

ISSUES IN DEVELOPMENT

Discussion Paper

6

**Poverty, equity and social
welfare in Latin America:
Determinants of change over
growth spells**

Alain de Janvry & Elisabeth Sadoulet

**Development and Technical Cooperation Department
INTERNATIONAL LABOUR OFFICE GENEVA**

Publications of the International Labour Office enjoy copyright under Protocol 2 of the Universal Copyright Convention. Nevertheless, short excerpts from them may be reproduced without authorization, on condition that the source is indicated. For rights or reproduction, or translation, application should be made to the ILO Publications Bureau (Rights and Permissions), International Labour Office, CH-1211 Geneva 22, Switzerland. The International Labour Office welcomes such applications.

Libraries, institutions and other users registered in the United Kingdom with the Copyright Licensing Agency, 90 Tottenham Court road, London W1P 9HE (Fax:+ 44 171 436 3986), in the United States with the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923 (Fax:+ 1 508 750 4470), or in other countries with associated Reproduction Rights Organizations, may make photocopies in accordance with the licences issued to them for this purpose.

The designations employed in ILO publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the International Labour Office concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers.

The responsibility for opinions expressed in signed articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by the International Labour Office of the opinions expressed in them.

Reference to names of firms and commercial products and processes does not imply their endorsement by the International Labour Office, and any failure to mention a particular firm, commercial product or process is not a sign of disapproval.

ILO publications can be obtained through major booksellers or ILO local offices in many countries, or direct from ILO Publications, International Labour Office, CH-1211 Geneva 22, Switzerland. Catalogues or lists of new publications are available free of charge from the above address.

Contents

Preface	v
1. Equitable growth as an emergent political issue	1
1.1 Observed tendencies	2
1.2 Explanatory factors	3
2. Poverty and inequality over time	4
3. Poverty and inequality by growth spells	6
4. Regression analysis	9
4.1 Determinants of poverty	9
4.1.1 Urban poverty	11
4.1.2 Rural poverty	12
4.2 Determinants of inequality	13
4.3 Infant mortality	14
5. Summary and conclusion	14
Notes	18

Preface

The relationship between economic growth and poverty alleviation has been one of the more contentious issues in development studies. Over the past four decades, the predominant view has come full circle. During the 1950s and 1960s it was widely believed that the fruits of economic growth would "trickle down" to the poor, even if the process may at times be fairly slow. By the early 1970s, accumulated evidence had sharply questioned this view, showing that the links between growth and poverty were more tenuous than presumed. Some fast growing countries had failed to substantially reduce poverty and certain countries with reasonably successful experience against poverty had witnessed only modest growth. The widespread economic crisis of the 1980s served to somewhat divert attention from the concern with the poverty impact of growth but as growth resumes, its implications for the poor is again assuming its rightful place in the development debate.

The present discussion paper is an attempt at an in-depth analysis of the links between economic growth and recession on the one hand, and poverty alleviation and inequality on the other. Relying on the experiences of Latin American countries over the past two decades and using different methodological approaches, the study reaches a number of important conclusions about these linkages. One is that wide swings in economic performance are highly costly in the struggle against inequality and poverty since a modest recession can nullify the poverty gains of much stronger growth. The policy implication of such an asymmetry is that a more conservative management of the economy, as opposed to seizing opportunities for faster but more unstable growth, may well be more beneficial in the struggle against poverty and inequality. Another important finding is that only in the rural sector have overall growth and agricultural growth been effective in reducing poverty. In the urban sector, the link between income and poverty comes from recession, not from growth. With poverty reduction high on the political agenda, and an approach to poverty reduction through social funds both ineffective and politically unsustainable in the long run, relinking poverty reduction to growth is the great challenge ahead for Latin American governments. The authors recommend mounting effective programmes of rural development that combine access to land, productivity gains for small farmers, and employment creation in agriculture and in rural non-farm activities. Similarly, as far as the urban sector is concerned, it is necessary to promote productivity gains in the informal and small enterprise sectors so as to make these sectors more effective at not only labour absorption, but also at poverty reduction. A further finding is that economic growth has systematically failed to serve as an instrument of inequality reduction, with the link between inequality and income established in recession, not in growth.

