of its macroeconomic policy, and its weaker financial links with domestic and foreign markets. Of all these factors, terms of trade shocks account for one-fourth of the difference in GDP growth volatility between LAC and the other regions. In turn, monetary and fiscal policy volatility combined account for over one-third of the cross-regional difference in volatility. Latin America's lower degree of external financial integration than the other regions' (measured by the volume of capital inflows plus outflows relative to GDP) accounts for another 20 percent. Volatility of capital flows also contributes to LAC's higher GDP growth volatility than in the other regions, but only a small amount. Finally, the smaller size of LAC's domestic financial markets (as measured by the ratio of private credit to GDP) accounts for another substantial portion of the difference in volatility. Combined, all these factors account for roughly 95 percent of the difference in income growth volatility between LAC and the other regions, leaving only a small portion to be explained by the relatively higher presence of oil-exporting economies in LAC (which appear to display an extra degree of volatility not captured well by other economic variables) and a tiny unexplained residual. Thus, external factors, domestic policies, and financial market underdevelopment all contribute to LAC's economic volatility.<sup>35</sup>

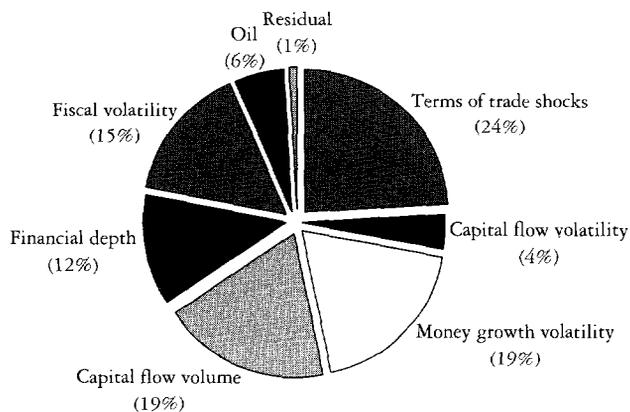
These results, while illustrative, also bring out the forces behind the observed improvement in LAC's growth volatility in the 1990s relative to the 1980s. Improving external conditions—less volatile terms of trade and capital flows—expanding financial markets at home and abroad, and more stable domestic policies, have all been contributing factors to the reduced instability of the 1990s relative to the 1980s.

**Policies to Deal with Aggregate Volatility in LAC**

What should be done to deal with LAC's aggregate volatility? Aggregate risk is not diversifiable within the domestic economy—since it affects all domestic economic actors—

FIGURE 4.23

**Why is Latin America more Volatile than Industrial and East Asian Countries?**



but it can be shared internationally if not all countries suffer the same shocks at the same time. International diversification would allow countries to eliminate their country-specific risk, so that they would face only the undiversifiable global risk of worldwide income fluctuations. This issue has received much attention in recent years, because if nations diversified optimally their consumption risk they would all end up with very similar (strictly speaking, perfectly correlated) consumption profiles, a theoretical implication which is clearly contradicted by the facts.

In essence, to achieve international diversification, domestic economic actors would purchase claims on the risky future incomes of foreign workers and firms, and sell claims on their own risky incomes. It is important to note that, for this to be a risk-reducing strategy, the incomes of foreign economies need not be less risky than those of

domestic economies. It is enough that they not be affected identically by the same disturbances. In this manner, copper exporters could share in the incomes of copper importers, countries specialized in agricultural products would trade part of their future incomes for those of countries specialized in manufactures, and so on. By pursuing this strategy, countries could entirely diversify away their idiosyncratic risks, and remain exposed only to global risks.

In the case of LAC, international risk-sharing along these lines would allow a considerable reduction in the volatility of consumption, resulting in a potentially very large welfare gain. Box 4.3 computes the gain that would have accrued to LAC countries had they been able to completely diversify their idiosyncratic aggregate risks in the 1990s. The calculations suggest the region's median welfare gain would have been equivalent to a permanent increase in the level of consumption around 7 percent per

#### BOX 4.3

#### The Welfare Cost of Volatility and the Gains from International Risk-Sharing

Many countries experience a high degree of volatility in their consumption path. To the extent that their citizens care about risk, their welfare would improve by reducing consumption volatility. This can be achieved through international risk-sharing, which would allow countries to shelter their standard of living from shocks by international diversification of their portfolios.

If countries were optimally diversified, they would fully eliminate the *idiosyncratic* (or country-specific) risk they face, so that they would remain subject only to *global*, or worldwide, risk. As a result, the *consumption* paths of all countries would become closely correlated. This is obviously not the case in reality, which provides proof of insufficient international diversification. Of course, one reason for this could be that the welfare gains from better diversification are simply too small to make this worthwhile. This possibility is explored below.

#### Quantifying Welfare Gains

The magnitude of the welfare gain from international diversification depends primarily on the degree of risk aversion (that is, how much value is attributed to reducing

risk) and the amount of risk that could be eliminated by diversification. The latter factor plays the key role in determining the size of potential welfare gains. In addition, these also depend on the implicit risk-free interest rate and the risk-adjusted growth rate for the domestic economy. Finally, the time horizon also matters: the longer the time horizon, the greater the benefits of hedging.

The calculations presented here follow an approach recently proposed by Athanasoulis and Van Wincoop (2000), from which we take most parameter values. Specifically, the risk-free real interest rate is 0.85 percent, the average growth rate of per capita consumption is 2.35 percent, and the coefficient of relative risk-aversion is 3. Undiversifiable or global risk is taken from the same source and is set at 0.00000225. For each country, the country-specific, diversifiable risk is then the difference between the variance of its respective growth rate of consumption and this undiversifiable risk. For illustrative purposes, we use the variance of consumption growth of each country during the 1990s. Finally, the welfare gain is computed for a horizon of 35 years and, in keeping with tradition, is expressed as the permanent percentage increase in expected consumption.

Table 4.2 assesses the welfare gains that would have been accrued to each country had it been able to diversify its idiosyncratic aggregate volatility in the 1990s. The table shows that the potential welfare gains would have been quite substantial for most LAC countries. The regional median exceeds 7 percent—a figure similar to those implied by van Wincoop (1999) for non-OECD economies, but about 6 times as high as the average for OECD countries.

TABLE 4.2

**Estimated Welfare Gains from Diversification**

(Latin America and the Caribbean, Percent of Private Annual Consumption)

COUNTRY	
Argentina	9.55
Bolivia	0.06
Brazil	6.99
Chile	3.71
Colombia	1.01
Costa Rica	2.95
Dominican Republic	22.39
Ecuador	0.02
El Salvador	13.65
Guatemala	0.27
Honduras	1.09
Jamaica	79.05
Mexico	8.49
Nicaragua	63.35
Panama	30.28
Paraguay	45.97
Peru	6.49
Trinidad and Tobago	97.01
Uruguay	8.58
Venezuela	6.48
<i>Mean</i>	20.37
<i>Median</i>	7.74
<i>Industrialized Economies Mean</i>	1.17
<i>Smaller Countries</i>	
Bahamas	—
Belize	7.54
Barbados	6.80
Guyana	27.58
<i>Mean</i>	13.03
<i>Median</i>	7.64
<i>Overall Mean</i>	19.13
<i>Overall Median</i>	7.02

Note: Variances are over sample period 1990–99. For Argentina and Barbados, total consumption has been used. Time horizon is 35 years.

Source: World Bank staff calculations based on Arhanasoulis and van Wincoop (2000).

It is important to insist that this type of calculation only highlights direct welfare gains. Large as they may seem for LAC, for several reasons these figures still understate the true benefits of international risk-sharing. First, investment in risky assets with high returns would increase once risk is diversified away, which should raise growth and contribute to secondary-level gains (Obstfeld 1994). Second, portfolio diversification would reduce the incentives to use second-best distortionary measures (such as trade barriers) as risk-protection devices. Finally, risk diversification would allow financial markets to better fulfill their related functions of consumption-smoothing and optimal resource allocation.

*Operationalizing Risk-Sharing*

How would international risk-sharing be implemented? One conceptually simple way would be for residents in the different countries to trade claims on their respective risky national incomes. For example, residents of developing countries would sell claims on their GDP and buy claims on the GDP of industrial countries or other developing economies. Since not all economies suffer the same shocks at the same time, the result of this portfolio diversification would be a reduction in the risk faced by economic actors in each country. This is far from reality, however. At present, existing markets only allow trade in claims on firm dividends, which are a minor share of income in most countries, and ideally it would be necessary to develop “macro markets” to trade such national income claims.

If the potential welfare gains that such markets would allow are so large, why are they not already in operation? Their establishment involves a “public good” aspect that would prevent private firms and individuals from capturing the benefits of market introduction, even though they would have to bear the costs. Problems of measurement of national incomes and enforcement of market contracts would also be substantial. Finally, benefits of risk-sharing are far greater for the more volatile economies, and these economies are not necessarily the ones best positioned to lead in the creation of new markets that would be trusted by investors.

year—well above the corresponding figure for the average industrial economy. The more volatile economies in LAC would of course have benefited more from risk diversification, because they would have been able to more greatly reduce the variability of their consumption path, so their estimated gains would have been much bigger.

If the gains from international diversification are so large, why is it not already taking place? The answer is that the necessary financial instruments and the markets to trade them simply do not exist. At present, organized markets around the world only allow trade in the equity of a handful of firms accounting for a small fraction of world output. In other words, asset trading is limited to the sale and purchase of legal claims on the future profits of these firms, which represent a minuscule fraction of world incomes. And the available evidence shows that the degree of diversification generated by such trading is small. Table 4.3 presents the portfolio shares, relative to

total wealth, of a large group of industrial and developing countries.<sup>36</sup> Even for industrial economies, claims on capital held abroad are only about 5 percent of total wealth in the 1990s; domestic capital held by foreigners is of a similar magnitude. For developing economies, the figures are even smaller—less than 0.5 percent and about 3 percent, respectively.

In addition, other existing market-based insurance mechanisms for aggregate risks are limited in scope.<sup>37</sup> Even with better-developed markets, however, the insurance decisions of private individuals would likely lead to underinsuring anyway, because they do not take into account the fact that their individual actions may collectively add to economywide risk.<sup>38</sup> These facts call for policy action to deal with aggregate risks.

At the level of the national economy, what policies and institutions can help reduce aggregate volatility? Three broad types of measures can be distinguished,

TABLE 4.3

**International Portfolio Diversification**

(Ratios to Total Wealth)

	1966–73	1974–81	1982–89	1990–97	1966–97
<b>Weighted Average</b>					
<b>Industrial Countries</b>					
Foreign assets	0.013	0.007	0.000	-0.006	0.004
Capital owned by foreigners	0.025	0.024	0.029	0.042	0.033
Capital held abroad	0.028	0.029	0.032	0.053	0.039
Gross lending	0.041	0.061	0.124	0.158	0.112
Gross borrowing	0.031	0.059	0.127	0.175	0.114
<b>Developing countries</b>					
Foreign assets	-0.099	-0.037	-0.081	-0.065	-0.068
Capital owned by foreigners	0.039	0.022	0.023	0.029	0.028
Capital held abroad	0.004	0.002	0.002	0.005	0.003
Gross lending	0.024	0.060	0.048	0.041	0.045
Gross borrowing	0.088	0.077	0.108	0.082	0.088
<b>Median</b>					
<b>Industrial Countries</b>					
Foreign assets	-0.011	-0.028	-0.025	-0.037	-0.016
Capital owned by foreigners	0.021	0.021	0.030	0.061	0.035
Capital held abroad	0.007	0.007	0.023	0.053	0.028
Gross lending	0.046	0.050	0.119	0.140	0.105
Gross borrowing	0.044	0.083	0.161	0.199	0.145
<b>Developing countries</b>					
Foreign assets	-0.120	-0.116	-0.167	-0.139	-0.137
Capital owned by foreigners	0.039	0.027	0.031	0.033	0.035
Capital held abroad	0.000	0.000	0.000	0.001	0.001
Gross lending	0.028	0.043	0.045	0.056	0.051
Gross borrowing	0.105	0.128	0.174	0.155	0.160

Note: Weighted averages are computed over an unbalanced panel of eight-year averages for 68 countries. As a result, to a small extent changes across periods reflect changes in the composition of the sample. Results using a smaller balanced panel are similar.

respectively aimed at increasing (market) insurance, self-insurance, and self-protection against aggregate disturbances. Dealing effectively with macroeconomic risks requires a comprehensive strategy combining all three types of measures.

An overview of policies in each of these areas to deal with specific sources of aggregate volatility is outlined in Table 4.4. Rather than being comprehensive, the table's purpose is to illustrate the various alternatives available to governments to tackle the sources and amplification mechanisms of macroeconomic volatility. Because labor markets are examined again later in this report, we defer until then discussion of measures targeted at them. It is important to keep in mind that some policies serve more than one purpose—they may address more than one source of instability, or combine two or more of the insurance, self-insurance, and self-protection aspects.

Finally, the risk management policies reviewed below entail implicit and explicit economic costs. This does not mean they should not be undertaken, but rather that it is important to take such costs into consideration when assessing policy options. The cost and effectiveness of the various options depend on the economy's overall structure and institutional framework, so the optimal policy mix will differ across countries. The discussion below is meant to provide a guide or starting point for assessing the different alternatives.

### *Terms of Trade Risk*

As with other aggregate disturbances, risk diversification provides the best response to terms of trade volatility. Diversification could be achieved by selling to foreigners the rights to a part of the country's income from the future sale of commodities. Then domestic agents will not have to bear the full brunt of its volatility and can hold other assets instead. In this regard, the boom of foreign investment in LAC in recent years plays, in part, a risk-reducing role or self-protection-augmenting role.<sup>39</sup>

Hedging in international futures markets—for example, by selling tomorrow's copper or oil output at prices known today—is another way to diversify terms of trade risk. In spite of their expansion over recent years, however, futures markets remain limited in size, futures prices often fluctuate widely, and trading concentrates on short-term instruments. Currently, they offer limited scope for diversification over longer horizons.

Given the limitations of insurance markets, several LAC countries (for example, Chile and Colombia) have resorted to self-insurance, in the form of commodity stabilization funds, to deal with terms of trade risk. Such funds are designed to accumulate resources at times of high commodity prices and run them down when prices fall below a predetermined "reference" level. Unlike insurance mechanisms, stabilization funds do not involve any diversification of risk, only a precautionary transfer of resources from good to bad states.

TABLE 4.4

### **An Overview of Policies to Deal with Aggregate Volatility**

POLICY SOURCE/AMPLIFIER OF VOLATILITY	INSURANCE	SELF-INSURANCE	SELF-PROTECTION
Terms of trade	<ul style="list-style-type: none"> <li>International portfolio diversification</li> <li>Hedging</li> </ul>	<ul style="list-style-type: none"> <li>Stabilization funds</li> </ul>	<ul style="list-style-type: none"> <li>Trade diversification</li> <li>Trade taxes/subsidies</li> </ul>
International capital flows	<ul style="list-style-type: none"> <li>Contingent credit lines</li> </ul>	<ul style="list-style-type: none"> <li>Liquidity hoarding</li> </ul>	<ul style="list-style-type: none"> <li>Debt management</li> <li>Limits on current account gaps</li> <li>Capital controls</li> </ul>
Financial system	<ul style="list-style-type: none"> <li>Facilitate risk diversification through capital market development</li> <li>Internationalization of the banking system</li> </ul>	<ul style="list-style-type: none"> <li>Enhanced capital and liquidity requirements for banks</li> <li>Deposit insurance</li> </ul>	<ul style="list-style-type: none"> <li>Adequate bank regulation and supervision</li> <li>Avoidance of portfolio mismatches</li> </ul>
Fiscal policy		<ul style="list-style-type: none"> <li>Precautionary targets and contingent rules</li> </ul>	<ul style="list-style-type: none"> <li>Tax base diversification</li> <li>Public debt management</li> </ul>
Monetary and exchange rate policy		<ul style="list-style-type: none"> <li>Clear and transparent exchange rate/monetary rules</li> <li>Balance flexibility against credibility</li> </ul>	

They entail opportunity costs from the returns foregone by holding those resources in the form of short-term assets rather than longer-term, higher-yield investments.

Reducing the economy's exposure to terms of trade disturbances (that is, self-protection) is another way to limit their potential damage. One way in which this may be achieved is through export diversification, which reduces the impact of commodity price fluctuations by lowering the degree of concentration of exports in a few primary commodities. Diversification is often a natural result of the removal of bad policies—trade barriers or overvalued exchange rates—imposing an anti-export bias in the economic framework.

A related, but much more wasteful approach entails the use of trade barriers to isolate the economy from fluctuations in world prices (see Eaton and Grossman 1985). This procedure, however, runs counter to diversification—it can impose a strong anti-export bias in the incentive structure in addition to the efficiency cost of the distortions it creates. On the whole, these side effects make trade barriers counterproductive from the point of view of sheltering the economy from terms of trade risk.

### *Capital Flows*

Sudden reversals of international capital flows often leave emerging market economies deprived of external financing when they most need it. In the lack of developed market-based mechanisms to insure against such risks, the international financial institutions have often played a subsidiary role by supplying additional liquidity in emergency situations. But some market mechanisms are beginning to emerge. One example is that of contingent credit lines, which are prearranged and can be drawn upon by the borrower if needed. Mexico entered such an arrangement with a group of private banks in 1997 and drew upon it in 1998 following a deterioration in oil prices and external financing.<sup>40</sup> The potential role of international financial institutions in this area is also highlighted by the case of Argentina, the access of which to financial markets in 1999 was facilitated by a World Bank policy-based guarantee on repayments.<sup>41</sup>

While contingent credit arrangements are a promising phenomenon, their implications remain to be fully established. Specifically, it is not yet clear whether such arrangements represent genuinely additional financing, or just substitute for more conventional forms of financing, under

the action of international investors' portfolio diversification rules that limit the share of financing supplied to specific countries or regions.

Countries can also self-insure against capital flow shifts by hoarding international liquidity, in the form of foreign exchange reserves and short-term assets, and reduce exposure (that is, self-protect) to unanticipated capital flow shifts by managing external borrowing so as to prevent accumulation of large short-term liabilities and "bunching" of repayments. Importantly, such strategy should involve both public and private borrowing, because it is the repayment schedule of the country as a whole that matters—as shown by the East Asian crisis of 1997—and the private sector may tend to overborrow at short maturities.<sup>42</sup> Yet this strategy entails high costs, from both holding large stocks of resources in short-term, low-yield instruments, and borrowing at long maturities, which involve an interest premium.<sup>43</sup>

A more direct form of sheltering the economy from disruptions in capital flows is attempting to restrict them. This can be achieved by limiting the economy's financing needs, keeping the current account balance within narrow limits. While runaway current account deficits are a sure recipe for macroeconomic disaster, however, inflexible adherence to rigid current account targets tends to make adjustment to adverse disturbances unduly harsh. At the same time, it is no guarantee against sudden losses of confidence by international investors, as shown by the East Asian crisis of 1997.

Capital controls—on inflows, outflows, or both—also aim directly at restricting international capital mobility. In the aftermath of the Asia and Russia crises of recent years, they have received renewed attention, in particular given the Chilean experience with controls designed to have a stronger deterrent effect on short-term inflows, which are conventionally deemed the most volatile.<sup>44</sup> From the theoretical perspective, the drawback of capital controls is that they distort intertemporal saving and investment decisions, and hamper the efficient allocation of capital across countries.<sup>45</sup> From the practical perspective, the effectiveness of capital controls in deterring flows beyond the immediate future remains hotly debated—many argue that private investors sooner or later find ways to circumvent the controls. There seems to be some agreement, however, that controls may succeed in altering the composition of flows.<sup>46</sup>

### *The Financial System*

As noted earlier, the domestic financial system plays a dual role. It allows risk diversification through capital markets—mainly for idiosyncratic risks, but also for aggregate risks if foreigners participate in the market. It also provides the means to efficient self-protection against risk by individuals and firms.

In LAC, enhancing the first of these two functions requires development of deeper capital markets open to foreigners. This in turn raises the need for regulatory reforms aimed at improving firms' transparency and accountability and enhancing corporate governance. In the banking system, in particular, one way to diversify risk internationally that has been employed by several LAC countries is to allow entry of foreign banks, the overall portfolios of which are less subject to the risks affecting domestic banks. The other side of the coin is that foreign banks might increase financial contagion by retrenching in the domestic market when hit by adverse developments in other markets.

As argued earlier, weak banks tend to amplify shocks rather than help absorb them. They hamper efficient self-insurance against aggregate shocks by discouraging individuals from holding deposits and other banking system liabilities when the health of banks is perceived as suspect. In such cases, they are also vulnerable to losses of confidence. Maintenance of high capital and liquidity ratios can self-insure against such events. Such ratios should be higher the lesser the degree of financial market development, and could be made procyclical—rising in economic booms and falling in recessions. They are not without economic costs, however, because they will be reflected in higher costs of credit for borrowers. Deposit insurance can also raise savers' confidence in the banking system and thus encourage saving, enhancing economywide self-insurance (it may also enhance self-protection by making the system less vulnerable to runs). To limit the impact of disturbances on the banking system, adequate prudential regulation and supervision of banks is also a high priority. In particular, regulatory norms should aim at avoidance of unhedged currency mismatches in bank portfolios—mismatches that may arise directly in their balance sheets, or indirectly through the balance sheets of their borrowers.

### *Fiscal Policy*

Unstable fiscal policies are perhaps at the core of LAC's aggregate volatility. Ensuring fiscal stability is therefore of

high priority in the policy agenda. The first step, already achieved in many of the region's economies, is to set public finances on a sustainable path. To reduce aggregate volatility, however, it is also necessary to allow fiscal policy to carry out a countercyclical role. To a large extent, this will only be assured with development of stronger external financial links and deeper domestic financial markets. However, specific steps can be taken to reduce the impact of shocks on the fiscal accounts and the amplifier role played by fiscal policy.

Effective implementation of precautionary targets, and contingent fiscal rules that create room for action in bad times by accumulating resources during good times should be at the top of the policy agenda. Precautionary schemes to accumulate fiscal revenues in good times and run them down in bad times—as in the case of Chile's and Colombia's stabilization funds—are a good example. However, these rules should ideally be extended to all revenues, not only to those derived from natural resources. In addition, adoption of contingent rules relating fiscal policy to developments in the terms of trade, world capital markets, and so forth would also speed up and facilitate management of shocks, especially if such rules are preannounced. Adequate fiscal institutions and transparent budgetary procedures are necessary to ensure that such systems work as intended, and their resources are not misused for political objectives. In this regard, Brazil's Fiscal Responsibility Law represents an important step in the right direction.

To limit the effects of disturbances on public revenues, countries need to diversify their sources of fiscal revenues by expanding tax bases. This is particularly important in economies whose public sectors are heavily dependent on commodity revenues (such as Mexico or Venezuela). While any tax system entails deadweight losses, the international experience provides valuable hints on ways to limit such costs. Finally, management of the public sector's external borrowing program along the lines described earlier could also go a long way toward reducing fiscal vulnerability to financial shocks and, hence, fiscal and aggregate volatility.

### *Monetary and Exchange Rate Policy*

Regarding monetary and exchange policy, the key concern is to strike a balance between flexibility and credibility. Hard pegs and flexible rates offer different advantages and disadvantages in terms of self-protection and self-insurance against economywide risks. Flexible exchange rates and

independent monetary policy may help ease adjustment to real shocks, and thus reduce volatility. To deliver these benefits, however, credible monetary policy should follow clear rules, which could be explicitly made contingent on external developments, to facilitate the management of shocks.

Monetary independence may be curtailed by low credibility, large private sector foreign currency liabilities, or extensive de facto dollarization, when most real and, especially, financial transactions are carried out in foreign currency. In such cases, a rigidly pegged exchange rate may be a preferable alternative to impose financial discipline and establish credibility. However, it needs to be matched by well-managed fiscal policy and flexibility in labor markets, since these become the major adjustment mechanisms to shocks in the absence of independent monetary tools. In addition, the absence of a lender of last resort that can help domestic banks in the face of adverse disturbances will require imposing high liquidity requirements on banks (like in Argentina) to self-insure them against shocks.

The upshot, however, is that there is no universally valid exchange rate and monetary regime for LAC economies. The key recommendation is to adopt simple and transparent monetary and exchange rate rules, a precondition to establish credibility (see Frankel, Schmukler, and Servén 2000). Hard pegs—in the extreme, dollarization—or floating exchange regimes—as in Brazil, Chile, and Mexico—provide the best options in this regard.

### *Supranational Action*

In a broad sense, international financial integration is too limited rather than too broad. So far, it has not led to sufficient development of markets and instruments capable of providing adequate risk-sharing opportunities for developing economies to diversify much of the risk they face. While some progress in this direction has been made in recent years—with the expansion of world futures markets to trade commodity risks, and the emergence of contingent credit lines supplied by private investors to countries like Mexico—deep international markets for insuring aggregate risks remain a distant dream.

In this context of market imperfections, two lines of supranational policy action could speed up the process toward better international risk-sharing. Coordinated government action could speed up the development of adequate markets and instruments for international risk diversification. This, however, is a long-term undertaking. In

the meantime, the international financial institutions (IFIs) could play a major role, along two dimensions: first, by explicitly deploying their lending anticyclically, to counteract in part the fluctuations in private capital flows; and second, by helping expand the use of other insurance mechanisms, such as contingent credit lines. Their provision by the IFIs could serve as a catalyst for their further development by the private sector. Enhanced use of these or similar instruments by the IFIs—such as the policy-based guarantee recently obtained by Argentina—would serve to strengthen LAC's links with world financial markets and address the core of its economic instability.

Of course, important issues would need to be worked out. Key among them would be designing these contingent systems so that countries eligible to access them would nevertheless retain strong incentives for sound economic management so as to avoid moral hazard problems that could hamper such implicit insurance schemes. Clear definition of such policies, and design of adequate monitoring mechanisms and certification procedures that determine a country's eligibility status, are a prerequisite for implementation of the system. These issues should be at the top of the international policy agenda.

### **Annex 1**

This annex describes the methodology used in Figure 4.23 to identify the contribution of different economic factors to the “excess” aggregate volatility in Latin America—that is, the difference between the region's growth volatility and that observed in industrial countries and the East Asian miracle economies.

