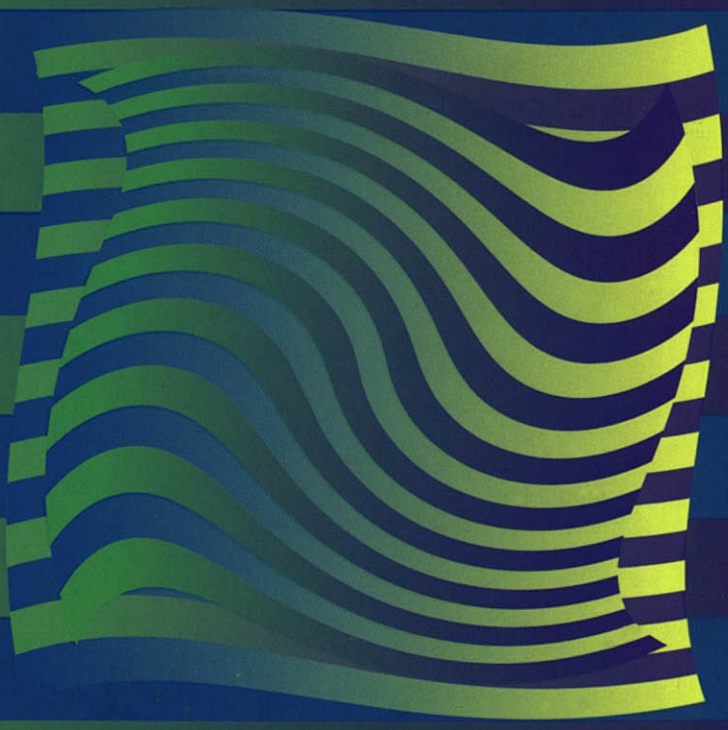
Social Protection for Equity and Growth



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Social Protection for Equity and Growth

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Preface

Over the past 20 years, Latin America and the Caribbean have faced recurrent economic crises and natural disasters. The acceleration of market reforms and global integration has expanded economic opportunities while increasing country and individual exposure to risk. To manage these risks, people resort to available insurance markets or informal coping mechanisms. But the poor often have little or no access to these instruments, and their incomes are too low to be allocated to anything other than consumption of basic goods.

The objective of this book is to provide policy recommendations to reduce the economic vulnerability of the poor to adverse shocks and help them cope with income downturns. Social protection for the poor is the set of policy interventions needed to assist low-income and vulnerable individuals, households, communities and countries manage risk more effectively.

Our target population includes people with limited ability to insure and self-insure against income downturns; those with precarious employment conditions; those unable to access social security and other insurance systems; and those unable to work because of age or permanent disability. Most of these people have little or no capacity to voice their needs and concerns. In times of crisis, they lack the economic and political power to push for policies responsive to their needs.

Public financing is required to insure the poor—particularly those living close to subsistence levels—against sharp declines in income. The welfare losses for the poor associated with even a small downward movement in income are very high.

This book argues that social equity arguments aside, insuring the poor is desirable in terms of economic efficiency. Both theory and evidence suggests that risk-averse individuals who are unable to insure will select low-risk and low-return survival strategies. In terms of human capital and employment decisions, these strategies may provide them with minimum levels of income. But they do not help people climb out of poverty or prevent the intergenerational transfer of poverty. Providing safety nets to those who cannot afford insurance, or where insurance markets fail, enables people to lower their risk exposure and select higher-return activities. As individual risk-return profiles improve, so do overall growth prospects for the economy. Insuring the poor against the risks associated with economic and financial crises, natural disasters, unemployment and aging is critical to a country's ability to pursue higher economic growth paths.

Social Protection for Equity and Growth is the result of a series of initiatives in 1998 and 1999 by the Poverty and Inequality Advisory Unit of the Inter-American Development Bank (IDB). Many were financed by the regional technical cooperation entitled "Studies and Guidelines on Social Protection for the

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Poor." Specific inputs include the Conference on Social Protection and Poverty in February 1999 and its associated papers and presentations, which will be jointly published by the IDB and the Brookings Institution. The book also includes contributions from other departments of the IDB on lending and non-lending activities, summaries of analytical issues and policy recommendations, and inputs from ongoing in-house research efforts by the unit and the LACEA/IDB/World Bank Network on Inequality and Poverty.

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Social Protection for Equity and Growth

Poor people are among the most vulnerable to downturns in income when a country is hit by an adverse shock such as a financial crisis, a major commodity price fall, or a natural disaster. The poor also suffer from shocks caused by government decisions, such as the sudden elimination of food subsidies. And the poor are particularly vulnerable to individual shocks, such as unemployment, illness or the advent of old age, since they are less likely than their better-off neighbors to have the savings or insurance to support themselves when these shocks hit. In short, adverse shocks dramatically reduce incomes of the poor, affecting their consumption and investment decisions and contributing to the persistence of chronic poverty in Latin America and the Caribbean.

The impact of shocks on the poor and on the overall economy suggests the need for structures to reduce the economic vulnerability of lower-income groups to help them cope with income downturns. Social protection as defined in this book refers to public interventions that can lessen the impact of these sudden events on the incomes and living conditions of the poor, as well as on long-term development trends. These interventions—including labor market measures, social safety nets, pension systems and calamity funds—help individuals and households better manage economic and natural shocks. Sound fiscal policy or prudential regulation of financial markets can help prevent economy-wide crises. Reforestation and the careful design of buildings can help reduce the impact of floods and earthquakes. Measures to help people protect themselves from adverse shocks—such as building a more solid asset base through better education or improving access to credit and insurance markets—also form part of the social protection agenda.

The primary focus here is social protection for the poor, who represent more than one-third of the population in Latin America. The poor are the most vulnerable to negative shocks for a variety of reasons. They have little or no access to public social insurance schemes because they are self-employed or work for employers who have difficulty complying with a contributory system (or in the case of microenterprises, are unwilling to pay their share into the system). Since enforcement mechanisms tend to be weak, noncompliance is widespread. The poor may also be precluded from access to social insurance because of legal restrictions, as is the case with domestic workers in a number of countries.

Access to social insurance on the part of the poor is not likely to expand overnight given the characteristics of the region's labor

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market and job opportunities. The poor are also unlikely to save in adequate amounts to self-insure. Furthermore, the poor have little or no access to private market insurance or credit mechanisms to smooth their income because these markets are nonexistent or underdeveloped, hindered by asymmetrical information and high transaction costs. Likewise, because of their limited education, the poor may not be able to use these markets effectively even when they do exist. Finally, the poor have little or no voice to demand protection of social programs and the implementation of safety nets in times of fiscal retrenchment.

Adverse shocks can affect individuals and households, towns and provinces, or whole countries. Illness may seriously affect income flows into the household because of both the costs of health care and the foregone income. Old age brings economic uncertainty, as productivity declines and traditional support mechanisms such as the family become less effective as societies modernize. People without access to formal pension systems are likely to face poverty in their old age. Obsolescence of skills affects a person's ability to generate an income both in the present and the future. Unemployment and underemployment sharply reduce income. Major job displacement brought about by a factory closing or by flooding or drought can affect a whole town or region. The effects of an aggregate (or covariate) shock, such as a financial crisis, can be felt across the whole economy. Similarly, a large-scale natural disaster such as Hurricane Mitch can disrupt economic activity nationwide.

Economic crises and natural disasters are, unfortunately, quite frequent in Latin America and often felt across many borders. Hurricane Mitch and the El Niño phenomenon caused suffering in many countries, as did the regionwide debt crisis of the 1980s and the more recent contagion from the Asian financial crisis.

Social Protection for the Poor: An Economic and Social Imperative

Over the last 20 years, Latin America has faced sharp economic downturns due to a combination of unsound macroeconomic policies, declines in the terms of trade, volatility of capital flows, and environmental instability. Although progress has been made, the poor remain vulnerable to aggregate and localized shocks because they lack savings and access to credit and insurance markets. When earnings of households fall below a subsistence level, the poor suffer increased malnutrition and are often forced to take their children out of school.

Latin America does not have adequate prevention and compensation systems to reduce the impact of shocks on its poor. As a result, shocks not only have severe effects on poverty and equity, but also diminish economic prospects for growth. In the absence of reforms that address the needs of low-income households—that is, both social protection programs and investment in human capital that can raise the future earning capacity of the poor—shocks will continue to have these dire long-term implications for poverty, inequality and prospects for growth.

The key objectives of a social protection strategy for the poor should be to:

- Guarantee minimum consumption levels and access to basic services to avoid transitory poverty from becoming permanent, and to protect those permanently unable to provide for themselves (e.g., transfers to the old and disabled).

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• Strengthen the asset base of the poor to reduce their vulnerability to shocks and break the intergenerational transfer of poverty by providing incentives for investment in human capital and by improving access to credit and output markets that help the poor accumulate human and physical capital assets.

• Ensure continued investment in human capital during periods of crisis to order to avoid the long-term consequences of reduced investment on earning capacity (e.g., transfers to help keep poor children in school).

• Reduce risk exposure faced by the poor by improving the return-to-risk profile of their economic choices (e.g., unemployment insurance schemes that allow them to engage in riskier but more profitable activities).

For Latin America, the cost of providing basic social protection to the poor would not constitute an unaffordable luxury. The costs of Argentina's *Trabajar* employment program, for example, represented only about a quarter of a percentage point of GDP in 1997, yet the program reaches 350,000 unskilled and unemployed workers. The budget of *Progresa*—the targeted human development program in Mexico—represents 0.2 percent of GDP, while reaching almost 2 million households per year with cash assistance.

These figures pale in comparison with the costs of bailing out a financial system, which run on the order of 10 percent of GDP or more. The cost of bank bailouts in Mexico in 1995 corresponded to 19.3 percent of GDP,[1] and the cost of a similar intervention in Ecuador in 1998 was 8 percent of GDP.[2]

Thus, social protection policies are fully compatible with maintaining prudent fiscal policy in the region. For what amounts to a limited budgetary cost, introducing efficient social protection schemes would facilitate important advances in terms of poverty reduction, equity, long-term growth and social cohesion.

The first step to avoid the vicious circle of adverse shocks and rising poverty is to prevent future crises through improved macroeconomic management and natural disaster risk-reduction strategies. Governments also need to introduce safety nets targeted to those most in need. As well as protecting the poor from short-term income shocks, these safety nets should be designed to help households build the human and physical capital assets they need to pull themselves permanently out of poverty.

Social protection is an economic as well as a social imperative. Following a shock, safety net programs help prevent or at least mitigate what could be irreversible damage to the accumulation of human capital, such as that caused by abusive child labor, malnutrition, or dropping out of school. People living close to a subsistence level are reluctant to venture into promising but risky economic initiatives because any decline in income could imperil the survival of their families. Providing them access to risk-sharing mechanisms that reduce their overall risk exposure (and, in particular, ensure them minimum consumption levels during downturns) would encourage them to engage in activities that might bring them greater returns. For example, instead of choosing to grow a basic staple with a low but secure yield that he can put on the table, a poor farmer with access to crop insurance might choose to grow an export crop with a variable but more profitable yield. Higher risk strate-

[1] *Financial Times* (September 16, 1999).

[2] *Latin American Daily Comment* (1999).

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gies not only improve incomes of the poor, but also have a beneficial effect on the overall economy.

This means that the benefits of social protection accrue not only to poor people, but also to the economy as a whole, particularly when one considers that the combination of weak institutions and inadequate social safety nets has been shown to be one of the root causes of growth collapses worldwide over the past 25 years.[3]

There are also potential political benefits in providing social protection to the poor. If the poor and near-poor were protected from the income variability associated with economic openness and flexible labor markets, they would be more likely to support stabilization programs and growth-enhancing reforms. Most of the backlash against globalization is directly linked to the absence of adequate social safety nets, which makes the implementation of reforms more difficult politically, and can in turn provoke stalemates, deepen economic crises, or even cause political collapses.[4]

Economic Crises

Macroeconomic crises have been a recurrent problem in Latin America over the last 20 years, and the income downturns associated with them are strongly correlated with rising poverty and inequality (see Map1). During the 1980s, income per capita fell during at least one year in every Latin American country, a trend that continued throughout the region in the 1990s as well. The effects of income downturns on poverty are hard to reverse, since periods of economic growth do not have an opposite symmetrical effect. Economic crises not only affect current poverty, but make it harder for the poor to grow out of poverty.

For Latin American countries for which a household survey was available during a recession year, the incidence of poverty increased in 9 of 11 recession episodes. The poverty rate several years after a recession is shown to have almost always been higher than the rate prevailing before the recession began. Poverty in Argentina more than doubled as a result of the crisis in 1985. In Costa Rica, the Dominican Republic, Guatemala, Mexico, Panama and Venezuela, poverty and inequality increased during the 1980s, as it did in urban areas of Argentina, Chile and Peru. And during the 1995 crisis, urban poverty and inequality in Argentina and national levels of poverty in Mexico rose sharply.

Because crises can have such a devastating impact on the poor, avoiding them should be at the center of any anti-poverty strategy. The lessons of the 1970s and 1980s were to avoid profligate fiscal and monetary policies, seriously overvalued exchange rates, and unsustainable current account deficits. In contrast, the lessons of the 1990s were to improve prudential regulation and supervision of financial intermediaries, introduce new standards for data dissemination, and implement corporate bankruptcy reform. Today, two areas remain controversial: the choice of exchange rate regime and the use of capital controls.

To lessen the impact of shocks on the poor, an exchange rate regime is needed that reduces a country's overall vulnerability to shocks and minimizes output contractions and unemployment. Theory and evidence indicate that while flexible exchange rates are likely to minimize both, they do not protect the country from irresponsible policymaking and, hence,

[3] Rodrik (1997).

[4] Ibid. (1998).

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Map 1. Selected Economic Crises in Latin America and the Caribbean, 1980-99

(Declines in per capita GDP)



* For Haiti and Trinidad and Tobago, the average annual decline in per capita GDP is for the specified range of years.

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inflation. Currency boards uproot inflation but do not shield the country from speculative attacks. Dollarization does away with inflation and speculative attacks, but when a dollarized economy (or a country with a currency board) faces a decline in the price of its main commodity or a devaluation in one of its major trading partners, the adjustment costs in terms of foregone output and unemployment—and therefore poverty—will be worse.

Controls on the inflow of short-term capital are another tool to reduce the likelihood of large fluctuations in capital flows. Opposition comes on the grounds that controls interfere with the workings of the free market economy, and therefore reduce overall welfare. However, weak financial systems and open capital accounts have proven to be a dangerous mix, as shown by the experiences of Chile in 1982 and Mexico in 1994. In any case, capital controls should not be seen as a way to avoid financial market reform, supervision and regulation.

Even with responsible policy, macroeconomic crises are still likely to occur in emerging market economies. In the event of a crisis, the government's priority must be to restore equilibrium in the external accounts and stabilize the currency. However, the macroeconomic policy mix can have far different effects on the poor. First and foremost, authorities should choose the mix that produces the lowest contraction of output at any point in the adjustment path. Sharp contractions hurt everyone, but particularly the poor. Therefore, avoiding overkill—that is, unnecessarily large fiscal and monetary adjustment—is a sensible policy in terms of the interests of the poor.

Different combinations of macroeconomic instruments can yield the same aggregate adjustment, but with different distributive outcomes. A pro-poor adjustment would choose that combination which implies the smallest reduction in the income of the poor at any point in the adjustment path, since income downturns hurt the poor more than the nonpoor. If the losers are powerful, however, such an outcome may be politically blocked. This is more clearly observed in the process of implementing fiscal austerity. Programs that benefit the poor are often the first to be eliminated, while those benefiting organized labor or public employees—who also suffer greatly during a crisis but are not poor—are more often protected.

A socially responsible response to a crisis should include implementation of adequate safety nets for the poor. Protection for anti-poverty programs was introduced in the fiscal adjustment programs in Mexico and Argentina in 1995, and later in Bolivia, Brazil and Venezuela. There also has been progress in implementing consumption and income-smoothing safety nets on a more permanent basis, although most governments in the region still improvise their responses to the social impact of economic shocks.

It is often argued that during periods of fiscal austerity, governments should not be asked to put in place safety nets or protect items from being cut. But safety nets need not be expensive. Furthermore, governments could introduce mechanisms in their fiscal programming to make fiscal policy, particularly in the area of social spending, more counter-cyclical. Saving revenues to deal with bad times is socially responsible.

Protecting pro-poor spending during a crisis is not an easy task, since poor people tend to lack a political voice. One way to deal with this is by earmarking revenues for specific purposes such as protecting pro-poor programs. An alternative is to rank programs according to priorities at the time the budgets

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are approved. This would avoid some of the political scrambling when the time comes to make the cuts.

Availability of funds during recessions is necessary but not in itself sufficient to protect those most in need. Well-designed safety nets can play a crucial role in reducing the impact of such crises on the poor. More often than not, however, countries do not have institutional mechanisms in place when the shock hits and must therefore resort to ad hoc solutions.

Latin American governments need to increase their understanding of the impact of alternative macroeconomic policy mixes on growth and income distribution. They also need a structure of safety nets that can expand counter-cyclically when shocks occur. The best safety nets are those that cushion the impact of the shock in the short term while investing in social infrastructure and human capital. Examples include employment programs used to generate infrastructure for the poor, and targeted human development initiatives such as stay-in-school or school nutrition programs.

Natural Disasters

Throughout history, Latin America has suffered numerous natural disasters, defined as natural events whose adverse impact in terms of injuries, homelessness, fatalities and destruction of assets creates a severe economic and social crisis that outstrips a society's ability to cope. Between 1900 and 1995 there were 638 natural disasters in the region, which represents 23 percent of the annual average number of disasters reported worldwide, second only to Asia (41.8 percent) (see Map 2).[5]

The acute vulnerability of the region to natural disasters is the result of a combination of geographical and socioeconomic factors. The extent of the risk depends on the severity, size and frequency of natural disasters and the extent to which communities or settlements are exposed or otherwise vulnerable to them.

Poor households are among the hardest hit by natural disasters. Because they often live in risk-prone areas or poor quality housing, the poor are frequently the most likely to suffer property damage or to be injured or killed. The poor are also particularly vulnerable to the economic effects of natural disasters because of their most common occupations (in the agricultural and informal sectors), and their limited access to insurance and credit. The results are often a loss of income-generating assets, falling income, and unemployment. The near-poor tend to fall into poverty following natural disasters, while those who are already poor slide into extreme poverty. In Ecuador, for example, it is estimated that areas affected by El Niño suffered a 10 percent increase in poverty rates.

By disproportionately hurting low-income groups, disasters also lead to greater inequality in an economy. Middle- and high-income households are better able to cope with the adverse consequences and income shocks associated with disasters than poor households. In the absence of redistributive public interventions, disasters can therefore exacerbate income gaps. The increase in poverty in affected areas feeds back into poorer quality housing, inadequate land use and environmental degradation, producing a vicious cycle of physical and economic vulnerability of regions and countries to future natural disasters.

[5] U.S. Office of Foreign Disaster Assistance (1999).

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Map 2. Major Natural Disasters in Latin America and the Caribbean, 1980-99



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To address the growing number of problems caused by these natural shocks, Latin American governments and donors must design and implement comprehensive disaster risk-management strategies at the macro and micro level, in collaboration with affected communities. Effective risk reduction first requires more investments in disaster-related information, such as mapping that identifies risks in specific geographic locations. As a second step, an adequate institutional framework needs to be put into place to implement risk mitigation and preparedness programs in all sectors of society.

These programs should use risk-mitigation techniques to adapt critical transportation, health, water and power infrastructure, create early warning and contingency planning systems, and widely disseminate information about risk reduction. Governments should also improve the overall resilience of their economies to natural shocks by encouraging sectoral diversification, creating calamity funds, and providing incentives for the development of credit and insurance markets.

To ensure that poor communities are provided with additional protection, given their particular vulnerabilities, low-cost and sustainable risk-reduction initiatives should be implemented at the local level. The most vulnerable communities should be identified through a combination of poverty and vulnerability maps, identification of zones according to disaster risks and incidence of poverty, and self-targeting mechanisms. This information could also be used to implement targeted vulnerability reduction programs, such as neighborhood improvements, upgrading of critical infrastructure (including community shelters and food storage), reforestation initiatives, radio broadcast early-warning systems, public information campaigns, and in the most extreme cases, evacuation and resettlement plans.

When natural disasters do occur, governments must have in place not only standard emergency responses, but also a set of anti-poverty policies to provide recovery and reconstruction assistance to the poor and most vulnerable communities and households. At the national level, this requires high-level political commitment and coordination to incorporate mitigation components into reconstruction programs for public and social infrastructure. It also entails implementation of macroeconomic policies that ensure stability while protecting the poorest through noninflationary increases in social spending and the quick disbursement of targeted assistance through emergency or social funds. At the micro level, governments need to introduce appropriate housing replacement policies, targeted subsidies for food, and measures to revive agricultural production and expand workfare and microcredit programs.

Unemployment

Because of macroeconomic downturns, the effect of structural reforms, technological change, and shifts in labor demand, poor workers run a high risk of unemployment in terms of both the severity and frequency of potential welfare losses associated with unemployment periods.

Poor workers tend to be excluded from mechanisms designed to smooth income. Since they already live close to subsistence levels, the poor cannot afford income losses resulting from long unemployment spells. So they have no choice but to accept any new job that becomes available, even extremely underpaid or part-time work. Indeed, under-

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employment is concentrated among poor and low-skilled workers.

In most countries, the large majority of the poor workforce is concentrated in the informal sector of the economy. This segment of the workforce is not part of a contributory social insurance system and does not receive other forms of protection such as severance payments.

The poor are thus denied choice. They cannot afford to be unemployed, and the low-paid job they must accept does not allow them to climb out of poverty. The benefits of providing the poor with instruments to cope with unemployment risks would therefore be substantial. Securing income and providing training to the poor would enable them to look for riskier but more productive jobs, reducing underemployment and helping poor people escape poverty. Providing training and access to credit help the poor build their asset base and reduce their exposure to risk. Access to income-support mechanisms during unemployment periods provides the poor with risk-sharing instruments that improve their set of choices, and gives them enough time to search for a job that best matches their skills and potential. In the longer term, preventing a reversal of achievements in health and education in times of crises can protect the earning potential of the next generation and help break the vicious circle of intergenerational poverty.

In the case of economy-wide rather than sectoral and regional shocks, the rationale for unemployment compensation mechanisms for the working poor is particularly strong because job loss is determined by factors outside the worker's control. For individualized unemployment and labor income shocks, the case is weaker because unemployment may be caused by lack of effort by the worker, and insurance against unemployment may increase the incentive to work less. Yet even in the case of individualized unemployment shocks, contingent protection against loss of employment (transfers conditional on job loss) can provide job seekers with the time needed to look for new employment that best suits their skills. Contingent protection can also provide self-employed people with sufficient time to rebuild or redirect their activities.

Because low-skilled and poor segments of the workforce are generally concentrated in the informal sector, unemployment insurance schemes have proved largely ineffective in providing contingent protection for poor workers. The lack of employment history and the inability to monitor employment status are the main obstacles to extending unemployment insurance benefits to the poor. An unemployment insurance scheme that is unable to monitor someone's job status would simply degenerate into an unconditional transfer to poor workers, generating a perverse set of incentives incompatible with the work ethic.

Unemployment insurance savings accounts are one mechanism that can be made available to informal workers with sufficient funds to insure themselves. In mandatory savings-based schemes, individuals are required to save a portion of their incomes in personal interest bearing accounts. These can be drawn upon during periods of unemployment. If an account is exhausted during an unemployment spell, the government lends money to the account. This is repaid during periods of employment. Positive balances at the time of retirement are converted into retirement income. Because the funds in the savings account belong to the individuals, incentives to lie about employment status are lower, as are the negative incentives to work.

While efforts should be made to

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increase access to unemployment insurance for the poor, it is hard in practice to extend these systems to informal workers with no employment records. Workfare programs offer a viable option for transferring income to poor and unemployed workers. The monitoring problem is resolved by imposing a cost to participate in the program. Evaluation of the *Trabajar* program in Argentina, for example, suggests that it is effective in reaching unskilled workers and increasing their income. However, the costs per dollar transferred are high, which means that program designers need to ensure that the infrastructure built has substantial social value.

Low-skilled and unemployed young people can be reached through training programs. Examples include *Chile Joven* and Mexico's PROBECAT. These schemes are widely used to transfer income through scholarships, job search assistance, and internships in private firms. Providing training during recessions, when the opportunity cost is lowest, makes sense. The success of these programs, however, depends critically on the state of the economy during the job search or, more specifically, the number of opportunities available to job seekers. That is why these programs are more successful in tackling sectoral and regional shocks than economy-wide crises.

Since the positive effects of such schemes increase with higher levels of education and work experience of the beneficiaries, the objective that training programs pursue should be clearly defined. If the goal is to maximize the impact on workers' future employability and income, programs should target unemployed workers with work experience who are actually less likely to be poor. If instead the goal is short-term poverty reduction, the income support component should be reinforced. Policymakers must then accept that the expected returns from the training component of the program will be lower.

Because a large portion of the labor force in Latin America is self-employed and vulnerable to economic fluctuations, particular attention should be given to assisting microentrepreneurs in the form of training and credit. This type of intervention provides protection against future risks by increasing skill and asset bases, and also against current shocks by retraining people whose skills are obsolete and by loosening credit constraints.

Aging

Aging substantially increases chances of falling into poverty. As people age, there are fewer opportunities for them to generate income through exchange of their labor—the principal asset of the poor. Productivity declines and the elderly are increasingly excluded from the formal labor market.

The elderly poor fall into two groups. The first is those who were not poor during their economically active years but then fall into poverty during old age due to a failure to balance savings and consumption over their life cycle. Lack of personal planning, imperfect credit and insurance markets, and disintegration of traditional family support structures can all push the elderly into poverty. The second group consists of the structural poor who have been in poverty throughout their lives. Members of this group have income levels during their working years that hover at or around the subsistence level. Whatever minimal savings possible are used to smooth immediate consumption needs rather than for saving for old age.

Social protection programs for the first group—those who should be able to

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save for their old age—are known as social insurance programs. These programs smooth income over time. Programs for the second group—the lifetime poor—are social assistance programs that redistribute income from higher lifetime income to lower lifetime income groups.

Social assistance for the elderly poor would prevent the growth of widespread poverty among this age group. Overall, pension coverage rates for low-income groups in the region are quite low, and are unlikely to improve for a number of reasons. The numbers of workers in the labor force who are self-employed or employed by small businesses mean that a growing proportion of Latin American workers are excluded from contributory social insurance programs. At the same time, the aging of populations means that there will be an inexorable rise in the ratio of those above 65 to the working age population. This is the result of demographic transition and higher life expectancies. Between 1995 and 2020, the average old age dependency ratio in Latin America is expected to rise by 50 percent, from 0.08 to 0.12. There are large disparities between countries, however. In Chile, Argentina and Uruguay, the old age dependency ratio will be 20 percent by 2020. In the poorest countries, such as Nicaragua, Honduras or Guatemala, where fertility rates are higher, the old age dependency ratio will remain stable at 7 to 8 percent.

Providing security for old age could contribute to a decline in total fertility rates. Having many children has been a commonly used device, in rural regions in particular, to provide protection against old age indigence. As the fall in fertility rates induced by better social protection for the elderly would spread to poor households, poverty rates would be expected to decline, since there would be a rise in income of heads of households due to declining dependency ratios and greater female participation in the labor force.

Reforms to contributory, pay-as-you-go social insurance systems should be seen as a necessary but insufficient condition for providing adequate social protection for the aged poor. By putting existing social insurance programs on a sound financial footing, these systems can in principle free up public resources for redistributive social assistance programs. At the same, by increasing national saving, deepening financial markets and reducing labor market distortions, pension reform can also enhance growth—the surest route to poverty reduction.

Yet the very nature of the reforms, which tie individual benefits more closely to individual contributions, raises the specter of increasing numbers of old people with inadequate incomes. The elderly poor run the risk of destitution unless social security systems include minimum pensions and compensatory social assistance is provided for those outside the formal social security system.

The problem is that such programs can create incentives for poor workers to evade the contributory insurance scheme unless the eligibility conditions and benefits of the non-contributory social assistance program are carefully designed. If benefits are too generous, they can undermine the contributory program. If they are too strict, they condemn the uninsured to poverty. This tradeoff is particularly difficult in countries with a high proportion of working poor participating in the contributory program. The challenge for Latin American governments is to strike the appropriate balance between social insurance and social assistance programs.

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Integrated Social Safety Nets

Instruments for managing adverse shocks fall into three categories:

- Market-based arrangements such as financial intermediaries and insurance companies, which allow households to smooth income and consumption over time, and so cope with adverse shocks when they arrive.
- Arrangements mandated or provided by the government, such as public insurance programs for unemployment, old age, disability, accident and sickness, as well as safety nets and social assistance programs, all of which are designed to ameliorate the impact of adverse shocks on the poor.
- Informal arrangements such as the safety nets provided by social networks (marriage, extended family, community support) and the self-insurance mechanisms used by individuals and households (food storage, crop and field diversification).

Poor people in Latin America have extremely limited access to the income-smoothing mechanisms such as savings, credit and unemployment or health care insurance used by the better-off to deal with shocks. The poor often have little physical access to these markets, since many live in rural and remote areas without local banks and insurance providers. They also have less access to information because of illiteracy and lack of available technology. The cost of providing credit or insurance to the poor is high because of the small size of loans and insurance policies, fixed transaction costs, and monitoring and enforcement problems. The poor also represent a high default risk due to their lack of collateral and credit history. Even where companies are actually prepared to provide insurance for poor people, premiums and interest rates tend to be prohibitively high to compensate companies for high risks and costs. Thus, where insurance is available, those living on a subsistence income cannot afford it.

In terms of government mandated social insurance schemes, most of the poor either work in the informal sector as wage earners (where most employers do not contribute to social insurance schemes) or are self-employed (and lack sufficient income to contribute on their own to social insurance schemes). Public intervention is therefore necessary to facilitate, when feasible, the access of the self-employed and informal sector workers to publicly mandated social insurance, or to provide alternative noncontributory solutions such as social assistance programs. Public intervention is also needed to help develop and deepen insurance and credit markets.

Because of their lack of access to formal consumption and income-smoothing instruments, the poor in developing countries are more likely to rely on informal and self-insurance arrangements. While some of these might be effective for coping with individual and localized shocks, their effectiveness in the event of economy-wide shocks is limited. Informal networks can collapse when large numbers of households are hit simultaneously. Reliance on self-insurance such as asset sales may cause long-term poverty to rise, as asset prices are likely to be depressed in the middle of a crisis. Following severe shocks, formal market-based arrangements can also be undermined.

Even in the case of localized and individual shocks, informal self-insurance arrangements may be suboptimal because they could result in lower potential incomes, as in the case of inefficient crop and field diversification, or a decision to take children out of school to increase household income. Public intervention might therefore be warranted both to improve the access of the poor to mar-

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ket-based arrangements and to reduce the use of inefficient and even self-destructive informal and self-insurance schemes to cope with shocks.

To ensure the well-being of the poor, social protection against individual shocks must be designed so that these schemes complement rather than substitute for self-insurance and informal private arrangements. There is a danger that government-provided insurance and safety nets might crowd out private informal arrangements. For example, if generous social safety nets are available for the elderly poor, this reduces the incentive for individuals to save for their old age. If unemployment insurance benefits are too generous, this can lead to higher frictional unemployment because beneficiaries tend to refuse job offers until their benefits expire. Social protection schemes therefore need to be carefully designed to limit the effect on existing informal arrangements whenever those arrangements are efficient, and to reduce perverse incentives for people to provide their own insurance. The objective of social protection is not to avoid every possible distortion, but to strike a necessary balance to ensure an overall positive contribution to the welfare of the poor once direct and indirect costs are accounted for.

This book advocates an integrated approach to social safety nets. The design of safety net instruments should take place within the context of an overall framework for poverty reduction. When appropriately designed, programs protecting the poor from temporary hardship can also help them escape from poverty permanently. Programs introduced to reduce poverty can be designed to expand and contract in response to changing economic circumstances in order that they serve as safety nets during times of crisis without becoming entitlements.

Targeted human development programs are emphasized throughout this book. These programs combine meeting immediate consumption needs, usually through a cash transfer, with providing an incentive to invest in human capital by conditioning the transfer on investments in school attendance and maternal and child health care. Thus, short-term poverty reduction is combined with investments intended to stop the intergenerational transfer of poverty.

Safety nets must contain appropriate targeting to ensure that they reach the most vulnerable. They should improve the balance of social protection among different target groups, such as the young and the elderly, who tend to suffer most from adverse shocks. They should ensure that the most vulnerable do not drop through holes in the safety net. Social safety nets can also combine support for different target groups. For example, if a high proportion of elderly people live in households with small children, income supports targeted at poor children will also provide support for the elderly poor.

Social safety net programs do not exist in a political vacuum. Competition for scarce public resources is always intense and social programs can be politically contentious. The political viability of a program must be considered in its design, especially in terms of the efficiency of its targeting and its funding source. At the same time, the political voice of Latin America's poor could be bolstered by giving them a more participatory role in program design and implementation, and by involving nongovernmental organizations in the process.

Social safety nets have to rest on solid financial and institutional ground, yet they are often financed in ways that make them vulnerable during periods of crisis. In most countries

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of the region, fiscal policies are procyclical, which means that safety nets tend to appear and expand in times of growth and diminish or disappear during recessions. In fact, the opposite is what is needed. Social safety nets targeted at the poor must be protected during periods of fiscal austerity by earmarking funds or ranking social programs when budget laws are passed. Another option is for social safety nets to be funded by external donors during severe fiscal retrenchments. Recently, several countries in the region received balance of payment support from the multilateral development banks to prevent cuts in social programs while preserving macroeconomic stability during periods of crisis.

Weak institutions make it difficult to implement a social protection agenda. Permanent structures are necessary to ensure continuous provision of social services to the poor, and so these funds have gradually been institutionalized. The long-term route to more robust social safety nets in the region lies in strengthening the institutions in charge of implementing the social protection agenda as part of a broader agenda to modernize government. That includes strengthening both the institutions that help prevent economic and natural shocks, as well as those that help the most vulnerable cope with those shocks when they occur.

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Chapter 1

Economic Crises and the Poor[1]

Macroeconomic crises hit the poor particularly hard, and over the past two decades Latin America has endured its share of crises. Whether it is the debt crisis of the 1980s, the Mexican devaluation in 1994, or the more recent contagion effects from financial turbulence in Asia and Russia, a macroeconomic crisis affects current real incomes and the ability of the poor to grow out of poverty. Fiscal austerity programs affect budgets for current social programs and plans for expansion, and the quantity and quality of public services for the poor often declines. Crises also bring about behavioral responses in terms of human, financial and physical asset accumulation, labor market participation, and occupational choice, all of which can affect current and future income streams. Finally, a crisis affects the value of assets owned by both the poor and the near poor, which reduces the possibility of using the assets to smooth consumption.

Macroeconomic crises in Latin America have been accompanied by sharp increases in poverty and rising inequality. While social indicators such as infant mortality rates and average years of schooling have continued to improve, they have done so at a much slower pace. Fiscal austerity measures in response to macroeconomic crises have generally ignored the impact on poverty, and even when governments have tried to limit that impact, their efforts have been frustrated by their limited institutional capacity to implement specific programs in the heat of a crisis.

Despite the recurrence of macroeconomic crises in the region, most countries have failed to institutionalize income-smoothing safety nets that could alleviate their negative impact on the poor. A poverty-sensitive response to a crisis should help the poor maintain adequate consumption levels and ensure their continued access to basic social services, head off permanent reversals in the accumulation of human and physical capital, and prevent adverse behavioral effects such as abusive child labor or increased criminal activities.

Clearly, the best way to avoid the social costs associated with a macroeconomic crisis is to take measures to prevent the crisis in the first place. Prudent macroeconomic policy and sound financial systems are the best defense. Countries with low fiscal deficits and coherent monetary and exchange rate policies are less likely to face problems associated with contagion effects and volatility in international capital markets. And countries

[1] This chapter draws from Lustig (1999).

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with well-regulated banking systems are less likely to face financial crises.

Even countries with effective macroeconomic policy and prudential regulation, however, may still face adverse macroeconomic shocks due to volatility in international capital markets, unstable commodity prices, and recessions in their major trading partners. Between 1986 and 1997, eight of 18 crises in Latin America were accompanied by a decline in the terms of trade. The region has in general experienced greater fluctuations than other parts of the world.[2]

The key to reducing the social costs of macroeconomic crises lies in better economic management—both in Latin America and of the world financial system. Still, the response to a crisis can to some degree steer its own path in terms of being sensitive to the plight of the poor. A poverty-sensitive strategy should include macroeconomic policies that avoid severe declines in GDP at any point in the adjustment path. The poor suffer more during recessions than the better-off, and short-term income losses for those below or near the poverty level can have devastating effects. Short-term poverty can turn into long-term poverty, shutting off opportunities for poor households to lift themselves out of poverty.

A poverty-sensitive response to adverse shocks should also create mechanisms to make fiscal policy more counter-cyclical. Social expenditures in such areas as primary education and basic health must be protected, as should those for safety nets to protect the poor. Too often in Latin America, governments improvise in the middle of a crisis, leading to problems of effectiveness and efficiency. The institutional arrangements for counter-cyclical safety nets should be in place on a permanent basis.

Protecting the poor from sharp and sudden declines in income with efficient and properly funded safety nets not only enhances equity but also promotes economic growth. Macroeconomic crises reduce the already limited human capital and physical assets held by the poor, frustrating their attempts over time to work their way out of chronic poverty. Ultimately, this reduction in the stock of human capital, whether from malnutrition or deteriorating job skills, will lead to lower economic growth.

The Social Impact of Economic Crises

There is a strong link between macroeconomic downturns and rising poverty. For every percentage point decline in growth, it has been estimated that poverty rises by 2 percent.[3] Others find that had Latin America achieved the levels of macroeconomic stability achieved by industrial economies, roughly 25 percent of the region's poor would have been lifted out of poverty.[4]

Because crises in Latin America are generally accompanied by increases in inequality, the negative impact of economic contraction on the poor tends to be more pronounced than the benefits of the previous period of growth. It has been estimated that a 1 percent decline in per capita income during a recession episode in the 1980s eliminated the gains in urban poverty reduction associated with a 3.7 percent increase in per capita income in the previous decade.[5] Furthermore, crises often ratchet up inequality. In other words, overcoming setbacks in poverty reduction that

[2] Inter-American Development Bank (IDB) (1995).

[3] See Fields (1991) and Morley (1994).

[4] IDB (1995).

[5] de Janvry and Sadoulet (2000).

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Box 1.1. The Impact of the 1982 Crisis in Mexico

One country for which the various effects of an economic crisis have been tracked in detail is Mexico in the 1980s.[1] The debt crisis led to a sharp fall in GDP in 1983 from which Mexico did not really recover until after 1988. What were the social costs of the crisis? Who bore the brunt of the adjustment? From 1983 to 1988, real wages cumulatively fell by between 36 and 46 percent, depending on the sector, and minimum real wages fell by 49 percent. Moderate poverty, measured by headcount, rose from 28.5 to 32.6 percent, and extreme poverty rose from 13.9 to 17.1 percent. Inequality measured by the total income Gini coefficient rose from 0.47 to 0.53.

The cuts in social spending were high: social spending fell by 33.1 percent, spending on education by 29.6 percent, and spending on health by 23.3 percent. Spending on targeted programs was cut by more than the total in noninterest spending. General food subsidies were phased out and replaced by a targeted food stamp program. However, targeted programs suffered from important exclusion problems. The number of free textbooks available per student declined and programs targeted to the extreme poor in rural areas (IMSS-COPLAMAR) were cut disproportionately and in some cases eliminated.

Social indicators revealed some worrisome patterns suggesting that Mexico's poor may have suffered a long-term impact on their capabilities as a result of the crisis.

In health, for example, infant and preschool mortality caused by avitaminosis and other nutritional deficiencies increased from 1982 onwards, after years of decline, and there was an increase in the number of infants suffering from slow fetal growth and malnutrition, both in absolute terms and in proportion to total diseases.

In education, the proportion of each graduating cohort after 1982 that entered the subsequent educational level declined—that is, relatively more children were either dropping out of school after completing a cycle, particularly after junior high or high school, or postponing their entry to the next level. This may explain why the average years of schooling of the population during the 1980s improved by one year, whereas the improvement in the previous decade was two years. In addition, the percentage of children entering primary school as a ratio of the total number of children in the relevant age cohort declined. Finally, although dropout rates from primary school continued to decline, further disaggregation shows that those rates improved only for urban children. In rural zones, the dropout rate rose by 40 percent.

[1] See Lustig (1998).

occur during periods of crisis will require more growth than before to get back to pre-crisis poverty levels.

The social impact of macroeconomic crises on the poor is profound. Box 1.1 describes the impact of the 1982 crisis in Mexico, while Box 1.2 summarizes the effects of crises in six Latin American countries between 1985 and 1995. Table 1.1 shows that real wages fell during the year of recession in 16 of 22 Latin American recession episodes. In 1983, real wages in Chile fell by 11 percent. During the 1980s, real wages in Argentina fell by 20 percent, and over 1995-96 in Mexico, they fell by 11 percent.

Table 1.2 shows that unemployment also increased during the year of recession in 24 of 31 recession episodes. In Chile, unem-

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Box 1.2. Social Impact of Economic Crises

	Argentina (1995)	Dominican Republic (1990)	Ecuador (1987)	Jamaica (1985)	Mexico (1995)	Venezuela (1994)
Main crisis indicators[1]	In 1995, GDP per capita fell 4.2% and private per capita consumption fell 6.4%.	In 1990, GDP per capita fell 7.6% and private per capita consumption fell 13.9%.	In 1987, GDP per capita fell 10.2% and private per capita consumption fell 7.7%.	In 1985, GDP per capita fell 6.2%.	In 1995, GDP per capita fell 8.1% and private per capita consumption fell 11.5%.	In 1994, GDP per capita fell 4.6% and private per capita consumption fell 8.3%.
Poverty and inequality	Urban income-based Gini index rose from 0.36 in 1994 to 0.38 in 1996. Moderate poverty headcount rose from 13% in 1994 to 20.2% in 1996. Extreme poverty rose from 2.4% to 5.3% in the same period.[2]	National income-based Gini index fell from 0.50 in 1989 to 0.49 in 1992.[3] Poverty headcount rose from 36% in 1989 to 40% in 1992.[4]		Moderate poverty rose from 29.1% in 1980 to 29.6% in 1988.[5]	Moderate poverty headcount rose from 36% in 1994 to 43% in 1996.[6]	National income-based Gini index rose from 0.45 in 1993 to 0.47 in 1995.[5] Moderate poverty headcount rose from 41% in 1993 to 48% in 1995,[7] and extreme poverty rose from 16.8% to 23% during the same period.[7]
Labor markets[8]	In 1995, the average real wage fell 1.1%. The urban open unemployment rate rose from 11.5% in 1994 to 17.5% in 1995.	Minimum urban real wages fell 3% in 1991.[9] The urban open unemployment rate rose less than one percentage point between 1991 and 1992.	The average real wage fell 15.5% in 1988 with respect to 1985. The open unemployment rate fell from 10.7% in 1986 to 7.2% in 1987.	The open unemployment rate decreased from 25.5% in 1984 to 23.6% in 1986.	Average real remuneration increased 3.7% in 1994 but decreased 13.5% in 1995.[11, a] The urban open unemployment rate rose 2.6 percentage points between 1994 and 1995 (3.7% to 6.3%). In 1997, it fell back to its 1994 level.[10]	Average real wages[b] fell 15.7% in 1994 and 4.6% in 1995. Urban open unemployment rose from 6.8% in 1993 to 10.5% in 1995.
Social spending[10]	Social spending as a share of total expenditure rose from 65.2% in 1994 to 66.8% in 1995; as a percentage of GDP, it increased from 18.1% to 18.6% in the same period. Education spending as a percentage of GDP rose from 3.7% in 1994 to 4% in 1995. Health spending as a percentage of GDP rose from 1.9% to 2% in the same period.	Social spending as a percentage of total expenditure decreased from 39.6% in 1989 to 36.6% in 1990 and as a percentage of GDP from 6.6% to 4.7% in the same period. Spending on education as a percentage of GDP decreased from 1.5% to 1.2%. Spending on health as a percentage of GDP decreased from 1.2% to 1.1% in the same period.	Social expenditure as a percentage of total expenditure decreased from 43% in 1987 to 40.2% in 1988. As a percentage of GDP, it fell from 11.9% in 1987 to 9.4% in 1988. Education spending as a percentage of GDP decreased from 5.6% in 1987 to 4% in 1988. Health spending as a percentage of GDP decreased from 1.9% to 1.7% in the same period.	Spending on education as a percentage of GDP decreased from 7.2% in 1982 to 0.6% in 1985. In 1986, it rose to 1.2%. Health spending as a percentage of GDP decreased from 10.6% in 1982 to 6.1% in 1985.	Social expenditure as a percentage of GDP decreased from 9% in 1994 to 6.8% in 1995. Education spending as a percentage of GDP decreased from 3.9% in 1994 to 3.6% in 1996.	Real per capita social expenditure in 1990-91 was 9% of GDP. In 1996-97, it fell to 8.4%. Spending on education as a percentage of GDP rose from 3.9% in 1993 to 4.4% in 1995.

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Box 1.2. Social Impact of Economic Crises (cont.)

	Argentina (1995)	Dominican Republic (1990)	Ecuador (1987)	Jamaica (1985)	Mexico (1995)	Venezuela (1994)
Health and nutrition[12,13]	The per capita daily protein gram intake decreased 3.8% in 1995, and in 1996 it increased 1.9%. In 1995, deaths from pneumonia and influenza rose nearly 6%.	The number of infants aged 6-11 months suffering from chronic malnutrition rose from 9.6% in 1986 to 17% in 1991. Per capita daily protein gram intake decreased 6.8% in 1990. The next year it increased 4.6%	The per capita daily protein gram intake decreased 2.1% in 1986, then increased 9.2% in 1988.	The per capita daily protein gram intake decreased 5.9% in 1985, then increased 4.9% in 1986.	Mortality from anemia increased in children under 1 from 6.3 deaths per 100,000 live births in 1993 to 7.9 in 1995, and in children between the ages of 1 and 4 from 1.7 to 2.2 deaths per 100,000.	Per capita daily protein gram intake decreased 4.2% in 1993, 2.9% in 1994 and 0.5% in 1995.
Education[14,c]	Total primary enrollment growth declined from 2.2% in 1993 to 0.62% in 1996.	Total primary enrollment declined from 97.1% in 1988 to 96.6% in 1990.	Total primary enrollment decreased from 120.2% in 1987 to 118.5% in 1988.	Total primary enrollment rose slowly between 1985 to 1987, from 100.0 to 100.8.	Total primary enrollment growth fell from 0.44% in 1994 to 0.35% the next year.	Total primary enrollment declined from 94.4% in 1993 to 91.7% in 1995.

[a] Only includes urban workers.
[b] Only includes manufacturing.
[c] Total primary enrollment is defined as the share of people enrolled in primary school as a percentage of people in the age group corresponding to primary education.

Sources:
[1] Information on GDP was obtained from the IDB Statistical and Social Database. Private per capita consumption was extracted from ECLAC, *Statistical Yearbook for Latin America and the Caribbean.*
[2] Altamir and Becaria (1998).
[3] Deininger and Squire (1996).
[4] Aristy and Dauhajre (1998).
[5] Londoño and Székely (1998).
[6] ECLAC, *Social Panorama, 1998.*
[7] Ruprah and Marcano (1998).
[8] Average real wage came from ECLAC, *Statistical Yearbook for Latin America and the Caribbean*, and ECLAC, *Economic Study of Latin America and the Caribbean.* The unemployment rate was obtained from the IDB Statistical and Social Database.
[9] ECLAC (1997), *Statistical Yearbook for Latin America and the Caribbean.*
[10] Lustig (1988).
[11] Social spending, including education and health expenditure, was obtained from ECLAC, *Social Panorama* and ECLAC, *Statistical Yearbook for Latin America and the Caribbean.*
[12] Data on health indicators and malnutrition was obtained from PAHO, *Health in the Americas.*
[13] Information on per capita daily protein gram intake was obtained from the IDB Statistical and Social Database.
[14] Information on education enrollment rates was obtained from the IDB Statistical and Social Database.

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Table 1.1
Real Wage Index

Country	Year of crisis	Years before crisis		Year of crisis		Years after crisis	
		-2	-1	0		1	2
Argentina	1985	99	125	100	-	100	90
	1989	128	124	100	-	105	106
	1995	100	101	100	-	100	99
Brazil							
Rio de Janeiro	1990	110	112	100	-	79	80
São Paulo	1990	108	112	100	-	88	85
Brazil	1998	97	100	100	=		
Chile	1982	92	100	100	=	89	89
Colombia	1982	95	96	100	+	105	113
Costa Rica	1982	141	125	100	-	111	120
	1996	104	102	100	-	101	
Guatemala	1982	85	94	100	+	93	84
Mexico	1982	98	99	100	+	69	74
	1986	100	107	100	-	98	101
	1995	112	116	100	-	89	88
Panama	1988	107	109	100	-	108	101
Paraguay	1982	98	103	100	-	93	90
	1986	109	104	100	-	112	122
Peru	1983	106	108	100	-	93	94
	1988	156	168	100	-	55	48
Uruguay	1982	93	100	100	=	79	68
	1995	102	103	100	-	101	101
Venezuela	1989	154	136	100	-	94	89
	1994	130	119	100	-	95	73

Source: Calculated using the database from the ECLAC *Statistical Yearbook for Latin America and the Caribbean.*
+ means an increase.
- means a decline.
= means no change.
Blanks mean not available.

ployment shot up by 11 percentage points during the 1982 crisis. More recently, unemployment in Argentina increased by 6 percent in 1995 and remained at around 17 percent during 1996.

Table 1.3 shows the evolution of poverty (measured by the headcount ratio) during periods of crisis in a number of countries in Latin America. In all cases, the incidence of poverty increased at the onset of the crisis, and several years later was still higher than it had been prior to the recession. In Costa Rica, the Dominican Republic, Guatemala, Mexico, Panama and Venezuela, poverty and inequality increased during the 1980s, as it did in the urban areas of Argentina, Chile and Peru. Urban poverty in Argentina[6] and national levels of poverty in Mexico rose sharply during the 1995 crisis.

Table 1.4 shows that inequality (measured by the Gini coefficient) rose at the onset of the crisis in five of eight episodes, and in

[6] Data for Argentina refers to the Greater Buenos Aires area. There are no data available for other urban centers or rural areas.

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Table 1.2
Unemployment Rate

Country	Year of crisis	Years before crisis		Year of crisis		Years after crisis	
		-2	-1	0		1	2
Argentina	1985	4.7	4.6				
	1989	5.9	6.3	7.6	+	7.5	6.5
	1995	9.6	11.5	17.5	+	17.2	14.9
Bahamas	1991	11.7		12.3	+	14.8	13.1
Barbados	1982	12.6	10.8	13.7	+	15.0	17.1
	1990	17.4	16.5	15.0	-	17.3	23.0
Bolivia	1983	5.9	8.2	8.5	+	6.9	5.8
	1986	6.9	5.8	7.0	+	7.2	11.6
Brazil	1990	3.8	3.3	4.3	+	4.8	5.8[a]
	1998	5.4	5.7	7.6	+	8.2	
Chile	1982	11.7	9.0	20.0	+	19.0	18.5
Costa Rica	1996	4.2	5.2	6.2	+	5.7	5.6
Ecuador	1983	6.0	6.3	6.7	+	10.5	10.4
	1987	10.4	10.7	7.2	-	7.4	7.9
Guatemala	1982	2.2	1.5	6.0	+	9.9	9.1
Honduras	1982	8.8	9.0	9.2	+	9.5	10.7
	1994	6.0	7.0	4.0	-	5.6	6.5
Jamaica	1985	26.4	25.5	25.0	-	23.6	21.0
Mexico[1]	1982	4.5	4.2		-	6.6	5.7
	1986	5.7	4.4	4.3	-	3.9	3.5
	1995	3.4	3.7	6.2	+	5.5	3.9
Panama	1983	10.7	10.1	11.7	+	12.4	15.6
	1988	12.7	14.1	21.1	+	20.4	20.0
Paraguay	1986		6.1	6.1	=	5.5	4.7
Peru[2]	1983	7.0	9.2	10.5	+	11.8	8.2
	1988	4.8	7.1	7.9	+	8.3	5.9
Uruguay	1982	7.4	6.7	11.9	+	15.5	14.0
	1995	8.3	9.2	10.3	+	11.9	11.9
Venezuela	1983	6.8	7.8	11.2	+	14.3	14.3
	1989	9.9	7.9	9.7	+	11.0	10.1
	1994	8.1	6.8	8.9	+	10.9	12.3

Source: Calculated using data from the IDB Statistics Department.

[a] Forecasted.

[1] Urban open unemployment comes from Lustig (1998).

[2] From Lustig (1993).

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Table 1.3
Crisis and Poverty (Headcount Ratio)

Country	Before crisis		Year of crisis			After crisis		
Argentina[1] (Greater Buenos Aires)	10.1	(1980)	20.6	(1985)	+	25.2	(1987)	+
	25.2	(1987)	47.3	(1989)	+	33.7	(1990)	+
	16.8	(1993)	24.8	(1995)	+	26.0	(1997)	+
Brazil[2] (All metropolitan areas)	27.9	(1989)	28.9	(1990)	+			
Chile[3] (Metropolitan areas)[a]	40.3	(1980)		(1982)		48.6	(1987)	+
Costa Rica[5, b]	29.6	(1981)	32.3	(1982)	+	29.7	(1983)	+
Dominican Republic[4, b]	37.3	(1984)		(1985)		38.2	(1986)	+
	35.7	(1989)		(1990)		39.5	(1992)	+
Guatemala[5, a]	65.0	(1980)		(1982)		68.0	(1986)	+
Mexico[6]	28.5	(1984)		(1986)		32.6	(1989)	+
Mexico[7, a]	36.0	(1994)		(1995)		43.0	(1996)	+
Panama[4, b]	40.6	(1980)		(1983)		44.0	(1986)	+
	44.0	(1986)		(1988)		50.0	(1989)	+
Peru[8] (Lima)[a]	46.0	(1979)		(1983)		52.0	(1986)	+
Peru[9] (Urban)[c]	39.3	(1985)		(1988)		50.0	(1991)	+
Uruguay[5] (Urban)[a]	11.0	(1981)		(1982)		15.0	(1986)	+
Venezuela[10, a]	25.7	(1982)	32.7	(1983)	+	34.8	(1985)	+
	40.0	(1988)	44.4	(1989)	+	41.5	(1990)	+
	41.4	(1993)	53.6	(1994)	+	48.2	(1996)	+

Notes: Headcount based on per capita household income unless otherwise noted.

Sources:

[a] Based on households.

[b] Based on household consumption.

[c] Based on household expenditures.

Sources:

[1] Ministerio de Economía de Argentina (1998) and Morley and Alvarez (1992) based on Instituto Nacional de Estadística y Censos de Argentina (INDEC).

[2] Barros, Mendoça, and Rocha (1995).

[3] Lustig (1995, Table 1.1).

[4] Londoño and Székely (1998).

[5] ECLAC (1993) and ECLAC, *Social Panorama of Latin America 1996.*

[6] Lustig and Székely (1998).

[7] ECLAC (1999).

[8] ECLAC (1989).

[9] Escobal, Saavedra and Torero (1998).

[10] Ruprah and Marcano (1998).

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15 of 20 it was higher after the onset of the crisis than before.[7] The poorest quintile of the population was not always hurt disproportionately. In general it was the share of the middle ranges which fell the most. In contrast, in most countries the income share of the top 10 percent increased, sometimes substantially.[8]

Certain long-term social indicators (infant mortality, years of schooling) improved in Latin America during the 1980s, but at a slower pace than in the previous decade (see Box 1.2). And social indicators that are more sensitive to consumption or income downturns actually worsened. In Chile, the data on low birthweight infants and undernourished children in the 1980s follow trends on economic conditions, and this after a systematic improvement in both indicators in the 1970s. In Venezuela, the literacy rate for ages 15-19 fell in the 1980s, while in Mexico, infant and preschool mortality caused by nutritional deficiency rose, reversing the trend from the previous decade. These trends also imply that investment in human capital probably became more skewed during the crisis, making the increase in inequality more entrenched.

Effects on Human Capital

Macroeconomic shocks also affect the accumulation of human capital through their impact on such areas as education and health. Unexpected shocks to household income affect investment in schooling, as shown by the well-documented deterioration in education indicators following macroeconomic volatility. The average increase in schooling attainment in Latin America, measured through years of schooling, slowed over the 1970-80 period (1.2 years) in comparison to 1950-70 (1.9 years).[9] Improvements in schooling attainment start to decline for those who entered the school system between 1975-86, the period that roughly coincides with the region's debt crisis.[10] And in fact, some 80 percent of this decline can be attributed to worsening macroeconomic conditions as measured by such indicators as short-term GDP shocks, volatility and adverse trade shocks.[11]

Macroeconomic shocks and income fluctuations in poor households also have an adverse effect on investments in health and nutrition, as documented by Morduch (1995). Labor force participation of children between 12 and 17 years of age has increased in some countries that are struggling with slow or negative income growth. Over 1994-96, labor participation by 12-14 year olds in poor households in Mexico reached 19.8 percent, an increase of 4.2 percent. In contrast, the labor participation by children from nonpoor households remained constant at around 6 percent.[12]

Crisis Avoidance

Preventing a macroeconomic crisis should be a top priority of any anti-poverty strategy. There is broad agreement on the kinds of macroeconomic and financial policies governments need to follow to reduce the vulnerability of countries to either policy-induced crises

[7] However, some of the Ginis refer to urban areas only.