Persistent extreme inequality, and reproduction of these inequalities in spite of growth, remain hurdles to poverty reduction and democratic achievements in Latin America. Addressing squarely the issue of inequality, and linking inequality and poverty reduction to growth, should be at the top of the agenda for the stabilization of economic recoveries and for the consolidation of democratic gains.

Samir Radwan
Director
Development and Technical Cooperation Department

1. Equitable growth as an emergent political issue

Compared with other countries at similar levels of economic development, the Latin American nations have historically displayed high levels of inequality¹. As a consequence, the incidence of poverty has been high compared to countries at similar levels of GDP per capita. There is also the suspicion that growth has been at best a weak force in reducing inequalities. If this is the case, either very high growth rates will be needed to reduce poverty, or income redistribution measures will have to be introduced to complement the poverty reducing effects of growth. If, as is likely, sustained high growth rates are unlikely to be achieved in most countries, equity for poverty reduction will have to become an important policy issue.

The questions of equitable growth and poverty reduction are not new in the Latin American development debates. There are, however, major qualitative changes that have made this debate transcend academic circles and assume fundamental policy relevance today. In the 1960s and 1970s, growth with equity and basic needs were important elements of discourse at the United Nations Economic Commission for Latin America and the Caribbean (CEPAL) and the ILO's former Regional Employment Programme for Latin America and the Caribbean (PREALC). With military regimes in power in a majority of countries, these debates could remain largely academic and their lack of policy impact justifiably blamed on absence of "political will". Rapid growth was of greater political concern than equity, and slow progress on the poverty front could be dismissed by authoritarian regimes as secondary to their priorities. Gradual exhaustion of the import substitution industrialization (ISI) model as a strategy for growth could be counteracted, not by policy reforms and social change, but by rapid accumulation of foreign debt.

During the 1980s, the decade of the debt crisis, restoration of the basic macroeconomic equilibria in order to resume economic growth was the primary policy concern. Stabilization and adjustment policies thus received priority attention, and they were complemented by social funds in order to compensate the short run costs of these policies and manage the social sharing of austerity. Again, poverty was an important issue in academic debates, but it translated in policy mainly under the form of short run compensatory measures, addressing transitional as opposed to structural poverty. Financial support for social adjustment funds often became an integral component of international lending for structural adjustment programmes.

Besides adjustment to the debt crisis and transformation of the economic systems away from ISI, major political and social transformations also occurred during the late 1970s and the 1980s which cast the growth–equity debate in a fully new perspective. In part as a consequence of delegitimation of authoritarian regimes brought about by failure of the grow–first strategy, many countries transited to democracy or deepened their democratic practices from less formal to more real. Argentina (1983), Bolivia (1979–80, and again 1983), Brazil (1985), the Dominican Republic (1979), Ecuador (1979), Peru (1980), and Uruguay (1985) transited to democracies. Following a tendency which had started under the authoritarian regimes, civil society witnessed an explosion in private voluntary organizations and new social movements, allowing not only the delivery of services to their members, but also to achieve political mobilization and exercise democratic pressures under the new regimes (Carroll, 1992; Salamon, 1994). As a consequence, Latin America emerges from the debt crisis as a politically and socially transformed society, where demands for poverty alleviation, greater equity, social welfare, and civil rights assume political relevance as never before.

As countries one after the other emerge from the debt crisis and renew economic growth, however precarious and unsteady these recoveries may still be, the question of equitable growth is drawn outside academic circles into the political arena. This is for several reasons. One is loss of faith in the possibility of relying on sustained growth to erase poverty, after the failings of the debt crisis and continued modest

performance of the world economy. The other is that, with democracy and grassroots organizations in place, demands for a broad sharing of the benefits from growth threaten to destabilize economic recovery, making equity a condition for sustainable growth. In addition, the exemplary success of the Asian economies has demonstrated that equity can indeed be efficient, not only as a source of incentives but also to reduce fiscal wastage on police and safety net expenditures. Finally, increasing dependency on foreign direct investment (FDI) as the source of investible capital (in a context of tight money supply and high interest rates to control inflation) and as a means of access to modern technology, makes fickle investment climates important determinants of successful growth. This "climate" is directly influenced by social tensions, political freedoms, and respect of legal rights, all of which are generally related to aspects of equity.