To perform the decompositions, we estimated empirical equations relating GDP growth volatility during 1975–99 (the period for which comprehensive data, particularly on capital flows, are available) to a number of variables discussed in the text, describing external and policy shocks and the depth of domestic and foreign financial markets. Specifically, the explanatory variables include the standard deviations of terms of trade shocks, public consumption growth, and reserve money growth; the coefficient of variation of gross private capital flows; and, to capture domestic and foreign financial market depth, the logarithm of the private credit/GDP ratio and the sum of private capital inflows and outflows relative to GDP. For credit, we use the logarithm to allow for the nonlinear effect on volatility mentioned earlier in the text. In addition to these vari-

ables, we also include a dummy variable taking the value of unity for countries specialized in oil exports. All the variables are constructed over 1975–99 or the longest period available within this time span.

The empirical sample includes all industrial and developing countries outside of Eastern Europe and Central Asia with population above 250,000 in 1995 for which the necessary data were available. From this initial sample, six countries (Cameroon, Chad, Gabon, Jordan, Sri Lanka, and Syria) were dropped because they presented extreme values for at least one of the variables of interest, which distorted the empirical results. This left a sample of 82 countries.

Estimation results are presented in Annex Table 1. Before reviewing them, some caveats should be noted. Most important, some of the explanatory variables may be themselves affected by growth volatility, so that the empirical association detected here may not reflect exclusively their impact on growth volatility but partly also reverse causality flowing in the opposite direction. The methods employed here (Ordinary Least Squares [OLS]) do not make any attempt to correct this problem. Some of the explanatory variables are strongly correlated, making it difficult to identify their individual contributions to explaining growth volatility.

The table lists the regression coefficients obtained using alternative empirical specifications. Coefficients in italics are statistically different from zero at least at the 10 percent confidence level.

Column 1 starts with a specification including only terms of trade shocks and macroeconomic policy volatility, omit-

ting all financial factors. It can be seen that these “real” factors all significantly contribute to explaining growth volatility. Column 2 adds (the log of) credit depth to the specification in column 1; it carries a negative and significant coefficient, suggesting that deeper domestic financial systems contribute to reducing volatility. Addition of the credit variable, however, makes fiscal volatility insignificant, as both variables display a high correlation (around  $-.50$ ).

Column 3 replaces domestic financial factors with foreign ones, as represented by the volatility of gross private capital flows and their average volume (of inflows plus outflows), both relative to GDP. The former carries a positive coefficient, as expected, while the latter carries a negative coefficient. Thus, given capital flow volatility, deeper financial integration with foreign markets tends to reduce growth volatility, as argued in the text.

Column 4 in the table combines the preceding two by adding both domestic and foreign financial variables to the initial specification. This is the column used to construct Figure 4.23. Because of the relatively large cross-correlation already mentioned among some of the explanatory variables, two of them are not individually significant—the volatility of capital flows and the (log of) private credit. However, when considered jointly, they are significant at the 10 percent level. This means that these two variables jointly make a significant contribution to explaining the observed variation in growth volatility across countries, even though their individual contributions cannot be accurately estimated. For this reason, the calculations in Figure 4.23 should be viewed as illustrative rather than definitive.

ANNEX TABLE 1

**Empirical Determinants of GDP Growth Volatility**

(Dependent Variable: Standard Deviation of GDP Growth, 1975–99)

VARIABLE	(1)	(2)	(3)	(4)	(5)
Constant	<i>0.024</i>	<i>0.043</i>	<i>0.021</i>	<i>0.030</i>	<i>0.025</i>
Volatility of terms of trade shocks	<i>0.002</i>	<i>0.002</i>	<i>0.002</i>	<i>0.002</i>	<i>0.002</i>
Volatility of public consumption growth	<i>0.015</i>	<i>0.013</i>	<i>0.013</i>	<i>0.012</i>	<i>0.012</i>
Volatility of reserve money growth	<i>0.066</i>	<i>0.042</i>	<i>0.050</i>	<i>0.040</i>	<i>0.043</i>
Log average of private credit/GDP ratio		<i>-0.005</i>		<i>-0.003</i>	<i>-0.003</i>
Volatility of capital flows			<i>0.013</i>	<i>0.012</i>	<i>0.013</i>
Average volume of capital inflows+outflows (x100)			<i>-0.025</i>	<i>-0.019</i>	<i>-0.020</i>
Average per capita GDP					<i>0.001</i>
Log population 1995					<i>0.000</i>
Oil-exporters dummy	<i>0.011</i>	<i>0.011</i>	<i>0.011</i>	<i>0.011</i>	<i>0.010</i>
R-squared	<i>0.51</i>	<i>0.54</i>	<i>0.57</i>	<i>0.58</i>	<i>0.58</i>
Number of observations	82	82	82	82	82

Note: Coefficients shown in italics are statistically significant at the 10 percent level or better. Significance tests use heteroskedasticity-consistent standard errors.

Finally, the last column adds to column 4 per capita real income and country size (as measured by population), the two variables found in Chapter 2 to be significantly associated with growth volatility. They are not significant either separately or jointly, and their addition changes little the coefficients on the other regressors, which appears to confirm the ability of the preferred specification to identify the economic roots of volatility.

## Notes

1. Aggregate volatility also reflects other noneconomic factors, such as climatic changes, natural disasters, and political developments. While these are important for some countries—for example, climatic factors in the Caribbean subregion—they are not covered in this report.

2. That is, the four commodities with largest export volume for each country. They are not necessarily the same for all countries.

3. It is important to note that the data required to compute terms of trade shocks are not available after 1998. In 1999, several economies in the region (such as Argentina and Chile) experienced terms of trade disturbances of significant magnitude.

4. Terms of trade shocks are defined as the change in export prices times the share of exports in GDP, minus the change in import prices times the share of imports in GDP.

5. This information is available on a comprehensive basis only for the 1990s.

6. See Gavin, Hausmann, and Leiderman (1997) for a comprehensive analysis of the evolution of capital flows to Latin America.

7. The operation of margin calls in financial markets has also been singled out as a source of contagion, as investors incurring losses in one market are forced to sell in other markets to meet their liquidity requirements.

8. Terms of trade are also determined in part by domestic factors in the case of countries which possess a major share of the world market for their imports and exports.

9. The coefficient of variation of gross capital flows relative to GDP is a more appropriate measure than the standard deviation because the average level of this ratio is of a relatively large magnitude that varies considerably across world regions and over time. This is in contrast to most of the other macroeconomic variables examined so far, which are typically small in magnitude. To perform cross-country comparisons of the variability of capital flows, it is therefore convenient to adjust for their average size.

10. In fairness, policy volatility could also result from policymakers' attempts to stabilize a highly volatile economy through swings in fiscal and monetary policies. In practice, however, this "good" volatility is unlikely to account for much of Latin America's observed policy instability, with the possible exception of a few economies such as Chile.

11. We use public consumption rather than the overall public deficit for two reasons. First, the former is under the direct control of the authorities, while the latter varies endogenously with tax collec-

tion, itself dependent on the level of economic activity, and with interest rates, which determine the burden of domestic debt service and are themselves affected by inflation. Variation in inflation rates across countries and periods then hampers comparability of public deficit figures. Second, data on public consumption are much more widely available than data on the public deficit. The ideal measure of fiscal stance would be the cyclically adjusted primary deficit (that is, the deficit exclusive of interest payments and adjusted for endogenous changes in tax collection). Such information, however, is available only for a small number of countries and years. In any case, the picture that results from using the standard deviation of public consumption growth (as in the text) as the measure of fiscal volatility is very similar to that obtained using instead the coefficient of variation of public consumption relative to GDP. By this latter measure, Latin America would also display higher volatility in the 1990s than in the 1980s, exceeding in the former decade all other world regions.

12. Figure 4.9 plots the (log) standard deviation of base money growth against the standard deviation of public consumption growth. The sample includes all countries, except those in Eastern Europe and Central Asia, with populations of more than 250,000.

13. Figure 4.10 plots the standard deviation of terms of trade against that of public consumption growth, for the same sample of countries as in the previous figure.

14. Although participation of foreigners in the domestic capital market also allows international sharing of aggregate risks.

15. The following discussion draws extensively from Caballero (2000).

16. This is documented by Caballero (1999a, b, c) for several major Latin American economies.

17. The progress of financial development in Latin America was reviewed in World Bank (1997).

18. The present value effect is computed assuming an AR(4) process for the spot price of copper, a constant growth rate for copper production (7 percent), and a fixed discount rate (7.5 percent).

19. A similar picture emerges if we use instead another standard measure of banking system size, namely the ratio of banks' liquid liabilities to GDP.

20. Banking systems are highly developed in a few smaller economies that are international financial centers, notably the Bahamas, Barbados, and Panama.

21. This does not mean that LAC countries should embark on a runaway expansion of the banking system. As experience has shown, the speed at which the banking system can safely expand is closely dependent on the strength of the regulatory and supervisory framework.

22. The graph omits Sub-Saharan Africa and the Middle East and North Africa due to the small number of countries from those regions for which information is available.

23. Sensitivity is measured by the regression coefficient of absolute equity price changes on trade volume.

24. The importance of these financial issues for macroeconomic management is discussed in Easterly, Islam, and Stiglitz (2000).

25. A similarly negative association emerges if we use instead the ratio of banks' liquid liabilities to GDP as our measure of financial depth. Furthermore, the results are robust to also controlling for the level of per capita income. This is necessary because financial depth indicators are strongly associated with per capita income across countries.

26. This resulted from a regression of GDP growth volatility on the logarithm of the credit/GDP ratio.

27. Easterly, Islam, and Stiglitz (2000) obtain the same empirical result.

28. This procyclical behavior of fiscal policy is documented in Inter-American Development Bank (1995) and World Bank (1997).

29. However, procyclical fiscal deficits might also be viewed as a second-best response to financial constraints, since at times of financial distress the government may not necessarily be the actor that can make the best use of scarce funds from the social point of view.

30. See Ghosh and others (1998) for a comprehensive empirical assessment of the macroeconomic effects of alternative exchange rate regimes. They find that pegged exchange rates are associated with lower inflation and higher variability of real income growth than flexible rates. However, the robustness of these results is questioned by Edwards and Savastano (1999).

31. This "devaluation refrainment" is examined by Calvo and Reinhart (1999) and Hausmann and others (1999).

32. See Perry and Lederman (1999) for a discussion of the real effects of nominal devaluations in Latin American and East Asian economies following the 1997 crisis.

33. Some caveats are in order, however. First, some of the potential explanatory factors are themselves affected by volatility (for example, capital flows, as noted above), and hence their causal effect on volatility may be blurred in the observed empirical association between both variables. Second, some of the explanatory variables are strongly associated among themselves, so it is difficult to disentangle from the data which one is responsible for what effect. This is particularly the case as our measures of fiscal volatility move closely with terms of trade shocks and monetary factors (positively with monetary volatility and negatively with credit depth).

34. The figures in Chapter 2 presented regional medians, while the empirical methods used here employ unweighted regional averages. They also exclude economies with populations under 250,000 in 1995, and economies for which data on any of the relevant variables was missing.

35. In several respects, these results are in fact rather similar to those reported by the Inter-American Development Bank (1995) and Easterly, Islam, and Stiglitz (2000). The former also finds a large effect of monetary instability and financial depth on Latin America's volatility, and both studies fail to find large effects of capital flow volatility.

36. The table is taken from Kraay, Loayza, Servén, and Ventura (2000).

37. This situation parallels the lack of development of market insurance for catastrophic risks in industrial countries.

38. This is analyzed by Caballero and Krishnamurty (2000).

39. With foreign resource ownership, however, an adequate taxation system is necessary to capture natural resource rents.

40. The line of credit was refinanced in 1999.

41. The guarantee was based on a number of specific policy reforms.

42. Long-term debt can be viewed as short-term debt plus an implicit rollover insurance. By neglecting their contribution to the overall repayment schedule, individual borrowers may undervalue the implicit insurance and tend to overborrow at short maturities.

43. Ironically, borrowing only long term and holding large short-term reserves would be considered poor financial management in most corporations of industrial countries. Several major economies in Latin America (especially Chile) already hold very large precautionary balances; see Caballero (2000) for details.

44. A similar scheme has been used by Colombia.

45. Capital controls may also hamper another function of capital flows, namely the contribution of equity inflows to improving corporate governance in destination countries. Moreover, an unintended side effect of controls is that they may create opportunities for rent-seeking and corruption.

46. On the effectiveness of capital controls see, for example, Edwards (1999), Montiel and Reinhart (1999), and Kaminsky and Schmukler (2000).



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## CHAPTER 5

# The Response of LAC Households to Economic Shocks

**L**ATIN AMERICA AND THE CARIBBEAN IS CHARACTERIZED BY HIGH LEVELS OF VOLATILITY OF household per capita income. Although this volatility declined in the 1990s as compared to the 1980s, it has remained high in international terms. These aggregate fluctuations have various sources: climatic shocks, such as those imposed by Hurricane Mitch on Honduras and Nicaragua in 1999; terms of trade shocks, such as the oil price shocks of 1973 and 1979; and external financial shocks, such as the higher real interest rates and quantity loan rationing of the Debt Crisis in the 1980s, and the more recent capital outflows associated with the Asian and Russian contagion episodes in 1997 and 1998–99. Transmission mechanisms and the macroeconomic policy implications of these various shocks are different for each shock and each country.<sup>1</sup>

Because aggregate volatility as examined in Chapter 4 measures the variance of means, it stands to reason that the mean volatility in *individual* or *household* income must have been even higher. After the debt crisis of the 1980s, economists started to quantify the effects of aggregate fluctuations on household welfare.<sup>2</sup> However, the absence of disaggregated, household-level *panel* data had, until recently, prevented serious empirical analysis of the impact of aggregate economic volatility on households and individuals in LAC.<sup>3</sup> The goal of this chapter is to contribute toward understanding the impact of shocks on LAC workers and households, and of their strategies—both *ex ante* and *ex post*—of dealing with these high levels of risk.

### **The Risk of Unemployment: Who is Most Affected?**

Though real wages often drop dramatically during crises, in normal times shocks to individual households (idiosyncratic risk) may be more likely to occur when the main earner or household head loses his or her job.

#### *Are the Poor Most Likely to Become Unemployed?*

Though differences in definition, measurement, and even cultural conceptions make comparing unemployment rates across countries difficult, this does not prevent us from studying how unemployment may vary across income quintiles within each country (see Table 5.1). The common conception that the poor bear a disproportionate share of the brunt of unemployment seems supported by the rankings by *per capita* reported income.

However, a temporary fall in reported income due to job loss may lead to incorrectly classifying generally well-off unemployed individuals as poor. Reranking households by a measure of *consumption*—which is less likely to drop as sharply as income if the job loss is considered temporary, as in most cases it turns out to be—leads to a substantially different picture. In Mexico and Uruguay, unemployment is far more evenly distributed across income classes; in Peru and Brazil, the poor show disproportionately less unemployment.

#### *Are Older, Less-Educated Men More Likely to Become Unemployed?*

Table 5.2 reveals another important fact: the highest rates of unemployment are found among those under 19 years of age who probably are not heads of households. This suggests

TABLE 5.1

**Unemployment Rates by Household Income and Consumption Quintile**

	POOREST	2	3	4	RICHEST
<b>Income</b>					
Argentina	28.5	16.1	13.2	7.5	4.1
Brazil	10.8	7.1	6.0	4.6	2.9
Chile	27.7	11.2	7.6	5.1	2.8
Colombia	31.2	20.3	13.8	10.6	5.0
El Salvador*		26.8	15.3	2.9	0.6
Mexico	5.0	4.8	4.6	3.9	3.2
Uruguay	35.7	26.4	19.5	11.9	6.7
<b>Consumption</b>					
Brazil	5.8	8.8	6.8	6.2	4.7
Mexico	4.8	4.4	4.5	3.9	3.8
Peru	5.2	6.3	8.1	9.1	7.4
Uruguay	25.1	20.3	21.1	19.7	13.6

\*For El Salvador, the first and second quintiles are combined.

Source: Household Surveys (various); Argentina 1994, Peru 1996, all other countries 1998.

that facilitating the entry of the young into the workplace may be as important an item on LAC government agendas as mitigating unemployment risk among household heads, generally assumed to be older males. Another notable finding is that women experience higher unemployment rates across the sample. It is not clear whether this is due to recent surges in female participation in the work force, or the imperative of predominantly male household heads to take a job and hence shorten job search times, or other factors. Finally, the highly educated do experience less unemployment; but among primary- and secondary-level educated workers there is no consistent pattern across countries.

***Is There No Unemployment in the Informal Sector?***

For Mexico and Argentina, Arango and Maloney (2000) have used panel household data to more carefully study the dynamics of unemployment, especially the incidence and duration of unemployment spells.<sup>4</sup> Table 5.3 presents estimates of transition probabilities among four types of workers: formal salaried workers; informal workers both salaried and self-employed, unemployed people, and people outside the labor force. The term “informal” refers here to owners of and workers in firms with fewer than 16 employees who do not have social security or medical benefits and are therefore not protected.

TABLE 5.2

**Unemployment Rates by Age, Education, and Gender**

	ARGENTINA	BRAZIL	CHILE	COLOMBIA	EL SALVADOR	MEXICO	URUGUAY
<b>Age</b>							
12–19	36.8	13.9		36.7	11.6	13.3	20.2
20–29	16.5	8.6	16.5	20.7	10.2	4.6	12.7
30–49	10.2	4.2	7.6	9.8	4.9	1.8	6.4
50–65	12.9	2.5	6.1	8.5	4.7	2.0	4.3
65+	11.0	1.1	5.6	8.7	3.1	6.8	4.3
<b>Education</b>							
Primary	16.6	10.2	N/A	13.7	8.5	4.7	9.4
Secondary	13.8	6.8	N/A	17.3	8.9	3.7	10.0
University	6.0	2.4	N/A	5.9	4.9	2.9	5.1
<b>Gender</b>							
Men	12.5	5.6	9.1	12.1	8.1	3.4	8.1
Women	17.4	8.0	11.7	18.1	6.0	5.5	12.8

Source: Household Surveys (various); Argentina 1997, Peru 1996, all other countries 1998.

TABLE 5.3

**Annual Probability of Becoming Unemployed from Formal and Informal Work (Percent)**

ORIGIN:	FORMAL SALARIED				INFORMAL			
	MEXICO		ARGENTINA		MEXICO		ARGENTINA	
AGE	HIGH SCHOOL	LOW SCHOOL	HIGH SCHOOL	LOW SCHOOL	HIGH SCHOOL	LOW SCHOOL	HIGH SCHOOL	LOW SCHOOL
<22	NA	1.7	15.4	25.0	NA	1.7	18.0	31.6
22-35	0.8	1.1	4.1	10.0	1.0	1.2	0.2	11.0
36-55	1.3	1.5	2.09	7.3	1.3	1.9	4.3	13.6
>55	2.3	2.7	0.6	8.0	2.7	2.7	2.3	11.3
Total	1.1	1.5	2.8	6.5	0.9	1.4	3.0	13.0

NA= Insufficient data.

Source: Arango and Maloney (2000). Maximum Likelihood Estimations following Kalbfleisch and Lawless (1985).

Consistent with more traditional views of the informal sector, the likelihood of becoming an informal sector worker is found to be two to three times as high as the likelihood of entering formal employment after being unemployed. However, what is striking is that there are also large flows from informality into unemployment. In particular, in Argentina, it is twice as likely for primary-school-educated informal sector workers to become unemployed as their formal sector counterparts. Only some of this effect disappears when we compensate for the fact that fewer people leave formal employment relative to informal sector jobs. This suggests that what is traditionally considered the reserve sector for the formal sector unemployed itself generates many unemployed. In fact, tabulations of the sector of origin of the unemployed sector in Argentina and Mexico suggest that only 36 percent and 25 percent, respectively, of those currently unemployed (who previously held jobs) were in the formal sector. The remainder were from either informal self-employment or informal salaried employment.

In addition, the informal salaried sector is often thought to be a "supercompetitive" sector where a laid-off worker can instantaneously find another job. And in fact, in Mexico and Argentina, those entering unemployment from the informal sector do spend between 22 and 35 percent less time, respectively, in unemployment than formal sector workers (see Box 5.1). But it is also true that the income variance among self-employed workers is significantly greater than in the formal sector (see Table 5.4). However, given the substantially higher incidence of unemployment, the difference in durations does not seem so large that we can conclude that informal workers are somehow of less concern than formal workers from the point of view of designing an income security program. It also suggests

that one commonly cited "safety net," the informal sector itself, is less comprehensive than often thought.

But without evidence that the differences in Table 5.4 are indicative of a higher income variance of any particular

**BOX 5.1****Informal Self-Employment: Precarious Workers or Voluntary Entrepreneurs?**

Do the findings that the informal often find themselves unemployed provide additional evidence that informal work is especially precarious? Perhaps not. As Chapter 2 suggested, there is evidence that up to 70 percent of the people working in the informal sector may be doing so voluntarily. Informal self-employment has behaved procyclically for long periods in Argentina, Chile, and Mexico, and enterprise surveys suggest that less than one-third of business owners in Argentina and Mexico entered the sector involuntarily.

Levenson and Maloney (1998) argue further that small firms everywhere show high rates of mortality and higher income variance. The fact that they may either be able to avoid taxation and regulation (Loayza 1998), or that they generally do not benefit from formal contracting, risk-pooling, and other institutions that larger formal sector firms can avail of, means that small firms will tend to be disproportionately informal. Combining these two elements leads to a finding that is common in the literature: informal firms show very high rates of failure and income volatility, and informal workers show high rates of turnover. But under this interpretation, this is voluntarily accepted risk and does not reflect a "precarious" business environment in the sense the term is frequently used.

TABLE 5.4

**Income Variance of Formal Salaried vs. Self-Employed Workers**

(Theil Index)

	ARGENTINA	BOLIVIA	CHILE	COLOMBIA	URUGUAY	VENEZUELA
Formal Salaried	.295	.430	.411	.433	.350	.264
Self-Employment	.484	.819	.867	.972	.499	.470

Source: Wodon, Maloney, and Barenstein (2000).

individual in one sector versus the other, this cannot be used as evidence of “precariousness”; it could as likely be evidence of greater heterogeneity in the informal relative to the formal sector. This should not imply, therefore, that those in informal activities should be the focus of an employment security program.

**Who Becomes Unemployed and for How Long?**

Tables 5.3 and 5.5 shed some light on who becomes unemployed and for how long. In both Argentina and Mexico, people with more schooling tend to become unemployed less frequently, but remain unemployed longer. This is consistent with more firm specific human capital leading to both lower separation rates and longer job searches. No clear pattern by age is shared across countries. In Mexico, older workers are more likely to become unemployed, and for longer periods. In Argentina, the young are far more likely to become unemployed and, among the less skilled, for longer periods. In sum, a blanket statement about who especially needs income protection cannot be made easily.

**Household Responses to Income Shocks: Findings of Panel Studies**

This section discusses the main results of the impact of shocks on households and their coping strategies, obtained for the agricultural production crisis of 1997 in rural El

Salvador (Conning, Olinto, and Trigueros 2000), for the 1995 Mexican Tequila Crisis (Cunningham and Maloney 2000), and for various boom and bust episodes in Brazil in the 1980s and 1990s (Neri and Thomas 2000).<sup>5</sup>

In interpreting the results of these three studies, readers are advised to keep in mind an important shortcoming. All three studies use incomes, not consumption expenditures, to analyze the effects of aggregate shocks. For a study of household responses to shocks, this is no small shortcoming. (See Box 5.2 for a discussion of methodologies used in these studies.) If shocks are not perfectly foreseen, or if capital markets are imperfect, a (constrained) consumption-smoothing household will respond by adjusting consumption levels. But even an unforeseen negative shock ought to lead to a (less than proportional) decline in consumption, and an unexpected positive shock should entail a (less than proportional) increase in consumption.<sup>6</sup> Since welfare ultimately derives from consumption, rather than income, this implies that income variations overstate welfare variations in all cases (and in both directions). The magnitude of the overstatement will, however, decrease with the degree of imperfection in capital markets and with how binding any subsistence constraint is.

The studies generated a wealth of detailed, country-specific information that should be valuable to those with a special interest in these countries, but there are also results of more general interest. We focus on what we call the four

TABLE 5.5

**Unemployment Duration, in Years**

AGE	MEXICO		ARGENTINA	
	HIGH SCHOOL	LOW SCHOOL	HIGH SCHOOL	LOW SCHOOL
<22	NA.	0.10	0.73	0.58
22–35	0.19	0.12	1.20	0.49
36–55	0.17	0.15	0.80	0.51
>55	0.20	0.14	0.64	0.39
Total	0.18	0.14	0.82	0.47

NA = Not applicable.

Source: Arango and Maloney (2000). Maximum Likelihood Estimations following Kalbfleish and Lawless (1985).

## BOX 5.2

**Data Sets and Methodologies Used**

This box describes the data sets and empirical approaches used by the case studies commissioned for this report and summarized in this chapter.

*Rural El Salvador*

Conning, Olinto, and Trigueros (2000) investigate the effects of a downturn in agricultural activity in El Salvador in 1997, using a panel of 489 rural households surveyed in 1995 and 1997 by the Universidad Centroamericana. The authors use these data to quantify the incidence of the impact by income groups, to disaggregate it by occupational category, and to investigate which household characteristics were associated with differences in the magnitude of the income shock. The existence of such characteristics would indicate that they play a role in risk management by the household, either *ex ante* (as insurance or self-protection), or *ex post* (as coping).

The authors deploy two complementary techniques. First, poverty indexes are computed by subgroup, using one of the seven occupational categories the household fits into: self-employed only, nonagricultural wage only, agricultural wage only, agricultural wage and nonagricultural wage, nonagricultural wage and self-employment, agricultural wage and self-employment, and all three occupations. Second, a model of income determination, including household-specific and time-variant variables, household-specific and time-invariant variables, household-specific and time-invariant unobserved effects, and household-specific and time-variant shocks, was estimated to generate random-effects estimators. A specification test suggested that the hypothesis that the estimates were the same could not be rejected. The authors focus on the analysis of the random effects estimates.