[8] See Lustig (1995, pp. 4-5).

[9] Behrman, Duryea and Székely (1999).

[10] Ibid. See also Chiu (1998), Duryea (1998), Flug, Spilimbergo and Weitcheim (1996), and Jacoby and Skoufias (1997). Binder (1996) focuses on Mexico.

[11] Author's calculations based on Table 11 of Behrman, Duryea and Székely (1999).

[12] INEGI (1994 and 1996).

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Table 1.4
Crisis and Inequality (Gini Coefficient)

Country	Gini before crisis		Year of crisis			Gini after crisis		
Argentina (Greater Buenos Aires)	0.40[1]	(1983)	0.40	(1985)	+	0.45	(1988)	+
	0.44[2]	(1986)	0.53	(1989)	+	0.45	(1992)	+
	0.36[3]	(1994)		(1995)		0.38	(1996)	+
Brazil[4] (All metropolitan areas)	0.61	(1989)	0.61	(1990)	=	0.59	(1992)	
Chile[5] (Santiago)	0.53	(1980)	0.54	(1982)	+	0.56	(1984)	+
Costa Rica[5]	0.40	(1980)	0.42	(1982)	+	0.38	(1984)	-
Dominican Republic[6, a]	0.42	(1984)		(1985)		0.51	(1986)	+
Dominican Republic[7]	0.51	(1989)		(1990)		0.52	(1992)	+
Guatemala[5, a]	0.48	(1981)		(1982)		0.53	(1986)	+
Mexico[7]	0.50	(1977)		(1982)		0.51	(1984)	+
Mexico[8]	0.47	(1984)		(1986)		0.53	(1989)	+
Mexico[9, a]	0.48	(1994)		(1995)		0.46	(1996)	-
Panama[4]	0.48	(1980)		(1983)		0.52	(1986)	+
	0.52	(1986)		(1988)		0.57	(1989)	+
Peru[5] (Lima)	0.34	(1981)		(1983)		0.39	(1984)	+
Peru[5] (Urban)	0.39	(1987)		(1988)		0.41	(1989)	+
Uruguay[7] (Urban)	0.43	(1981)		(1982)		0.40	(1983)	-
Venezuela[4]	0.44	(1981)	0.45	(1983)	+	0.48	(1985)	+
	0.47	(1987)	0.46	(1989)	-	0.46	(1991)	-
	0.45	(1992)	0.50	(1994)	+	0.47	(1995)	+

Notes: Gini based on individual per capita household income unless otherwise noted.

[a] Based on household per capita income unless otherwise noted.

Sources:

[1] Psacharapolous et al. (1993).

[2] World Bank (1995).

[3] Altimir and Becaria (1997).

[4] Londoño and Székely (1998).

[5] Morley (1994).

[6] Aristy and Dauhajre (1998).

[7] Deininger and Squire (1996).

[8] Lustig and Székely (1998).

[9] INEGI (Mexico). CD-ROM. *Encuesta Nacional de Ingresos y Gastos de los Hogares, 1992, 1994 y 1996.*

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or adverse external shocks.[13] These include avoiding profligate fiscal and monetary policies, seriously overvalued exchange rates, and unsustainable current account deficits—all problems that prevailed in the region in the 1970s and, particularly, the 1980s. Unable to finance ever-growing current account deficits as conditions in international capital markets changed, governments had to implement restrictive monetary and fiscal policy in order to restore equilibrium in the balance of payments.

The 1990s have seen a different type of crisis. The most important cause of the Mexican crisis in 1995 was not irresponsible fiscal and monetary policy, but rather weak banking systems and financial regulation in a world of huge and volatile international capital flows. In this new wave of crises, restoring balance of payments equilibrium is more closely linked to reestablishing equilibrium in the capital account by restoring investor confidence. In order to prevent repeated crises in the future, governments need to substantially improve regulation and supervision of financial intermediaries, introduce new standards for data dissemination, and implement corporate bankruptcy reform.

The two areas where the most controversy remains are the choice of the exchange rate regime and the use of capital controls.

Exchange Rate Regime

Following the crises in Latin America, Asia and Russia, fixed but adjustable exchange rate pegs have earned a bad name. The debate on exchange rate regimes now centers on whether a country should adopt a truly fixed exchange rate, such as a currency board, or a flexible exchange rate, such as a managed float. From a pro-poor perspective, the question is not only which regime reduces the vulnerability of countries to shocks, but also which system minimizes output contractions and unemployment when a country faces a shock.

Since real wages must fall to restore equilibrium in the advent of a shock, the argument in favor of flexible exchange rates is that this real wage adjustment can take place more quickly and at a lower cost in terms of foregone output and unemployment than under a currency board. That is, under a flexible exchange rate, poverty is likely to rise less. Comparing the cases of Argentina and Mexico in 1995 illustrates this point. While Mexico may have experienced a sharper fall in GDP, Argentina suffered a larger reduction in growth per percentage point of adjustment in the current account.[14] Where wages are rigid downwards, flexible exchange rates perform a social insurance function.[15]

Even if poverty is more likely to rise under a currency board than under a flexible exchange rate regime in the face of a shock, however, the advantage of a currency board is that countries will be better shielded from irresponsible monetary policy. This should result in fewer crises induced by bad policy. Furthermore, there can be large economic and social costs associated with scrapping a currency board once it is in place. The negative impact on investor confidence and the likely withdrawal of capital may lead to a collapse in growth far worse than the recession endured during the defense of a currency board.

Hard pegs and flexible exchange rate regimes also have different implications for

[13] See Eichengreen (1999) and IDB (1995).

[14] Calvo (1997).

[15] Rodrik (1999).

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the design of social safety nets for the working poor. In countries where the adjustment to an external shock takes place primarily through higher unemployment, emergency employment programs should be the central part of the safety net. In countries where adjustment takes place through a change in real wages, transfer programs such as targeted human development programs are more important (see Chapter 5).

A flexible exchange rate regime should also deter speculative attacks more forcefully than a currency board. Hence, a flexible exchange rate regime emerges as having several advantages. However, recent evidence from Latin America reveals that monetary authorities in countries that faced large negative terms of trade shocks, such as Chile, Peru and Venezuela in 1998, used the exchange rate to a very limited extent. Rather than letting the exchange rate do the adjustment, these countries raised domestic interest rates, and they raised them by even more than countries that were under fixed exchange rates. They did so because allowing the exchange rate to float would have been more costly given the currency mismatch faced by banks and firms. Hence, de facto, flexible exchange rate regimes could not perform the social insurance function referred to above. With the exception of Mexico, high unemployment rates now are as prevalent in countries with flexible regimes as they are in Argentina, with its currency board.

This observation has led some to propose a full dollarization of the economies in the region.[16] As demonstrated by the rise in credit spreads in Argentina and Hong Kong in recent years, currency boards are not a shield against speculation. A dollarized economy would be shielded from the volatility of overseas capital flows, and countries presumably would also be permanently protected from the follies of populist governments, since inflationary deficit financing would no longer be an option. For that reason, countries that have had traumatic hyperinflationary experiences are much more open to dollarization.

The question remains how a dollarized economy would cope with shocks without sharp drops in GDP or large increases in unemployment. If wages are sticky downwards, a dollarized economy would face the same difficulties in adjusting to a real shock faced by countries with a currency board. Although part of the problem could be removed by eliminating some anti-employment labor regulation, this would not solve the matter entirely, as has been shown in countries such as Chile, where the labor market is fairly deregulated.

With exchange rate flexibility, part of the adjustment can be made through a depreciating currency, which induces an expenditure switch from nontradable to tradable goods, which in turn results in lower reduction in output. With a dollarized economy, unemployment and excess capacity are likely to be more prevalent in the face of competitiveness shocks such as a worsening of the terms of trade and devaluation or a recession in a major partner. Such events will have to be weighed against the benefits that dollarization would bring in the form of fewer shocks to the capital account. Furthermore, the fact that countries have used the exchange rate to a limited extent to cope with recent shocks does not necessarily mean that they should give up an independent monetary policy.

As mentioned earlier, the downside of flexible exchange rate regimes for the poor is that they might yield higher rates of infla-

[16] See Calvo (1999), Fernández-Arias and Hausmann (1999), and Hausmann et al. (1999).

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tion.[17] A managed float does not protect a country from lack of discipline in monetary and fiscal policy with the efficacy of a currency board (or full dollarization), so it might be better to recur to other institutional forms to deal with such a risk. For discipline in monetary policy, a strong and independent central bank is needed that can resist political pressures to monetize budget deficits and monitor inflation. There have also been proposals to implement parallel independent institutions to manage fiscal policy, such as a national council to set ceilings on fiscal deficits. Proposals for independent fiscal authorities have met with greater political resistance. Less ambitious suggestions, which would take some of the rent-seeking out of budgeting and enforce fiscal discipline, include budgetary processes that reduce the power of legislatures and, by giving the power to set the fiscal agenda to the prime minister or the finance minister, reduce the power of autonomous spending entities. Greater transparency in the fiscal process also makes it easier for voters to detect irresponsible politicians.[18]

Capital Controls

Controls on the inflow of short-term capital should be considered by governments that want to reduce the likelihood of crises due to large fluctuations in (portfolio) capital flows. While controls on short-term capital inflows are no panacea for financial market reform, supervision and regulation, they can provide a more stable environment for financial sector reform.

Some economists oppose capital controls on either the outflow or inflow of capital on the grounds that they interfere with the workings of the free market economy. In a world of perfect markets, controls on short-term capital inflows can only be welfare reducing. But capital markets are not perfect. Bubbles and herd behavior are just two examples of capital market inefficiencies. Where financial systems are weak, completely free short-term capital inflows can lead to overlending by poorly informed foreign lenders, over-borrowing by domestic banks, and overleveraging practices that make financial intermediaries vulnerable to systemic crises.[19] This can happen even if fiscal policy is sound. Even while the banking crises in Chile in the early 1980s and Mexico in the mid-1990s were in the making, both countries were considered by policymakers and investors alike to be model examples of good policy. This is even truer in the case of the countries that have suffered banking crises in East Asia. As one leading economist put it, "recent experience has demonstrated too well that badly managed banks and open international accounts are a combustible mix."[20]

Controls on short-term capital inflows can reduce the probability of financial crises in emerging markets, without causing great inefficiencies in the allocation of capital. Research shows that controls can play a role in crisis prevention primarily because they lengthen the average maturities of capital inflows.[21]

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[17] Some studies, however, find evidence that inflation has a lower impact on poverty than declines in GDP. See Lustig and McLeod (1997).

[18] Eichengreen (1999), and Eichengreen, Hausmann and von Hagen (1996).

[19] Another reason why governments should consider controls is that short-term capital inflows can lead to an overvalued exchange rate, as happened in Mexico in the early 1990s.

[20] Eichengreen (1999).

[21] See Larrain and Velasco (1999).

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Avoiding economy-wide macroeconomic crises not only prevents associated increases in poverty, but also the associated costs of bailouts. In Latin America, the resolution costs of banking crises in terms of taking over bad loans and recapitalizing insolvent banks has been as high as 10 to 20 percent of GDP. The cost of the bailout from the 1994-95 crisis in Mexico has been estimated at 19 percent of GDP,[22] while the cost of rescuing the financial sector in Ecuador in 1998 was estimated at 8 percent of GDP.[23] These costs are borne by the public sector, and so use up scarce fiscal resources that could be used for programs that reduce poverty and enhance equity. Moreover, while tax systems in the region tend to be regressive, the investors who are the beneficiaries of bank bailouts tend to be better off.

Crisis Response that Protects the Poor

Even when governments implement responsible policy, macroeconomic crises still occur in emerging market economies. Faced with a crisis, governments need to restore equilibrium in the external accounts and stabilize the local currency. Although in theory this response should be socially as well as economically responsible, in practice programs that benefit the poor are often the first to be eliminated in times of fiscal adjustment, not least because poor people tend to be politically weak. Such was the fate of targeted rural intervention programs in Mexico in the 1980s, although that is just one of many examples. In fact, few Latin American countries have effective mechanisms to protect the poor during macroeconomic crises and fiscal adjustment.

Until recently, the international financial institutions also paid far too little attention to the social impact of policies they prescribed for the region and to the need to protect social safety net programs. The 1990s, however, witnessed important progress in incorporating social protection in adjustment programs, especially by multilateral institutions. The explicit protection of pro-poor programs was first introduced in the fiscal adjustments in Argentina and Mexico in 1995, and more recently in Argentina, Bolivia, Brazil and Venezuela. The concern, if not always the effectiveness, of addressing the social dimensions of crises took an even more central role in the wake of the Asian Crisis.

There has been progress as well in implementing consumption and income-smoothing safety nets, such as the *Trabajar* employment program in Argentina and the *Programa de Empleo Temporal* workfare program in Mexico (see Chapters 3 and 5). Despite these gains, however, most governments in the region still improvise their responses to the social impact of economic shocks. Governments do not have predetermined protocols to protect spending on the poor under fiscal austerity programs, and budgets for anti-poverty programs still lack adequate counter-cyclical components.

Macroeconomic Policy Mix

Alternative policy combinations have different distributive outcomes. (See Box 1.3 on the impact of different macroeconomic policy responses on the poor.) From the perspective of the poor, the preferred policy path is that which results in the smallest contraction of

[22] *Financial Times* (September 16, 1999).

[23] *Latin American Daily Comment* (July 1999).

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Box 1.3. Alternative Macroeconomic Policy Responses and the Poor

The effects of different policy responses to a macroeconomic shock such as the Latin American crisis of the 1980s have been simulated by de Janvry and Sadoulet (1995). They devised a Computable General Equilibrium model (CGE) for a stylized version of a typical Latin American country (based on the economy of Ecuador). The country is faced with a major external shock (rise in foreign interest rates, drop in the price of the major export commodity, or drastic reduction in capital inflows) that also reduces fiscal revenues. The simulation examines the effects of three types of policy responses: an exchange rate adjustment, a fiscal adjustment, and a monetary adjustment.

If the adjustment mechanism is a devaluation of the exchange rate, the cost in terms of economic growth is low in the short run, but there are sharp increases in inflation and interest rates in the medium run that result in lower growth rates. Poverty does not increase in the short run, but it does in the medium run due to the decrease in per capita growth rates. In the short run, the depreciation of the exchange rate benefits large farmers and harms urban households with medium or high levels of education through decreases in real wages and increases in unemployment. Low-education urban households are not hit as much as higher educated ones in the short run because they work in the informal sector. In the medium to long run, as growth decreases, poverty increases. Although all poor households lose income in the medium to long run, the loss is greater in urban areas, since migration decreases urban per capita incomes.

If the adjustment tool is a fiscal retrenchment, there is a strong recession in the short run, but growth recovers in the medium to long run. Long-run growth is highest under this type of adjustment. In the short run, fiscal austerity changes the composition of aggregate demand, as government spending is tilted towards labor-intensive nontradables (public services and consumption). This reduces output and employment in the short run. The decrease in output and employment causes poverty to grow substantially in the short run. Urban households are hit hard by fiscal austerity, as many lose their jobs in the public sector (from high-salary civil servants to low-income construction workers). The welfare of low-income households is affected even more, due to reductions in access to public benefits. Welfare losses are higher than income loses under this type of adjustment. For the exchange rate and monetary adjustments, welfare losses are lower than income losses, since the government continues to provide public goods and social assistance. In the long run, poverty increases less under this type of adjustment due to higher recoveries in GDP per capita, although this effect holds only for rural sectors.

Finally, if the adjustment mechanism is a reduction in money supply, the short-run recession will be less severe than in the case of fiscal retrenchment, but with the cost of lower medium-run growth. In this case, the short-run poverty increase is lower than with the fiscal adjustment, but with less of the beneficial medium-run effects. Rural households are worse off in the medium to long run with monetary as opposed to fiscal adjustment; the opposite is true for urban households. This happens because monetary adjustment does not result in the negative fiscal adjustment effects of reducing government employment and reducing provision of social services to urban households.

As seen by the simulations, the different adjustment policies imply a conflict between the urban and rural poor, especially in deciding between fiscal or monetary adjustment. Governments should try to design protection programs and safety nets that focus on the group most affected by the type of adjustment being used. Under fiscal stabilization, it is important to protect programs that target the poor and to design public employment programs for the urban unemployed.

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their real incomes at any point in the adjustment process.

The main source of income for the poor is their labor in agricultural, unskilled construction and manufacturing, and low-level service jobs, as well as self-employment in the retail sector. How much the poor suffer during a macroeconomic adjustment is therefore determined in part by the extent to which these activities are affected. A real devaluation will have a positive effect on tradable sectors (including agriculture and manufacturing) but a negative effect on nontradable sectors (including retail, services and construction). High interest rates tend to impact most heavily on the construction sector, while retail activities and menial services are more immune. Because the income source of the poor varies between tradable and nontradable sectors, rural and urban sectors, and male and female workers, the question of how policy alternatives affect different types of poor people is an empirical matter.

Household survey evidence shows that for men in the poor rural sector, agriculture accounts for 80 to 90 percent of income. Less revenue for poor women in the rural sector is from agriculture, although it is still their most important source of income. In urban areas, poor men and women earn their income from both tradable and nontradable sectors. Construction, wholesale and retail trade are important sources of income for men, while services are the major source for women.

Conflicts can emerge between the interests of the poor and the nonpoor when different policy combinations result in different paths of GDP per capita over time or in different distributive outcomes.[24] Some policy combinations may produce a higher contraction in the short run, but with a faster recovery of precrisis levels and growth rates. In most cases, the impact on the poor is minimized by the combination that produces the lowest contraction in the short run, since a sharp decline in income hurts the poor more than the nonpoor. This may be true even at the expense of a slower recovery. The implication of this, however, is not that governments should adopt the policy mix that is optimal for the poor, particularly because not all the poor are affected in the same way. In general, the authorities should follow the policy combination that is optimal for the economy, but making sure that safety nets are in place to protect the poor from the brunt of adjustment.

The optimal combination of policies brings about the necessary balance of payments adjustment with the smallest decline in output. But achieving this depends on conditions in the economy. In a country with a history of high inflation, or high inflation inertia, nominal devaluations are unlikely to be effective in restoring equilibrium because they are unlikely to translate into lasting real devaluations. For example, during the 1982 crisis, the Mexican peso was devalued by 37 percent in real terms, and by 1985, the real exchange rate had lost more than half of the real gain of the 1982 devaluation.[25]

Under circumstances such as those in Mexico, adjustment has to rely on tight fiscal and monetary policy. But when companies in an economy are highly leveraged, with large debt-equity ratios—as were firms in Indonesia and Thailand in the 1990s—sharp spikes in interest rates can be devastating. In both countries, real short-term interest rates doubled

[24] Appendix 1 presents alternative analytical approaches to the impact of policies on the incomes of different groups, particularly the poor.

[25] Lustig (1998).

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over a matter of months in 1997. Critics of the IMF pointed out that such high interest rates drove highly-geared corporations into bankruptcy. Manufacturing sector failures damaged the solvency of the financial sector, causing the exchange rate to weaken. Rather than capital flowing back into the economy encouraged by the higher interest rates, investors were driven away by the defaults.[26]

Controls on capital outflows can only be used as an emergency measure in countries that otherwise enjoy a good reputation in terms of sound economic policy and open capital markets. The Malaysian case in the late 1990s may provide an example of such a situation. Even the IMF has conceded that capital controls in Malaysia were well managed and worked.[27] They facilitated the use of macroeconomic policy in a counter-cyclical way that may have outweighed the negative effect of investor sentiment—at least in the short term. It is important to remember, however, that governments with a poor reputation in international markets, or where controls are difficult to implement, should rely on standard adjustment measures. Imposition of capital controls on outflows in Latin America during the 1990s would have sent a negative signal to investors.

Making Fiscal Policy Counter-cyclical

Fiscal policy in Latin America tends to be procyclical. One important way to introduce greater social responsibility into macroeconomic management would be to make fiscal policy more counter-cyclical, particularly since the region is exposed to large economic fluctuations. The volatility of GDP growth measured by the standard deviation in growth rates over the past 30 years has been 4.7 percent of GDP in Latin America as compared to around 2.2 percent in the industrialized countries.[28]

This volatile economic environment has important consequences for fiscal policy. Tax revenues depend upon the level of output in the economy. The level of economic activity determines the tax base for income and payroll taxes, as well as the level of private spending, and thus the tax base for expenditure taxes such as the value-added tax, sales taxes and import duties. Latin American countries tend to rely more heavily on expenditure taxes than do industrialized countries, which makes the high volatility of private spending particularly important. Combining economic volatility with a tendency towards procyclical fiscal policy means that during economic slowdowns in Latin America, a 1 percent fall in the growth rate typically translates into a reduction in revenues of 5.8 percent. In industrialized countries, a 1 percent fall in growth results in a reduction of revenues of just 1.8 percent—small enough to mean that governments are not forced to cut spending during a slowdown. Indeed, industrialized governments typically allow fiscal deficits to increase without cutting total expenditures in any significant way. While some expenditure categories may be reduced (such as capital expenditures), other components such as transfers increase in response to reductions in economic growth, which is why they are therefore sometimes referred to as "automatic stabilizers."

A counter-cyclical response of transfers means that social protection during recessions is institutionalized in industrialized countries. However, governments with badly managed public finances cannot easily respond

[26] See Eichengreen (1999).

[27] International Monetary Fund (1999).

[28] IDB (1995, Table 1).

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with expansionary macroeconomic policy during a slowdown. Where fiscal deficits are already large, and when international reserves have been run down, expansion may create fears of a fiscal crisis and a collapse in investor confidence. Moreover, during economic slowdowns, developing countries tend to lose access to noninflationary sources of finance. The resulting high inflation is highly regressive because the poor tend to hold proportionally higher money balances than the nonpoor, who are able to invest liquid assets in instruments that are more protected from the inflation tax.

This means that fiscal retrenchment during a slowdown may actually be the best response available to developing countries, given the constraints they face. The key to avoiding procyclical fiscal policy—and its negative effects on social protection—may not lie simply in relaxing fiscal policy during recessions, but rather in making sure that public finances are well managed during periods of growth so that expansionary fiscal policy can be used during a recession. Research shows that expenditure cuts during recessions in Latin America tend to be much deeper if an economy enters the recession in an already precarious fiscal position.[29] This means that there is no easy path to counter-cyclical fiscal policy, and no easy way to support social protection programs during recession. To make fiscal policy counter-cyclical, governments must therefore "save" revenues during good times in order to obviate the need during bad times for big spending cuts, or to avoid a collapse in investor confidence from a rising fiscal deficit or inflationary financing.

Stabilization funds are one way to ensure that additional resources generated during a period of growth are saved, and therefore that public spending is smoothed across the economic cycle. If actual revenues exceed expected revenues, a significant proportion of the extra funds are diverted to the stabilization fund as insurance against a future downturn. If actual revenues fall below expected levels due to an unforeseen shock, the stabilization fund then covers a portion of the difference with its saved resources. The accumulated resources of the stabilization fund should be kept in the form of liquid foreign assets, so they are readily available to act as a stabilizer following a negative shock. The Copper Compensation Fund in Chile and the Oil Stabilization Fund in Colombia establish rules that determine how much of the expected revenues can be incorporated into the budget and how much should go into the stabilization fund. The Chilean budget incorporates a conservative estimate of the price of copper. If the actual price exceeds the estimated price, money is transferred to the stabilization fund, but if the price dips below the budgeted level, government revenues are supplemented by the stabilization fund. Similarly, the Colombian stabilization fund smoothes revenues from oil production over time to take into account the pattern of exploration and discovery, as well as the volatility of oil prices.

Stabilization funds are particularly appropriate for governments whose revenues depend heavily on a small number of sources that are known to be volatile, such as commodity exports. But they could also be helpful in countries where government revenues flow from a more diverse source, but where revenues are still volatile due to swings in the economic cycle. Finally, stabilization funds can act as insurance against the effects of natural disasters.

[29] Gavin and Perotti (1997).

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The key to the success of stabilization funds is that the rules be predetermined and governed by legislation. The fund should not be left to the discretion of the government of the day. The main policy problem lies in the rules governing the operation of the fund, which is a far simpler matter when the price of a commodity is the major dynamic. Even so, if revenues are volatile, then a stabilization fund can help smooth expenditure, regardless of the source of the revenue fluctuations.

In the United States, 38 of the 50 states have established "rainy day funds" to smooth government spending, even though the degree of volatility faced by these states is much smaller than that typically faced by governments in Latin America. In some cases, the size of the funds reaches up to 15 percent of annual revenues. Since these state governments have balanced budget laws, stabilization funds provide a degree of counter-cyclicality that would otherwise be lacking. The rule used in the state of Virginia, for example, is based on a moving average of government revenue trends over the previous several years. When revenues drop below this level, the fund disburses.

Protecting Pro-poor Spending

How governments raise revenues and cut public (nondebt) spending has important policy implications in terms of who bears the burden of the adjustment process and whether the poor are protected. Because fiscal adjustment must be carried out swiftly, spending on primary education, health care, water and sanitation, and poverty-targeted programs is often cut back in the same proportion as other government expenditures. Governments face great pressure from a variety of political interest groups at such times. Proportional cuts are easier to implement quickly both in technical and political terms. And since poor people are often not well organized as an interest group, and thus lack a political voice, spending cuts on social protection and other poverty programs tends to be larger, in relative terms, than cuts in other areas.

The design of pro-poor fiscal adjustment policy requires that policymakers assess the distributional effects of spending programs. Programs that are particularly important in terms of social protection—basic education, preventive health, water and sanitation, rural infrastructure, targeted transfers, workfare and slum upgrading—should be protected from budget cuts. For example, it has been shown that spending on basic education and health care is progressive, with a ratio of benefits of the lowest quintile to the highest quintile being 3.2 for education and 1.7 for health.[30]

Equally important is to identify the kinds of government spending that can be cut without leading to big increases in poverty and inequality. Prioritizing in this way can pinpoint programs primarily benefiting the non-poor that can be either slimmed down or postponed during times of fiscal austerity.

The major obstacles to protecting anti-poverty programs during adjustment periods are political rather than economic—that is, the political difficulty involved in cutting middle-class programs and perks to the rich to protect spending on the poor. One mechanism to protect such programs is to earmark revenues for specific purposes such as employment programs and targeted human development programs during the passage of budget laws in normal times. In order to succeed, however,

[30] Yaqub (1999).

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the practice of earmarking revenues must be limited and carried out in a transparent way so that it is directed by efficiency and equity considerations, rather than by lobbyists.

An alternative to earmarking is for the executive and legislature to agree during budget negotiations on which programs will be protected during a recession. This kind of procedure is also used in some U.S. states. As part of the budget appropriations process in Arkansas, for example, government programs are placed in three categories according to their relative priority. When expenditure cuts are needed, the relative cuts are defined automatically depending on the priority assigned to each program. If such procedures were introduced in Latin American countries, government agencies could be required to provide evaluation reports on different programs, so that part of the criteria involving cuts would be that the most efficient and effective programs for the poor be protected. The objective would be to identify social programs with high rates of return in order to protect them during a crisis.

Safety Nets

Well-designed safety nets can play a crucial role in reducing the impact of crises on the poor. In contrast, their absence makes implementation of reforms politically more difficult and can in turn provoke stalemates, deepen economic crises, or even cause political collapses. Recent work has shown that the combination of weak institutions, including a lack of adequate safety nets, lies at the bottom of many growth collapses over the last 25 years.[31] Evidence suggests that programs operating even on a small scale before crises hit are better equipped to protect the target population than ad hoc emergency measures.

Most Latin American countries still need to improve their mechanisms to protect the poor from the brunt of economic crises. There is a widespread perception that the region's various Social Investment Funds—established to provide social assistance to the poor by bypassing inefficient public institutions—were put in place for precisely that purpose. But closer examination reveals that most funds were more effective at building small-scale social infrastructure than they were in creating employment opportunities for those hurt by the debt crisis.[32] In fact, most countries in the region lack effective consumption-smoothing safety nets to protect the poor from output, employment and price risks associated with systemic adverse shocks.

A recurring problem is that, because the institutional mechanisms to protect the poor from shocks are not in place beforehand, responses have to rely frequently on improvisation on or programs designed for purposes and beneficiaries other than those affected by the crisis. Emergency responses to crises often lack the time to carry out the technical analyses necessary to clarify the socioeconomic profile of the most vulnerable groups and to evaluate the cost-effectiveness of different social protection options.

There are, however, examples of safety nets inside and outside the region that work well.[33] Furthermore, there is no reason why Social Investment Funds cannot be adapted to function as safety nets when the need arises. Because many governments lacked the resources to put social safety nets

[31] Rodrik (1997).

[32] Newman, Jorgensen and Pradham (1991).

[33] See Chapter 5 for a description of targeted human development, employment, and early childhood intervention programs.

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in place during the 1980s, the establishment of Social Investment Funds proved useful both to mobilize external resources and to respond rapidly to pressing needs.[34] Whatever their form, implementing efficient and cost-effective safety nets to cope with emergencies can be of great value in the quest for greater social equity in the region.

Ideal safety nets are those that simultaneously provide a consumption floor while protecting human and physical capital accumulation. One such example is targeted human development programs that transfer income in cash or in-kind to households in exchange for keeping their children in school and taking infants and small children to health care centers. *Progresa* in Mexico is one of the most comprehensive examples in Latin America of this sort. Other examples are stay-in-school programs such as the Brazilian *Bolsa Escola* program or the Program of Family Assistance (PRAF) in Honduras, as well as programs that promote early childhood development (e.g., mother and child feeding programs). Finally, there are projects that expand workfare, which is generally the instrument of choice for poor workers. An example is the *Trabajar* program in Argentina.

It is often argued that during times of austerity, governments are not able to maintain, let alone expand, spending on safety nets. However, the costs of safety nets need not be large, even if they reach a large number of beneficiaries. The cost of *Progresa* is about 0.2 percent of Mexico's GDP and 1 percent of the total federal budget, yet it benefits almost 2 million households per year with cash assistance estimated to be about 34 percent of the cash income of an average poor family.[35] *Trabajar* costs about a quarter of 1 percent of GDP and reaches 350,000 unskilled and unemployed workers in Argentina. The program transfers 26 percent of family income on average and as much as 74 percent of family income in households in the bottom 5 percent of income distribution. Assuming that the average benefits remain constant, the cost of expanding the second phase of the *Trabajar* program to reach all unemployed workers in the first quintile of income distribution would be around 0.7 percent of GDP.[36]

Information, Diagnosis and Public Debate

Regardless of whether there is a crisis, information plays a central role in understanding changes in welfare and the impact of alternative responses. Having this information available fosters societal debate on options, promotes accountability through increased transparency, and educates civil society and communities about programs that affect them. A minimum set of key indicators for tracking the conditions of core socioeconomic groups should be established and incorporated into the monitoring of quick-disbursing operations to support countries in crisis (see Box 1.4).

Statistical services can provide current information to the public on the shifting patterns of welfare and vulnerability. Longitudinal surveys taken before, during and after a crisis are ideal sources of information for tracking these patterns. An alternative might be to add a module to measure risk and risk-coping responses in cross-section household surveys. (See the sample questionnaire included in Appendix 3.) Designing and conducting effective surveys of individ-

[34] See IDB (1998).

[35] Castañeda (1998).

[36] These estimates refer to *Trabajar II*.

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Box 1.4. Indicators to Track the Social Impact of Crises

1. Poverty and inequality indicators and consumption indicators

- Poverty headcounts (income or consumption based)
- Poverty gap
- Poverty severity
- Distribution of poor (by urban/rural location and by region)
- Income or consumption distribution (Gini, Theil, by urban/rural location, and by region)

2. Nonincome indicators (by decile, gender and region, if possible)

Nutrition and Health

- Malnutrition
- Caloric intake
- Infant mortality
- Under-five mortality
- Infant mortality due to nutritional deficiencies
- Morbidity due to nutritional deficiencies
- Life expectancy rate

Education

- Primary and secondary school enrollment
- Literacy rate
- Proportion of children entering first grade as ratio of relevant cohort
- Proportion of students starting next cycle as ratio of students completing previous cycle
- Dropout rates
- Average years of schooling

Social Disintegration

- Incidence of violence (domestic and social) and crime
- Child labor
- Ethnic conflict
- Guerilla war
- Civil war

3. Labor market indicators (by quintile, if possible)

- Real wages and nonwage income
- Real minimum wages
- Unemployment rates
- Informal sector employment
- Unemployment insurance coverage

4. Intermediate evaluation indicators

- Social spending in health care and basic education as percentage of GDP and government budget
- Spending on water and sanitation, slum upgrading, infrastructure in poor rural areas, targeted programs, early childhood interventions, emergency employment programs and Social Investment Funds by sector as a percentage of GDP and the government budget
- Social spending on safety net programs as a percentage of GDP and government budget
- More specific intermediate indicators by sector (vaccinations, number of doctors, nurses, hospital beds, teachers, etc.)

Checklist for adequate responses

- Poverty studies available (Yes/No) Year____
- Poverty map available (Yes/No) Year____
- LSMS survey exists or planned (Yes/No) Year____
- Household survey exists or planned (Yes/No) Year____
- Public expenditure review exists or planned (Yes/No) Year____
- Macro-simulation model exists or planned (Yes/No) Year____
- Social policy coordination council exists (Yes/No) Year____
- Social monitoring and early response exists (Yes/No) Year____
- Unit donor poverty reduction roundtable operates (Yes/No)

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ual and community conditions and developments would complement quantitative sources of information. Similarly, it is vital to have a sound structure for evaluating the impact of programs on an ongoing basis, using a range of quantitative and participatory techniques. There is also a dire need for publicly available information on the intended and actual use of programs. Multiple actors, including civil society and the press, should have access to such information in order to increase transparency and accountability. Finally, countries must develop effective systems to assess and debate issues and policy options. In this area, short-term external support can help information generation and sharing and foster longer-term institutional development.

It is also recommended that governments put into place a social monitoring and early response unit in order to respond more effectively to crises.[37] The objective is to provide rapid real-time qualitative information to governments and donors on crisis-related conditions and on the operations of social safety net programs. The system would enable community monitoring of crisis response programs, disseminate information about the design and intended operation of safety net programs, and establish specific feedback mechanisms. It would also build the capacity for rapid field assessments using a range of qualitative techniques to provide quick turnaround reporting on danger signals, and mobilize research to investigate specific thematic issues about a social crisis, such as household coping mechanisms, migration and support networks, and gender differences.

Conclusion

There is no doubt that crises are bad for the poor. They diminish current living standards and limit the ability of the poor to grow out of poverty. During economic crises, the children of the poor are more malnourished and drop out of school more frequently. This is also bad for overall growth. Poor households often are forced to sell their meager assets at depressed prices.

Hence, crisis prevention has to be a top priority of any anti-poverty strategy. Likewise, a pro-poor crisis response should be an integral part of a country's poverty reduction plan. Such a response should protect poverty programs in the process of implementing budget cuts and include income- or consumption-smoothing safety net programs targeted to those most in need. Safety nets that provide current transfers and at the same time encourage investment in assets of the poor are particularly attractive mechanisms. Examples are stay-in-school and public workfare programs.

Effective pro-poor crisis response requires that the institutional structures to make spending for the poor counter-cyclical be in place beforehand. Counter-cyclical safety nets should be an intrinsic part of a country's social protection agenda. Experience shows that improvising in the heat of a crisis results in a response that amounts to too little, too late.

[37] Such a unit was created in the recent crisis in Indonesia.

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Chapter 2

Protecting the Poor against Natural Disasters

Natural disasters, like macroeconomic crises, constitute aggregate shocks that have serious adverse effects on the poor in Latin America and the Caribbean. A natural hazard becomes a natural disaster when it outstrips the ability of a country or region to cope, causing dislocation in the economy and undermining a government's development strategy.

There were more than 700 natural disasters in the region between 1980 and 1998: 363 in South America, 200 in Central America, and 163 in the Caribbean. These disasters killed more thant 72,000 people, left nearly 5 million homeless, and affected the lives of some 100 million people.[1] In the last three years, major natural disasters associated with El Niño, Hurricane Mitch and the Quindio earthquake in Colombia claimed more than 10,000 lives and caused billions of dollars of damage. (See Box 2.1)

The frequency of natural disasters in Latin America is due to geography, location and climate, as well as to patterns of development. For instance, the persistence of widespread poverty dramatically increases the region's vulnerability to the effects of natural hazards. But the recent increase in the frequency and severity of natural disasters in the region also reflects an ongoing worldwide phenomenon. According to the Munich Reinsurance Group, the number of major natural disasters increased by a factor of three between the 1960s and 1990s. The costs associated with disasters in real terms have increased ninefold. In 1998, more natural disasters occurred worldwide than in any other year on record.

In addition to causing fatalities and destruction, natural disasters have a disastrous impact on poverty and inequality: they tend to hit the poorest members of society disproportionately, since the poor are least capable of adequately responding to sudden shocks that destroy capital assets and sharply reduce income.

Given the existence of this vicious circle between poverty and natural disasters, providing protection to the poor against such events should constitute an important element of the region's poverty reduction and development strategy. Implementing adequate mitigation and preparedness policies could significantly reduce the risks and costs associ-

[1] U.S. Office of Foreign Disaster Assistance (OFDA) (1999). The OFDA database includes all natural events declared by the U.S. government as disasters, as well as major undeclared disasters that cause a substantial number of deaths, injuries and damage to infrastructure, agricultural production and housing.

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ated with natural disasters in Latin America. Unfortunately, disaster risk management is rarely a priority item on the political agenda. Real policy changes are more likely, therefore, if municipalities, the private sector, nongovernmental organizations, citizen associations and donors put pressure on central governments and get directly involved in promoting better land use, infrastructure development and preparedness efforts at the local level.

In designing risk management policies, governments and disaster experts have to give more attention to the acute economic and physical vulnerability of urban and rural low-income groups. These groups are the primary victims of natural disasters, and their impoverishment plants the seeds of future catastrophes. Once a disaster strikes, social safety nets and pro-poor reconstruction policies are necessary to avoid irreversible damage to human capital and the social fabric.

Natural Disasters

Natural hazards pose a particular threat to Latin America because of their frequency and because countries in the region are so vulnerable to them. The high number of fatalities from the 1985 earthquake in Mexico City and the 1986 mudslide in Armero, Colombia are just two examples of the devastating impact that natural disasters can have on populations and assets (see Table 2.1). Despite substantial progress in disaster management since then and the economic growth of the 1990s, the region remains vulnerable, as painfully demonstrated by El Niño, Hurricane Mitch and the Quindio earthquake in Colombia.

Natural disasters can have various adverse economic effects on countries: *direct damage* to physical capital (crops, infrastructure and housing) and human capital (injuries and fatalities); *indirect damage* that reduces potential production because the flow of goods and services is disturbed and production costs increase; and *secondary effects* on overall economic performance in terms of reduced GDP and gross capital investment, balance of payments problems, an increase in the level of private indebtedness, and a deterioration in public finances.[2]

The magnitude of direct damage can be assessed by calculating the ratio of the value of total asset losses to the size of the economy affected. Asset losses reduce productive capacity. A high loss-to-GDP ratio suggests the likelihood that GDP will fall in the aftermath of a disaster unless the overall public and private investment effort for reconstruction (which boosts the growth rate of gross fixed capital formation) outweighs the adverse growth effects of the disaster.[3] On the other hand, an increase in public expenditures following a disaster, combined with a shortfall in tax revenues, can lead to a growing fiscal deficit.

A decline in productive capacity, along with strong public and private investment demand for reconstruction, means that imports are likely to increase and exports are likely to fall, leading to a trade deficit. This may be offset by the capital inflows generated by official and private donations, allowing the affected countries to maintain their level of foreign reserves despite the likely decrease in their foreign exchange earnings. Disasters such as floods, drought and hurricanes may also lead to a significant increase in food product prices if production and distribution are disrupted.

[2] Otero and Marti (1994).

[3] Albala-Bertrand (1993a).

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Box 2.1. The Impact of Hurricane Mitch in Central America

Hurricane Mitch in 1998 was the Atlantic basin's fourth strongest hurricane ever, with sustained winds of 180 mph. As the storm's winds weakened, it continued dumping heavy rain on Central America, causing floods and mudslides that have been blamed for at least 10,000 deaths. The total population affected in Nicaragua, Honduras, El Salvador and Guatemala numbered over 3.1 million.

Total estimated damage for Central America reached $6 billion, 80 percent of which was in Honduras and Nicaragua. In Honduras, total direct losses were estimated at $2 billion and total losses, including secondary effects, at $3.7 billion (or 70 percent of the country's GDP). Between 60 to 70 percent of roads suffered damage in Guatemala, Honduras and Nicaragua. The impact on agriculture was also severe in the export sector: 90 percent of the banana crop was destroyed in Honduras, 45 to 60 percent in Guatemala, and 30 percent in Nicaragua. Growth of agricultural output for 1998 was weakened throughout Central America, and declined in Honduras by 7 percent.

In Honduras, GDP growth had reached 4.5 percent in 1997 and was projected at 5.1 percent before Mitch; it reached only 3 percent in 1998. At the same time, the annual rate of inflation in 1998 was 15.7 percent, mainly due to the disruption in food production and distribution associated both with the hurricane and with droughts earlier in the year. The public deficit reached 3 percent of GDP in 1998, far beyond the pre-Mitch target of 1 percent. In 1999, GDP is expected to fall, with a balance of payments deficit reaching $700 million.

In Central America overall, where 68 percent of the population lived below the poverty line before Mitch, the impact on poverty is expected to be dramatic because of increased unemployment, accelerating inflation, and loss of housing and income-generating assets. By November 1998, Honduras' Secretary of Labor had already received 23,000 requests for suspension of labor contracts. Unemployment and underemployment were expected to rise significantly in 1999 in the agricultural, commercial and transportation sectors. In Guatemala, Mitch left about 30,000 people unemployed, mostly in the agricultural sector, and caused the incidence of poverty to increase to a staggering four-fifths of the total population.

Sources: Agence France Press (May 27, 1999); ECLAC (1999); IDB (1999e); U.S. Office of Foreign Disaster Assistance (1999).

The severity of direct and indirect damages and secondary effects, and thus the impact on growth and development following a disaster, is determined by a number of factors:

• *Type and magnitude of the disaster.* Natural disasters that affect an entire country, such as Hurricane Mitch, have a stronger aggregate impact than localized ones. Sudden hazards such as storms usually have fewer longlasting effects than slowly developing ones, such as droughts or recurrent phenomena like El Niño. Hurricanes, floods and droughts have stronger indirect and secondary effects than earthquakes and volcanic eruptions, mainly because of their more damaging effects on the agricultural sector.[4]

• *Compound effects.* Several unrelated natural events occurring over a short period compound the negative effects of disasters,

[4] Anderson (1990, p. 22).

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Table 2.1
Major Natural Disasters in Latin America and the Caribbean, 1980-99[1]

Year	Country	Location	Disaster	Killed	Affected	Homeless
1979-83	Brazil	Northeast, Sertão	Drought	0	20 million	0
1980	Haiti	Southwest, Port-au Prince	Hurricane Allen	300	330,000	0
1982	Peru	Huallaga, Cuzco	Flood	332	20,000	0
1982	Peru	Cuzco	Flood	200	0	0
1982	Mexico	Northern Pacific coast	Hurricane Paul	225	50,000	0
1982	El Salvador	Sonsonate, Huachapan	Flood	500	50,000	0
1982	Guatemala	Western coast	Flood	620	20,000	20,000
1983	Ecuador	Entire coast	Flood	307	700,000	0
1983	Peru	Northern coast	Flood	364	700,000	0
1983	Argentina	Northeast	Flood	0	5.6 million	250,000
1983	Bolivia	Altiplano	Drought	0	1.6 million	0
1983	Bolivia	City of Santa Cruz	Flood	250	50,000	0
1983	Colombia	Popayan	Earthquake	250	35,000	35,000
1983	Brazil	Minas Gerais	Flood	68	3 million	8,000
1984-85	Brazil	Espirito Santo, Minas Gerais, Rio de Janeiro	Flood	200	60,000	60,000
1985	Mexico	Mexico City, Michioacan, Jalisco	Earthquake	8,776	100,000	100,000
1986	Colombia	Armero, Calda, Tolima	Volcano	21,800	7,700	7,700
1987	El Salvador	San Salvador	Earthquake	1,100	500,000	250,000
1987	Ecuador	Carchi, Imbabura, Pastaza, Napo	Earthquake	300	150,000	0
1987	Colombia	Medellin, Vila Tina Barrio	Landslide	240	0	2,500
1988	Brazil	Petropolis, Rio de Janeiro	Flood	289	58,560	58,560
1988	Argentina	Buenos Aires Province	Flood	25	4.6 million	0
1988	Dom. Rep.	North and Southeast	Flood	0	1.2 million	0
1988	Mexico	Yucatan and Gulf coast	Hurricane Gilbert	240	100,000	100,000
1990	Peru	Highlands	Drought	0	2.2 million	0
1992	Peru	16 departments	El Niño Floods	0	1.1 million	0
1993	Ecuador	Nambija in Zamora-Chinchipe	Landslide	300	0	0
1994	Colombia	Cauca and Huila	Earthquake	271	24,797	0
1994	Haiti	Jacmel, Port-au-Prince	Tropical Storm Gordon	1,122	1.5 million	87,000
1997-98	Ecuador, Peru	n/a	El Niño floods	550	n/a	400,000
1998	Argentina	n/a	El Niño floods	n/a	n/a	100,000
1998	Dom. Rep.	Countrywide	Hurricane Georges	208	400,000	n/a
1998	Brazil	Northeast	El Niño drought	n/a	n/a	4.8 million
1998	Honduras	Countrywide	Hurricane Mitch	6,600	2.1 million	1.4 million
1998	Nicaragua	Countrywide	Hurricane Mitch	2,055	868,000	n/a
1998	Guatemala	Countrywide	Hurricane Mitch	268	n/a	750,000
1999	Colombia	Central Quindio	Earthquake	1,117	425,000	150,000
1999	Venezuela	Caracas and 8 states	Floods, landslides	25-50,000[a]	600,000[a]	51,000[a]

Note: Major natural disasters refer here to those that either affected more than 1 million people or caused a minimum of 200 fatalities.

[a] Preliminary estimates.

Sources: For 1980-95: OFDA (1999). For 1995-99: *The Economist*, May 9, 1998; FAO (1998); OFDA, *Hurricane Georges, Fact Sheet #9*; Effects of Hurricane Mitch (online); *Hurricane Mitch, Fact Sheet #17*; *Colombia Earthquake, Fact Sheet #6*; *Venezuela Floods Fact Sheet #10*; and IDB (1999a).

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as happened in Honduras in 1998. Droughts and forest fires early in the year increased vulnerability to flooding, thereby deepening the destructive impact of Hurricane Mitch.

• *Proximity, density and vulnerability of populated areas.* The proximity of densely populated areas to high-risk zones contributes to high levels of damage and fatalities. Earthquakes that hit cities are by far the deadliest disasters, as well as the most costly in terms of direct damages. Vulnerability of populated areas is also exacerbated by the poor quality of housing and infrastructure such as hospitals, roads and dams.

• *Type of activity affected.* The type and degree of vulnerability of an activity affected by disaster-related disruptions, as well as its impact on other productive sectors, are important factors in determining the potential for long-term damage. For example, the 1987 earthquake in Ecuador represented a loss-to-output ratio of only 1.8 percent, but it destroyed the most important oil pipeline in the country, reducing oil exports for months.[5]

• *Overall resiliency of a nation's economy.* This depends on macroeconomic conditions before the disaster, the degree of sectoral diversification of the economy, and the size of indebtedness. Honduras, for example, is extremely vulnerable to disasters because its agricultural and food sector represents 50 percent of GDP, 63 percent of exports, and 50 percent of total employment.[6]

• *Effectiveness of a strategy for management of natural hazards.* This includes mitigation and preparedness measures.

Developing countries are particularly vulnerable to natural disasters because they have a limited capacity to prevent and absorb the effects of adverse geological and meteorological events. Several observations suggest strongly that poverty and lagging development greatly amplify the adverse impact of natural hazards. People in low-income countries are four times more at risk of dying in a disaster than those in high-income countries.[7] The 1972 earthquake in Managua, Nicaragua caused 5,000 fatalities, whereas the 1971 California earthquake, of a higher seismic magnitude, resulted in only 65 deaths.[8] Despite experiencing similar numbers of potential natural disasters each year, Peru reports annual fatalities of 2,900 and Japan only 63.[9] In terms of aggregate economic effects, costs as a proportion of GDP are on average 20 percent higher in developing countries than in the industrial economies.[10]

In Latin America, rapid demographic growth and population density have increased the overall vulnerability of many countries to natural events. In Ecuador, for example, population and agricultural production in areas prone to El Niño significantly increased between 1982 and 1998. The population of Honduras has quadrupled since 1950, reaching 6 million.[11]

Rapid urbanization resulting from growing demographic pressure in rural areas and related patterns of rural-urban migration has also increased vulnerability to natural disasters. Because of inadequate city planning, building codes and land use regulations, unsafe settlements have mushroomed throughout the region. The rate of urbanization is currently over 77 percent, with an estimated 363 million

[5] Albala-Bertrand (1993a, p. 1,419).
[6] IDB (1999b).
[7] IFRC (1993, p. 34).
[8] Ibid., p. 34.
[9] Anderson (1990).
[10] Funaro-Curtis (1982).
[11] IFRC (1999, p. 49).

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Latin Americans living in urban areas.[12] Some of the fastest growing cities, such as Lima and Mexico City, are located in high-seismic activity areas. Lima has been badly damaged or destroyed by earthquakes on average once a century over the last 500 years. Its population in 1940, when the last major earthquake occurred, was 645,000; today it is more than 4.6 million. The risk of an earthquake of more than 8.6 on the Richter scale occurring in the next century in Lima has been estimated at 96 percent.[13]

In urban areas, the potential impact of flooding is exacerbated by slums, high population density, deforestation, and paved roads. The risk of earthquake-related damage is heightened by factors present in most Latin American cities: high population density, narrow streets, unstable and sloping ground, and housing made from unstable adobe (using mud and straw bricks) or drystone (piled stone construction that does not use cement). The use of hazard-resistant building techniques is neither required nor controlled in most cities, even for public and social infrastructure. On the Caribbean island of Montserrat, where 98 percent of the housing stock was damaged or destroyed by a hurricane in 1989, there was almost universal noncompliance with wind and hurricane-resistance building codes. The cost of this damage was estimated at $240 million, equivalent to five years of the country's economic output.[14] In Mexico City, the modern wing of Júarez Hospital collapsed during the 1985 earthquake, paralyzing critical social infrastructure in a time of crisis.[15]

In rural areas across the region, there has been a dramatic depletion of natural resources due to growing population density, the use of improper cultivation techniques, and the absence of alternative viable economic opportunities for the poor. By eliminating natural shields to bad weather, deforestation and soil erosion have increased the vulnerability of many rural areas to heavy rains and strong winds. Before Hurricane Mitch, the rate of deforestation in Central America reached 340,000 hectares per year.[16] Honduras is a striking example of the deadly consequences of large-scale deforestation in disaster-prone areas. Honduras' forest cover fell to 37 percent in 1998, compared with 41 percent in 1990 and 63 percent in 1960.[17]

Sources of Vulnerability of the Poor

Low-income people and communities are usually the primary victims of natural disasters, in part because they are more likely to be located in areas vulnerable to bad weather or seismic activity. As a result, natural disasters have dramatically adverse effects on poverty and inequality in affected areas. Box 2.2 discusses the impact of El Niño in Ecuador, where poverty in affected municipalities, which already was as high as 73 percent before El Niño, rose by 10 percent in 1998 because of lost harvests of poor farmers and rising unemployment among agricultural workers.[18] A study following severe flooding in China found that the differing impacts of the disaster reflected preexisting levels of vulnerability, development and wealth.[19]

[12] IDB (1998).
[13] IFRC (1993, pp. 48-50).
[14] IFRC (1997, p. 80).
[15] PAHO/WHO (1994, p. 72).
[16] Stockholm Consultative Group (1999, p. 7).
[17] IFRC (1999, p. 47).
[18] Vos, Velasco and de Labastida (1999).
[19] IFRC (1993, p. 68).

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Box 2.2. Effects of El Niño in Ecuador

The economic and social costs of El Niño in Ecuador during 1997-98 were substantial for the most vulnerable groups, particularly with respect to losses associated with agricultural production and infrastructure damage. Nearly 300 people died and 30,000 lost their homes and were forced to rely on support from families, friends and relief camps for survival.

Although they caution that it is often difficult to separate the effects of disasters from general inadequacies in infrastructure and economic development, Vos, Velasco and de Labastida (1999) suggest that the overall impact of El Niño on what was already a high rate of poverty in affected areas in Ecuador could be as large as 10 percentage points. Given these estimates, poverty could reach 84.3 percent and extreme poverty 28.8 percent.

An estimate of the economic and social costs of damages caused by El Niño in 1997-98 includes the following:

- The affected areas coincide with areas hit in previous occurrences of El Niño, the most recent in 1982-83.
- In the rural sector, total expected net losses (valued in terms of foregone earnings) were $112 million (or 4.7 percent of agricultural GDP and 0.6 percent of total GDP). These losses mainly fell on poor farmers and agricultural laborers.
- Some 12,000 workers on banana and sugar cane plantations in the lowlands temporarily lost their jobs.
- Although in 1998 there were no available data to measure El Niño's direct impact on health, some 2.5 million Ecuadorians in coastal regions are believed as a result to be increasingly vulnerable to disease and worsening health conditions

Vos, Velasco and de Labastida conclude that the characteristics of the population most vulnerable to the effects of El Niño included low initial incomes, low educational levels, and inadequate access to economic and social infrastructure. The vulnerability of affected communities was also increased by the poor quality of available infrastructure.

Settlement Areas and Occupational Strategies

An estimated 80 percent of poor people in Latin America live on marginal lands characterized by low productivity and high vulnerability to environmental degradation and natural disasters.[20] Environmentally degraded land is less able to absorb natural shocks. For example, deforested and eroded land does not absorb as much water during heavy rains, contributing to landslides and downstream flooding. Throughout the region, risks of flooding and landslides are increased by deforestation, the absence of soil conservation programs, and inappropriate land use.

Due to the increased demand for urban space linked with rural-urban migration, the expansion of commercial and mechanized agriculture, and the increase in the price of both urban and rural land, many low-income households are pushed away from the center of cities or from the most fertile land. Low-income housing is often located in marginal and environmentally vulnerable areas such as riverbanks, volcano slopes and low-lying ter-

[20] Clarke and Munasinghe (1994).

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rain. Rio de Janeiro's favelas (shantytowns) lie on hill slopes, and Guatemala City's shantytowns on ravines. In rural areas, poor farmers tend to concentrate in flood plains and drought-prone areas.[21]

Income-generating strategies followed by the poor can directly contribute to exacerbating vulnerability to natural hazards. The poor sometimes choose to live on marginal lands such as fertile flood plains or volcano slopes because this increases their income generation possibilities. In addition, because the poor have less capital and education and are more likely to live on marginal lands, they often employ land-intensive strategies such as excessive use of wood resources or labor-led agricultural intensification, which further contribute to environmental degradation.

Poor Quality of Housing

In 1993, 37 percent of the existing housing stock in Latin America provided inadequate protection against disaster and illness.[22] The Caribbean Disaster Mitigation Project of the Organization of American States estimates that 60 percent of the total housing stock in the Caribbean is built without any technical input.[23] And low-income rural migrants in city slums are often poorly informed about potential risks and available mitigation strategies. It was estimated in 1990 that 40 percent of accidents in Rio's favelas were caused by building collapses and 30 percent by landslides. Residents in low-income areas in general lack the knowledge, technical skills and income needed to deal with problems such as surface water drainage, pedestrian access, and the danger of collapse where dwellings are built on roofs of other dwellings.[24]

Inadequate Infrastructure

Inadequate investment in basic infrastructure also puts poor communities at greater risk. Unsatisfactory watershed or waste management in these areas increases the probability of landslides and mudslides that could be prevented with adequate drainage and flood protection. Similarly, poor communities are generally less likely to have access to early warning systems or safe shelters in times of disasters. Deaths associated with Tropical Storm Gordon in Haiti in 1994 and Hurricane Cesar in 1996 in Costa Rica were primarily due to problems with local warning and evacuation systems.[25] In other cases, fatalities were caused by the collapse of village churches and schools that were used as shelters by communities, but which were not built to withstand strong winds or heavy rains.

Lack of maintenance in local transportation and communication infrastructure also contributes to higher fatalities and malnutrition among poor communities by isolating them in the aftermath of a disaster. In the case of Hurricane Pauline in Mexico in 1997, half of the 400 fatalities were due to the inability to reach populations in isolated areas.[26]

Difficulties with Preparation and Mitigation Mechanisms

Even where there are some existing capabilities at the community level to reduce vulner-

[21] Albala-Bertrand (1993b, p. 92).
[22] PAHO (1998).
[23] IFRC (1997, p. 80).
[24] Hardoy (1989).
[25] PAHO (1998).
[26] Ibid.

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ability to disasters, poor households generally are ill equipped to prepare and implement prevention measures. Because their income is often at or only slightly above subsistence levels, the poor cannot sacrifice present consumption to accumulate the savings necessary to invest in prevention or mitigation mechanisms. Therefore, poor people may rationally decide against reducing their vulnerability to natural events, since such disasters may or may not occur. Moreover, the insecurity of land tenure for many poor households discourages long-term investment in disaster mitigation, as does limited access to credit. There is also a collective action problem. The non-excludable, nonrivalrous public good aspect of such investments means that acting at the household level, the poor have little incentive to protect the environment and refrain from depleting natural resources.