As growth recovers, what this growth will do to poverty and equity is thus a fundamental question. And if prospects for growth are modest, or if the poverty reduction capacity of growth is weak, then introduction of complementary policies and programmes to manage equity and certain forms of poverty will need to be high on the political agenda. It is consequently not surprising that the major development agencies have again addressed the equity issue as a central element of policy. The Inter-American Development Bank (IDB) and the United Nations Development Programme (UNDP), in particular, called in 1993 a Latin American forum on Social Reform and Poverty to explore mechanisms to strengthen the link between growth and equity (IDB-UNDP, 1993). In order to illuminate this quest for a new approach to equitable growth, it is consequently essential to gain a better understanding of the dynamics of poverty and equity, the determinants of the number of poor and the incidence of poverty, and the determinants of inequality in the distribution of income.

Prompted by this logic, a number of efforts have been made in this direction in the last few years. While this is a problem area where quantitative information had been notably lacking, important new data sets have recently become available (CEPAL, 1990; Psacharopoulos et al., 1993). Country case studies have been compiled by Lustig (1992) at the Brookings Institution. Others have further analysed these data sets such as Morley (1994) at the Inter-American Development Bank, Berg et al. (1994) for US-AID, Beccaria et al. (1992) at UNDP, and Peek (1993) and van der Hoeven and Stewart (1993) at ILO. This remarkable body of scholarship has evolved into a fairly consistent vision of the evolution of poverty and inequality in Latin America, particularly through the decade of growth in the 1970s and the decade of crisis and adjustment in the 1980s. In what follows, we first summarize the main observed tendencies and explanatory factors that derive from these studies before presenting our own analysis of these data.

1.1 Observed tendencies

- (i) During the 1970s, the incidence of rural poverty fell, while that of urban poverty remained constant or declined marginally. The total incidence of poverty was thus reduced. The absolute number of poor fell in the rural areas and rose in the urban areas (CEPAL, 1990).
- (ii) During the 1980-86 period, the incidence of rural poverty remained constant or continued to decline marginally while the incidence of urban poverty rose sharply with a new type of poverty created by the crisis, the "new poor". The total incidence of poverty thus increased and was displaced to the cities, with a majority of the poor now found in the urban sector.
- (iii) Limited available data extending these tendencies to 1990 suggest a falling incidence of urban and total poverty where economic stabilization and recovery have been achieved (Peek, 1993; Morley, 1994). Altogether, the gains of the 1970s, a decade during which the Latin American incidence of poverty fell from 40 to 35 per cent, have been erased by the recession of the 1980s, with poverty climbing back to 39 per cent (Peek, 1993).