*Metropolitan Mexico*

Cunningham and Maloney (2000) identify the groups worst affected by the 1995 Tequila Crisis in Mexico, and study the results of labor force participation changes around the shock, as coping strategies. The data set used is a panel of 21,262 households in 16 metropolitan areas in Mexico, from 1994 to 1997, drawn from the National Urban Employment Survey (ENEU). Households are

interviewed quarterly, and stay in the panel for five consecutive quarters.

To account for the possibility that "vulnerability" might depend on the initial rank of the household in the welfare distribution, results are presented for unweighted and weighted—where different weights are attached to income levels depending on the place in the distribution. Three quantile regressions (for the first quintile, the median, and the fourth quintile) are estimated, with proportional changes in household income as the dependent variable. A set of demographic, educational, and occupational dummy variables, three of which capture household behavior in response to the shock (head enters labor force, spouse enters labor force, and child enters labor force), are used as independent variables.

*Metropolitan Brazil*

Neri and Thomas (2000) identify the groups most affected by aggregate economic fluctuations in Brazil, and then investigate the nature of the household responses. They restrict their inquiry to urban areas, but span a longer period: from 1982 to 1999. The data set is drawn from the Monthly Employment Survey (PME), carried out by the Brazilian Statistical Institute (IBGE) every month for Brazil's six largest metropolitan areas. The same households are interviewed for four consecutive months, then excluded from the sample for eight months, and then revisited for a further four consecutive months. This allows the authors to construct a series of panels, using four-month averages of household incomes per capita, to investigate the impact on households of seven periods of macroeconomic volatility: three booms and four recessions. The distribution used is a distribution of household per capita income, per household head.

Neri and Thomas also find that using current income to rank the distribution would bias the results by exaggerating true mobility. They too use a proxy for permanent income, which is the value of the predicted income for each household head in a Mincerian (earnings) equation with age, experience, gender, marital status, and employment sector. Average proportional income

*(continues on next page)*

## BOX 5.2

**Continued**

changes for each quintile in each episode are calculated, then disaggregated depending on whether the household head was a formal or informal sector employee or was self-employed in the first period. The probability of entering or exiting poverty in booms and recessions is computed by education of the household head and

changes in occupational status. Finally, a difference-in-differences approach is used to compare the probabilities of four types of household responses to changes in employment status of the household heads: spouse enters employment, child leaves school, child repeats grade, and child enters employment.

stylized facts of aggregate income risk and household welfare in Latin America:

- (1) Aggregate income volatility affects different ranges of income distribution differently, depending on the country and on the episode. There is no discernible pattern that either the poorest or the richest households persistently have a higher income volatility than others.
- (2) The ownership of assets—such as land, education, and surplus household labor—reduces the risk faced by households.
- (3) The poor, like everyone else, appear to be reluctant to make irreversible divestments during bad times, and this is especially true of decisions concerning the education of their children. The evidence broadly suggests that school enrollment is reasonably insensitive to aggregate economic fluctuations, although school performance is not. Child labor is generally procyclical rather than countercyclical.
- (4) From the experience of some countries, relatively large crises (deep or long recessions) appear to have qualitatively different effects on poverty and investments in human capital than smaller shocks; for example, the poor are affected more than the rich when the shocks are big, but vice versa when the shocks are smaller.

***Do Aggregate Shocks Hurt the Poor More than the Rich?***

Macroeconomic volatility—in particular, unexpected negative aggregate income shocks—do not appear to disproportionately affect the incomes of any particular range of the income distribution. Specifically, we find no support for the common claim that the poorest are always those most affected by economic fluctuations. Of the four Brazilian recessions studied, only the most severe (1982–83) gener-

ated a greater proportional income loss to the poorest quintile than to any other. In all other cases (1990–91, 1996–97, and 1998–99), the greatest proportional—and therefore obviously also absolute—income losses were borne by the richest quintile. In fact, during the recession that followed the failed stabilization attempt known as the “Collor Plan,” which was based on a temporary seizure of financial assets, proportional losses declined consistently by income quintile.

Growth episodes also appeared to have been more benevolent to the poor than is generally acknowledged. In two of the three boom episodes considered (1984–85 and 1986–87) proportional income gains also declined consistently by income quintile. The third episode, which followed the successful stabilization of the Brazilian real during 1994–95, is best described as broadly neutral. Table 5.6 and Figures 5.1.a and b summarize the results from Brazil.

Using a different methodology, similar results emerge for Mexico in 1995. Households that suffered average or median losses were found to be evenly spread across all wealth classes. But households in the poorest 40 percent of the population were less likely to suffer large negative losses and were overrepresented among those “suffering” small losses (or even gaining) in the aftermath of the 1995 crisis. Table 5.7 reports the actual results of those regressions. In addition, some groups often thought to suffer disproportionately, such as the elderly and single mothers, do not appear to be particularly badly affected, echoing earlier findings from Peru by Hall and Glewwe (1998).

But just as they did during 1982–83 in metropolitan Brazil, the poorest households do, on some occasions, fare worse than richer households in terms of the relative income losses inflicted by a shock. This was found for the rural Salvadoran sample, where the mean proportional income loss during the aggregate shock suffered by the poorest 20 percent of the population was 32 percent; 18

TABLE 5.6

**Metropolitan Brazil: Percentage Income Changes by Head's Wage Bracket**

WAGE BRACKET	GROWTH			RECESSION			
	1984-85	1986-87	1994-95	1982-83	1990-91	1996-97	1998-99
1 (poorest)	8.8	31.0	15.7	-33.3	-11.7	-1.8	-3.9
2	6.7	19.4	17.1	-30.7	-12.5	-1.9	-5.5
3	6.6	14.9	16.9	-31.0	-18.9	-1.7	-4.9
4	4.6	12.6	18.0	-28.6	-26.0	-2.0	-6.3
5 (richest)	3.8	4.9	14.0	-27.1	-28.1	-5.2	-6.5

Source: Neri and Thomas (2000).

percent for the second fifth; 2 percent for the third; 5 percent for the fourth; and the richest 20 percent actually experienced a 9 percent gain in income.<sup>7</sup>

Just as the Salvadoran example showed that the results may differ among countries—or for the same country, between rural and urban areas—results also differ if distributional weights are attached to losses, for example, with higher weights attached to incomes of the poor. This qualification should be kept in mind when interpreting results such as those for Brazil and Mexico, and in reacting to claims that the “the poor are affected more severely during crises.”<sup>8</sup>

#### *Does Ownership of Assets Reduce Vulnerability to Aggregate Shocks?*

The second stylized fact of covariate income risk and household welfare in LAC is that asset ownership decreases a household's vulnerability to shocks (in the sense of reducing its proportional income variation). The term “asset” is used in a broad sense to include land, education, the benefits associated with formal employment, and underused family labor. All three studies uncovered evidence of this,

although the different settings to which they refer imply that the assets in question differed in importance.

Perhaps the starkest evidence refers to the smoothing effect of land ownership on the plight of rural households during the 1997 agricultural downturn in El Salvador. Table 5.8 decomposes the total change in the poverty headcount ratio<sup>9</sup> for the seven occupational categories previously mentioned, into three effects: one due to an increase in poverty within the existing subgroup, another due to changes in the population shares of each subgroup, and a third that accounts for interactions between the previous two terms. Given the choice of a relatively high poverty line, the headcount did not change much overall, rising from 0.65 to 0.69.<sup>10</sup> However, the poverty profile was transformed. The self-employed only group, which generally has no access to land, accounted for some 16 percent of the poor in 1995; two years later, the figure was 25 percent. Interestingly, this did reflect a rise in the intragroup headcount ratio, but was predominantly due to an increase in the number of people who lost jobs in agriculture. Correspondingly, the poverty share of agricultural wage workers

FIGURE 5.1

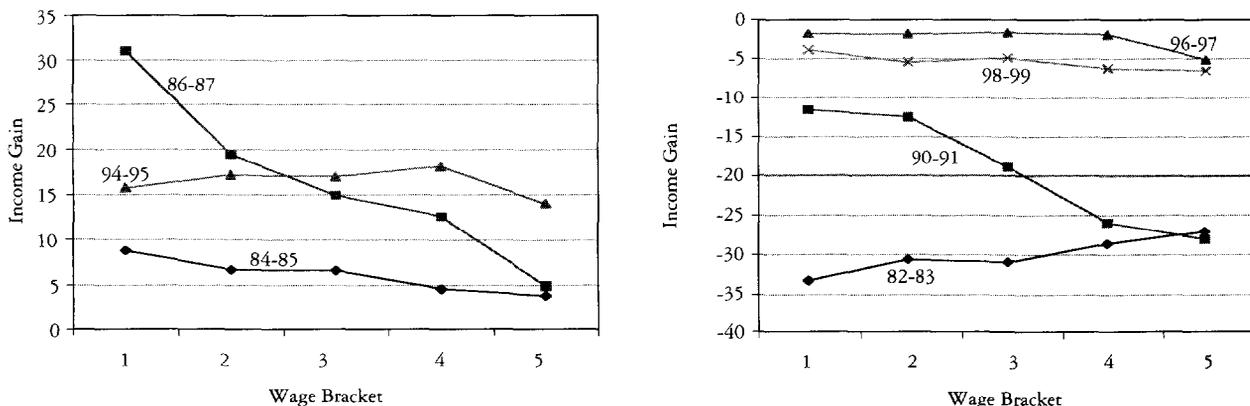
**Income Gains and Losses in Seven Episodes of Volatility in Brazil**

TABLE 5.7

**Mexico: Proportional Income Change by Income Quintile, 1995–96**

	PERCENTAGE CHANGE ACROSS 5 QUANTILES					
	0.2	0.5	0.8	0.2	0.5	0.8
	A	B	C	D	E	F
Quintile 1	0.033*	0.007	0.085**	0.091**	0.091**	0.281**
Quintile 2	0.048**	0.016	0.006	0.053**	0.046**	0.112**
Quintile 3	0.018	-0.0068	-0.0291	0.064**	0.034**	0.094**
Quintile 4	0.011	-0.021	0.006	0.027	0.012	0.032
Consumption	-0.562**	-0.260**	0.115**	-0.382**	-0.004	0.508**

\* Denotes statistical significance at the 1 percent level.

\*\* Denotes statistical significance at the 5 percent level.

Note: The table reports percentage income changes relative to the richest 20 percent of the population. The omitted category is the top quintile, and the proportional change in its income is given by the constant term; other entries indicate differences with respect to that change.

Source: Cunningham and Maloney (2000).

TABLE 5.8

**Rural El Salvador: A Dynamic Decomposition of Poverty Changes, 1995–1997**

HEADCOUNT RATIO	CONTRIBUTION TOWARD CHANGE IN POVERTY (%)			
	TOTAL	SECTORAL	POPULATION SHIFT	INTERACTION
Self-employed only	160	22	127	11
Nonagricultural wage workers only	-23	29	-43	-8
Nonagricultural wage + self-employed	21	-3	24	-0
Agricultural wage workers only	-91	11	-98	-4
Agricultural wage workers + self-employed	49	27	21	1
Agricultural wage + nonagricultural wage	-12	36	-35	-13
Agricultural and nonagricultural wage + self	-5	-22	20	-3
Total	100	100	16	-16

fell from 18 percent to 11 percent, despite an increase in its own headcount ratio.

The results for El Salvador indicate that—controlling for income—land ownership makes households more likely to keep children enrolled in school, and helps preserve the productivity of labor during crises. The importance of land is confirmed by statistical analysis to estimate earnings in both periods. Land ownership appears to have played a more important role as a self-insurance strategy than as a direct determinant of earnings in good times: the effect of land ownership was not statistically significant in 1995, and only became important after the crisis. During good times, it was access to off-farm employment, rather than having a plot of land, that had the greatest (and most significant) impact on household income.<sup>11</sup> And both original access to nonagricultural employment and the ability to keep it after the crisis appear, in turn, to have been correlated with that other asset crucial to the poor: education.

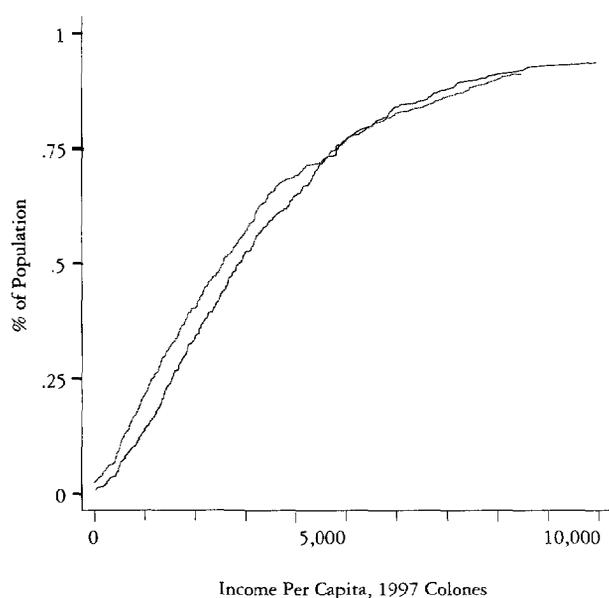
The results for rural El Salvador also indicate a strong and statistically significant effect of the years of schooling of the household head on income. Combined with Figure

5.2, which suggests that those with higher earnings did not suffer income losses even during the agricultural downturn (and may even have done better during the crisis), this hints at the role of education as an important self-protection instrument.<sup>12</sup>

This possible self-protection role of education was found to be associated with a smaller probability of transition into poverty and a larger transition rate out of poverty, both during recessions and growth spurts in Brazil. Figures 5.3.a through 5.3.d illustrate that those associations were robust for all three growth episodes and all four recessions considered.

A partial exception to this role of education is the case of Mexico, where households headed by college-educated males suffered somewhat larger proportional falls in income as a consequence of the 1995 crisis than did those with primary or secondary education. However, inclusion of what the authors call “coping variables”—namely entry into the labor force by the head, the spouse, or a child—reduces that advantage of the uneducated, and it ceases to be significant at the median. It appears that for

FIGURE 5.2  
**El Salvador: Cumulative Distributions of Real Income Per Capita, 1995 and 1997**



Mexico any apparent greater ability to weather shocks by the less educated is due to their greater ability or willingness to send household members previously out of the labor force into it. If one thinks of underemployed family labor as an asset, this finding simply suggests that education is a substitute for it, as a self-insurance strategy. And if leisure is a good thing, as Box 5.3 suggests, the consequences for family welfare, particularly that of women, may be substantial.

In fact, recourse to underused family labor is also found to be an important coping strategy in rural El Salvador. This may reflect a greater proportion of women in the wage-contract labor force—where demand rationing was clearly in effect—and perhaps more important, a complementarity between greater reliance on owned land and unpaid family female labor. Just as in Mexico's urban setting it appears that education and surplus family labor are substitute assets in coping with a crisis, in the rural El Salvador setting, surplus family labor and land are complementary assets, with a measurable volatility-reducing effect.

#### *Do the Poor Engage in Self-Destructive or Myopic Coping?*

The third stylized fact of covariate income risk and household welfare in LAC is that the poor, like everyone else, appear to be reluctant to jeopardize their (family's) future in an irreversible way during a temporary downturn. This

is particularly true of parental decisions about the schooling of their children.

A number of recent studies have emphasized the risk that, in addition to their temporary impacts, temporary negative income shocks might have permanent effects on the incomes of poor families. One of the main transmission mechanisms which these studies suggest for such "poverty hysteresis" is that parents might be forced to take their children out of school to deploy them in income-generating activities (see, for example, Lustig 1999, and IDB 2000). Even though the opportunity cost of schooling is likely to have declined, as the covariate shock reduces the potential earnings in the market for children's labor, the argument goes, a subsistence constraint may become binding and necessitate a reallocation of the child's time away from schooling and toward work. The existence of a subsistence constraint, and of irreversibilities in the educational production function, would thus lead to a rational decision which might, nevertheless, imply a reduction in the lifetime earnings of the child.

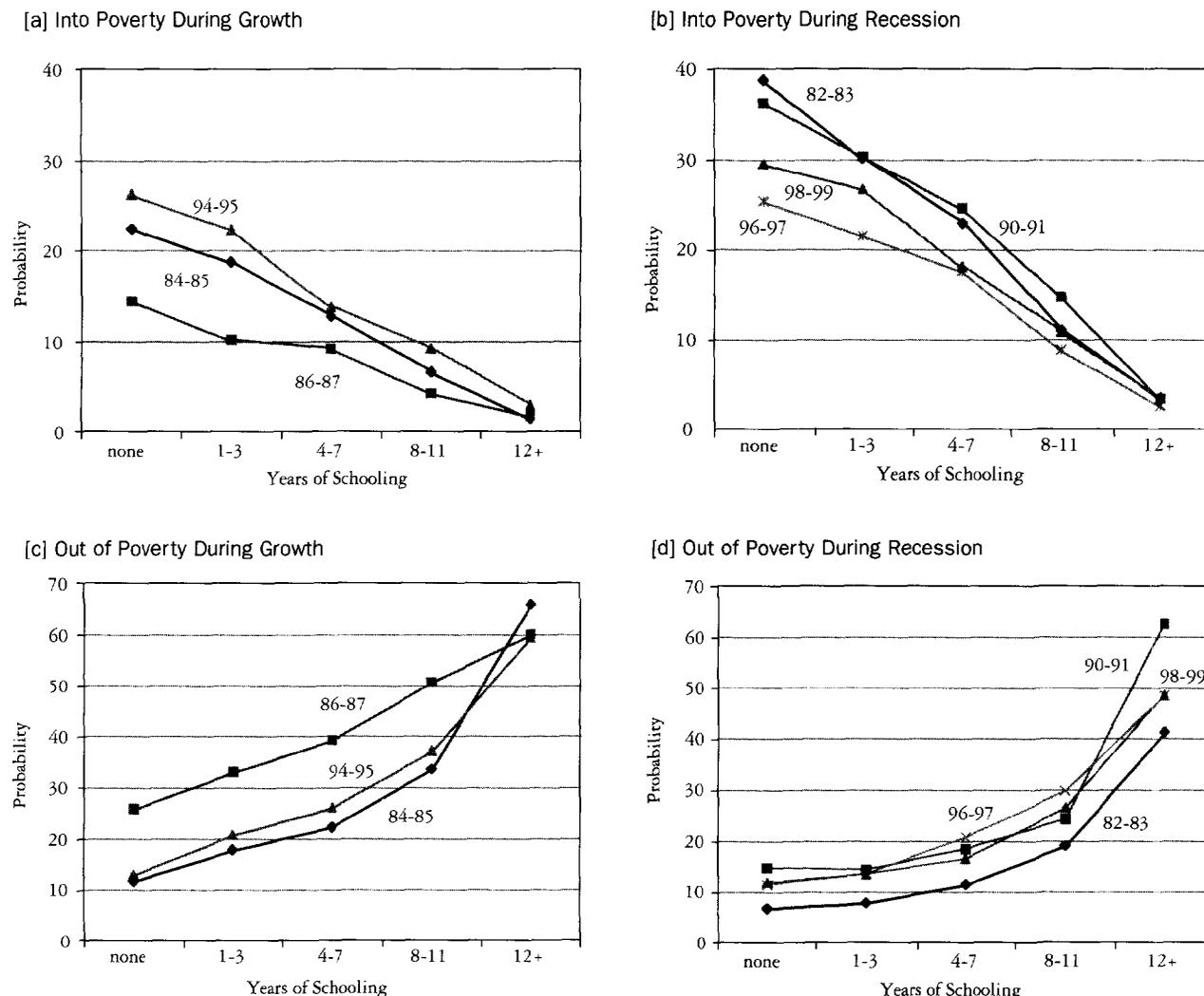
Although the conceptual argument is plausible, empirical tests have been scant. And they are needed: theoretical predictions are ambiguous because of opposing effects of earning opportunities (which are lower during bad times) and the need for income (which is higher during bad times). Examining the effect of the four Brazilian recessions and three growth episodes on three child schooling variables—dropout rates, grade repetition rates, and child labor participation rates—helps shed light on the nature of the effects sketched above. As Figures 5.5, 5.6, and 5.7 suggest, school enrollment is largely acyclical with respect to trend, but child labor and grade repetition are mildly procyclical.

The economic cycle appears to have no overall effect on dropout rates. It does, however, have some effect on repetition rates, a serious problem in the Brazilian education system. Upturns appear to increase repetition rates; this may be associated with the procyclical nature of child labor (which can be engaged in without dropping out of school entirely, but at the cost of diminished performance). The result for child labor, illustrated in Figure 5.7, suggests that the effect of a lower opportunity cost of schooling during recessions outweighs the other effects.<sup>13</sup>

However, a more detailed investigation revealed that for children of workers moving from formal sector jobs to informal self-employment—which is more frequent dur-

FIGURE 5.3

**Brazil: Moves Into and Out of Poverty, by Level of Education**



Source: Neri and Thomas (2000).

ing recessions—repetition rates increased substantially, and there was also an increase in the work participation of these workers' spouses. It is tempting to hypothesize that informality may worsen school performance by drawing on "surplus" household labor.<sup>14</sup> Brazilian children—and probably those in most LAC countries—age 10 to 15 have been entering the labor market at decreasing rates over the last two decades. This trend is clear, and the effects of aggregate fluctuations are relatively minor. But they do exist and are procyclical: entrance into the labor force for this age group has generally been higher in booms than during recessions.

The procyclicality of child labor is not a peculiarity of metropolitan Brazil. In Mexico, the proportion of households sending children to work during the 1995–96 cycle was consistently low (less than 4 percent) and marginally higher during the recovery than during the downturn (see Box 5.4). The procyclical nature of child labor was more pronounced for the poorest quintile, where 3.8 percent of families added children to the work force in the recession, but 5.7 percent did during the recovery. In Chile, once again, labor force participation of youth age 15 to 19 is procyclical, falling for both males and females during the 1982–84 recession. The same is true for men age 20 to 24.<sup>15</sup> Again, it

BOX 5.3

**Where Does Time Go During a Crisis?**

Using the same Mexican panel data, Cunningham (1999) and Parker and Skoufias (2000) find that wives do enter the job market if the husband loses his job. But when a woman enters the job market, who does the work she used to do? Or does she simply lose her leisure time and work a “double shift”?

Cunningham (1999) finds that for every additional hour worked outside the house, women do one-half hour less housework, in effect, working a “shift and a half.” Other members of the family compensate somewhat, but overall, the household work falls by about the same amount. This implies both that women become more “time poor” (that is, lose leisure time) and that many necessary household tasks—such as raising children, ensuring healthy living conditions, and investing in socially useful networks—may get less attention (see Figure 5.4).

was only for young adult women (age 20 to 24) that participation rates were found to be countercyclical. The results from Chile confirm both the countercyclical pattern for female labor force participation rates and the procyclical pattern for child labor found by the other studies.

These results run counter to frequent claims that government efforts to combat child labor should be stepped up

during recessions. Hence, the results have important policy implications. Caution is necessary, however, until this is found to be true for other countries or settings (for example, rural areas), and one must keep in mind that this procyclicality result relates to child labor, not school enrollment. In fact, the results for school enrollment are mixed: in Brazil, enrollment was acyclical while in Chile enrollment declined during a severe recession. There is also some evidence that ingredients for producing well-schooled children decline in quantity or quality during downturns (for example, because of lower public and private spending or because some spouses join the labor force and have less time to spend with their children). It is also too early to make strong claims about the nature of the effect of aggregate income shocks on the education of poor children. Nevertheless, the evidence uncovered so far can provide useful guidance to policymakers, as we outline in Chapter 7.