Gender, Age and Ethnicity

Low-income women and households headed by women are highly vulnerable to natural disasters.[27] Following the 1985 earthquake in Mexico, the families hardest hit were those headed by women with small children and with informal sector jobs.[28] Female-headed families also seem to have particular difficulties in the recovery phase following disasters. In Tegucigalpa, Honduras, the proportion of female-headed families in the shelters following Hurricane Mitch increased significantly (from 41 to 58 percent) as the total shelter population shrank.[29] The inability of women to leave may be explained by the types of jobs women generally hold, their lack of capital assets, and their limited access to reconstruction-related jobs.

Given the health and nutritional implications of natural disasters, young children and the elderly are also extremely vulnerable groups among the poor. Children might be hurt in their development if their nutritional needs are not satisfied. They may also lose several years of education if local schools are not rehabilitated following disasters, and if there are poverty-induced increases in child labor. UNICEF estimates that after Hurricane Mitch, 20,000 students were at risk of dropping out in Guatemala due to the destruction of schools and the increasing need for income in poor households. Inadequate nutrition and disaster-related diseases are also expected to have a severe impact on low-income children in Guatemala.[30]

The elderly make up a disproportionate number of casualties following natural disasters.[31] They have fewer alternative income-generation possibilities than the young, encounter more difficulties in rebuilding housing and assets, and are less able to relocate outside the disaster area.

Indigenous communities are also highly vulnerable, since their asset portfolio tends to be undiversified. These groups rely primarily on natural resources for income and food security needs. Such reliance on natural resources makes them more vulnerable to natural events, especially when ecosystems are affected by deforestation and other types of environmental degradation. Indigenous communities also tend to live in areas with poor roads and limited access to social services. Post-disaster emergency assistance is unlikely to reach these isolated communities, and recon-

[27] IDB (1999d).
[28] Dufka (1988).
[29] Gomariz (1999).
[30] ECLAC (1999, p. 16).
[31] Cochrane (1975).

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struction plans may not give them high priority, since they have low rates of participation in the political process.

The Impact of Natural Disasters on Poverty

There is strong evidence that the short- and long-term effects of natural disasters contribute to rising poverty and inequality in several regions of Latin America.

For example, the combination of a poor natural resource base, skewed land distribution and periodic droughts contributes to the fact that the northeast region of Brazil is home to 60 percent of the country's poor but covers only 20 percent of the national territory.[32] Annual per capita income in the rural northeast is $230, one-tenth of the average for Brazil as a whole. While it is difficult to isolate the various causes of chronic poverty in the northeast, several indicators demonstrate that droughts have had a substantial negative impact. During the 1979-83 drought in northeast Brazil, 15 million people suffered a shortage of food and water. Surveys conducted during the drought indicated that average food consumption was below the level recommended by the World Health Organization, and that half of all children in affected areas suffered from malnutrition.[33] In rural areas, 91 percent of workers during the drought period earned less than the minimum wage, but that number decreased when the drought ended in 1984 and participation in farm employment came back to pre-drought levels. But in 1998, severe droughts associated with El Niño caused agricultural output to decrease by almost 50 percent and put 4.8 million people at risk of malnutrition and starvation.[34]

Research shows that localized floods and droughts between 1968 and 1986 increased poverty and inequality in Coquimbo, a rural region of Chile where the main agricultural activities are extensive grazing of cattle and rain-fed agriculture. Because of recurrent droughts, nonirrigated land could not be cultivated. Livestock mortality rose due to drought-induced diseases and a shortage of fodder. Poor households were hit hardest because they could not afford to buy fodder or relocate animals to summer pastures. The cumulative effect of very low rainfall over the period was a significant increase in poverty and inequality at the community level in Las Tazas.[35]

Short-term Effects

Because low-income households are so physically vulnerable to natural disasters, they are more likely to suffer fatalities, leaving widows and orphans at a time when the extended family or the community may be unable to provide any assistance to the survivors. Earthquakes, flash floods, hurricanes or mudslides are likely to destroy already precarious low-income housing. Loss of shelter can be made worse by social disruption and looting in the aftermath of the disaster. Temporary shelters for the poorest and marginalized members of the community often exacerbate violence, rape, child abuse and prostitution, further contributing to the breakdown of family units. Poor families from outside the disaster area may also try to take advantage of relief benefits, causing further social tension.[36]

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[32] World Bank (1998).

[33] Magalhaes and Glantz (1992, pp. 5-7).

[34] Food and Agriculture Organization (1998).

[35] Scott and Litchfield (1994).

[36] Anderson and Woodrow (1989, p. 165).

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Hurricanes, droughts and floods can disrupt agricultural production by destroying harvests and disrupting transportation. As a result, the poor may see sharp increases in prices and food shortages at a time when they are most vulnerable. Famine can develop in cases of severe droughts, and if it persists the poor are forced to abandon their communities and consume foods that have little nutritional value. Diseases such as cholera and malaria increase either as a direct consequence of a natural disaster or as a result of insufficient nutrition. People from poor households, generally uninsured and often living in remote areas, are frequently unable to get any medical attention.

Medium- and Long-term Effects

In rural areas, floods and mudslides destroy income-generating assets of poor farmers by damaging harvests and crops, and by eroding agricultural land. Rural workers can remain unemployed for months if the farms that employed them are hit by a natural disaster. One of the biggest banana producers in Honduras laid off 9,000 people in the immediate aftermath of Hurricane Mitch and announced that there would be no crop for the next two years.[37] One of the usual results of disaster-related rural unemployment and impoverishment is an increase in rural-urban migration, as observed in Brazil between the Sertão and coastal cities. In severe cases of countrywide disasters, many low-income victims migrate to neighboring and better-off countries.

In urban areas, the poor become underemployed or unemployed because the informal sector is disproportionately hit by natural disasters. First, most businesses in the informal sector do not provide workers with a compensation scheme for their loss of income due to temporary or permanent unemployment. Second, small firms are likely to go out of business if the natural disaster destroys their physical assets or significantly disrupts transportation and distribution. Businesses in the informal sector are generally not covered by business interruption insurance and have little access to credit to smooth their consumption during a time of reduced cash flows.

Traditional income-smoothing mechanisms for the poor, such as the extended family or community networks, are not likely to work in times of natural disasters, especially if the disaster covers a large portion of the country. In addition, shock-induced poverty might disrupt traditional rules governing access to common resources, reducing access of the poor to previously available resources. Schemes that poor farmers usually rely on to cope with exogenous shocks to their income (such as borrowing from local stores, off-farm work, drawing down food stocks, selling assets) are unlikely to protect them effectively against covariant shocks such as a regionwide drought. During droughts or floods, increased borrowing in the affected community will lead to interest rate increases, farmers will face a buyers' market for their assets, and local wages will decrease as the labor supply for off-farm work increases and demand contracts.[38]

Formal insurance, which can overcome regional covariance problems and reduce the cost of risk management, plays only a limited role in helping poor communities mitigate risks related to natural disasters and in

[37] IFRC (1999).

[38] Alderman, Gautam and Hazell (1994).

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smoothing their consumption. In fact, it is very unlikely that the poor are covered by any kind of insurance. Poor households are generally unwilling or unable to sacrifice present consumption to pay the high premiums necessary for insuring against low-probability risks. Even if the value of insured assets is low, premiums might be expensive because of the difficulty of spreading risks at the local level, the limited profitability of insuring such assets, and the high transaction costs involved in providing insurance at the household level. Similarly, the poor are likely to have limited access to credit during the recovery phase to help them rebuild their housing and reconstitute income-generating assets, such as crops.

In national reconstruction plans, the need to help the poorest communities is often a low priority, further exacerbating existing inequalities. Following Hurricane Gilbert in Jamaica in 1988, the business community successfully lobbied for central and local governments to define priority business areas for reconstruction, at the expense of poorer neighborhoods with less political leverage.[39] A study commissioned by OXFAM claims that because of the influence of road contractors on damage assessments, the government of Nicaragua included in its reconstruction plan the widening and paving of the Managua-Masaya highway, a section of road left relatively undamaged by Hurricane Mitch.[40]

In the absence of safety nets and reconstruction programs, entire poor communities can be forced to take children out of school to help the family rebuild assets and generate income. High and persistent rural unemployment in disaster regions leads to increased rural-urban migration, with the younger and most productive members of poor families forced to migrate, leaving behind the most vulnerable family members.

Finally, poor communities are unlikely to be able to afford the investments necessary to mitigate future disasters. They might even engage in strategies that put them at greater risk by further depleting the environment. This is another reason why socioeconomic vulnerability to disasters appears to be cumulative and compounding over time.

Disaster Risk Management Strategies for the Poor

Strategies to directly and indirectly help the poor reduce their overall vulnerability to natural hazards, and to cope with adverse effects caused by a natural disaster, require efforts at the regional, national and international levels, as well as low-cost strategies at the local level.

While natural hazards cannot be prevented, vulnerability to them of a given household, community, sector or country can be dramatically reduced. Disaster mitigation and preparedness can lessen the magnitude of the destruction and disruption, thereby reducing overall risk. In addition, mitigation strategies are much less costly than coping strategies, since they not only diminish direct damages but also can sometimes reduce indirect damages and secondary effects. This enables a society or community to absorb the shock without depending on external assistance.[41]

Once direct damage has already occurred, countries must urgently find solutions to lessen the ex-post impact of the disaster. Coping involves taking critical steps during

[39] Berke, Kartez and Wenger (1993, p. 96).

[40] Barraclough and Moss (1999, p. 29).

[41] Anderson (1990, pp. 17-27).

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the emergency and, later, during the recovery and reconstruction period. Social safety nets and pro-poor reconstruction policies have to be implemented to avoid irreversible damage to human capital and the social fabric.

Reducing Vulnerability

Economic development itself provides protection against some of the adverse effects of natural events. Countries with higher income per capita tend to have fewer fatalities, and their recovery process is in general quicker and smoother than in less developed countries. Nevertheless, misguided development strategies that ignore risks, deplete natural resources and increase inequality contribute to an overall increased vulnerability to natural events. To reduce the risks, growth needs to be environmentally and socially sustainable. Development projects should encourage sectoral diversification, be sensitive to natural hazards, and address the need to improve living standards among the poor. In terms of social policy, broadening the scope of employment opportunities and access to education, housing and basic social services can substantially mitigate disaster-related risks.

Risk and Vulnerability Assessment

Governments, insurance companies and donors need accurate information to identify risks and design building codes, insurance policies and development projects that address them. However, detailed information about the occurrence and impact of natural hazards in Latin America is sparse. Disaster mitigation agencies should therefore invest in risk and vulnerability analysis with the support of the interested stakeholders. Vulnerability maps would help to evaluate overall risks of natural hazards, assess the probability of different natural hazards in the region, and identify the degree of vulnerability of communities located in high-risk areas. They could also be used with poverty maps to help prioritize mitigation needs and to target assistance in the aftermath of a disaster.

Numerous mapping initiatives have been undertaken in the region since the 1980s. Costa Rica's Integrated Emergency Information System and Venezuela's Foundation for the Prevention of Seismic Risk have developed comprehensive risk and vulnerability maps to help their governments formulate emergency plans and to regulate the granting of construction permits.[42] In 1997, the Guatemalan government participated in an initiative that conditioned access to matching grants for housing upgrades on the development of municipal risk maps and the adoption of mitigation measures at the community level. A housing program in Honduras following Hurricane Mitch uses risk mapping to identify suitable areas for construction of homes for displaced persons.

Institutional Frameworks

Reducing the risks represented by natural hazards requires that countries design comprehensive strategies for disaster mitigation. These should be multi-year plans that identify implementation instruments such as laws, regulations and funding, and include quantitative targets and progress indicators. Responsibilities for implementation and enforcement of regulations at the national, regional and local levels

[42] PAHO/WHO (1994).

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need to be clearly identified. The institutional framework should take into account local or regional circumstances and allow for decentralization of authority where necessary. In the case of localized risks, it is the local authorities that should take the lead in disaster mitigation. When the same hazard affects several countries or when mitigation requires the cooperation of several nations, as in the case of watershed management, supranational agencies might be the most effective institutions.

Latin American government agencies charged with managing natural risks tend to lack adequate resources and the political clout to keep disaster mitigation strategies at the top of the government agenda. According to the Coordination Center for the Prevention of Natural Disasters (CEPREDENAC), none of the governments of Central America allocate sufficient resources in their national budgets for managing natural hazards.[43] The level of coordination with health, transportation and environment ministries is often inadequate, and social investments and infrastructure projects generally fail to take risks associated with natural disasters into account. Governmental institutions often have poor links with civil society organizations involved in disaster preparation or relief, which is critical to a successful disaster mitigation strategy in poor countries with limited public resources.

To help define, coordinate and monitor a disaster prevention and mitigation strategy, countries need a central government agency capable of evaluating risks and prioritizing mitigation works in cooperation with relevant ministries and local counterparts. Colombia provides a good example of an institutional framework with a clear chain of command, an appropriate degree of decentralization of responsibilities, and good institutional coordination. This is the result of the partnership between the Institute for the Awareness and Prevention of Catastrophes (part of the office of the Secretary of State), the National Institute of Social Interest Housing and Urban Reform, local governments, and nongovernmental organizations.

Land Use and Watershed and Coastal Management[44]

Historical patterns of settlement and urbanization in Latin America place significant constraints on achieving optimal land use in most countries. The absence of adequate land use legislation or a lack of enforcement where such legislation exists has prevented improvements in the region. One example of the result is Central America, where 50 percent of the land is either over or underutilized.[45]

Land use planning, which establishes priorities for the use of land in accordance with environmental and socioeconomic criteria, could become a powerful instrument for reducing physical vulnerability in the region. There are five primary areas of intervention for effective land use:

- Land use regulation, including zoning (defining geographic zones for different uses such as commercial, residential, industrial, or park lands);
- Watershed and coastal management;
- Economic incentives, such as taxation schemes and subsidies, to maximize economic returns and reduce vulnerabilities to natural hazards;

[43] Stockholm Consultative Group (1999, p. 13).

[44] This section is based on Stockholm Consultative Group (1999).

[45] ECLAC (1998).

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• Property rights, including land tenure security and infrastructure development with choice of location and design guided by risk assessments;

• Provision of public information and education.

Watershed and coastal management is particularly important in Latin America because of the frequency of floods and the concentration of populations near rivers and coasts. Watershed management schemes, which cover the entire system of a body of water and its watershed, can help to control floods, stabilize soils and water flows, and improve water quality. A number of such initiatives are underway in Latin America, among them the Matanza-Riachuelo River Basin Project in Argentina, which involves a comprehensive management approach of a high-risk area that includes stream flow control, storm drainage, contingency planning, land use management planning, and rehabilitation of areas degraded by flooding.

Adapting Critical Infrastructure

While it would be too costly to reinforce all housing and buildings in disaster-prone areas of Latin America, it would be worthwhile and feasible even in the poorest countries to reinforce critical infrastructure such as water supply, power systems and hospitals. It is estimated that half of the 15,000 hospitals in the region are located in areas at risk.[46] The U.S. Federal Emergency Management Agency (FEMA) estimates that the cost of incorporating hurricane and earthquake resistance in large-scale projects such as hospitals would amount to just 0.5 to 2 percent of the total initial cost of such buildings.[47]

In almost all cases, the cost of reinforcing infrastructure is dwarfed by the costs associated with reconstruction. One example of a successful mitigation strategy is the Costa Rican Social Security Fund, which conducted vulnerability studies in 1986 and started to reinforce its vulnerable hospitals. The cost-effectiveness of this effort was demonstrated in 1990 and 1991, when the buildings withstood earthquakes that struck the country. The Pan American Health Organization (PAHO) is currently assessing the vulnerability of facilities in several other countries, including Chile, Colombia, Ecuador and Venezuela.

Disaster Preparedness

Disaster preparedness attempts to lessen the impact of a disaster by structuring in advance the country's ability to respond quickly and effectively to the emergency. This is essential to reduce fatalities, facilitate rescue, relief and rehabilitation efforts, and coordinate the use of resources at the local, national and international levels. To prepare for potential emergencies, laws should establish emergency command, control and communication systems. Countries at risk should also establish prior agreements for external disaster assistance, instead of relying on improvisation following a disaster. When possible, early warning systems and evacuation plans should be developed in the most vulnerable areas.

Prior to the eruption of the Nevado del Ruiz Volcano in Colombia after several months of intense activity in 1986, risk maps were available for the area and clearly showed that the local population was at great risk. (The

[46] PAHO (1998).

[47] As cited in PAHO/WHO (1994).

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nearby city of Armero had been destroyed by mudslides in 1595 and 1845.) Nevertheless, there was no contingency planning in place for the evacuation of inhabitants. The eruption led to a massive mudflow down the slopes of the volcano, striking Armero, once again, and causing 23,000 deaths. The mudslides took an hour to reach Armero, and Civil Defense Forces issued a warning, but official sources and radio stations advised the population to remain calm. Following this tragedy, Colombia reformed its early warning system by introducing automatic public notification at local levels in coordination with national scientific institutes.[48]

Despite the overall damage wrought by Hurricane Mitch, some areas of Honduras clearly benefited from prevention and preparedness efforts. Municipalities such as Puerto Cortes and La Ceiba, which had been hit hard by Hurricane Fifi in 1974 and subsequent hurricanes, suffered minimal fatalities during Hurricane Mitch thanks to effective evacuation systems that had been put in place earlier.[49] But while such systems exist in many Latin American countries, they usually fail to function properly when a disaster strikes. There is a particular problem in remote areas, where the quality of communications is poor or local authorities are unresponsive. Developing a local emergency information radio broadcast system in direct coordination with disaster forecasters would represent a major improvement in this regard. Efficient evacuation plans should also be designed at the local level, involving local civil protection forces or army corps. Special attention should be given to emergency planning in hospitals, with adequate training of personnel, instruction in triage techniques, and establishment of medical supply reserves such as blood banks. Other important preparedness steps include power and water outage contingency planning, development of infrastructure to support and facilitate emergencies, and basic training in search and rescue and first aid.

Insurance Schemes

By pooling risks among a bigger group, insurance can reduce the financial risk represented by natural disasters at the household, regional or national levels. Insurance allows for the transfer of financial risk from an individual to a group, with the insured party paying a premium for a specified level of coverage against an uncertain event.[50]

Wider insurance coverage would also lessen the financial burden of reconstruction for the state following disasters, allowing governments to focus on needs of the uninsured poor. Better insurance coverage of the agricultural sector would be especially desirable, since the state is usually the sole guarantor of income for farmers in years of catastrophic floods and droughts through debt forgiveness and disaster relief programs. Crop insurance would help farmers reduce their overall risks, while also serving as collateral for them to gain access to credit markets.[51] Unlike undiscriminating public post-disaster assistance—which does not penalize risky behavior such as living in high-risk areas or using inadequate building techniques—developed insurance markets could give incentives for risk-mitigating behavior through higher premiums for noncompliance, refusal of coverage in high-risk areas, or high deductibles.

[48] PAHO/WHO (1994).

[49] IFRC (1999, p. 51).

[50] Kunreuther (1998).

[51] Hazell, Pomareda and Valdés (1986).

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As the situation stands, however, the rate of disaster insurance coverage is very low in Latin America, and the burden of financing catastrophic losses rests almost entirely on individuals, the state and international assistance. Insurance markets are underdeveloped and their present capitalization is clearly insufficient in comparison to the value of assets potentially at risk.[52] Public infrastructure, utility companies and the agricultural and informal sectors are either uninsured or insufficiently covered against natural disaster-related risks. For example, El Niño caused $2.8 billion in damages to public infrastructure in Peru, of which only $150 million was insured.

In Mexico, a high natural risk country, only 2 percent of the insurable housing market has coverage.[53] And although some 90 percent of industrial enterprises and 50 percent of commercial enterprises are covered to varying degrees by insurance, the coverage rate is much lower for small businesses. While federal buildings are insured, facilities at state and local levels more often are not.[54] The national rail carrier *Ferrocarriles Nacionales de México* incurred major property losses due to the 1998 flooding in Chiapas because it was inadequately insured.[55]

There are many obstacles to developing sound insurance markets in the region. On the demand side, many governments bail out uninsured parties in the aftermath of a disaster for legal or political reasons. When government becomes the de facto insurer of last resort, uninsured parties are not penalized for their choice not to contract proper insurance. The U.S. goverment has this problem because of its legal obligation to provide assistance in the case of natural disasters.

On the supply side, the very nature of natural disasters—their relative unpredictability, the catastrophic nature of the risks involved, and the potentially high value of damages—tends to undermine a basic premise of insurance, which is the ability to predict losses and the opportunity to spread risks. As a result, in extreme cases, the supply of insurance and reinsurance is altogether absent in high-risk zones.[56] In Montserrat, which has suffered since 1996 from a series of volcanic eruptions, insurance companies responsible for most policies withdrew entirely from the island.[57]

Because the risks involved are correlated, risk pooling can only be effective if the geographical coverage of the insurance scheme includes regions with uncorrelated patterns of rainfall or seismic activity. To pool risks that are countrywide, such as those posed by Hurricane Mitch, the insurance scheme needs to be larger than the geographical zone at risk. In other words, the correct level of insurance or reinsurance coverage for Latin America might well extend beyond nations themselves and to the regional or even international level.

Insurance and reinsurance companies also encounter major difficulties in attempting to correctly appraise the risks associated with natural events. The period of recorded history from which they can draw is relatively short, the cost of preparing accurate vulnerability maps is high, and climatic and vulnerability patterns are constantly changing. Monitoring costs for insurance companies are also partic-

[52] UNCTAD (1995).

[53] The insurable housing market is defined as housing built with solid materials and with potable water and drainage.

[54] World Bank (1999, pp. 25-29).

[55] Ibid., p. 29.

[56] IFRC (1999).

[57] Oxford Analytica (1997).

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ularly high in Latin America because of the high proportion of informal sector construction and poor enforcement of building codes. Moral hazard—the risk that insurance coverage will lead to riskier behavior—is also an important issue.

Box 2.3 presents key recommendations to improve the quality of the supply of disaster insurance in the region as well as increase the demand for it.

Calamity Funds

Calamity funds can be especially useful in countries where the insurance and financial sectors are not developed enough to provide adequate coverage of populations and assets at risk. By using resources accumulated before disaster strikes, these funds smooth government expenditures at the municipal, local, national and even regional levels during a crisis. The institutional design of such set-aside funds should guarantee that they not be used for other purposes and that spending priorities not be influenced by political considerations when the emergency arises. One strategy to achieve this is to vest responsibility for budget allocation and financial strategies of the calamity funds in an independent agency.

To minimize crowding out the private insurance market, governments should focus the use of funds on uninsured and poor victims and communities, and on uninsurable critical and lifeline infrastructure. The funds should also be designed in ways that prevent the creation of perverse incentives to risky behavior such as deliberate location in disaster-prone areas or unsafe construction. Finally, to avoid overexposure and reduce opportunity costs, calamity funds should be used to finance disaster mitigation investments, purchase reinsurance, and make use of new capital market instruments such as catastrophic bonds. The use of other financial instruments that complement calamity funds, such as contingent loans, should be considered.

After fires related to El Niño broke out in 1998, Honduras established a small natural disaster fund that was quickly disbursed following Hurricane Mitch.[58] Mexico created a federal calamity fund earlier in the decade whose 1999 budget was $400 million.[59] The Natural Disaster Fund (FONDEN) is designed to finance emergency food, health and shelter assistance to disaster victims. It also finances repairs of uninsured public infrastructure and economic recovery for low-income households through housing assistance, rehabilitation of income-generating assets in the agricultural sector, and income transfers through workfare programs such as the *Programa de Empleo Temporal (PET)*.[60] The federal endowment is replenished by financial contributions from states that are affected by natural events and draw on the fund.

At the local level, the city of Manizales, Colombia, struck by recurrent mudslides, created a municipal calamity fund equivalent to 1 percent of the city's revenues as part of the Comprehensive Plan for Disaster Prevention and Response (PADEM).[61]

And at the regional level, an Emergency Reconstruction Facility for Natural and

[58] ECLAC (1998, p. 16).

[59] From the keynote address by the Mexican Minister of Social Development, Esteban Moctezuma, at the IDB Conference on Social Protection and Poverty, February 1999.

[60] Government of Mexico (1999).

[61] PAHO/WHO (1994).

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Box 2.3. Strategies to Develop Insurance Schemes

The following stakeholders interested in the development of insurance in Latin American markets could take any number of steps to improve the quality and quantity of insurance and to increase the demand for it.

Insurance Companies

- Improve predictive ability of insurance models;
- Cooperate with governments in funding data gathering and vulnerability maps;
- Offer more diversified products to households;
- Reduce future exposure by linking insurance premiums to adoption of risk-mitigating behavior.

Governments

- Reform insurance regulatory framework by dismantling monopolies of reinsurance, entry barriers to foreign insurers, and price regulation of premiums;
- Create partial insurance and reinsurance schemes (risk retention groups) with other countries facing similar risks in order to gain negotiation power with reinsurance companies and get protection from extreme volatility of reinsurance prices;
- Insure public infrastructure by contracting insurance or using nonintermediated instruments such as weather-catastrophic bonds and hedge funds;
- Support private demand by providing incentives for the purchase of insurance (compulsory insurance coverage for mortgage eligibility, reduced property tax for insured households, subsidized crop insurance), conducting public information campaigns, and focusing post-disaster relief on noninsurable assets.

Donors

- Request insurance coverage for future infrastructure projects;
- Provide guarantees against default for catastrophic bonds;
- Encourage creation of multinational risk retention groups;
- Include insurance issues in policy dialogue with governments.

Unexpected Disaster Support financed by the Inter-American Development Bank is endowed with $100 million to be used for emergency-related temporary rehabilitation projects.

Reducing Vulnerability at the Local Level

To complement national initiatives, special efforts are needed to consult and involve communities at risk. Projects are sustainable over the long term only if they provide economic incentives that encourage the poorest communities to adopt mitigation measures that include public education and local participation.

Since emergency evacuation and resettlement are often the most appropriate strategies in flood-prone or volcanic areas, these measures should be tailored to meet the needs of the poorest. When evacuation or resettlement is temporary, for example, that means addressing such concerns as looting. When it is permanent, assistance should include subsidized land acquisition or microcredit for housing.

Neighborhood improvement programs constitute an alternative strategy when resettlement is not feasible. In most low-income areas, the poor build their own housing or get help from family or neighbors. They

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generally cannot afford technical assistance. Thus, financing low-cost housing improvements in exchange for labor, or training construction workers from the informal sector in mitigation techniques, can serve to overcome building code violations in poor areas. In rural areas, programs can focus on conservation and reforestation.

Programs for the shantytowns of Rio de Janeiro and São Paulo, for example, include hillside stabilization works and drainage, as well as upgrading of housing and basic infrastructure at risk of fire, flooding and landslides.

There are also many low-cost measures that can help reduce the economic vulnerability of communities to natural disasters. Local food banks can be created in rural areas particularly prone to recurrent droughts and floods. In Burkina Faso, local cereal banks were introduced to improve storage, lower costs, and stabilize food prices over a full year, including the drought season.[62] Agricultural cooperatives at the community level enable small farmers to get credit or crop insurance. Various strategies for the diversification of income-generating activities at the community level could also be promoted.

Reducing the Economic and Social Costs of Natural Disasters

Emergency Phase

To be most effective, emergency operations have to be based on an accurate and comprehensive diagnosis of the situation and identify lines of action and priorities (see Box 2.4). Emergency assistance to victims of disasters includes basic provision of food, water, shelter and medical care. Temporary repairs of critical infrastructure and water supply are also crucial, as is preparation and planning to ensure the quick start-up of employment programs for those who have lost their means of making a living.

A key point is that the people who suffer from a natural disaster are not only those who are directly affected by the event itself. As waters warmed during El Niño, for example, poor fishermen in Ecuador and Peru fell further into poverty because the fish that usually inhabit the countries' coastal waters left the area.

The best approach to such problems is public works programs that can build social or community infrastructure or help in the cleanup and reconstruction. For example, Mexico's new strategy to address natural disasters includes the transfer of resources from the existing temporary employment program *(Programa de Empleo Temporal—PET)* to areas affected by natural disasters.

Community recovery also depends on a quick transition to financially sustainable and less market-distorting solutions. In the case of food assistance, the possible negative effects of prolonged and massive food donations or food-for-work programs must be taken into account. Although they provide temporary assistance, such programs ultimately can depreciate local food prices and foster consumer dependency on food aid.[63] Once the emergency subsides, more appropriate solutions might be the use of local markets, subsidies to revive local production, and poverty-targeted food stamps.

[62] Anderson and Woodrow (1989, pp. 185-207).

[63] Barraclough and Moss (1999).

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Box 2.4. Coping with Natural Disasters: A Checklist for Effective External Intervention

1. Identification of adverse environmental effects of expected events:

- Includes drought, flooding, changes in water temperature, contamination of water supply.

2. Analysis of the impact of these meteorological phenomena on four areas:

- Economic activities susceptible to being severely affected;
- Productive infrastructure and housing;
- Public health;
- Basic services such as water and sanitation, health and education.

3. Identification of affected regions within the country, and of vulnerable groups within these regions and their economic activities:

- Includes salaried workers, small farmers, etc.

4. Identification of the possible effects of natural hazards on vulnerable groups:

- Loss of life or of the ability to function physically and mentally;
- Loss of employment or decline in production;
- Loss of purchasing power through unemployment or severe price changes (e.g., price of basic foods);
- Destruction of housing stock or other physical assets, arable land, roads, water and sanitation systems;
- Risks of disease and malnutrition, especially among the most vulnerable (children, the elderly);
- Difficulty of access to basic services due to destruction of roads or basic social infrastructure.

5. Identification of priority lines of action:

- Short run (emergency): distribution of water, food and medicine, vaccination campaigns, temporary shelters;
- Medium run (recovery): food subsidies, income transfers, creation of public works projects to provide temporary employment, rebuilding of housing and infrastructure;
- Long run (reconstruction): construction of infrastructure to mitigate future effects, establishment of monitoring and rapid response systems for the next round.

6. Identification of relevant counterparts within the country:

- Agencies in charge of natural disaster management (at national and local levels);
- Institutions protecting vulnerable groups against other shocks (e.g., Social Investment Funds);
- Nongovernmental organizations and other civil society groups that have the skills and availability to help.

Similarly, temporary shelters often become permanent solutions for the most vulnerable, who are least able to recover autonomously. Hygiene and security can quickly become problems in temporary shelters. Alternative solutions include travel assistance to families with relatives living in unaffected areas, and targeted rent assistance.

In order to avoid competition between assistance providers and the waste of resources, better coordination is needed between central and local government agencies, NGOs and

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international organizations. Steps must also be taken to better distribute funding between the emergency and the reconstruction periods. Too often, funds pile up in the immediate aftermath of a disaster, but are lacking in the year following the event. This leads populations to initiate or return to the risky behavior that makes them vulnerable to disasters, and it also jeopardizes investments made during the emergency. After the Nevada del Ruiz eruption and the tragedy in Armero, the heavy concentration and lack of coordination of assistance providers in a limited geographical area resulted in dependency among many of the poorest beneficiaries, wasted funds, and diversion of monies to the nonpoor.[64]

Recovery and Reconstruction

Following a large-scale natural disaster, national and local governments need to establish a macroeconomic management scheme to tackle the expected shortfall in tax revenues, increased public expenditures, decline in exports, and increase in imports. Given the decline in foreign exchange earnings and the inflows of capital that result from international assistance, foreign exchange policy may also need to be modified. In the case of heavily indebted countries, the task of macroeconomic management is made more difficult by the need to service and possibly reschedule foreign debt.

Following a natural disaster, governments are forced to make difficult choices at the macroeconomic level. After Hurricane Mitch, the Guatemalan Ministry of Finance asked the Congress to reduce total government expenditures by 7 percent to meet macroeconomic objectives, despite the need to increase expenditures for reconstruction.[65] While leading to a deteriorating trade deficit, an increase in imports of basic foods can also prevent food price increases, lessen inflationary tensions, and substantially improve the lot of the poor, as happened in Ecuador over 1997-98 as a result of the response to El Niño.[66]

Targeted international assistance can also help maintain macroeconomic stability, accelerate the recovery process, and protect the poor. Following floods in Bangladesh in 1998, the World Bank set up a $200 million emergency flood recovery credit program that included rapid-disbursement loans to finance the purchase of commodities needed for rehabilitation, such as grain imports to prevent inflation in food prices, inputs for agricultural recovery, and machinery and raw materials for the labor-intensive manufacturing sector. The credit helped maintain macroeconomic stability by avoiding the depletion of foreign exchange reserves and supporting recovery of the export sector.[67]

Where necessary, the multilateral institutions provide debt relief for countries that are badly hit by natural disasters. Following Hurricane Mitch, the IDB and the IMF designed relief programs under the Highly Indebted Poor Country Initiative for Honduras and Nicaragua, where foreign debt in 1998 reached 80 percent and 300 percent of GDP, respectively.[68]

Recovery and reconstruction also requires refocusing social spending and expanding existing social assistance programs. Given expected shortfalls in tax revenues, this involves prioritizing. Initial priorities

[64] Anderson and Woodrow (1989).

[65] Barraclough and Moss (1999, p. 31).

[66] Vos, Velasco and de Labastida (1999).

[67] World Bank (1998).

[68] Oxford Analytica (1998).

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should include repairing critical social and economic infrastructure (especially when linked to export-oriented and labor-intensive sectors) and providing social assistance to the poorest and most affected areas. Given the experience of Social Investment Funds (SIFs) in supporting construction of infrastructure and providing social services to the poor, they can be used—as in fact the SIF in Honduras was used following Hurricane Mitch—to expeditiously channel funds, identify spending priorities at the grassroots level, and minimize misuse of funds or corruption.

The reconstruction period following a natural disaster provides an opportunity to permanently reduce vulnerability to natural events. But lack of funding and competing emergency needs often mean that disaster mitigation is overlooked in reconstruction projects. Reconstruction of Mexico City following the 1985 earthquake is a case in point. Because the city is built on layers of clay and most buildings at the time were not strongly constructed, the massive quake (8.1 on the Richter scale) killed 8,000 people, destroyed more than 33,000 dwellings, and destabilized another 65,000. Hospitals, water and electricity supply, and telecommunications systems were extensively damaged. The cost of the direct damage was estimated at $4 billion. Nevertheless, early reconstruction ignored the predisaster vulnerability of the city because of the urgent need to rehabilitate the nation's capital, the scale of damage, and the severity of the macroeconomic shock.[69]

Additional Protection for the Most Vulnerable

A key goal of the recovery and reconstruction phase is to provide targeted assistance to local populations most in need, in consultation with affected communities and households. To improve targeting and avoid bureaucratic hurdles, specific channels such as SIFs and nongovernmental organizations can be used to provide assistance.

Finding permanent solutions for homeless and displaced persons is also critical. Relying on temporary housing construction to solve the problem of homelessness is a costly strategy. Semipermanent structures used in the recovery period are often designed for several families, and are often located on land not intended to be transferred to its temporary occupants. As a result, displaced people who face an extended stay in temporary housing often choose to return to risky areas, or to occupy land illegally.

Temporary shelters should be phased out gradually, and new residential areas identified that will prevent the displaced poor from rebuilding on dangerous land. For the poorest, assistance could include rent subsidies or credit for purchase of land, as well as basic training in reconstruction of housing that will not put them at risk again. To respond to the housing crisis in Honduras, the IDB recently approved a $10 million project that will provide a $1,000 subsidy per household for housing construction on plots with registered land outside high-risk areas. The assistance is targeted to low-income families still living in shelters, damaged housing, or high-risk areas.

Budgetary problems and poor targeting—which characterize nonemergency public expenditures on housing in the region[70]—are likely to be even more acute in the aftermath of

[69] According to the United Nations Disaster Relief Office, as cited by PAHO/WHO (1994, p. 35).

[70] ECLAC (1995, pp. 57-62).

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disasters. Therefore, international assistance channeled through local NGOs may be necessary to help housing reconstruction at the local level. A reconstruction program supported by the NGO *Cáritas* successfully mitigated earthquake-related risks in a poor area of Peru that had been partially destroyed by an earthquake in 1990. After consultation with the community, *Cáritas* decided to develop housing made with *quincha*, a locally available material capable of withstanding earthquakes. Assistance was targeted to the neediest families, such as households headed by women, by providing them with the necessary nonlocal materials in exchange for their participation in communal work. Most *quincha* houses resisted a second earthquake in 1991 that registered 6.2 on the Richter scale.[71]

Given the disastrous impact of hurricanes, floods and droughts on agriculture and the income of small farmers, another key component of reconstruction must be a comprehensive approach to reviving agricultural production and generating nonagricultural employment in poor rural areas. Road repair and improvement is a crucial step in restoring links from rural areas to national markets. In addition, credit and subsidies for the purchase of inputs can be extended to small farming units, and targeted distribution and marketing plans introduced. New crops and agricultural methods should also be promoted in order to avert a food crisis and to increase the future resilience of agricultural production in disaster-prone areas.

In areas where arable soil has been destroyed, farmers must be relocated or provided with sustainable alternative income-generation opportunities. Land banks, which provide credit to landless peasants to purchase land from willing sellers, are one mechanism that can be used in post-disaster situations.[72]

Workfare programs should be introduced or expanded in disaster areas in conjunction with reconstruction operations. After flooding in Chiapas, the Mexican government's temporary employment program *(PET)* provided families with much needed additional income by enabling them to work on reconstruction crews for one day a week.[73] In northeast Brazil, the *Frente de Trabalho* program provides similar employment in periods of drought. During the 1979-84 drought, the program employed some 3 million workers in construction and drought-related jobs.[74]

Microcredit institutions can play an important role in fending off a credit crunch in the reconstruction phase. However, given that most of their clients are likely to be insolvent, microcredit institutions are likely to need international support. Their operations should be extended in the aftermath of a disaster in order to help small entrepreneurs restart their activities and thereby absorb unemployment.

The most vulnerable groups in a disaster situation—including women, children and the elderly—must be given special attention. Among the steps that can improve the recovery of women and female-headed households are to involve women in the management of shelters, provide workfare programs adapted to women, and ensure a gender-neutral housing acquisition process. The expansion of early child development programs might be considered, particularly mother and child feed-

[71] Schilderman (1993).

[72] Barraclough and Moss (1999, p. 37).

[73] From the keynote address by Esteban Moctezuma, the Mexican Minister of Social Development, at the IDB Conference on Social Protection and Poverty, February 1999.

[74] Magalhaes and Glantz (1992, p. 25).

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Box 2.5. Key Policy Recommendations

1. Incorporate natural disaster management issues in the overall development strategy of the region by:

- Investing in risk and vulnerability mapping in disaster-prone areas;
- Actively mitigating risks in the transportation, social, housing, agricultural and urban planning sectors;
- Creating an adequate institutional framework for the implementation of disaster mitigation strategies;
- Undertaking long-term disaster preparedness (early warning systems, contingency planning of social, transportation, water and power infrastructure, public information campaigns);
- Improving the overall resilience of the economy through sectoral diversification, stabilization/calamity funds, incentives for increased savings at household levels, and development of income-smoothing mechanisms (insurance, microcredit).

2. Reduce the physical and economic vulnerability of poor communities at high risk by designing and implementing low-cost and sustainable initiatives such as:

- Plans for the evacuation and resettlement of people out of high-risk areas;
- Neighborhood improvements that mitigate vulnerability to disasters;
- Upgrading of critical social and transportation infrastructure;
- Reforestation initiatives with community involvement;
- Improved food storage or creation of food banks;
- Systems for emergency radio broadcasts;
- Targeted information campaigns.

3. Minimize the loss of lives and disruptions in the immediate aftermath of a disaster by:

- Assessing food and medical needs;
- Rehabilitating the critical infrastructure;
- Providing food, water and temporary shelters to the poorest while avoiding further economic and social disruption (dependency, corruption, looting).

4. In the recovery phase, implement a set of pro-equity policies providing protection and assistance to the poorest and most vulnerable disaster victims by:

- Incorporating a pro-equity and mitigation component in planning for reconstruction;
- Designing an adequate macroeconomic framework;
- Redirecting social spending and expanding the existing social assistance programs;
- Channeling assistance through emergency or social funds;
- Finding permanent housing solutions for the homeless;
- Reviving affected rural areas and agricultural production;
- Expanding workfare and microcredit programs;
- Providing additional protection for the most vulnerable through social assistance programs.

5. Ensure proper coordination of mitigation and coping efforts between donors, different levels of government, and nongovernmental organizations.

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ing programs. And to avoid losses in human capital, the rebuilding of schools is one of the first priorities. Poor families should receive cash transfers to encourage them to keep their children in school. Finally, flexible scheduling of classes tailored to the family and the community would enable young people to participate to some extent in the recovery effort without sacrificing their education.

Conclusion

Latin America's extreme vulnerability to natural disasters is caused by a combination of natural and socioeconomic factors. While it is impossible to prevent natural disasters, their impact can be softened and mitigated through a variety of measures. (Box 2.5 lists a series of policy recommendations in this regard.)

Better information about natural risks and their potential impact on vulnerable areas can facilitate introduction of preventive measures by alerting at-risk populations and supporting development of insurance systems and other risk-coping mechanisms. An effective natural disaster prevention strategy requires adequate institutional organization based on the identification of risks and the prevention and mitigation of disasters, with a clear chain of command and responsibility, institutional coordination and decentralized responsibilities. Furthermore, disaster prevention requires careful planning in terms of land use and the construction of homes in vulnerable areas. This should be accomplished through a variety of regulatory norms, economic incentives using taxes and subsidies, and strong property laws to facilitate adequate investment, as well as education and information.

A disaster preparation framework must be developed so that when a disaster occurs, evacuation, rescue and rehabilitation plans can be quickly and efficiently deployed. The private sector can play an important role by developing insurance schemes, but an effective legal framework and adequate incentives must first be in place. Finally, governments throughout the region can create calamity funds in order to make sure that the needed fiscal resources are available to respond quickly and effectively to a natural disaster. These funds can be used to finance safety nets needed to temporarily protect poor people whose incomes were affected by the disaster, and to rebuild damaged infrastructure.

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Chapter 3

Unemployment Risk and Social Protection

Since poor people cannot afford to be unemployed, they may forego seeking better opportunities and stick to suboptimal occupations. When faced with unemployment, they may accept the first job that comes along. That may explain why Latin Americans with little education swell the bottom ranks of income distribution, yet are less likely to be unemployed than those further up the income scale (see Table 3.1).

This does not, however, eliminate the need for social programs to protect the poor from unemployment risks. On the contrary, unemployment shocks must be included in the social protection agenda. Unemployment rates may be lower for poor workers than for the better off, but the risk of unemployment and the adverse consequences of it are greater for the poor. Because poor people do not have access to unemployment insurance schemes, their survival strategy is to accept whatever low-paying occupation they can find, even if it means being underemployed and underproductive. This hinders not only the ability of the poor to climb out of poverty, but also the prospects for productivity and growth in the economy as a whole.

For a poor person living at or near the subsistence level, any income loss due to unemployment or falling real incomes can be devastating. The impact of losing one dollar to someone living at the subsistence level is much greater than the effect of such a loss on someone with a higher standard of living. Therefore, the unemployment risk faced by poor workers is extremely high if it is measured in terms of potential welfare losses.

There are a number of ways to cope with the income loss caused by unemployment and to smooth consumption over time. The first is to use up accumulated savings, or to borrow to make up for lost income. However, poor people are in no position to save enough to smooth income in case of future unemployment. Nor do most have access to formal credit mechanisms, since they have limited assets to use as collateral and often live in isolated areas. Most importantly, Latin America's poor generally do not participate in social insurance schemes because they are either self-employed or working in sectors excluded from the contributory social insurance system. Depending on the country, between 28 and 76 percent of workers in the bottom quintile are self-employed and nonremunerated workers—and the incidence of poverty among such groups is consistently higher than among formal and public sector employees.[1] Because they are

[1] See Appendix Table 3.1.

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Table 3.1
Urban Unemployment Rates by Years of Completed Education
(In percent)

Country and period		Total	Years of education 0-5	6-9	10-12	13+
Argentina[1]	Total	13.0	14.0		15.0	7.7
Oct. 1994	Males	11.5	13.1		12.1	5.9
	Females	15.5	15.8		19.7	9.5
Bolivia	Total	4.7	2.9	4.5	6.1	5.0
2nd half of 1995	Males	4.2	3.1	3.6	5.2	4.2
	Females	5.3	2.7	5.9	7.8	6.1
Brazil	Total	7.2	6.6	10.4	6.9	3.0
Sept. 1995	Males	6.2	6.0	8.3	5.6	2.2
	Females	8.7	7.5	13.7	8.2	3.7
Colombia	Total	9.2	7.0	11.0	11.4	7.0
Sept. 1995	Males	7.0	6.0	7.8	8.4	5.3
	Females	12.2	8.5	15.9	14.8	8.9
Costa Rica	Total	5.6	6.1	6.4	6.2	3.3
July 1995	Males	5.2	5.7	6.3	5.4	2.7
	Females	6.3	7.2	6.5	7.5	4.2
Chile	Total	6.0	6.7	6.7	6.6	4.0
Nov. 1996	Males	5.1	6.8	5.9	5.2	3.4
	Females	7.3	6.6	8.1	9.1	4.8
Ecuador	Total	6.8	3.9	6.0	10.0	5.8
Nov. 1995	Males	5.5	3.0	5.4	7.0	5.1
	Females	8.9	5.1	7.1	13.7	6.8
Honduras	Total	4.1	7.1	3.6	3.1	1.3
Oct. 1994	Males	4.5	7.5	3.7	4.1	2.0
	Females	3.4	6.6	3.6	1.3	0.1
Mexico	Total	4.5	3.9	5.0	5.0	3.5
3rd qtr. of 1994	Males	5.1	5.4	5.7	5.1	2.7
	Females	3.6	1.2	3.6	4.8	5.1
Panama	Total	16.0	11.8	16.9	19.4	11.8
Aug. 1995	Males	12.9	11.4	14.3	14.2	8.6
	Females	21.0	13.3	22.2	26.5	15.1
Paraguay	Total	5.1	5.4	5.0	6.8	2.5
Aug.-Nov. 1995	Males	4.9	5.9	4.7	6.0	2.2
	Females	5.4	4.8	5.3	7.9	3.0
Uruguay	Total	10.1	7.2	12.0	10.5	5.8
1995	Males	7.9	5.8	9.2	7.6	4.7
	Females	13.2	9.9	16.4	13.8	6.7
Venezuela	Total	10.7	8.9	11.4	11.1	10.1
2nd half of 1995	Males	9.5	9.1	10.3	9.6	7.3
	Females	12.9	8.3	13.9	13.2	13.1

Source: ECLAC (1997).

[1] For Argentina, the first educational category is for 0-9 years.

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Table 3.2
Argentina: Underemployment by Sex and Education, 1996

	Level of education			
	None and Elementary	Secondary	Higher	Total
	Weekly average hours worked			
Males	36.7	40.5	42.7	39.5
Females	24.9	28.9	29.7	27.8
	Percentage of employed population willing to work more hours			
Males	50.2	43.4	25.4	41.9
Females	61.4	42.5	26.3	43.7

Source: IDB estimates based on INEC household survey.

self-employed or work for small family enterprises, and because they are poor, workers in the informal sector often are unable or unwilling to comply with labor regulations or contribute to unemployment or health insurance or pension schemes. Moreover, social insurance is usually designed to cover only workers in the formal sector, or even just certain parts of the formal sector, such as public employees.

Inadequate social protection for the poor translates into low productivity jobs and underemployment. Because poor people cannot cope with the income loss associated with unemployment and are usually uninsured, they are forced to take any job they can find, even if it is underpaid or the hours are short. Table 3.2 shows that in Argentina, unskilled workers work significantly fewer hours than do skilled workers. Yet, a substantially higher proportion of unskilled workers say they would like to work more hours, a clear sign of underemployment. Unemployment rates may therefore underestimate the gravity of the effect of unemployment on the poor and unskilled.

Because searching for a job is time intensive, poor and uninsured workers often accept any suboptimal job rather than wait for something that better matches their productive potential, thus reducing average productivity in the economy. Furthermore, risk-averse individuals may select lower productivity jobs that offer a higher level of security, rather than more productive activities with a higher risk of loss. For example, small Nicaraguan farmers tend to grow a type of pineapple that is low in market value rather than a sweeter, more profitable variety. This is because their variety is less susceptible to pests and thus the yield is less variable. In so doing they accept smaller profits in exchange for greater security.

These low-risk strategies help explain the persistence of poverty and why poor workers are often trapped in a vicious circle. The absence of protection against unemployment fosters suboptimal choices by the poor. Accepting underemployment and low productivity jobs is often the only survival strategy available to them to meet short-run consumption needs. But it reinforces their exclusion from income-support and contingent unemployment mechanisms, and prevents them from earning higher wages.

Unemployment-contingent income transfers can therefore help to break the cycle. By enlarging the set of choices available to poor people, social protection programs can

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increase individual welfare, reduce poverty and enhance economy-wide efficiency. Social protection for the unemployed poor and for the people who fall below the poverty line as a result of unemployment is essential to ensure minimum family consumption levels, provide sufficient time for the unemployed to search for a job that matches their productive potential, and offer the poor an opportunity to engage in activities with a higher risk and return that can help lift them out of poverty.

Informal Labor Markets

A large part of the working population in Latin America, as well as most of the region's low-income workers, are self-employed or unpaid family workers (see Table 3.3). This poses two types of problems: it excludes the poor from formal sector social insurance and training programs, and it makes it more difficult to monitor the working status of the labor force.

Any public or private insurance system requires that the insurer (the principal) be able to monitor the insured (the agent) at a reasonable cost. But in the case of unemployment insurance, the unemployed have far better information about why they became and have remained unemployed than do the managers of the insurance system. This asymmetry is far worse when the worker is in the informal sector, which explains in part why so few of these workers are covered by unemployment insurance. Monitoring self-employment, in particular, is difficult and costly. As we will see later, employment programs incorporate technology to solve the monitoring problem.

This large informal sector—representing as much as 50 percent of the labor force in some Latin American countries[2]—has traditionally been viewed as a consequence of the region's highly-regulated labor markets.[3] These regulations govern unfair dismissals and restricted layoffs, and mandate compulsory severance payments. In addition, governments frequently take part in collective bargaining agreements in tripartite negotiations with unions and employers. Although there is a consensus that Latin American labor markets are overregulated, this does not mean that they are necessarily more rigid than in other parts of the world, particularly since these regulations are often ignored.[4]

Labor market regulations have a significant effect on employment composition. Extensive labor legislation is associated with a larger informal sector in the economy.[5] High labor and hiring and firing costs lead to greater exclusion of women, young workers and unskilled people from formal labor market opportunities.

If the size of the informal sector is positively correlated with labor market regulations, labor market reforms could actually play an important role in reducing the magnitude of informal activities.[6] That would make it easier

[2] According to the International Labour Organization (ILO).

[3] Informal workers are defined here as those who do not participate in the contributory social insurance system. ILO (1999); Harris and Todaro (1970).

[4] IDB (1998, p. 141).

[5] IDB (1998, p. 143) finds a positive relationship between labor market rigidities and the size of the informal sector.

[6] However, research suggests that the dualistic structure of labor markets may be the outcome of endogenous wage-setting mechanisms adopted by formal sector firms to attract the most productive workers (for example, efficiency wages). If the dual structure of the labor market is endogenous, reforms aimed at reducing rigidities will not be effective in increasing the size of the formal sector (Maloney, 1998a).

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Table 3.3
Occupational Structure
(In percent)

	Bottom quintile		Total	
	Informal[1]	Employees[2]	Informal	Employees
Urban				
Argentina	32.1	67.1	21.8	73.8
Bolivia	84.1	1.1	60.1	17.8
Brazil	30.1	49.7	24.9	61.3
Chile	22.8	70.1	24.7	68.1
Colombia	49.0	44.6	32.5	60.8
Costa Rica	23.7	63.5	17.5	72.1
Dom. Rep.	37.8	59.8	32.5	61.5
El Salvador	52.6	17.0	32.5	42.4
Honduras	53.5	38.6	31.5	59.2
Panama	39.9	49.1	18.9	71.3
Paraguay	50.4	7.9	35.4	27.7
Uruguay	31.5	67.9	24.0	71.7
Venezuela	41.1	53.8	31.5	62.6
Rural				
Brazil	63.8	19.0	49.6	33.3
Chile	42.2	56.7	40.9	54.5
Colombia	78.8	1.9	44.3	13.3
Costa Rica	40.7	45.9	24.3	65.1
Dom. Rep.	52.1	45.6	40.2	55.2
El Salvador	71.8	1.4	43.3	15.4
Honduras	79.4	18.1	64.3	30.5
Panama	85.4	11.2	45.4	48.0
Venezuela	60.2	37.5	44.2	49.4
National				
Brazil	45.7	35.4	30.3	55.1
Chile	27.8	66.6	27.1	66.0
Colombia	65.9	10.6	36.9	43.0
Costa Rica	34.2	52.4	20.8	68.3
Dom. Rep.	45.9	51.6	36.1	58.5
El Salvador	68.2	4.4	36.8	31.6
Honduras	75.6	21.2	49.1	43.8
Panama	71.0	23.2	28.6	63.0
Venezuela	45.9	49.4	33.8	60.1

Note: Percentages do not add to 100 because other categories of workers, such as employers, are not included.

[1] Informal sector includes self-employed and unpaid family workers.

[2] Employees include public and private sector salaried employees.

Source: IDB estimates based on household income and expenditure surveys.

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to reach poor workers affected by economic downturns through unemployment insurance or means-tested income support mechanisms.

Trade liberalization and general economic reforms have rapidly changed Latin America's economic environment, challenging prevailing regulatory measures. During the 1990s, some countries initiated structural reforms of the labor market. Argentina, Chile, Colombia, Guatemala, Nicaragua, Panama, Peru and Venezuela enacted regulatory reforms with the aim of creating more flexible labor markets.[7] The reforms have tried to increase flexibility in hiring and firing practices on the margin, for example, through wider use of temporary contracts and lower payroll taxes designed to reduce labor market rigidities and foster job creation. As a result, the share of full-benefit contracts in total employment has dropped, and more precarious forms of employment have expanded. There has been a steep increase, for example, in the share of workers hired on temporary contracts in the formal sector. Over 1985-95, this share increased from 29 to 38 percent in Argentina, from 30 to 50 percent in Peru, and from 10 to 30 percent in Bolivia.[8] However, there is no evidence that the increase in temporary contracts boosted employment growth. In fact, Argentina and Bolivia had among the worst records of employment growth in the 1990s.[9]

Despite initial labor market reforms (or maybe because of the lack of depth of those reforms), the share of workers in Latin America's informal sector actually grew from 52 percent in 1990 to 58 percent in 1997.[10] One explanation is that liberalization in the product and financial markets has, on the one hand, induced formal businesses to reduce overall formal employment to increase their competitiveness in international markets, and, on the other, expanded opportunities for small entrepreneurs by lowering their credit constraints. Furthermore, given the skill-biased trend in labor demand, it is likely that a large share of the total workforce, particularly poor and unskilled workers, will continue to be employed in the informal sector and excluded from formal insurance mechanisms. This suggests the need for alternative mechanisms that provide social protection to these workers while resolving the problem of monitoring their employment status.

Employment, Wage Volatility and Economic Shocks

Unemployment problems have persisted in Latin America principally because of insufficient job creation and, in particular, because of a lack of demand for low-skilled workers. The opening of the region's economies to international trade has produced neither an increase in the demand for unskilled labor nor a rise in wages for unskilled workers—contradicting the theory of comparative advantage in international trade, which says it should increase both.[11] In fact, the effect has actually been the opposite. Latin America's overall real wage gap—the ratio between white- to blue-collar average real wages—increased by 46 percent over 1988-97.[12] Rapid technological changes and the competition of some Asian economies with relatively high unskilled labor endowments might help to explain this trend.

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[7] Edwards and Lustig (1997).

[8] Lora and Pagés (1997).

[9] Lora and Márquez (1998).

[10] ILO (1999). These numbers do not correspond to those in Table 3.1 because the ILO uses a more comprehensive definition of informality.

[11] Lora and Márquez (1998).

[12] Ibid.

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Opinion polls rank unemployment as the number one problem facing Latin America. A Latinobarómetro survey in 1998 found that one in five Latin Americans believed unemployment to be the most important problem affecting the region.[13] The average unemployment rate in the region increased from below 6 percent at the start of the 1990s to 8 percent by the end of the decade. Those countries that had high unemployment rates at the start of the decade still do: the Bahamas, Barbados, Colombia, Ecuador, Jamaica, Nicaragua, Peru, Trinidad and Tobago and Uruguay. At the same time, Argentina, Brazil and Venezuela, which had low unemployment rates at the start of the decade, have seen those rates rise. The severe economy-wide crises in these countries are partly responsible for this surge in unemployment. Repeated crises generate steady increases in unemployment. Argentina's unemployment rose from 12 percent in May 1995 to a high of 18.6 percent in October 1995 (17.5 percent yearly average) as a result of the 1995 liquidity crisis.[14] Although the 1999 recession was not as severe as had been expected in Brazil after the collapse of the *real* peg, unemployment rose to 8.8 percent in March 1999, up from 5.8 percent in 1997.[15] In Venezuela, unemployment rose from 12.5 percent in June 1998 to 17.4 percent in July 1999 as a result of the drop in oil prices and the subsequent fiscal crisis. The severe deterioration of real incomes and the increase in poverty in Venezuela can be traced back to the repeated shocks the country suffered during the 1980s and 1990s.[16]

Even Chile, whose economic performance has outpaced the rest of the region over the past 20 years, had double-digit unemployment in 1999 (11 percent in July 1999, up from 5.6 percent in May 1998). This reflected the impact of the Asian crisis on the price of copper—Chile's main export, representing 40 percent of export earnings—as well as the effect of high interest rates designed to contain the widening current account deficit.[17]

Macroeconomic policy and the structure of the labor market determine the degree of real wage downward rigidity, which, in turn, determines the nature of the adjustment during and after a crisis. Whenever real wages suffer from downward rigidity, the adjustment to a negative shock to the economy will come more through quantities (employment and output) than through prices (wages and product prices). How these adjustments affect the poor will depend on the their distribution across income groups.