- (iv) Inequality remained constant or declined marginally during the 1970s in spite of growth. By contrast, it increased sharply during the 1980s. Inequality may thus be countercyclical (Morley, 1994), rising in recession and falling in expansion, although the rise in recession per percentage point of GDP per capita may far exceed the mild fall induced by growth.
- (v) With a continuing fall in the incidence of rural poverty and a constant or rising incidence of urban poverty, there has been a slow convergence in poverty incidence between rural and urban areas (Peek, 1993). This gap decreased more during the 1980s when urban poverty was rising than during the 1970s when rural poverty was falling, suggesting, by the 1990s, a convergence in poverty as opposed to an elimination of poverty.
- (vi) Social indicators such as child mortality, calorie availability, and primary school enrollment ratios continued to improve through the 1980s, as they had through the 1970s, in spite of fiscal austerity and falling per capita government expenditures in health and education (Beccaria et al., 1992). The rate of improvement, however, slowed down during the 1980s.
- (vii) The poor may not have been hurt more by the adjustment policies than the middle class, but the richest benefited at least relatively and sometimes absolutely. Protection of the poor would have come from their location in agriculture whose performance was relatively better than that of the other sectors of the economy, their sheltering from falling real wages by linkages to a subsistence economy, and the benefits derived from compensatory social funds programmes. The poor were thus hurt more in countries where the population is more urbanized, where they are more involved in the production of nontradables and the consumption of tradables, and where there was more formal employment in ISI industries and the public sector. The rich benefited from access to cheap labour as real wages fell sharply, higher interest rates on bank deposits, speculative gains on capital outflight, access to assets through privatization, real estate investments, and transformation of outstanding foreign debts in domestic currency (Lustig, 1992).
- (viii) There were major changes in the qualitative nature of poverty during the 1970s and 1980s (Morley, 1994; PREALC, 1990). Main changes include:
 - the emergence of the "new poor" defined as urban, high school educated, and employed in the informal sector;
 - the feminization and ethnicization of poverty, particularly in the rural sector due to selective migration;
 - the increasingly informal and seasonal character of employment, both in agriculture and industry; and
 - shrinking access to land on a per capita basis and increasing dependency on labour market earnings for peasant households (de Janvry, Sadoulet and Wilcox Young, 1989).

1.2 Explanatory factors

- (i) In general, all analysts agree on the key role of growth in GDP per capita (GDP_{pc}) for poverty reduction, at least as a necessary if not a sufficient condition (Fields, 1989; Beccaria et al., 1992; Morley, 1994).
- (ii) Rural poverty declined, in some cases under the migration pull of rising per capita GDP, and in others by vertical mobility in agriculture associated with increasing agricultural GDP and the derived rural linkage effects. Rural poverty increased with falling GDP_{pc} as migration declined and the peasant sector served as a refuge for surplus population, even if agricultural GDP was growing (Altimir, 1992).

- (iii) The effect of growth in reducing the incidence of urban poverty (UP_0) was lessened by rapid rural migration and population growth.
- (iv) There are several asymmetries in the poverty reducing effect of growth that are evidenced by the elasticity of UP_0 with respect to GDP_{pc} . This elasticity was:
 - low in pre-crisis growth due to constant or worsening inequality, rapid rural-urban migration, weak employment creation effect of growth, employment creation in the informal sector with low productivity, and low wages for the unskilled (Beccaria et al., 1992);
 - very high in recession (Peek, 1993);
 - high in recovery (Morley, 1994; Lustig, 1992); and
 - lower in full capacity growth than in early recovery (Morley, 1994). The magnitude of this elasticity under late as opposed to pre-crisis growth is, however, unclear due to insufficient data.
- (v) Full capacity growth may thus be weakly able to lower poverty and weakly effective in reducing inequalities. If this is the case, poverty reduction will need either high growth or policy interventions specifically aimed at reducing inequality. Anti-poverty policies are, however, limited by continued fiscal austerity, ideological shifts away from the welfare state and toward assigning to growth the role of poverty reduction, and loss of control over policy instruments that had traditionally been used for anti-poverty management (protectionism, employment creation in public sector firms, non-independent central banks allowing soft budget constraints on social expenditures, exchange rate controls, etc.) (Lustig, 1992).
- (vi) Poverty is increasingly heterogenous due to the new forms of poverty created in the 1980s and selective migration. In the rural sector, non-agricultural households are a rising share of rural population and households with access to land have increasingly diversified sources of income. As a consequence, anti-poverty interventions need to be multi-pronged and group specific (de Janvry and Sadoulet, 1993). Given the loss of control over many traditional policy instruments, they are all the more complex as they need call on new instruments such as targeted public goods and services (education, health, infrastructure), targeted income transfers, industrial policy to stimulate labour intensive activities, and population policy.