*Are All Downturns the Same in Their Effects?*

Discussions about policies to protect the vulnerable from the effects of aggregate volatility generally assume that all downturns are similar in their effects on poverty and human capital investments. In fact, the evidence from the case studies for Brazil, Chile, El Salvador, and Mexico reveal that this is not true: longer, deeper recessions appear to have results qualitatively different from shorter downturns. The poor suffered greater proportional losses in income during severe recessions than the wealthy (but this was reversed at least for metropolitan Brazil and Mexico),

FIGURE 5.4  
**Change in Housework Time Due to Labor Force Entry**

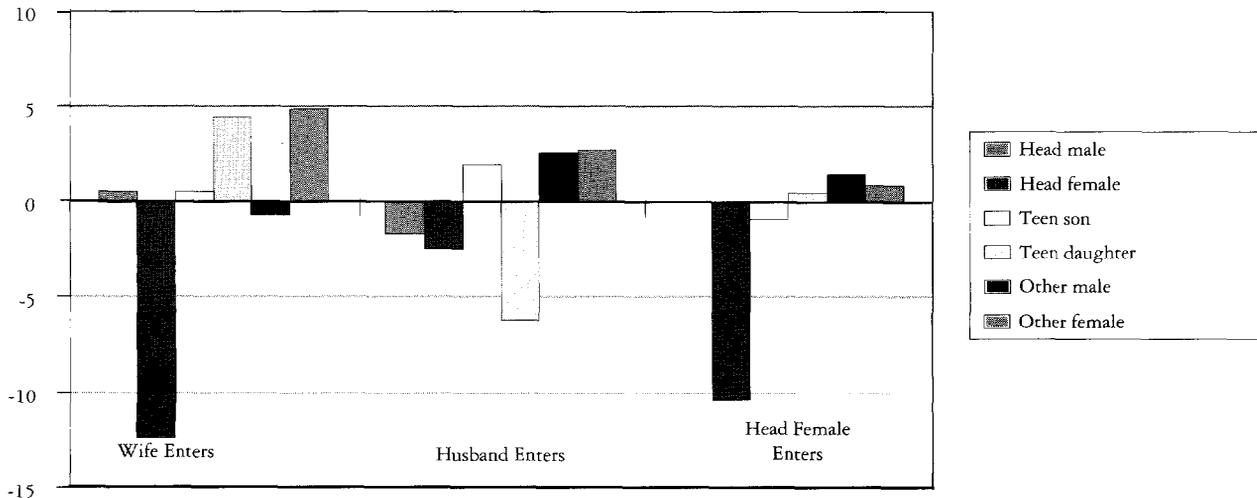


FIGURE 5.5

**Brazil: Probability of School Dropout**

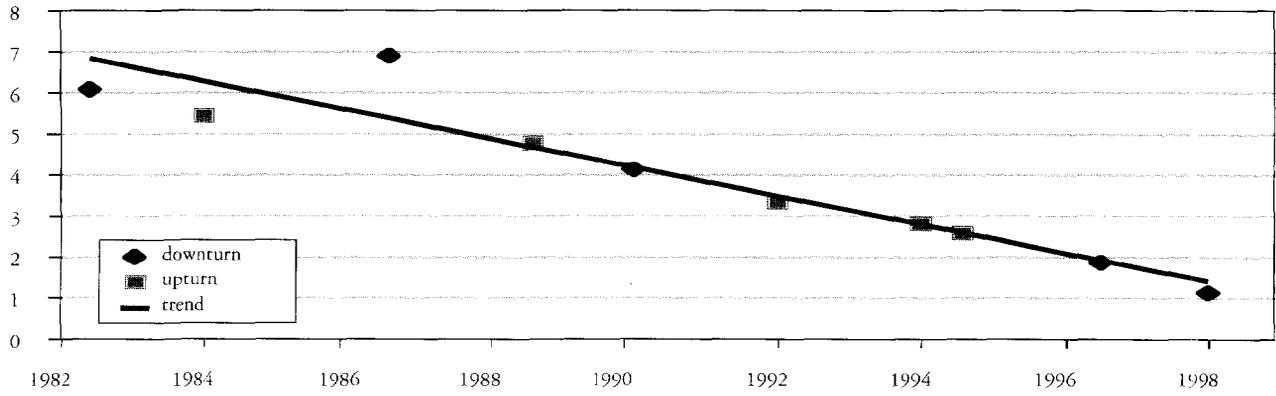


FIGURE 5.6

**Brazil: Probability of Repeating a Grade at School**

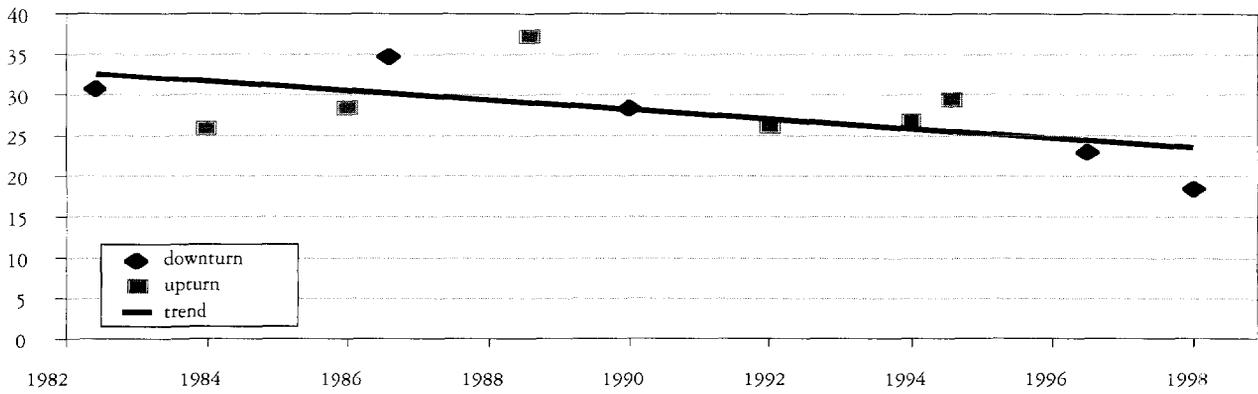
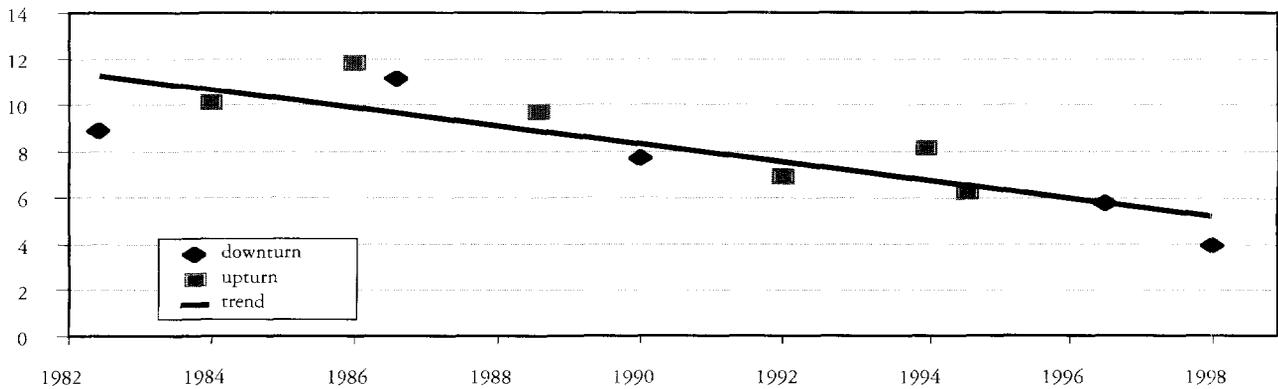


FIGURE 5.7

**Brazil: Probability of Child Aged 10–15 Starting Work**



Source: Neri and Thomas (2000).

and children were pulled out of school in Brazil and Chile when the recession was deep, but not otherwise. If confirmed for other countries and settings, this finding has important policy implications.

The Brazilian recession of 1982–83 was more serious than the other three downturns (1990–91, 1996–97, and 1998–99) examined here. But it was also different in that while in milder recessions the poorer 40 percent suffered proportionally less than the wealthiest 40 percent of the population—declines in income of about 12 percent, 2 percent, and 5 percent for the poor during 1990–91, 1996–97, and 1998–99, respectively, as compared with 27 percent, 4 percent, and 6 percent, respectively—the deeper recession resulted in a loss of 32 percent for the poorest two-fifths as compared with 28 percent for the richest two-fifths (see Table 5.1 and Figure 5.1). Again, the Chilean recession of 1982–84, which was steeper and longer than other episodes of negative growth, was also different in that it was the only recession during which child enrollment declined.

The rationale for these findings may be that the poor have smaller asset stocks (both in absolute terms and relative to income flows) as compared with the rich, limiting their ability to draw on their assets for prolonged periods. Thus, while they behave similarly during moderate downturns—drawing down some of their assets and working longer hours but maintaining critical long-term investments such as education of children—longer downturns result in a divergence of behavior between the rich and the poor. Again, while the reduced earnings (or “substitution effect”) may offset the propensity to send children to work due to the subsistence constraint (or “income effect”) during short downturns, the latter may dominate the former during downturns that are expected to last longer. In any case, if confirmed for other countries and settings, this finding, too, has important policy implications which are discussed in Chapter 7.

## Conclusion

Large macroeconomic volatility in LAC both causes and obscures even more substantial variation in the incomes and employment status of individuals and families in the region. Although lack of consumption data prevented better estimates of variations in household welfare, the magnitude of the income variations reported here (and which constitute an upper bound to the true welfare

changes) was substantial. Recessions like those of 1982–83 and 1990–91 in Brazil led to proportional declines in mean incomes for some quintile groups on the order of 30 percent. In Mexico’s 1995 crisis, the median proportional income loss for all households was around 25 percent, and for those suffering “catastrophic losses” (that is, in the first quintile group of the distribution of changes), the figure was over 50 percent. In El Salvador, the agricultural crisis of 1997 led some measures of the severity of poverty to rise by about 37 percent among the rural self-employed.

If Latin Americans are risk-averse, as we suppose most people to be, this degree of household income volatility implies a considerable loss of social welfare. Reducing it would make workers and their families better off, other things remaining the same. This argument and the magnitude of the variations at the household level provide a powerful incentive to study the determinants of microeconomic risk and the strategies adopted by households to reduce it and insure against it.

The general conclusion of this chapter is that households largely respond rationally and sensibly both from the viewpoint of individual households and often even from that of society: most notably, they attempt to shelter their children’s schooling and leisure from economic shocks, both aggregate and idiosyncratic. This does not mean that governments cannot do more to help households deal better with income risk. Chapter 6 discusses how countries in the region have sought to deal with the risk of unemployment, and finds that countries can better match income support programs for the unemployed with the type and level of risk, and the level of sophistication of the available instruments for self-insurance. Chapter 7, which addresses the issue of what governments have done and how they could improve public interventions, finds that while “targeted” social spending is often both procyclical and poorly targeted, broader social spending such as that on education and health is less subject to be cut during economic downturns, but is often insufficient to prevent a deterioration of performance indicators during recessions. The findings of Chapter 5 actually imply that there is considerable scope for welfare gains from better policies for dealing with the risks of unemployment and aggregate economic fluctuations that can lead to increased poverty. The final sections of Chapters 6 and 7 propose how these gains can best be realized.

## BOX 5.4

**Do Families Mortgage Their Children's Future? Other Evidence**

As with the evidence from Brazil and Mexico, there is little or only weak evidence from other countries in the region that families faced with income shocks either put children to work or pull them out of school. The claims are made nevertheless.

For Peru, using Living Standards Measurement Surveys for 1994 and 1997, Ilahi (1999) found that when mothers become unemployed, children allocate less time to household chores, but there is little or no change in schooling or child labor. Schady (2000) found no significant difference between school enrollment rates in Peru in the crisis year of 1991 and in the growth years of 1994 and 1997. Once again, acyclicity is observed in the broader context of a secular rise in enrollment.

Like the Neri and Thomas (2000) paper discussed here, Duryea (1998) examined the effects of shocks in metropolitan Brazil. But the nature of shocks is idiosyncratic rather than aggregate: unemployment of the father lowers the probability of grade advancement of children age 10 to 15 by about 4 percentage points, but Duryea (1998) does not explore the reasons for this—for example, whether this is due to a less favorable family environment, reduced inputs such as books, or because the child has to begin or increase paid work. Recall that Neri and Thomas (2000) found no systematic evidence that enrollment or repetition or dropout declines during periods of aggregate downturns, but found some evidence that child labor increases during periods of recovery (in economic parlance, the “substitution effect” of changes in

child wages dominates the income effect over the economic cycle).

Cunningham (1999), Parker and Skoufias (2000), and Cunningham and Maloney (2000) focus on Mexico and study the impact of income shocks on child labor and school attendance before, during, and after the 1995 crisis, examining the effects of idiosyncratic shocks while controlling for aggregate risk. All focus especially on the effects on children of involuntary loss of employment. Parker and Skoufias focus especially on those due to illness, divorce, or other labor market reasons—of any of the parents. Their finding is that children—boys more so than girls—are largely unaffected by household-specific economic shocks, in periods of both aggregate downturns and recovery.

Exploiting the dynamic possibilities of the panel, Cunningham and Maloney do find the predicted effects on girls in response to the father's job loss, but ambiguous evidence for boys. Further they find that while in less well-off families children do work and drop out more, there is little evidence of credit constraints that would cause poorer families to put children to work. However, they do find that where a wife or husband enters informal self-employment, children are more likely to work. As with the evidence from Brazil that the substitution effect dominates the income effect, starting a family microenterprise may raise the value of a child's work time and encourage entry. Finally, they find only ambiguous evidence of household adjustments lasting more than a quarter.

**Notes**

1. See Caballero (2000), Calvo (1991), and Rodrik (1999) for a sampling of possible explanations on high volatility in the region.

2. Cornia and others (1987) and the *World Development Report 1990* played an important role in raising the profile of this issue in the late 1980s.

3. For a path-breaking exception, see Glewwe and Hall (1998).

4. Arango and Maloney (2000) use both the Mexican Household Survey described in Box 5.2 and the Permanent Household survey (EPH) from Argentina. The EPH conducts extensive biannual interviews in Greater Buenos Aires and is structured so as to generate panels that allow tracking a quarter of the sample across two years. To generate a sufficiently large sample of roughly 5,700 observations,

seven contiguous EPH cohorts were combined beginning in May 1993 and rotated every six months.

5. This section is based on Ferreira and Gill (2000).

6. The consumption variations would only be equi-proportional if households were certain that the shocks were permanent.

7. There are a number of good reasons to believe that the nature of this negative shock in 1997 did affect the rural poor more severely than other segments. We will discuss some of these below. But it should also be noted that the ranking of households in this study is based on an average of each household's income in 1995 and 1997. This is arguably a less robust proxy for permanent income than either the neighborhood average used by Cunningham and Maloney (2000), or the Mincerian predicted income used by Neri and Thomas (2000).

8. Cunningham and Maloney (2000) show that when permanent incomes are weighted to give more importance to the poor, the proportional losses accruing to the least educated—and hence likely the poorest—do indeed become greater than when that weight is 1. Like them, other researchers making claims about who suffers disproportionately during crises should make their welfare weights explicit.

9. See Conning, Olinto, and Trigueros (2000) for analogous decompositions using other poverty indexes.

10. Depth and severity, as measured by other poverty indexes, rose in a more pronounced manner.

11. The “self-employment only” category into which many households fell in 1997 due to having lost jobs is not made up mostly of the landless. In fact, most of these households are engaged at least in part in agricultural or animal husbandry activities. The relationship between land ownership and poverty and vulnerability is complex. The main finding in Conning, Olinto, and Trigueros (2000) is how much household labor allocation changes in a crisis. The large increase in self-employment hours is split evenly between

farming and nonfarming hours, while the loss of wage hours is driven principally by reduced agricultural wage employment.

12. See Box 3.1 for definitions of alternative insurance instruments; see Ehrlich and Becker (1972), and Gill and Ilahi (2000) for details.

13. See Ferreira and Gill (2000) for a fuller characterization of these opposing effects.

14. This suggests a caveat to our earlier consideration of surplus household labor as an asset with insurance value. It is likely that those family members were not completely idle. In fact, mothers were most likely being a highly productive input into the education of their children. Their joining the labor force is not without cost and, even if the evidence is largely against the proposition that this leads to massive increases in dropout rates, the quality and pace of their children’s education may suffer nonetheless.

15. Mizala and Romaguera (2000) report gender-disaggregated time-series for labor force participation rates for people age 15 to 19 and 20 to 24 in Chile, from 1976 to 1993.



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## CHAPTER 6

# Helping Workers Deal with the Risk of Unemployment

**L**ATIN AMERICA'S SHIFT AWAY FROM THE STATE-LED DEVELOPMENT MODEL TOWARD A MARKET-based economic paradigm has rendered obsolete key components of the old income protection system, such as layoff restrictions and the state as employer of last resort. On the one hand, international competition entails the need for firms to use greater flexibility in managing their staffs, weakening the traditional lifetime relationship with their employees. On the other hand, public finance constraints, privatization of public enterprises, and renewed emphasis on financial performance of those remaining in public hands have all led to public sector downsizing and to a much-reduced role of the state as employer. All these developments, together with the potentially adverse employment effects of the economic reform process on some groups of workers documented in Chapter 2, have raised considerable interest in Latin America and the Caribbean in income support programs that could mitigate the effects of economic insecurity in general, and of job loss in particular. This chapter deals with the latter.

As in many other policy areas, developed countries have served as the reference when thinking about the appropriate design of income support programs for the unemployed. Some analysts have discussed ways to adapt unemployment insurance programs to developing countries (Hamermesh 1992), and some have even tried to calibrate the parameters of such programs to the specific characteristics of those countries (Hopenhayn and Nicolini 1999).<sup>1</sup> However, it is not clear that unemployment insurance is the best-suited income

support program under all circumstances. More recently, there have been proposals to introduce individual unemployment savings accounts, whereby workers are forced to set aside money when at work, and are given access to these savings in the event of job loss. While these programs do provide a more certain severance benefit to workers, these proposals are justified largely on theoretical grounds: individual savings accounts provide better incentives than conventional unemployment insurance to contribute to when employed and to search for a job when unemployed.<sup>2</sup> But there are theoretical arguments against this proposal as well. In particular, individual savings accounts do not pool risk among individuals, and thus may be less efficient than those that do so explicitly (such as formal unemployment insurance) or implicitly (such as income support programs financed from general tax revenues).

This chapter assesses a set of income support programs that have been tried in the Latin American context. Rather than starting from a theoretically "ideal" program and adjusting it to the characteristics of a specific country, the chapter considers specific programs that are currently in operation. Until recently, the accumulated knowledge on income support programs for the unemployed in developing countries was quite limited.<sup>3</sup> Hence, while this chapter draws from existing literature, it is mainly based on studies commissioned by the World Bank specially for this report. These studies deal with the operation and effects of specific income support programs for the unemployed in Argentina (Ravallion 2000), Brazil (Cunningham 2000), Colombia (Kugler 2000), Mexico (Wodon 2000), and Peru (MacIsaac and Rama 2000).<sup>4</sup>

The objective is not to generate an unambiguous "ranking" of these programs; all of them can be expected to have

both strengths and weaknesses under different objectives of policymakers, depending on the constraints they face. For example, a program may do well at offsetting the losses formal sector workers experience as a result of increased import competition or deregulation, but fail to reach informal sector workers who risk poverty as a result of aggregate fluctuations. Similarly, a program may have broad coverage, but also entail a large cost for the budget. Which program is best suited for a country depends especially on the state of labor markets (for example, the extent of informal employment and the frequency of joblessness) and the administrative capacity of governments to implement different public income support programs.

This said, it should also be kept in mind that governments can overcome some of these constraints over time: labor market reforms can reduce the difference between formal and informal activities, and administrative capacity can be built. In going from what governments have done to facilitate income support to the unemployed to how they could do better, therefore, we bring in a medium- and longer-term perspective as well. While some of the policy recommendations are based on specific theoretical premises, we believe that a blend of practicality and analytical rigor can help countries devise strategies that efficiently bridge immediate action and long-term vision. This chapter introduces programs of income support in five countries, distinguishing their key features; summarizes the evaluation of these programs; and using the main findings of these and other studies and the comprehensive insurance framework outlined in Chapter 3 as an organizing device, discusses the main policy implications for LAC economies.

### A Typology of Programs

At least five different types of income support programs for the unemployed have been tried in LAC.<sup>5</sup> All of them involve a net transfer of resources to workers who lose their jobs, but the amount, conditions, and sources of the transfer differ substantially across programs. Conceptually, some of these programs can be seen as a mere redistribution of resources, from taxpayers to the unemployed; others amount to forced savings or self-insurance, made available in the event of job loss. Still others resemble market insurance, with a premium being paid while at work and a claim being made in the event of unemployment.

The five types of income support programs used in the region are public works (PW), mandatory severance pay (SP),

training for the unemployed (TG), unemployment insurance (UI) and individual savings accounts (IA). The main features of these programs are summarized in Box 6.1. The timing and nature of the payments involved in each of these five income support programs is summarized in Table 6.1.

To interpret Table 6.1, consider the following stylized labor market sequence. In period 0 the worker loses work, in period F he or she finds a new job, D is the maximum duration of benefits allowed by the income support program, and R is the worker's retirement age. The table is constructed under the assumption that F comes before D, but this is not necessarily so in practice. The rows in the table correspond to the five broad types of income support programs currently in operation in LAC. A zero indicates that the program does not entail any payment, from or to the worker, in the corresponding period. Possible payments include the salary received from a public works program (W), the training allowance (A), the amount of severance pay received from the employer (S), the contribution by worker and employer to an income-support program (-C), a benefit whose amount depends on past contributions (+C), and an old-age pension (P).

In the individual accounts program, the old-age pension can be accrued by the portion of the forced savings that was not used as income support in periods of unemployment. While only workers enrolled with social security can participate in the unemployment insurance and individual accounts programs, the other three programs are in principle accessible to nonenrolled workers—hence the question marks in the postretirement columns of Table 6.1. Other question marks in this table reflect the possible inability or unwillingness of the social security administration to monitor whether beneficiaries are actually out of a job.

In this report, we take one example of each of the five programs and examine how well it has helped to deal with job loss. Public works are represented here by Argentina's *Trabajar* program. This program was created during 1996–97, in response to a surge in unemployment in 1995. *Trabajar* allocates funds across provinces based on the distribution of the unemployed poor. Proposals to use the funds are made by municipalities and non-government organizations. These proposals are approved at the regional level, based on a system of points related to poverty in the area and the merits of the project. The government pays for the costs of unskilled labor and the sponsoring units pay for materials and skilled labor. The wage of unskilled

## BOX 6.1

**Income Support Programs for the Unemployed: Main Features**

**Public works.** This income support program was used by Chile in the 1970s and 1980s, and was introduced more recently by Argentina, Brazil, Colombia, and Mexico. The program provides low-wage jobs to all those who are willing to take them. In principle most of the jobs are in activities that do not compete with the private sector, and the jobs can be physically demanding and typically last for only a few months. Therefore, it is likely that the program attracts unemployed workers and those out of the labor force, and not the currently employed. High effort, short duration, and low pay imply that only the neediest participate.

**Training.** To the extent that some training programs are specifically targeted to the unemployed, and provide an income allowance to the trainees, they can be viewed as a form of income support. Mexico has a large program along these lines. Training programs for the unemployed have some similarities to public works programs: resources are provided by the government, beneficiaries do not need to be enrolled with any social security program to have access to the training, and being enrolled in a training program is usually incompatible with having a job, so that there is some self-selection of the beneficiaries. In addition, these programs generate a "product" in the form of better skills, although the market value of these skills is open to debate. They are different from public works programs in that eligibility rules generally apply—only individuals of specified age or education levels are allowed to participate.

**Severance pay.** This program can be found in most Latin American countries, where the labor code mandates employers to pay an end-of-service gratuity to the workers they fire without a "justified" cause (that is, for nondisciplinary reasons). The gratuity is a multiple of the worker's salary; in some countries, the gratuity cannot exceed a specified amount or multiple of the worker's

salary, and in other countries the gratuity formula is different when job separation is due to economic reasons. Employers are usually not mandated to set aside any resources to pay the end-of-service gratuity.

**Individual accounts.** This is a "funded" version of the severance pay program. Workers have individual accounts to which some percentage of their salary is transferred on a regular basis. In the event of job separation, whether voluntary or involuntary, workers can draw resources from their accounts. Any resources left in these accounts at retirement can be used toward old-age pensions. Workers can also "borrow" from their accounts under specific circumstances. A program along these lines has existed in Brazil for more than three decades. More recently, Colombia has replaced its severance pay program with fully funded individual accounts of this type. Unlike unemployment insurance and severance pay, this program involves no net transfer of resources to workers who lose their jobs.

**Unemployment insurance.** This program, modeled after those in developed countries, can be found in Argentina, Barbados, Brazil, Ecuador, Uruguay, and Venezuela. Workers and employers in the formal sector make regular contributions to a fund, generally managed by the country's social security administration. After a specified contribution period, workers are entitled to an unemployment benefit in the event of job loss (but not of voluntary separation). The benefit is some percentage of the workers' salary, typically declining over time. Benefits are paid for as long as the worker remains unemployed, up to a maximum of several months or years. However, monitoring whether beneficiaries take a job in the informal sector is practically impossible, so some of the programs do not even attempt to make the payment of benefits conditional on actually being unemployed.

laborers is set at two-thirds of the average wage for the poorest decile in the capital city. In principle, there are no restrictions on the eligibility to participate in the program, but in practice there is rationing.

Mexico's *Probecat* training program was created in 1984, in response to rising unemployment and deteriorating liv-

ing standards due to the 1982 economic crisis. The stated objective of the program is to improve the productivity of unemployed workers to help them find jobs. The program provides publicly funded training and a subsistence allowance during the training, with a maximum duration of six months. The allowance is equal to the minimum

TABLE 6.1

**How Various Income Support Programs for the Unemployed Work**

PERIOD	EMPLOYED	LOSES JOB	UNEMPLOYED	FINDS ANOTHER JOB	INCOME SUPPORT ENDS	UNEMPLOYED	AT RETIREMENT
	-1	0	1	F	D	D+1	R
Public works	0	0	W	0	0	0	?
Training for unemployed	0	0	A	0	0	0	?
Mandatory severance pay	0	S	0	0	0	0	?
Individual saving accounts	-C	+C	+C	0	0	0	P+C
Unemployment insurance	-C	?	B	B?	B?	0	P

*Note:* The timing of events is as follows: in period 0 the worker loses his or her job; in period F he or she takes a new job; D is the maximum duration of benefits; R is the retirement age. The table is constructed under the assumption that F comes before D, but this is not necessarily so in practice. The programs involve the following payments or transfers: W is the salary paid by the public works program; S is the amount of severance pay received by the worker; A is a training allowance; -C is the contribution by worker and employer to a program; +C is a contribution-defined income transfer; P is the old-age pension, with the question mark indicating that beneficiaries of the program are not necessarily enrolled with social security; B is unemployment benefits, with the question mark indicating that the worker may not receive the benefit during that period.

wage plus transportation costs and health insurance coverage. Training was initially carried out in schools and training centers, but it was subsequently expanded to enterprises as well. Participating enterprises are required to hire at least 70 percent of the trainees. Beneficiaries are selected based on a system of points, and can get trained only once. For about a decade the program was small, but after several positive reviews the program was expanded by a factor of 10. Two criteria are used to evaluate the program: success in providing income support (that is, an income transfer or “social insurance” function) and effectiveness in reducing future incidence or duration of unemployment (that is, aiding “self-protection”).

The mandatory severance pay program examined here is the one Peru had during the 1990s. Over the two previous decades, this program had been part of an attempt to guarantee job security to workers after probation. Job security regulations lost their teeth in the early 1990s and were formally abolished in 1993. But mandatory severance pay regulations were not substantially eased. Although the formula setting the amount to be paid in the event of “unjustified” dismissal was modified four times in the 1990s, the basic structure remained the same. As of 1996, the employer had to pay one month of salary per year of service, up to a maximum of 12 months. In 1997, mandatory severance pay was raised by 50 percent. Since then, the mandatory severance pay program of Peru has not been modified.

Colombia is one of the few LAC countries that succeeded in replacing its mandatory severance pay program with an individual accounts program. This change was made in 1990, at a time when the unemployment rate was

low. It was part of a broader set of reforms, which included trade and financial liberalization. Under the new system, workers have to contribute 9.3 percent of their salary to an unemployment fund. They are entitled to their savings in the event of termination, but can also “borrow” from them for housing and education purposes while employed. In the old system, workers could also borrow part of their severance pay entitlement from their employers, but the value of the loan was not appropriately adjusted for inflation. Some specific groups of workers can opt out of the new system, and get a higher salary in exchange for not being covered by the program.