One example is the choice of exchange rate regime. Although soft exchange rate pegs have been largely discredited by their vulnerability to speculative attacks and the consequences of those attacks on economic activity, the debate between hard pegs and flexible exchange rates is ongoing. Often the debate does not take into consideration the distributional impacts of these alternatives. In particular, an economy with a hard peg will impose price rigidities and force a quantity adjustment in response to a crisis, while under a flexible exchange rate system, the adjustment will occur through prices. Employment and wage adjustments have different ways of

[13] Low education was cited as the second biggest problem and low salaries the third.

[14] Oxford Analytica Brief (May 22, 1995 and October 11, 1995).

[15] Estimate by the Institute for Geography and Statistics (IBGE). The Trade Union Association (Diesse) estimates unemployment in March 1999 at 12 percent. This is because Diesse has a wider definition of unemployment.

[16] Ruprah and Marcano (1999).

[17] Oxford Analytica Brief (July 24, 1998 and September 10, 1999).

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Table 3.4
Open Unemployment Rates by Age Group, Education and Gender, Argentina, 1994-96
(In percent)

Workforce aged 25-64	Level of education							
	None and Elementary		Secondary		Higher		Total	
Males								
1994	10.7		8.7		4.3		8.8	
1995	16.2	(51.4)[a]	10.8	(24.1)	5.5	(27.9)	12.0	(36.3)
1996	17.3	(6.7)	12.1	(12.0)	7.1	(29.0)	13.1	(9.1)
Females								
1994	13.3		15.7		6.1		12.2	
1995	18.7	(40.6)	18.8	(19.7)	10.5	(72.1)	16.4	(34.4)
1996	20.2	(8.0)	18.5	(-1.5)	11.8	(12.3)	17.1	(4.2)
Workforce aged 15-24								
	Level of education							
	None and Elementary		Secondary		Higher		Total	
Males								
1994	23.3		20.2		13.8		20.3	
1995	29.8	(27.8)	29.3	(45.0)	14.0	(1.44)	27.2	(33.9)
1996	30.0	(0.67)	29.7	(1.3)	30.3	(116.0)	29.9	(9.9)
Females								
1994	31.9		28.4		20.6		26.8	
1995	36.6	(14.7)	35.6	(25.3)	25.3	(22.8)	32.4	(20.8)
1996	44.2	(20.7)	38.2	(7.3)	31.7	(25.2)	37.6	(16.0)

Source: IDB estimates based on INEC households surveys, 1994-96.

[a] Figures in parentheses report the percentage change with respect to the year before.

affecting different segments of the poor and nonpoor populations, including rural and urban workers, public and private sector employees, and skilled and unskilled workers.

Two extremes were observed during the crisis in 1995: Argentina experienced huge spikes in unemployment, while Mexico had drastic falls in real wages. The effects of the Argentine currency board, which by its existence rules out an independent monetary policy, contributed to a dramatic rise in unemployment during the liquidity crisis that followed the devaluation of the Mexican peso in December 1994. The rise in open unemployment was significantly greater for low-educated workers than for more educated workers in the Greater Buenos Aires area (see Table 3.4).[18] For male workers aged 25-64, the open unemployment rate for those with at most a primary education rose by 6 percentage points over 1994-95, while the rate for people with higher education rose by only 1 percentage point (2 points for those with secondary

[18] Open unemployment refers to the unemployment rate in a particular month, rather than the average for a whole year, as more commonly used in OECD countries.

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Table 3.5
Real Hourly Wages by Gender and Education, Mexico, 1994-96
(Constant 1996 pesos)

Workforce aged 25-64

	Level of education							
	None and Elementary		Secondary		Higher		Total	
Males								
1994	13.0		32.2		89.5		29.5	
1996	9.5	(-26.9) [a]	21.1	(-34.4)	53.3	(-40.4)	19.7	(-33.2)
Females								
1994	7.5		37.4		68.4		25.9	
1996	5.8	(-22.6)	22.1	(-40.9)	49.3	(-27.9)	17.7	(-31.6)

Source: IDB estimates based on INEGI household income and expenditure surveys, 1994-96.
[a] Figures in parentheses report the percentage change between 1994 and 1996.

education). In the year following the crisis, unemployment among the unskilled stabilized, while it kept growing among the most skilled segment of the male workforce. In addition, in 1995 a greater percentage of the employed workforce than in 1994 revealed that they would want to work more, this trend being stronger among the unskilled, indicating that both unemployment and underemployment deteriorated among the low-skilled more than among the skilled. Hourly real wages, although fairly stable (relative to the Mexican case, for example), tended to affect skilled workers more than unskilled ones, dropping by only 0.5 percent over 1995-96 among male workers with at most a primary education and by 7 percent among those with secondary and higher education.

Mexico's open unemployment rate increased from 3.7 to 6.3 percent over 1994-95, but it fell back to its precrisis level by 1997.[19] The adjustment through real wages, however, was dramatic. Table 3.5 shows that real wages fell by 35 to 40 percent between 1994 and 1996, with proportionally larger real falls in wages among skilled workers. Panel data shows that households in the bottom decile of the income distribution in 1994 suffered a staggering 27 percent decline in household income. But poor households suffered proportionally lower income declines than richer households. Household income fell by 65 percent for those who were in the top decile in 1994.[20] Therefore, the crisis impacted the income of the better off more than that of the poor.

Clearly, from a welfare point of view, lower-income families may still have been hit the most. Because of the concavity of preferences, the welfare loss to poor households can be more devastating than that suffered by richer households, even when the drop in income is proportionately smaller. The resulting drop in consumption of basic goods and services may be proportionally bigger for the poorest households because they tend to consume all that they earn and more, and because they rarely have access to consumption smoothing mechanisms. Indeed, a large number of people whose income was just

[19] Open unemployment rate as calculated by INEGI from April 1994-April 1995.
[20] Maloney and Cunningham (1999).

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above the poverty line prior to the crisis fell into extreme poverty a year later: 78 percent of those in the second-to-bottom decile of family income distribution before the crisis, and 67 percent of those in the third-to-bottom decile, were in extreme poverty a year later.[21]

The experience of Argentina suggests that economies under a fixed exchange rate regime, such as the currency board, will adjust to an adverse shock more through employment adjustment than through real wage adjustment. The case of Mexico suggests that a flexible exchange rate will lead to a greater adjustment in wages than in employment. More study is needed to assess whether this is a cross-country regularity. The distributional impact differed significantly in the two instances. The adjustment through employment was more marked for the unskilled than for the skilled, while the adjustment through wages had a greater effect on the skilled than on the unskilled. In Argentina, the unemployment rate of the unskilled increased more than that of the skilled, while in Mexico, the real wage adjustment was greater among skilled workers. These results suggest that a flexible exchange rate regime may have less of a negative effect on the poor relative to the nonpoor, although little can be said on the relative welfare impact of these alternative adjustment mechanisms. As discussed in Chapter 1, flexible exchange rate regimes might result in lower poverty rates because the contraction of output resulting from an adverse shock is smaller than under less flexible regimes. In 1999, Chile abandoned the crawling peg in favor of a floating regime precisely to lower the impact of the crisis on employment and output.[22]

Sector and regional shocks also lead to significant bouts of unemployment on either a temporary or more permanent basis. Regions affected by recurrent droughts, such as northeast Brazil, endure high-income variations and severe temporary increases in unemployment. Regions that specialize in the production of a single commodity suffer greatly from international price volatility and changes in trade regimes. Swings in coffee and banana prices and sugar trade restrictions have, at various times, seriously impacted regions in Brazil, Colombia and Mexico, as well as the Central American and Caribbean countries. Downward price trends have caused persistent falls in income and the displacement of agricultural workers. Such trends tend to affect the poorest people in poor countries (such as Belize and Honduras) and the poorest regions within countries, such as northeast Brazil and southern Mexico, in part because they are the least diversified.

In the case of economy-wide or sector shocks, there is a strong rationale for contingent unemployment protection such as unemployment insurance and workfare programs to help smooth consumption.[23] Unemployment spells bring about a large and sudden loss of income while at the same time diminishing informal and formal support mechanisms, such as intra-family transfers and access to credit. When real wage volatility dominates employment volatility, real wage adjustments can be better addressed with alternative income support mechanisms such as targeted human development programs (see Chapter 5).

Individual unemployment shocks are more likely to involve voluntary behavior (such as shirking or engaging in activities inconsistent with job responsibilities), which makes

[21] Ibid.

[22] Oxford Analytica Brief (September 10, 1999).

[23] Contingent unemployment protection is protection conditionally available, depending on the occurrence of an unemployment spell.

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the rationale for contingent unemployment protection less strong than in the case of an exogenous shock such as a macroeconomic crisis or a natural disaster. Individuals have a greater degree of responsibility in the job loss, so contingent unemployment protection may have behavioral effects because the costs of being unemployed are reduced. If people are so well insured against unemployment that their level of income remains unaffected when they lose their job, then they in effect have an incentive to reduce effort during employment or a job search. For this reason, the incentive structure of labor market interventions must be carefully examined to deal with moral hazard problems.

At the same time, since searching for a job is time-intensive, a certain level of frictional unemployment is necessary for ensuring optimal allocation of human resources in the economy. As discussed above, where insurance is not available, poor people often take the first job that comes available, which can result in a poor match between employer and employee, lower productivity or underemployment. Therefore, contingent protection may improve overall welfare even in the case of individual unemployment shocks because it provides job seekers the time needed to look for the job that best suits their skills.[24]

Social Protection against Unemployment Risks

Social protection against unemployment risks is needed to improve resource allocation in an economy. Protecting the poor and those who fall into poverty as a result of unemployment helps to maintain minimum consumption levels for the jobless and their families. This affords the poor and unemployed sufficient time to search for an adequate job. It also provides a mechanism for reducing their risk exposure and enabling them to select riskier but more profitable activities. Multiple instruments are required to reach different target groups. Unemployment insurance is an effective mechanism to lower the risk exposure of formal workers. Other initiatives such as social assistance, workfare and microenterprise programs, target the poor and unskilled workers but cover only a fraction of the working poor. Training programs created to improve workers' future employability and to reinforce long-term poverty reduction can also be used as income transfer mechanisms.

Unemployment Insurance

The objective of unemployment insurance is to insure workers against unemployment risk brought about by aggregate, regional and idiosyncratic shocks. There are few unemployment insurance schemes in place in Latin America. Those that operate cover but a fraction of the overall working population, rarely more than 1 percent of the labor force. These programs are almost exclusively aimed at workers in the formal sector, who are already protected by a regulatory environment that stresses severance payments and barriers to firings.

Table 3.6 shows that existing unemployment insurance schemes provide low benefits for a relatively short time. Brazil has the biggest unemployment insurance system in the region, with around 350,000 beneficiaries, although its coverage relative to the overall target population is very low (about 7 percent

[24] Zilibotti and Marimon (1999) and Acemoglu and Shimer (1998).

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Table 3.6
Unemployment Insurance

	Law	Replacement funding	Benefit rates[a]	Benefit duration	Min/Max	Coverage	Require-ments[b]
Argentina	1991 Reformed in 1995	Worker: 1% wage Employer: 1.5% payroll	60%	4-12 months	Min: 1 mw Max: 4 mw	Employees	1 (12), 2, 3
Barbados	1982	Worker: 1.5% wage Employer: 1.5% payroll	60% 10 weeks 40% 16 weeks	26 weeks in a 52-week period		Employees aged 16-64	1(6)
Brazil	1986 Reformed in 1990	FAT (.65% tax on total sales)	1-3 minimum wages	4 months	Min: 1 mw	Employees	4 (36, 4), 5, 6
Chile		Government	$37 monthly for the first 6 months, $18 last 6 months	Max. 1 year [b]		Employees	2, 4 (12,2), 5
Ecuador	1958 Reformed in 1988	Worker: 2% salary Employer: 1% pay-roll	One time sub-sidy, amounts decided each year			Employees	1 (24), 7
Mexico		Social Security	95% pension	5-year maxi-mum		Employees aged 60-65	
Uruguay	1981	Contributions to Social Security	Up to 50%	6 months	Min: 0.5mw Max: 4 mw	Employees in commerce and industry	1 (6), 5, 3, 8
Venezuela	1989 Reformed in 1998	Worker: .7% wages Employer: 1.5% pay-roll	Up to 60%	13-26 weeks Max. $44		Employees	1 (12), 2

Source: Social Security Programs throughout the World – 1995, U.S. Department of Health and Human Services, as it appears in Márquez (2000).

Notes:

mw = minimum wage.

[a] Percent of the last wage.

[b] Requirements:

1 (s) – Be employed s months before receiving subsidy.

2 – Availability to work.

3 – Does not receive other social security benefits.

4 (s, j) – Not having received more than s months of benefits in the last j years.

5 – Unemployed for reasons outside the conduct and willingness of worker.

6 – Subject to economic need.

7 – Waiting period of x days.

8 – At least 12 months between two periods in which unemployment subsidies are received.

[c] Beneficiaries also receive family support and medical and maternity benefits.

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of the unemployed). Because only formal sector workers have access to the system, most beneficiaries are skilled (45 percent have completed secondary school or more), and benefits accrue to the middle-income deciles. Only around 3 percent of expenditures on unemployment insurance reach the bottom quintile of the population.[25]

In Argentina, participation in the unemployment insurance system is limited, despite big increases in the number of unemployed workers. The number of beneficiaries has remained stable at around 100,000 workers. More than 70 percent of them are prime-age males, and more than 50 percent are not household heads.[26]

In Venezuela, the unemployment insurance system was legally enacted in 1989 but never implemented. The system was reformed in 1998 to protect beneficiaries through a mix of individual and collective insurance programs operated by competitive insurance providers. But the reformed program has yet to be implemented. Given that only workers with regulated, taxable contracts are entitled to benefits, it is likely that the distribution of beneficiaries will be similar to that of Argentina and Brazil.[27]

Mexico and Uruguay have unemployment insurance programs operated by the social security system. In both cases coverage is quite limited, and in the former it is just an advance payment of old age pensions for a maximum period of five years. In Barbados, the unemployment insurance system also has limited coverage, although it is quite well adapted to the needs of an island economy with frequent but short episodes of unemployment concentrated in the tourism industry.[28]

Common to all of these programs is eligibility criteria based on past employment histories, which are necessary to limit coverage to the unemployed rather than to those outside the labor force. Given that a large share of poor workers are concentrated in the informal sector, where work histories and job losses cannot be easily monitored, many poor people are automatically excluded from unemployment insurance. The severance payment system, for example, has only applied to formal contract workers. Eligibility criteria and enforceability of insurance contracts are the reasons why unemployment insurance schemes have traditionally benefited workers belonging to the middle quintiles of the income distribution.

These unemployment insurance schemes are financed either through general taxation or payroll taxes. Payroll taxes increase the cost of labor, thus inducing more capital-intensive technologies and lowering overall employment. From this point of view, general taxation is more efficient. When payroll taxes are used, companies with high layoff records and workers with frequent unemployment spells should pay higher unemployment insurance premiums. This would reduce incentives for temporary layoffs and improve the financial sustainability of the system.

Unemployment insurance savings accounts are an alternative financing mechanism to traditional unemployment insurance, but with fewer adverse incentives. Under these schemes, individuals are required to save a portion of their incomes into personal interest bearing accounts, which can be drawn upon during periods of unemployment. If an account is exhausted during an unemployment spell, the government lends it money, to be repaid

[25] Paes de Barro and Henriques (1999).

[26] Mazza (1999).

[27] Márquez (2000).

[28] Ibid.

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during employment periods at the same interest rate. Positive balances at the time of retirement are converted into retirement income. This can minimize negative incentives to search for employment.[29] Defaulting on previously accumulated credit obtained from the government could be punished with exclusion from the program.

One of the main features of these mandatory savings-based schemes is the fact that, in theory, eligibility can automatically be extended to all labor force participants without the need to distinguish between the formal and informal sectors. In practice, however, poor workers are excluded because of their limited saving capacity. For this reason, these schemes may have to incorporate a redistributive element to subsidize the accounts of the poor.

While design features of unemployment insurance schemes can be improved to provide increased access to the poor, it is doubtful that significant progress can be made in substantially extending coverage as long as the majority of the poor are in the informal sector of the economy. Other instruments that are specifically poverty targeted and that include technology to resolve the monitoring problem will be more effective in reaching the poor.

Cash Transfers

Cash transfers offer a way to protect the incomes of unemployed and underemployed workers whose families fall below a predetermined income level. Cash transfers are conditioned on family income levels rather than employment status. They can therefore be used to tackle the income variability produced by economic shocks, regardless of the employment status of the beneficiaries. A cash transfer can help to smooth consumption levels across periods of wage variability. More sophisticated cash transfer schemes can also help reduce the intergenerational persistence of poverty by requiring families to invest in their children's health and education, improving human capital accumulation among the poor in the process (see Chapter 5).

However, unconditional cash transfers are not compatible with labor market incentives, and can induce labor supply distortions. Whenever the entitlement to receive the transfers vanishes as individual labor income rises above a predetermined level, cash transfers create disincentives to work. Withdrawing the benefit after an individual finds a job can lead to a high marginal tax rate. *Progresa* in Mexico successfully resolves this issue by making transfers conditional on initial rather that current income.[30] Cash transfers also tend to create strong entitlements among the beneficiaries, making it difficult to adjust either the number of beneficiaries or the amount of benefits in a counter-cyclical fashion.

Cash transfer programs that include a self-targeting mechanism to target unemployed and unskilled workers are more suitable for dealing with unemployment risk. The requirement to work is a self-targeting mechanism that is compatible with labor market incentives. It also simplifies verification and enforcement of eligibility, and protects against extending benefits to families who do not need them. Such is the appeal of workfare programs.

[29] Feldstein and Altman (1998).

[30] Gómez de León and Parker (1999).

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Workfare Programs

The objective of workfare is to transfer resources to unemployed and (usually) unskilled workers while limiting perverse incentives to work. These programs offer wages in exchange for work. In other words, they are an unemployment insurance contract coupled with a technology to monitor working status.[31] If the wage rate offered is low compared to prevailing market wages for unskilled workers, these schemes will only appeal to those unskilled workers who have very few opportunities to earn money elsewhere. Workfare programs are therefore self-targeted. In particular, they can effectively target unskilled workers, since the reservation wage and the opportunity cost are positively related to skills and the standard of living.[32] Workfare programs are best suited to provide unemployment protection for the working poor in the event of aggregate, regional, sectoral or idiosyncratic shocks.

Chile was the first Latin American country to successfully introduce workfare as an employment generation device to target poor and unemployed workers. At its height, the web of public works programs introduced to fight high unemployment caused by the 1982 recession employed 13 percent of the Chilean labor force.[33]

Argentina's federal government introduced intensive workfare programs during the 1995 crisis. *Trabajar* and similar programs are financed and supervised by the federal government using the *Fondo Nacional de Empleo* (National Employment Fund), which is financed through payroll taxes. The resources are used to build small and labor-intensive public works, such as social infrastructure, roads and sanitation works. These schemes are managed by a variety of agencies, from local and state governments to nongovernmental organizations.[34]

In Mexico, public works programs concentrate on rural roads and social infrastructure. The programs are financed by allocations from general revenues in the federal budget, and managed by state and local governments. Peru's *Fondo Nacional de Compensación y Desarrollo Social* (National Social Compensation and Development Fund) is used as an employment generation mechanism that can be quickly adjusted to changes in local labor markets.[35]

The direct impact of a workfare program should be measured by the increase in the family income of beneficiaries relative to the income they would have had without the program. It cannot be assumed that the total amount of the transfer translates into higher income, since beneficiaries forego earnings from alternative uses of their time. The total poverty reduction impact can be measured as the medium-term increase in community income, which includes the value of assets and services produced that benefit the community overall. For this reason, poorer workers and communities should be targeted, and a system established to ensure adequate selection of beneficiaries and project quality.

The benefit of this type of program in terms of self-targeting—and in so doing avoiding the administrative costs of means-tested targeting—does not necessarily imply greater transfers to the poor. These programs tend to face high operating and administrative costs associated with managing public works

[31] Hopenhayn and Nicolini (2000).
[32] Lipton and Ravallion (1995).
[33] Márquez (2000).
[34] Ibid.
[35] Verdera (1998).

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projects. Cost-effectiveness in terms of direct benefits is low relative to other transfer mechanisms. *Trabajar* is well targeted, for example, with 70 percent of participants coming from the bottom quintile and 94 percent from the bottom two quintiles of income distribution.[36] Yet the cost of transferring one dollar of direct benefits to the poor ranges from four to five dollars. This suggests that *Trabajar* can be justified as an anti-poverty program only if it generates sufficient indirect benefits, such as the value of the social and physical assets it produces, to outweigh its large costs.[37]

Short-term poverty impact assessments that ignore these indirect benefits might otherwise conclude that public workfare programs, although well targeted, may do no better than a uniform untargeted transfer in reducing poverty and income variability. However, workfare programs may provide other benefits that are harder to quantify, such as improvements in human capital through on-the-job training and reduced stigma from unemployment. The value of on-the-job training should be evaluated in terms of the probability of a beneficiary finding a job relative to a nonbeneficiary, and in terms of their relative wages.

Although workfare programs may have no better impact than other alternatives in terms of reducing the proportion of people below the poverty line, they may be substantially more effective in reaching the very poor. If workfare programs in fact attract those most in need, the transfer will be effective in reducing the severity of their poverty, although not necessarily in pulling them out of poverty altogether. The impact on the poverty gap and the severity of poverty may be greater when benefits attract very poor workers, whereas the impact on the poverty headcount may be greater when those who are not so poor benefit. Thus an important policy decision—and one which depends on the available budget, administrative cost, wage distribution and society's willingness to tolerate severe poverty—is whether to have the widest possible coverage of the poor, or to reduce the coverage but award higher wages.[38] The latter might attract nonpoor workers and induce job rationing. More empirical work is needed to assess the impact of these different strategies on the poor in general and on the very poor in particular.

Appropriately designed workfare programs reduce levels of leakage to the nonpoor. However, the problem of excluding certain demographic groups can be a serious one. The nature and location of the activities offered through these programs—mainly construction work in sites that are far from the household—mean that they tend to exclude women, children, the disabled and the elderly from any direct benefit, although a household certainly benefits when its head receives a transfer. The needs of children and the incapacitated to work have to be addressed through different types of programs, while greater female participation in workfare programs can be achieved through more careful program design.

As mentioned, low levels of participation by women are the result in part of the type of work offered through workfare programs. But they are also the result of women's limited experience in the workplace, the fact that there are so few outreach programs for women, the distance of the work from the household, and women's preference for part-time work, given that they bear the burden of household responsibilities. To target women, programs must offer work that is traditionally less male dominated; piece-rate and house-

[36] Jalan and Ravallion (1998).

[37] World Bank (1998).

[38] Lipton and Ravallion (1995).

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based work; and jobs that offer childcare facilities. The *Wawa Wasi* program in Peru is a good example of an effective childcare scheme where one in a group of women is responsible for caring for the group's children, while the other women in the group can start working outside the household.

Another significant problem associated with publicly funded and administered workfare programs is that they traditionally have had poor accountability. Project selection becomes a political matter, with noncompetitive bidding procedures, misappropriation of funds, and kickbacks hidden in the cost of providing materials. Inadequate supervision is associated with poor quality infrastructure. Nepotism and fraud lead to inappropriate selection of beneficiaries. These issues need to be carefully addressed during project design through well-defined project selection criteria and approval procedures, cofinancing of nonlabor costs by local governments, administrative controls, and monitoring that includes technical and financial audits and an impact evaluation. Problems with corruption can be overcome by establishing small and independent units to manage the bidding processes of social investment funds, and by increasing community participation in project selection, financing and supervision at the local level.

Job Subsidies and Promotional Employment Contracts

Programs that subsidize private sector jobs are much less commonly used than public workfare programs. These programs lower labor costs to private firms, thus encouraging employment creation following aggregate and sector shocks. Job subsidies for hiring young entrants in the labor force may work as a substitute for training programs by providing private firms with a subsidy for investing in the human capital of young workers. These subsidies however may cause firms to displace one type of worker with another. Their effectiveness on net job creation must be evaluated.

Argentina is one of the few countries that uses private sector job subsidies, employing a variety of mechanisms since 1995 to provide public subsidies to private sector employers who have increased their numbers of employees. Workers displaced from the public sector as well as unemployed workers not receiving unemployment insurance have been given vouchers that employers can use to pay tax liabilities. Firms can also opt for tax rebates if hiring particular groups of workers such as youth, women and veterans under promotional contractual forms. Particular activities such as reforestation are also subsidized if they hire new workers. The most visible program has been the promotional employment contracts that are less rigid than regular full-benefit contracts, do not institute rights to severance payments, and have lower payroll tax liabilities.[39]

Wage subsidies can be effective in targeting vulnerable groups. However, they introduce labor market distortions by changing the relative price of different types of workers. Caution is needed in judging such schemes. The net positive impact on employment generation can be undermined if other groups of workers are simply displaced. Temporary contracts can give rise to a dual labor market system within the formal sector itself. Firms might pursue their employment adjustment strategies by using temporary contract workers who are usually young or low skilled as

[39] Márquez (2000).

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a counter-cyclical buffer. This then provides greater protection to permanent workers whose dismissal costs are high. A consequence of concern is that firms then have fewer incentives to invest in the human capital of temporary workers. If long-term contracted workers retain high job protection, then the employment volatility of temporary contracted workers is likely to be very high, a problem that has been experienced in countries such as Spain.[40]

Dual labor markets can result when basic benefits, such as access to health and unemployment insurance and pensions, are only granted to long-term contracted workers. This can be prevented by extending these legal rights to temporary workers, and by reducing gender and ethnic discrimination.

Assistance to Microenterprises

Assistance to microentrepreneurs in the form of training and access to credit does not lead to the same kind of incentive problems caused by public workfare and employment subsidy programs. Since a large proportion of the Latin American labor force is self-employed, assistance to microenterprises should be an important part of government strategies to reduce unemployment risk. Technology shocks may speed up the obsolescence of microentrepreneurs' limited skills and so displace their income source. Training and improved access to credit help to both protect against future risks (by increasing skills and the asset base) and overcome shocks (by retraining in case of obsolescence, and by smoothing consumption). Credit will generally be more efficient in dealing with individual rather than aggregate shocks, since the amount of credit available may shrink during economic downturns.

Microfinance interventions do not necessarily reach the poorest workers directly. However, they do have important spillover effects on local economies, particularly in expanding nonagricultural (and more profitable) opportunities and low-skill employment in rural economies. They also expand the set of savings instruments available to poor people in rural areas beyond the traditional seasonal savings instruments.[41]

The best strategy for making more credit available to microenterprises is to develop efficient national financial systems (which provide competitive instruments for savings and credit) and appropriately supervised retail institutions that have a wide client outreach (banks, credit unions and financial nongovernmental organizations). To encourage the extension of services to poorer areas, governments can provide training and financial incentives to second-tier institutions that are capable of reaching the target population. Local financial markets can also be strengthened through the transfer of alternative lending technologies that utilize local knowledge and structures, and by financing fixed starting costs involved in branching into low-income communities. Dissemination of information to microenterprises regarding availability of financial services and the requirements for gaining access to these services is but one of the mechanisms to increase participation by low-income and self-employed workers.[42]

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[40] Bentolila and Dolado (1994).

[41] For example, agricultural households tend to accumulate and reduce resources by purchasing and selling small livestock, usually buying high and selling low because of the common economic cycle.

[42] Legovini and Sánchez (1999) and Chaves and Sánchez (1995).

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In the area of training, the rationale for intervention is that there is no private market for short and practical training programs tailored to microentrepreneurs, mainly because of an information failure. Innovative microenterprise training schemes have been implemented in a number of Latin American countries (see Table 3.7). A pioneering program in urban areas of Paraguay in the mid-1990s was the *Programa Nacional de Información y Capacitación* (National Information and Training Program), which opened competition to all institutions willing to design and implement such training programs. At the same time, microentrepreneurs were provided with vouchers on demand to partially cover the cost of training. An information clearinghouse was set up to facilitate information flows between microentrepreneurs and training providers. This resulted in a multitude of private initiatives utilizing local infrastructure (renting school space, chambers of commerce and trade organizations) and offering courses on everything from cooking and baking to electronics and basic accounting. Anecdotal evidence suggests that the practical skills acquired led to immediate sources of income for the self-employed. Rigorous evaluation is needed to establish the impact of these programs and the sustainability of the newly created markets in this area.

Training Programs and Income Support

Training programs are widely used as a mechanism to transfer income through subsidized classroom training, job search assistance, and apprenticeships in private firms. Unemployed youth have often been targeted. Table 3.8 shows the coverage and expenditures on youth training programs in various countries. In most cases, these programs are financed by the government and carried out by private and nongovernmental organizations with little or no intervention by traditional national training institutions. Even if originally conceived as pure education programs, these initiatives now include an income support component. However, training programs are better suited to tackle the unemployment and underemployment created by sectoral or regional shocks than aggregate shocks, given that their success depends on general labor market conditions.

The operational technology of these training programs is based on *Chile Joven*, a pioneering youth training program that combines a training scholarship with a three-month paid apprenticeship in a private firm. Instead of directly purchasing training services, resources are used to create a fund that is managed by a central government agency. The agency requests proposals for training projects and funds are granted through open bidding. The proposals must describe the content of the courses to be taught and include a commitment from private sector firms to accept the trainees as apprentices, normally for three months. The provision of scholarships serves as an income transfer to beneficiaries, takes them off the unemployment line, and provides labor market experience during the apprenticeship.

The contracting mechanism of *Chile Joven* is in fact a way to create incentives for training providers to deliver courses that are of good quality and relevant to the labor market. This creates pressures for revamping the training system both institutionally and in terms of content. Firms accepting apprentices in effect monitor the adequacy and relevance of the training provided. The program is therefore rightly perceived as a tool to modernize and connect the training system with real productive activities.

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Table 3.7
Sampling of Employment Generation and Microenterprise Assistance Programs

	Beneficiaries		Expenditure	
	Number	% of total labor force	US$ millions	% GDP
Argentina		9.31		0.09
Public-financed employment with public resources				
1. Programa de Asistencia Solidaria (PROAS) Unemployed household heads in public employment; executed jointly by Social Development Secretariat and state governments	260,000	2.7	54.5	0.020
2. Programa de Entrenamiento Ocupacional	94,000	1.0	20.0	0.007
3. Programa de Servicio Comunitario (ASISTIR) Female household heads in community development activities	25,000	0.3	2.6	0.001
4. Programa Trabajar Unemployed household heads in public employment; executed by local governments and NGOs	233,000	2.4	44.9	0.017
Private Sector Employment Promotion				
5. Programa de Empleo Privado para Pequeñas y Medianas Empresas Subsidy for new jobs for unemployed workers in firms with less than 100 employees	254,000	2.7	42.4	0.016
6. Programa Nacional de Forestación Intensiva (FORESTAR) Subsidy for new jobs for unemployed workers in new agricultural/forestry firms	21,000	0.2	4.4	0.002
7. Programa de Reinserción Laboral Subsidy to workers who find a job while receiving unemployment insurance	na		na	
8. Programa de Movilidad Geográfica Subsidy to workers who have to move from place of residence to keep the job	na		na	
9. Bono para la Creación de Empleo Privado (BOCEP) Fiscal credit for workers displaced from state payroll; new employer can use as collateral for credit from public banks	5,200	0.1	73.4	0.027
Brazil[1]	221,800	0.5	1,188.8	0.210
1. Employment and Income Generation Program (PROGER) Special credit lines to MSMEs, cooperatives and informal sector	221,800	0.5	1,188.8	0.210
Chile	4,300	0.1	1.4	0.000
1. Trabajadoras Temporeras Childcare and educational services for children of agricultural temporary workers	4,300	0.1	1.2	0.002
2. Programa de Desarrollo del Microempresario Indígena Strengthening of economic networks of indigenous groups through microenterprise creation and support	na		0.2	

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Table 3.7 (cont.)
Sampling of Employment Generation and Microenterprise Assistance Programs

	Beneficiaries		Expenditure	
	Number	% of total labor force	US$ millions	% GDP
Costa Rica	8,100	0.71	3.3	0.04
1. Programa Nacional de Generación de Empleo				
Transfer of a minimum wage to unemployed workers who participate in construction of social infrastructure and service delivery	2,100	0.2	0.1	0.001
2. Pro Trabajo				
- Incentives for labor reinsertion and temporary work: Subsidy of 50% of minimum wage for on-the-job training for unemployed/vulnerable workers	3,400	0.3	2.1	0.026
- Ideas for productivity: Support for microenterprise creation	2,600	0.2	1.1	0.013
Jamaica	6,000	0.61	21.2	0.50
1. Micro Investment Development Agency				
Credit for microenterprise development	6,000	0.6	7.6	0.181
2. Government of Jamaica/Government of the Netherlands Microenterprise Project (GoJ/GoN MEP)				
Credit for microenterprise development	na			0
3. Govt. of Jamaica/European Union Program				
Credit for microenterprise development	na		1.4	0.034
4. Mel Nathan Institute for Development and Social Research (MMI)				
Community development services	na		1.6	0.038
5. Enterprise Development Trust (EDT)				
Credit for microenterprise development	0	0	0.2	0.004
6. The Women's Construction Collective (WCC)				
Training and credit for female construction workers	na		na	
7. ASSIST Ltd.				
Credit for microenterprise development	na		0.1	0.002
8. Beekeeping and Honey Bee Project				
Training and employment for youth in beekeeping activities	na		0.3	0.007
9. SESP				
Training and temporary employment for unemployed workers	na		10.0	0.237
Mexico	1,024,000	4.42	1,802.0	0.51
1. Programa de Conservación de Caminos Rurales				
Rural public jobs for unemployed youth, federally financed, organized by state and local governments	712,000	3.1	350.0	0.099
2. Programa de Construcción de Infraestructura Física y Obras de Empleo Productivo				
Social infrastructure public employment for unemployed youth, federally financed, organized by state and local governments	312,000	1.3	1,452.0	0.410
3. Programas Sociales Privados				
Club de Leones y Rotarios	na	na	na	na

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Table 3.7 (cont.)
Sampling of Employment Generation and Microenterprise Assistance Programs

	Beneficiaries		Expenditure	
	Number	% of total labor force	US$ millions	% GDP
Peru[2]	27,800	0.93	100.1	0.002
1. Programa de Autoempleo y Microempresa (PRODAME) Training and credit for microenterprise creation and support	4,200	0.1	0.1	0
2. FONCODES Social investment fund builds small public works using local work force	23,600	0.8	100.0	0.002

Source: Márquez (2000).

[1] PROEMPREGO is excluded from the Brazilian list of employment generation programs because it is an investment program with obvious employment consequences, but with the primary objective of improving such areas as sanitation, environmental infrastructure and urban transport through BNDES lines of credit.

[2] Peru has also implemented a number of its employment generation programs as labor-intensive investment subprojects, complementing the normal investment activities of institutions such as the Instituto Nacional de Desarrollo (INADE), Programa Nacional de Asistencia Alimentaria (PRONAA), Empresa Nacional de Edificaciones (ENACE), Fondo Nacional de la Vivienda (FONAVI), Instituto Nacional de Infraestructura Educativa y de Salud (INFES), SEDAPAL, CORDECALLAO, CORDELIMA, INABIF, Fondo de Compensación Municipal, PROMANACHCS (Ministerio de Agricultura), and the Ministerio de Transporte.

Argentina and Peru have programs (*Proyecto Joven* and *Pro Joven,* respectively) modeled after *Chile Joven* that target low-income and unemployed youth. Argentina also uses the contracting mechanism of the Chilean program to develop training for other population groups, and it grants subsidies to private employers who hire apprentices under promotional employment contracts.

Brazil uses competitive bidding for training, but the programs operate in a highly decentralized way. The PLANFOR program is financed through a fund financed by the payroll tax. Funds are allocated to states and local governments, which in turn hire different private and public providers through competitive bidding. States must present annual training plans to the PLANFOR administration, and funds are allocated in proportion to the state's share of the total workforce. This method of allocation is in the process of being changed to reflect the state's level of poverty and education, as well as its experience with carrying out annual training programs. The government is undertaking an impact evaluation of PLANFOR that is expected to provide an accurate measure of its effects on youth employment and poverty.

Costa Rica uses a national training institution (INA) as a channel for providing training services to semi-skilled and skilled unemployed workers. Using its own facilities and instructors, INA schedules and delivers training programs for low-income workers in marginal urban areas, displaced public sector workers, and handicapped workers. A special line of action enables INA to contract out to other training institutions, but no special targeting mechanism is used.

Mexico has the biggest training and income transfer program in the region. PROBECAT has been used effectively as a protective device for unemployed and displaced workers, and it expands and contracts

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Table 3.8
Youth Training Programs

	Beneficiaries		Expenditure	
	Number	% of total labor force	US$ millions	% GDP
Argentina	133,000	1.4	95.6	0.04
Brazil	740,500	1.6	310.2	0.1
Chile	36,600	0.8	18.3	0.03
Costa Rica	13,100	1.2	60.6	0.73
Jamaica	43,500	4.4	18.6	0.44
Mexico	410,300	1.8	135.0	0.04
Peru	1,500	0.1	5.0	0.01

Source: Verdera (1998) as it appears in Márquez (2000).

according to the demands of the economic cycle. PROBECAT provides scholarships to beneficiaries, and the state offices of the Labor Ministry organize a variety of training programs that are delivered locally. Evaluations have found the program to be reasonably successful in training and in increasing beneficiaries' incomes and their likelihood of employment. However, the positive effects tend to increase with beneficiaries who have higher levels of education.[43]

Experiences stress the importance of clearly defining the objectives to be pursued through these programs. If the goal is to increase workers' future employability and income, then training programs should perhaps target unemployed workers with work experience who are actually less likely to be poor. If instead the objective is to reduce the variability of incomes, then the income support component should be reinforced, with the understanding that the returns from the training component will likely be lower, since the targeted population is poor and low-skilled workers with little work experience.

Conclusion

Providing mechanisms to insure the poor and near-poor against the risk of unemployment is essential to protect them against sharp income downturns and to help them allocate their resources more efficiently so as to pull themselves out of poverty and contribute to economic growth.

Contingent unemployment support helps families avoid drops in consumption that, at critical moments in their lives, could permanently harm their children's growth and ability to learn, and thus their future earning capacity. It also reduces the exposure of the poor to unemployment risk, giving them an incentive to select higher risk but also higher return strategies. Finally, by giving the unemployed time to search for a job that matches their productive potential, contingent unemployment raises both the incomes and productive capacity of the economy overall.

As long as the majority of the labor force is in the informal sector, traditional unemployment insurance is not equipped to deal with the unemployment risk and income

[43] Secretaría de Trabajo y Previsión Social (1995).

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Box 3.1. Key Recommendations for Reducing the Unemployment Risk of the Poor

Reducing unemployment risk requires a combination of interventions to improve the productive choices of the poor, lower their probability of unemployment, and help them cope with the fall in income if jobs are lost. Robust mechanisms are needed to evaluate the impact of these instruments and to help design policy. Key areas that need to be addressed include the following:

Provide the poor with risk-pooling mechanisms to lower risk exposure and to improve the efficiency of their production by:

- Reforming labor market regulation that excludes informal sector workers from publicly mandated insurance systems (health, unemployment and pensions).
- Developing mechanisms to attenuate the monitoring problem associated with providing unemployment insurance to informal workers (through unemployment insurance savings accounts, for example).
- Subsidizing unemployment insurance for poor and unskilled workers.
- Facilitating the development of financial markets in general, and for microcredit in particular.

Strengthen the asset base of the poor to lower the probability of job loss by:

- Increasing availability of credit to strengthen the physical asset base of the working poor.
- Providing incentives for education and training to youth and microentrepreneurs.
- Providing mechanisms for on-the-job training through workfare and incentives to the private sector.

Provide transfer mechanisms to help the poor cope with declines in income when job loss occurs by:

- Limiting the use of unconditional cash transfers because of their perverse incentive against work.
- Implementing workfare programs that provide a mechanism to target unskilled and unemployed workers.
- Improving the design of workfare programs to address the needs of specific categories of poor workers, particularly women.
- Providing financial incentives for training to support the poor and the young through unemployment spells while improving their skills.

Introduce robust impact evaluation mechanisms to evaluate the poverty impact and cost-effectiveness of workfare, training and credit programs.

variation of the poor. Viable alternatives are those that target the poor by imposing some participation cost, such as workfare and training programs. In addition, microenterprise programs target the poor before they become unemployed by reducing unemployment risk and increasing microentrepreneurs' ability to cope. Box 3.1 presents the main recommendations for reducing unemployment risks of the poor.

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Appendix Table 3.1
Urban Poverty Incidence in Occupational Categories[a]
(In percent)

Country	Year	% of total population in poverty	% of total employed population in poverty	% of public employees in poverty	% of private sector employees in poverty (no professionals, or technicians)			% of self-employed in poverty (no professionals or technicians)	
					Business with over 5 employees	Business with up to 5 dependents	Domestic employees	Industry and construction	Trade and services
Argentina (Greater Buenos Aires)	1994	13	5	-	5[b]	7	10	4	3
Bolivia	1994	47	37	30	40	51	30	46	39
Brazil[c]	1993	46	37	-	31	47	55	50	38
Chile	1996	22	15	7	17	24	20	10	9
Colombia (8 principal cities)	1994[e]	45	34	15	41[d]	-3	1	42	42
Costa Rica	1994	21	12	5	11	19	25	24	18
Guatemala	1989	53	42	-	45	54	42	47	34
Honduras	1994	75	66	42	71	83	56	84	77
Mexico	1994	37	29-	33[f]	-		56	27[g]	-
Panama	1994	31	18	6	16	30	28	26	25
Paraguay (Asunción)	1992	39	27	-	38	36	29	32	33
Uruguay	1994	10	6	2	6	7	13	12	7
Venezuela	1994	47	32	38	29	48	41	32	32

Source: ECLAC.

[a] Refers to the percentage of employees who live in households below the poverty line.

[b] Includes public employees.

[c] In the columns corresponding to firms employing five or more dependents, each person is considered an employee .

[d] Includes employees corresponding to firms employing up to five dependents.

[e] Since 1993, the geographical area of the survey has increased and now encompasses almost all the urban population. Until 1992, the survey encompassed over half of the urban population.

[f] Includes public employees and those who work in firms with up to five dependents.

[g] Corresponds to the total number of people who are self-employed (excluding professionals and technicians).

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Appendix Table 3.2
Composition of Educational Achievements by Quintile
(In percent)

	Quintile					
	I	II	III	IV	V	Total
Argentina 1996 (Greater Buenos Aires)						
No Education	0.1	-	-	0.1	-	-
Some Primary	20.0	15.9	12.2	8.9	3.2	11.2
Primary Completed	-	-	-	-	-	-
Some Secondary	68.0	66.9	59.0	53.3	29.4	53.6
Secondary Completed	6.0	10.0	12.7	14.6	18.6	13.0
Some University	4.7	5.8	12.1	16.5	24.0	13.6
University Completed	1.2	1.4	4.0	6.6	24.8	8.6
Graduate	-	-	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0
Bolivia 1996						
No Education	33.2	21.9	11.3	9.0	4.3	14.9
Some Primary	46.1	38.6	32.1	27.7	16.9	31.1
Primary Completed	4.6	6.2	7.1	6.0	5.1	5.8
Some Secondary	13.4	23.2	31.4	30.1	27.2	25.4
Secondary Completed	1.8	6.6	11.2	14.8	16.6	10.8
Some University	0.8	2.7	5.4	9.8	16.5	7.8
University Completed	0.1	0.8	1.6	2.6	13.2	4.2
Graduate	-	-	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0
Brazil 1996						
No Education	34.3	24.3	18.9	9.6	3.4	16.6
Some Primary	49.7	48.7	43.8	36.9	21.2	38.8
Primary Completed	3.7	5.5	5.7	5.5	2.9	4.7
Some Secondary	11.9	21.0	30.0	42.9	46.7	32.3
Secondary Completed	0.1	0.2	0.5	1.4	3.0	1.2
Some University	0.2	0.3	1.0	3.6	21.0	6.0
University Completed	-	-	-	0.1	1.8	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Colombia 1996						
No Education	17.5	11.0	8.1	5.2	2.3	8.1
Some Primary	57.7	51.7	43.1	36.2	20.2	40.1
Primary Completed	5.2	5.9	5.8	5.1	2.9	4.9
Some Secondary	18.8	29.8	39.5	46.5	46.3	37.5
Secondary Completed	0.2	0.4	0.7	1.3	3.0	1.2
Some University	0.6	1.2	2.7	5.5	22.4	7.4
University Completed	-	-	-	0.2	1.7	0.5
Graduate	-	-	-	0.1	1.3	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Costa Rica 1996 (National)						
No Education	19.0	14.2	12.2	7.8	6.0	11.7
Some Primary	40.6	33.6	29.4	24.3	16.0	28.5
Primary Completed	25.3	29.9	27.8	28.4	19.1	26.0
Some Secondary	9.6	14.0	17.7	19.5	17.5	15.7
Secondary Completed	3.0	4.6	7.7	10.0	14.5	8.1
Some University	1.4	2.3	3.5	6.3	12.0	5.2
University Completed	0.2	0.6	0.8	1.3	5.2	1.7
Graduate	0.8	0.8	0.8	2.4	9.7	3.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

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Appendix Table 3.2 (cont.)
Composition of Educational Achievements by Quintile
(In percent)

	Quintile					
	I	II	III	IV	V	Total
Dominican Republic						
No Education	35.5	28.9	24.3	21.2	17.1	25.4
Some Primary	34.9	32.8	28.5	25.7	22.8	28.9
Primary Completed	5.3	6.0	5.8	6.1	5.2	5.7
Some Secondary	19.7	25.1	29.2	29.9	26.9	26.2
Secondary Completed	3.5	5.3	7.7	9.5	10.6	7.3
Some University	0.9	1.5	3.9	6.4	11.3	4.8
University Completed	0.1	0.4	0.5	1.1	5.1	1.5
Graduate	-	-	0.1	0.1	0.9	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Ecuador 1995 (Urban areas)						
No Education	17.1	10.6	9.4	5.8	2.8	8.6
Some Primary	33.1	25.0	19.3	13.7	9.8	19.3
Primary Completed	29.4	32.0	27.4	23.8	16.1	25.2
Some Secondary	14.2	21.6	26.6	30.3	25.4	24.1
Secondary Completed	4.7	6.5	9.1	14.0	17.4	10.9
Some University	1.4	3.3	6.3	9.5	16.0	7.8
University Completed	0.0	0.5	1.0	1.3	5.5	1.8
Graduate	0.1	0.5	0.9	1.6	7.0	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
El Salvador 1996						
No Education	46.6	36.9	27.9	18.8	8.1	25.7
Some Primary	40.2	40.8	39.0	35.3	23.3	34.9
Primary Completed	2.5	3.9	4.2	3.3	2.6	3.3
Some Secondary	10.2	17.6	26.0	36.0	41.3	27.9
Secondary Completed	0.1	0.4	1.0	1.4	2.9	1.3
Some University	0.3	0.5	1.8	4.6	14.8	5.1
University Completed	0.0	0.0	0.0	0.0	0.1	0.0
Graduate	0.1	0.0	0.2	0.6	6.9	1.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Honduras 1996						
No Education	35.3	29.1	22.6	13.6	6.6	19.9
Some Primary	37.3	40.0	34.1	28.4	16.0	30.0
Primary Completed	21.9	22.4	26.5	28.9	23.1	24.7
Some Secondary	4.7	7.1	12.3	18.0	22.0	13.8
Secondary Completed	0.6	1.3	3.8	8.6	19.1	7.6
Some University	0.2	0.2	0.5	1.8	7.6	2.4
University Completed	-	-	0.1	0.5	3.5	1.0
Graduate	-	-	-	0.2	2.1	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Jamaica 1996						
No Education	2.3	2.0	0.6	0.7	0.6	1.2
Some Primary	6.4	6.1	6.3	4.0	4.1	5.3
Primary Completed	14.4	13.9	11.4	13.2	9.8	12.3
Some Secondary	74.3	73.6	76.2	70.6	61.6	70.6
Secondary Completed	0.9	1.8	1.4	4.5	6.4	3.3
More than Secondary	1.7	2.5	4.0	7.0	17.4	7.4
Total	100.0	100.0	100.0	100.0	100.0	100.0

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Appendix Table 3.2 (cont.)
Composition of Educational Achievements by Quintile
(In percent)

	Quintile					
	I	II	III	IV	V	Total
Mexico 1996						
No Education	26.0	16.8	12.1	7.7	3.8	12.3
Some Primary	35.2	27.9	21.8	17.8	8.8	21.2
Primary Completed	23.3	23.4	21.8	20.3	10.8	19.5
Some Secondary	13.1	25.5	31.0	31.5	23.4	25.4
Secondary Completed	1.7	4.7	9.9	15.3	25.3	12.4
More than Secondary	0.5	1.4	2.5	4.8	13.0	4.9
Graduate	0.1	0.3	0.8	2.4	14.8	4.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Nicaragua 1993						
No Education	44.1	34.5	23.3	17.4	9.5	24.2
Some Primary	34.8	31.0	27.8	27.4	19.7	27.5
Primary Completed	9.7	12.4	18.2	16.8	16.1	14.9
Some Secondary	10.2	20.3	27.7	32.2	38.5	27.0
Secondary Completed	0.8	0.8	1.3	3.3	4.1	2.2
Some University	0.3	1.0	1.6	2.7	11.2	3.8
University Completed	0.1	0.1	0.1	0.1	1.0	0.3
Graduate	-	-	-	-	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Panama 1996						
No Education	12.4	7.3	4.1	2.9	0.8	5.0
Some Primary	26.1	17.1	11.2	8.3	3.5	12.1
Primary Completed	32.5	27.5	23.3	18.2	9.2	21.0
Some Secondary	20.6	31.2	35.9	30.9	21.5	28.0
Secondary Completed	6.4	12.3	17.5	24.4	24.9	18.1
Some University	1.4	3.6	6.3	10.5	19.8	9.2
University Completed	0.4	0.7	1.0	3.1	11.8	3.9
Graduate	0.2	0.2	0.6	1.7	8.4	2.6
Total	100.0	100.0	100.0	100.0	100.0	100.0
Paraguay 1996 (Urban areas)						
No Education	7.8	4.4	3.3	2.3	0.9	3.4
Some Primary	41.5	31.0	23.6	16.8	8.6	22.6
Primary Completed	25.2	27.4	23.9	21.2	12.3	21.3
Some Secondary	20.7	29.1	31.2	30.9	23.3	27.2
Secondary Completed	4.5	5.6	13.3	17.9	24.8	14.4
Some Superior	0.2	1.7	3.8	8.8	17.1	7.3
Superior Completed	0.1	-	0.3	0.3	2.1	0.7
More than Superior	-	0.7	0.5	1.7	10.8	3.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Peru 1997						
No Education	18.0	12.3	7.1	4.8	2.0	8.0
Some Primary	25.3	19.2	13.1	8.6	4.7	13.0
Primary Completed	26.9	19.8	15.7	13.1	9.1	16.0
Some Secondary	27.2	42.2	49.8	50.1	41.1	42.8
Secondary Completed	0.5	1.4	2.5	3.2	4.6	2.7
Some University	2.2	5.1	11.8	20.2	38.4	17.5
University Completed	-	0.1	0.1	0.2	1.2	0.4
Graduate	-	-	-	-	1.2	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

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Appendix Table 3.2 (cont.)
Composition of Educational Achievements by Quintile
(In percent)

	Quintile					
	I	II	III	IV	V	Total
Uruguay 1996 (Urban areas)						
No Education	3.3	4.3	3.3	1.6	0.7	2.5
Some Primary	21.3	21.9	20.0	15.6	6.7	16.6
Primary Completed	34.4	28.9	26.1	23.9	14.8	24.9
Some Secondary	35.7	35.4	36.7	36.1	32.2	35.1
Secondary Completed	4.3	6.7	8.1	11.5	15.3	9.6
Some University	0.9	2.6	5.0	9.2	19.9	8.2
University completed	-	0.1	0.3	1.0	4.1	1.2
Graduate	0.1	0.1	0.4	1.1	6.4	1.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Venezuela 1996						
No Education	12.8	9.5	6.0	3.9	2.0	6.3
Some Primary	19.3	15.4	11.8	9.7	6.7	12.0
Primary Completed	26.0	25.8	26.0	22.3	14.7	22.4
Some Secondary	35.8	42.3	46.4	50.6	46.4	44.8
Secondary Completed	0.3	0.6	0.5	0.8	0.9	0.7
Some University	4.0	4.7	6.7	8.9	14.6	8.3
University Completed	1.7	1.6	2.6	3.6	14.0	5.2
Graduate	0.1	0.1	0.1	0.3	0.7	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

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Chapter 4

Social Protection for the Elderly Poor

Aging is predictable, and as such it is distinct from other types of adverse economic and natural shocks. But it is a shock, nevertheless, particularly for the elderly who are poor. Aging without proper insurance drastically increases the risk of falling into poverty. Since labor is the principal asset of the poor, opportunities for poor people to generate income by working diminish as they age because of declining productivity and increasing exclusion from the formal labor market. When not properly adjusted, pensions and other forms of savings can be eroded by inflation caused by macroeconomic mismanagement. Aging brings increased incidence of chronic disease, mental illness and other disabilities. Limited mobility makes the elderly especially prone to suffer harm from natural disasters. Finally, the rapid aging of a country's population also represents an aggregate shock to the economy.

The aging of a population can be forecast far more accurately and over a much longer time horizon than many of the other trends that involve social protection in Latin America. This means that it should be easier for governments to plan ahead, develop mechanisms to effectively manage an aging population, and help people head off the risks of falling into poverty in their old age.

There are two main types of elderly poor. The first is people who were not poor during their economically active years but then fall into poverty during old age because they fail to balance consumption and savings over their life cycle. Lack of foresight on a personal level, imperfect credit and insurance markets, and the disintegration of traditional family support structures all can exacerbate the risks of this group falling into poverty. The second group of elderly poor is the lifetime or structural poor who had subsistence level incomes during their working years. Whatever minimal savings they could afford were used up by consumption smoothing needs that were more urgent than saving for old age.

Social protection programs for those with the capacity to save for their old age during their economically active years are known as social insurance. These programs promote savings and insurance to smooth income over time.

Protection for the elderly who have been poor throughout their lifetimes is provided through social assistance programs. These programs redistribute income from higher to lower lifetime income groups. There can also be redistribution within social insurance programs, as part of the normal risk pooling of insurance programs and through the

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inclusion of minimum pension guarantees for low-income participants.

Both types of programs exist in Latin America, but social insurance for the elderly is significantly more important in terms of financial resources and the number of people covered. Overall coverage rates for the elderly poor, however, are notably low. Most Latin Americans who have spent their lives in poverty find themselves without any public support precisely when their ability to meet their own needs is weakest.

Given Latin America's current demographic structure, poor people are more likely to be young than old. But there are still a significant number of people who are both old and poor. Table 4.1 shows that between 6 and 27 percent of people over 65 are in the lowest income quintile. Women are especially at risk of falling into poverty when aging because of their smaller participation in the formal labor force and their longer life expectancy.

Trends in the labor market, along with demographic patterns, suggest that the ranks of the elderly poor are likely to increase in the years to come. Labor markets have become increasingly flexible in response to globalization and technological advances, but the institutional arrangements for social insurance have not kept pace. Current coverage of social insurance and social assistance programs for the elderly is far from ideal, and without appropriate institutional reforms, future coverage will be even worse because of demographic shifts, high levels of unemployment, and the region's changing occupational structure.

A wave of pension reform is shifting the region's social insurance from systems based on pay-as-you-go defined benefits to fully funded and defined contributions. These reforms will make systems more solvent, particularly important as the population ages. But there are limits to the social protection possible within the framework of these second-generation pension systems. Since individual benefits are tied more closely to individual contributions, an increasing number of people are at risk of being uninsured or underinsured.

Governments in Latin America clearly need to strengthen social assistance programs for the aged poor. But they face a familiar dilemma in attempting to do so. If governments provide more protection for the elderly poor, responsible people will save less for their old age. This is particularly true of the poor, since it is reasonable to say that the discount rate between present and future consumption—and thus the importance of present versus future consumption—is higher for poor people than for those who are better off.

Governments must strike a balance between insurance and assistance programs in building an integrated system of social protection for the elderly. A country's growth rate, the degree of informality in the labor market, the level of inequality, demographic patterns, institutional capacity to administer programs, and even political considerations play an important role in program design.

Demographic change over the next 20 years will lead to a 50 percent increase in the dependency ratio; that is, the ratio of the nonworking to the working age population. Countries in the region therefore need to take advantage of the current window of opportunity—characterized by a higher proportion of the population at working age—in order to introduce reforms that enhance the financial sustainability of social insurance and expand coverage of insurance and assistance to the poor.

To be politically and financially sustainable, reforms should be based on social insurance rather than social assistance, yet include strong redistributive components to

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fight against poverty of the elderly. Social insurance programs should provide incentives for the uninsured working poor and for employers in the informal sector to contribute to the system. Benefits should be closely tied to contributions, but the system should include minimum pension schemes for low-income contributors to be financed by general tax revenues.

This public pillar within the contributory system ensures minimum income levels of the contributors during old age. A social assistance program should ensure minimum income levels among poor people who have not contributed to the system. But noncontributory social assistance programs can only be a last resort. They should not be an alternative to participation in contributory social insurance; rather, their design should minimize crowding out of informal social protection provided within extended families. Benefits should also be means-tested and kept significantly lower than the minimum pension in the contributory system to avoid perverse incentives. To ensure that the elderly poor can maintain minimum consumption levels, in-kind subsidies can supplement social assistance allowances.