In this paper, we seriously question the meaning of the observed relations between poverty/inequality and growth, and show that they are often incorrect, suggesting in particular a more cautious interpretation on the role of growth in reducing urban poverty and inequality. We do this by conducting three types of analyses: (1) A time analysis, giving a more accurate characterization of the aggregate changes in poverty, avoiding in particular aggregation over a changing number of countries across years which vitiates the results. The CEPAL (1990) results were thus obtained with 7 countries for the 1970–80 changes and 8 countries for the 1980–90 changes, while the aggregate data presented in Peek (1993) are based on 10 countries in 1970 and 1980 and 19 countries in 1990. (2) A spells analysis, avoiding the pitfall of overlapping spells which creates biases in averaging or regression, as for example done by Morley (1992) who increases the number of observations on spells by using a large number of overlapping measures. (3) A more rigorous econometric explanation of the determinants of poverty and inequality, by controlling for the various determinants of poverty and inequality other than growth. We stress, in particular the roles of agricultural sector growth and of a bias in growth in favour of agriculture as well as the role of migration on the magnitude and incidence of rural poverty.

2. Poverty and inequality over time

Quantifying the time path of poverty and inequality is important to describe the dynamics of social conditions in Latin America. This time path has typically been used to establish a link between poverty/inequality and economic growth, by considering the 1970s as a decade of growth and the 1980s as a decade of stagnation. While it is true that there was overall per capita GDP growth in the 1970s and decline in the 1980s, the analysis by decades is weakened by the tremendous unevenness in the timing of the periods of growth and stagnation across countries. In consequence, we use the time path of poverty purely for descriptive purposes and to raise hypotheses about causality. These hypotheses are to be later tested with a rigorous correspondence between spells of growth or stagnation and changes in poverty and inequality.

Information on poverty (measured by the rural P_0 (RP_0), urban P_0 (UP_0), and total P_0 (TP_0), where P_0 is the headcount or incidence ratio, and by the share of urban in total poverty), inequality (measured by the Gini coefficient and by high/low which is the ratio of the income shares of the richest 20 per cent to the poorest 40 per cent), and social welfare (measured by infant mortality) over time are given in Table 1. We start from data for 12 countries in Appendix I. However, these data are incomplete for several countries, and, in calculating overall indicators over time for Latin America on the basis of these data, we have to be careful to compare averages calculated over the same set of countries, particularly since countries are weighted by their population size. For instance, as there are no data for Mexico in 1980, including Mexico in the other year averages but not in 1980 (as done by CEPAL) significantly biases comparisons over time. Reducing the data set to comparable averages, we see in Table 1 that we have only three countries with four data points (1970, 1980, 1987, and 1990), five with three early data points (1970, 1980, and 1987), and six with three late data points (1980, 1987, and 1990). With eight countries, only selected changes in these variables can be consistently measured. Alternatively, the maximum number of countries for which complete data are available can be used separately for each indicator, which allows to maximize the use of information for comparisons over time, but not across countries. In this case, RP_0 , TP_0 , and the share of urban in total poverty can be measured over 5 countries; Gini over 6 countries; UP_0 and the high/low ratio over 8 countries; and infant mortality over 12 countries.

For the 1970s, the results consistently support the view that the incidence of poverty in the rural sector has been declining rapidly, at an average annual rate of -1.44 per cent. A question to be answered will thus be whether this decline in rural poverty was due principally to migration, with the city offering an external solution to rural poverty, or whether it was due principally to upward mobility in agriculture and the rural areas, with agriculture and rural development offering a sectoral solution to poverty. In addition, if it was due principally to migration, the question arises as to who migrates, mainly the poor or mainly the nonpoor, thus determining the effectiveness of migration in reducing the rural poverty incidence ratio. The incidence of poverty in the urban sector has, by contrast, fallen only marginally (-0.16 per cent) in spite of growth. This could be due either to absorption of the rural migrants as urban poor, with a corresponding upward mobility for the urban poor, or an unbiased absorption of the rural poor and a very high rate of urban population growth relative to economic growth that prevented a fall in the urban incidence ratio. Under the dynamics of falling rural poverty, the overall incidence of poverty was also falling, from 45.9 per cent in 1970 to 38.2 per cent in 1980. And poverty was being displaced to the cities. The share of urban in total poverty thus rose from 44.3 per cent in 1970 to 54.5 per cent in 1980, making, for the first time, the city the main locus of poverty in Latin America. In this period, inequality measured by the Gini coefficient remained constant, but inequality measured by the high/low ratio, which offers a better indicator of high income effects, has been falling. This suggests that the poorest were benefiting relative to the richest. Using infant mortality as an indicator of social welfare, we see that there were sharp improvements. Overall, in the 1970s, in spite of rapid growth, both inequality and the incidence of urban poverty were fairly resilient to growth.