Brazil has the largest unemployment insurance program in the region, though it is small in comparison with those in OECD countries with relatively frugal UI systems, such as the U.S. system (see Table 6.2 and Gill, Dar, and Thomas, 1999). This program was created in 1986, as part of a policy package (the *Cruzado* plan) aimed at price stabilization. The program is funded by taxes levied by employers. To be entitled to unemployment insurance benefits, a worker has to be covered during 15 of the 24 months preceding job loss. Benefits are in the range of one to two minimum monthly salaries,<sup>6</sup> depending on past contributions. Benefits are paid in monthly installments, up to a maximum of 120 days, but they are not contingent on being out of work. Workers need to be present in person at social security centers to collect their benefits.

### Main Findings

The five income support programs can be assessed along several dimensions (see Box 6.2). Proposals to introduce

TABLE 6.2

**Contrasting the Brazilian and the U.S. Unemployment Insurance Systems**

CHARACTERISTICS	BRAZIL	U.S.
Administered by	Federal government	State and federal governments
Number of Claimants	3–5 million per year	15–20 million per year
Objectives	(i) Alleviate hardships due to loss of earnings (ii) Automatic macro stabilization (iii) Improving quality of job matches (iv) Making employers share burden of unemployment	(i) Alleviate hardships due to loss of earnings (ii) Automatic macro stabilization (iii) Help stabilize employment by experience-rating of employers
Tax Rate	Federal tax = 0.65% of revenues of private firms, 1.0% of revenues of public firms, and 1.0% of expenditures of nonprofit firms	Federal tax = 0.8% of taxable payroll; State Tax varies from 0–10% of taxable payroll according to employers' experience-rating
Tax Base	Firm revenues or expenditures (see box above)	Federal: up to \$7,000 of each employee's payroll States: at least \$7,000 of each employee's payroll (80% of states had tax base above \$7,000)
Use of Funds	40% of collections transferred to uses other than paying UI benefits through mandated transfer to national development bank	Both principal and interest must be used to pay only UI claims
Benefit Replacement Rates	80% of reference wages up to R\$220 per month; 50% of wages between R\$220–254 per month; 0% above this	Between 32–57% up to benefit ceiling. Lowest ceiling is \$180/week; highest is \$390 (\$575 with dependency allowance)
Reference Wage	Average salary 3 months prior to dismissal	Last salary before dismissal
Duration of Benefits	3–5 payments depending on work history during previous 3 years; can receive UI payment package only once in 16 months	Regular benefits up to 26 weeks; extended benefits up to 13 additional weeks; additional temporary benefits during recessions

Source: Gill, Dar, and Thomas (1999).

“optimal” unemployment insurance, or individual savings accounts, usually focus on the incentives these programs could provide for workers to actively search for jobs. In countries with high informality, however, it is also important to consider who these programs reach. In addition, the burden of some of these programs does not fall only on their beneficiaries. Depending on who “pays” for the benefits, and how, the programs can have different implications on efficiency and equity grounds. Finally, in the absence of income support programs, some of the unemployed could resort to their savings, or to transfers from relatives, to support their consumption. It is therefore important to assess whether formal income support programs really help smooth consumption, or simply replace other more informal self-insurance mechanisms. Based on these considerations, the findings on these five income support programs can be summarized along four dimensions:

- **Coverage.** How many workers are eligible to participate in the income support program considered? How many actually benefit from an income transfer, or have benefited from one recently? How does coverage vary with wealth?

- **Cost.** How large are income transfers in the program considered? What fraction of the total cost of the program is actually received by the worker? Do workers “buy” income protection through lower wages, or is the burden shifted to employers or taxpayers?
- **Incentives.** Do workers who are covered by the program remain unemployed for longer periods than those who are not? Do they find jobs with higher earnings, or jobs that are “better” in any other sense?
- **Insurance.** Do workers who are covered by income support programs display smoother consumption patterns than those who do not? Does the consumption of covered workers fall less, other things equal, in the event of job loss?

Not all these questions can be easily answered for all the programs. This would require a vast amount of information on the employment, earnings, and consumption history of a representative sample of workers, and the data available in the five countries usually do not deal with all of these variables at once. Moreover, information on the individual characteristics of the workers (such as age and education) is necessarily limited. Therefore, it is always

## BOX 6.2

**Data Sources and Methodology***Argentina's Trabajar*

The effects of the *Trabajar* program are assessed combining two household surveys. One of them, the *Encuesta de Desarrollo Social* (EDS), was carried out in 1997 and covered the population residing in localities with 5,000 or more inhabitants. Jalan and Ravallion (1999) constructed a comparison group out of the EDS sample, using matching methods. The other household survey used to assess the effects of *Trabajar* is a 1997 sample of its participants, covering 3,500 households. The information used by Ravallion (2000) on *Trabajar* is from government records.

*Mexico's Probecat*

The assessment of the *Probecat* program by Wodon and Minowa (1999) combines data from the 1993–94 rounds of National Urban Employment Survey (ENEU) and from a survey administered roughly at the same time to *Probecat* trainees. The latter was designed to match the questions in the ENEU, so that information from the two surveys is comparable. The two samples are combined by Wodon and Minowa (1999) using matching methods.

*Peru's Mandatory Severance*

The study on the effects of mandatory severance pay in Peru by MacIsaac and Rama (2000) uses panel data from the Living Standards Measurement Surveys (LSMS) of 1994 and 1997. The panel nature of the data allows control for unobservable differences across individuals. MacIsaac and Rama combine several job indicators (years of service, written contract, enrollment with social security, size of the establishment, and presence of a union) to evaluate whether a worker will get severance pay in the event of unjustified dismissal. The survey also contains information on earnings at the individual level, and consumption at the household level. Saavedra and Torero (1999) analyze the impact of mandatory severance pay on turnover using data on job tenure from the *Encuesta*

*Annual de Hogares*, for all the years between 1986 and 1997. They attribute all the observed changes in job tenure to the weakening of job security regulations, although this was not the only reform or shock that took place over this period.

*Colombia's Individual Savings Accounts*

In the case of Colombia, a similar natural experiment is provided by the 1990 labor market reform, which replaced severance payments by individual accounts. The data used by Kugler (2000) to assess the effects of this change are drawn from the June 1998, 1992, and 1996 rounds of the *Encuesta Nacional de Hogares* (ENH). This survey was administered in the seven largest metropolitan areas of Colombia. June waves of the ENH include special modules on informality, thus allowing the identification of workers who are covered by mandatory severance pay regulations (until 1990) or included in the individual accounts program (afterward). Given the nature of the policy change in 1990, the results obtained refer to the effects of replacing severance pay with individual accounts, not to the specific effects of the latter.

*Brazil's Unemployment Insurance*

Brazil's unemployment insurance program is studied by Cunningham (2000) using data from a sample of males and females of working age who left a nonagricultural job, spent at least one month unemployed, and found a new job. This sample is drawn from the *Pesquisa Nacional de Amostra de Domicilios* (PNAD) in all years from 1992 to 1997, except 1994, when there was no survey. Each round of the PNAD survey has over 360,000 observations. Despite being quite restrictive, the criteria used by Cunningham led to a pooled sample of more than 24,000 individuals. The increase in the generosity of unemployment insurance benefits that took place in 1994 serves as a natural experiment, allowing a difference-in-differences evaluation of the effects of participation in the program.

possible to argue that differences in employment, earnings, or consumption are not due to participation in a specific income support program, but rather to unobservable char-

acteristics of the workers (for example, talent) which are correlated with program participation. For these reasons the evaluations should not be considered definitive assess-

ments. But the studies commissioned for this report, and some other recent papers, take advantage of multiple observations for the same workers, or of changes in the regulatory framework, to identify some of the effects of the programs.

### *Who Is Covered by these Programs?*

All five income support programs cover, in principle, a considerable portion of the labor force. The highest coverage corresponds to Argentina's public works program, because anyone willing to take a job at the prevailing wage rate is supposedly allowed to do it. In practice, however, the coverage of the program is determined by the resources available. Coverage is slightly lower for Mexico's training program, because eligibility rules apply. The first column in Table 6.3 shows that the other three programs reach a smaller but still sizable share of the labor force. The share appears to be much lower in the case of Peru's mandatory severance pay program, but this is due mainly to the way the denominator is defined: while coverage rates for Brazil and Colombia refer only to workers in the largest urban centers, the coverage rate for Peru refers to all private sector workers, including those in agriculture. The relatively high coverage of the programs is consistent with casual evidence that workers do not opt out of them when given the choice. In Colombia, for example, as of 1995 only 1.5 percent of workers in manufacturing and 0.6 percent of workers in commerce preferred a higher salary in exchange for

not being covered by the individual accounts program (Kugler 2000).

The relatively high coverage of the programs among those at work is in sharp contrast with the relatively low number of beneficiaries among the unemployed, as shown by the second column in Table 6.3. The interpretation of the figures in this column is not straightforward because they compare a flow (the number of beneficiaries in a year) with a stock (the average number of unemployed during the same year). In countries where movements in and out of unemployment are frequent, as in Mexico, the total number of people who are unemployed at any point over the year could be several times higher than the average number of unemployed. Taking this into account, it would be safe to conclude that at best, no more than 1 out of every 10 unemployed workers benefits from the income support programs considered.

There are several reasons for the discrepancy between relatively high legal coverage and relatively low actual coverage. One of them is self-selection. Public works programs pay low wages, offer little continuity, and require hard work, so that only the neediest among the unemployed apply. Because training programs are not as physically demanding, and have the potential to increase skills, they could attract a larger number of candidates. The other three programs could lead to self-selection by employers. The latter should have no interest in extending contracts beyond the probationary period, hence incurring addi-

TABLE 6.3

### **Income Support Programs for the Unemployed: Beneficiaries Across Population Groups**

PROGRAM AND COUNTRY	WORKERS LEGALLY COVERED BY THE PROGRAM	ACTUAL BENEFICIARIES AS PERCENT OF UNEMPLOYED	SHARE OF BENEFICIARIES IN POPULATION GROUP (%)				
			Poorest	2nd poorest	Middle	2nd richest	Richest
Public works in Argentina	In principle, all	7.5	78.6	15.3	3.5	2.1	0.4
Training in Mexico	Eligible by age, education	29.4	69.9	15.5	8.1	5.0	1.5
Severance pay in Peru	21.2% of all private sector	3.6	4.7	9.5	28.6	33.3	23.8
Unemployment insurance in Brazil	39.6% of urban workers	11.8	10.6	24.6	19.1	25.1	13.6
Individual accounts in Colombia	47.2% of urban workers	Unknown	0.0	4.3	Not applicable	19.1	76.6

*Note:* Coverage is based on legal entitlement. The unemployed include first-time job seekers. Data for Argentina are from Jalan and Ravallion (1999) and Jones and Ravallion (1999) and refer to 1997; groups are population quintiles according to household earnings per capita, excluding benefits paid by the program. Data for Mexico are from Wodon and Minowa (1999). Data for Peru are from MacIsaac and Rama (2000) and refer to 1994; private sector workers include farmers, the self-employed, and unpaid family workers; groups are sample quintiles according to household consumption per capita. Data for Brazil are from Cunningham (2000); coverage figures are for 1997; groups are defined based on earnings in last job, as of 1992, with cutoff points at 1, 2, 3, and 5 minimum wages. Data for Colombia are from Kugler (2000), and refer to 1992–96; groups are workers quartiles according to income in last job.

tional costs in terms of contributions or severance payments for workers they may not want to retain.

Another potential explanation for the discrepancy between legal and actual coverage is the weakness of enforcement capabilities. In the case of Peru, MacIsaac and Rama (2000) construct a coverage score that combines four criteria, in addition to legal entitlement: having a written contract, being enrolled in social security, working in a firm where at least one trade union operates, and working in a large firm. It can be assumed that the likelihood of actually getting severance pay in the event of dismissal increases with the number of criteria met by the worker. If only those workers who meet at least one of these criteria do get severance in practice, the coverage rate falls from 21.1 percent to 9.3 percent of the labor force. It drops to 5.2 percent if workers have to meet any two of the criteria. In the case of Brazil, Cunningham (2000) reports that a significant portion of the unemployed is entitled to unemployment benefits, but does not collect them. This could be due to the lack of social security offices nearby.

The actual beneficiaries of income support programs tend to be relatively wealthy, with Mexico's *Probecat* and Argentina's public works program the exception. *Trabajar* is a poverty alleviation program targeted through unemployment, rather than an income support program for the unemployed. In all of the other programs for which the information is available, the poorest population group has the smallest number of beneficiaries. Beneficiaries tend to be more numerous among middle- or upper-middle income groups. Colombia's individual account program is the least pro-poor; more than three quarters of the beneficiaries can be found among the richest quarter of the urban population.

#### *How Much Do the Programs Cost?*

The average income transfer received by the beneficiaries of these programs ranges from roughly US\$300 in Mexico to US\$1,300 in Argentina. The spending figures reported for these two countries in the first column of Table 6.4 are higher, because they also include other costs of the programs. In the case of Argentina, only one-third of each dollar spent is paid to laborers, with the other two-thirds going to materials and skilled personnel in charge of the activities supported by the program (Ravallion 1999a). The ratio increases to roughly three-quarters in the case of Mexico, with the other quarter going to trainers' salaries and other related expenses. The other three income support

programs reviewed in this paper have a higher ratio of benefit to nonbenefit expenses.

Income transfers are financed in two different ways. In the case of Argentina's public works program and Mexico's training program, the funding comes mainly from the budget, hence from general taxation. In the other three cases, the transfers are funded by explicit or implicit taxes on employment. In principle, taxes on employment could be either more or less distortionary than general taxation, depending on the nature of the tax system in force. But all taxes carry a marginal burden, in the sense that they reduce economic efficiency. This burden should be factored in when assessing programs such as Argentina's *Trabajar* or Mexico's *Probecat*. More specifically, the value of the physical or human assets generated by the programs should not be high enough just to cover their cost, but also to cover the corresponding marginal tax burden. The last column in Table 6.4 suggests that in practice this is not the case.

The employment tax is formally similar in the Brazilian, Colombian, and Peruvian income support programs. In particular, contributing 9.3 percent of the workers' salary to an individual accounts program amounts to setting aside roughly one month of salary per year of work. Therefore, in the mid-1990s the employment "taxes" in the Colombian and Peruvian income support programs were roughly the same. Some of the proponents of the individual accounts system claim that an income support program along the Colombian lines is less burdensome to employers than a program along the Peruvian lines. However, Peruvian employers could set resources aside on a monthly basis, if they wished to. It is not at all obvious that forcing them to do so would make them better off. However, savings accounts that are administered by third parties (not employers or workers) do facilitate labor mobility, reduce legal claims, and provide workers with more certain benefits.

A potentially more important difference between income support programs relying on an employment tax is related to the endogenous adjustment of wages. If a program is valued by the workers, they should be willing to "pay" for it through lower wages. In principle, the net impact of a program on wages depends on its explicit or implicit employment tax, on how much the workers "value" the benefits from the program, and on the wage elasticity of labor demand and supply. This net impact was evaluated using panel data estimates for Peru by MacIsaac

TABLE 6.4

**Income Support Programs for the Unemployed: Cost per Beneficiary**

BURDEN ON EMPLOYERS					
PROGRAM AND COUNTRY	AVERAGE SPENDING PER BENEFICIARY (IN U.S. DOLLARS)	CONTRIBUTIONS OR PAYMENTS	CHANGE IN EQUILIBRIUM WAGE (IN %)	BURDEN ON TAXPAYERS	VALUE OF ASSETS GENERATED PER BENEFICIARY
Public works in Argentina	3,100	None	Not applicable	All	Similar to spending
Training in Mexico	393	None	Not applicable	All	Insignificant
Severance pay in Peru	760	1 monthly wage per year, lump sum	Insignificant	None	Not applicable
Unemployment insurance in Brazil	664	0.65% of firm's revenue, monthly	Unknown	None (the system runs a surplus)	Not applicable
Individual accounts in Colombia	Unknown	9.3% of workers' wage, monthly	Insignificant	None	Not applicable

*Note:* Data for Argentina are from Ravallion (1999a), Jalan and Ravallion (1999), and Jones and Ravallion (1999), and refer to 1997. Cost data for Mexico were kindly provided by Quentin Wodon; the assessment of the value of the assets is from Wodon and Minowa (1999). Data for Peru are from MacIsaac and Rama (2000); payment by employer refers to 1994, whereas change in equilibrium wage was estimated on 1994–97 panel data. Data for Brazil are from Cunningham (2000); spending refers to 1995. Data for Colombia are from Kugler (2000); the change in the equilibrium wage was estimated using differences in differences for 1990 and 1992–96.

and Rama (2000), and using difference-in-differences estimators for Colombia by Kugler (2000). In both cases, the net impact turned out to be statistically insignificant, implying that the burden of these two programs falls entirely on employers.

***What Are the Efficiency Effects and Insurance Benefits?***

Proposals to introduce “optimal” unemployment insurance or individual savings accounts often emphasize the distortions to incentives created by conventional unemployment insurance. Key among those distortions is the lower effort devoted to a job search by those who collect unemployment benefits. On the other hand, it can be argued that income support allows the unemployed to search for a longer period, possibly leading to a better job match. More generally, income support programs for the unemployed could have effects on the duration of unemployment spells, on the earnings level subsequent to reemployment, and even on nonpecuniary characteristics of the new jobs. The evidence available in this respect is limited. However, the results summarized in Table 6.5 suggest that all these incentive effects are weak.

Some of the evidence on unemployment spells is difficult to interpret. In the case of Peru, the allegedly longer unemployment spells are derived from an analysis of changes in job tenure over time. Saavedra and Torero (1999) show that job tenure was longer in the 1980s, when job security regulations were in force, than in the 1990s,

when they were substantially weakened. But there was mandatory severance pay in both periods, whereas in the meantime the economy was subject to many other economic reforms and external shocks. In the case of Colombia, the shorter unemployment spells reported by Kugler (2000) after 1990 could not be due to a change in the amount of the transfers received, or in the conditions attached to them. The only difference is that in the new system the beneficiaries can keep the unused portion of their transfer in their individual accounts, whereas in the old system they would have had to put that portion into a bank account, or found some other form of investment for it. It is difficult to believe that the difference in returns between these two alternatives is large enough to justify a difference of three weeks in the duration of unemployment spells. The same reasoning casts doubt on the allegedly higher earnings observed upon reemployment.

One of the few clear-cut results in Table 6.5 refers to where people get jobs after unemployment ends. In the case of Brazil, Cunningham (2000) finds that unemployment beneficiaries are more likely to become self-employed than nonbeneficiaries. This result is consistent with credit rationing at the household level. Under this hypothesis, unemployment benefits would provide start-up capital, and the most profitable use of this capital would be to run an independent business. This choice would not be available to those who do not receive unemployment benefits. This result is also consistent with the view that working in

TABLE 6.5

**Income Support Programs for the Unemployed: Effects on Employment, Earnings, and Consumption**

	EFFECTS ON DURATION OF UNEMPLOYMENT	EFFECTS ON EARNINGS ON REEMPLOYMENT	EFFECTS ON SECTOR OF REEMPLOYMENT	CONSUMPTION INCOME RELATIVE TO NONPARTICIPANTS
Public works in Argentina	Unknown	Unknown	Unknown	25.9% higher income
Training in Mexico	Insignificant	Insignificant	Unknown	Unknown
Severance pay in Peru	Longer	Unknown	Unknown	Consumption rose 6.8% for beneficiaries; fell 16.9% for nonbeneficiaries
Unemployment insurance in Brazil	Insignificant	Insignificant	Self-employment more likely	Unknown
Individual accounts in Colombia	Three weeks shorter	5.5% higher	Unknown	Unknown

*Note:* Information for Argentina is from Jalan and Ravallion (1999), based on 1997 data on household income per capita. Information on Mexico is from Wodon and Minowa (1999). Information on Peru is from Maclsaac and Rama (2000) for consumption, using data for 1994–97, and Saavedra and Torezo (1999) for other; unemployment spells are assumed to be longer because the average job tenure was longer in the late 1980s, when job security regulations were in force, than in the late 1990s. Information on Brazil is from Cunningham (2000). Information on Colombia is from Kugler (2000); unemployment spells are shorter compared to those of workers entitled to severance pay, but not necessarily compared to those who are not covered by an income support program.

the informal sector is not necessarily an inferior outcome, but often a deliberate choice.

Credit constraints at the household level could also underlie the apparent effectiveness of income support programs at providing insurance, which is suggested by the evidence from Argentina and Peru. If households could borrow when one of their members is confronted with temporary job loss, they should not experience a serious drop in consumption. In Peru, consumption per capita drops by more than 16 percent when one household member becomes unemployed *and* does not get severance; on the other hand, consumption per capita increases by almost 7 percent if the unemployed member gets severance. This result suggests that the Peruvian program mandates severance payments that are too generous. Jalan and Ravallion (1999) show that the foregone income from participating in Argentina's *Trabajador* program amounts to only half of the transfer received.<sup>7</sup> For the average household, participation results in an increase of almost 26 percent in income per capita, a figure quite close to the 23 percent difference in consumption per capita between beneficiaries and nonbeneficiaries in Peru. Unfortunately, there are no similar estimates available for the other three income support programs considered.

#### *What Are the Main Weaknesses of these Programs?*

Before drawing the policy implications of these assessments in the broader context of macroeconomic and labor

market changes in the region, we offer some summary observations specifically for the five programs surveyed above. First, nonlabor costs in Argentina's *Trabajador* appear to be high, so there is room for improving the effectiveness of public works programs as instruments for income transfers by lowering the non wage component, though this may jeopardize the quality and nature of the investments being made through the program (see also the following section). Second, the training in Mexico's *Probecat* seems ineffective, so there may be potential saving if the share spent on training costs is reduced or redirected. Third, severance pay in Peru appears to be excessively generous. Fourth, individual savings accounts in Colombia seem to be used mainly by the wealthy, who are more likely to have voluntary savings anyway. Fifth, Brazil's unemployment insurance scheme covers largely those who also have individual severance accounts, thus providing insurance—although quite frugal for most workers—to those who also benefit from mandatory severance laws. Finally, these programs cover little more than 10 percent of the unemployed, implying that by themselves they fail to offer most workers any insurance against job loss.

#### **Policy Implications**

There is an increasing clamor for greater unemployment insurance in the region. There is also a widely held view, however, that given the nature of labor markets and the extent of administrative capacity in developing countries,

they should hesitate before setting up formal unemployment insurance systems. In fact, extensive informality results in even greater problems in administering benefit payments because it is difficult for the UI agency to determine if claimants are in fact unemployed: many may be working in the unregulated sector while drawing benefits. It also creates problems in financing the UI system because it will be impossible to make a large number of employers and employees pay their contributions. The recent experience of Argentina is symptomatic of both problems (see for example, Mazza 1999). These considerations have led observers to argue that middle-income countries in East Asia and Latin America would be better off reforming their mandated severance payment schemes rather than instituting formal UI systems (see, for example, Edwards and Manning 1999). Variants of Brazil's individualized severance accounts (*Fundo Garantia por Tempo de Serviço* [FGTS]) are sometimes recommended as a substitute for unemployment insurance.

Using the findings summarized in the last section and the conceptual framework outlined in Chapter 3, this section reevaluates these and related propositions. This reevaluation is done not with the objective of recommending specific changes in existing mechanisms for income support for the unemployed—though there may be some lessons to be learned—but to contribute to the general discussion that will gather steam as countries in the region reassess whether the mechanisms they employ are indeed appropriate for the types of product, labor, and financial markets they have, and the types of aggregate and micro-economic risks faced by workers and firms. In particular, we provide some tools and techniques to policymakers to determine the suitability and adequacy of the alternative programs of income support for the unemployed by asking the questions: Do individuals have effective instruments of comprehensive insurance against the risk of unemployment, that is, market insurance, self-insurance, and self-protection? If not, are government programs providing the missing instruments?

### **Self-Protection: The State of Labor Markets**

The logical first step in examining whether enough is being done to help workers deal with unemployment shocks is to determine if more can be done to reduce the probability of these shocks. In the terminology of Chapter 3, this constitutes the set of government actions to aug-

ment self-protection, or lower the probability of occurrence of crises or shocks. Chapter 4 discussed the monetary, fiscal, and capital market policies that will help lower the frequency and size of economic crises, including unemployment of workers. This section discusses another important set of public policy measures in this regard: labor market reforms.

Each country has a unique social consensus on the desirable balance between economic efficiency and social equity, and labor policies straddle both concerns. Different economic and political histories of countries can result in significant differences between the impact of seemingly identical laws on wages and employment, so that the subset of binding laws—and hence the labor reform agenda—is country specific (see Box 6.3). Here we simply note that labor market reform has lagged behind other economic reforms in most countries in the region, with only a few exceptions such as Chile. In fact, it has been described as the “forgotten” economic reform in LAC (Edwards and Lustig 1997), or a major component of an unfinished agenda of “second generation reforms” in the region (Guasch 1999a). For governments that wish to facilitate comprehensive insurance decisions by their workers and households in a rapidly changing global economy, labor market reform should get high priority.

### **Self-Insurance: Individual Savings Accounts**

Programs where a specified part of a worker's salary is set aside in an account—generally held in a government-approved financial institution, sometimes with guaranteed rates of interest as in the case of Brazil's *Fundo Garantia por Tempo de Serviço*—are a form of forced self-insurance. Since governments cannot credibly state that they will not “rescue” people who did not save enough, people may not save enough on their own—hence the need to make the program compulsory (Coate 1995). The main drawback of these programs is that they do not involve pooling of unemployment risks, and hence lead to lower consumption and investment by households than traditional unemployment insurance programs that are more “pay-as-you-go” in nature (see Gill, Haindl, Montenegro, and Sapelli 2000 for more on this distinction). While this may not lead to reduced welfare for wealthier households, poorer workers would suffer more. Their main strengths are that they minimize disincentive effects on work that are unavoidable in programs that involve pooling, make severance benefits

## BOX 6.3

**Labor Markets: Latin America's "Forgotten Reform"**

This box describes the four main lessons of a recent study (Gill and Montenegro 2000) that quantitatively assesses the main labor market issues in Argentina, Brazil, and Chile.