Aging and Poverty

Aging and poverty tend to be inversely related because the poor have lower life expectancies than the rich.[1] Poor people who survive to old age are less likely than wealthier members of their cohort to have savings or access to social insurance coverage.[2]

At present, the proportion of older people among the poor is relatively small. The proportion of them in the 65 and older age group is below 5 percent in most cases, and never greater than 10 percent (see Table 4.1).[3] Countries with a higher proportion of elderly poor include Jamaica (7.1 percent) and Costa Rica (8.2 percent). In Brazil, El Salvador and Honduras, the elderly poor are more concentrated in cities, while in Jamaica and Ecuador they are found more often in rural areas. The percentage of the cohort 65 and older in the bottom quintile of income distribution is between 15 and 20 percent in most countries. Brazil (7.9 percent) and Chile (6.2 percent) stand out at the low end, and Costa Rica (26.5 percent) and Ecuador (26.8 percent) at the high end. Although national averages mask important differences in rural and urban areas, it remains true that the proportion of the elderly in poverty is generally lower than the proportion of people in poverty among the total population. Only in Costa Rica, Ecuador, Honduras and Mexico is the share of the elderly in the bottom quintile more than 20 percent at the national level.

Still, even though most people in poverty are of working age or children, in many countries one old person in four is poor. So while it is important that governments address the needs of a greater number of children and

[1] Most claims on association of life expectancy with income are based on comparisons of country or regional averages. See Pritchett and Summers (1993).

[2] Poor people not only have shorter life expectancies, but they are also likely to experience deterioration from aging at a younger age than the better off because of poor nutrition, inadequate health care, and more physically demanding work. This means they are more likely to be unable to work at a younger age.

[3] The tables in this chapter compare households or individuals in the bottom quintile of income distribution with those in total income distribution. The differences between these two groups are thus dampened by the fact that the bottom income quintile is included in the total distribution. Thus, comparisons between the poor and nonpoor based on these data are underestimating true differences.

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Table 4.1
Socioeconomic Characteristics of Latin America's Elderly

Country	% of people in bottom income quintile who are 65+ (1)	% of 65+ who are in bottom income quintile (2)	Ratio of mean characteristic of age 65 to age 15-64 individuals (bottom quintile)		
			Income (3)	Family size[1] (4)	Years of education (5)
National					
Brazil	2.3	7.9	1.17	0.98	0.27
Chile	2.4	6.2	1.06	1.04	0.45
Colombia	5.4	20.0	1.03	0.78	0.44
Costa Rica	8.2	26.5	0.85	0.62	0.44
Dom. Rep.	4.0	18.4	0.94	1.08	0.39
Ecuador	5.9	26.8			
El Salvador	4.8	15.9	1.05	0.82	0.22
Honduras	4.2	22.8	0.99	0.79	0.26
Jamaica	7.1	17.4			
Mexico	4.7	20.3			
Nicaragua	2.7	16.8			
Panama	5.5	17.9	1.00	0.76	0.38
Peru	4.2	14.6			
Venezuela	4.0	19.2	1.01	0.80	0.33
Urban					
Argentina	5.8	9.4	1.03	0.57	0.59
Bolivia	4.7	21.2	1.10	0.61	1.01
Brazil	3.5	11.9	1.13	0.82	0.30
Chile	2.6	7.1	1.10	1.04	0.44
Colombia	4.8	17.4	1.00	0.90	0.52
Costa Rica	8.3	23.5	0.94	0.69	0.42
Dom. Rep.	4.0	17.3	0.97	1.19	0.36
Ecuador	4.1	19.9			
El Salvador	7.0	21.2	0.98	0.85	0.20
Honduras	4.9	27.2	0.89	0.87	0.38
Jamaica	5.8	16.4			
Mexico	4.3	19.4			
Nicaragua	3.3	19.7			
Panama	4.3	13.9	1.00	0.94	0.52
Paraguay	3.9	16.1	0.91	0.89	0.42
Peru	4.6	15.2			
Uruguay	5.7	7.4	1.10	0.77	0.52
Venezuela	3.8	19.0	1.00	0.78	0.38
Rural					
Brazil	0.8	15.9	1.13	1.08	0.26
Chile	1.6	3.7	0.99	1.18	0.28
Colombia	5.5	19.8	1.00	0.71	0.40
Costa Rica	8.5	30.4	0.87	0.61	0.44
Dom. Rep.	4.0	20.2	0.95	1.00	0.38
Ecuador	6.5	26.3			
El Salvador	4.3	15.8	1.08	0.76	0.28
Honduras	4.1	21.8	1.00	0.76	0.21
Jamaica	7.7	16.7			
Mexico	4.1	16.6			
Nicaragua	1.8	12.4			
Panama	5.4	16.5	0.89	0.79	0.34
Peru	3.2	12.9			
Venezuela	3.9	17.6	0.96	0.79	0.15

Source: IDB estimates based on household income and expenditure surveys.

[1] Based on heads of households.

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working age people in poverty—helping them to meet subsistence needs, invest in human capital, and save for their retirement years—they must also develop adequate social protection mechanisms for today's aged poor. Furthermore, as the demographic transition comes to a close in the coming decades, both the share of the old among the poor and the share of the poor who are old are likely to steadily rise.

Survival Strategies of the Elderly Poor

The main survival strategies among Latin America's elderly poor are to continue to work beyond normal retirement age and to rely on external transfers and the extended family for protection.

Table 4.2 shows that although labor force participation rates of the elderly are below those of prime working age (15-64), the difference is much smaller for those in the bottom income quintile.[4] At the national level, the elderly poor are more likely to continue to participate in the labor force than are the elderly who are better off (except in Costa Rica, the Dominican Republic, Nicaragua and Venezuela). Participation rates for the elderly are also much higher in rural than in urban areas, with the exception of Brazil, which has an extremely generous rural pension program for low-income groups.

Extended family structures play an important part in the survival strategies of the elderly poor. At the national level, the elderly poor have difficulty maintaining separate households, and instead form extended households with their younger relatives. Chile, El Salvador, Jamaica and Panama are exceptions, but in all countries—at the national level and in urban and rural areas—there are proportionately more elderly as household heads in the bottom quintile of the income distribution than there are elderly living alone. Therefore, while the elderly do not represent a high proportion of the poor in the region, they play an important role as heads of households of extended families that are likely to include several generations.

Reliance upon extended families helps to explain the absence of strong differences in average per capita income or family size for households headed by the elderly as opposed to working age people in the bottom quintile of income distribution (shown in columns 3 and 4 of Table 4.1). It seems likely that varying heads of households and household size serve to maintain per capita income, with extended families grouping or disbanding as economic circumstance demands.

Table 4.3 shows that in urban areas, pensions tend to account for the greatest share of income in households headed by the elderly, while in rural areas income from pensions is much less prevalent and sometimes nonexistent, while earnings and transfers are more important.[5, 6] The elderly poor in general are more dependent on income from pensions and

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[4] CELADE (1997) also found that although age-specific labor force participation rates decline as people age, more than one-third of Latin American men 65 and over in 1995 were still economically active.

[5] Information may overestimate the importance of pensions as an income source for the elderly to the extent that there is a selection bias in the survey design. For example, countries that have more extensive pension coverage are more likely to detail this as an income source in the questionnaire.

[6] Brazil and Chile are important exceptions because their rural social assistance pensions provide more extensive coverage than other countries. Box. 4.1 explores Chile's three-tiered system of social protection for the aged poor.

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Table 4.2
Labor Force Participation Rates
(In percent)

	Age 65+		Age 15-64		Women		Men	
	Bottom quintile	Total	Bottom quintile	Total	Bottom quintile	Total	Bottom quintile	Total
National								
Brazil	30.7	24.4	66.7	70.2	48.2	51.3	83.4	82.2
Chile	16.9	16.6	47.4	59.0	16.9	33.8	77.7	75.6
Colombia	35.0	28.3	58.6	65.1	33.3	44.0	83.2	81.9
Costa Rica	12.1	16.2	50.4	60.7	20.1	33.9	73.8	79.7
Dom. Rep.	25.0	30.1	69.2	76.7	45.5	54.1	89.8	93.3
Ecuador	56.6	46.7	68.6	72.3	46.1	49.1	80.7	79.9
El Salvador	36.2	32.6	51.4	61.1	21.2	40.1	83.9	79.8
Honduras	49.4	48.4	57.5	65.7	28.2	40.7	90.6	89.5
Mexico	44.6	34.1	61.9	62.4	30.5	35.1	68.3	70.6
Nicaragua	33.4	35.8	52.5	60.5	19.1	34.5	61.7	64.1
Panama	35.2	19.6	57.0	64.5	24.8	41.2	85.1	79.9
Peru	51.3	37.8	82.2	72.0	66.7	52.3	81.9	74.0
Venezuela	27.4	29.0	56.3	65.4	31.6	43.4	78.4	82.6
Urban								
Argentina	16.5	10.5	63.8	68.1	43.1	44.2	77.0	75.8
Bolivia	79.6	57.9	89.1	74.7	83.6	64.6	93.6	83.1
Brazil	16.9	18.4	59.4	68.6	40.9	49.9	75.6	80.4
Chile	11.8	14.8	47.5	59.2	20.5	36.0	74.7	74.4
Colombia	23.3	21.9	58.1	65.9	39.5	48.4	76.2	79.1
Costa Rica	8.6	14.1	51.9	61.3	28.8	38.9	70.0	76.0
Dom. Rep.	20.7	24.2	75.3	80.6	52.0	56.6	89.6	93.4
Ecuador	43.7	36.8	57.5	69.9	35.2	47.7	65.9	75.2
El Salvador	27.4	27.6	53.1	63.3	35.9	47.3	69.3	75.1
Honduras	48.9	40.2	58.6	68.1	41.6	50.6	80.5	84.5
Mexico	30.3	24.2	56.4	61.5	25.3	35.5	65.5	68.9
Nicaragua	33.1	33.9	53.9	61.0	33.1	38.9	50.6	60.7
Panama	14.3	11.8	57.1	65.9	34.8	46.8	77.2	77.0
Paraguay	25.1	29.0	65.3	74.0	46.4	56.1	80.2	86.2
Peru	27.2	26.9	61.8	67.1	38.5	45.3	61.8	68.3
Uruguay	8.0	10.0	64.0	71.0	43.0	47.0	77.0	73.0
Venezuela	23.7	26.1	56.8	65.6	35.1	45.7	76.3	81.1
Rural								
Brazil	52.2	46.1	76.5	77.1	59.0	57.6	92.5	89.4
Chile	18.6	25.1	46.1	57.5	8.4	19.6	81.5	81.6
Colombia	42.7	38.0	58.1	63.7	30.3	35.5	85.8	86.2
Costa Rica	13.1	18.3	48.6	60.2	15.3	29.3	74.0	82.7
Dom. Rep.	29.7	38.6	65.9	72.7	44.3	51.8	88.9	93.2
Ecuador	62.4	58.0	75.9	76.1	55.2	51.4	87.2	86.4
El Salvador	36.9	39.9	52.1	58.1	16.8	29.4	88.4	85.9
Honduras	53.2	54.1	55.3	63.6	23.4	31.6	92.9	93.5
Mexico	44.7	46.8	64.4	63.7	31.8	34.6	70.4	73.1
Nicaragua	36.9	39.3	49.5	59.7	11.5	26.6	66.9	69.6
Panama	40.6	31.7	57.4	61.8	17.5	29.6	90.3	84.6
Peru	65.3	61.9	86.6	83.0	74.2	67.5	88.5	85.8
Venezuela	35.6	40.0	52.7	64.5	22.6	32.7	81.1	88.8

Source: IDB estimates based on household surveys.

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Table 4.3
Income Sources for Ages 65 and Older
(In percent)

Households with heads age 65+

	Bottom quintile				Total distribution			
	Earnings	Pensions	Transfers	Other	Earnings	Pensions	Transfers	Other
National								
Brazil	18.2	81.0	0.5	0.3	24.4	65.3	0.6	9.7
Chile	23.1	56.7	16.8	3.4	28.8	54.9	2.9	13.4
Dom. Rep.	38.8	11.4	45.0	4.8	46.6	11.1	27.1	15.2
Panama	22.0	16.0	48.0	14.0	18.0	64.0	8.0	10.0
Urban								
Argentina	10.5	86.1	1.5	1.9	12.9	76.9	2.0	8.2
Bolivia	64.1	0.5	11.5	23.9	44.4	34.5	10.3	10.8
Brazil	9.8	88.7	1.0	0.5	24.4	65.3	0.6	9.7
Chile	13.1	70.4	2.1	14.4	25.5	58.3	0.7	15.5
Dom. Rep.	35.9	18.3	39.8	6.0	41.9	12.8	24.8	20.5
Panama	15.0	58.0	16.0	11.0	19.0	67.0	6.0	8.0
Paraguay	23.0	23.0	47.0	7.0	44.0	24.0	8.0	24.0
Uruguay	8.0	86.0	4.0	2.0	15.0	73.0	4.0	8.0
Rural								
Brazil	35.2	64.8	0.0	0.0	41.4	53.2	0.6	4.8
Chile	25.6	53.5	19.7	1.2	51.0	32.2	2.9	9.5
Dom. Rep.	47.0	7.0	39.6	6.4	55.2	8.0	27.1	5.4
Panama	22.0	0.0	69.0	9.0	18.0	49.0	8.0	16.0

Individuals age 65+

	Bottom quintile				Total distribution			
	Earnings	Pensions	Transfers	Other	Earnings	Pensions	Transfers	Other
National								
Brazil	14.0	85.3	0.5	0.2	21.5	68.8	1.0	8.7
Chile	18.5	58.3	20.1	3.1	25.8	57.2	4.3	12.7
Dom. Rep.	38.2	12.0	45.0	4.8	45.9	11.7	27.9	14.5
Panama	21.0	17.0	51.0	11.0	17.0	66.0	8.0	9.0
Urban								
Argentina	18.3	79.8	0.6	1.3	15.1	78.5	1.7	4.7
Bolivia	63.9	0.5	12.2	23.4	37.1	33.9	10.0	19.0
Brazil	8.4	90.3	0.9	0.4	19.8	69.9	1.1	9.2
Chile	10.5	70.3	15.7	3.5	22.9	60.9	3.3	12.9
Dom. Rep.	35.8	18.2	40.2	5.8	41.7	13.3	25.8	19.2
Panama	15.0	55.0	21.0	9.0	17.0	69.0	6.0	8.0
Paraguay	21.0	27.0	45.0	7.0	42.0	26.0	9.0	23.0
Uruguay	6.0	89.0	4.0	1.0	13.0	77.0	3.0	7.0
Rural								
Brazil	23.8	75.3	0.0	0.9	33.9	61.0	1.1	4.0
Chile	22.4	55.8	20.6	1.2	45.2	35.0	11.1	8.7
Dom. Rep.	46.2	7.7	39.8	6.3	54.0	8.5	32.0	5.5
Panama	19.0	0.0	74.0	7.0	18.0	48.0	18.0	16.0

Source: IDB estimates based on household surveys.
Note: Earnings include income from salaries, self-employment, and business profits. Selection of countries includes only those that detailed sources of income from other assets.
Argentina: Transfers = other transfers.
Bolivia: Transfers = contributions from other households and family assistance.
Brazil: Transfers = donations.
Chile: Transfers = subsidies.
Dom. Rep.: Transfers = income from family and transfers in kind.
Panama: Transfers = income from family and grants and subsidies.
Paraguay: Transfers = family assistance.
Uruguay: Transfers = other transfers.

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Box 4.1. Chile's Three-tiered System of Social Protection for the Elderly

The experience of Chile shows the costs involved in providing social protection to groups of people previously uncovered or only partially covered. The state provides funding for two types of guarantees for those not covered by the reformed contributory pillar.

A minimum pension is guaranteed for those who have contributed for at least 20 years but have been unable to save enough to have the system pay them a minimum pension benefit (redistribution within the social insurance system). For those outside the system, an assistance pension is available. In the case of the minimum pension benefit, the government supplements the privately managed funds accordingly. The legal minimum pension is about $135 per month for those younger than 70 years and $150 for those older. Estimates place the share of affiliates eligible to receive minimum pensions at roughly 40 percent of all contributors.

Different studies place the present value of the flow of guarantees to a range between 0.8 and 6.3 percent of GDP, with the estimates highly sensitive to the income strata of those eligible for subsidies. The larger the number of low-income contributors, the larger the financing needed to meet the minimum pension, and the greater the subsidy required from the state.

For those outside the system, the assistance pension or guaranteed income benefit of about $60 per month is also extended to all those who could not contribute for at least 20 years. The state has no earmarked tax to finance these guarantees, and they are included in the fiscal budget and paid out of general revenues. The assistance pension is equal to roughly two-thirds of the estimated per capita monthly poverty line for Chile.

Source: Uthoff (2000).

family transfers, and are less likely than working age poor to have income from earnings. Wealthier old people have significantly more income from returns to nonlabor assets.

Overall, the income sources of the elderly poor are less diversified than those of other groups. As such, they are particularly vulnerable to adverse shocks and dependent upon the generosity of other family members. A survey undertaken in the urban slums of Buenos Aires, for example, found that one-fifth of the elderly were either completely or substantially dependent upon the economic support of other people in the household.[7] At both the individual and household level, the aged poor depend heavily on their own labor income, family transfers and pensions to meet income needs. Reliance on labor income becomes increasingly unsustainable as people age and their health deteriorates, while reliance on family transfers and pensions—unless these latter are adequately adjusted for inflation and protected against spending cuts—make the elderly vulnerable to economy-wide shocks. The most robust source of income is transfers from family members who have migrated to richer areas.

Given the importance of private transfers, governments must balance several factors regarding transfers when designing social protection programs for the elderly poor. On the one hand, they must take into account the

[7] Lloyd-Sherlock (1997, p. 192).

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potential negative effects of social programs that crowd out private transfers within families. On the other, they must also consider intergenerational welfare effects. Displacing private transfers can enhance efficiency and equity if those transfers come from people who are themselves poor. Risk pooling within families is unlikely to be more efficient than pooling risks at the national level.

Caution is needed in interpreting the links between the composition of households with elderly people and the pattern of economic interaction between older people and other household or family members. Elderly people living alone may still rely heavily on transfers from other family members, while those living with their extended family may in fact provide younger family members with important assets or income. For example, if an elderly person owns his or her own home, an extended family structure can allow younger relatives to live rent-free. Pension benefits can also provide a steady income source that enables younger family members to undertake more risky (but potentially more profitable) income generating activities, such as taking a training course or starting a small business. Assistance from elderly household members in housework and childcare facilitates more active labor force participation by the rest of the family and the continued schooling of younger family members, particularly women.

Special consideration is needed for the plight of older women, who are more likely than men to be poor in their old age. Women account for 53.9 percent of the population aged 60 and over in Latin America, and more than 40 percent of them do not have access to their own income source, as compared to 15 percent of men. Several factors contribute to the greater vulnerability of elderly women to poverty, including longer life expectancies[8] and more of a probability of widowhood, since women are more likely to marry men older than themselves, and less likely to remarry after divorce or the death of a spouse. Women are less likely to participate in contributory social insurance programs, as their labor force participation is generally shorter and more irregular than that of men because of responsibilities for child rearing and caring for elder family members.[9]

Coverage of Social Insurance and Social Assistance Programs

Of the 33 countries in Latin America and the Caribbean, 25 legally require that all salaried workers be covered by a social insurance program. The other eight require only that part of the labor force be covered. Table 4.4 shows that legal coverage is far from complete for the self-employed: 13 countries mandate coverage for self-employed workers, 10 mandate voluntary coverage, and 10 exclude them altogether. Generally, pension programs only cover rural workers if they are salaried employees on large plantations. Unemployed and unpaid family workers, as well as peasants, are excluded across the board from social insurance programs.

Throughout the region, social assistance programs have been developed on a much smaller scale than insurance programs. Only a third of the countries have legislated programs to provide social assistance to the

[8] Projected life expectancies at birth by gender are shown in Table A.3 of Appendix 2. Without exception, women are expected to live longer than men in all countries of the region.

[9] See World Bank (1994, p. 29) and IDB (1998, Chapter 3).

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Table 4.4
Legal Coverage of Social Assistance Pensions for the Poor and Other Vulnerable Groups, 1997

Country[a]	Noncontributory (social assistance) pensions for the poor[b]	Contributory (social insurance) pensions for vulnerable groups		Minimum pension (as proportion of per capita income)
		Self-employed	Domestic servants[c]	
Latin America				
Argentina	x	x	x	
Bolivia		x [d]		
Brazil	x	x	x	100% minimum wage
Chile	x	x [d]	x	
Colombia		x [d]	x	100% minimum wage
Costa Rica	x	x [d]	x	0.61
Cuba	x	x		
Dom. Republic			x	0.49
Ecuador		x [d]	x	0.74
El Salvador		x [d]		0.82
Honduras		x		
Mexico		x [d]	x [d]	100% minimum wage
Nicaragua	x	x [d]		66% minimum wage
Panama		x [d]	x	0.86
Peru		x [d]	x	0.24 to 0.48
Uruguay	x	x	x	100% minimum wage
Venezuela		x		
Caribbean				
Antigua and Barbuda	x			
Bahamas	x	x	x	0.16
Barbados	x	x	x	0.34
Belize		x	x	12.5
Bermuda	x	x		
Guyana		x	x	50% minimum wage
Jamaica		x	x	
St. Kitts and Nevis		x		
Trinidad and Tobago		x	x	0.062

Sources: Mesa-Lago (2000, Table 2); IDB (1998).

[a] Dominica, Guatemala, Haiti, Paraguay, St. Lucia and St. Vincent do not have any programs for the poor and other vulnerable groups.

[b] Means tested. No country provides flat rate universal pensions. Argentina, Barbados, Brazil, Chile and Costa Rica have social assistance pensions but are not included in *Social Security Programs throughout the World, 1997* (U.S. Social Security Administration). Conversely, Nicaragua is included but currently does not provide such pensions.

[c] In some countries, these pensions are submitted to special conditions and/or receive some type of subsidy.

[d] Voluntary affiliation.

elderly poor (see Tables 4.4 and 4.5). All social assistance programs are means tested, with the exception of the short-lived experiment with the *Bonosol* program in Bolivia (see Box 4.2). In order to avoid the incentive to opt out of contributory social insurance programs and free ride on the safety net, entitlement conditions for social assistance pensions tend to be stricter and their benefits more limited than those for social insurance pensions. While social insurance pensions normally provide survivors' pensions, only three of eight coun-

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Box 4.2. The Fixed Universal Pension: Bolivia's *Bonosol*

The *Bono Solidario* was created under Bolivia's 1996 Pension Reform Law, which initiated a shift from a defined benefit and publicly managed pension system to a defined contribution system based on privately managed individual capitalization accounts.

The law also created the Bonosol as a fixed payment to all those age 65 and over. The objective was to provide pension coverage for those outside the formal pension system, distribute the profits of the privatization program, and reduce poverty. The first *Bonosol* payments were made in mid-1997.

The *Bonosol* is an annuity intended to distribute the benefits of the capitalization program to Bolivians 20 years or older as of the end of 1995 once they reach age 65 (about 3.5 million people). There are no plans to repeat the program for future generations, as the rationale for the current universal benefit is that it is to "repay" the beneficiary population that had previously "paid" for public enterprises through general tax revenues. The annuity will amount to $248 per person per year for the first five years and will then be revised every three years according to changes in the portfolio and life expectancy. One calculation shows that the *Bonosol* represents about 42 percent of the annual minimum salary, 42 percent of the rural poverty line, and 91 percent of the extreme poverty line in rural areas. Another estimate is that it represents 85 percent of the income of the extremely poor, and 50 percent of that of the poor.

The *Bonosol* program has both progressive and regressive features. On the one hand, since the benefit is fixed in nominal terms it represents a larger proportion of annual income for the poor than for the better off. On the other, lower life expectancy of the poor implies that they have less chance to receive benefits and will likely receive them for less time. In fact, the average Bolivian citizen would not be able to collect the *Bonosol* at all, since life expectancy at birth is 60 years.

Implementation of the *Bonosol* program has encountered a series of difficulties. On the financing side, portfolio performance failed to live up to expectations for reasons that included difficulties in divesting shares and lower-than-anticipated accumulated dividends. On the demand side, fraud in the collection of the *Bonosol* was apparently widespread because of the limited capacity to document vital statistics. The combination of lower resources and higher payouts than expected—295,000 beneficiaries were expected, but 364,000 requested the annuity—forced the government to secure expensive bridge financing to cover the shortfall. In January 1998, payment of the *Bonosol* was suspended indefinitely because the private pension fund managers, faced with restrictions on the use of funds, were unable to generate sufficient liquidity to cover their deficits.

Sources: Leach (1998), James (2000) and von Gersdorff (1994).

tries for which data are available grant survivors' pensions under social assistance programs. This again highlights the particular vulnerability faced by elderly poor women.

There are, therefore, significant gaps in legislated coverage of social insurance programs, while social assistance programs are limited in scope. Table 4.6 shows social asistance expeditures as a percentage of total social security benefits. Low compliance rates and poor enforcement capacity mean that actual coverage is far worse than legislated coverage.

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Table 4.5
Entitlement Conditions for Social Assistance Pensions, 1997-98[a]

Country	Year of inception	Risks covered OA	D	S	Age required for OA	Family per capita income	Means tested	Other limitations
Argentina		x	x		70		x	
Bahamas	1957-58,1967	x	x	x	65		x	
Barbados	1957-58	x			65		x[b]	
Brazil	1974, 1995	x	x		70/67[e]	Less than 25% of minimum wage	x	Beneficiary cannot be supported by family
Chile		x	x		60/65[f]		x	Ceiling of 300,000 pensions
Costa Rica	1974	x	x	x	65	Equal or less than 50% of minimum pension in social insurance	x	Resources available
Cuba	1970s	x	x	x[c]			x[d]	
Uruguay	1919	x	x		70	Less than minimum old age pension	x	Beneficiary cannot be supported by family

Source: Mesa-Lago (2000, Table 4).

OA= Old Age D=Disability S=Survivors

[a] Argentina 1995; Bahamas and Barbados 1987; Cuba and Uruguay 1990.

[b] Eliminated in 1982, might have been reestablished.

[c] Also single mothers with children.

[d] Provided to noninsured without means whose essential needs are not satisfied.

[e] Old and new systems; in the latter, the age will be reduced to 65 in the year 2000.

[f] Females/males.

Thus, legal entitlement for potential affiliates of contributory systems often does not translate into actual coverage.

Table 4.7 shows that coverage rates of contributory insurance pensions are highest in the wealthier countries, generally covering more than three-quarters of the economically active population. In countries with the lowest per capita incomes, coverage of social insurance programs is less than a third. Moreover, official data can be misleading, since it underestimates true levels of evasion and is based on affiliation with insurance programs rather than on the actual receipt of benefits. To the extent that benefits are tied to contributions, and contributions are stopped or interrupted, affiliation does not automatically translate into guaranteed benefits.

Table 4.8 shows that rates of affiliation with social security systems are significantly lower for the bottom income quintile than the average for the population at large. A comparative study of social security coverage in six Latin American countries found that a typical worker with five to six years of education has a 50 percent chance of being affiliated with social insurance, while for university graduates affiliation is almost 100 percent. Women (who are more likely to perform unpaid family labor) have less access than men, and rural workers are less likely to be affiliated than those who live in cities.[10]

When the benefits of social security affiliation are not available to them, the poor must instead resort to informal social insur-

[10] Márquez and Pagés (1998).

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Table 4.6
Social Assistance Expenditures as a Percentage of Total Social Security Benefit Expenditures and GDP, 1989

Country	% of total social security benefit expenditure	% of GDP
Latin America		
Brazil	5.0	0.27
Cuba	1.5	0.27
Ecuador	17.2	0.51
Nicaragua	18.8	0.64
Panama	0.4	0.04
Caribbean		
Barbados	5.5	0.25
Belize	9.4	0.09
Grenada	6.2	0.17
Guyana	1.6	0.03
Jamaica	33.0	0.40
Suriname	31.7	0.82
Trinidad and Tobago	17.1	0.41

Source: Mesa-Lago (2000, Table 6).
Notes: Brazil 1994 in first column; Barbados and Ecuador 1986 in the two columns. Only countries that show social assistance expenditures are included.

ance or social assistance programs. Costa Rica, one of the countries in the region with the highest levels of elderly in the bottom quintile of the income distribution, is an exceptional case. More than 90 percent of the elderly poor are currently affiliated with social insurance and assistance programs, and the bottom quintile has a higher proportion of affiliates than the average. However, equity in the system is likely to deteriorate in the future because the affiliation rate for the poor currently of working age is only at around 70 percent.

Future Trends

Given that an important share of today's labor force does not belong to any social insurance scheme, and the current low female labor force participation rates, prospects for the next generation of the elderly are not particularly encouraging. Many could find themselves living in poverty. Furthermore, the effectiveness of informal support mechanisms will also deteriorate, since longer life expectancy and lower fertility rates will make reliance on extended families that much more difficult over time.

The demographic transition in some countries in the region provides a window of opportunity over the next generation, since there initially will be an increase in the ratio of the working to nonworking age population. The demographic shift will bring about important changes in the dependency ratio, which is the ratio of nonworkers in the population (retired people and children) to workers.[11] Populations are gradually aging, with the pace set to accelerate over the next 50 years. The share of nonworking age people in the total population will experience an initial decrease due to the declining percentage of the under-15 age group, followed by a rapid increase in dependency due to the increasing proportion of old people. In the next 20 years, there will be a 50 percent increase in the old age dependency ratio, which will reach 12 percent on average in the region by the year 2020. At the macro level, this implies that the ratio of potential contributors to beneficiaries of the social insurance system will be better for a while, and then get increasingly worse over time.

Latin American countries are in different stages of the demographic transition. Bolivia and Haiti are the only two countries

[11] See Appendix 2 for a summary of the demographic transition underway in the region.

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Table 4.7
Pension and Health Care Coverage of Economically Active and Total Populations, 1990-95
(In percent)

Country	Year[a]	Economically active population[b]	Total population	
			Social insurance[c]	Global coverage[d]
Argentina		81.4	na	92
Bahamas		na	98.0	na
Barbados	1985-88	96.9	na	97
Bolivia		13.6	21.3	34
Brazil		na	na	92
Chile		80.0[f]	100.0[f]	93
Colombia	1985-88	30.2	16.0	75
Costa Rica		55.0	86.2[g]	96
Cuba	1980	93.0[e]	100.0[e]	na
Dom. Rep.		12.7	5.6	71
Ecuador		28.0	17.2	61
El Salvador		22.6	14.2	59
Guatemala		27.6	16.3	50
Honduras	1985-88	12.8	10.3	46
Jamaica	1985-88	93.2	na	89
Mexico		43.7	58.4	77
Nicaragua		14.3	13.0	69
Panama		64.0	57.4[i]	79
Paraguay		8.7	22.3	54
Peru		32.0	23.8	44
Uruguay	1985-88	73.0	87.7[h]	96
Venezuela	1985-88	54.3	49.9	76

Source: Mesa-Lago (2000, Table 8).

[a] Most recent data for more than half of the countries are from 1990-95; for the rest the most recent year available is noted.

[b] Coverage of pensions.

[c] Coverage of health care by sickness-maternity program of social insurance. Excludes coverage by Ministry of Public Health, except in countries with national health systems such as Cuba.

[d] Gross estimate of total population coverage combining all health care programs.

[e] Based on legal coverage; no statistics are available.

[f] Official figures on coverage of the economically active population are inflated and the figure is a rough estimate; the figure on population coverage is probably inflated as well.

[g] Includes coverage of the poor *(indigentes)*; if coverage by the Ministry of Health is added, total coverage is almost universal.

[h] Includes the Social Insurance Bank, the Ministry of Health, the Armed Forces, and Mutual Aid Societies.

[i] 1985-88.

still in the first stage. El Salvador, Guatemala, Honduras, Nicaragua and Paraguay are at the end of the first stage, when adult mortality rates are still high while infant mortality rates begin to decline. Brazil, Colombia, Costa Rica, the Dominican Republic, Ecuador, Mexico, Panama, Peru and Venezuela are in the second stage, while Argentina, Chile, Cuba and Uruguay have already entered the final stage.

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Table 4.8
Social Security Coverage of the Poor in Selected Countries

Country	% of bottom quintile who are age 65+ and covered			% of bottom quintile age 15-64 and covered			% of 65+ who are covered and in bottom quintile			% of age 15-64 who are covered and in bottom quintile		
	National	Urban	Rural	National	Urban	Rural	National	Urban	Rural	National	Urban	Rural
Brazil	19.8	21.2	15.9	29.2	36.7	13.5	4.6	5.3	2.5	5.5	7.6	3.1
Colombia	1.6	6.8	1.7	1.6	16.8	1.7	5.2	9.4	11.4	2.3	5.8	1.0
Costa Rica	94.5	91.4	94.8	69.1	70.8	69.0	26.8	23.1	30.7	13.9	15.2	14.0
El Salvador	0.0	1.0	0.0	0.9	3.7	0.6	0.0	1.0	0.0	0.9	3.7	0.6

Source: IDB estimates based on household surveys.

Countries that are further ahead in the demographic transition, such as Uruguay and Argentina, have already begun to reform their social insurance systems, achieving high coverage rates and making strides toward financial sustainability. Poorer and younger countries have not yet started the reform process (with the exception of Bolivia and El Salvador). However, the increase in the share of the working age population and the still moderate growth in the dependency ratio in terms of the elderly should help to support the necessary reforms. The longer the necessary reforms are postponed, the harder they will be to attain.

Behavioral changes at the micro level, which underpin the aging of the population, mean that poverty among the region's elderly is likely to increase unless institutional reforms are made soon. Longer life expectancy means there will be more elderly people living for longer periods of time. Declining fertility rates mean that smaller extended families will be much less likely to serve as a safety net for growing numbers of elderly poor. Fertility rate declines have actually been particularly precipitous among the poor, with average family size among the bottom quintile dropping significantly over recent decades. In Mexico, family size in the lowest income decile fell from 6.47 in 1984 to 4.04 in 1994, compared to an average fall for the total population from 5.07 to 4.6.

Another current trend that does not augur well for the elderly poor is the high level of unemployment and underemployment among the working poor, which prevents them from saving for their own old age and undermines their ability to support their aging parents.

In addition, high inflation has reduced the real value of contributions to social insurance systems. Evidence from several countries that have undertaken pension reforms that tie benefits more closely to contributions show increasing shares of noncontributing affiliates during periods of high unemployment.[12]

Occupational structure is also changing in Latin America, with an increasing proportion of the workforce self-employed or working for small firms. The International Labour Organization (ILO) has shown that the informal sector is the fastest growing source of nonagricultural employment in the region.[13]

[12] Queisser (1999, pp. 20-21).
[13] ILO (1999).

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This means that growing numbers of current workers are excluded from contributory social insurance programs, since coverage in these sectors is far lower.

Apart from Chile, employment in the informal sector in the region is consistently higher for the bottom income quintile than it is for the total income distribution.[14] In urban areas, informal employment among the poor ranges from 22.8 percent of the workforce in Chile to 84.1 percent in Bolivia. In rural areas, the incidence of informality is consistently higher across all levels of income distribution, with rates for the bottom quintile ranging from 40.7 percent in Costa Rica to 85.4 percent in Panama.

Although informality is more prevalent among the poorest, a significant number of people further up the income distribution scale are also employed in the informal sector. Informal employment rates that include people of all income levels range from 20.8 percent in Costa Rica to almost 50 percent in Honduras.

In other words, a large share of the *total* working population in Latin America—and a very large share of the poor—are excluded from contributory social insurance programs. Even reformed systems in Chile and Argentina have failed to provide adequate coverage for the self-employed and workers in small firms. If these trends continue, there will be a steady increase in the already-high share of workers who are not affiliated with contributory social insurance programs.

Social Insurance Reform

Latin America has been one of the world's most dynamic and innovative regions in terms of pension reform. Chile began the process in 1981 with a shift from traditional public pay-as-you-go pensions to a fully funded and privately managed pension scheme.

Chile was followed by Peru and Colombia (1993), Argentina (1994), Uruguay (1996), and Bolivia, El Salvador and Mexico (1997). Reforms are also under way in Brazil, Venezuela, Guatemala, Paraguay, Costa Rica, Nicaragua, the Dominican Republic, Panama and Ecuador.[15]

Pay-as-you-go systems in Latin America have been inequitable and have become financially unsustainable as the region's demographics have changed. In 1997, almost two-thirds of the benefits paid out in the Brazilian pension system went to the top two income quintiles, and only 9 percent to the bottom two income quintiles.[16] Liberal early retirement provisions and generous benefits have required high contribution rates, leading to widespread evasion and labor market distortions, which in turn have pushed contribution rates and evasion still higher. In Argentina, more than half of all covered workers evaded their contributions to the old social security system before the 1984 reform.

Pension reform in the region has involved a shift from defined-benefit to defined-contribution plans, and from pay-as-you-go to funded or partially funded pension systems. Moving to a defined contribution plan strengthens the link between individual contributions and benefits because workers receive a pension based on their individual contribu-

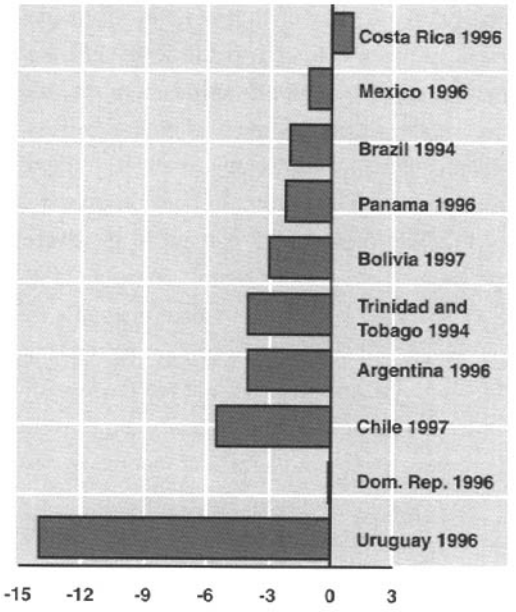
[14] This data gives a lower-bound estimate of levels of informality, given that most common definitions also include employees of small businesses as well as the self-employed and unpaid family workers, as shown in Table 3.3 in the previous chapter.

[15] A discussion of ongoing pension reform processes can be found in World Bank (1999).

[16] Paes de Barros and Henriquez (1999).

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Figure. 4.1. Operating Capital of Public Social Security Programs
(Percent of GDP)



Source: IMF (1998).

tions. The move to funding means that each cohort of workers saves for its own retirement. In contrast, pay-as-you-go systems are based on intergenerational transfers through which today's workers pay pension contributions to finance the benefits for today's pensioners.

Although there have been different approaches to combining public and private pillars and in making the transition to the new systems, Latin America's pension reforms have generally aimed to strengthen incentives to contribute to the system, since individual accounts in the new private pillar tie benefits more closely to contributions. Private management of pension funds, in principle, improves transparency and generates higher returns, since private fund managers are subject to market competition and social control mechanisms that generate greater accountability than was the case for public sector social security officials.

Pension reforms have also sought to correct the imbalance between contributions and benefits, prevent high rates of evasion, and ensure adequate administrative and financial management of social security agencies. There is little doubt that the pre-reform social insurance models provided inadequate and often inequitable social protection for the poor. In some cases, governments have been forced to subsidize benefit payments from general tax revenues because the pay-as-you-go systems (or only partially funded reformed systems), with their overly generous benefits and inadequate contributions, have been unable to fund benefits out of current contributions. In the worst cases, the poorest workers—informal sector workers and the rural poor, neither of whom have formal pension coverage—have actually been forced to subsidize the pensions of wealthy retirees from the formal sector by paying regressive general taxes such as the value-added tax. Figure 4.1 shows that this inequitable practice has been quite common in the region.

A shift to a contributory social insurance system is a necessary but unto itself insufficient condition for providing adequate social protection for the elderly poor. While pension reform should introduce measures to reduce actuarial deficits, thus reducing the need to rely upon general revenues for financing benefits, the transition phase can be extremely costly and is often financed from general revenue. Nor are equity issues eliminated in a multi-pillar system that combines social insurance and assistance. Calculating benefit annuities can be highly regressive if it does not take into account that the poor have a shorter life expectancy, and thus tend to collect benefits for fewer years than the rich.

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Nevertheless, putting existing social insurance programs on a sound financial footing can in principle free up public resources to be redistributed through social assistance programs to the elderly poor. By raising national savings rates, deepening financial markets, and reducing labor market distortions, pension reform supports higher growth rates—the most potent and sustainable form of poverty reduction. Still, the very nature of reforms that tie individual benefits more closely to individual contributions does little to help the elderly poor who are either not covered or inadequately covered by the system.

Reaching the Poor[17]

Latin America's pension reforms in general have incorporated a redistributive element in order to provide minimum pension coverage for lower-income workers within the system.The public pillar that seeks to redistribute resources is often financed by general revenues. (The last column of Table 4.4 provides summary information on the relative value of current minimum pensions in the region). However, redistribution only occurs within the group of people who contribute to the private pillar of the system. This means that the public pillar pays out pensions only to low-income groups who have already met some minimal contribution requirement. Those who do not participate in the contributory system are uncovered. This includes workers from the informal sector, subsistence farmers, and women who have worked in the household rather than in the labor market—groups that represent a substantial portion of the Latin American population, and which are over-represented at the bottom levels of income distribution.

In a reformed system, then, the distinction between the insured and uninsured is still a key issue, particularly regarding the elderly. To the extent that benefits from the public pillar are linked to the level and the number of years of contributions, a new class of partially insured people may emerge whose pensions are not sufficient to protect them from poverty. The minimum pension guarantee in Chile provides 25 percent of the average wage to workers who have contributed at least 20 years in their individual accounts in the private pillar. This provides protection for some low-income workers, but not those with contributions of less than 20 years. Moreover, it provides an incentive for low-income workers to stay in the system for 20 years, but to evade contributions thereafter.

As countries move to improve the fiscal sustainability of social insurance programs by raising the eligibility criteria for the public pillar, the ranks of the uninsured will likely increase. Expanding the coverage of social insurance systems involves a series of tradeoffs. First is a tradeoff between maximizing nominal coverage and minimizing evasion. Systems based on earmarked taxes and defined contribution plans are designed to compensate for a number of market failures that lead to inadequate provision for old age security. Specifically, such systems seek to increase peoples' willingness to pay and to decrease evasion. Mandatory participation, at least for formal sector workers, is designed to protect people who are too shortsighted to save for the future, and to protect against moral hazard, that is, the assumption by people that public social assistance will be available to them if they fail to save. However, there

[17] This discussion draws extensively on James (2000).

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are problems in enforcing mandatory coverage goals due to weak administrative capacity and informality in the labor market.

Mandatory participation for all workers would not always be desirable even if it could be enforced. Workers with near-subsistence incomes might be better off outside the formal contributory social insurance system, benefiting more from higher take-home pay than from any benefit they might receive from a forced social security contribution. There is thus a tradeoff between higher coverage and higher current consumption for the working poor.

Finally, as the burden of contributions is shifted to employers, labor costs increase, reducing international competitiveness and employment. A third tradeoff therefore exists between maximizing coverage and maximizing employment. If a low target replacement rate and required contribution rate are chosen, this tradeoff may be decreased and coverage increased.

In general, the poor evince lower demand and face higher opportunity costs for participating in social insurance programs. In fact, there are many perfectly rational and utility-maximizing reasons why the poor may opt out of social insurance programs, choosing to evade contributions even if they are nominally covered.

First, the poor have relatively short expected life spans and may prefer to spend on survival needs now rather than save for a far distant future that may not arrive. This tendency is exacerbated when low- and high-income workers are merged into one risk pool when calculating annuities, so that actual benefits and returns for the poor are reduced.

Second, it is unclear that formal pension plans offer the best rate of return for poor households that are able to save. The poor might be better off investing in tangible assets such as land or homes, or financing the education of their children. In the absence of well functioning credit markets, poor households usually have to use savings to finance these investments, which in the end may earn a higher return and provide greater security than would a retirement program. Also, such assets are more easily cashed in, as opposed to a retirement program that will not be available to meet short-term investment, health or other emergency needs.

Strategies to overcome this resistance include permitting lump sum withdrawals upon retirement or allowing the poor to borrow against their retirement funds. However, these strategies run the risk of depleting assets early on in the life cycle and thus undermining the original objectives of the pension program.

While low compliance rates can thus be explained by limited demand due to the high discount rates of rational agents in low-income households, poor enforcement capacity creates an additional set of difficulties in collecting from small enterprises and the self-employed. Mandating participation, therefore, does not solve the problem, as can be seen by low coverage rates even in countries where participation for the self-employed is legally mandated. The higher the degree of informality (small enterprises and self-employed workers), the greater the difficulties in enforcement. Small firms have short life spans and are difficult to monitor. Self-employed workers who feel that they have to pay higher contributions than formal sector employees have greater incentive to evade and greater ease in underreporting earnings. In response to these difficulties, many countries do not even try to cover the self-employed, as in the case of Chile, where the self-employed constitute one-third

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of the labor force. In Argentina, the self-employed are legally covered, but the government is considering excluding them in the future due to high evasion.

In the absence of an increase in means-tested social assistance coverage, the proportion of the elderly poor will also rise. In general, as the benefit-contribution link increases, a major issue in all reforming countries is how to address the needs of those groups that have not contributed long enough to qualify for adequate benefits from the contributory program. The larger the informal sector and the lower the labor force participation rate of women, the worse the problem.

Thus, neither the anachronistic pay-as-you-go pension systems nor the more modern and reformed ones provide adequate social protection for Latin America's elderly poor. The pre-reform systems are inefficient in serving their target groups, financially unsustainable, and often dependent on perverse redistribution from excluded populations. The reformed multi-pillar systems, while addressing issues of financial sustainability, still fail to cover the bulk of the low-income population. After more than 15 years of a reformed pension system in Chile, access to a pension is still determined by occupational category and the size of the company where the worker was employed. Over 40 percent of the population is still not covered by the system.[18]

Finally, a note of caution is in order when designing pension schemes for the poor. Providing for old age involves two household strategies that are often indistinguishable in practice but conceptually distinct: a savings strategy and a strategy to purchase insurance.

Saving involves postponing current consumption so as to enjoy consumption during old age. A risk-neutral, perfectly rational household with diminishing marginal utility of consumption in any given period would save so that the expected returns of savings would provide a smooth consumption stream up until the expected age of death, given an expected income stream.

The second strategy—either purchasing insurance or enrolling in a public program that provides it—is of interest to risk-averse households wanting to insure against risky returns on assets being accumulated through the savings strategy; against stochastic age of death (the risk of living longer than planned for); and against a stochastic earnings stream during the productive lifetime. The poor are particularly vulnerable to the first and third, given their limited access to financial and credit markets and their poor labor market insertion, all of which produce employment instability, underemployment and high degrees of informality.

It is not clear that the individual retirement accounts common to reformed systems can effectively provide any of the insurance functions. While there are a number of advantages to defined contribution schemes, they do not provide as much insurance against risky returns as the defined benefit schemes, where the risk is borne by the ultimate insurer, the taxpayer.

The choice between defined contribution versus defined benefit plans, however, does not have to beg the question of financing. In principle, one could have defined benefit, fully funded schemes. Maintaining contributions would be more challenging, given the standard political economy issues, and the system would be riskier and need contingencies

[18] Uthoff (2000).

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for bailouts from general revenue. However, given the government's stronger access to capital markets, and (hopefully) prudential risk assessment, it is possible that such a scheme would provide considerably better insurance than a defined contribution scheme. In effect, this is what is done with minimum pension guarantees for low-earners who are members of defined contribution social insurance plans.

Balancing Social Insurance and Social Assistance

When designing an integrated system of social protection for the elderly poor, governments must address a problem that is sometimes referred to as the "Samaritan's dilemma." Where there is a guaranteed pension, the incentive for people to save for their old age is reduced because the government (or private sector charitable organizations) cannot credibly commit to refuse assistance to those with little savings.

Given Latin America's high levels of evasion and noncompliance, limited enforcement capacity, and the moral hazard problem inherent in the Samaritan's dilemma, governments must take considerable care in defining the eligibility conditions and benefits of noncontributory social assistance programs. If benefits are too generous, they will undermine the contributory social insurance system. If they are too small, the moral hazard problem will be minimized, but uninsured old people will live in poverty. The level of a social assistance pension needed to prevent perverse incentives, and to stop some people from free riding by avoiding contributions to the system, may well be below the poverty line. This is especially likely in countries where a high proportion of working poor participate in the contributory program, and where informal working practices are prevalent.

In general, social assistance pensions should be smaller than social insurance pensions in order to avoid moral hazard. Social assistance pensions should be sufficient to cover the income gaps of the elderly poor, but not so high as to create perverse incentives.

Barbados provides an example of this dilemma. The abolition of means testing for the social assistance pension in 1982, combined with the fact that social insurance benefits were not much greater than those of the social assistance pension, led to a decline in participation in the contributory social insurance scheme. Table 4.9 shows that the weight of social assistance versus social insurance in Barbados in 1997-98 was high (58.5 percent of pensioners, 39.9 percent of expenditures), with an average social insurance pension representing only 1.4 times the average social assistance benefits.

In Uruguay, the social assistance pension is set at the same value as the minimum pension guaranteed for affiliates to the contributory social insurance scheme. The consequences for compliance with the social insurance pension scheme are discussed in Box 4.3.

Given that social assistance programs have to be financed from general revenue, governments are limited in their capacity to increase social assistance. They face a tradeoff between the amount of the benefit and the extent of coverage—that is, bigger benefits mean narrower coverage. Different governments will tackle these tradeoffs in different ways, reflecting the coverage of social insurance programs, the extent of old age poverty, the state of public finances, and, of course, politics.

Table 4.9 shows that in Costa Rica,

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Box 4.3. The Minimum Social Security Pension in Uruguay

Social security reform in Uruguay in 1996 changed the existing pay-as-you-go system and introduced an individual savings pillar. The reform also introduced more modest replacement rates and older minimum retirement ages for men and women. Total current coverage of pensions in the pay-as-you-go system is 73 percent of the economically active population, while approximately 60 percent are affiliates in the new savings pillar.

A minimum pension of approximately $90 is available contingent upon meeting the eligibility conditions of the two systems.

Under the social insurance scheme, which is the reformed version of the pay-as-you-go system, affiliates 60 or older with 35 years of service are eligible to receive the minimum pension only if it is higher than the new mandated replacement rate of 50 percent. Similarly, affiliates 70 or older with at least 15 years of service are eligible to receive the minimum pension or the new mandated replacement rate of 50 percent, whichever is higher.

Under the social assistance scheme, or noncontributory pension scheme, all Uruguayan residents 70 or older below a certain income level (including immigrants with at least 15 years of residence) are eligible for the minimum pension. Eligibility is subject to a means-testing procedure applied by the pay-as-you-go system administrator, the *Banco de Previsión Social* (BPS).

In December 1997, the BPS administered payment of 661,000 contributory and 64,600 noncontributory old age pensions. These figures represented 93.6 percent and 4.2 percent, respectively, of the total BPS expenditure of that year. For the medium and long term, it has been estimated that BPS expenditures on social assistance pensions may increase 24 percent and 300 percent by the years 2010 and 2040, respectively. The pay-as-you-go system will remain vulnerable to fiscal pressures because of low average pensions in the social insurance system (currently $10), the equivalent of social assistance with the minimum pension of social insurance, and a rapid aging of the population. Forecasts for expenditures range from 12.2 percent of GDP in 1996 to 7.8 percent in 2040.

While from a redistributive vantage point the minimum pension is highly desirable, at present values it may prove unsustainable. The best alternative would be to enhance the institutional mechanisms to better target the social assistance pension, and to establish a tiered benefit system that rewards contributions to social insurance. This additional reform may increase compliance for very low-paid workers who at present have incentives to evade contributing to the system.

a country with one of the highest levels of elderly poverty in the region, the value of the social assistance pension is less than 10 percent of the estimated national poverty line. In Chile and Argentina, on the other hand, social assistance pensions cover approximately 70 percent of the estimated national poverty line, while in Uruguay the pension exceeds it.

An Integrated Approach to Social Protection for the Elderly Poor

The surest route to expanded social insurance coverage in Latin America is economic growth and higher wages, which would afford the poor the chance to think about the future as well as the present. Defined contribution and

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Table 4.9
Benefits of Social Assistance Pensions, 1997-98[a]

Country	% of social assistance over total social security		Ratio of social insurance over social assistance average pension	Poverty line (per capita monthly 1996 US$)[c]	Monthly average social assistance pension (US$)
	Number of pensioners[b]	Pension expenditures			
Argentina	8.2			156.00	112.62
Bahamas	76.5	45.5	1.5		
Barbados	58.5	39.9	1.4		
Brazil	10.2	5.7	1.9		108.72
Chile				76.89	52.37
Costa Rica	49.7	15.9	5.2	283.23	25.10
Uruguay	9.1	5.6	1.8	121.77	134.13

Source: Mesa-Lago (2000, Table 5).

[a] Argentina 1995; Bahamas and Barbados 1986.

[b] In some countries, this refers to the number of pensions (one person may receive more than one pension).

[c] Based on most recent estimates adjusted by inflation.

funded pension systems will not solve all the social protection problems for the elderly poor. A substantial redistributive element is needed in pension systems, but this must go hand-in-hand with efforts to increase compliance among workers who can afford to save for their old age.

Redistribution can be directed toward contributors to the social insurance system through the public pillar of the contributory system, or to noncontributors through a social assistance program. Policymakers must seek to avoid the current problem of perverse redistribution from the many outside the system to the privileged few who are covered.

Social protection schemes must be flexible enough to accommodate the diverse needs of the poor, including different family sizes, levels of income and types of occupation. Policymakers should consider diversifying types of benefits, which would allow low-income people to insure for some risks without mandating them to contribute the amount required for the complete pension.[19] And when annuities are calculated, the working poor should not be included in the same actuarial pool as higher income groups, whose life expectancies are longer.

Pension systems must also try to reach the self-employed. Special incentives could be considered, including health insurance programs, tax benefits and flexibility of withdrawals. Government subsidies should also be considered.

During the process of introducing reforms to increase social insurance coverage, contribution and target benefit replacement rates should be kept low in order to minimize evasion and shifts into informal employment. When moving to defined contribution systems—where benefits are directly linked to

[19] Gertler (2000) makes a similar argument that the poor should be permitted to insured just against catastrophic health shocks (see Box 4.4).

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Box 4.4. Health Shocks and Poverty

The size and unpredictability of large health shocks, both in terms of cost of treatment and lost income, suggest that households may not be able to smooth their consumption over periods of major illness, especially in developing countries where few individuals are covered by formal health and disability insurance. One study for Indonesia found that households can smooth 70 percent of the costs of moderate health shocks, yet can only smooth about 40 percent of the costs of serious illness. This same study and others for Asian countries have also found that the poor are willing to pay for insuring against the costs of catastrophic health events.

Despite this potential demand from poor households, private health insurance markets fail because of adverse selection, driving up high prices for insurance premiums, and cream skimming, resulting in refusal by insurers to cover high-risk individuals. To substitute for formal insurance markets, the poor use informal insurance mechanisms such as drawing on savings, selling assets, making transfers from family and social support networks, and borrowing from local credit markets. However, as the severity of a health shock increases, these informal mechanisms are less able to adequately smooth consumption. The inability of the poor to smooth consumption with informal arrangements, combined with the failure of private insurance markets to take hold, suggests there would be a potential large welfare gain from government intervention in the market for catastrophic health care insurance.

Poorer countries often face severe budget constraints in providing social insurance, as well as a tradeoff of providing a large number of people with a small benefit or a small number of people with a large benefit. Latin American countries typically opt for the former, offering first dollar coverage to ensure universal access to medical care regardless of income. In order to provide uncapped benefits for rare large financial risks (such as those associated with catastrophic illnesses such as cancer), a very large deductible and possibly a large copayment would be required. If households are in fact able to insure against the costs of small illnesses, then there could be big welfare gains for the poor in terms of protecting consumption streams if they are insured against catastrophic illnesses.

contributions—reforms should include special transitory measures to protect partially insured groups.

Production of more extensive and detailed data would improve the actuarial soundness of pension reforms and better account for the heterogeneity of income groups, (for example, by providing mortality statistics across income quintiles).

Social assistance also has to be carefully designed to optimize expenditures and avoid crowding out social insurance. Given fiscal limits on the total pool of resources available for transfers, careful targeting is crucial. Outreach programs are needed to ensure that the neediest are covered. Access for the very poorest can be improved through strategic location of benefits offices, information campaigns, proactive measures to identify beneficiaries, and increased community involvement.

Financing of social assistance pensions should be kept separate from that of contributory social insurance programs. Otherwise, potential contributors might feel that their savings are not going towards their

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own pensions, discouraging compliance. This issue is strongly related to the challenge of including the self-employed in social insurance schemes.

Minimum pensions should be defined in such a way as to minimize free riding. Eligibility criteria should be fine-tuned to encourage contributions when possible to social insurance programs. The Chilean model, with built-in triggers for different levels of protection, is one possible model (see Box 4.1).

Means-tested income guarantees, a solution for the elderly poor, should be kept very low relative to social insurance minimum pensions. The type of means test used for social assistance programs should be designed to reduce transaction costs and minimize potential abuses. (As opposed, for example, to case workers filling out income information or taking sworn testimony, as is done in Brazil.) Programs function best when financed by the government but delivered by nongovernmental organizations, making comprehensive use of household survey data and computerized econometric models to design targeting schemes, like those used by *Progresa* in Mexico and SISBEN in Colombia. Programs can also make use of self-selection mechanisms and more community involvement (see more on this in Chapter 5). In-kind subsidies such as housing support can ensure adequate consumption for the elderly poor while avoiding the incentive to free ride.