Between 1980 and 1987, the situation was fundamentally altered. Rural poverty continued to decline, but at a pace (−0.42 per cent) that was less than a third the pace of decline in the previous period. In a sense, that rural poverty continued to decline in spite of an overall economic decline suggests that agricultural growth, however modest, may have had a role to play in poverty absorption during periods of recession when the city was less able to absorb the rural poor. Urban poverty rose sharply (2.25 per cent), which comes as no surprise since real wages and formal sector employment were falling, principally in the import substitution and government sectors, showing its high sensitivity to recession. Thanks to the contribution of the rural sector to poverty absorption, total poverty rose only modestly (0.35 per cent). Evidently, the urban share of total poverty continued to rise, reaching 64.4 per cent in 1987. Inequality measured by Gini rose as the urban middle class was hurt differentially by the crisis and adjustment policies, while the high/low income ratio rose sharply, showing how little the richest shared in the social cost of recession and adjustment. The rate of decline in infant mortality continued unabated, suggesting high achievements in social welfare in spite of the crisis.

During the late 1980s, as several countries were able to stabilize and resume growth, the rate of rural poverty resumed its accelerated decline (−2.16 per cent) and the rate of decline in infant mortality accelerated. Other symptoms of poverty and inequality were, however, highly disturbing: urban poverty rose rapidly, raising the total incidence of poverty, and further displacing poverty to the urban environment where 70.4 per cent of the poor were located by 1990. And inequality, measured by the Gini coefficient, also rose. In spite of recovery in many countries, poverty and inequality were thus rising. Clearly, understanding these trends would require a better control of the timing of economic recovery across countries. This is what we do in the following growth spells analysis.

3. Poverty and inequality by growth spells

To do a descriptive analysis of the determinants of change in poverty, inequality, and social welfare, the data should be organized by spells that group contiguous years between turning points in the key determining variables, particularly the growth rate in per capita income. However, measurements on poverty are only available for selected discontinuous years between which change can be measured. These spells were constructed for each country as non-overlapping sequences of years determined by the years for which comparable poverty measures are available. We show in Figure 1 the correspondence between these spells and the evolution of per capita GDP, as well as the available measurements on the incidence of rural and urban poverty. This shows that there is frequently a fortuitous correspondence between spells and changes in per capita GDP due to the fact that 1980 was for most countries at or near a turning point into recession, and 1987 the beginning of recovery for those countries that were able to resume growth. Measures of Gini and high/low are given by Altimir (1992) for a number of spells. We established the best possible correspondence between these spells and ours, and calculated all changes on an annual basis within the spell. In general, while levels of poverty and inequality remain difficult to compare across countries (and sometimes across years in a country) because they often correspond to different concepts (e.g., whether poverty levels were adjusted or not to income levels measured in the national accounts), we can be more confident about the comparability of the annual rates of change in these variables which we use in this study.

For descriptive analysis, growth spells were grouped, as in table below, into epochs on the basis of annual per capita GDP growth rates (GDP_{pc}). For regression analysis, in order to save on degrees of freedom, the two early and the two late growth spells were regrouped. The rule for placing the country spells into these epochs was:

- *Early growth*: growth spell preceding a recession period; or 1970s spell if uninterrupted growth (Chile, Colombia, Costa Rica, and Honduras).

- *Late growth*: growth spell following a recession period; or 1980s spell if uninterrupted growth (same four countries).

The data by spells, aggregated with weights corresponding to population size for the corresponding sector or country, give an epochs description of Latin America as characterized by the 12 countries for which there is information (Table 2). The interesting aspect of these data is to contrast them with the time series data in Table 1 and to derive from them a stricter relation between poverty/inequality/welfare and growth than allowed by time analysis.