*Labor Policy Issues are Country Specific*

Ironically, the first general lesson is that regional generalizations about labor policy are often pointless or misleading. There are no shortcuts: implementable labor policies must be designed by understanding labor markets country by country. For example, there is evidence that a large number of workers are paid exactly the legal minimum wage even in Brazil's "unregulated" sector, and adjustments in this wage are matched by salary adjustments. It is possible—and indeed has been confirmed—that in some other countries minimum wages are not binding even in the regulated sector; but it would be unwise to assert either that minimum wage legislation is not important for economic outcomes or that it is important for all or most countries. Again, the finding that sustained growth in Chile has not been associated with increasing earnings inequality does not guarantee similar results for other countries; it merely weakens claims by people who question the desirability of growth-oriented labor policies instituted during the 1980s in Chile.

*Labor Outcomes Depend only Partly on Labor Policies*

Labor reform is neither necessary nor sufficient for improving labor outcomes. As the experiences of Argentina, Brazil, and Chile show, successful stabilization unaccompanied by changes in labor policy in general improves labor outcomes, though it also unmasks microeconomic imbalances (public-private compensation differentials in Brazil, relative prices of labor and capital in Argentina, and the gaps between the rich and poor in Chile). Similarly, fiscal adjustment could also improve employment and earnings outcomes, illustrating that actions such as putting government finances in order can improve outcomes in the private labor market, even if no labor reforms take place. Further, moving from a period of adjustment to sustained economic growth will improve earnings and employment outcomes, even if there are no accompanying improvements in labor policies. However, this does not mean that outcomes could not be better still if appropriate labor reforms are made, though it is harder to make this case persuasively.

*Making Labor Policies Better is Difficult During Good Times*

The first corollary of the above is that it is difficult to carry out labor reforms during economic booms. In

more certain for workers, and lower transactions costs. These considerations present the challenge of balancing labor market efficiency and poverty concerns.

The framework set forth in Chapter 3 can help resolve this dilemma. Following that framework, programs containing a significant mandatory self-insurance component may be especially well suited for countries where workers face high risk, for example, those that have high average rates of unemployment. For workers in these countries—if there were no public interventions to help the unemployed—comprehensive insurance against this risk would entail a relatively large component of self-insurance relative to market insurance. Mandating such self-insurance ensures time consistency of government behavior, but does not impose forms of insurance on individuals that would be purchased only in relatively small amounts in the absence

of government (because market insurance would be available only at a high price given that the chances of a worker being unemployed are high).

While considerable variation in unemployment rates exists among LAC economies, the regionwide average was estimated to be about 10 percent in 1999.<sup>8</sup> The likelihood of becoming unemployed is anything but rare in most countries, therefore, especially for the young, the less educated, and women, as seen in Chapter 5. For these reasons, mandated self-insurance may be well suited for countries such as Argentina and Brazil that have not carried out comprehensive economic—especially labor market—reforms. By the same token, they may be less suited for countries such as Chile, where the risks of unemployment have been lowered through far-reaching economic reforms (see below). But even countries such as Argentina should

Argentina, for example, labor policies did not rise to the top of the reform agenda during 1990–94 even though unemployment was increasing steadily, because of improving wage and employment conditions as a result of successful stabilization. When the Tequila Crisis hit Argentina, unemployment skyrocketed and labor reform came to the forefront of discussions, only to recede again when economic growth resumed as fiscal and financial reforms advanced. Again, in Brazil, labor reforms only briefly dominated the political landscape when unemployment rates rose to historic levels in mid-1998 after the economy slid into a recession. When the economic slowdown proved to be less severe than anticipated and unemployment rates fell, labor policy reform was moved off the Brazilian government's list of priorities. Finally, a decade of sustained growth and improving employment and earnings outcomes in Chile had the effect of prompting the reversal of labor reforms that may have made these outcomes possible in the first place.

#### *Quantifying Key Magnitudes can Facilitate Labor Reform*

The second corollary of the finding that labor outcomes only partly depend on labor policies is that quantification

of the likely effects of policy reform can help to advance the reforms. Labor reform is always difficult and—when attempted—reforms are usually piecemeal. In every country, there are well-entrenched labor interests, political risks for reformers are high, and proponents of reform such as employers or economists are often ineffective in convincing people of the benefits of taking risks. To help policymakers focus their efforts and explain them to the electorate, it is important to know whether labor policy changes are necessary and, if so, which aspects of labor policy are binding, which are irrelevant, and what are the likely benefits. Quantification of the benefits of labor policy reform—rather than relying only on economic growth—shows that Argentina probably has paid a high price for not reforming labor legislation between 1995 and 2000. For Brazil, again using a quantitative approach, the aspects of labor legislation that are the most important for outcomes can be isolated. Quantifying the concept of “precariousness” helps to determine that Chile may be better off leaving labor policies largely unaltered, and looking to other policy measures such as improved education quality to narrow the income gap between the rich and the poor.

not turn their backs to pooled-risk insurance schemes: pooling offers immediate poverty-related advantages and, over the longer term as labor reforms progress and unemployment rates fall, it becomes more and more preferred to self-insurance (see Box 3.1). Guasch (1999b) proposes a program that could address both short- and long-term considerations for countries embarking on labor reforms. A study at the World Bank proposes to again address the suitability of mandated self-insurance as income support for unemployment (Vodopovic 2000).

#### **“Market-Type” Insurance: Risk-Pooling Programs**

While precise conditions for the introduction of public programs are difficult to pinpoint, there are advantages of formal, public programs in addressing unemployment risk. Informal insurance mechanisms may not be effective,

because the loss of employment is often too large a shock, or may affect a large fraction of the population at the same time. Morduch (1999) argues that informal insurance, for example, through reciprocal transfers within the extended family or community, may thus be the least effective when help is most needed. Private, market-based arrangements may fail because of informational and incentive problems involved in insuring against even rare risks, toward which individuals and households have a rational inclination, versus self-insurance (the “price” of which is the same for rare and frequent losses, and self-protection, for which expenditures may yield only small payoff when the probability of the bad state occurring is already low; see Chapter 3).

While concerns that publicly provided insurance will displace some private transfers are justified (see, for example, Cox and Jimenez 1998), its introduction may improve

## BOX 6.4

**Combining Mandated Self-Insurance and Market-Type Unemployment Insurance**

Guasch (1999b) recommends combining individual savings accounts—which have the weakness that they involve no pooling of risk and are simply forced self-insurance—and conventional unemployment insurance—which runs the risk of abuse in economies with high rates of formal unemployment combined with high shares of informal employment.

The main characteristics of the proposed program are:

- Each employee is assigned an individual account in an eligible financial institution of his or her choice.
- Each month, the worker and employer deposits a fixed fraction of wages into the account.
- The money is invested in financial securities but with strong safeguards against loss of principal value.
- The account is fully portable in the event of job separation or retirement.
- Access to funds is permitted only in the event of unemployment or retirement, and monthly withdrawals are limited to a fraction of last monthly salary.
- A part of the worker's/employer's contribution goes into a general fund—administered at the firm, sector, or economywide level—to complement the accounts of workers who may not have reached amounts that would allow certain minimum amounts when separated from work.
- Minimum monthly withdrawals for a maximum stipulated period are guaranteed only for certain types of workers (for example, heads of households).
- Firing with just cause should include dismissals by the employer due to economic reasons, and legislation should be made clear and simple.

both welfare and efficiency. For example, in poorer countries the beneficiaries of private transfers are often the elderly, and keeping more income for themselves would enable the young—who may also be poor—to invest more in their own education and health and that of their children (Morduch 1999). Public systems may also be more

efficient because they can pool resources across larger groups.

*Severance Pay Provisions as Insurance for Unemployment*

The most common form of public unemployment insurance in most of Latin America has been mandatory severance pay provisions, such as those evaluated in depth by MacIsaac and Rama (2000) for Peru. Though not generally associated with “market insurance” that involves pooling of risks, these programs in fact do pool risks to provide insurance in the event of unemployment (with the employer and/or all workers paying an “insurance premium” through reduced salary and benefits while employed). The problem is that because the employer is responsible for severance pay, the pooling is at the level of the firm, and hence the risk is spread over only a small group. In the old economic environment protected by trade barriers, the risks were effectively pooled over a greater population because consumers effectively subsidized potentially bankrupt firms through higher prices. With globalization and reduced barriers to trade, however, this is no longer possible because products must be sold at world prices.

If this scheme had proved to be administratively uncomplicated relative to other options, there might still be a reason to recommend the use of severance pay provisions. But, as pointed out in Rama and Maloney (2000), most of the grievances handled by labor courts in Latin America are in fact related to disputes over severance pay. Employment adjustments needed for economic reasons are rendered complicated, and workers are deterred from seeking better job matches voluntarily. These mandates may therefore be the worst among public “market-type insurance” programs: they involve high moral hazard with little pooling of risks, and may discourage hiring in the first place and hence raise the risk of unemployment for those looking for jobs. They exist in most countries in the region even today; these countries may be well advised to seriously reevaluate the suitability of these mandates in relation to other alternatives for ensuring income support for the unemployed.

*Public Works Programs as Insurance for Unemployment*  
Again, though generally not regarded as “market-type” insurance that involves pooling of risks and the charging of

premiums, public works programs of the type analyzed above can in principle be treated as such.<sup>9</sup> The question addressed here is whether these programs have fulfilled this role in the LAC region and whether there are any lessons for the future.

The main strength of these programs is that if properly designed as a “work guarantee” (low wages, no rationing, low nonlabor costs—see Ravallion 1999) they serve effectively as unemployment insurance for those who formerly were employed (in formal or informal jobs) and for households the coping strategy of which is for family members to begin working when the main earner becomes unemployed.<sup>10</sup> The experience in the region and outside shows that these programs are able to target the poor when designed specifically for this purpose.

Both Ravallion (2000) and Snyder and Yackovlev (2000) confirm that some leakage to the nonpoor makes for resilience in social programs during economic contractions. But the results for Argentina’s *Trabajar* suggest the program was clearly subject to the same constraints in the political economy that influenced the incidence of past fiscal contractions in Argentina. The program expanded into poor areas when the budget increased, but it retreated from poor areas when the budget was cut. It was the program’s disbursements to nonpoor areas that were protected.<sup>11</sup>

Further, as Maloney (2000) argues, there is a question about the cost-effectiveness of these programs and, even more fundamentally, the proper means to evaluate them. Measured against other income protection programs considered here which seek primarily to transfer income to households experiencing shocks, the emphasis on employment through infrastructure projects means that a large fraction of the funds earmarked for income protection may be diverted to materials and capital costs. In noncrisis periods, these projects may be socially valuable when evaluated at the market rate of discount. During crises, however, when poor families facing credit constraints strongly discount the future, they represent a diversion of resources away from present income transfers that is socially costly.<sup>12</sup>

In this regard, Chile and Mexico appear to place a high value on the transfer and less on the investment per se, so that they reach rates of transfer close to 70 percent (see Wodon 2000). Argentina and Colombia seem to value the project component more, so they transfer 40 percent or less. This implies large differences across countries in the

cost per transfer and in the cost per job created, with no obvious implications for policy. In other words, these programs appear to aim at a combination of objectives— income smoothing, employment per se, provision of infrastructure—which makes difficult the comparison of workfare to other income support programs. Training programs, such as *Probecat*, can be seen as a special case of such programs where the investment is now in human capital rather than infrastructure. Since materials costs are low, the rate of transfer is very high.

### “Conventional” Unemployment Insurance

One of the more attractive features of a well-designed unemployment insurance program is that it can simultaneously help offset (part of) both microeconomic and macroeconomic fluctuations. In a study of the political economy aspects of social insurance and transfer programs in the U.S. and Latin America, Snyder and Yackovlev (2000) conduct cross-section, time-series analysis on 45 program-groups in the U.S. during 1962–98. Part of the analysis focuses explicitly on what happens during the economic cycle and major political changes, contrasting spending levels just prior to recessions with the levels during recessions. One of the findings is that the *only* class of programs which show a clearly countercyclical pattern of spending are those classified as “income security programs” (for example, social security, family assistance, food stamps, and unemployment insurance). Most of the other social protection functions exhibit no clear pattern, and some show evidence of *procyclicality*. Overall, spending on social protection program-groups appears countercyclical, but the most countercyclical program in the U.S., by far, is unemployment insurance.<sup>13</sup>

Most observers would probably not find this surprising—as unemployment rises during a recession, unemployment insurance expenditures should rise as well. But it is not unreasonable to expect that in the fiscally constrained atmosphere of a recession, unemployment benefits might be cut or eligibility constrained, so as not to “bust the budget.” Evidently, this does not occur in the U.S. Instead, a 1 percent increase in unemployment leads to somewhat more than a 1 percent increase in unemployment spending. This “automatic stabilizer” function makes it worthwhile to examine unemployment insurance programs more closely, especially that of the U.S., which has several other attractive features as well.<sup>14</sup>

Traditional unemployment insurance is usually financed through contributions by employers and/or employees, though government subsidies—either to cover deficits or to fund programs such as means-tested unemployment assistance—are usually significant. Table 6.7 shows the extent of burden-sharing in the financing of UI (Gill, Dar, and Thomas 1999, based on data reported in Tzannatos and Roddis 1998). In only 10 countries is the burden entirely borne by just one party. Brazil, where only employers contribute to UI financing, is the notable example of such countries in LAC. Burden-sharing between two parties is more prevalent, especially between employers and employees. In 13 countries, including Argentina, Ecuador, and Venezuela, the burden is shared by both. In Argentina, the UI program is financed by a 1.5 percent payroll tax on employers and a 1 percent tax on workers' wages (Mazza 1999). The most prevalent means of financing UI systems is through contributions by all three parties, with 38 countries financing their UI system through these means. In 17 of these 38 countries, the role of the government is limited to just paying off any deficit.<sup>15</sup>

Under most scenarios, it is difficult to justify large-scale permanent subsidization of unemployment insurance programs by the government. The insurance aspect of the scheme implies that benefits should be paid from contributions. One exception is, perhaps, the cost of administering UI programs; it is reasonable to expect the government to pay the administration costs of a system that it has set up, especially if it wishes to significantly influence its

design. The U.S. federal government, for example, pays state governments for administration costs. Countries such as France, Germany, and the U.K. also pay the administration costs of UI programs, while not subsidizing payments to UI claimants. Another exception may be the payment by government of social security dues on behalf of the unemployed during the period he or she is eligible to receive unemployment insurance benefits—for example, in Germany and Portugal—though in principle this could also be financed from UI contributions. It is easier to justify government subsidies, for assistance, to those among the unemployed who are poor, determined through reliable means-testing. Under such a system, the government pays for modest benefits for those where the main eligibility criteria are not proof of past contributions and current involuntary unemployment (as required for unemployment insurance), but proof of current poverty (which is fundamental) and of current involuntary unemployment (which is secondary). Governments in Austria, Finland, France, and the U.K. finance unemployment assistance along these lines.<sup>16</sup>

Table 6.6 provides information on who among workers or employers is *legally* responsible for contributing to the scheme on behalf of workers. Who actually pays—in more general economic terms—is a far more complicated question, the answer to which depends on the design of the program and the relative market power of workers and employers, both of which are country-specific considerations (see Box 6.5). The relative market power of employ-

TABLE 6.6

**Costs of Unemployment Insurance: Burden-Sharing Among Workers, Employers, and Government**

PAID BY	OECD	LATIN AMERICA AND OTHER	TOTAL NUMBER
Worker only	None	None	0
Employer only	Iceland	Bangladesh, <i>Brazil</i> , Moldova	4
Government only	Australia, New Zealand	<i>Chile</i> , Estonia, Hong Kong, Tunisia	6
Employer and government	Italy	Bulgaria, China, Georgia, Russia	5
Employer and worker	Canada, Greece, Netherlands, Sweden, U.S.	Algeria, <i>Argentina</i> , <i>Barbados</i> , <i>Ecuador</i> , Hungary, Serbia and Montenegro, South Africa, <i>Venezuela</i>	13
Employer and/or worker; government pays any deficit	Belgium, Denmark, Ireland, Norway	Albania, Armenia, Azerbaijan, Belarus, Czech Rep., Egypt, Iran, Lithuania, Poland, Romania, Turkmenistan, Ukraine, Uzbekistan	17
All three; government's contribution is <i>nonresidual</i>	Austria, Finland, France, Germany, Japan, Luxembourg, Portugal, Spain, Switzerland, U.K.	Croatia, Cyprus, Guernsey, Israel, Kyrgyzstan, Latvia, Liechtenstein, Malta, Slovak Rep, Slovenia, <i>Uruguay</i>	21

Note: Turkey and *Mexico* are the only OECD countries without formal unemployment insurance systems as defined in this paper.

Source: Tzannatos and Roddis (1998), using data reported in *Social Security Systems Throughout the World—1997*, published by the U.S. Social Security Administration.

BOX 6.5

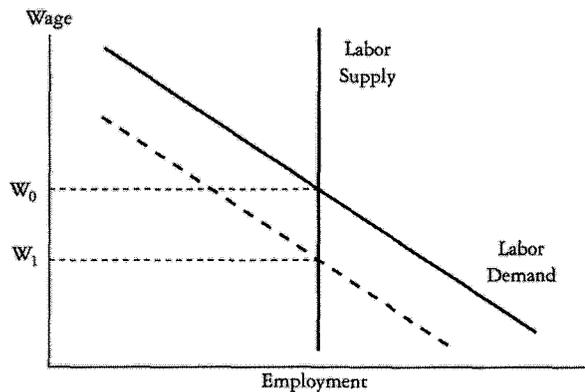
**Who Really Pays for Unemployment Insurance?**

Who bears how much of the burden of contributions to formal unemployment insurance depends on two factors: (a) the extent to which the design of the UI program differs from what workers would have chosen for themselves as insurance against unemployment; and (b) to the extent that some differences exist, UI contributions will be viewed as a tax, the incidence of which will depend on the demand and supply elasticities of labor (see Gill, Dar, and Thomas 1999).

If the government-sponsored UI program is exactly what every worker would have chosen by themselves, then the cost will be borne entirely by the worker (who will willingly accept a wage net of all UI contributions). If—as is likely—the government program is different from the insurance against unemployment the worker would buy privately, the tax burden will in general be shared by the worker and the employer. The higher the elasticity of demand for labor, other things being the same, the larger the share of the tax borne by the worker. The higher the elasticity of supply of labor (or the ease of becoming informal), the higher the share of the tax borne by the employer. Who actually pays (that is, bears the incidence) therefore depends not on whom the tax is levied but the design of the scheme and the relative market power of the worker vis-à-vis the employer.

Figures 6.1 and 6.2 illustrate this point. Figure 6.1 shows the effect of imposing a UI contribution on employers in a labor market in which the supply of labor is highly inelastic. This has the effect of reducing the labor demand of firms at any given wage (the demand curve shifts down by the amount of the employer contribution). In the new equilibrium, after the imposition of the UI contribution, workers receive a wage which is lower by the amount of the contribution  $w_1$  (as opposed to the previous equilibrium of  $w_0$ ); employers end up paying the same gross wage as they did before. In other words, the fact that the contribution is nominally raised on employers makes no difference to the outcome, which is that workers end up paying, just as they would have

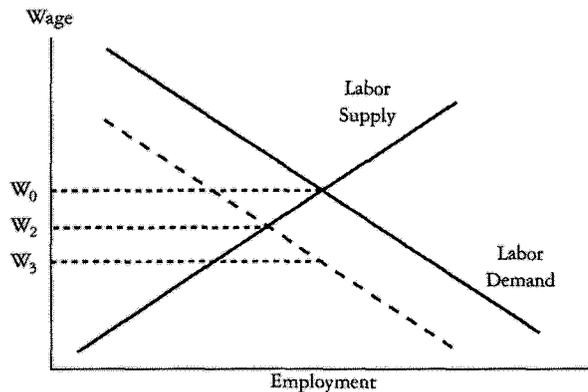
FIGURE 6.1  
**Workers Pay for UI even Though the Contributions are Levied on Firms**



done if the contributions had been raised directly from their paychecks.

Figure 6.2 shows the outcome of an employer contribution if the supply of labor is more sensitive to the

FIGURE 6.2  
**Workers and Firms Share UI Costs even Though Contributions are Levied on Firms**



wage. Now the incidence is shared. Rather than falling all the way from  $w_0$  to  $w_1$ , the supply response pulls the wage back up to  $w_2$ . Workers still “pay” for a part ( $w_0 - w_2$ ) of their UI contributions by receiving lower wages, while employers pay the difference ( $w_2 - w_1$ ).

ers and workers is not something the government should try to influence, but the design of the program should be

of central importance to government. In this regard, the key question is how well the program’s design “mimics the

TABLE 6.7

**Income Support Programs for the Unemployed: Summary of Findings and Policy Implications**

MEASURE	NATURE OF INSTRUMENT	ADVANTAGES AND DISADVANTAGES	POLICY IMPLICATION
Individual savings accounts	Self-insurance—no pooling of risk	Low labor market efficiency costs, but welfare reduction especially for poorer workers.	Should be considered by countries that have high unemployment, especially where labor reforms are only a distant possibility.
Severance pay	Pooling over small group—globalization makes group even smaller	Almost no advantage. Little pooling of risk, entails labor market inefficiency, makes labor relations contentious, and is administratively challenging.	Possibly the worst form of unemployment support in a globalized economy.
Public works and training programs	Market-type insurance elements—implicit pooling of risk	Can reach informal sector workers and the poor, but can entail high leakages in the form of nonlabor costs when investment element is made a priority. Training programs show less leakage but also lower coverage potential.	Should be considered for a part of work force, but not a universal scheme. Permanent schemes allow for better balance between consumption smoothing and investment over the economic cycle.
Unemployment insurance	Market-type insurance—explicit pooling of risks	Most pooling of risk, can be used both to address idiosyncratic and aggregate risk, and hence, serve as a “automatic fiscal stabilizer.” Generally politically popular. May be administratively demanding.	Should be considered by governments that have carried out comprehensive economic reforms; labor market disincentive effects can be reduced by keeping benefits frugal and “mimicking the market” as much as possible in design.

market.” One of the principal features of private insurance markets is that the price reflects the degree of risk, even if imperfectly. This is a noteworthy feature of the U.S. system, perhaps the only one that tries to match unemployment tax rates to risk through employer “experience-rating,” where rates of tax vary according to the frequency with which an employer’s former workers have filed for unemployment benefits.<sup>17</sup> Mimicking the market, and more particularly, the insurance that workers would choose to buy, is also essential to the long-run goal of covering the informal sector. If wages fall to reflect the cost of insurance that workers do not want, then they have the incentive to avoid the implicit “tax” and become informal (see Maloney 1998).

The U.S. unemployment insurance program may be a good model for LAC countries that are considering such systems: there are minimal mandated severance pay rules under the general labor laws, the system mimics the market as much as countrywide public systems can, benefit level and duration are modest, the rules are relatively uniform throughout the country even though states collect taxes and pay benefits, and the design of the program in general makes it an automatic fiscal stabilizer. While this role may not be large in quantitative terms, the program

stands out as a rare government program that is strongly countercyclical in nature.

There are several ways to move from the current systems of mandated severance pay to such unemployment systems. Coloma (1996) proposes an unemployment insurance system for Chile—which has severance pay provisions but is considering the introduction of a new system—that uses severance pay benefits as a “deductible.” Under this proposal, the unemployed would first have to draw down the accumulated severance benefits, and only then have access to unemployment insurance payments. The effort to make the hybrid system resemble the structure of private insurance schemes—where the insured are not paid the full loss but the loss minus a deductible—makes the proposal an improvement over a system of mandated severance pay. Following the line of reasoning developed in Chapter 3, countries that have low unemployment risks because of comprehensive economic reforms and strong information systems, (for example, strong administrative data and regular households surveys), have the “insurance fundamentals” that make for moves toward unemployment support systems that pool risk to be welfare-increasing for its citizens, even when some efficiency losses are involved. For countries such as Brazil, that already have minimalistic

unemployment insurance systems but may or may not have these preconditions, Box 6.6 provides some tentative guidelines.

## Conclusion

This chapter summarized the experience in five countries with five types of income support programs for the unemployed, and then drew some policy lessons. While it is difficult to determine an unambiguous ranking of these programs independent of country-specific circumstances, these experiences, combined with the comprehensive insurance

framework presented earlier in the report, do provide for some broad but potentially useful guidelines.

Table 6.7 presents these findings, which draw from both theoretical considerations and the regional experience. They should be viewed as a starting point for closer policy analysis from a country-specific perspective. With this objective, the table casts each available policy instrument in the general framework of Chapter 3 and notes their respective advantages and disadvantages. Based on this, the rightmost column of the table outlines the conditions under which each instrument may represent an appropriate policy choice.

### BOX 6.6

#### Some Guidelines for Countries that Have Unemployment Systems

International experience appears to suggest the following lessons for LAC economies that currently have unemployment insurance (UI) systems, but which cover only a small fraction of the workforce.

*It does not appear necessary to extend the UI tax to workers.* Having a levy only on employers is in line with international experience in the OECD and middle-income countries. Besides, economic theory suggests that the final burden of UI taxes has less to do with who bears the initial impact and more with the design of the scheme and the elasticities of demand and supply of labor.

*Keep the role of government in UI finance minimal.* Governments should pay only for the costs of administration of the UI system. This is in line with international experience, and in keeping with the principle of employers and employees together insuring workers against drastic income loss during unemployment.

*Frugality of benefits should be maintained.* Because of the high degree of informality, it is difficult for the UI agency to determine if claimants are in fact unemployed. Keeping a waiting time of about 30 days before benefits commence and the benefit levels low—as Brazil has succeeded in doing so far—circumvents this problem somewhat and also reduces work-related disincentives associated with all UI systems. Financing a more generous UI system will also be difficult because it will be impossible to make a large number of employers and employees pay their contributions.

*Decisions on the tax base should be made on administrative grounds.* The decision on the tax base should be

made on grounds of administrative ease for both government and employers. Ideally, the base should be the same or similar to that used for other taxes collected. Thus, if the system is administered by states, the tax base should be the same as that used for other state taxes. If the system is federally administered, there may be grounds to make the tax base the same as that used for the main federal tax on employers, usually the social security tax.

*Experience-rating of employers can be a reasonable medium-term goal.* While experience-rating has many attractive features, it is administratively demanding. Before making any decisions in this regard, countries in the region would be well advised to seek technical assistance from experts in the U.S., especially UI administrators from states that have relatively recently and successfully instituted experience-rating.