The needs of the elderly poor, of course, have to be considered alongside those of other groups in the population, such as children. Too often, fiscal limitations result in tensions between old and young, who are left essentially to compete with one another for public subsidies. Building tomorrow's human capital takes precedence when allocating limited resources and using up limited political support for social assistance programs. But more creative thinking is needed on this front. Possibilities include adult day care combined with early childhood intervention projects, or tax relief or additional subsidies to families or communities that care for their elderly. Since many households include elderly people, income supports targeted at households where there are children can also help the elderly.

More research and analysis is needed on several fronts to improve the quality of information available for the design of social insurance and assistance programs. Two areas take priority. The first is to design social protection that provides effective incentives for increasing the participation of the self-employed in social insurance programs. The informal sector is a large, important and still growing segment of the region's labor market. Rather than expect the labor market to adapt to social protection institutions, it is time to accept the fact that these institutions—even reformed pension systems—need to be adapted to the current labor market.

The second priority is to determine the most economically efficient means of meeting the income-smoothing needs of the elderly poor who are not adequately covered by social insurance programs. Methodologies need to be developed to determine the optimum size of minimum income guarantees based on the characteristics of the labor market, the fiscal context, and the extent of poverty in each country. Such methodologies would facilitate running simulations of the effects of the different tradeoffs described above and estimating the financial needs for providing coverage via social assistance to those who are not covered by social insurance programs.

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Conclusion

While the majority of Latin America's poor are still young or of working age, every fourth or fifth old person is poor in many countries. The challenge for the region is to develop adequate social protection mechanisms for these elderly poor, while at the same time helping the young and working age poor meet their subsistence needs, invest in their development, and save for their own retirement years.

There are a number of reasons why the need is great and the time is right to meet the challenge to provide adequate social protection for the elderly poor. First, Latin America has a changing occupational structure in which increasing numbers of people are self-employed or working for small firms. This means that more and more of today's workers are excluded from contributory social insurance programs. Second, the economic difficulties of the 1980s and early 1990s weakened the ability of eligible contributors to participate in social insurance systems. Finally, the aging of the population in the region has both macro and micro implications for the incomes of the elderly. At the macro level, in a number of countries there is a demographic window of opportunity over the next generation, when the ratio of working to nonworking age people will be at its most favorable ever, after which there will be a steady increase in the proportion of the elderly. At the micro level, longer life expectancy and lower fertility rates imply that reliance upon extended families will become more and more difficult over time.

At present, neither the inefficient social insurance systems of old nor the current reformed systems are able to provide adequate social protection for the elderly poor. Unless expanded coverage of contributory social insurance systems is accompanied by significant redistribution, compensatory social assistance will have to be provided in order to prevent many elderly poor from becoming destitute.

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Chapter 5

Safety Nets for Equity and Growth

The shocks discussed in this book—macroeconomic crises, natural disasters, unemployment and the economic risks associated with aging—can frustrate economic and social development. Social safety nets in Latin America and the Caribbean should be designed to reduce the impact of shocks on poor people who are most vulnerable to them, promote equity and growth, and counter the tendency for the poor to pursue survival strategies that destroy human capital and damage the environment.[1]

Safety nets traditionally have been introduced during crises and phased out during periods of recovery. But there are many shortcomings in such a short-run and improvised approach. Protecting people from income downfalls should not simply be a policy response after a shock hits. It requires a sustained effort to strengthen the ability of the poor—as well as those who are close to the poverty line and at risk of falling below it during a crisis—to withstand short-term shocks and lift themselves out of poverty. The short- and long-term objectives of poverty reduction are closely intertwined, so an integrated and sustainable approach to developing safety nets is essential.

In the absence of adequate social safety nets, a temporary fall in income can lead to permanent poverty. Protection during a crisis must therefore provide transfers to smooth income and consumption while also creating incentives for ongoing investments in human capital. Permanent safety net structures are needed for chronic and long-term poverty among the old and the disabled. People with little potential to climb out of poverty through their own efforts need continued support. Finally, safety nets must be flexible enough to expand during periods of recession and shrink during periods of growth.

The challenge for Latin American governments is to devise safety nets that promote the twin objectives of reducing poverty and increasing economic growth. Program design should focus on increasing the asset base of the poor—in terms of both human and physical capital—by incorporating incentives for investment into income support transfers. Policymakers must also minimize the perverse behavioral incentives associated with transfer programs, which can reduce the incentive to work and save.

Safety nets do not exist in isolation from political reality. Competition for public resources is always intense, and the political

[1] See Appendix 5.1 for selected safety net programs in the Latin American and Caribbean countries.

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sustainability of safety nets must be considered as a part of program design. Targeting must be efficient in order to minimize waste and prevent transfers to those who do not need public support. Because the incidence of poverty and the impact of shocks on consumption vary across demographic groups, different programs will target different groups. But again, an integrated approach is required. Transfers to particular groups—children, mothers, the unemployed, and the elderly—will spill over to other members of households. Finally, the best way to ensure political sustainability and stable funding for social protection is to bolster the political voice of the poor and to give poor people and communities an active role in designing and implementing safety net programs.

This chapter highlights best practices in the design of social safety net programs in Latin America and beyond, starting with Ecuador's *Bono Solidario* program (see Box 5.1). The examples point to the importance of protecting the most vulnerable members of society, such as elderly women living alone or people in rural areas, who are sometimes overlooked in otherwise effective programs.

Informal Safety Nets

Informal safety nets play an important role in providing social protection for poor households in Latin America. The poor cope with economic adversity and the effects of shocks through family decisions regarding household size and structure, patterns of migration and remittances, changes in labor market participation of household members, and reliance upon community networks.

Because of their limitations, however, informal systems complement but cannot substitute for formal safety nets. They pool smaller numbers of households and therefore are less able to redistribute income from rich to poor than are formal safety nets financed by general tax revenues. Informal community networks can be overwhelmed by regional shocks, and even when they are strong and function well, these networks cannot reach everyone, particularly people who live alone or do not have other family members.

A study of household responses to poverty in four impoverished urban areas found that since labor is a poor person's greatest asset, poor households frequently respond to declining real income by mobilizing additional labor, principally that of women and children.[2] The study found that changes in household structure to strengthen family support networks are both a result of vulnerability and a strategy to reduce it. However, these strategies sometimes impose unequal burdens on household members, with women frequently assuming a disproportionate share of the burden of adjusting to adverse economic circumstances.

Nonetheless, empirical work has demonstrated that private transfers provide social assistance to those least likely to be covered by formal social insurance programs, such as the poor, the elderly, the sick, those who lack access to formal credit, and the unemployed. Transfers tend to be redistributive between better off and poorer households within the social network and can help to raise the incomes of the poorest. Private transfers also appear to work as informal credit and insurance markets. Studies of Peru and Colombia have found that private transfers are targeted to the very young and the very old, age groups with

[2] Moser (1996).

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Box 5.1. Ecuador's Strategy for Confronting Crisis: *Bono Solidario*

Ecuador has suffered a series of shocks in recent years that have resulted in one of the largest national economic crises in the region. El Niño severely affected agricultural production, infrastructure and, ultimately, employment and poverty. The adverse oil price shock further reduced fiscal revenues. Finally, the contagion of the international financial crisis in 1998 destabilized an already weak banking system, resulting in bank collapses, interest rate hikes, and the freezing of economic assets. The overall economic impact has been devastating, exacerbating political instability and social unrest.

In September 1998, the government instituted a $220 million cash transfer program—the *Bono Solidario*—to compensate, at least initially, for the elimination of general subsidies on gas and electricity.[1] The transfers are targeted to all mothers raising children and to the elderly and disabled with self-reported incomes of below $2 per capita per day. The program provides a transfer of 150,000 sucres per month (approximately $14) to qualifying mothers and 75,000 sucres per month to qualifying elderly or disabled persons. Individuals secure access to the transfer by applying through the network of Catholic and Episcopalian churches. Applications are considered on the basis of self-reported income and income proxies, and cross-checked with information in other databases. The transfer is distributed through the banking system and now reaches 1.4 million families, which may account for as many as 6 million beneficiaries, or approximately half the population. This is a significant effort in terms of population coverage and rapid implementation during a period of crisis. The transfer to mothers represents about 15 percent of the average income of the poor, although its real value has been falling substantially since the inception of the program.

Recent evaluation of targeting efficiency relative to the 1998 household survey suggests that the program suffers significant exclusion and leakage, possibly on the order of 30 to 40 percent. Exclusion is particularly high in rural areas, often because of the lack of access to financial institutions or a lack of effort by government to deliver the transfer to isolated areas. Conversely, leakage is concentrated in urban areas. The government is undertaking a review of beneficiaries to establish mechanisms to confirm eligibility. Finally, although the ranks of the poor have increased in the last year as a result of the ongoing crisis, no mechanism is in place to make the transfer accessible to those who have fallen below the poverty line.

The option the government is developing to deal with the continuing crisis is to expand the benefits by instituting a sister program of scholarships targeted to poor families with school age children. The aim would be to ensure school attendance. The additional transfer would be paid to mothers conditional on their children's school attendance (monthly attendance of 90 percent or above). The objective of such a conditional transfer would be twofold: in the short run, to transfer additional resources to low-income families and provide disincentives to child labor; and in the longer term, to increase the stock of human capital and earning capacity of the poor, thus helping break the intergenerational transfer of poverty.

The implementation of a new system for targeting and evaluation, and institutional strengthening, are key elements to improve the cost-effectiveness of public action.

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[1] The general subsidies on gas and electricity, both very regressive, still account for $286 million (IDB 1999a).

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few current resources.[3] Further evidence finds that private transfers work as insurance against income shortfalls. In Cartagena, Colombia, where the variance in household income was found to be quite extreme, a simulation analysis showed that transfers would fall by 40 percent if incomes were completely stabilized.

The very fact that private transfers reach precisely those groups normally targeted by public safety net programs suggests that the response of private transfers to public transfers could have important operational implications for public policy. Limited evidence suggests that public transfers can crowd out private ones. In Peru, 17 percent of the potential net gain to households from an increase in public pensions was lost through declining private transfers.[4] However, to the extent that private transfers come from people in income distribution ranks close to those of the recipients, they are unlikely to compare favorably to public transfers in terms of either equity or efficiency. Public transfers benefit from their ability to pool risks across a more diversified pool of contributors.

Overall, informal safety nets can provide an important buffer for the poor where comprehensive public programs are lacking. Yet, they are an imperfect substitute, and can often impose long-term costs in terms of human capital development or risk-averse production strategies. Public safety net programs should be designed to promote and incorporate those aspects of the informal safety net that support longer-term growth and equity objectives, while at the same time ameliorating the need for survival strategies that perpetuate poverty across generations.

The Need for Public Safety Nets

Safety nets should be a permanent feature of public policy, both because poverty reduction requires a medium-term policy commitment and because timely intervention during a crisis depends critically on using existing structures and expanding them quickly to reach the target population.

The structure of safety nets should be in place in normal times to cater to individual shocks and the chronically poor. During crises, they must protect the poor and near-poor from falling below subsistence levels and from taking investment decisions that may have irreversible consequences on their family's earning prospects. Although permanent, however, safety nets must be counter-cyclical, expanding during crises and contracting during recovery, since the ranks of the poor grow during a crisis and their informal support mechanisms diminish.

Safety nets must be designed to be flexible enough to expand their expenditures at a time when there is a great deal of pressure on the government budget. This might involve development of financing stabilization funds that expand during periods of economic growth and are drawn upon during recessions, or commitments from government to protect spending on targeted programs, as has been the case in the most recent fiscal adjustment programs in Brazil and Venezuela.

Institutions have an inherent tendency to expand. Downsizing is far more difficult. Policymakers need to design automatic triggering mechanisms to increase and expand programs counter-cylically. One way to achieve

[3] Cox and Jiménez (1998).

[4] Ibid.

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this is through self-targeting mechanisms, such as those used in workfare programs. Demand for such programs increases during a crisis and subsides during recovery. When the poor are required to pay in some way for the benefits they receive, either through the exchange of income support for work or by sending their children to school, they are less likely to perceive transfers as an entitlement.

Finally, the effective expansion and contraction of safety nets demands rapid, accurate and current information regarding the social impact of a crisis, such as that provided by a Social Monitoring and Early Response Unit created in Indonesia during its recent financial crisis.

Jamaica's Food Stamp Program is an example of a safety net that has become a permanent public program and has provided important income support to the poor for 15 years (see Box 5.2). But it also illustrates the challenges faced when withdrawing benefits from people who no longer need but have come to expect them.

Safety nets must be effective in reducing the depth and severity of poverty both in the short and long term. The first element of a program is to ensure that the safety net targets the most vulnerable, including the working poor, families with young children, school age children, the disabled and the elderly. Particular care is needed to ensure that vulnerable groups—such as elderly women living alone and street children—do not fall through holes in the safety net.

To the extent that the poor rely on extended family structures for coping with economic adversity and managing risks, the intra-household allocation of resources must be taken into consideration. For example, transfers targeted at families with young children will also benefit the elderly who live in those same households. The reverse holds as well: in South Africa, the social assistance program to the elderly poor reaches not only the direct beneficiaries but, since a high proportion of the elderly live with their grandchildren, it is also effective in directing money to households where children live.[5] Analytical tools to understand the effects of the composition of the family and its allocation of resources must be coupled with effective targeting mechanisms to select beneficiaries according to the chosen indicator for their standard of living. Effectiveness is an empirical issue: it is specific to the target population, to the instruments used, and to prevailing conditions.

The second key element of safety nets is the mechanism to measure impact, defined as the ability of the program to improve the conditions of beneficiaries relative to those that would have prevailed in the absence of the program. Impact evaluations provide the necessary guidance to select instruments and policy mixes, and to design and modify programs. A closely related issue is the cost effectiveness of safety nets. The impact of the program must be measured against program cost, including transfers, administrative costs, and the costs associated with perverse incentives and induced behavioral changes, such as reduced incentive for work effort or the search for employment.

Ensuring impact and cost effectiveness of safety net programs are the most important factors for their political sustainability. Even though safety net programs in Latin America represent only a very small share of government spending, competition for scarce public resources is often intense. Vocal and organized groups are more likely to receive

[5] Case and Deaton (1998, pp. 1330-61).

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Box 5.2. The Jamaican Food Stamp Program: 15 Years of Targeted Transfers

The Jamaican Food Stamp Program is one of the longest running and most studied targeted programs in the region. The program was established in 1984 to buffer the impact of structural adjustment policies on vulnerable groups, combat hunger and reduce malnutrition. The food stamps replaced general food subsidies, with the goal of reducing the fiscal deficit while still protecting the poor.

The program uses both a simple means-test survey and general self-selection targeting criteria to determine potential beneficiaries. The target population currently consists of pregnant and lactating mothers (from pregnancy until six months after giving birth); children under the age of six; elderly and disabled poor; all recipients of poverty relief and public assistance; and all indigent households. In 1997, over 200,000 people (about 7.5 percent of the population) benefited from the program.

Self-selection occurs as beneficiaries apply and register for the program at health centers, clinics and parish program offices. The beneficiaries are required to have regular health check-ups before receiving their bimonthly allocation of stamps. Two characteristics of the Jamaican health care system contribute to the success of a self-selection mechanism: first, 95 percent of Jamaicans live within 10 miles of a government health clinic (the universal coverage of government clinics minimizes the problem of undercoverage); and second, there is a tendency for better-off Jamaicans to use private health care rather than public clinics.

Targeting through the food stamp program has a larger impact on the incomes of the poor than did the generalized food subsidies that preceded it. And the cost of food stamps, particularly during the early years (1984-89), was about half that of the previous system. Data from 1988 reveals that people in the poorest quintile received 31 percent of food stamp benefits—more than twice the share they had received from general food subsidies. Furthermore, by utilizing already existing institutions to administer the program, the government was able to start the program quickly, with solid institutional management experience. The use of the commercial and retail food chain distribution structure keeps administrative costs low and ensures that program recipients can easily use the food stamps.

The lack of an adequate management information system has been a concern since the program began, at times hindering its capacity to register beneficiaries and maintain adequate tracking. There have also been ongoing issues with reregistration of beneficiaries because the system is not computerized and because there are no consistent reregistration procedures. For example, those first identified as poor when the program began in 1984 stayed on the rolls until special reregistrations were done in 1987 and then again in 1989. In 1987, 100,000 ineligible names were removed from the program after the reregistration process.

Another shortcoming is that coverage of vulnerable children appears to be weak. According to the Survey of Living Conditions in 1996, only 6.8 percent of malnourished children participated in the program. The survey data point to a lack of coordination between Ministry of Health clinics and the food stamp program administration in both identifying and registering malnourished children, as well as to a problem in the self-selection element of the registration process. Some recent studies of the program recommend a more proactive role by program administrators in searching for and registering malnourished children.

Sources: Grosh (1992); Castañeda (1999); Baker (1997); World Bank (1990).

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resources than the very poor, who are often less organized and politically isolated. The need for a political voice for the poor is particularly important in times of economic crisis, when budgets are under pressure. In designing safety nets, part of the challenge is to maintain spending—and in times of crisis, actually increase it—for those groups least likely to have political power.

Though accurate targeting of the poorest may best meet the social objectives of reducing the depth and severity of poverty, overly-narrow targeting can erode political support and funding. Such has been the case with the Jamaican Food Stamp Program, whose effectiveness and impact have been hindered because of the rapid erosion in real food stamp values. Left unadjusted for inflation, these values dropped by more than 40 percent from 1990-96. It appears that careful targeting resulted in decreased political support, which led to a decline in the value of food stamps.

Some leakage of program benefits can serve to increase the political support for safety net programs by letting more politically powerful, but less poor, groups share in the benefits. A program targeted to the poorest of the poor, while effectively reducing the severity and depth of poverty, may do little to reduce the incidence of poverty as measured by a simple headcount ratio, since those straddling the poverty line may not receive program benefits. This may impact the perception of a program's effectiveness, undermining its political viability. This is in part why appropriate evaluation systems are needed to provide substantive results to help "sell" and maintain political support for safety net programs.

Another factor in the political feasibility of safety net programs is the sustainability of financing. Though earmarked taxes may impose certain economic costs in terms of fiscal discipline and allocative efficiency, they can be the best way to maintain a steady flow of public resources to the poor, especially in times of crisis. The Maharashtra Employment Guarantee Scheme in India was successfully financed through an employment tax in urban areas of the state, most significantly the city of Bombay (see Box 5.3). Although this particular tax mechanism is inefficient because it taxes labor, it did provide a secure stream of resources for the program. The introduction of protocols to rank programs according to priorities along the lines discussed in Chapter 1 can also help ensure the needed funding of safety nets.

During a crisis, when resources are few, governments are more likely to respond to demands from groups whose political support is important. This is unlikely to be the very poor. Involving community-based and nongovernmental organizations in social programs and strengthening their relationship with governments can create a political voice for the poor, in turn increasing the political viability of safety net programs. This has been the case with Costa Rica's *Triángulo de Solidaridad* (see Box 5.4).

Governments must also persuade the general public that directing scarce public resources to the poor, especially during times of crisis, has both immediate and long-term benefits that outweigh the costs of the programs. The rapid field assessments carried out by Indonesia's Social Monitoring and Early Response Unit, for example, provide the government with valuable information on the benefits of safety nets that can be communicated to the public.

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Box 5.3. The Maharashtra Employment Guarantee Scheme

The Maharashtra Employment Guarantee Scheme in India is one of the most frequently cited examples of a successful workfare program. Started in the early 1970s, the program was small in scale at first but grew rapidly until the late 1980s. By 1986, the program was creating 190 million work days annually.

Changes in the wage rate structure of the program in 1988 led to important changes in its reach and effectiveness. Since the program's peak in the late 1980s, it has been reduced in size by about 50 percent and no longer plays as important a role as a safety net. Nevertheless, it remains an important source of income for the rural poor in Maharashtra.

The program initially was a response in part to the sharp decline in India's food production during the late 1960s. But beyond this association, it was not specifically created to respond to any particular crisis or shock. The number of people employed by the program has been highly seasonal and also varies significantly from year to year. This shock-absorbing function—guaranteeing work when it is most in demand—has raised average earnings and also reduced week-to-week and month-to-month fluctuations in income. This income-smoothing capacity enables the program to function as an effective safety net against seasonal or other sharp downturns in income.

The program was an important factor in the impressive reduction of poverty rates in Maharashtra during the 1970s and early 1980s, especially among the poorest of the poor. Estimates of its impact on labor suggest that it reduced rural unemployment rates by 10 to 35 percent. A range of survey data concludes that nearly 50 percent of participants' wage employment and 20 to 35 percent of their total income comes from participation in the scheme.

The program confers significant transfer benefits to the poor, even considering the cost of forgone income, the main cost of participation in the program. Ravallion (1991) found that the opportunity costs of participation amounted only to about 20 percent of earnings. One of the keys to the program's successful targeting of the rural poor was that the wage rate was set below the market wage rate, at least until 1988. Self-targeting has ensured that most benefits are directed to the poor; one estimate finds that approximately 80 percent of program participants belong to poor households.

Though the program remains an important source of income for the rural poor in Maharashtra, its effectiveness as a safety net was seriously eroded in 1988 when the minimum wage—and thus the program wage—was increased from below the market rate to above it. This led program officials to cut the number of work places, making work harder to access and effectively rationing jobs. This eroded the guarantee of employment, thus ending the program's effectiveness as a safety net. Though higher wages certainly benefited poor people who found work, many of the poor were excluded.

The program began with some significant advantages that may be difficult to find in other contexts. They include the long period of project preparation prior to start-up, having a source of urban financing, relatively representative and efficient local government and administration, and the political willingness to redistribute funds to poor rural areas. The financing of the program through an earmarked urban tax was critical; indeed, the sustained success of the program owes much to Bombay, where the bulk of those taxes were collected.

Sources: Lipton (1996); Ravallion (1991); World Bank (1990).

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Box 5.4. Social Policy from the Bottom Up: *Triángulo de Solidaridad* in Costa Rica

The *Triángulo de Solidaridad* is an innovative initiative that redefines how social programs are conceived and administered in Costa Rica. *Triángulo* encourages investments in human development projects by creating a strategic alliance among the three principle actors: communities, local governments and state institutions. The goal is to improve the quality and reach of social programs by promoting local cooperation through participatory democracy and the strengthening of municipal governments. This in turn enables people to become participants in the creation of effective human development programs.

The initiative rests on the principles of solidarity through cooperation; respect for human rights, pluralism and cultural diversity; participatory democracy; and equity in terms of geography, income and gender. The specific objectives are to strengthen citizen participation in decisionmaking for social development at all levels; protect programs with a focus on human rights and gender equity; and promote a new concept of governance that responds to citizen demands and requires direct contact with communities and local governments. Projects are expected to focus on solving urgent problems in health, education and the productive sectors.

Projects are selected and identified at the district level by an entity called the *Asamblea de Vecinos*, which brings together the municipal government, community leaders and civil society organizations. With the support and technical assistance of the *Triángulo* Secretariat, the assembly identifies priority areas within the district, selects development projects, and identifies the contributions that the community and municipal government can make. The assembly then negotiates with the central government to analyze the viability of the proposed projects, make final project selections, and establish the division of financing among general government revenues and the contributions pledged by the community and municipal government. A board of citizens oversees the entire process to ensure transparency in planning and financing and to evaluate projects in terms of effectiveness.

Designing Safety Nets for the Poor

Emergency employment and microcredit programs contribute to an integrated, growth-oriented social safety net. Dealing with unemployment and underemployment creates positive spillover effects in local labor markets, and can benefit poor communities by providing social infrastructure. Social Investment Funds, which were set up throughout the region in response to the crises of the 1980s, can be used to help overcome problems of program delivery and implementation. Microcredit helps the poor overcome obstacles in saving and building financial assets, and allows them to diversify production. It thus serves as a strategy both for risk mitigation and risk prevention.

Targeted human development programs provide cash transfers for poor families to help meet immediate subsistence needs, while at the same time supporting interventions to improve the quality of health and education services. Such programs are increasingly common in the region, with initiatives under way in Mexico, Honduras and Brazil, and others being prepared in Nicaragua and Ecuador.

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Emergency Employment Programs

Emergency employment programs (sometimes called workfare) should be a central part of integrated social safety nets. As discussed in Chapter 3, they provide an income-smoothing device for people of working age without inducing the perverse incentives against work that are common to other transfer programs. In addition, the self-targeting nature of workfare is a cost-effective alternative to means-tested targeting, allowing for automatic adjustment of program size depending on demand and available funding.

Chile's array of public employment programs in the 1980s covered almost 13 percent of the entire labor force.[6] Most of these programs were introduced to reduce the dramatic impact of the 1982 recession, which saw unemployment reach a peak of 23.7 percent in September of that year. Enrollment in emergency employment programs skyrocketed at the end of 1982 and remained high until the end of 1984, when labor market conditions improved. Program wages were set at roughly 70 percent of the minimum wage to strengthen the self-targeting of the poor workforce. Projects were run at the municipal level but were financed by the central government. The requirement that at least 80 percent of total project disbursement be for labor costs reinforced selection of labor-intensive projects.

The two main schemes under which projects were financed were the Minimum Employment Program *(Programa de Empleo Minimo—PEM)*, which had been in place since 1975, and the Heads of Household Employment Program *(Programa Ocupacional Para Jefes de Hogar—POJH)*, which started in 1982. Both programs targeted unemployed workers not receiving unemployment subsidies or any other form of income support. But the nature of the two schemes was very different. The POJH targeted heads of households and required previous work experience. Its projects primarily involved construction and maintenance of public infrastructure. Participation in POJH programs was particularly high among married males ages 35-55 with little education.

PEM did not require previous work experience and included textile and food production. As a result, female participation was particularly high—on average, 70 percent of total beneficiaries, as compared with 25 percent female participation in all of Chile's 13 public employment programs taken together.

PEM participants spent an average of 40 months in the program, while the average tenure in POJH was 25 months. Absenteeism from PEM jobs was fairly high, at 12 percent, representing a weakness in the program that could have been improved by better supervision or more appropriate incentive schemes. Overall, however, Chile's emergency employment programs were relatively successful at targeting the segment of the population concentrated in the bottom 20 to 30 percent of income distribution.

In Argentina, the national temporary employment program *Trabajar* has tried to reduce the impact of labor market adjustments on employment and incomes of the poor.[7] The program targets low-skilled unemployed workers in urban areas as well as poor rural workers who do not receive any unemployment subsidy. Started in 1996 and financed primarily by the World Bank and the Argentine *Fondo Nacional de Empleo (FNE)*, the pro-

[6] Information on Chile's workfare programs comes from Subbarao et al. (1997) and the Universidad de Chile, Departamento de Economía (1989).

[7] For more information on workfare programs and *Trabajar*, see Ravallion (1998).

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gram is focusing more recently on better reaching its target population and improving the quality of the social infrastructure it builds.

National, provincial and local agencies, together with nongovernmental organizations, are responsible for submitting project proposals and carrying out projects once they are approved. Projects are evaluated on the basis of their location in areas with the highest incidence of poverty and unemployment, their recognized social utility, and their coordination with social programs and priorities at the national and provincial levels. Labor remuneration must account for more than 30 percent of total project disbursements.

An evaluation of project performance in 1997 found average coverage was 8.4 percent of the targeted population at the national level, roughly one-third of the objective initially set by the World Bank. However, recent results from the evaluation show that project performance has improved since the initial project phases in terms of reaching poor provinces and, in particular, targeting the poorest segments of the population within these provinces. In fact, the evaluation found that 70 percent of participating workers came from the poorest quintile of national income distribution, and 50 percent from the poorest decile. The net income gain for program participants was 26 percent of their pre-participation income.

Participation in workfare programs tends to be positively correlated with the compensation offered. If the wage rate is low compared to the market wage, these schemes will attract only those workers who have little or no opportunity to earn money elsewhere. The Maharashtra Employment Guarantee Scheme in India is a clear example of how a change in the wage structure can affect program participation (see Box 5.3). Wages that are too high attract nonpoor workers into the program, while wages that are too low reduce the transfer benefit. The wage policy depends, therefore, on whether public employment programs seek to reduce the severity or the incidence of poverty.

A common critique of emergency employment is that, unlike other social programs, it tends to focus exclusively on short-term poverty alleviation rather than on offering escape routes from poverty. This implies that the poverty reduction impact of workfare programs is improved if they also provide beneficiaries with incentives to accumulate assets (human capital and savings). This and other critiques remain unanswered because further evaluation is needed of the long-term impact of emergency employment programs. It is not clear if participants receive beneficial long-term job training that enhances their ability to find employment after leaving the program.

Evaluation of the cost effectiveness and poverty impact of workfare programs must take into account the extent to which poor people are covered and the net amount of the benefits they receive (that is, the wage that participants receive net of direct costs and forgone earnings). The income of program participants compared to nonparticipants must also be reviewed. To estimate the impact of employment programs on the economy as a whole, policymakers need to take a number of indirect factors into account. These include the impact on demand in the economy (as program participants spend their earned incomes on goods and services), and possible additions to the human capital stock (where workers develop new skills). Also important is the impact of public employment programs on the labor market through its effects, for example, on labor supply and wage levels in the private sector. If employment programs are

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available only to offset falling labor demand following economic shocks, participants will benefit from income stabilization and consumption smoothing. However, if these programs are also kept in place during periods of expansion, they may restrict labor supply in the private sector by forcing up the market clearing level of wages among unskilled workers.

Ravallion (1998) identifies some of the features that can make workfare programs effective anti-poverty interventions. First, the wage rate should be lower than the prevailing wage for unskilled labor. Willingness to work at that wage rate should be the only eligibility requirement for participation in the program. If program funds are limited relative to demand for work at that wage, the program should ration jobs by targeting the poorest areas in the country. Programs should strive for higher labor intensity (which should be a byproduct of low labor costs), and benefit poor areas by creating assets of maximum value to the poor. Finally, the impact of these programs on poverty should be carefully monitored and evaluated.

Social Investment Funds

Where institutional capacity is particularly weak, Social Investment Funds (SIFs) can be used. Although initially designed to manage demand-driven safety net programs, over time these funds have become increasingly involved in building institutional capacity.

Several Latin American countries established SIFs in the 1980s and 1990s in order to provide safety nets to the poorest in times of macroeconomic crises and adjustment. They were originally intended to bypass inefficient and overly centralized public institutions by selecting and financing small-scale projects proposed and then executed by local governments, nongovernmental organizations and grassroots groups.

SIFs were conceived as temporary and counter-cyclical safety net programs that would provide additional income and employment to victims of crises. However, in practice they did not act as safety nets at all,[8] evolving instead into permanent institutions specializing in the delivery of social services to poor communities. They have the potential to play an important role in poverty reduction and to serve as a delivery mechanism for other types of safety net programs.

The first internationally recognized SIF was introduced in Bolivia in 1986 to protect the poor and near-poor from unemployment and declining incomes resulting from the country's macroeconomic adjustment program.[9] Tin workers were targeted explicitly, since they were expected to be the primary victims of the adjustment. The $240 million program, known as the Emergency Social Fund (ESF), financed modest projects designed to provide additional employment and income in poor areas. The four defined areas of intervention were economic infrastructure, social infrastructure, social assistance, and productive support (in the form of credit schemes).

At full capacity, the Bolivian ESF provided 20,000 person-months of employment per month. Despite this tangible result, the fund only partially reached its original objectives as a safety net. Tin workers, for example, turned out to be only marginal beneficiaries of the employment program (10 percent of beneficiaries), although a substantial

[8] See Lustig (1997).

[9] Graham (1994) and Jorgensen, Grosh and Schacter (1992).

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number of employment opportunities were provided for construction workers (44 percent of beneficiaries), who had also been hit hard by the crisis.

In terms of poverty alleviation, the fund did not reach the poorest populations. ESF spending remained lowest in the poorest regions—$9.45 per capita in those areas compared with $23.97 in the least poor area. In addition, workers in the poorest two income deciles were underrepresented in terms of ESF employment. More than two-thirds of ESF workers belonged to the third through sixth income deciles. This problem was primarily due to the nature of the ESF, which was demand driven and therefore depended on the capacity of communities and municipalities to formulate and execute projects.

In contrast with these ambiguous results in terms of income smoothing was the fact that the infrastructure created through the ESF benefited 1.2 million people in low-income rural and urban areas in a country with a population of under 7 million. The additional social infrastructure and delivery of social services contributed significantly—and at low cost—to improving living conditions of communities that were most in need.

Over time, however, the ESF moved further away from its original safety net objective. It became a permanent institution in 1991 and was officially transformed into an instrument to deliver social services in poverty stricken and underdeveloped areas.

Like the Bolivian ESF, the performance of most Social Investment Funds has been poor in terms of generating additional employment and income to cushion the poor from the effects of adverse shocks. A study of all major SIFs in the region indicates they have not significantly increased the incomes of beneficiaries.[10] Since many funds concentrated efforts on completion of small-scale projects, communities were offered only short-term unskilled employment (or even asked to provide free labor), while most of the long-term construction jobs were given to outside contractors.

Despite this trend, SIFs can serve as a safety net during times of crises if they are used appropriately, as the Honduran SIF demonstrated during Hurricane Mitch. SIFs remain more flexible than most ministries in delivering social services to poor communities, and they have a good track record in terms of disbursing resources quickly. Following Hurricane Mitch, the *Fondo Hondureño de Inversión Social (FHIS)* supplied 10,000 rations to the inhabitants of the Department of Colón. Based on per capita damages per municipality, the FHIS reassigned funds so that seriously affected municipalities could receive increased support. Some 100 days after Hurricane Mitch, the FHIS portfolio had increased fourfold compared with historical precedents for the same period of time. More than 2,000 projects were in progress totaling $40 million and covering 835 municipalities.[11]

SIFs should be considered a permanent component of an integrated approach to poverty reduction and social protection. However, there is an inherent contradiction that needs to be addressed. It is often argued that by bypassing traditional government structures, SIFs serve as a safety valve that allows policymakers to provide needed services to poor and marginalized areas while at the same time avoiding difficult structural reforms in their ministries. If SIFs are to become per-

[10] IDB (1998, p. 4).

[11] World Bank (1999).

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manent instruments in fighting poverty, then more careful thinking is needed about how they can promote ongoing processes of reform in the region.

SIFs can act on three fronts to promote much needed reforms in the delivery of social programs. First, they can share their tools. SIFs have been pioneers in the use of geographical poverty maps to target investments, and have developed substantial expertise in working with community-level groups. Second, SIFs can serve as a model. In principal, there is no reason why other government agencies could not function more like social funds, offering alternative services or subprojects for communities to choose from and adapting to local circumstances. Interagency coordination would allow for the integrated delivery of a package of social services to the local level, complete with plans for community participation. The management structure of SIFs could also inform the design of other safety net programs. Private sector managers, when they are allowed some institutional autonomy, can improve the efficiency and financial sustainability of safety net programs, as well as ensure that their implementation is nonpartisan.[12] Third, SIFs can serve as the eyes and ears for the central government in marginalized areas. Because of their links with local communities, SIFs have the resources at their disposal to channel the demands of local groups to those who need to hear them. They can also help previously disenfranchised groups build a voice and generate political constituencies in support of policy change and needed services such as microcredit.

The organization of a safety net program may be as important as the specific activities financed by the program—and perhaps more important in terms of the collateral effects on longer-term development objectives. Positive spillover is more likely from institutional arrangements—such as those of the *Triángulo de Solidaridad* in Costa Rica or the *Nuestros Niños* program in Ecuador—that build on beneficiary participation, community-led initiatives, and strong involvement by nongovernmental organizations and other civil society groups.

To the extent that the central government is able to develop rules and guidelines with clear targeting criteria and a well-defined menu of activities, partnering with beneficiaries and local actors can help to rapidly expand program resources during times of crisis. The program can in effect be designed in franchise form. As demand increases and eligibility conditions are met, the program can be easily expanded, as long as funding is available. This in turn depends upon the political will of governments of the region to provide social protection for the poor.

Microfinance[13]

There was an increase in the number and reach of microfinance institutions throughout the developing world during the 1990s because of increased funding from governments, donors, private investors and foundations. These institutions have focused primarily on the role of microcredit in mobilizing resources for long-term growth. The traditional case for microfinance has emphasized that improved access to financial services can raise the rate of investment and asset accumulation, leading to additional income and economic growth. The services offered usually include micro-

[12] Graham (1994, p. 10).

[13] This section draws on Zeller (2000).

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enterprise credit, seasonal agricultural credit, medium- and long-term investment credit, and interest-earning term deposits and savings accounts.

Less attention has been paid to the potential safety net role of microfinance in helping households cope with risk. This role is in fact related, however, to what has been the traditional concept of microfinance, since building the asset base of the poor is the best insurance against income fluctuations. Improved access to financial services can decrease the variance of income and consumption, reducing the risk of consumption falling below a subsistence level in poor households. Credit also provides a mechanism for transferring risk from the borrower to the lender, thus allowing the borrower to engage in activities with a higher return profile. Financial services such as credit, savings and insurance can address the demand for reducing ex ante the variance of income and ex post the variance of consumption.

An important potential role for microfinance as part of safety nets lies in addressing individual shocks such as illness, disability and old age. Financial services can help mitigate these risks by providing precautionary savings services, insurance, and lines of consumer credit. BancoSol in Bolivia is one example of a microfinance institution that successfully provides savings services to both urban and rural poor (see Box 5.5).

Because credit is inherently procyclical, microfinance institutions are not well equipped to adequately address economy-wide shocks. They can, however, help mitigate regional shocks if they are integrated into the network of first-tier institutions, and thus have access to national savings. Well-established microfinance institutions have also been able to address economy-wide shocks in the wake of natural disasters by channeling international aid. For example, after severe floods in Bangladesh in 1998, the Grameen Bank and other microfinance institutions provided relief services and emergency loans, rescheduled loans, allowed the withdrawal of savings, and coordinated with donors, relief agencies and the government.[14]

As described in Chapter 3, effective microfinance interventions are predicated upon the development of efficient national financial systems and appropriate supervision of second-tier institutions. In order to increase the effectiveness of microfinance in reducing poverty, policies and pilot projects should be developed that support innovative financial services for income and consumption smoothing. Policies should promote the transfer of innovative technologies to local financial institutions, as well as financial incentives to lower the barriers to entry in rural and isolated communities. Dissemination of information to microenterprises is also conducive to increasing access to financial services.

Targeted Human Development Programs

The objective of targeted human development programs is to support current consumption of the poor and to break the intergenerational transfer of poverty. The programs transfer cash or services to poor households with children and condition the transfers on the households' investment in the human capital of their children (school attendance and health care visits). Income support reduces immediate poverty, and because human capital is the single most valuable asset for climbing out of poverty,

[14] Nagarajan (1999).

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Box 5.5. *BancoSol* in Bolivia

Banco Solidario, S.A. (BancoSol) in Bolivia has emerged as a pioneer in microfinance because of its successful use of solidarity group lending, its sustained growth, and its remarkably low default rates.

BancoSol was the first private commercial bank in the Western Hemisphere to provide financial services specifically to microentrepreneurs. It was created in early 1992 when PRODEM, a Bolivian nongovernmental organization that had been involved in microcredit lending since 1986, responded to growing demand for microcredit by converting into a formal commercial bank. This was the first time a credit-granting NGO made the transition to a formal financial institution.

The objectives of *BancoSol* are to increase the income-generating capabilities of microentrepreneurs in the informal sector and meet their demand for credit, and to create a market-driven approach to microlending. It primarily targets urban or periurban dwellers who have no experience with formal financial markets, although it does not reach the poorest Bolivians, who are predominantly rural and indigenous.

BancoSol currently has 29 branches that provide both lending and saving services throughout the country. The number of clients served grew from 25,000 to 75,000 between 1992 and 1997. The average loan size is $579, less than half that of other microlenders in Bolivia. *BancoSol* also distinguishes itself in its targeting of women, who make up 72 percent of its clients.

BancoSol's eligibility requirements are in line with its objective to serve the poor, and are therefore not particularly restrictive. To help borrowers who lack the necessary collateral to secure their loans, and to externalize some of the costs of monitoring loan repayment, *BancoSol* uses solidarity group lending. All members of a group guarantee the loan to a group member. The actual loans are made to individuals, but only on the basis of the group guarantee.

BancoSol's interest rates are higher than those of other traditional lending institutions and slightly higher than those of other Bolivian microfinance programs. But its arrears rate is remarkably low, averaging around 3 percent, and its interest rates are still lower than those charged by informal moneylenders.

BancoSol has managed to find success as a commercial bank, while at the same time helping to increase its clients' incomes, diversify assets for consumption smoothing, create new jobs, and improve living standards. Most importantly, there has been strong demand for financial services from the informal sector. The bank's rapid growth demonstrates that poor microentrepreneurs are willing to borrow at high costs when financial services are also well targeted to their needs. *Bancosol's* savings services are also attuned to the informal sector. It is the only bank in Bolivia with no minimum deposit requirement to open an account. Finally, *BancoSol* has succeeded because of the experience and technical assistance, as well as the existing loan portfolio, provided by PRODEM. Its commercial orientation and professional approach to providing microcredit have been instrumental in sustaining the bank itself while maintaining a focus on reaching the poor.

BancoSol still faces a number of challenges to continue to meet the demand by the poor for financial services. Banking regulations limit the amount of personal guaranteed loans to twice the value of the bank's equity capital. This makes it difficult for *BancoSol* to lower its capital-to-risk-weighted assets ratio, restricting its capacity for growth. And in recent years, more sophisticated borrowers have begun to make up a greater share of the client base as clients graduate to higher levels of business activity and the bank attracts new informal sector clients who are not poor but lack access to traditional financial markets.

Sources: Fidler (1998) and Leach (1998).

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ensuring the health and educational development of children combats intergenerational poverty because it augments their future earning capacity.

Educational intervention is efficient from an economy-wide point of view because it is a public good: the private incentives to invest in human capital are lower than the public returns. Ensuring increased investment in human capital of the poor will therefore be not only beneficial to poor families, but to society in general. This means that the fiscal cost of this type of program may be repaid in the future in the form of higher growth for the economy overall.

Design of targeted human development programs is more complicated than that of an unconditional transfer program. Both short- and long-term considerations (poverty alleviation and asset accumulation) must be addressed. Because these programs require a medium-term commitment from governments and a substantial financial commitment, evaluation mechanisms are needed to measure the progress and impact of the transfers both in the short and long run.

The optimal mix of education, health and nutrition interventions is an empirical issue that can be evaluated during a pilot phase, along with the complementarity of other social interventions such as providing schools and health facilities. The size of the transfers to beneficiaries must balance the need to provide sufficient incentives to affect family behavior, while also recognizing the tradeoff between the size of transfers and population coverage given a limited budget.

To provide enough of an incentive, the transfer in educational programs must at least cover the cost of school attendance and at least some of the costs in terms of forgone earnings of children. Programs can condition the transfer of benefits on school attendance of each child or of all the children in the household. The advantage of the former is that benefits can reflect each child's opportunity cost; the benefit of the latter is that it precludes families from choosing to educate one child and not another (sending girls to school but not boys, for example, because the opportunity cost of boys' forgone earnings is greater) and it provides no incentive for increased fertility. The latter, however, is harder to monitor.

Progresa in Mexico is the most complete targeted human development program in the region in terms of its range of education, health and nutrition interventions, and its targeting and evaluation mechanisms. In 1998, 1.9 million households participated in the program, three-quarters of which were in the targeted population.

The Family Allowance Program (PRAF) in Honduras is smaller in focus, reaching some 183,000 households, but includes both demand and supply side interventions in health and education, as well as a solid evaluation system designed to assess the impact of alternative policy interventions.

In Brazil, scholarship programs for poor families were first introduced at the municipal level in Brasilia and Campinas in 1995, then quickly expanded to 27 other states and municipalities. A federal version of this program was recently created as part of a campaign against child labor. The program aims to keep children in school by compensating families for the lost income earned by the children in school who would have been working. Preliminary evaluations of these programs show significant improvements in school attendance.

Programs and policies to support investments in early childhood are distinct from but closely related to targeted human development programs. The objectives of both types

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of programs often complement one another. Early childhood development programs represent an important element of a social protection strategy to promote growth with equity (see Box 5.6). They are highly cost-effective, offering higher returns than most other public programs. By providing health care, education and nutrition for preschool children, they create the conditions for the young to succeed when they start school, leading to increased human capital formation. And by providing childcare facilities, they allow parents to participate in the labor market, improving their chances of getting higher paying formal sector jobs.[15] World Bank research based on experiences in Russia shows that substituting childcare subsidies for family allowances has a strong positive effect on women's labor force participation, and as such can be effective not only in short-term consumption smoothing but in longer-term poverty reduction.[16]

If designed carefully, early childhood programs can be expanded during times of crisis, possibly in association with workfare programs, as is the case with the Maharashtra Employment Guarantee Scheme. However, withdrawing services after a crisis is over may present a stiff political challenge.

Improving Performance

Two important ways to improve the cost-effectiveness and increase the amount of benefits and transfers directed to the poor through safety net programs are to use a carefully planned targeting mechanism during program design and to undertake rigorous evaluation of existing programs. The way in which programs and services are implemented and delivered can also have important consequences on their effectiveness and impact.

Targeting

The most frequently used mechanisms to target social programs are categorical, means-tested and proxy means-tested, and self-selection (see Box 5.7).[17] Any targeting mechanism should be considered in terms of its efficiency, administrative cost, and political feasibility. Efficient targeting minimizes both the probability of missing individuals who should be included (errors of exclusion or Type I errors) and the probability of including the nonpoor (errors of inclusion or Type II errors). Tradeoffs between the costs of targeting errors and administrative costs—as well as the possibility that programs with some leakage might be more politically sustainable—must also be considered.

The targeting mechanisms identified in Box 5.7 can be combined in different stages or areas of a program in order to maximize the amount of transfer per dollar spent or to minimize costs in terms of leakage and administration. For example, geographical targeting can be used for homogeneously poor communities as long as the proportion of nonpoor in selected communities is acceptably low relative to the administrative cost of an alternative targeting mechanism. In communities with higher proportions of nonpoor, means testing will avoid leakage, particularly if coupled with a self-selection mechanism that imposes costs on the beneficiary, such as standing in line to apply for the benefit, lower quality of service, or work requirements. Self-selection will also lower the costs of means-testing mechanisms. Successful targeting

[15] Deutsch (1998) provides an overview of the economic rationale for investing in early childhood programs.

[16] Lokshin (1999).

[17] See Legovini (1999).

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Box 5.6. Early Childhood Intervention: Short-term Response with a Long-term Benefit

Early childhood intervention (ECI) programs can form a critical part of a new generation of safety nets, since they simultaneously fight the battle against poverty on two fronts. First, their education, health and nutrition services for children prevent the erosion of human capital investment during a crisis. Participating children are provided critical support and attention that improves their school readiness and affords them a better chance of breaking the cycle of poverty. Second, childcare services offer mothers opportunities for increased labor force participation and higher earnings. A prevalent household survival strategy for the poor during times of economic downturn is increased female labor force participation. ECI services allow women to work away from home without having to pull older siblings out of school in order to take care of younger children.

ECI programs are ideally designed to achieve a series of mutually reinforcing objectives with the overarching goal of helping to improve equality of opportunity for children in poverty. The best programs aim to improve school readiness and reduce the risk of future social exclusion of at-risk preschool children by providing their families with childcare, child health and nutrition services, early childhood education, and guidance and education on effective parenting techniques. In general, such programs are targeted to overcome the cognitive, emotional and resource limitations that may characterize the environments of disadvantaged children during the first several years of life.

Recent scientific findings have illustrated the crucial role played by caregivers in stimulating and nurturing children during the preschool years. There are windows of opportunity during periods when children develop crucial skills and capabilities (or fail to develop them due to inadequate stimulation). If the appropriate inputs are not provided during these early years, particularly from birth to three years of age, these missed opportunities in terms of stimulating development of mental, emotional and motor skills cannot be easily retrieved later on.

India's Maharashtra Employment Guarantee Scheme (see Box 5.3) is an example of a program that builds these positive synergies between ECI and female labor force participation into its design. Participation by women in this public employment program has always been high because childcare services are provided for mothers. That the program has targeted women effectively is evidenced by the fact that the share of women in participant days rose from 42 percent in 1979 to 53 percent in 1987 (Dev, 1994).

Programs like Peru's *Wawa-Wasi*, in which members of the community provide home-based day care for small groups of children so other mothers can work, would be well suited for matching with public employment projects. So would the *Nuestros Niños* program in Ecuador, which uses demand-driven mechanisms and market forces to match households, communities and local governments with appropriate service providers. With norms and operational procedures already established, the government is able to take advantage of an apparently large supply of potential private sector contractors. Plans are in the works to speed disbursement of project funds for contracting the delivery of a basic early childhood package through a network of available nongovernmental organizations, churches and community organizations.

Sources: Deutsch (1998); IDB (1999b); Dev (1994).

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Box 5.7. Targeting Methods

Categorical targeting. Programs that use categorical targeting provide benefits on demand to all individuals within a certain geographical area or group (e.g., school children in schools located in poor areas). Geographical targeting requires knowledge of the geographical distribution of the incidence, depth or severity of poverty (or other selected indicators). Communities can then be ranked according to those indicators and programs delivered to those determined to be most in need. The mechanism works well only where there are high concentrations of poverty, such as urban slums or specific rural areas. In such cases, it is efficient, has low leakage, and is administratively inexpensive. As the program expands to communities with higher percentages of nonpoor, targeting efficiency will decline and leakage will increase. The results also depend on the geographic unit of choice (community, municipality, region, etc.). The smaller the unit, the more efficient the targeting and the lower the leakage. One of the benefits is that no stigma is associated with this type of targeting. A drawback is that programs targeted in this way may induce migration from nontargeted to targeted areas.

Group targeting requires knowledge of the demographic distribution of poverty. Groups with higher than average incidence of poverty can be selected as program targets, often in conjunction with information based on geographical targeting, in order to improve both targeting efficiency and leakage levels.

Means testing and proxy means testing. Means-tested targeting programs provide benefits to households with incomes below an established threshold. Because they require collection and verification of household income information, these programs imply higher administrative costs than either categorical or self-selecting mechanisms. They may also be subject to gaming schemes (e.g., lying and fraud), which tend to increase leakage.[1] Stigma may negatively affect take-up rates.

Proxy means testing bases access to program benefits on easy-to-collect household or individual characteristics that corre-

approaches are available that involve simple technology and which incorporate local knowledge that complements household survey data processed at the central government level. Such approaches are particularly well suited for working with small communities and indigenous people with a well-defined social network and representative leadership.

In general design, targeting and implementation, community participation or beneficiary involvement can have significant benefits. They are cost-effective in terms of reducing errors of exclusion and inclusion and tailoring programs to the specific needs of each community. One example of community involvement is the Mahallas of Uzbekistan, as discussed in Box 5.8.

Evaluation

Improving the effectiveness of safety nets requires rigorous and ongoing evaluation of existing programs.[18] The evaluation process should address three questions: Is the program achieving its objectives? How does the program change the condition of participants and

[18] See Baker (forthcoming) and Ravallion (1999a).

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late with welfare and can proxy for income. It provides a cheaper and more easily verifiable alternative to means testing, and suffers fewer problems with gaming. Data is collected on both income and potential indicators on a sample of the population. Indicators are selected and their relative importance established through statistical analysis or calibration. The indicators, weighted appropriately, are then used across the population to predict whether an individual or a household qualifies as poor. The method is less efficient in terms of targeting than direct means testing. How it performs relative to means testing will depend on the goodness-of-fit and out-of-sample predictive properties of the statistical or calibration model. This can be improved by estimating or calibrating on the poorest half of the population, by specific region, and on urban and rural areas separately. The costs in terms of errors of both exclusion and inclusion must be weighed against the cost of wider data collection and verification. Examples of systems using proxy means testing are Chile's *Ficha CAS*, Colombia's SISBEN and Mexico's *Progresa*.

Self-selection. Self-selecting mechanisms impose disincentives to program participation in the form of work requirements, waiting time and lower product quality so as to attract only individuals in need. Examples are low-wage workfare programs, queuing for health provision, and lower quality public schooling. This targeting mechanism is inexpensive to administer, and has low leakage because only truly needy individuals are willing to incur the cost of participating. It is also a convenient mechanism for automatically adjusting coverage during crises. Its level of targeting efficiency is unclear, however, and must be estimated case by case. One example of a self-selecting program is Argentina's *Trabajar*, a workfare program that provides low-wage employment.

[1] Given the difficulties in selecting an optimal poverty line, gaming may actually increase targeting efficiency if the majority of people who qualify through lying are close to the poverty line.

Source: Legovini (1999).

what would have happened in the absence of the program? And how can program design be altered to improve performance?[19]

The second question raises the difficult problem of the counter-factual. There are a variety of evaluation methodologies designed to overcome this missing information problem. All aim to construct a control group that can be compared to the treatment group, and to collect information over time on which to base the comparison. All of these methods—broadly divided into experimental and non-experimental—have shortcomings (see Box 5.9). Therefore, as a rule, program evaluation should aim to use a combination of different methods, as was done in the evaluation of *Progresa* in Mexico.

By providing critical data on the incidence and distribution of poverty, comprehensive program evaluation answers the three key questions and is an important management tool for policymakers and program designers. An impact evaluation system helps clarify program objectives and define the group to be targeted and the targeting mechanism needed. As well as determining the overall effectiveness of the existing program—and providing the tech-

[19] See Regalia (1999).

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Box 5.8. The Use of Community Networks to Target Social Assistance: The Mahallas in Uzbekistan

The *Mahalla* social assistance scheme in Uzbekistan, the third-largest former Soviet Republic, is an innovative and flexible approach to cash transfer programs. The scheme was initiated in late 1994 in response to several shocks associated with the political transition from socialism: falling output, declining living standards, and the end of state food subsides.

The program is administered at the local level by traditional pre-Soviet local community groups known as *Mahallas*, community organizations that have existed for hundreds of years in Uzbek and Tajik cultures. These organizations administer and disburse state funds, using their knowledge of the community to target families most in need and determine how much support they should receive. Households either apply or are recommended for assistance by the chairman of the local *Mahalla*. A report for each applicant is then prepared by a committee made up of representatives from local offices of the Ministries of Finance and Labor and community elders. The report is based on a household visit to determine labor status, income and assets, and access to agricultural land. The Ministry of Labor plays an important role in guiding the process of identifying eligible households, but it is left to the *Mahalla*, drawing on the committee report, to determine how to award assistance. It is guided by a set of instructions that identifies which indicators should be taken into account. However, the indicators remain flexible and no rigid formula is set.

Analysis of 1997 administrative data reveals that approximately 11 percent of households received an award at some time during the year. Support is provided in the form of cash transfers that are granted for three months but can be renewed. In general, support from the program is relatively modest. The average benefit equals one-third of total cash income received in the month prior to the award.

The program appears to be reasonably well targeted to poor households. One study found that low-welfare households are between seven and eight times more likely to receive assistance than high-welfare households, and two and a half times more likely than the mean observed probability.[1] Another good targeting indicator is that the program seems to favor children, female-headed households, and the unemployed. However,

nical basis for building continued political support for it—the evaluation system is necessary to assess alternative interventions and policy mixes. By providing a reliable flow of information on the relationship between fiscal expenditures and results, evaluation contributes to building accountability of social programs.

Impact evaluation systems are a cost-effective medium-term investment. The costs are generally low relative to the scale of a transfer program, particularly if data are collected in conjunction with existing national surveys. The returns will be in the form of increased effectiveness of social spending and greater accountability.

Delivery and Implementation

Reforming safety net programs in Latin America is no easy task: in many countries, the social assistance sector is chaotic, programs fragmented, and administration weak. Overall funding for social safety nets is low and rep-

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it also appears biased in favor of rural areas and ethnic Central Asian households.

The unique design of the *Mahalla* social assistance scheme confers a number of distinct advantages over more traditional programs. One important strength is that the eligibility criteria assess a variety of living standard indicators, not just cash income. The decentralized and flexible organization of the program exploits local knowledge of households in a way that would be nearly impossible to replicate by a central administrative authority using means testing to identify program beneficiaries. Highly decentralized local-level administration also increases the diffusion of information regarding the program and an acceptance of its principles. This, in turn, results in more participation by those genuinely in need, while discouraging fraudulent applications. Furthermore, the program implicitly recognizes the dynamics of poverty alleviation, targeting households unable to increase their income, rather than just poor households.

Though the unique program design confers notable benefits, certain features of its decentralized design leave some shortcomings as well. The high degree of independence and discretion given to the *Mahallas* can be an invitation to subjectivity and arbitrariness, while varying degrees of administrative skill in implementing guidelines across the *Mahallas* could potentially reduce horizontal equity. The manner in which central government funds are disbursed to the *Mahallas* does not consider the country-level variation of demand for benefits; instead, its implicit focus is on the reduction of intra-*Mahalla* variation in living standards. At the national level, this results in errors of both exclusion and inclusion. In addition, the public nature of the application and review process may discourage some potential beneficiaries from applying. Finally, the fact that the program is not directly administered by the central government does not mean that the state does not incur significant administrative costs. The state finances the salaries of the chairmen and secretary of each of the 12,000 *Mahallas*, and government officials play a significant role in monitoring program administration.

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[1] Low-welfare households are defined as those in the bottom income decile, with no durable goods, transportation or livestock, and with children (if present) who are in the bottom decile of height for age. High-welfare households are those in the top decile, with four durable goods, means of transport, and a cow.

Source: Coudel, Marnie and Micklewright (1998).

resents but a fraction of the resources devoted to universal health care, education and formal sector social insurance.

But funding is not the key issue. Great improvements in social assistance coverage could be achieved by liberating general revenues currently being used to prop up creaking pay-as-you-go pension systems, and by rationalizing existing social assistance programs.

Governments of the region need to balance the needs of both the old and the young, while ensuring that social assistance for the latter includes incentives for investment in human capital. The efficiency and efficacy of social assistance programs would be improved by institutional investments that foster economies of scale in the development of methods for targeting, household surveys, distributing of transfers, tracking of beneficiaries, and impact evaluation.

Good information exists on the ways in which various types of shocks affect poor households, making it easier to tailor the design of appropriate safety net programs and

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Box 5.9. Evaluation Methods

Experimental Methods

• *Randomization.* This represents the "ideal" situation: the target population is chosen on the basis of some observed characteristics, and program beneficiaries and nonbeneficiaries are selected randomly within the target population. When randomization is correctly implemented, it should not be possible to predict whether individuals of the target population will or will not be beneficiaries. This means that there should not be any systematic difference in the observed characteristics between the program participants and the members of the control group. The impact of the intervention is assessed by subtracting the indicator mean outcomes of the group of beneficiaries from the indicator mean outcomes of the nonbeneficiaries in the control group. Any observable systematic differences between these two groups need to be controlled for. In this case, either randomization must be improved or nonexperimental methods need to be used. Sometimes, however, the nature of the program does not allow randomization.

Nonexperimental Methods

• *Matching.* This method links program beneficiaries with members of a nonexperimental group (the control group) chosen among the respondents of a large-scale survey. The matching between program participants and nonparticipants is performed on the basis of a set of observed characteristics. People from the treatment and control group are paired if their observed characteristics are similar. If the set of observed characteristics is large, the matching between beneficiaries and nonbeneficiaries can be performed using propensity scores, which are the predicted probabilities of being a program participant given the observed characteristics. These predicted probabilities are obtained from the estimation of binary choice nonlinear models using the whole sample of beneficiaries and nonbeneficiaries. The matching method pairs participants and control group members with the closest propensity scores. For example, a measure of this closeness is the absolute difference in scores. The control group should be as similar as possible to the treatment group in terms of observable characteristics as assessed by the propensity scores. Beneficiaries and nonbeneficiaries should come from a similar economic environment and be given the same survey questionnaire. In particular, they should all answer whether or not they are participating in the program. The impact of the intervention is evaluated by subtracting the mean outcomes of the group of beneficiaries from the mean outcomes of the matched nonbeneficiaries belonging to the control group. The results of the program evaluation depend on the set of observable characteristics used to compute the propensity scores. These results might be subject to two sources of bias, the first being the significant differences in the distribution of observable characteristics between the control and the treatment group. Accurate weighting of the two groups helps in reducing this bias. The second source of bias is more relevant. It arises when unobservable individual characteristics are systematically influencing both the program participation and the outcome variables that are the object of the impact analysis (selection bias). Programs that use self-selection targeting criteria might be particularly subject to selection bias because the program placement is endogenous and based on potential beneficiaries' unobservable characteristics.

• *Difference in difference.* This methodology can be used to reduce the potential selection bias when unobservable individual characteristics are assumed to be time invariant. Before and after treatment, data should

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be collected both for the treatment group and the untreated comparison group. First, the difference in the outcome indicators of these two groups before and after the intervention is computed (first difference). Second, the impact of the program is measured by subtracting the difference in outcome indicators before and after the program implementation (second difference). The propensity score matching method can be used to check whether treatment and control groups are similar. Members of the control group with propensity scores outside the range observed for the treatment group should be dropped before performing the double difference. Regression analysis allows controlling for differences in initial observed conditions and for changes in exogenous variables.

• *Reflexive comparison.* This involves a baseline survey of program beneficiaries before the program is implemented, and then a follow up-survey. The baseline represents the control group. The evaluation is performed by comparing the average change in outcome indicators before and after the intervention.

• *Regression methods based on instrumental variables.* Sometimes it is neither possible nor desirable to do a baseline and follow-up survey. This is particularly true when it is likely that households originally included in the baseline survey drop out from the sample nonrandomly (attrition bias). When outcomes are observed both for participants and nonparticipants after program implementation, instrumental variables can be used to evaluate the program impact without incurring problems of selection bias. Any variable that is correlated with individual participation in the program, but is uncorrelated with individual outcomes given participation, can be used as an instrumental variable. This method is carried out in two steps. First, participation in the program is predicted using instrumental variables. Then, mean outcome indicators are compared conditional on predicted participation and nonparticipation.

General Equilibrium Methods

All the above evaluation methods assume that the programs have no effect on nonparticipants. In other words, these methods rest on two very strong assumptions that are not always satisfied. The first is that the distribution of individual outcomes within the control group of a given program can be used to approximate the distribution of individual outcomes if the program did not exist. The second is that the distribution of individual outcomes within the treatment group of a given program can be used to approximate the distribution of individual outcomes if the program is universally applied. This means that all the general equilibrium effects generated by the program, including taxes and spillover effects on factor and output markets, are considered to be insignificant. For example, the implementation of a large workfare program is very likely to have an indirect impact on the wages and employment situation of nonbeneficiaries by altering aggregate demand for labor. This would not have happened if the program did not exist. The first assumption is therefore plausible only if the program produces negligible general equilibrium effects and its size is small. Additionally, it could be misleading to forecast the outcomes of a program's expansion relying on the results of an evaluation carried out on a program that has been reduced in size, since the expansion might give rise to important general equilibrium effects that are usually ignored when the second assumption is adopted. General equilibrium effects should therefore be included to fully assess the impact of a program and to carry out a rigorous cost-benefit analysis.

Sources: Ravallion (1999a) and Heckman and Smith (1998).

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to incorporate mechanisms for rapid expansion during times of crisis. Increasing the quality of information available in the household surveys of the region is an important part of this effort. Once the information is generated, it needs to be used in such a way as to help ensure that resources are effectively deployed in response to economic shocks. At present, the administrative and financial weaknesses of social assistance and safety net programs are likely to be exacerbated at times when such programs are most needed. Inter-agency coordination and minimizing the perverse incentive effects of transfers becomes more challenging when the extent and depth of poverty is in flux. A mechanism such as Indonesia's Social Monitoring and Emergency Response Unit could provide updated information to help government agencies, municipal governments, nongovernmental organizations and international donors respond to a crisis in the most efficient and effective way.

Implementation of social assistance and safety net programs is constrained not only by a weak information base and fragile budgets, but also by the administrative capacity of the municipality (or other government agency) in charge. The supervisory capacity of municipalities may need to be strengthened, with operational responsibility transferred to nongovernmental organizations and the private sector. Overloading weak agencies can undermine the effectiveness of even the best-designed program. Program delivery instruments and institutional arrangements should be implemented that are conducive to long-term institutional development goals and that strengthen local governments and civil society groups. As shown above, SIFs can offer such a mechanism.

Case Studies of Targeted Human Development Programs

• *Mexico's Progresa*

Using an integrated approach to poverty reduction, *Progresa* began in 1997 as the pioneering targeted human development program in Latin America. The program targets poor rural households and subsidizes education, health care and nutrition. It reached approximately 1 in 10 Mexican families in 1998—1.9 million households in 41,000 localities in 30 states.

The educational component of *Progresa* provides transfers to poor families with at least one and up to three children aged 8-18 and enrolled in school, with transfers made per child enrolled. The size of the grant, which is equivalent to the estimated productivity of rural child labor, increases as children reach higher levels of education. These grants can be a significant source of rural household income—an educational grant for a child in the third year of secondary school equals 46 percent of the average earnings of a male agricultural worker.

Health interventions target families that meet the poverty eligibility criteria and make periodic health care visits. The objective is to provide basic health care for all family members and strengthen the quality of health services. The nutrition intervention conditions monetary transfers and nutritional supplements on visits to health centers in order to improve the consumption and nutritional habits of poor families. Both nutrition and health services are delivered through health care centers, with special care directed towards children under five and pregnant and lactating mothers.

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Targeting

Progresa targets beneficiary households at three points in the selection process: first, during identification of program localities; second, in selecting beneficiary households within the localities; and third, upon review of the beneficiary list after receiving community feedback. Localities are selected by creating a "marginality index" using seven easily found socioeconomic variables common to unsatisfied basic needs indices. Logistical and financial considerations such as geographical location, distance between localities, and the existence of health and school infrastructure are also weighed. Once communities are identified, households are selected by taking a census; constructing total household income from the census results; subtracting child income from total household income (that is, the income that would be lost if the child enrolled in school); constructing per capita income per household; comparing per capita income with a standard food basket measure; and identifying the variables that best distinguish between poor and nonpoor households.

Conditions imposed on the community selection process mean that the program excludes some of the poorest localities. This does not reflect mistakes in the targeting methodology, but rather the program's emphasis on increasing household use of existing health and educational facilities instead of on building new facilities.

A number of recent studies have evaluated the effectiveness of *Progresa's* targeting methodology, as well as the program's impact on education.[20] A comparison of the marginality index used by *Progresa* to a model based on household consumption found that the geographic targeting mechanism worked quite well. The targeting errors that did occur were more likely to be errors of inclusion rather than exclusion. Geographic targeting was most accurate in the low and very high marginality categories and less accurate for medium marginality categories.

The targeting accuracy at the household level, like the geographic targeting, seemed to do better at identifying extremely poor households and less accurate at identifying moderately poor households. Errors of both exclusion and inclusion occurred at the household level at approximately equal rates. A comparison of the household targeting mechanism with a consumption-based index found that the relatively substantial errors of exclusion probably reflect the tendency of the methodology to classify households with more children as beneficiaries and to exclude smaller households or older ones with no young children. *Progresa* has recently begun to adjust for this error, reclassifying roughly 40 percent of the extremely poor households originally excluded.

To determine their seriousness, errors of exclusion and inclusion were compared with results from two other types of target and transfer schemes—uniform transfers and targeting at the local level. The comparison found that *Progresa* is relatively well targeted. The use of locality-based targeting would have excluded many more of the extreme poor, while uniform targeting would have created much larger errors of inclusion.

In order to assess the costs of targeting, a simulation was run that evaluated the impact of different types of target and transfer schemes on indices of poverty, assuming

[20] Schultz (1999), Skoufias, Davis and Behrman (1999), Gómez de León and Parker (1999), and Programa de Educación, Salud y Alimentación (1999).

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a fixed program budget. The targeting scheme used by *Progresa* was compared to a uniform transfer (no targeting), to "perfect" consumption-based targeting, and to locality targeting. When a simple headcount index indicating the proportion of households below the poverty line was considered, a uniform transfer was most effective, locality targeting was second, *Progresa* third, and consumption-based targeting last. With uniform transfers, households close to the poverty line cross over after receiving benefits, while targeted schemes may give transfers only to those far below the poverty line. The results changed dramatically when measures of poverty that consider inequality and the severity of poverty were used. When these measures were considered, *Progresa's* targeting methodology performed second best, ahead of locality targeting and uniform transfers and behind "perfect" (and probably unachievable) consumption-based targeting.

Overall, the targeting method used by *Progresa* is relatively effective in terms of selecting communities and identifying poor households within those communities. The program is very effective at selecting extremely poor communities, but less effective at selecting middle-scale ones. Similarly, the program is more effective in identifying extremely poor households within communities and less so in selecting moderately poor households. This will become a more pressing issue as *Progresa* expands into relatively less poor, marginal urban areas.

Impact on School Enrollment[21]

The impact of *Progresa* on school enrollment was evaluated using two methods: first, a comparison of group differences in enrollment rates in program and nonprogram communities for those groups that would be eligible, controlling for regional differences that existed before the program started; and second, an estimation of individual enrollment decisions, holding constant important determinants of enrollment related to access and quality of schools as well as the household's educational and economic standing.

Group comparisons of enrollment rates revealed that the poor in beneficiary communities were more likely to enroll their children in school than the poor in control communities, especially for children at the secondary school level. Enrollment rates in grades 3-6 were 2.2 percentage points higher than they would be without the program, and secondary school (grades 7-9) enrollment rates rose even more, by 4.9 percentage points. The continuation rate from primary to secondary education also increased significantly under the program. The enrollment rate for eligible children who had completed the sixth grade was 55 percent, compared to 43 percent in communities not reached by the program. Even after adjusting this difference for past variations in enrollment rates, the increase remains significant.

The program has also had an important impact on educational inequality in beneficiary communities. Before the program began, children of poor families attended school less frequently than children from relatively better off families in grades 1-8. After only one year of program grants, this was reversed, with the enrollment rates of the poor now higher in all but one grade level.

[21] For a preliminary evaluation of the impact of *Progresa* on education, see Schultz (1999).

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Impact on Labor Force Participation

Preliminary evidence on the supply of labor shows no decrease in labor participation by program participants. Contrary to expectations, evidence suggests an increase in labor force participation by working age males.[22] This may be the result of increased female bargaining power in the household, since women are the recipients of the benefit. Also the program does not withdraw benefits as a result of increased current income, limiting the disincentive to work usually associated with transfer programs.

• ***The Honduras PRAF***

The Honduras Family Allowance Program (PRAF) was introduced in 1990 as a cash transfer mechanism to compensate income losses incurred by the poor as a result of the economic adjustment program that started a year earlier. Today, some 113,000 households receive the PRAF education benefit and another 70,000 households receive the health and nutrition benefits.

Since demand for education and health services among the poor declines rapidly as income and consumption fall, the rationale behind PRAF is to heighten demand for these services by increasing income and consumption. The program also promotes human capital development. In order for families to receive the transfer, their children are required to attend local public school, and pregnant women and their babies must participate in pre- and postnatal care programs provided at local public health centers. An estimated 400 schools and 150 health centers participate in the program.

PRAF had a number of problems when it was launched. Because of minimal monitoring and evaluation during implementation, there was little empirical evidence showing the program's impact on health and education indicators. There also was a lack of clearly defined targeting. Schools and health centers simply registered participants rather than screening them in order to target benefits. The little empirical evidence available shows that among the poorest municipalities, PRAF was not reaching the poorest households. Nor was there a clear relationship between the level of transferred resources and a desired effect on family incomes or expenditures.

Phase II

Phase II of PRAF was developed in 1998 to address the issues of targeting and evaluation. Its objective is to increase the rate of human capital accumulation among the poorest families in Honduras. Financial incentives are provided to families, as well as to health and education providers.

This new phase of the program targets those municipalities considered to be most at risk, based on annual malnutrition comparisons. A proxy means test is applied to all families in participating municipalities in order to establish eligibility (see Box 5.8). The level of transfers for the school program is set at approximately the opportunity cost of sending children to school, while for the nutrition program the level is based on a percentage of household expenditures. These figures will be revised at least once a year with data generated by the program.

The new program phase uses a network of nongovernmental organizations to

[22] Gómez de León and Parker (1999).

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monitor compliance with requirements that beneficiaries use health and education services. Service providers must sign a contract with PRAF requiring them to achieve certain goals in order for PRAF to transfer financial resources. In the case of health, PRAF participants must receive a protocol of services, while for education, PRAF resources must be used to improve school inputs and undertake educational innovations.

Evaluating the Program

The overriding motivation in redesigning PRAF was to generate the data needed to evaluate the effectiveness of demand-side social services in smoothing consumption patterns within the household, and in increasing the rate of human capital accumulation.

The program also involves extra incentives for schools and health centers to supply services, as well as subsidies to encourage demand for these services by poor families. This will help to determine whether the primary problem is a lack of demand for services among families too poor to afford them, or inadequate supply.

Three treatment groups and one control group were developed to estimate the impact of alternative interventions. The treatment groups were those receiving demand-side interventions (educational and health household transfers); those receiving supply-side interventions (transfers to health care facilities and schools); and those receiving both supply- and demand-side transfers. The control group did not receive any transfers.[23] These group will be compared periodically to assess the impact of demand- and supply-side interventions as well as the synergy effect from combining them.

[23] While the above taxonomy suggests that there needs to be four experimental groups, the problem is more complex. The selection of controls must account for other time-varying influences that affect the performance indicators besides the interventions. Therefore, the controls must be in the same geographic areas as the treatments. There are three sources of controls: households below the proxy means test (PMT) in nonselected municipalities, households below the PMT in nonselected localities in selected municipalities, and households above the PMT in selected localities. Therefore, to ensure that we have sufficient controls, we need the size of the control group to be equal to the sum of the three treatment groups. Furthermore, sample sizes need to be chosen so as to generate sufficient confidence that we are not falsely rejecting a true null hypothesis (type I error) and to ensure that there is sufficient statistical power to reject the null when it is indeed false (type II error). The former is referred to as significance and the latter as power. The choice of the sample sizes uses a significance level of 5 percent and a power of 90 percent. For example, assuming that 10 percent of the households will have had a baby born within the last 12 months, we need 19,000 households in each group to be able to observe a 50 percent decrease in the infant mortality rate from .043 to .0215.

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Appendix 5.1. Selected Safety Net Programs in Latin America and the Caribbean

Food and Cash Transfers	Targeted Human Development Programs and Early Childhood Interventions	Employment and Infrastructure Programs
ARGENTINA		
Food Subsidies • Programa Nacional de Alimentación (PAN) • PAMI Subsidios Económicos • Probienestar *School Feeding Programs* • Programa Social Nutricional (PROSONU)	*Early Childhood Interventions* • Programa Materno Infantil y Nutrición (PROMIN) • Menores en Condiciones Especiales • Programa de Alimentación y Nutrición Infantil (PRANI)	*Employment Programs* • TRABAJAR, PRONAPAS, PEP, PTI, PROEDIS • Programa de Asistencia Solidaria (PROAS) • Fondo Nacional de Empleo (FNE) • Proyecto Joven • Programa de Servicio Comunitario (ASISTIR) • Programa de Empleo Privado para Pequeñas y Medianas Empresas • Programa de Reinserción Laboral • Bono para la Creación de Empleo Privado (BOCEP) • Programa Nacional de Forestación (FORESTAR) • Programa de Movilidad Geográfica *Social Investment Funds and Public Works* • Fondo de Inversión Social: Fondo Social Piloto, Monitoreo de la Pobreza *Training Programs* • Programa de Entrenamiento Ocupacional (PRENO) • Proyecto de Microemprendimiento • Programa Imagen • Programa de Talleres Ocupacionales (PTO) • Programa de Capacitación para el Empleo • Programa Aprender • Programa Emprender • Programa Crédito Fiscal

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Appendix 5.1. Selected Safety Net Programs in Latin America and the Caribbean (cont.)

Food and Cash Transfers	Targeted Human Development Programs and Early Childhood Interventions	Employment and Infrastructure Programs
BARBADOS		
Cash Transfers • National Assistance Program • Social Assistance Program to the Disabled and Aged Poor *School Feeding Programs* • School Food Program		*Employment Programs* • Barbados Youth Service (BYS) • Youth Development Program (YDP) • Youth Entrepreneurs Scheme • Small Business Development *Social Investment Funds and Public Works* • Poverty Alleviation Fund *Training Programs* • Barbados Vocational Training Program
BELIZE		
Cash Transfers • Social Fund	*Targeted Human Development Programs* • Social Assistance to Low-income Families with Children	*Social Investment Funds and Public Works* • Belize City Infrastructure Project • National Development Foundation of Belize *Training Programs* • Employment Training Program

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BOLIVIA

Food Subsidies
- Programa de Vigilancia para la Acción Alimentaria Nutricional (PROVIAN)

Targeted Human Development Programs
- Programa Piloto de Educación Femenina

Early Childhood Interventions
- Seguro Nacional de la Madre y el Niño
- Programa Nacional de Atención al Menor
- Proyecto Integral de Desarrollo Infantil (PIDI)
- Plan Nacional para la Reducción de la Mortalidad Materna, Perinatal y del Menor de Cinco Años (PLAN VIDA)

Employment Programs
- Investment Program for Small-Farmer Development (PIDC)

Social Investment Funds and Public Works
- Programa de Saneamiento Básico Rural (PROSABAR)
- Emergency Social Investment Fund (FSE and FIS)
- Fondo Nacional de Desarrollo Regional (FNDR)
- FDC

BRAZIL

Cash Transfers
- Minimum Rent for the Elderly and Handicapped

Food Subsidies
- Food Program for Workers (PAT)
- Emergency Food Distribution Program (PRODEA)

School Feeding Programs
- Programa Nacional de Alimentación Escolar (PNAE)
- "Milk is Health" Program

Targeted Human Development Programs
- Bolsa Escola
- Brazil "Child Citizen" Program

Early Childhood Interventions
- Child Mortality Reduction Program

Employment Programs
- Employment and Income Generation Program (PROGER)
- PROEMBREGO

Training Programs
- National Program for Professional Qualification (PLANFOR)

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Appendix 5.1. Selected Safety Net Programs in Latin America and the Caribbean (cont.)

Food and Cash Transfers	Targeted Human Development Programs and Early Childhood Interventions	Employment and Infrastructure Programs
CHILE		
Cash Transfers • Subsidios Unicos Familiares (SUF) • Ficha CAS (Social Passport Program) • Pensiones Asistenciales (INP) *School Feeding Programs* • Junta Nacional de Auxilio Escolar y Becas (JUNAEB)	*Early Childhood Interventions* • Programa Nacional de Alimentación Complementaria (PNAC) • National Association of Child Care Centers (JUNJI) • Intergra (Jardines Infantiles)	*Employment Programs* • Chile Joven • Trabajadoras Temporeras • Programa de Apoyo a Mujeres Jefas de Hogares de Escasos Recursos • Programa de Reinserción Laboral • Proyecto de Apoyo a los Programas de Inserción Laboral para Personas con Discapacidad • Programa de Desarrollo del Microempresariado Indígena *Social Investment Funds and Public Works* • Fondo de Solidaridad e Inversión Social (FOSIS) • Programa de Mejoramiento de Barrios *Training Programs* • Servicio Nacional de Capacitación y Empleo (SENCE) • Programas Regulares de Becas • Programa de Formación y Capacitación para el Trabajo

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COLOMBIA

Cash Transfers
- Subsidio al Anciano Red de Seguridad Social

Food Subsidies
- Hogares Infantiles
- HOBIS
- Clubes Juveniles
- Instituto Colombiano de Bienestar Familiar (ICBF)

School Feeding Programs
- Restaurantes Escolares

Early Childhood Interventions
- Programa Obligatorio en Salud (POS)

Social Investment Funds and Public Works
- Empleo Urbano y Empleo Rural Red de Seguridad Social

COSTA RICA

Cash Transfers
- Fondo de Desarrollo Social y de Asignaciones Familiares (FODESAF)
- Plan de Compensación Social (PCS)
- Instituto Mixto de Ayuda Social (IMASI)

Targeted Human Development Programs
- Programa Nacional de Lucha Contra la Pobreza (PNCP)

Early Childhood Interventions
- Childhood National Society (PANI)

Employment Programs
- Programa Nacional de Generación de Empleo
- Pro Trabajo
- Incentivos para la Reinsercion Laboral y el Empleo Temporal (IRLET)
- Ideas Productivas
- Llave en Mano
- Intermediación en el Mercado de Trabajo

Training Programs
- Becas de Capacitación para el Empleo
- Formación Integral Para Mujeres Jefas de Hogar
- Formación y Reconversion para los Movilizados
- Talleres Públicos
- Formación Profesional para el Desarrollo Socio Laboral de Personas con Discapacidad

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Appendix 5.1. Selected Safety Net Programs in Latin America and the Caribbean (cont.)

Food and Cash Transfers	Targeted Human Development Programs and Early Childhood Interventions	Employment and Infrastructure Programs
DOMINICAN REPUBLIC		
Cash Transfers • Transfer Program to Low-income Families		
School Feeding Programs • Operation Youth Quake		
ECUADOR		
Cash Transfers • Bono Solidario	*Targeted Human Development Programs* • Operación Rescate de la Infancia (ORI)	*Social Investment Funds and Public Works* • Fondo de Inversión de Emergencia (FISE)
School Feeding Programs • Programas de Desayunos y Almuerzos Escolares	*Early Childhood Interventions* • Programa de Desarrollo Infantil (PDI) • Programas del Instituto Nacional de la Niñez y la Familia (INNFA) • Programa de Cuidado Materno Gratuito (Fondo de Solidaridad)	

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EL SALVADOR

Cash Transfers
- Family Gardens Program
- SNF

School Feeding Programs
- School Lunch Program

Early Childhood Interventions
- Salud Materno-Infantil (SMI)
- Salud y Nutrición Materno Infantil

Employment Programs
- CONARA/SRN, FEPADES

Social Investment Funds and Public Works
- MOP, CONADES, DIGECO, MOA, MOL, BFA
- Fondo de Inversión Social (FIS)

Training Programs
- INSAFORP

GUATEMALA

School Feeding Programs
- Programa Nacional de Alimento Escolar

Social Investment Funds and Public Works
- Fondo de Inversión Social (FIS)
- Fondo de Solidaridad para el Desarrollo Comunitario (FSDC)
- Fondo Nacional para la Paz (FONAPAZ)
- Programa de Asentamientos Urbanos y Vivienda
- Fondo del Desarrollo Indígena Guatemalteco (FODIGUA)

GUYANA

Food Stamps
- Food Subsidies

School Feeding Programs
- School Snack Program

Social Investment Funds and Public Works
- Social Impact Amelioration Program (SIMAP)
- Basic Needs Trust Fund (BNTF)

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Appendix 5.1. Selected Safety Net Programs in Latin America and the Caribbean (cont.)

Food and Cash Transfers	Targeted Human Development Programs and Early Childhood Interventions	Employment and Infrastructure Programs
HAITI		
School Feeding Programs • Program for Public Primary Schools		*Employment Programs* • PCE, HIMO, FUREC, JOBS *Social Investment Funds and Public Works* • Emergency Economic Recovery Program (PURE I&II) • FAES I & II • Road Rehabilitation Program/Labor Intensive Component (MTPTC/HIMO) • Jobs Creation Project (PADF)
HONDURAS		
Cash Transfers • Junta Nacional de Bienestar Social (JNBS) *Food Subsidies* • Suplidora Nacional de Productos Básicos (BANASUPRO)	*Targeted Human Development Programs* • Programa de Asignaciones Familiares (PRAF)	*Employment Programs* • Programa de Apoyo al Sector Informal (PASI) *Social Investment Funds and Public Works* • Fondo Hondureño de Inversion Social (FHIS) *Training Programs* • Occupational Training Project (PFO)

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JAMAICA

Cash Transfers
- Poor Relief Programs (OPR, IPR)
- Economic and Social Assistance (ESA)
- Elderly Social Assistance

Food Stamps
- Food Stamp Program

Food Subsidies
- School Lunch, Nutrition and Milk Program

Employment Programs
- National Youth Service (NYS)
- Empowerment Programme (YEP)
- Jamaica 4-H Clubs
- Bee Keeping and Honey Bee Project
- SESP
- Micro Investment Development Agency (MIDA)
- The Government of Jamaica/Government of the Netherlands Micro Enterprise Project (GoJ/GoN MEP)
- The Government of Jamaica/European Union Programme
- Mel Nathan Institute for Development and Social Research (MMI)
- Enterprise Development Trust (EDT)
- The Women's Construction Collective (WCC)
- ASSIST Ltd.

Training Programs
- National Vocational and Rehabilitation Service (NVRS)
- Skills 2000
- Special Training Empowerment Program (STEP)
- Strategies to Rehabilitate Inner Cities Through Viable Enterprises (VIABLE)

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Appendix 5.1. Selected Safety Net Programs in Latin America and the Caribbean (cont.)

Food and Cash Transfers	Targeted Human Development Programs and Early Childhood Interventions	Employment and Infrastructure Programs
MEXICO		
Cash Transfers • Income Support for Farmers (PROCAMPO) *Food Subsidies* • Tortillas (FIDELIST) • Leche Industrializada de CONASUPO-LICONSA *School Feeding Programs* • Programas de Desayunos Escolares (DIF)	*Targeted Human Development Programs* • *Progresa* *Early Childhood Interventions* • IMSS and ISSSTE (Social Security Childcare Programs) • Programa Ampliado de Inmunizaciones • Programa de Asistencia Social Alimentaria a Familias (DIF)	*Employment Programs* • Programa de Empleo Temporal • Programa Especial de Empleo (PESE) *Social Investment Funds and Public Works* • Programa de Conservación de Caminos Rurales • Programa de Construcción de Infraestructura Física y Obras de Empleo Productivo *Training Programs* • Programa de Becas de Capacitación para Trabajadores (PROBECAT)
NICARAGUA		
Cash Transfers • Integrated Rural Development Projects (IRDP) • Programas para el Desarrollo de la Población Dezplazada, Refugiada y Repatriada (PRODERE, RAAS, WANGKI) *Food Subsidies* • Basic Grains Program *School Feeding Programs* • Early Morning Snack • School Lunch Program (FES)	*Early Childhood Interventions* • Fondo Nicaraguense de la Niñez y la Familia (FONIF)	*Employment Programs* • Actividades Productivas (JINOTEGA, WFP-4571, COSUDESOMOTO). • PRONORTE • PRODERE *Social Investment Funds and Public Works* • Proyectos de Impacto Rápido (PIR) • PEC • Fondo de Inversión Social (FISE)

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PANAMA

Food Subsidies
- Programa Nacional de Alimento y Nutrición (PRONAN)

School Feeding Programs
- Meriendas Escolares (MINEDUC)
- Almuerzos del Fondo de Emergencia Social
- Nuevo Programa de Almuerzos Escolares (MINEDUC)

Early Childhood Interventions
- Programa de Alimentación Complementaria Materno Infantil (PAC)

Social Investment Funds and Public Works
- Fondo de Emergencia Social (FES)

PARAGUAY

Cash Transfers
- Instituto de Bienestar Rural (IBR)
- Dirección de Beneficiencia y Ayuda Nacional (DIBEN)
- Programa de Desarrollo Humano (PDH)
- Instituto Paraguayo del Indígena (INDI)

Social Investment Funds and Public Works
- Programa de Inversiones Sociales (PROPAIS)
- Servicio Nacional de Saneamiento Ambiental (SENASA)
- Water and Sewer Services (CORPOSANA)

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Appendix 5.1. Selected Safety Net Programs in Latin America and the Caribbean

Food and Cash Transfers	Targeted Human Development Programs and Early Childhood Interventions	Employment and Infrastructure Programs
PERU		
Food Subsidies • Programas Alimentarios (FONCODES) • Programa Nacional de Apoyo Alimentario (PRONAA) • Programa de Alimentación y Nutrición a la Familia en Alto Riesgo (PANFAR) • Programa de Desarrollo Integral Urbano con Apoyo Alimentario (PRODIA) • Comedores Populares • Agroforesteria Rural con Apoyo Alimentario (ARCA) *School Feeding Programs* • Programa de Desayunos Escolares (FONCODES) • Escuela Defiende a la Vida • Programa del Vaso de Leche	*Early Childhood Interventions* • Wawa-Wasi Program • PAMI • Seguro Materno Infantil	*Employment Programs* • Programa de Apoyo al Ingreso Temporal (PAIT) • Programa de Auto Empleo y Microempresa (PRODAME) • Programa Femenino de Consolidación de Empleo (PROFESE) *Social Investment Funds and Public Works* • Fondo Nacional de Compensación y Desarrollo Social (FONCODES) • Fondo de Emergencia Social (ESF) • Instituto Nacional de Desarrollo (INADE) • Empresa Nacional de Edificaciones (ENACE) • Fondo Nacional de Vivienda (FONAVI) • Instituto Nacional de Infraestructura Educativa y Salud (INFES) • SEDAPAL, CORDECALLAO, CORDELIMA, INABIF • Fondo de Compensación Municipal • PROMANACHCS • Programa de Caminos Rurales *Training Programs* • Programa de Capacitación Laboral Juvenil (PROJOVEN)

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TRINIDAD AND TOBAGO

Cash Transfers
- Cash Transfer Program for Poor Families
- Emergency Assistance

School Feeding Programs
- School Food Program
- SHARE Program

Employment Programs
- Unemployment Relief Program (URP)
- National Apprenticeship Program (NAP)
- Retraining of Displaced Workers (RDW)
- Small Business Development Corporation

Training Programs
- Youth Training and Employment Partnership (YTEPP)
- Business Training for Women

URUGUAY

Food Subsidies
- Programa de Alimentos del Instituto Nacional de Alimentación (INDA)

School Feeding Programs
- School Dining Halls
- Programa de Distribución de Leche (MTSS-ACOR)

Early Childhood Interventions
- Cash Transfer for Health and Care Services to Pregnant Women and Small Children Disease Insurance (DISSE)

Training Programs
- Programa de Capacitación Laboral Juvenil (PROJOVEN)

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Appendix 5.1. Selected Safety Net Programs in Latin America and the Caribbean

Food and Cash Transfers	Targeted Human Development Programs and Early Childhood Interventions	Employment and Infrastructure Programs
VENEZUELA		
Cash Transfers • Programa de Protección al Anciano • Subsidio del Instituto Venezolano de Seguridad Social *Food Subsidies* • Programa de Alimentos Estratégicos (PEA) *School Feeding Programs* • Programa Alimentario Escolar • Merienda Escolar y Comedores Escolares	*Early Childhood Interventions* • Programa Alimentario Materno Infantil (PAMI) • Programa de Hogares y Multihogares	*Social Investment Funds and Public Works* • Plan Bolivar 2000 • Fortalecimiento Social *Training Programs* • Capacitación y Empleo Joven

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Appendix 1

Measuring the Impact of Shocks

This appendix describes three methods that can be used to assess how poverty and income distribution are affected by changes in relative prices of goods, shifts in labor demand across sectors, or variations in relative wages. Such changes could be the result of economy-wide developments like macroeconomic crises or structural adjustments. Three methods that can be used to assess the impact of these changes on poverty and inequality are the *partial equilibrium approach,* the *social accounting matrix-computable general equilibrium approach,* and the *macro-dynamic general equilibrium approach.*

The Partial Equilibrium Approach

This approach is based on a very stylized representation of how economy-wide adjustment programs or relative price changes influence individual incomes. This method does not require much modeling or computational effort, as it abstracts from all the possible interactions among socioeconomic groups that are actually found in the real economy.

One advantage is that the data requirements of the partial equilibrium approach are relatively low and can easily be obtained from household surveys. This feature makes this approach a valuable and easy-to-use tool for providing a preliminary approximate picture of the impact of macroeconomic adjustments on poverty. The main disadvantage is that this framework does not model individual household behavior as well as interaction effects among socioeconomic groups. The methodology proposed by Kanbur (1986) is an example of applying the partial equilibrium approach to the analysis of the distributional effects of adjustment programs.

Applying the Partial Equilibrium Approach

Kanbur's work is focused on the asymmetric effect that macroeconomic shocks or adjustment policies have on poverty in different sectors of the economy and also their effect on overall poverty. Its methodology is based on a two-step procedure. The first step concerns the choice of the poverty index. The second step models the mechanisms for the transmission of economic shocks to individual incomes.

• *Step 1. The Choice of Poverty Index*

The poverty index chosen needs to capture shifts in sectoral or subgroup population pov-

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erty and aggregate them into the impact on overall poverty. The *per capita aggregate poverty gap index* is particularly useful in this case because it is subgroup decomposable.[1] The value of this index for the whole economy is a weighted sum of the value of the same index computed in each population subgroup. The weights are the share of the population in each subgroup over the total population in the economy. Suppose that we have a continuum of observations for individual incomes and that each agent's income comes only from one sectoral source. The *per capita sectoral poverty gap index* in sector i is given by

$$P_{i,\alpha} = \int_0^z \left(\frac{z-w}{z} \right)^{\alpha} f_i(w)dw \qquad (A.1)$$

$f_i(w)$ is the individual income density function for people belonging to sector i, z is the economy poverty line and α is the so-called poverty aversion parameter. Contrary to the *head count ratio* that reports only the fraction of people who are under the poverty line, this index also provides information on how poor the poorest are. In other words, it provides information on the income spread among the poor. The higher α is, the higher the sensitivity of the index towards the spread. The linear structure of the P_α class of indexes ensures additive decomposability.

Assume that the population is partitioned in subgroups that are mutually exclusive. Each subgroup is indexed by

$$i \in \{1,2,3.....n\}$$

and the measure of the total population in each subgroup is given by x_i such that

$$\sum_{i=1}^{n} x_i = 1.$$

The *per capita aggregate poverty gap* is then given by

$$P_\alpha = \sum_{i=1}^{n} x_i P_{i,\alpha} \qquad (A.2)$$

This index is useful in capturing the effects on national poverty of variations in subgroups' poverty and reallocation of population across groups caused by macro and sectoral shocks and related adjustment policies. Notice that when $\alpha = 0$ the index expression is

$$P_0 = \int_0^z f(w)dw = F(z) \qquad (A.3)$$

$F(.)$ is the cumulative distribution corresponding to $f(.)$. $F(z)$ is known as the *head count ratio.* If instead $\alpha = 1$

$$P_1 = \int_0^z \left(\frac{z-w}{z} \right) f(w)dw = \frac{z-\overline{w}_p}{z} P_0 \qquad (A.4)$$

$\overline{w}_p$ is the average income of the poor people.

It easy to extend the model to consider the possibility of multiple income sources for each individual. If this is the case, the subgroup decomposition coincides with the population decomposition by income sources.

• *Step 2. Modeling the Transmission Mechanism*

The second step of this methodology consists

[1] See Foster, Greer and Thorbecke (1984).

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of modeling the way macroeconomic shocks or adjustment policies affect individual incomes. Three examples are discussed.

First Example: Recession Episode

Suppose that we want to evaluate the impact of a recession episode on poverty. Unskilled workers within each sector tend to pay the highest cost of a crisis. They in fact go through longer periods of unemployment than do skilled workers. Since in general unskilled workers are also poorer to start with, a recession might deprive poor individuals of a higher share of their income. Therefore, one way to model the impact of this type of macro shock on individual incomes is to assume that all will be reduced by an equal amount Δ. Assume that Δ is equal to the drop in average income per capita caused by the recession. The *per capita aggregate poverty index* after the shock would then be given by

$$P_\alpha(\Delta) = \int_0^{z+\Delta} \left(\frac{z+\Delta-w}{z} \right)^\alpha f(w)dw \qquad \text{(A.5)}$$

The intuition is easy. People whose individual incomes were equal to $w = z + \Delta$ before the shock will be on the poverty line after the shock. All individual incomes shift downward by Δ. Therefore, the effect on the poverty index is equivalent to that which we would obtain with an increase in the poverty line value from z to $z + \Delta$. The response of the poverty indicator to marginal changes in Δ is then given by the following expression:

$$\frac{dP_\alpha(\Delta)}{d\Delta} = \frac{\alpha}{z} P_{\alpha-1}(\Delta) \qquad \text{(A.6)}$$

Since this expression is always positive it follows that an additive income reduction always increases poverty. This is not a striking result. What is important is that a very simple expression for the exact response of poverty can be calculated using the existing income distribution data. Suppose, for example, that the estimated reduction in individual income is a fraction ξ of the average per capita income before the crisis $\overline{w}$, i.e. $\Delta = \xi\,\overline{w}$. For the sake of simplicity the poverty aversion parameter α is set equal to 1. Equation (A.7) shows the percentage change in the poverty index caused by a marginal variation in ξ.

$$\frac{dP_1(\Delta)}{P_1(\Delta)} = \frac{\overline{w}}{z}\frac{P_0(\Delta)}{P_1(\Delta)}d\xi = \frac{\overline{w}}{z}\frac{z}{z-\overline{w}_p}d\xi \qquad \text{(A.7)}$$

Suppose that the poverty line is one-fifth of the average income before the shock, i.e.,

$$\frac{\overline{w}}{z} = 5,$$

and the average income of the poor is half of the poverty line, i.e. .

$$\frac{z}{z-\overline{w}_p} = 2.$$

A general drop in individual incomes of 0.5 percent of the average income before the shock would cause a 5 percent increase in the poverty gap index.,

Second Example: Fiscal Policy that Increases Taxes

Suppose that we want to evaluate the effects of a fiscal policy that increases taxes to improve fiscal discipline on poverty. Let's assume that the total increase in tax collection is a percentage θ of the total national income. With a proportional tax system, the increase in fiscal

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pressure translates into a proportional reduction in individual incomes by a fraction θ of pre-tax incomes. The *per capita aggregate poverty index* after the fiscal reform is given by

$$P_\alpha(\theta) = \int_0^{\frac{z}{1-\theta}} \left(\frac{z - w(1-\theta)}{z} \right)^\alpha f(w)dw \quad \text{(A.8)}$$

By proportionally increasing the tax rate, the variance of the income distribution falls. Those individuals whose incomes were equal to

$$\frac{z}{1-\theta}$$

before the fiscal adjustment will have an after-tax income exactly equal to the poverty line when the tax adjustment is implemented. The response of the poverty indicator to marginal changes in θ is then given by the following expression:

$$\frac{dP_\alpha(\theta)}{d\theta} = \frac{\alpha}{1-\theta}\left[P_{\alpha-1}(\theta) - P_\alpha(\theta)\right] \quad \text{(A.9)}$$

This expression is always positive, given that the term in square brackets is always positive. If α is set equal to 1, the percentage increase in the poverty index induced by a marginal variation in θ is given by

$$\frac{dP_1(\theta)}{P_1(\theta)} = \frac{1}{1-\theta}\left[\frac{P_0(\theta)}{P_1(\theta)} - 1\right]d\theta = \frac{1}{1-\theta}\left[\frac{\overline{w}_p}{z - \overline{w}_p}\right]d\theta \quad \text{(A.10)}$$

If $\left[\frac{\overline{w}_p}{z - \overline{w}_p} = 1\right]$

i.e., if the average income of the poor is half of the poverty line and we start with θ = 0, a rise in θ from 0 percent to 5 percent will increase the poverty index by 5 percent as well.

In the two examples presented, only three elements need to be known in order to perform the quantitative analysis if α is set equal to 1: the value of the poverty line, the average income of the population, and the average income among the poor. Therefore data requirements are very limited.

Another important question that could be easily addressed with this method is how much growth is needed in order for the poor to recover the ground lost after a macro crisis or an adjustment policy that has adversely affected them. If, for example, benefits from growth were spread uniformly among the total population, the effect would be an additive increase Δ in individual incomes.

Third Example: Relative Price Changes Due to Trade Reform, Devaluation, Elimination of Subsidies, or Labor Market Reform

This methodology could also be used to assess the impact of relative price changes on poverty following such events as trade liberalization, labor market reforms or currency devaluation. In all these cases, domestic productive sectors are idiosyncratically affected.

Suppose we have an economy with two productive sectors that employ only labor. The population is divided into two subgroups that are mutually exclusive (i.e., they derive their income solely from one source). Suppose that $F_i(L_1)$ and $F_2(L_2)$ are traditional concave neoclassical production functions and L_i with

$$i \in \{1,2\}$$

is the number of workers employed in sectors 1 and 2 of the economy. Assume that workers' productivity is heterogeneous between and

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within sectors and it is equal to the productivity of the marginal worker within each sector,

$$p_i \frac{\partial F_i}{\partial L_i},$$

plus a constant ε_g that is a worker-specific component, i.e.,

$$p_i \frac{\partial F_i}{\partial L_i} + \varepsilon_g$$

ε_g is distributed according to the density function $h_i(\varepsilon_g)$ that is sector-specific.

Let's assume that

$$\int_{\varepsilon_{min}}^{\varepsilon_{max}} \varepsilon_g h_i(\varepsilon_g) d\varepsilon_g = 0$$

that, i.e., the average worker-specific productivity component is zero within sectors. Workers' income in the two sectors is then given by

$$w_1 = y_1 + \varepsilon_g = p_1 \frac{\partial F_1}{\partial L_1} + \varepsilon_g \text{ and}$$

$$w_2 = y_2 + \varepsilon_g = p_2 \frac{\partial F_2}{\partial L_2} + \varepsilon_g.$$

The poverty index for sectors 1 and 2 takes the following form

$$P_{i,\alpha} = \int_0^z \left(\frac{z - w_i}{z} \right)^\alpha f_i(w_i) dw_i \qquad \text{(A.11)}$$

$$\text{with } i \in \{1,2\}$$

The *per capita aggregate poverty index* is given by

$$P_\alpha = \sum_{i=1}^{2} x_i P_{i,\alpha} \qquad \text{(A.12)}$$

where x_i is the share of the total population working in sectors *i*.

Suppose that prices in sector 1 change while prices in sector 2 stay constant. In the short term, labor is not likely to move across sectors, therefore any price variation translates only into individual income variations within sectors. Workers' incomes in sector 2 are left unchanged. In sector 1, incomes increase by an additive factor Δ_1

$$w_1 = p_1 \frac{\partial F_1}{\partial L_1} + \varepsilon_g + \Delta_1 \qquad \text{(A.13)}$$

where $\Delta_1 = \Delta p_1 \frac{\partial F_1}{\partial L_1}$

The short-term poverty index variation in sector 1 is given by

$$\frac{dP_{1,\alpha}(\Delta_1)}{d\Delta_1} = \frac{\alpha}{z} P_{1,\alpha-1}(\Delta_1) \qquad \text{(A.14)}$$

while the poverty index in sector 2 is left unchanged. The aggregate poverty index also changes

$$\frac{dP_\alpha(\Delta_1)}{d\Delta_1} = x_i \frac{\alpha}{z} P_{1,\alpha-1}(\Delta_1) \qquad \text{(A.15)}$$

In the medium long run, factors are mobile. A reallocation of the total labor force $L = L_1 + L_2$ between sectors will take place. The exact pattern of labor reallocation across sectors should also affect the overall distribution of income through changes in within-group income spread. However, Kanbur (1986) assumes that population is withdrawn representatively from sector 2 distribution and moves to sector 1 taking up sector 1 distribution of ε_g. This is a very strong assumption. It basically implies that workers' movement between sectors does not affect income variation within sectors. Workers move as long

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as there are differentials in average productivity between sectors. If this is the case, factor mobility will equalize aggregate labor returns across sectors such that $y = y_1 = y_2$.

The change in relative prices between sectors produces the following total effect on poverty:

$$\frac{dP_\alpha(\Delta_1)}{d\Delta_1} = \frac{a}{z} x_1 P_{1,\alpha-1}(\Delta_1) + \frac{dx_1}{d\Delta_1} P_{1,\alpha} \quad \text{(A.16)}$$

$$+ \frac{dx_2}{d\Delta_1} P_{2,\alpha} + \frac{dx_1}{d\Delta_1} \frac{P_{1,\alpha}(\Delta_1)}{dx_1} + \frac{dx_2}{d\Delta_1} \frac{P_{2,\alpha}(\Delta_1)}{dx_2}$$

• The first term on the r.h.s of equation (A.16) captures only the short-term effect that involves sector 1.

• The second and the third terms capture the total effect on poverty of a shift in the sectoral composition of the labor force as if this shift did not have any effect on sectoral productivity.

• The fourth and the fifth terms reflect the effect that a shift in the sectoral composition of the workforce has on within-sector average productivity.

All these terms can be computed. The initial distribution of the population across sectors needs to be known. Once the change in relative prices is known, the final workforce allocation between sectors can be computed. The extra data requirements include the average income of the population in each sector, and the average income among poor in all sectors. This information is usually available in household and expenditure surveys.

• **Advantages:** very reduced modeling and data requirements. It might be recommended for a first approximation assessment of the impact of macro shocks or policy measures on income distribution when income variation at the national level is mainly determined by between-group variation in income. The sectoral disaggregation available in the data should correspond to the sectoral divides implied by the macro shocks and policies under consideration.

• **Disadvantages:** individual or socioeconomic group behavior is not explicitly modeled. This makes Kanbur's methodology a very weak tool to evaluate the medium-long-term effects of macro shocks and exogenous adjustments on poverty and income distributions. Moreover, this approach does not account for within-group income variation. If the latter is the main source of national income variation and it changes as a result of exogenous shocks, this methodology is a poor tool of analysis.

The Social Accounting Matrices/ Computable General Equilibrium Approach (SAM-CGE)

This approach is based on a full specification of the model economy. We treat the SAM-CGE approach as a unified methodology, as has been done in recent work (see Decaluwé et al., 1999). The advantage of this methodology is that it captures general equilibrium interactions. Therefore the modeling effort is much higher than in the partial equilibrium case. This is also true in terms of data requirements.

The SAM (see Thorbecke, 1994) is a comprehensive, disaggregated, complete data system that is used as an accounting methodology to capture all the general equilibrium interactions that exist within a socioeconomic system. It provides a framework to quantify all the intersectoral, interregional linkages (flows of capital, services, goods, etc.) within

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a national economy, but also to assess the size of capital and goods flows between the domestic economy and the rest of the world. In other words the SAM method offers a very detailed picture of the economy at a certain point in time.

As a first approximation, all the "actors" in the real economy can be grouped into fairly homogeneous categories (e.g., non-financial firms, the government, the financial sector, households, the rest of the world, etc.). The SAM approach measures all possible transactions among these groups. Since the SAM methodology gives a self-contained snapshot of the economy, all the expenditures within a particular category (e.g., households) sum to the total income of that category.

The chosen taxonomy and the level of disaggregation depend on the issues addressed with the SAM. If household distributional issues are the main focus of the analysis, the SAM household account should be broken down into a number of household homogeneous subgroups reflecting the socioeconomic characteristics of the country under consideration. In this way the SAM approach can be used to analyze the determinants of households' income distribution. The structure of national production activities determines the distribution of value added and the returns to the factors of production. These returns ultimately determine which part of the total value added accrues to households. Government's taxes and transfers influence households' final income distribution. Households' income determination and distribution yield ultimately households' consumption patterns.

The SAM framework can be used not only as an accounting tool but also as a conceptual framework to assess the effect of exogenous shocks on poverty and income distribution. A distinction between "endogenous" and "exogenous" sectors or categories is drawn. As an example, households' income and expenditures are treated as endogenous, while government expenditures and tax collection or exports to the rest of the world are treated as exogenous. Once all the interactions between "endogenous" and "exogenous" sectors are identified and measured, the SAM approach offers a way of tracking the effect of, for example, an increase in government expenditure throughout the economy. A matrix represents these interactions. The entries of this matrix show how a change in an exogenous variable (government demand for some goods, exports of some other goods, a subsidy to a poor socioeconomic group, etc.) translates into a variation in the vector of endogenous variables (factors' returns, households' incomes, consumption, savings, poverty, etc.). This procedure is called SAM Multiplier Analysis.

Given that the SAM approach does not explicitly disentangle prices from quantities, the SAM Multiplier Analysis should be used only for economies with excess productive capacity or underemployed labor resources. In these economies, exogenous shocks are more likely to affect quantities rather than prices. The assumption of excess capacity and unused resources might be quite unrealistic, for example, when applied to the agricultural sector of developing countries.

The SAM approach might prove useful in explaining the determination of total income accruing to different socioeconomic groups, but it does not account for within-group income distribution. The SAM approach might actually account for a high portion of the total income variation if most of the income spread comes from between-group income variation (e.g., urban vs. rural areas). For the same reason, the SAM approach by itself can provide only limited information on poverty

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if intra-group income variation is dominant in the economy. The issue is then the tension between the need for sufficient disaggregation and data availability. The SAM methodology assumes that the structure and the behavior of the economy remain as they were in the base year, therefore it is essentially static. SAM multiplier analysis is, strictly speaking, valid only in the short run. When the purpose of the investigation is to understand long-term changes in the structure of the economy and in agents' behavior, a genuinely dynamic framework such as the CGE is more appropriate.

The CGE approach builds on and extends the SAM methodology. CGE models are dynamic extensions of the SAM. A recent example of the CGE approach can be found in Decaluwé et al. (1999). In the CGE methodology both production and demand sides of the economy are modeled. Prices and quantities are disentangled as distinguished from the SAM approach.

In contrast with the simple SAM multiplier framework, the CGE methodology assigns different behavioral rules to various socioeconomic groups. These behavioral rules show how sectors or socioeconomic subgroups react to changes in exogenous variables (like public expenditures, international prices of traded goods, exports, etc.) and track their interaction over time. In CGE models, most prices are endogenously determined.

Moreover, given data availability, the CGE approach allows for imposing initial within-group income distributions, unlike the SAM approach. However within-group income distributions shift only according to whether mean incomes of socioeconomic household groups increase or decrease following an external shock.

CGE models are usually calibrated (i.e., values are assigned to the model parameters) on the basis of an initial year Social Accounting Matrix. Behavioral rules and initial intra-group income distribution parameters are calibrated so that the model economy replicates the fundamental characteristics of the real economy for a base year.

Once the model is set up, the CGE methodology allows for the tracking of exogenous shocks or policy adjustments on the statistics of interest like those concerning income distribution and poverty indicators. In particular, the poverty line can be endogenously determined within these models.

Seminal work using these two methodologies has been done by Dervis, de Melo and Robinson (1982), Thorbecke (1985, 1994), Bourguignon and Fields (1997), and Taylor (1998).

• **Advantages:** The SAM-CGE approach produces a comprehensive snapshot of all the interactions among socioeconomic groups and sectors of the real economy. Because of that, it is a useful instrument to analyze the sources of income distribution, poverty and inequality of an economy. It is a widely used framework; in fact, at least 100 countries have a SAM. This makes the SAM-CGE method a ready-to use tool of analysis.

• **Disadvantages:** We should distinguish between SAM and CGE approaches. The SAM cannot account for within-group income variation and it provides information only on total and average income by socioeconomic group. This limits its explanatory power with respect to poverty issues. The SAM approach is fundamentally static. The CGE approach allows imposing an exogenous within-group income distribution. However, only the mean and not the variance of this distribution may change as a result of exogenous shocks. This is an important obstacle to the evaluation of the effects of shocks if changes in the vari-

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ance of within-group income distributions are major determinants of inequality and poverty patterns. Second, results are very sensitive to the calibration procedure (accurate sensitivity analysis should be performed to determine how results change when the model parametrization is modified). Finally there is a very well-known criticism of this methodology. The SAM-CGE class of models assumes that private agents' decisions are invariant with respect to changes in the economic environment (tax rates, wage rates, prices, interest rates, etc.). This assumption violates the principle that agents' optimal decisions are indeed a function of these changes. This argument is known in the literature as Lucas' critique (Lucas, 1976). This limits the role of the SAM-CGE as a tool to address the impact of macroeconomic shocks and policy measures on income distribution and poverty.

Macro Dynamic General Equilibrium Models (MD)

Lucas' criticism embraced two fundamental ideas that motivated the project of building large CGE models. The first idea was that for policy experiments, or to understand the impact of macro shocks, it was important to separate relationships that were *structural*—that is invariant with respect to the class of interventions to be studied—from those that were responsive to policy changes. Dynamic optimization theory showed that the key equations thought of as structural in CGE models in fact should not be so regarded. Second, it was thought useful to derive private agents' decision rules from the hypothesis that agents exhibit optimizing behavior in a dynamic framework.

When we actually think about the impacts of macro-shocks on poverty and inequality, we are ultimately interested in seeing how people react to a changing environment. When we want to evaluate poverty reduction measures, we are thinking about how people will react to these policies. By explicitly spelling out the assumptions about agents' perceptions and behaviors as well as government's actions over time and across contingencies, macro-dynamic models offer a very effective context in which to analyze the effects of exogenous shocks, structural adjustments and government policies.

However, there is no such thing as a widely accepted all-purpose model. Instead, different macro-dynamic models are now being used to interpret various macro-microeconomic phenomena. Because MD general equilibrium models derive agents' decisions and behavioral rules endogenously, they are computationally intensive. Therefore, MD general equilibrium models restrict their focus on a limited set of essential interactions among agents.[2] The picture of the real economy that they give is therefore far from the detailed snapshot of reality that SAM/CGE models are able to produce.

To answer questions regarding the impact of macroeconomic shocks, structural reforms, social spending and tax reforms on poverty requires models where the households that populate the economy are heterogeneous along dimensions that are essential for poverty: education, sources of income, asset holdings, age, number of dependants, marital status, geographical location, and so on. Macro-dynamic models with heterogeneous agents are particularly well suited to address distributional issues along the above-mentioned dimensions of inequality.

[2] Essential, that is, for the question they are addressing.

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This kind of model has been extensively used to analyze U.S. economic issues related to:

• Structure of the banking system, welfare costs of alternative monetary and tax policies, and real effects of different interest-rate policy rules (Díaz-Gimenez et al., 1992).

• Asset, earnings, income distribution and business cycle fluctuations (Huggett, 1993; Aiyagari, 1994; Castañeda et al., 1995; Krusell and Smith, 1995; Quadrini, 1996).

• Earnings mobility, fertility patterns (Knowles, 1998; Greenwood, Guner and Knowles, 1999).

• Demographic changes, marital status patterns and saving behaviors (Stroresletten, 1994; Ríos-Rull, 1994; Cubeddu and Ríos-Rull, 1996).

• Marital status patterns and wage dynamics (Regalia and Ríos-Rull, 1999).

• Social security reforms (Huang, Imrohoroğlu and Sargent, 1997).

• Insurance and taxation (Kruger and Perri, 1999).

Suppose, for example, that we want to measure the long-term effect on poverty and income distribution of changes in returns to education and the impact of alternative educational policies.

These modifications in the economic environment influence parents' investment in children's education, household members' labor supply, and fertility decisions. We could build for this purpose a model populated by agents who take fertility decisions, decide how much to invest in their children's education, and how much to save. We could calibrate the parameters of the model such that the statistics computed from it reproduce those obtained from the data. This would be our baseline model economy.

Finally we could measure what the response of the model economy to an exogenous change in returns to education would be or what the impact of different educational policies would be.

To evaluate these changes, we could compare poverty and inequality statistics computed for our model economy in two points in time, i.e., before and after the shock or the policy intervention has taken place. Alternatively, we could follow the whole transition process following the shock or the policy change. The latter task is sometimes hard to implement. The increasing availability of household surveys for Latin American and Caribbean countries will facilitate the calibration of models of this type applied to the analysis of economies of the region.

• **Advantages:** agents' decision rules are derived from their optimizing behavior in a dynamic framework. Within- and between-group variation in income can be taken into consideration and tracked over the transition following a macroeconomic shock or a policy adjustment. Agents can be modeled to be heterogeneous along dimensions that are extremely important for poverty (age, education, earnings, asset holdings, marital status, number of children, access to different insurance mechanisms, etc.). This approach should be recommended as a valuable instrument for positive and normative quantitative analysis of distributional and poverty issues.