*Government financing of unemployment assistance could be considered.* Most countries in the region have a high degree of informal employment, often synonymous with noncompliance with social security laws. The region confronts the challenge of extending income support to those in the informal sector as economies are opened up to the rigors of international competition. One option could be for the government to finance a system of unemployment assistance with low, uniform benefits to those who are currently unemployed and who satisfy a means test, do not qualify for unemployment insurance because their employers have not paid UI taxes, but who can prove that they have contributed their social security dues for the same length of time as required for UI eligibility.

However, a major conclusion of this chapter is that in designing an effective strategy to help workers deal with the risk of unemployment, administrative capacity should be an important but not overriding concern of government. Most countries in the region are capable of building this capacity. The more important questions are whether there are government actions that can rapidly lower the risk of unemployment, and what are the type of unemployment support programs that are in demand but the supply of which is constrained. These questions can be posed as follows:

- What are the measures that would augment the *self-protection* efforts of workers—that is, reforms that lower the risks of unemployment? Labor policy measures are a leading candidate, though their importance and nature have to be decided by each country.
- What are the most practical measures to augment *market-type insurance* involving pooling of unemployment risks? These measures invariably imply efficiency costs but suit countries better and better as they successfully implement self-protection-augmenting policies that lower the risk of unemployment.
- What are the most practical measures to augment *self-insurance* efforts of workers? These measures generally minimize labor market distortions and best suit countries where self-protection augmenting efforts are underway, but may require that special attention be paid to poorer workers.

While the relative weight on each of the three measures will differ across the economies in the region, a sound policy mix involves pursuing all three objectives so that workers obtain not a full guarantee against all shocks, but comprehensive insurance that allows them to seize the opportunities presented by globalization, and to see that risk is a fact of life in a world that grows smaller every year.

## Notes

1. Argentina, Barbados, Brazil, Ecuador, Uruguay, and Venezuela have unemployment insurance programs, though some of these are quite limited in scope.

2. Chile is currently debating the merits and demerits of introducing individual saving accounts for dealing with the risk of unemployment.

3. Only for public works programs was there a substantial literature available (Ravallion, 1990; Ravallion, Datt and Chaudhuri, 1993; Datt and Ravallion, 1994). For other income support programs, and with a few exceptions (Cunningham, 1997; Kugler,

1999a and 1999b; Wodon and Minowa, 1999), the literature is much more scant.

4. The chapter also draws from a series of independently produced studies dealing with one income support program in Argentina (Ravallion 1999a, 1999b, and 1999c; Jalan and Ravallion 1999; Jones and Ravallion 1999).

5. Sections 2 and 3 of this chapter are based on Rama and Maloney (2000).

6. In 1999 the monthly minimum salary was less than \$100.

7. It follows that the public works program is not merely displacing other, roughly equivalent ways of generating income. Ravallion does assume, however, that jobs displaced are lost and not taken by other unemployed. Relaxing this assumption would lead to higher estimates of benefits to the target population.

8. Countries such as Argentina have rates as high as 15 percent, while those in Chile are less than half these rates.

9. Programs with large transfer elements can be treated in an insurance setting as market-type insurance with a negative loading factor, that is, those for which the price of insurance is better than actuarially fair.

10. Montenegro and Gill (2000) and others find that in the 1980s a large share of the participants of Chile's Minimum Employment Program were formerly out of the labor force.

11. Given the low wage rate offered, the direct benefits from the program are still likely to have favored the poor, even after the cuts. Thus, the design features of the program undoubtedly helped protect the poor from cuts.

12. This diversion may be justified by appeals to the dignity of work, or avoiding the adverse social consequences of mass unemployment, although such considerations tend to receive less discussion when programs affecting middle-class workers are discussed. From the political economy perspective, governments may also be more willing to finance investment projects than simply transfers, or even workfare projects that have low materials costs and are essentially recurrent in nature (maintenance, cleaning, repairing). In this case, benefits to the unemployed may be higher when packaged in an investment project than simply as a transfer.

13. Another important finding in Snyder and Yackovlev (2000) is that there is a difference between programs that are targeted at the poor and those—such as unemployment insurance—that are not; that is, spending on programs that are targeted at the poor is much more sensitive to party control in Congress than spending on non-targeted programs.

14. Gill, Dar, and Thomas (1999) summarize the features that lead to this strong countercyclicality as (a) stringent legal restrictions that unemployment tax proceeds can be used only for paying unemployment benefits, (b) established rules by which the federal government provides loans to states whose UI trust funds are drying up, and (c) rules that the federal government uses its own UI trust fund to extend unemployment benefits during long recessions—the maximum duration can be doubled to 26 weeks.

15. While in some countries the government may directly contribute into the UI fund (for example, Israel, Japan, and Malta),

more often this may involve the government's financing of means-tested unemployment assistance programs (for example, Austria, Finland, France, and the U.K.), social insurance programs (for example, Germany and Portugal), or even active labor market or social assistance programs (for example, Latvia and the Slovak Republic).

16. The main difference between unemployment insurance and unemployment assistance is that the eligibility condition for insur-

ance is time of contribution, while eligibility for assistance is based on a means test that qualifies the recipient as needy.

17. Note again that, given the design of the program, who actually pays the contribution does not depend on whom the tax is levied. In essence, the U.S. system transfers the problem of determining unemployment risk onto the employer. Thus employees who have filed for UI benefits more frequently are likely to be less attractive to future employers.



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## CHAPTER 7

# Helping Poor Households Deal Better with Economic Crises

**G**IVEN THE FINDINGS IN CHAPTER 5 ON HOW HOUSEHOLDS RESPOND TO ECONOMIC CRISES, designing minimalistic and effective interventions to help households—especially poor families—deal better with crises is not easy. While more investigation is needed to confirm the findings of panel studies in Argentina, Brazil, El Salvador, and Mexico, what we found appears to suggest three fundamental points.

- First, the poor, like the rest of the population, are reluctant to take actions that are not in their own long-term interest—such as withdrawing children from school during short or moderate downturns. But they have to draw down their assets like everyone else and—since reserve labor is a primary asset of such households—greater labor force participation of secondary workers (mainly women) in the household is observed. Since this takes time away from household production, these changes are likely to affect the quality of education and health.
- Second, steeper or longer downturns do have negative effects even on education enrollment and basic healthcare decisions. For example, children may be withdrawn from school or attendance reduced, and the incidence of child labor increases. That is, both quantity and quality of schooling and healthcare are reduced: as shocks become more serious, “good coping” appears to give way to “bad coping” as assets are exhausted.
- Third, the poor do gain from economic growth episodes—in fact, good times appear to be more beneficial for the poor than the non-poor.

These findings should influence policy choices of any government concerned with sustainable poverty reduction. Governments should not be reluctant to carry out growth-enhancing liberalization and reform that may mean somewhat greater volatility during the transition, because while short downturns may not hurt the poor much, increased growth helps the poor a lot. Further, the findings suggest that macroeconomic policies should be oriented not to avoid downturns at all costs, but to prevent them from becoming long or deep. In addition, the quality of social programs used by the poor should be smoothed over the cycle—protecting the quantity and quality of public education and health services used by the poor is critical in both long and short downturns.

While the first two findings involve government actions that are treated in Chapter 4 (macroeconomic, financial sector, and capital markets policies) and Chapter 6 (labor policy), the third—spending on social services—is the focus of this chapter. Protecting the quality of selected social services that the poor need during economic crises is a difficult task for even a determined government. This generally involves maintaining the level of spending per poor person during economic downturns, which is doubly challenging because the fiscal envelope shrinks at the same time that the number of poor increases. This is where the appeal of programs that are well targeted to the poor is highest: even if governments cannot maintain social spending per poor person at their normal levels, the adverse effects of the down-

turn may be reduced if a subset of this spending that is used mainly by the poor is maintained or even increased.

This chapter examines whether governments in Latin America have maintained social spending over the economic cycle, distinguishing as much as possible between “general” social spending and its more targeted components. Two studies of cyclical fluctuations in government spending in Latin American countries commissioned for this report form the core of this section, but the section also uses more detailed examinations of public education in Chile, and health insurance in Argentina, Brazil, Chile, and Colombia. We briefly study the characteristics of five poverty-targeted programs in Brazil, Honduras, Mexico, and Nicaragua that aim to reduce current and future poverty by giving cash transfers conditioned on health and education decisions by recipient households. Given the concerns that the poor may reduce education and health investments when their income falls, these are considered prime candidates for the type of programs that should be protected or even expanded during economic downturns. However, their suitability as an effective instrument for countering cyclical fluctuations in income and human capital investments is not self-evident from either their design or their track record. We evaluate whether they can in fact serve this function well, and propose some policy lessons based on our findings in the light of evidence on how households respond, bringing in political economy considerations.

Briefly, what we find for governments contrasts with our findings in Chapter 5 on how households respond to economic risk. While poor households in LAC tend not to rely on “bad coping” over the economic cycle, for example, by sharply cutting investments in the education of their children during downturns, governments in the region do behave in ways that are shortsighted by sharply increasing spending when times are good, and decreasing critical investments such as in education and health when times are bad. This report provides some conjectures as why this may be so, and suggests policies that can help make government behavior conform to the principles of effective insurance.

Before we discuss how governments in the region have tried to help the poor deal with economic shocks, it is useful to briefly discuss what sound insurance principles would require of governments. Figure 7.1 presents an ideal scenario where the targeted social spending per poor person increases steadily or *acyclically* at the long-term rate of growth of per capita income (which is subject to *cyclical* fluctuations). This implies, however, that the share of targeted spending to total government spending or GDP must be strongly *anticyclical*. Maintaining a noncyclical pattern of targeted social spending is a tall order for even the most pro-poor and determined government, but it may be a good measure against which governments can judge their own performance. This chapter will show that gov-

FIGURE 7.1

### Targeted Social Spending Over the Economic Cycle

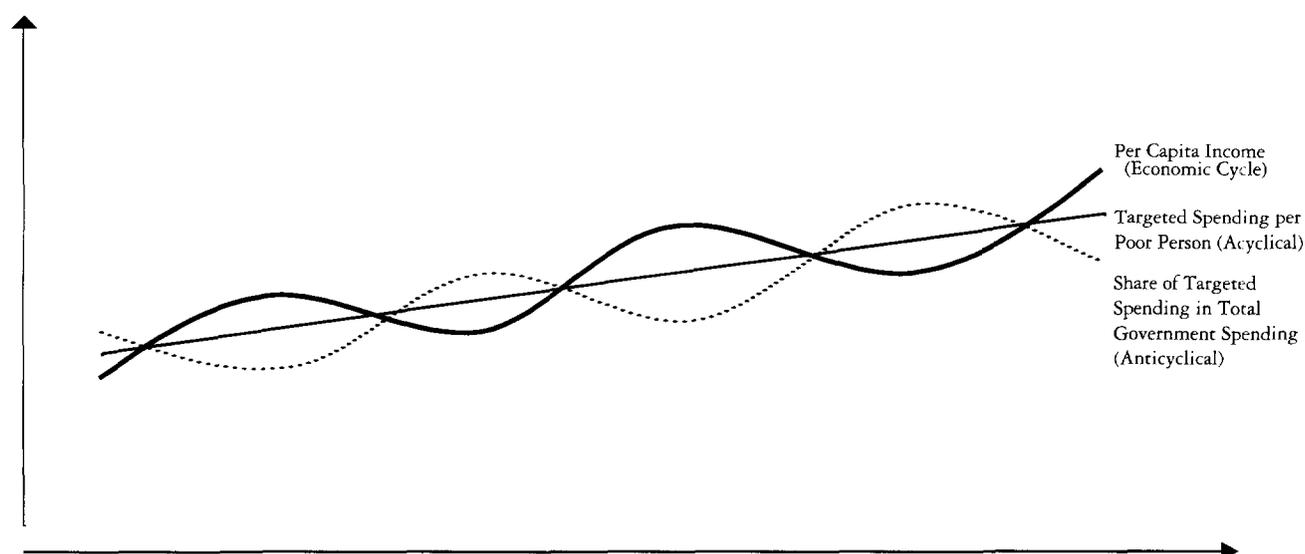


TABLE 7.1

**Targeted Public Spending per Poor Person in Argentina and Mexico, 1994–96**

ARGENTINA					MEXICO						
REAL PER CAPITA GDP (1994 = 100)	SHARE OF TARGETED SOCIAL SPENDING IN GDP (%)	POVERTY RATE (%)	NUMBER OF POOR PEOPLE (MILLION)	TARGETED SPENDING PER POOR PERSON (1994=100)	REAL PER CAPITA GDP (1994 = 100)	SHARE OF TARGETED SOCIAL SPENDING IN GDP (%)	POVERTY RATE (%)	NUMBER OF POOR PEOPLE (MILLION)	TARGETED SPENDING PER POOR PERSON (1994=100)		
Level					Level						
1994	100	1.24	21.6	7.5	100	100	1.36	46.95	42.04		
1995	94.68	1.21	27.2	9.6	63.12	1996	95.07	1.23	60.93	56.51	67.30
Change					Change						
1994–95	-5.32%				-27.88%	1994–96	-4.93%			-23.70%	

Source: Hicks and Wodon (2000).

ernments in the region have found it hard both to keep targeted spending per poor person from falling during bad economic times, and to keep it from rising “too fast” during good times.

### Social Spending Over Economic Cycles

For social spending that is targeted toward the poor to reduce the losses incurred by them because of an economic downturn (that is, for it to act as a complement to self-insurance and a substitute for missing market insurance), governments should design social spending to be counter-cyclical. In fact, we generally observe the opposite in Latin America. Table 7.1 summarizes the findings for both Argentina and Mexico during the 1994–96 recession in these two countries. As one might expect, the natural effect of the recession is to lower GDP per capita and to increase the headcount poverty ratio, as was observed in both cases. To increase social spending per poor person, the government should have therefore considerably increased its share of GDP in targeted spending. Instead, that share fell in both countries. The result was that targeted spending per poor person declined by about 28 percent in Argentina and 24 percent in Mexico (Hicks and Wodon 1999) during the economic crisis.

We also recognize that the pattern observed by Hicks and Wodon (1999) is almost certainly not the result of ignorance on the part of governments. There are obviously some factors—both economic and political constraints—that prevent them from following policies that are so obviously in the interests of their citizens. In a paper commissioned for this report, Wodon and others (2000) analyze

more closely how social spending by government varies over the economic cycle. Of special concern is how public spending that is targeted to the poor is affected by expansions and recessions (see Box 7.1). Another commissioned paper, by Snyder and Yackovlev (2000), examines these factors for the U.S. and for Latin American countries within a political economy framework.

### How Do Governments Vary Spending Over the Economic Cycle?

In this section, we first summarize the findings for seven LAC countries regarding how the elasticity to growth of targeted spending for the poor behaves during booms and busts. The countries are Argentina, Chile, Costa Rica, the Dominican Republic, Honduras, Mexico, and Panama. They were chosen because data available were more reliable for them than for other LAC economies. The data cover the 1980s and 1990s, generally between 1981 and 1997–98.

The data are not refined enough to test whether governments are “pro-poor” in the sense required by Wodon and others (2000) (see Box 7.2). Assuming that social spending (for example, on education and health) is more pro-poor than nonsocial spending, testing whether governments have been pro-poor can then be done using social spending as a proxy for targeted spending. The *share* of social spending in total spending is found to increase during booms, and is not reduced during busts (see Table 7.2). This suggests that these governments are “prosocial,” that is, they make special efforts to protect social expenditures.

This should help to protect the poor during a crisis, but it is not enough. Despite efforts by government to main-

## BOX 7.1

**How Do Pro-Poor Governments Vary Spending Over the Economic Cycle?**

According to Wodon and others (2000), governments are “pro-poor” if the growth elasticity of targeted public spending is at least 1 during booms, and smaller than 1 during recessions. This asymmetry between booms and busts is tested empirically using panel data on public expenditures for seven Latin American countries. The results suggest that governments are pro-poor, or at least tend to vary social spending over the cycle to conform to this rule. But this is not enough to protect the poor during a recession. The reason is that during a downturn, the economy (and government spending) contracts at the same time that the number of poor increases.

To more formally understand why, denote the total targeted spending for the poor by the government by  $SP$ , the headcount index of poverty by  $H$ , and the size of the total population by  $N$ , so that the targeted public spending per poor person is  $SP/(H*N)$ . This can be expressed as a function of three parameters: (a) the targeted budgetary spending as a share of GDP, denoted by  $SP/GDP$ ; (b) the level of GDP per capita, denoted by  $GDP/N$ ; and (c) the inverse of the headcount index of poverty, denoted by  $1/H$ :

$$\frac{SP}{H*N} = \frac{SP}{GDP} \frac{GDP}{N} \frac{1}{H}$$

tain targeted and social spending constant *as a share of total spending* during a crisis, a 1 percentage point decrease in GDP still reduces targeted public spending *per poor person* by about 2 percentage points during a recession. Half of this impact (1 percentage point) is due to the reduction in GDP, which leads to reduced total spending even when the share of targeted spending in GDP remains constant. The other half is due to the increase in the number of poor people due to the economic contraction.<sup>1</sup>

Another test of the pro-poor tendency of governments is to see how they spend during times when budgets are not as tight, for example, during economic expansions. For these seven countries, the elasticity of social spending to GDP growth is found to be larger than 2. Thus, in the most general terms, governments expand spending on social programs twice as fast as overall budgets during periods of economic growth.

To assess how growth affects how much targeted public spending reaches each poor person, this can be transformed to yield:

$$\frac{DLog\left(\frac{SP}{H*N}\right)}{DLog\left(\frac{GDP}{N}\right)} = 1 + \frac{DLog\left(\frac{SP}{GDP}\right)}{DLog\left(\frac{GDP}{N}\right)} - \frac{DLog(H)}{DLog\left(\frac{GDP}{N}\right)}$$

That is, the growth elasticity of targeted spending per poor person is 1 plus the growth elasticity of the share of targeted spending in per capita GDP, minus the growth elasticity of poverty.

To increase targeted spending per poor person during a crisis, the left-hand side of the equation should be negative. Wodon and others (2000) estimate the elasticity of poverty reduction to growth to be minus 1, that is, a 1 percent increase in per capita GDP reduces the number of poor by 1 percent. To maintain targeted public spending per poor person constant, therefore, the growth elasticity of the share of targeted spending in GDP must be less than -2. This is a difficult task for any government. For the seven Latin American countries studied, the observed elasticity during recessions is not statistically different from zero, so that a 1 percentage point negative growth *reduces* targeted social spending per poor person by 2 percentage points.

**The Importance of Political Factors**

The procyclicality of social spending in Latin America is also confirmed by Snyder and Yackovlev (2000) using data over roughly the same period as that analyzed by Wodon and others (2000), but for 19 countries in the LAC region. While they do not distinguish between targeted and general social spending, they examine the influence of political factors as well as economic cycles. One of their main findings is that while both authoritarian and democratic governments behave similarly during recessions (cutting social spending per capita), the behavior during good times appears to be more pro-poor under democracy (see Box 7.3 and Table 7.3). They also find that the relatively nontargeted parts of social spending (for example, higher education) tend to be more procyclical than those that help the poor more (primary and secondary education), which is encouraging.

## BOX 7.2

**Data Sources and Classification into Targeted and Social Spending**

Although Wodon and others (2000) carefully construct the data using both the General Financial Statistics of the International Monetary Fund and country-level data provided by governments, social spending information is more reliable than data for targeted spending. Targeted spending is not strictly comparable between countries because while some countries classify certain programs as targeted, others may classify similar programs as social, but not targeted. Social spending is more reliable because it includes all targeted expenditures as well as spending for education and health (plus a few small items).

*Argentina*

Annual GDP and budgetary data for 1980–97 are from the Ministry of the Economy. Apart from information on total spending, the Ministry provides consistent series for social spending (education, health, water and sanitation, social assistance, labor, housing, and other services for urban areas excluding those expenditures allocated in the social security budget). Within social spending, the data identify targeted spending as consisting of spending for housing and urban development, social assistance, and labor. This includes *Trabajar*, the public works program discussed in Chapter 6. The data include spending at federal, provincial, and municipal levels. Health excludes health expenditures allocated in the social security budget.

*Honduras*

The data are from the Ministry of Finance and are not available in published form. The expenditures are for the central government (but the level of decentralization is low in Honduras). Targeted expenditures exclude the expenditures for the social investment fund, but include all other expenditures directed specifically at the poor. Programs included in targeted expenditures are PRAF II (a demand-

side program targeted according to malnutrition rates and providing cash stipends for nutrition and school enrollment—see following section), some general subsidies, and expenditures for a number of smaller programs.

*Mexico*

The data are for the federal government only but, since the decentralization process in Mexico started only in 1998, this is not of major concern. Social spending consists of spending for education, health and social security, labor, regional development, water, environment, and social assistance. Targeted spending is the sum of social assistance and spending for labor, which includes programs such as *Empleo Temporal* (public works in rural areas) and *Probecat* (job training in urban areas), mentioned earlier. Health spending includes social security expenditures, so that health as a share of social expenditures is overstated.

*Chile, Costa Rica, the Dominican Republic, and Panama*

The expenditure data for these four countries are from the IMF's Government Financial Statistics, combining the series for consolidated central government, state or provincial governments, and local government where available. When data on transfer payments from the central government to other levels of government are available, these were added to the consolidated expenditures in education, health, and targeted spending. Targeted spending was calculated by subtracting social security spending from "Social Security and Welfare" expenditures. This yields an approximate measure of spending that is targeted because countries do, for example, grant noncontributory pensions targeted at the poor. These countries were selected because of data quality considerations.

Overall, the results suggest that governments do make efforts to protect the poor—or at least to protect social expenditures during crises—and that they increase these expenditures faster than economic growth during periods of expansions. Unfortunately, the findings also indicate that their efforts during contractions are not enough—

spending per poor person falls despite their efforts. And equally worrisome is that government behavior in expansions may be pro-poor but shortsighted—democratic governments expand too fast, perhaps responding to strong political pressures to "make up" for their inadequacies during recessions. The finding in Chapter 5 that the poor

TABLE 7.2

**Elasticities of Spending to Growth, by Type of Spending**

ELASTICITY WITH RESPECT TO GROWTH OF	TARGETED SPENDING	NONTARGETED SPENDING	EDUCATION SPENDING	HEALTH SPENDING
<b>Targeted spending/GDP</b>				
Overall	0.75*	0.31	0.35	0.24
In expansions	1.06*	0.55*	0.43*	0.55*
In contractions	0.44	0.07	0.27	-0.04
<b>Total spending/GDP</b>				
In expansions	-0.08	-0.08	-0.02	-0.07
In contractions	0.04	0.04	0.23	0.18
<b>Social/total spending</b>				
In expansions	0.69*	0.69*	0.74*	0.75*
In contractions	0.07	0.07	0.13	0.08
<b>Targeted/social spending</b>				
In expansions	0.46	-0.06	-0.29	-0.14
In contractions	0.32	-0.05	-0.09	-0.30*

\* Denotes significant at 10 percent level of significance or better. Otherwise the coefficient should be interpreted as zero elasticity.

Note: These are elasticities of shares. A zero growth elasticity of the ratio of total spending to GDP implies that spending increases in proportion to GDP.

Source: Wodon and others (2000).

register strong income gains during growth episodes also means that governments help them most when they least need the help.

*The Quality of Social Services Over the Cycle*

These findings suggest that the quality of social services consumed by the poor should be even more procyclical

## BOX 7.3

**Social Spending Over Economic and Political Cycles in Latin America**

Snyder and Yackovlev (2000) conduct cross-section, time-series (panel) regressions for 19 Latin American countries from 1980–96, for eight spending variables (total social spending—consisting of social security, education, health, and housing—and education spending at primary, secondary, and tertiary levels). The independent variables are growth of GDP (current and lagged), government deficit (lagged), regime type, and governing party “ideology.” The main results are:

- The income elasticity of overall per capita social spending with respect to GDP is clearly positive, but less than 1.
- For the four broad categories, education, health, housing, and social security, they find that the income elasticity of spending on education and health is about 1; the elasticity is also 1 for housing, but it is imprecisely estimated. Interestingly, for social security—which is probably less targeted than public education and health care—the elasticity is not statistically different from zero—that is, per capita social security spending is not procyclical.
- Breaking down education spending into three broad categories—primary, secondary, and higher education—Snyder and Yackovlev (2000) find income elasticities of about 1 for primary and secondary education, but a noticeably higher elasticity of about 1.5 for higher education spending, which is the least targeted of these categories.
- Authoritarian and democratic regimes appear to respond similarly to economic crises. Both cut social spending per capita, and about equally. But there is a large difference by regime type on spending changes during expansions: greater increases in spending take place under democratic rule. Social spending increases only when there is both democratic rule and a nonshrinking economy.
- There appears to be little effect of the executive branch’s “ideology” or populist leanings.

TABLE 7.3

**Changes in Latin American Social Protection Spending, 1970–95**  
(Broad Spending Categories)

	DEPENDENT VARIABLE = PERCENT CHANGE IN PER CAPITA SPENDING		
	TOTAL SPENDING	4 BROAD CATEGORIES	4 BROAD CATEGORIES
%Δ in per capita GDP	.73*	—	—
%Δ in per capita GDP × social security	—	.24	.25
%Δ in per capita GDP × education	—	.90***	—
%Δ in per capita GDP × health	—	.97***	—
%Δ in per capita GDP × housing	—	1.60*	—
%Δ in per capita GDP × not soc. sec.	—	—	1.07*
Lagged deficit	-.01*	-.01*	-.01*
New democratic regime	.05***	.09**	.08**
Old democratic regime	.04	.06	.06
# of observations	226	835	835

\* = Significant at the .10 level.

\*\* = Significant at the .05 level.

\*\*\* = Significant at the .01 level.

Note: Country-specific, fixed effects included in all specifications.

Source: Snyder and Yackovlev (2000).

than social spending because government spending on social services such as education and healthcare is cut at the same time that private capacity to pay for them declines. But there are mechanisms specific to education and healthcare that may offset some of these effects. In education, for example, governments may reallocate spending from higher education toward primary and secondary education during downturns—the previous section discusses some evidence that suggests this. In healthcare, the reforms in countries that have strengthened health insurance for those employed, as well as others, may provide some relief during economic cycles.

There is no systematic evidence on this question of how quality of social services varies with aggregate economic shocks. Two studies commissioned for this report, Mizala and Romaguera (2000) and Jack (2000), address this issue for public education and health, respectively, but the results should be regarded as preliminary. Mizala and Romaguera (2000) approach the question by studying changes in the quality of educational outcomes in Chile in the mid-1990s. They find that the quality of educational services, using two standardized school achievement test scores as proxies, behaves procyclically.<sup>2</sup> There are two possible explanations. First, a downturn reduces private incomes for the wealthier households, thus reducing the demand for places in fee-charging private schools that traditionally have displayed higher educational attainment. Second, decreased educational spending affects schools, teacher incentives, and other inputs generally, but also

forces cuts in targeted programs intended to benefit disadvantaged students.

While the issue of cyclical fluctuations in education quality requires much more study, it appears that during a downturn there is a negative effect on the quality of education for the middle and upper-middle classes, who generally send their children to private subsidized and unsubsidized schools. For poor children things may be even worse: they use public schools which may be even more vulnerable to expenditure cuts, and they benefit from special public programs that are threatened as well. The only group whose education quality may be unaffected by cyclical fluctuations is the wealthy. Economic volatility may thus, through its effects on government spending, make it harder to narrow the educational gap between the rich and poor.

This is especially unfortunate because education has been found to be related to the ability of workers and families to withstand aggregate shocks (see Chapter 5). Many countries in the region have chosen to not redistribute assets such as land, focusing instead on improving the distribution of human capital assets such as education through aggressive public education initiatives for the poor. This is in all likelihood the most sensible policy, but the rewards will be seen only after some time. Violent cycles in public education spending and the quality of education services push the rewards from public-education-as-redistribution policies even further into the future. Programs such as Mexico's *Progres*a and Brazil's *Bolsa Escola*—if used as instruments to reduce this cyclicity in

education quality—have the attractive feature that they can reduce the amplitude of these quality swings for poor families. The usefulness of these programs is evaluated in some detail in the next section.

In Latin America, the regulatory role of governments is becoming more complex, especially in two areas: the regulation of financial markets, and the regulation and public provision of health services. A critical review of the recent experiences with health insurance reform in Argentina, Brazil, Chile, and Colombia can be found in Jack (2000). The study finds that the traditional approach of public health systems in LAC attempted to provide free universal coverage, motivated more by a concern for equity than for the efficiency of the insurance arrangements available to households. This was, in turn, caused by the highly unequal income distributions prevalent throughout most of the region.

During the 1980s and 1990s a number of governments in the region, including the four studied by Jack (2000), sought to improve the efficiency of public health provision by relying on or mimicking private insurance mechanisms, albeit to varying degrees. In some cases, like that of the *obras sociales* in Argentina, this was achieved by reforming the focus of existing institutions. In others, entirely new institutions were created, such as Chile's Instituciones de Salud Previsional (ISAPRE).

Because health insurance and health care are almost always integrated, the task of reducing the exposure of individuals to health risks is intimately connected to the organization of health care delivery and financing mechanisms. Colombia's health insurance reform appears to have been explicitly market-augmenting: the reform aimed at ensuring that those who could pay for coverage—employees in formal sector jobs—were guaranteed access to quality healthcare, while those from whom contributions are harder to collect—the unemployed, the self-employed and the poor—were guaranteed access to services as well, but of modest quality. The performance of such “dual-voucher” systems during aggregate shocks should be studied in greater detail. However, with evidence that health system coverage for the poor increased from 5 percent to almost 50 percent because of the reform, the new system is almost certainly better for helping those affected adversely by aggregate fluctuations (see Box 7.4). This does not rule out cyclical fluctuations in quality as the relatively high quality unsubsidized subsystem contracts and the subsidized subsystem expands during downturns, and vice versa during upturns.

#### BOX 7.4

#### Colombia's Healthcare Reform

Colombia's health sector reforms initiated in the early 1990s represent one of the most ambitious policy interventions undertaken in Latin America. Before the reforms, Colombia had a centralized, budget-financed, and poorly organized public health delivery system, and many informal sector workers and their families were uninsured. The general goal of the Colombian reforms was to ensure a basic level of coverage for all individuals, that could be improved upon for those willing and able to pay more.

Although no formal voucher scheme exists, the scheme is equivalent to a two-level voucher system. Effectively, members of one group of families (those with workers in the formal sector) receive a voucher for insurance that covers a wide range of services at high quality, while all others (many of whom are poor) receive a voucher for a less generous package of insurance. Members in the first group are said to be in the “contributory regime,” and those in the second are referred to as participating in the “subsidized regime.”

The tax base consists of a payroll tax plus general revenues. Participants in the contributory regime are required to pay a 12 percent payroll tax to help finance health care. This tax is earmarked for health services provision. Participants in the subsidized regime also contribute, but these contributions are means-tested.

There has been a marked increase in formal coverage of the population, particularly among lower-income groups. Overall, the proportion of individuals with insurance more than doubled during this period from 24 percent to 57 percent, with the largest proportionate gains among the poor—the lowest quintile group's coverage rate rose from about 5 percent to 45 percent.

On the whole, health insurance functions in LAC are still covered by a dichotomous system. On the one hand, most countries now have a private or quasi-private market for actual insurance policies, with explicit premiums, coverage rules and deductibles, which gives access to varying degrees of reasonably high-quality services. On the other, there remains almost everywhere a large public or publicly subsidized provider of health services, such as

Brazil's Sistema Unico de Saude (SUS) or Chile's FONASA, which is quantity-rationed and provides low-quality care. Reform of these health systems must continue in most countries. Given the complexity of health insurance markets, governments throughout the region would be well advised to invest in a greater understanding of the main design and regulatory principles that need to be set in place.

### Targeted Spending During Booms and Busts

Many countries in the region have steadily moved from using general subsidies (especially for food and fuel) as the major instrument of support to poorer households, to programs aimed at providing income transfers to the poor. Facing administrative difficulties in keeping these pro-

grams focused on the poor, some countries have tried to make the programs more self-targeting, for example, by using low-wage work as the targeting device (as in public works programs in Argentina, Brazil, and Chile). While LAC followed countries such as India in these second-generation programs, the region has led the world in what can be considered the third generation of antipoverty programs "targeted conditional transfers," which make means-tested cash transfers, but make them conditional on "socially desirable behavior" of recipients. The five programs reviewed in this chapter belong to this class of targeted programs that provide social assistance to poor families with children, on the condition that these families invest in their education and health (Sedlacek, Ilahi, and Gustafsson-Wright 2000).

TABLE 7.4

#### Main Characteristics of Targeted Conditional Transfers

INDICATOR	PROGRESA (MEXICO)	PRAF-II (HONDURAS)	RED (NICARAGUA)	BOLSA ESCOLA (BRAZIL)	PETI (BRAZIL)
Implementing Agency	Federal	National	National	Municipal/State	Federal
Objectives					
Education enrollment increase	Yes	Yes	Yes	Yes	
Health and nutrition improvement	Yes	Yes	Yes	Yes	
Child labor reduction	Yes	Yes	Yes	Yes	
Poverty alleviation					
Supply-side support	Yes	Yes	Yes	No	Yes
Current coverage	2.3 million families (1997)	Under preparation	Under preparation	200,000 families (1995)	131,000 children (1996)
Size of monthly education grant	US\$10 per person	US\$5 per person	US\$9.3 per person	US\$32–\$65 per family	US\$12 per person
Geographical targeting level	National	National	National	Municipal	National
Beneficiary selection criteria	Income means-tested	None	Under preparation	Income means-tested and score	Income means-tested
Targeting outcome	Low leakage, but high undercoverage			Low leakage, but high undercoverage	
Outcomes					
- Improvements in education	Yes: enrollment increases			Yes: lower dropout, promotion increases	No evaluation
- Better health and nutrition	Yes				
- Child Labor	Mixed			Mixed	
Suitability for expansion in crisis					
- Intensive (more for old covered)	Yes	Yes	Yes	Yes	Yes
- Extensive (new participants)	Difficult	Difficult	Difficult	Difficult	Difficult

Source: Sedlacek, Ilahi, and Gustafsson-Wright (2000).

## BOX 7.5

**Mexico's *Progresa* Program: Works Well, But Would it Do as Well in Crises?**

*Progresa* gives cash grants to poor families in rural areas on the condition that their children attend school and visit health centers regularly. The stated objective of the program is to reduce current and future poverty, the latter by increasing investments in children's human capital. This demand-side intervention is also accompanied by sizable supply-side support in the form of increases in teacher salaries and the supply of medicines. *Progresa* began in 1997 and today covers 2.6 million rural families—about one-tenth of all families in Mexico—at a cost of \$800 million, or 0.2 percent of GDP. Three questions are of primary concern for this report: Does the program target well? Does the program improve child school and health outcomes? And can the program be altered to serve the purpose of a social safety net in a world with risk? Evaluations of the program being carried out by the International Food Policy Research Institute (IFPRI) in collaboration with *Progresa* can provide answers to these questions.

**Targeting**

*Progresa* was found to be the most effective of the targeted programs in Mexico—both in terms of selecting poor localities and selecting poor households within them. *Progresa* is not effective, however, when it comes to distinguishing between localities in the middle of the scale. As *Progresa* expands into less-poor communities, selection error is higher. It also did not do well in selecting moderately poor households. Thus, as *Progresa* expands into less marginal communities, leakages are likely to compound at both the locality and the household level (Skoufias, Davis, and Behrman 1999).

**Education and Health Outcomes**

Systematic evaluations of *Progresa* have revealed significant impacts on education and health. Enrollment rates of children in households in *Progresa* localities are higher compared to the enrollment rates of children in similar

households in non-*Progresa* localities (Schultz 2000). The increases in enrollments were largest in the grades in which enrollments were lowest—between completing elementary school (grade 6) and starting junior secondary school. These effects imply, for example, that a 16-year-old completed on average 1.1 more years of schooling than a poor child in a community without *Progresa*. The internal rate of return on *Progresa* grants is 9.2 percent. The program also improved health indicators (Gertler 2000). Clinic visits in *Progresa* localities were 18 percent higher than in non-*Progresa* areas, the number of pregnant women making their first visit in the first trimester increased by about 8 percent, and prenatal care visits increased by 5 percent. Participation lowers the probability of illness by 22 percent among children aged 0 to 2.

**Suitability in Crises**

While the targeting and outcomes are encouraging, *Progresa's* design suggests that its ability to serve as an instrument of social insurance might be limited. It is useful here to distinguish between the program's ability to expand *intensively* and its ability to expand *extensively*. It would do better in the former—that is, it might be relatively simple to increase the amount of benefit distributed to households already in the program during periods of economic crises so as to continue providing the incentive to beneficiary families to keep their children in school. However, any attempt to expand the program extensively—that is, to include households that experience transitory income or employment shocks—would require changing selection methods and criteria. In addition, any major expansion would also necessitate defining exit rules—that is, how families that “improve” after a positive shock will be dropped from the rolls. Otherwise, the program will not be financially sustainable over the long run.

*Source:* Emmanuel Skoufias, International Food Policy Research Institute, and Leader of the *Progresa* Evaluation Project.

Table 7.4 summarizes the principal features. Broadly speaking, these programs have three objectives: the alleviation of poverty; improvements in educational attainment,

health, and nutrition (and hence a subsequent reduction in long-term poverty); and the reduction of child labor (explicit in some of the programs such as Brazil's Programa

de Erradicação do Trabalho Infantil (PETI), and implicit in others such as Mexico's *Progres*a, Honduras' PRAF II, and Brazil's *Bolsa Escola*. The programs are demand-side interventions, with some supply-side support. The largest of these programs is *Progres*a, which covers more than 2 million households (or about 10 percent of total households in Mexico).

Regarding their effects on poverty, human capital, and child labor, rigorous evaluations are scarce, but the programs appear to work well. *Progres*a has been systematically studied, though, and appears to have improved education, health, and nutrition (see Box 7.5). The programs have low leakage to the non-poor. However, there is also considerable undercoverage of the eligible poor both because the programs are relatively new and expansion has been cautious, and because of the inevitable fiscal constraints facing some of the programs such as *Bolsa Escola*.

Because eligibility requires having school-age children, the programs will exclude some of the poor even if all eligible families are covered. This makes it relevant to ask if it is the behavioral condition that leads to the observed gains, or if this is the effect of the income transfer making the household somewhat better off. In determining this, however, both administrative and political economy considerations are important. First, the additional conditionality may somewhat paradoxically lead to lower administrative costs: the programs anchor the monitoring system in established schools and clinics, and therefore circumvent the need for completely new administrative arrangements. Second, this conditionality may be key to their political popularity, and may make them resilient to cuts even when budgets are being cut.

For the purposes of this report, however, the critical question is how well the programs can serve as a safety net over the economic cycle. They come up somewhat short in this regard. The programs do not cover families that are non-poor in good times, but who fall into poverty during a recession. Thus, while the amount of the cash transfer to those already covered can be increased quickly when incomes fall (thus being responsive on what can be called the “intensive margin of poverty”), the programs cannot by their design cater to the transient poor (and hence are unsuited on the “extensive margin of poverty”).

In the terminology of Chapter 3, these targeted conditional transfer programs may therefore be more effective in augmenting *self-protection*—decreasing household vul-

nerability to risk in the long run—than in providing *market-type insurance* during crises for all or many of those people who fall into poverty. As the next section proposes, however, these programs may have the attributes that make transfer programs resilient to cuts over the economic cycle. Political economy considerations may overturn their purely economic drawbacks.

## Designing Economic Policy Under Political Constraints

In examining the role of governments in assisting their citizens in dealing with economic risks, we found three findings of note. First, social spending by LAC governments is generally highly procyclical: even when the share of social spending in total budget outlays rises during bad times, total spending shrinks and headcount poverty increases, so that social spending per poor person is procyclical. Second, the spending—which includes most expenditure on social insurance and safety net programs—is often poorly targeted. Third, the quality of social services—especially education—also behaves procyclically. These are not desirable characteristics of policies for facilitating comprehensive insurance by individuals and families.

Insurance principles require that governments transfer resources from good times to bad—“saving” during good times, and “dissaving” during bad, or borrowing during bad times and repaying loans during expansions. It is clear that this is not what has happened over the last two decades in Latin America. Whether governments are prevented from doing so by political and economic factors is important to understand. What is clear is that governments seem to treat changes over the economic cycle as permanent—being shortsighted when times are good, and engaging in “bad coping” when times are bad by cutting down on critical investments such as education and health. That is, *governments respond to economic shocks uncannily like the stereotyped responses that poor households allegedly display*. Ironically, in Chapter 5 we found that the poor actually do *not* behave as stereotyped—in bad times that appear to be temporary, (that is, short or mild recessions), the poor draw upon assets such as reserve labor, and do not sharply cut investments in health and education.

The factors that make governments poor practitioners of the most basic insurance rules are worthy of closer study. In proposing policies, this section makes some sum-

mary observations on this subject. There are four major policy implications that follow from the analysis of how households respond to economic volatility (in Chapter 5) and what governments in the region have done to help.

***The Long-Term Goal of Social Policy Must be to Improve the Distribution of Assets***

First, since assets are crucial to enable households to self-protect and self-insure against shocks, a better distribution of assets should reduce *ex post* variations and thus improve welfare. Our findings provide additional support to the already traditional emphasis on more and better education: in addition to the impact it has on income levels, education appears to reduce the vulnerability to shocks and enable both rural and urban workers to cope better with them.

***Targeted Programs Should be Permanent and Better Protected During Crises***

Second, the temporal profile of social spending—especially on targeted programs—needs considerable realignment. Targeted social spending accounts for small shares of GDP, but the programs it makes possible can make such a large difference to poor people affected by a negative shock that governments should make an effort to protect them from the great budgetary pressures which arise during recessions, and to design them as much as possible to be automatically countercyclical. Unemployment insurance programs, public works guarantees, and poverty-targeted human development programs can all be designed to have this property. Other budget items that deserve attention during recessions are those which relate to the quality of selected social services, such as the salaries of teachers and primary healthcare workers, and the maintenance budgets of the facilities with which they work.

***Keeping Increases in Social Spending Moderate in Good Times is Important Too***

Third, while the evidence is not definitive, there is enough to suggest that it may be as important not to increase social spending during good times as rapidly as countries have, as it is to protect it during bad times. The empirical evidence for LAC summarized in this chapter indicates that despite efforts to restrict cuts in social spending, targeted and general social spending per poor person are reduced during recessions by 2 percentage points for each percentage point

decrease in per capita GDP. There are two reasons for the failure of targeted public spending to protect the poor. First, when GDP falls, even if targeted spending remains constant as a share of GDP, there will be less money available to distribute to the poor through targeted programs. Second, when GDP falls, poverty increases, which means that targeted spending for the poor must be distributed to a larger number of poor people. These two factors combined make targeted spending for the poor highly procyclical, which leads to a lack of protection during hard times. The same is true for social spending. Our results suggest that additional efforts should be made to create effective countercyclical programs and safety nets to protect the poor during crises.

With governments cutting targeted spending per poor person during economic crises, the finding that during expansions targeted spending per poor person increases by more than 2 percentage points for every percentage point increase in per capita GDP may seem like good news. However, for several reasons, this finding is not as encouraging as it seems. There is evidence that the income of the poor grows rapidly—generally even faster than that of the nonpoor—during growth episodes so that, as a rule, they need government transfers the least in these times. In addition, rapid increases during good times make the subsequent cuts in spending during bad times seem much worse, and may be politically destabilizing. Moderation in spending during good times lowers the risk of large reductions in spending during crises—especially if accompanied by transferring resources from good times to bad.

***International Financial Institutions Can Help Overcome Political Constraints to Insurance***

Fourth, for democratic governments, the pressures to spend during economic recovery can be ignored only by risking loss of political power. Because economic and political cycles seldom coincide, it is equally difficult to ensure that the savings during good times are spent only for the right things (social services and targeted programs) at the right time (during economic crises)—the record of such self-insurance efforts by governments, such as fiscal stabilization funds, is patchy at best.

Under these political constraints, governments that have taken appropriate self-protection measures through comprehensive reforms should adopt strategies that involve a good measure of market insurance. Recall from

Chapter 3 that at the margin, rarer losses are better insured through market insurance than self-insurance, and Chapter 4 applied these principles at the level of the country. In the absence of a well-developed market for insuring against aggregate risk, the strategy that suggests itself is for governments to borrow during bad times to prop up social spending and repay during good times. The problem, of course, is that the private market for countercyclical finance is also thin or nonexistent. Governments that have carried out comprehensive economic reforms deserve access to countercyclical finance from multilateral financial institutions. For governments that have yet to carry out the required economic reforms—and face a high likelihood of crises—the appropriate mechanisms for transferring resources would be of a more self-insurance nature. Recall from Chapters 3 and 4 that more frequent risks may be better insured against through self-insurance than through market-type insurance. Setting up programs that build up reserves during good times which are strictly earmarked to be spent only for these purposes during bad times may be the main viable option for such governments until they carry out comprehensive economic reforms.

## Conclusion

The foregoing policy recommendations aim either to better enable households to self-insure and self-protect, or to improve the government's role in assisting them. When all is said and done, however, these are necessary steps largely because insurance markets are either missing or seriously imperfect. Ultimately, risk is best dealt with through a combination of market insurance, self-insurance, and self-protection. Policymakers should recognize this, and note especially that the market for insurance with pooling of risk is highly prone to failure. The best solution will usually be to correct and complement the market, rather than to replace it. Intelligent regulation is essential for this, be it in labor markets, financial markets, or health services.

Following the comprehensive framework outlined in Chapter 3 for understanding household behavior in the face of risk, the absence of insurance markets would generally make households worse off. Governments may be able to improve matters through public action (see Gill and Ilahi 2000). This can be of three types:

- First, the provision of or subsidy to activities used by households to generate *self-protection*, but the production of which is characterized by positive externali-

ties. The presence of these provides an efficiency-based reason for government subsidy or direct provision. An additional equity-related rationale may arise if these activities, in addition to contributing to self-protection, also increase lifetime earnings. Education and health care qualify under this heading and, in practice, most “social spending” finances these services.

- Second, the provision of *market-type insurance* for risks where markets may be missing or underdeveloped, and some scope for risk-pooling exists. Unemployment insurance and public works guarantees are typical examples. Public health services, either in the form of direct provision or of cash subsidies to users or suppliers of private services, are another important category of social insurance against idiosyncratic risks which may be unrelated to aggregate income risks.
- Third, regulation of private insurers helps to extend insurance to many who would be excluded without such rules. Additionally, other forms of regulation—notably prudential regulation of financial intermediaries—may reduce aggregate risk in an economy and provide safer instruments of *self-insurance* to individuals. Financial and capital market sector strengthening may be the most seriously underemphasized instrument of social policy.

In practice, almost every example of governmental action that successfully fulfills one of these three roles will also to some extent fulfill one or both of the others. In addition, many social insurance policies will also perform social assistance (that is, redistribution from richer to poorer households).

Many countries in the region have improved the poverty impact of social spending through reform over the last decade, for example, by replacing generalized subsidies with programs specifically designed to help the poor. Evidence on government spending over the cycle for several countries is consistent with the view that LAC governments are sincere about protecting social spending during downturns: spending on education, health, housing, and social security generally does not fall by as much as GDP. However, social spending *per poor person* does fall—roughly equally because of the reduced overall budget and the increased number of poor people during economic contractions.

Social spending—while being generally pro-poor—directly benefits the nonpoor as well. Spending on more

## BOX 7.6

**Social Programs, Entitlements, and Countercyclicality in the U.S.**

Since the New Deal launched by President Franklin Roosevelt in the 1930s, the U.S. has had many of the programs being considered in LAC. Some of the U.S. experience may be relevant for countries in the region. Snyder and Yackovlev (2000) provide a quantitative analysis of social spending in the U.S. during 1962–98, using detailed spending series and controlling for both political and economic factors. Some of their results are:

- Overall, spending on social protection is quite countercyclical in the U.S. The analysis deals only with ongoing programs, though it appears that extending the analysis to new programs will make the spending appear somewhat more procyclical.
- The most countercyclical program, by far, is unemployment insurance (see Chapter 6). Social security is also relatively countercyclical. These programs are distinguishable from others in having a strong “entitlement” factor: because people see them as something they have specifically contributed to, they are difficult for politicians to alter over the cycle.
- Targeted and nontargeted programs appear to be equally countercyclical. Programs can be quite well targeted and still be resilient over both economic and political cycles—that is, it is not true that programs must help both the poor and nonpoor to attain resilience in a democracy. Avoiding overt “welfare” labels, keeping eligibility flexible so that the transient poor also can benefit from the program (for example, food stamps), and aiming to help poor children rather than adults can keep support for the programs high among even the nonpoor.
- Programs that are targeted at (poor) places appear to fare worse than nationwide programs targeted at the poor.
- Which party is in control of Congress clearly matters—all social protection programs grow faster under Democratic control. However, party control matters even more for targeted programs.

tightly targeted programs for the poor does appear to suffer more during crises. Governments could do better to protect these programs from cuts. Experience in the region and in the U.S. shows that a successful strategy requires explicitly accounting for political economy factors that make programs resilient to both political and economic changes (see Box 7.6). Such factors may include deliberately building in some features that have been associated with longer-lived government interventions, such as designing and marketing them as countrywide programs aimed at the poor, rather than programs targeted at particular parts of the country.

There is room for improving the design of targeted programs, however, especially how they relate to the economic cycle. While meeting many of the goals they were designed to accomplish in various settings (for example, both rural and urban), targeted conditional transfer (TCT) programs such as Mexico’s *Progresas* and Brazil’s *Bolsa Escola* do not seem to be especially well suited to assist those vulnerable to poverty with cash assistance in economic downturns. Through their innovative links with human capital accumulation, TCT programs may be better suited than earlier interventions to address structural poverty concerns, and even to counter the cyclical swings in quality of education and healthcare services. They look even better when political economy factors are explicitly considered—the programs appear to have increasingly broad political support, which is rather rare for transfer programs. More conventional instruments such as public works programs—when designed well—may be better safety nets, but have not enjoyed the same degree of popular support in the region. Based on these considerations, targeted conditional transfer programs should be viewed as a strong contender for forming the third leg of a comprehensive and permanent safety net—the first two being social security for the elderly and disabled, and income support for the unemployed in both the formal and informal sectors.

In conclusion, governments in the region do appear to have behaved in a pro-poor manner in the most general terms, especially since the rise of democracy in the last two decades. While authoritarian and democratic regimes in LAC appear to have responded similarly to economic crises—both cut social spending sharply and about equally—greater increases in spending take place under democratic rule. However, this is also where governments run the greatest danger of adding policy risk to economic

risk. Well-intentioned governments or those under political pressure to sharply increase spending on social programs during growth episodes, only to have to reduce spending in the next contraction, both raise risk and sow the seeds of social discontent.

The obvious solution for governments is to rely less on ex post coping and more on ex ante insurance—that is, move resources from good states to bad. This report takes the view that the reason why governments have not been doing this is neither ignorance nor indifference, but lies in an interplay of political and economic factors. Self-insurance at the country level (for example, through fiscal stabilization funds) is a difficult option for democratic governments: saving during good times runs the risk of being punished by the electorate, and the funds may be used up by more short-sighted successors. There are two viable options. The first is to create a sense of entitlement among the electorate for programs that have a genuine insurance component, such as that displayed by unemployment insurance and social security in the U.S. The second is access to financial markets in a manner that serves the purpose of market insurance: governments can borrow during bad

times and repay during good times. The main problem in this regard is that private markets for such instruments do not exist: short-term capital usually flows *out* of countries during economic downturns, to return only in good times.

Discipline on the part of both governments and international financial institutions can help countries deal better with aggregate economic volatility. Countries that institute effective self-protection (that is, through comprehensive economic reforms) and self-insurance (that is, through well-designed and efficiently run social programs) should be rewarded with credit at reasonable terms. These loans should be repaid during good times. Lending by these institutions should therefore be both strongly countercyclical so that it serves as insurance, and discriminating so that it encourages self-protection by governments.

## Notes

1. Wodon and others (2000) find that this is roughly proportional: a 1 percent fall in per capita GDP leads to a 1 percent rise in headcount poverty.

2. As measured by the SIMCE Mathematics, Spanish, and General Knowledge tests, taken at the fourth and eighth grades in all Chilean schools.



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