• **Disadvantages:** relatively heavy computational and data requirements. There is no such a thing as a widely accepted all-purpose model. These models have been traditionally applied to the analysis of "developed" economies.

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Conclusion

The following table tries to give a concise picture of the methods discussed in this appendix. The tradeoff between ease of computation and low data requirements on the one hand and explanatory power and theoretical limitations on the other is evident. On one extreme stands the partial equilibrium approach. It can be used for a very rough first approximation estimate of the distributional impact of a macroeconomic shock. It has nevertheless heavy theoretical limitations. SAM-CGE models provide instead a detailed snapshot of all the interactions in place in a real economy. However, they face two problems: heavy data requirements and strong theoretical limitations. On the other extreme stands the macro-dynamic general equilibrium approach with heterogeneous agents. The fact that an all-purpose macro-dynamic model does not exist and that this framework has been applied to the study of "developed" economies might be seen as a shortcoming of this approach. However, it may potentially provide the strongest theoretical framework to analyze socioeconomic groups' interaction and the effect on poverty of changes in the economic environment in developing economies.

Summary Table

Approach	Data requirements	Ease of computation	Theoretical Limitations	Ability to Standardize
Partial Equilibrium Approach	Very low	Very high	Socioeconomic groups' behaviors are not modeled. Within-group income variation is taken as given.	High
SAM	Very high	Low	Private agents' decisions are invariant with respect to changes in the economic environment. It cannot account for within-group income variation. Limited to short-run analysis.	Very high
CGE	Very high	Low	Private agents' decisions are invariant with respect to changes in the economic environment.	High
Macro-dynamic	High	Low	None	Low

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Appendix 2

The Demographic Transition in Latin America

One of the most important phenomena in the economic development of a society is the demographic transition. Before the demographic transition takes place, societies are characterized by high mortality and fertility rates. During the first stage of the transition, infant mortality falls. During the second stage, a drop in adult mortality is observed. Only during the third stage does fertility decline. At the end of the transition both the mortality and the fertility rates stabilize at lower levels. Fertility rates drop more than mortality rates over the transition. As a consequence, population growth is lower after the transition than in the pre-transition period.

While there is general consensus that medical advances played an important role in the drop in infant and adult mortality rates, alternative theories have tried to explain the causes of the drop in fertility. In a society in transition, the returns from allocating time to market activities grow relative to the returns of time allocated to household production. This causes an increase in female labor market participation.[1]

By changing the opportunity cost of childbearing, an increase in women's labor force participation plays an important role in explaining fertility declines.[2] In societies changing from an agricultural to an industrial phase, where children are less productive, or in societies where compulsory education for children is introduced, the net benefit of having several children might fall. When children are seen as potential providers of old age security, falling child mortality reduces parents' risk of aging without children and becomes an incentive to reducing fertility rates (Appelbaum and Katz, 1991).

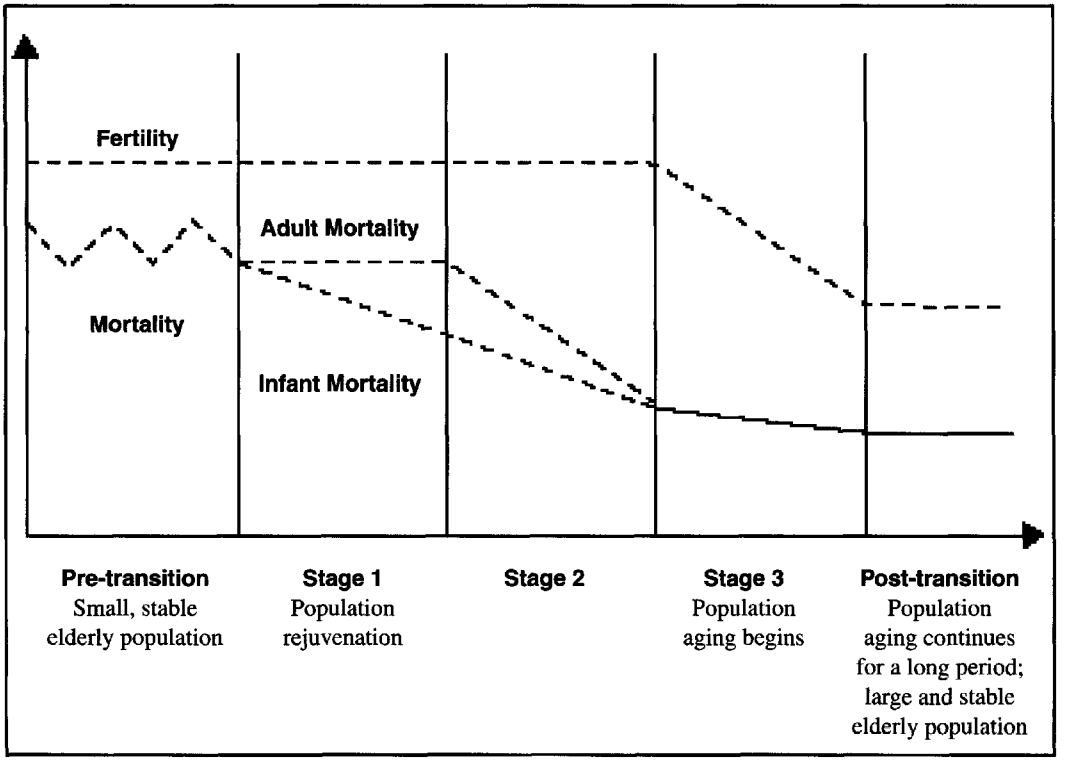
Latin American countries are in different stages of the demographic transition. Bolivia and Haiti are still in the first stage. They are characterized by very high infant mortality rates of 67 and 71 per 1,000 live births, respectively. The average for the Latin American and Caribbean region is 30 per 1,000 live births. Adult mortality is high as well. As a result, in 1996 Bolivian life expectancy at birth was 62.7 years for women and 59 years for men. This is considerably less than the regional averages of 69.5 years for women and 64.3 years for men. Total fertility rates in these two countries are also very high—4.6 in Bolivia and 4.7 in Haiti in 1995, while the Latin American and Caribbean aver-

[1] This is the observed trend in Latin America over the last three decades.

[2] See Eckstein, Wolpin and Mira (1997) for empirical evidence on the Swedish demographic transition.

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Stages of Demographic Transition



age was 3.3. Table A.1 shows the main fertility patterns for the region, while Table A.2 shows the main demographic trends.

El Salvador, Guatemala, Honduras, Nicaragua and Paraguay are a little further along in the first stage of the transition, when adult mortality rates are still high while infant mortality rates start to decline. Brazil, Colombia, Costa Rica, the Dominican Republic, Ecuador, Mexico, Panama, Peru and Venezuela are in the second stage. Argentina, Chile, Cuba and Uruguay have already entered the final stage of the demographic transition, characterized by lower fertility and mortality rates. In Argentina, for example, the infant mortality rate was 22 per 1,000 live births in 1996, well below the regional average. Adult mortality rates were also particularly low. Life expectancy at birth was 76.6 years for women and 69.4 years for men (see Table A.3). Total fertility was below the Latin American average.

One of the consequences of demographic transition is a change in the age composition of the population (see graph above). The first stage of the transition is called population rejuvenation because infant mortality rates drop while adult mortality rates stay fairly constant. The second and third stages of the transition lead to a shift in the age composition of the population. The population ages. During the last stage, the cohort distribution finally stabilizes, with a larger share of elderly.

Because of modern medical advances, the demographic transition is expected to occur

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Table A.1
Total Fertility Rates

	1980	1985	1990	1993	1994	1995	2020 (Proj.)
Argentina	3.3	3.1	2.9	2.8	2.7	2.7	2.1
Bahamas	2.8	2.5	2.1	2.0	2.0	2.0	2.1
Barbados	2.1	1.8	1.7	1.8	1.8	1.8	2.1
Bolivia	5.6	5.2	4.9	4.8	4.7	4.6	2.7
Brazil	3.9	3.4	3.0	2.9	2.8	2.8	2.1
Chile	2.8	2.7	2.6	2.5	2.5	2.5	2.1
Colombia	3.8	3.2	2.8	2.7	2.6	2.6	2.1
Costa Rica	3.7	3.4	3.3	3.1	3.1	3.0	2.4
Dominican Rep.	4.3	3.7	3.3	3.1	3.0	2.9	2.2
Ecuador	5.1	4.4	3.8	3.5	3.4	3.3	2.1
El Salvador	5.9	4.8	4.3	4.0	3.9	3.8	2.4
Guatemala	6.3	5.9	5.6	5.3	5.2	5.1	3.1
Guyana	3.6	3.0	2.7	2.5	2.5	2.4	2.1
Haiti	5.3	5.1	4.9	4.8	4.7	4.7	3.8
Honduras	6.3	5.7	5.1	4.9	4.7	4.6	2.5
Jamaica	5.4	3.1	2.5	2.3	2.3	2.2	2.1
Mexico	4.7	4.0	3.5	3.2	3.1	3.0	2.1
Nicaragua	6.2	5.8	5.3	5.0	4.9	4.8	2.7
Panama	3.8	3.4	3.0	2.9	2.8	2.8	2.1
Paraguay	4.8	4.7	4.5	4.3	4.2	4.1	2.6
Peru	5.0	4.2	3.6	3.4	3.3	3.3	2.3
Trin. and Tob.	3.3	3.0	2.6	2.4	2.4	2.3	2.1
Uruguay	2.7	2.5	2.4	2.3	2.3	2.3	2.1
Venezuela	4.2	3.8	3.5	3.3	3.2	3.1	2.2

Source: USAID Center for International Health Information (CIHI).

much more rapidly in Latin America than happened in Europe. In France, it took 135 years for the proportion of people older than 65 years to double from 9 to 18 percent of the total population. In Sweden it took 90 years. In the United Kingdom and West Germany, it took 50 years.

Furthermore, the true impact of population aging in Latin America is probably understated by the data, since the elderly are defined only in chronological terms. In our definition, the elderly are those who are older than 65 years. Studies of aging in the developing world have questioned the validity of simple age thresholds in capturing the biological, social and cultural complexity of the process. In many of the countries in Latin America, a strong case could be made for lowering the old age threshold to perhaps 50 or 55 years, in line with lower life expectancy that reflects a lower quality of life in terms of nutrition, sanitary and working conditions, and health care.

Current demographic trends indicate that the average age of the population is expected to increase by 6.2 years by the year 2020. For Latin America as a whole, the young dependency ratio (i.e., the ratio between the 0-14 age group and the 15-64 age group) is expected to decrease from .58 in 1995 to .38 in 2020. The old dependency ratio (i.e., the ratio between the 65 and over age group and

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Table A.2
Demographic Structure of the Population in Latin America

Country	% of pop. 0-14		% of pop. 15-64		% of pop. 65 and over		Youth dep. ratio		Elderly dep. ratio		Average age of population	
	1995	2020	1995	2020	1995	2020	1995	2020	1995	2020	1995	2020
Average LAC	35.0	25.0	61.0	67.0	5.0	8.0	0.58	0.38	0.08	0.12	25.7	31.9
Nicaragua	44.0	30.0	53.0	65.0	3.0	5.0	0.82	0.47	0.06	0.07	21.6	27.6
Honduras	44.0	31.0	53.0	64.0	3.0	5.0	0.82	0.48	0.06	0.08	21.9	27.5
Guatemala	44.0	35.0	52.0	61.0	3.0	4.0	0.85	0.57	0.07	0.07	22.0	25.7
Belize	42.0	26.0	54.0	69.0	4.0	5.0	0.77	0.38	0.08	0.07	22.2	29.2
Paraguay	42.0	32.0	55.0	62.0	4.0	5.0	0.76	0.52	0.06	0.08	23.1	27.5
Bolivia	41.0	31.0	56.0	63.0	4.0	5.0	0.73	0.50	0.07	0.09	23.5	27.6
Haiti	40.0	37.0	56.0	59.0	4.0	4.0	0.72	0.62	0.07	0.07	23.7	25.0
El Salvador	37.0	27.0	58.0	67.0	4.0	6.0	0.64	0.40	0.07	0.10	24.0	30.1
Ecuador	36.0	25.0	59.0	67.0	4.0	7.0	0.61	0.37	0.07	0.11	24.9	31.4
Mexico	35.0	25.0	60.0	68.0	4.0	8.0	0.59	0.36	0.07	0.12	24.9	32.2
Venezuela	36.0	26.0	60.0	66.0	4.0	8.0	0.61	0.39	0.07	0.12	25.1	31.4
Peru	36.0	25.0	60.0	68.0	4.0	7.0	0.60	0.37	0.07	0.11	25.2	31.6
Dom. Rep.	35.0	25.0	61.0	67.0	4.0	8.0	0.58	0.37	0.07	0.12	25.2	32.3
Colombia	34.0	25.0	61.0	67.0	4.0	8.0	0.56	0.37	0.07	0.12	25.7	32.2
Costa Rica	35.0	27.0	60.0	65.0	5.0	8.0	0.58	0.41	0.08	0.12	25.9	31.6
Panama	33.0	23.0	61.0	68.0	5.0	9.0	0.54	0.35	0.09	0.13	26.6	33.4
Brazil	32.0	23.0	64.0	68.0	5.0	9.0	0.50	0.34	0.07	0.13	27.0	33.6
Jamaica	32.0	22.0	62.0	70.0	7.0	8.0	0.51	0.32	0.11	0.11	27.1	33.5
Bahamas	29.0	22.0	66.0	68.0	5.0	10.0	0.44	0.32	0.08	0.14	27.9	35.3
Trin. Tob.	31.0	22.0	63.0	68.0	6.0	10.0	0.48	0.33	0.10	0.15	28.5	34.8
Chile	29.0	23.0	64.0	66.0	7.0	11.0	0.46	0.35	0.10	0.17	29.1	34.7
Argentina	29.0	23.0	62.0	65.0	9.0	12.0	0.47	0.36	0.15	0.18	30.8	34.2
Barbados	23.0	19.0	65.0	68.0	12.0	13.0	0.36	0.27	0.18	0.20	33.1	38.5
Uruguay	24.0	22.0	63.0	66.0	12.0	13.0	0.39	0.33	0.19	0.19	34.0	35.9

Source: Behrman, Duryea and Székely (1999). Calculated from United Nations Population Statistics, 1996 revision.

the 15-64 age group) is expected to increase from .08 in 1995 to .12 in 2020. Table A.2 shows the main trends in the region.

As the proportion of the elderly grows, society as a whole will have to make a greater effort to fund pensions. This pressure will become particularly strong if the fertility rate at the end of the transition stabilizes slightly above or even below mortality rates, which is what happened in many European countries in the last three decades.

Latin American countries far ahead in the demographic transition process have already begun needed reforms of their social insurance systems, achieved greater coverage rates, and made strides towards financial sustainability. Poorer and younger countries (Bolivia and El Salvador are the exceptions) have not yet started the reform process. These countries should be aware of their enormous window of opportunity in the near future. The increase in the share of the working-age population (15-64 age group) and the still moderate growth in the elderly dependency ratio should help to achieve the support needed for the reforms. One thing is clear: the longer needed reforms are postponed, the harder they will be to achieve.

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Table A.3
Social Indicators by Country and Gender

		1960	1962	1970	1980	1985	1990	1995	1996
Argentina	Mortality rate, under 1 (per 1,000 live births)	..	60.00	51.60	34.80	29.00	25.20	22.20	22.10
	Life expectancy at birth, total (years)	..	65.48	66.81	69.59	68.25	71.64	72.69	72.90
	Life expectancy at birth, male (years)	..	62.50	63.58	66.24	65.05	68.20	69.20	69.40
	Life expectancy at birth, female (years)	..	68.60	70.20	73.10	71.60	75.26	76.36	76.58
	Mortality rate, under 5 (per 1,000 live births)	72.00	..	71.00	38.00	..	28.00	24.00	25.00
Bahamas	Mortality rate, under 1 (per 1,000 live births)	52.00	..	35.00	30.00	26.70	28.40	19.00	18.00
	Life expectancy at birth, total (years)	..	64.07	66.15	68.15	69.83	71.76	73.26	73.49
	Life expectancy at birth, male (years)	..	61.00	63.08	64.28	66.00	68.30	70.02	70.26
	Life expectancy at birth, female (years)	..	64.30	69.38	72.22	73.86	75.40	76.66	76.88
	Mortality rate, under 5 (per 1,000 live births)	..	..	..	..	..	..	18.00	..
Barbados	Mortality rate, under 1 (per 1,000 live births)	..	61.00	38.20	21.00	12.85	11.67	13.20	11.10
	Life expectancy at birth, total (years)	..	65.84	68.67	72.26	70.09	74.94	75.79	75.94
	Life expectancy at birth, male (years)	..	63.50	66.22	69.78	64.70	72.50	73.32	73.46
	Life expectancy at birth, female (years)	..	68.30	71.24	74.86	72.60	74.50	78.38	78.54
	Mortality rate, under 5 (per 1,000 live births)							12.00	
Bolivia	Mortality rate, under 1 (per 1,000 live births)	..	164.0	153.40	114.8	94.60	81.00	69.00	64.00
	Life expectancy at birth, total (years)	..	43.45	46.07	52.24	50.13	58.31	60.60	61.03
	Life expectancy at birth, male (years)	..	41.40	43.92	50.34	48.25	56.66	58.96	59.38
	Life expectancy at birth, female (years)	..	45.60	48.32	54.24	52.10	60.04	62.32	62.76
	Mortality rate, under 5 (per 1,000 live births)	255.00	..	243.00	171.00	..	124.00	96.00	102.00
Brazil	Mortality rate, under 1 (per 1,000 live births)	..	109.00	94.60	66.60	58.00	48.20	34.33	35.67
	Life expectancy at birth, total (years)	..	55.85	59.05	62.73	60.36	65.61	66.77	66.99
	Life expectancy at birth, male (years)	..	54.00	56.92	59.92	54.70	61.94	62.96	63.18
	Life expectancy at birth, female (years)	..	54.80	61.28	65.68	63.15	69.46	70.76	70.98

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Table A.3
Social Indicators by Country and Gender (cont.)

		1960	1962	1970	1980	1985	1990	1995	1996
	Mortality rate, under 5 (per 1,000 live births)	174.00	..	135.00	86.00	..	66.67	54.00	42.00
Chile	Mortality rate, under 1 (per 1,000 live births)	..	109.00	74.00	32.40	20.40	16.00	11.77	11.53
	Life expectancy at birth, total (years)	..	58.03	62.40	69.30	65.35	73.70	74.89	75.06
	Life expectancy at birth, male (years)	..	55.30	59.36	66.00	62.45	70.74	71.98	72.14
	Life expectancy at birth, female (years)	..	60.90	65.60	72.76	68.40	76.80	74.94	78.12
	Mortality rate, under 5 (per 1,000 live births)	155.00	..	94.00	34.00	..	19.00	15.00	13.00
Colombia	Mortality rate, under 1 (per 1,000 live births)	..	92.00	73.60	45.20	35.80	30.00	25.60	24.80
	Life expectancy at birth, total (years)	..	54.91	60.97	65.91	64.81	68.86	69.85	70.04
	Life expectancy at birth, male (years)	..	56.20	59.26	63.48	65.14	66.04	66.89	64.06
	Life expectancy at birth, female (years)	..	59.70	62.76	68.46	65.40	71.82	72.95	73.17
	Mortality rate, under 5 (per 1,000 live births)	122.00	..	113.00	58.00	..	40.00	31.00	31.00
Costa Rica	Mortality rate, under 1 (per 1,000 live births)	74.30	83.20	61.50	20.10	14.93	14.80	12.67	12.33
	Life expectancy at birth, total (years)	..	63.02	64.12	72.70	74.72	75.89	76.68	76.82
	Life expectancy at birth, male (years)	..	61.60	65.22	70.52	72.50	73.65	74.41	74.54
	Life expectancy at birth, female (years)	..	64.50	69.12	74.98	74.06	78.25	79.06	79.21
	Mortality rate, under 5 (per 1,000 live births)	124.00	..	85.00	29.00	..	20.33	16.00	15.00
Dominican Republic	Mortality rate, under 1 (per 1,000 live births)	..	114.00	98.40	74.40	59.60	50.40	42.00	40.00
	Life expectation at birth, total (years)	..	53.62	58.73	64.20	60.94	69.06	70.41	70.68
	Life expectancy at birth, male (years)	..	52.10	54.02	62.34	59.20	64.08	68.38	68.64
	Life expectancy at birth, female (years)	..	55.22	60.53	66.15	62.76	71.14	72.54	72.82
	Mortality rate, under 5 (per 1,000 live births)	149.00	..	124.00	92.00	..	58.00	44.00	44.00
Ecuador	Mortality rate, under 1 (per 1,000 live births)	..	119.00	99.80	64.20	56.60	45.20	35.86	34.48
	Life expectancy at birth, total (years)	..	54.72	58.05	63.26	60.88	68.12	69.68	69.97
	Life expectancy at birth, male (years)	..	53.40	56.60	61.38	59.05	65.72	64.20	64.47

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Table A.3
Social Indicators by Country and Gender (cont.)

		1960	1962	1970	1980	1985	1990	1995	1996
	Life expectancy at birth, female (years)	..	56.10	59.58	65.24	62.80	70.64	72.29	72.58
	Mortality rate, under 5 (per 1,000 live births)	178.00	..	140.00	98.00	..	50.00	45.00	40.00
El Salvador	Mortality rate, under 1 (per 1,000 live births)	..	123.00	103.40	81.00	63.20	46.20	35.60	33.80
	Life expectancy at birth, total (years)	..	52.34	54.62	54.26	54.87	66.07	68.80	69.11
	Life expectancy at birth, male (years)	..	50.76	55.58	51.42	54.88	62.06	65.54	66.02
	Life expectancy at birth, female (years)	..	54.00	59.76	63.39	61.00	70.28	72.22	72.36
	Mortality rate, under 5 (per 1,000 live births)	191.00	..	161.00	125.00	..	54.00	42.00	40.00
Guatemala	Mortality rate, under 1 (per 1,000 live births)	..	119.00	105.60	80.80	70.40	56.20	42.60	40.80
	Life expectancy at birth, total (years)	..	44.03	52.46	54.96	54.52	63.44	65.62	66.03
	Life expectancy at birth, male (years)	..	46.20	51.16	55.88	52.96	61.09	63.20	63.60
	Life expectancy at birth, female (years)	..	44.90	53.82	60.14	56.16	65.91	68.16	68.58
	Mortality rate, under 5 (per 1,000 live births)	204.00	..	168.00	140.00	..	73.00	58.00	56.00
Guyana	Mortality rate, under 1 (per 1,000 live births)	..	95.00	80.20	68.20	64.20	64.20	60.00	59.00
	Life expectancy at birth, total (years)	..	54.31	59.68	61.01	59.79	62.72	63.86	64.14
	Life expectancy at birth, male (years)	..	55.80	54.80	58.36	54.55	59.60	60.58	60.84
	Life expectancy at birth, female (years)	..	58.90	61.66	63.80	62.15	66.00	64.30	64.60
	Mortality rate, under 5 (per 1,000 live births)	..	..	..	..	..	..	82.00	..
Haiti	Mortality rate, under 1 (per 1,000 live births)	..	170.00	141.00	122.80	108.60	84.80	72.26	71.68
	Life expectancy at birth, total (years)	..	43.57	44.59	51.90	49.14	55.82	55.57	55.25
	Life expectancy at birth, male (years)	..	42.26	46.21	50.36	44.68	54.18	54.12	53.86
	Life expectancy at birth, female (years)	..	44.94	49.04	53.51	50.67	54.54	54.10	56.70
	Mortality rate, under 5 (per 1,000 live births)	..	..	221.00	200.00	..	148.00	101.00	130.00
Honduras	Mortality rate, under 1 (per 1,000 live births)	..	144.00	110.20	70.00	62.00	50.00	45.40	44.20
	Life expectancy at birth, total (years)	..	44.94	52.82	60.01	56.67	65.64	66.61	66.88

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Table A.3
Social Indicators by Country and Gender (cont.)

		1960	1962	1970	1980	1985	1990	1995	1996
	Life expectancy at birth, male (years)	..	46.27	50.93	54.88	54.74	63.50	64.48	64.74
	Life expectancy at birth, female (years)	..	49.70	54.80	62.24	58.70	64.88	68.84	69.12
	Mortality rate, under 5 (per 1,000 live births)	204.00	..	170.00	101.00	..	73.00	59.00	50.00
Jamaica	Mortality rate, under 1 (per 1,000 live births)	..	54.00	43.20	21.20	14.40	15.20	12.56	12.08
	Life expectancy at birth, total (years)	..	64.25	64.69	70.85	68.40	73.17	74.15	74.34
	Life expectancy at birth, male (years)	..	62.40	65.76	68.72	66.40	70.99	71.91	72.09
	Life expectancy at birth, female (years)	..	66.20	69.72	73.08	70.50	75.45	76.51	76.71
	Mortality rate, under 5 (per 1,000 live births)	74.00	..	64.00	34.00	..	21.33	15.00	14.00
Mexico	Mortality rate, under 1 (per 1,000 live births)	..	86.00	72.40	51.00	42.80	34.60	32.64	31.52
	Life expectancy at birth, total (years)	..	58.62	61.71	66.76	64.22	70.40	71.50	71.74
	Life expectancy at birth, male (years)	..	54.01	59.46	63.52	61.91	64.40	68.52	68.76
	Life expectancy at birth, female (years)	..	60.30	64.06	70.16	66.65	73.54	74.62	74.86
	Mortality rate, under 5 (per 1,000 live births)	134.00	..	111.00	76.00	..	44.00	41.00	36.00
Nicaragua	Mortality rate, under 1 (per 1,000 live births)	..	131.00	106.00	90.40	74.00	59.60	45.82	43.76
	Life expectancy at birth, total (years)	..	48.62	53.89	58.72	55.39	64.49	64.30	64.72
	Life expectancy at birth, male (years)	..	44.30	52.42	56.02	53.15	61.70	64.88	65.34
	Life expectancy at birth, female (years)	..	50.00	55.44	61.56	54.75	64.42	69.84	70.22
	Mortality rate, under 5 (per 1,000 live births)	193.00	..	165.00	120.00	..	80.67	61.00	54.00
Panama	Mortality rate, under 1 (per 1,000 live births)	..	63.00	46.60	32.00	28.80	26.20	22.60	21.80
	Life expectancy at birth, total (years)	..	61.97	65.59	70.12	66.86	72.44	73.59	73.82
	Life expectancy at birth, male (years)	..	60.90	64.24	68.04	65.15	70.30	71.44	71.62
	Life expectancy at birth, female (years)	..	63.10	64.00	72.30	68.65	74.68	75.84	76.12
	Mortality rate, under 5 (per 1,000 live births)	88.00	..	68.00	44.00	..	34.33	28.00	25.00
Paraguay	Mortality rate, under 1 (per 1,000 live births)	..	62.00	55.40	49.80	42.40	31.40	24.60	23.80

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Table A.3
Social Indicators by Country and Gender (cont.)

		1960	1962	1970	1980	1985	1990	1995	1996
	Life expectancy at birth, total (years)	..	64.38	65.50	66.83	66.29	69.24	70.69	70.93
	Life expectancy at birth, male (years)	..	62.46	63.44	64.70	64.23	66.90	68.10	68.30
	Life expectancy at birth, female (years)	..	66.40	64.66	69.06	68.45	71.70	73.40	73.70
	Mortality rate, under 5 (per 1,000 live births)	92.00	..	76.00	59.00	..	54.33	52.00	45.00
Peru	Mortality rate, under 1 (per 1,000 live births)	..	136.00	108.00	81.00	69.67	54.00	43.00	41.50
	Life expectancy at birth, total (years)	..	49.12	53.94	60.38	56.76	65.80	64.82	68.18
	Life expectancy at birth, male (years)	..	44.80	52.38	58.38	54.95	63.48	65.48	65.84
	Life expectancy at birth, female (years)	..	50.50	55.58	62.48	58.65	68.24	70.28	70.64
	Mortality rate, under 5 (per 1,000 live births)	234.00	..	178.00	126.00	..	73.00	62.00	58.00
Trinidad and Tobago	Mortality rate, under 1 (per 1,000 live births)	..	60.00	52.00	35.00	25.60	14.80	13.20	12.60
	Life expectancy at birth, total (years)	..	64.55	65.36	68.04	64.47	71.11	72.30	72.54
	Life expectancy at birth, male (years)	..	62.50	63.16	65.60	65.30	68.82	70.00	70.24
	Life expectancy at birth, female (years)	..	66.70	64.66	70.60	69.75	73.52	74.72	74.96
	Mortality rate, under 5 (per 1,000 live births)	61.00	..	55.00	39.00	..	24.00	18.00	15.00
Uruguay	Mortality rate, under 1 (per 1,000 live births)	..	48.00	46.40	36.60	24.60	21.60	19.60	18.00
	Life expectancy at birth, total (years)	..	68.43	68.75	70.44	71.58	72.25	73.26	73.54
	Life expectancy at birth, male (years)	..	65.38	65.57	64.21	68.41	69.11	69.77	69.94
	Life expectancy at birth, female (years)	..	71.64	72.09	73.84	74.90	75.56	76.92	74.32
	Mortality rate, under 5 (per 1,000 live births)	56.00	..	56.00	43.00	..	24.00	21.00	22.00
Venezuela	Mortality rate, under 1 (per 1,000 live births)	..	73.00	53.40	36.00	29.80	24.60	22.67	21.83
	Life expectancy at birth, total (years)	..	61.01	65.12	68.34	65.77	71.25	72.36	72.57
	Life expectancy at birth, male (years)	..	59.30	62.58	65.46	63.50	68.42	69.56	69.78
	Life expectancy at birth, female (years)	..	62.80	64.78	71.36	68.15	74.22	75.30	75.50
	Mortality rate, under 5 (per 1,000 live births)	75.00	..	62.00	42.00	..	26.00	25.00	28.00

Source: World Bank, World Development Indicators 1998 CD-Rom.

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Appendix 3

Questionnaire for Measuring Risk and Risk Coping Strategies

This questionnaire was developed within the framework of the Program for the Improvement of Surveys and the Measurement of Living Conditions in Latin America and the Caribbean (ISLC/MECOVI). The program is a joint initiative of the Inter-American Development Bank (IDB), the World Bank (IBRD), and the Economic Commission for Latin America and the Caribbean (ECLAC).

The objective of the ISLC program is to improve information on living conditions in the Latin American and Caribbean region. In particular, the program aims to ensure that surveys are of high quality, representative of the country at the national level, and that they cover issues important for effective policy formulation.

The program sponsors activities at both country and regional levels. At the country level (Argentina, Bolivia, El Salvador, Guatemala, Nicaragua, Paraguay and Peru), it provides technical assistance to the offices of statistics in charge of survey development and data collection in order to improve survey design, sampling methodologies, collection mechanisms, etc. At the regional level, the program sponsors outreach and training activities (workshops and courses) to improve coordination, availability of data, and cross-fertilization across countries. The creation of a data bank of all available household surveys is one of the major activities to improve data availability to policymakers, academics, development organizations and the public at large.

Finally, the program, with inputs from researchers and academics, is developing innovative and effective questionnaire modules to provide guidance to countries interested in investigating particular issues, such as criminality or the impact of natural shocks. One such questionnaire is the Measuring Risks and Risk Coping Strategies module. Parts of it have been used in Nicaragua to assess the impact of Hurricane Mitch. Also, a version of this module will be implemented in the other participating countries. The proposed questionnaire will serve as a guide for designing questionnaires in other countries of the region.

Objectives

The objectives of the questionnaire are to measure the type and extent of adverse shocks faced by households and to collect information on the different ways households can cope with adverse situations that have negative effects on their income/consumption. This information is needed to understand house-

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hold behavior in relation to risk management, and to support the design of social protection public policies for the poor.

Implementation

The best way to measure the impact of adverse shocks and the way in which households react to them is through a panel survey. A long-term panel survey would allow a full decomposition of given shocks, assessing whether they are permanent and transitory.

Given the difficulties involved in the implementation of a panel survey, a viable alternative is to ask backward and forward-looking questions in order to measure risk exposure and the reduction, mitigating and coping strategies used by households at any given point in time. The proposed questionnaire has been designed with this alternative in mind. The questionnaire has to be modified for use in a panel.

The questionnaire was designed to be implemented in conjunction with a multi-purpose questionnaire on living conditions. For this reason, it only incorporates quantitative and qualitative income and consumption questions relative to the impact of shocks, since the more general income and consumption questions are already part of the main body of the multi-purpose survey. The questionnaire on shocks can be implemented as a module, as in the proposed case. It is also possible to distribute the questions in the respective modules of the multi-purpose questionnaire according to convenience.

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Questionnaire: Measuring Risks and Risk Coping Strategies

Questions asked of the household head or the person best informed about the activities of household.

Section 1 - SHOCKS

1. The total income received by your household during (MONTH OF THE CORRESPONDING YEAR), in comparison with the income received during (SAME MONTH OF EARLIER YEAR), has been —? (Take into consideration income from all sources and all earners. Take into account the purchasing power of your household income.)

1. ❑ The same
2. ❑ Greater
3. ❑ Less

2. What do you think will be the level of your household income during the next 12 months in comparison with the income currently received? (Take into consideration income from all sources and all earners. Take into account the purchasing power of your household income.)

1. ❑ The same
2. ❑ Greater
3. ❑ Less

3. Has your household been affected during the last 12 months by any of the following problems or particular contingencies? *(If answered NO to all alternatives, go to question 8)*

	YES	NO	
1.	❑	❑	Loss of job
2.	❑	❑	Decrease of wages of the head of household or of any other earner
3.	❑	❑	Bankruptcy of household business
4.	❑	❑	Grave illness or accident
5.	❑	❑	Death of member of household (head of household/earner)
6.	❑	❑	Abandonment by head of household
7.	❑	❑	Death of member of household (other than head of household/earner)
8.	❑	❑	Fire in household, business, or property
9.	❑	❑	Felony (theft, kidnapping, fraud)
10.	❑	❑	Judicial problem

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11. ❑ ❑ Low prices of household business products
12. ❑ ❑ High costs of household business inputs
13. ❑ ❑ Failure of household business equipment
14. ❑ ❑ Termination of aid from family and/or friends
15. ❑ ❑ Other problem that affected only your house (specify)

4. Has the occurrence of these situations represented a decrease or loss of: *(If answered NO to all alternatives, go to question 8)*

	YES	NO	
1.	❑	❑	Income normally received by your household?
2.	❑	❑	Patrimony?
3.	❑	❑	Both?

5. In what amount do you estimate the income/patrimony decrease or loss due to contingencies or problems faced by your household during the last 12 months? (SURVEYOR, WRITE DOWN THE CONTINGENCIES THAT OCCURRED ACCORDING TO QUESTION 5 AND THE ESTIMATED QUANTITY OF INCOME AND/OR PATRIMONY DECREASE OR LOSS)

	Type of contingency	Monthly	Annual	Total
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

6. The decrease of *household income* to date as a result of those events...

	YES	NO	
1.	❑	❑	has been resolved?
2.	❑	❑	has persisted but will be resolved in less than 6 months?
3.	❑	❑	has persisted and will take from 6 to 12 months to be resolved?
4.	❑	❑	will take more than a year to be resolved?
5.	❑	❑	does not know when it will be resolved.

7. The loss of *household patrimony* to date as a consequence of those events...

	YES	NO	
1.	❑	❑	has been resolved?
2.	❑	❑	has persisted but will be resolved in less than 6 months?

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3. ❑ ❑ has persisted and will take from 6 to 12 months to be resolved?
4. ❑ ❑ will take more than a year to be resolved?
5. ❑ ❑ does not know when it will be resolved.

8. In the last 12 months, has your household been affected by any of the following generic problems or contingencies?

	YES	NO	
1.	❑	❑	Earthquake
2.	❑	❑	Drought
3.	❑	❑	Flood
4.	❑	❑	Storms
5.	❑	❑	Hurricanes
6.	❑	❑	Plagues
7.	❑	❑	Frost
8.	❑	❑	Landslide
9.	❑	❑	Forest fire
10.	❑	❑	Lack of employment, no jobs available
11.	❑	❑	Closure of companies, dismissals, downsizing
12.	❑	❑	Price increment of mass consumption goods (inflation)
13.	❑	❑	Lack of better wages
14.	❑	❑	Decrease of sales (recession)
15.	❑	❑	Bankruptcies
16.	❑	❑	Stock market downfall
17.	❑	❑	War/guerrillas
18.	❑	❑	Terrorism
19.	❑	❑	Public demonstrations (strikes, others)
20.	❑	❑	Reduction or elimination of government transfers
21.	❑	❑	Other problem that affected the community (specify)

9. Has the occurrence of these situations represented a decrease or loss of: *(If answered NO to all alternatives, go to question 13.)*

	YES	NO	
1.	❑	❑	the income normally received by the household?
2.	❑	❑	patrimony?
3.	❑	❑	both?

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10. How much do you estimate the income decrease or loss of patrimony to be due to contingencies or problems faced by your household during the last 12 months? (SURVEYOR, WRITE DOWN THE CONTINGENCIES OCCURRED ACCORDING TO QUESTION 10 AND THE ESTIMATED QUANTITY OF INCOME AND/OR PATRIMONY DECREASE OR LOSS)

	Type of contingency	Monthly	Annual	Total
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

11. The decrease of *household income* to date as a result of those events...

	YES	NO	
1.	❑	❑	has been resolved?
2.	❑	❑	has persisted but will be resolved in less than 6 months?
3.	❑	❑	has persisted and will take from 6 to 12 months to be resolved?
4.	❑	❑	will take more than a year to be resolved?
5.	❑	❑	does not know when it will be resolved.

12. The loss of *household patrimony* to date as a consequence of those events...

	YES	NO	
1.	❑	❑	has been resolved?
2.	❑	❑	has persisted but will be resolved in less than 6 months?
3.	❑	❑	has persisted and will take from 6 to 12 months to be resolved?
4.	❑	❑	will take more than a year to be resolved?
5.	❑	❑	does not know when it will be resolved.

Section 2 - ACCESS TO INSURANCE

13. Has your household been affiliated or is it currently affiliated with...? *(If answered NO to all alternatives, go to question 16)*

	YES	NO	
1.	❑	❑	a public health insurance plan?
2.	❑	❑	a private health insurance plan?
3.	❑	❑	a life insurance plan?

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4. ❑ ❑ a property damage insurance plan?
5. ❑ ❑ a public pension system?
6. ❑ ❑ a private pension system?
7. ❑ ❑ Other (specify)

14. Has your household encountered the need to use any type of insurance available to it during the last 12 months? *(If answered NO, go to question 16)*

YES NO
❑ ❑

15. Why have you used your insurance plan(s) during the last 12 months?

		Amount
1. ❑	Medical emergency, illness, accident, death	_____
2. ❑	House repair or replacement	_____
3. ❑	Equipment repair or replacement	_____
4. ❑	Other (specify)	_____

Section 3 - NEGATIVE SAVINGS

16. Has your household kept savings during the last 12 months? *(If answered NO go to question 21)*

YES NO
❑ ❑

17. What amount and what type of savings does your household currently keep?

		Amount
1. ❑	In banks	_____
2. ❑	In private pension funds	_____
3. ❑	In mutual funds	_____
4. ❑	In stocks/ bonds	_____
5. ❑	In cash	_____
6. ❑	In *juntas, tandas, pandero*	_____
7. ❑	Other (specify)	_____

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18. Has your household during the last 12 months had the need to partially or wholly use its savings in order to finance unforeseen expenses or to pay for daily expenses? *(If answered NO, go to question 21)*

YES NO
❑ ❑

19. In the last 12 months, what kinds of withdrawals have been made and what is the respective sum?

		Amount
1. ❑	From banks	_____
2. ❑	From private pension funds	_____
3. ❑	From mutual funds	_____
4. ❑	From stocks/ bonds	_____
5. ❑	From cash	_____
6. ❑	From *juntas, tandas, pandero*	_____
7. ❑	Other (specify)	_____

20. What has been the destination (and amount) of the money withdrawn from your savings in the last 12 months?

		Amount
1. ❑	Payment of medical emergency, accident, death	_____
2. ❑	Payment of school or university expenses	_____
3. ❑	Food, apparel, and other household expenses	_____
4. ❑	Home repairs	_____
5. ❑	Equipment repairs	_____
6. ❑	Business investment, input acquisition	_____
7. ❑	Agriculture investment/livestock	_____
8. ❑	Debt payment (loans, leases, buying, etc.)	_____
9. ❑	Other (specify)	_____

Section 4 - LOANS RECEIVED

21. Has your household been granted a monetary or in-kind loan(s) in the last 12 months in order to finance unforeseen expenses or to pay for daily expense?

YES	NO	
1. ❑	❑	Monetary *(If no, go to 26)*
2. ❑	❑	In-kind *(If no, go to 30)*
3. ❑	❑	Both

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22. What was the amount of the *monetary loan*(s) that you were granted during the last 12 months?

Amount _____

23. What have been the main sources for the *monetary loan*(s) that you were granted during the last 12 months?

		Amount
1. ❑	Private bank	_____
2. ❑	State bank or financial entity	_____
3. ❑	Municipal *cajas*	_____
4. ❑	Relatives	_____
5. ❑	Friends	_____
6. ❑	Private moneylender	_____
7. ❑	NGO	_____
8. ❑	Workplace	_____
9. ❑	*Tandas, juntas, pandero*	_____
10. ❑	Other (specify)	_____

24. What were the terms of the *monetary loan*(s) granted?

1. ❑	Interest rate:	Monthly	_____	Annual	_____
2. ❑	Payment period:	Years	_____	Months	_____

25. What was the use (and the amount) of the *monetary loan*(s) obtained during the last 12 months?

		Amount
1. ❑	Payment of medical emergency, accident, death	_____
2. ❑	Payment of school or university expenses	_____
3. ❑	Food, apparel, and other household expenses	_____
4. ❑	Home repairs	_____
5. ❑	Equipment repairs	_____
6. ❑	Business investment, input acquisition	_____
7. ❑	Agriculture investment/ livestock	_____
8. ❑	Debt payment (loans, leases, buying, etc.)	_____
9. ❑	Other (specify)	_____

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26. What was the amount of the *in-kind loan*(s) that you obtained during the last 12 months? (Appraise the loan)

Appraised amount

_____

27. Who provided you the *in-kind loan*(s) obtained during the last 12 months?

		Appraised amount
1. ❑	Government entity	_____
2. ❑	Cooperative	_____
3. ❑	Relatives	_____
4. ❑	Friends	_____
5. ❑	Moneylender	_____
6. ❑	Store, warehouse, grocery	_____
7. ❑	NGO	_____
8. ❑	Other (specify)	_____

28. What have been the terms of the *in-kind loan*(s) granted?

1. ❑	Interest rate:	Monthly _____	Annual _____		
2. ❑	In-kind cost:	Monthly _____	Annual _____		
3. ❑	Payment period:	Years _____	Months _____		

29. What was the use (and amount) of the *in-kind loan*(s) obtained during the last 12 months?

		Amount
1. ❑	Food for household	_____
2. ❑	Food for livestock	_____
3. ❑	Seeds for agriculture	_____
4. ❑	Home repairs	_____
5. ❑	Business investment	_____
6. ❑	Debt payment	_____
7. ❑	Other (specify)	_____

30. Notwithstanding that your household has not obtained a loan during the last 12 months, has it requested a loan to cope with contingencies? *(If answered NO, go to question 33)*

YES	NO
❑	❑

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31. Where did you request that loan?

1. ❑ Private bank
2. ❑ State bank or financial entity
3. ❑ Municipal *cajas*
4. ❑ Relatives
5. ❑ Friends
6. ❑ Private moneylender
7. ❑ NGO
8. ❑ Workplace
9. ❑ Cooperative
10. ❑ Store, warehouse, grocery store
11. ❑ Other (specify)

32. What were the reasons you did not obtain the requested credit or loan?

1. ❑ Lack of financial guarantee
2. ❑ Too expensive/very high interest rates
3. ❑ Lack of information/did not know how to request and fill out the paperwork
4. ❑ Excessive bureaucratic procedures
5. ❑ The credit is still in process
6. ❑ Other (specify)

Section 5 - ASSET SALE AND MORTGAGE

33. Has this household sold or mortgaged any of its assets in order to finance unforeseen expenses resulting from contingencies?

	YES	NO	
1.	❑	❑	Sale *(If no, go to question 36)*
2.	❑	❑	Mortgage *(If no, go to question 40)*
3.	❑	❑	Both

34. How much money did you receive from the sale of assets during the last 12 months?

Amount

_____

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35. During the last 12 months, what kind of assets have you sold to resolve household problems, and how much did you sell them for?

		Amount
1. ❑	Urban land	_____
2. ❑	Agricultural land	_____
3. ❑	Livestock (cattle, mules, etc.)	_____
4. ❑	House/apartment	_____
5. ❑	Furniture	_____
6. ❑	Jewelry	_____
7. ❑	Equipment (vehicles, machinery)	_____
8. ❑	In-advance harvest sale	_____
9. ❑	Other (specify)	_____

36. In the last 12 months, how much money did you receive from the mortgage of assets?

Amount
_____

37. In the last 12 months, what kinds of assets have you mortgaged for resolving household problems and what is the value of the mortgage?

		Amount
1. ❑	Urban land	_____
2. ❑	Agricultural land	_____
3. ❑	Livestock (cattle, mules, etc.)	_____
4. ❑	House/apartment	_____
5. ❑	Furniture	_____
6. ❑	Jewelry	_____
7. ❑	Equipment (vehicles, machinery)	_____
8. ❑	In-advance harvest sale	_____
9. ❑	Other (specify)	_____

38. What was the destination (and amount) of the money obtained by the sale and/or mortgage of these assets?

		Amount
1. ❑	Payment of medical emergency, accident, death	_____
2. ❑	Payment of school or university expenses	_____
3. ❑	Food, apparel, and other household expenses	_____

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4. ❑ Home repairs _____
5. ❑ Equipment repairs _____
6. ❑ Business investment, input acquisition _____
7. ❑ Agriculture investment/livestock _____
8. ❑ Debt payment (loans, leases, buying, etc.) _____
9. ❑ Other (specify) _____

39. Within the last 12 months, has your household lost any item and/or asset given in guarantee for being unable to pay the mortgage and/or credit?

YES	NO
❑	❑

Section 6 - LABOR HOURS/NUMBER OF EARNERS

(Questions 40-48 refer individually to all household members, so that the questionnaire design must have one line for each member. Questions 40-44 must be answered directly by each household member who is an income earner. Questions 45-48 are meant to be answered by the head of the household)

40. The number of weekly worked hours by (HOUSEHOLD MEMBER) during (REFERENCE MONTH OF THIS YEAR) in comparison with the weekly working hours (12 months ago) has been...?

1. ❑ The same *(Go to 44)*
2. ❑ More
3. ❑ Less *(Go to 44)*

41. How much has (HOUSEHOLD MEMBER) increased the number of weekly working hours?

1. ❑ 0-5 hours
2. ❑ 5-10 hours
3. ❑ 10-15 hours
4. ❑ More than 15 hours

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42. Why have you (HOUSEHOLD MEMBER) increased the number of weekly working hours? (Select from those that apply)

1. ❑ To increase the level of income obtained normally
2. ❑ To maintain the level of income obtained normally
3. ❑ To pay for household emergencies
4. ❑ To pay for school or university
5. ❑ To restore the house, equipment
6. ❑ To pay debts
7. ❑ To invest in livestock and agriculture
8. ❑ For savings
9. ❑ Other (specify)

43. Where do you spend (HOUSEHOLD MEMBER) the additional number of working hours you currently work? (Mark the two most important ones)

1. ❑ Extra hours in your primary job
2. ❑ In your secondary job
3. ❑ In a third job
4. ❑ In your sporadic job
5. ❑ Other (specify)

44. Why do you (HOUSEHOLD MEMBER) work the exact same hours (or less hours) as 12 months ago?

1. ❑ Does not need to work more
2. ❑ Needs to work more hours but cannot find a job
3. ❑ Needs to work more hours but does not have the money to invest in a new business
4. ❑ Other (sickness, etc.)

45. During the last 12 months, has a non-working household member had the necessity to work due to the need to increase income for the household? *(If answered NO, go to question 49)*

YES	NO
❑	❑

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46. What kind of activity did the non-working household member previously have?

1. ❑ Studied in elementary school
2. ❑ Studied in secondary school
3. ❑ Studied in high school
4. ❑ Studied in college/university
5. ❑ Vocational school
6. ❑ Other type of school or training
7. ❑ Housework *(go to 49)*
8. ❑ Family worker without remuneration *(go to 49)*
9. ❑ Retired/ pensioned (go to 49)
10. ❑ Landlord *(go to 49)*
11. ❑ Vacation (due to agricultural season) *(go to 49)*
12. ❑ Other (specify) *(go to 49)*

47. Did the household member have to quit school altogether in order to work?

YES	NO
❑	❑

48. What kind of work or occupation is the household member currently involved in?

1. ❑ Dependent remunerated work
2. ❑ Independent remunerated work
3. ❑ Household chores
4. ❑ Family business/home production
5. ❑ Other (specify)

Section 7 - MIGRATION/REMITTANCE/FAMILY COMPOSITION

49. During the last 12 months, has one or more members of the household migrated to another city within the country or to another country with the purpose of finding a better job or a better income? *(If answered NO, go to question 53)*

YES	NO
❑	❑

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50. How many household members have migrated with this purpose in the last 12 months?

1. Men _____
2. Women _____

51. Where have they migrated?

1. ❑ To the capital of the country
2. ❑ To a city in the same province/state/department
3. ❑ To another city in a different province/state/department
4. ❑ To another part of the country
5. ❑ To a foreign country

52. During the last 12 months, has any member of the household received (regularly or irregularly) monetary or in-kind remittances from a family member who has migrated looking for a better income?

1. ❑ Yes
   - ❑ Regularly
   - ❑ Irregularly
2. ❑ No

53. During the last 12 months, has any member of the household received monetary or in-kind remittances from other family members or friends who live in different areas of the country or in a foreign country?

YES	NO
❑	❑

54. During the last 12 months, how much has the household received in remittances?

	TOTAL
1. Monetary remittances	_____
2. In-kind remittances (ESTIMATED VALUE)	_____

55. During the last 12 months, has any of the following situations or changes in household composition occurred due to economic problems?

	YES	NO	
1.	❑	❑	One of the household members moved to a relative's house
2.	❑	❑	An adult relative moved into the house to aid the family

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3. ❑ ❑ Gave up for adoption any of their younger children
4. ❑ ❑ Any of the children have abandoned the house and now live in the streets
5. ❑ ❑ Occurrence of divorce and/or legal separation
6. ❑ ❑ Abandonment by father or mother
7. ❑ ❑ One household member lives in shelter, asylum, temporary housing
8. ❑ ❑ Competition, rivalry, and violence among household members
9. ❑ ❑ Other (specify)

Section 8 - CONSUMPTION BEHAVIOR CHANGES

56. The level of your household consumption during (MONTH OF THE CORRESPONDING YEAR), in comparison with the consumption during (SAME MONTH OF EARLIER YEAR), has been _____? (Take into account total consumption through purchases, self-consumption, self-production, donations, etc.)

1. ❑ The same
2. ❑ Greater
3. ❑ Less

57. What do you think will be your consumption level during the next 12 months in comparison to your current consumption level? (Take into account total consumption through purchases, self-consumption, self-production, donations, etc.)

1. ❑ The same
2. ❑ Greater
3. ❑ Less

58. Within the last 12 months, has your household modified its consumption behavior in order to make the most out of the household budget? *(If answered NO, go to question 60)*

YES	NO
❑	❑

59. What kind of consumption behavior changes or measures have been adopted in order to make better use of the family budget?

	YES	NO	
1.	❑	❑	Substituted the consumption of certain products for less expensive ones

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2. ❑ ❑ Stopped consuming some of the products you used to consume before
3. ❑ ❑ Decreased the daily consumption quantity of food (milk, meat, others)
4. ❑ ❑ Decreased the buying frequency of clothes, shoes, and home appliances
5. ❑ ❑ Decreased the use of entertainment services (movies, parties, cable TV, etc.)
6. ❑ ❑ Transferred students from private into public schools
7. ❑ ❑ Made use of public health centers more frequently than private ones
8. ❑ ❑ Made use of public services more frequently (transportation, mail, etc.)
9. ❑ ❑ Postponed expenses for buying, repairs, trips, etc.
10. ❑ ❑ Dismissed domestic servants
11. ❑ ❑ Dropped out of school, university or training center
12. ❑ ❑ Cancelled health insurance
13. ❑ ❑ Other measures (specify)

60. Have any of the following situations happened in your house during the last 12 months as a result of economic problems?

YES NO

1. ❑ ❑ Children removed from or deferred entrance to primary school
2. ❑ ❑ Household food consumption decreased (per person ration)
3. ❑ ❑ Used less preventive medical care for children
4. ❑ ❑ Other situation that affected the development of children (specify)

Section 9 - NEIGHBORHOOD AND COMMUNITY ACTION

61. Within the last 12 months, has your household participated in any of the following community or neighborhood mutual support activities? *(If answered NO to all alternatives, go to question 65)*

YES NO

1. ❑ ❑ Common food preparation
2. ❑ ❑ Organization and participation in neighborhood dining-room
3. ❑ ❑ Wholesale joint purchase of food
4. ❑ ❑ Participation in community workshop to earn additional income
5. ❑ ❑ Exchange of labor
6. ❑ ❑ Fund raising activities (collections)
7. ❑ ❑ Community childcare
8. ❑ ❑ Took steps to access government support programs

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9. ❑ ❑ Collective participation in community construction (roads, schools, etc.)
10. ❑ ❑ Land invasion for living purposes
11. ❑ ❑ Security and protection committees
12. ❑ ❑ Other (specify)

62. For how many of the last 12 months has your household participated in any of these activities? (List the three with the longest duration)

	Activities	Months
1.	_____	_____
2.	_____	_____
3.	_____	_____

63. What were the reasons for your household to participate in these activities? (Specify main causes)

1. _____
2. _____
3. _____
4. _____

64. The participation of your household in these activities has been of...

1. ❑ Much help?
2. ❑ Medium help?
3. ❑ Little help?
4. ❑ No help at all?
5. ❑ Other (specify)

Section 10 - GOVERNMENT PROGRAMS/NGOs

65. During the last 12 months, have any members of your household used or been a beneficiary of any of the following government support programs? *(If answered NO to all alternatives, go to question 69)*

	YES	NO	
1.	❑	❑	Food aid program for the elderly and sick
2.	❑	❑	School feeding and school breakfast program
3.	❑	❑	"Glass of milk" program

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4. ❑ ❑ Transfers program (monetary, in-kind)
5. ❑ ❑ Scholarship program
6. ❑ ❑ Microfinance program
7. ❑ ❑ Social investment fund
8. ❑ ❑ Community dining room
9. ❑ ❑ Basic food aid (food stamps)
10. ❑ ❑ Basic health program
11. ❑ ❑ Employment program (youth, women)
12. ❑ ❑ Other (specify)

66. During the last 12 months, how long has your household received aid from any of the previously mentioned support programs? (Mention the three with the longest duration)

	Type of Program	Months
1.	_____	_____
2.	_____	_____
3.	_____	_____

67. What were the reasons for your participation in the government supported program? (Specify main reasons)

1. _____
2. _____
3. _____
4. _____

68. For your household, the participation and the benefits received from the government support program(s) have been...?

	YES	NO	
1.	❑	❑	Moderately helpful?
2.	❑	❑	Scarcely helpful?
3.	❑	❑	Of no help at all?
4.	❑	❑	Other (specify)

69. Has your household used any kind of support program provided by nongovernment organizations during the last 12 months? *(If answered NO, end the survey.)*

YES	NO
❑	❑

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70. What kind of program has been used? (Mark all those that apply.)

1. ❑ Food aid program
2. ❑ Health program
3. ❑ Birth control program
4. ❑ Agriculture program
5. ❑ Microfinance program
6. ❑ Other (specify)

71. For how many of the last 12 months has your household received aid from any of the previously mentioned support programs? (Mention the three with the longest duration)

	Type of Program	Months
1.	_____	_____
2.	_____	_____
3.	_____	_____

72. What was the reason for your participation in NGO support programs?

1. ❑ Unforeseen income decrease due to adverse contingencies
2. ❑ To complement low income normally received
3. ❑ As an alternative to ameliorate low income and poverty
4. ❑ Due to easy access to available NGO programs
5. ❑ Due to difficult access to government support programs
6. ❑ Other (specify)

73. For your household, your participation and the benefits received from the nongovernment support program(s) have been...?

	YES	NO	
1.	❑	❑	Very helpful?
2.	❑	❑	Moderately helpful?
3.	❑	❑	Scarcely helpful?
4.	❑	❑	Of no help at all?
5.	❑	❑	Other (specify)

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INFORMATION AND CONTACTS

For more information on the ISLC/MECOVI Program and social protection issues, contact:

Poverty and Inequality Advisory Unit
Sustainable Development Department
Inter-American Development Bank
Internet: http://www.iadb.org/sds/pov

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ECONOMIC DEVELOPMENT

Poor people are among the most vulnerable when a country is hit by a shock such as a macroeconomic crisis or a natural disaster. In Latin America, the poor have been buffeted by a series of shocks over the past 20 years that have reduced incomes and exacerbated poverty.

Social Protection for Equity and Growth provides policy recommendations to reduce the economic vulnerability of the poor to shocks and help them cope with downturns in income. Social protection refers to public interventions—including labor market measures, social safety nets, pension systems and calamity funds—that can lessen the impact of these sudden events. They target low-income groups with precarious employment conditions or limited access to social security or other insurance systems. These groups often live near the subsistence level and lack the economic or political power to push for policies that can respond to their needs during times of crisis.

The authors argue that providing social services and insurance mechanisms improves a country's economic efficiency by reducing the exposure of the poor to risk and boosting their participation in economic activities with higher returns.

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