Years of spells and annual GDP_{pc} during corresponding spell

	Early high growth $GDP_{pc}>1$	Early low growth $0<GDP_{pc}<1$	Recession $GDP_{pc}<0$	Late low growth $0<GDP_{pc}<1$	Late high growth $GDP_{pc}>1$
Argentina		1970–80: 0.78	1980–86: -1.94 1986–90: -3.19		1990–91: 7.65
Brazil	1970–79: 5.99	1979–87: 0.57	1987–90: -2.04		
Chile		1970–80: 0.19		1980–87: 0.44	1987–90: 5.43 1990–92: 6.54
Colombia	1970–80: 3.19			1980–86: 0.63	1986–90: 2.33
Costa Rica	1970–81: 2.45			1981–88: 0.34	1988–90: 1.95
Guatemala			1980–86: -3.98	1986–90: 0.75	
Honduras		1970–86: 0.79		1986–90: 0.75	
Mexico	1970–84: 2.97		1984–89: -1.08		1989–92: 1.68
Panama	1970–79: 1.28 1979–86: 1.59		1986–89: -8.04		
Peru		1970–79: 0.87	1979–86: -1.62		
Uruguay	1970–81: 2.84		1981–86: -3.30		1986–89: 2.20
Venezuela			1970–81: -0.34 1981–86: -2.62 1986–90: -1.54		

First we should notice that there were important qualitative differences between high and low growth in the early growth period, differences that will result in marked contrasts in the relation between growth and poverty/inequality. Low growth was more unstable (as measured by the coefficient of variation of GDP_{pc} around trend), with much higher inflation and falling real wages. The incidence of rural poverty declined with growth (-0.9 per cent per year), but particularly with high (-1.4 per cent) as opposed to low (-0.3 per cent) growth. This fall in the incidence of poverty is, however, much lower than measured for the 1970s in Table 1 (-1.44 per cent). The role of growth on urban poverty is also less optimistic than suggested by data for the 1970s, since instead of falling or remaining constant (as in Table 1), we see it constant with high growth, rising rapidly with low growth (2.5 per cent), and rising overall (1.2 per cent). The result for the total incidence of poverty is disappointing: it fell with high growth (-0.8 per cent), rose with low growth (1.3 per cent), and was overall stagnant or slightly rising with growth (0.2 per cent). Inequality measured by the Gini is seen to fall with high growth (-0.63 per cent) and to rise with low growth (0.70 per cent). As suggested by the 1970s data, inequality was overall stagnant (-0.02 per cent), as instances where it fell with high growth were compensated by instances where it rose with low growth.

Inequality measured by the high/low ratio is much more sensitive to growth: under low growth, in particular, the richest 20 per cent benefit disproportionately (3.86 per cent), and it takes high growth for benefits to reach the poorest 40 per cent (-1.75 per cent). Overall, high/low inequality increased. Both measures hence stress the fact that inequality can indeed increase with per capita income growth, as observed by Fields (1989), and that for growth to reduce inequality requires very high growth. Finally, per capita public expenditures on health were growing twice as fast as GDP_{pc} (7.0 per cent). Changes in infant mortality were remarkable, falling at the rate of -2.9 per cent whatever the per capita income performance, suggesting that this indicator of social welfare is more related to public expenditures than to income, and probably strongly trend determined as well. In summary, we see that the growth spell analysis gives us a more pessimistic reading of the welfare effects of pre-crisis growth: urban poverty rose, overall poverty was stagnant, and inequality was stagnant or rising. Only under very high growth were the expected beneficial poverty and equity effects of growth achieved.

Under recession, not only did per capita income fall, but inflation accelerated (683 per cent per year) and real wages fell sharply (-3.8 per cent). While rural poverty continued to fall modestly (-0.5 per cent), urban poverty rose sharply (5.7 per cent), and the total incidence of poverty rose (3.1 per cent). These poverty effects of recession are much stronger than revealed by time analysis in Table 1, as the growing countries were removed from this epoch. It shows the extreme sensitivity of urban poverty to recession. Inequality rose sharply, both measured by the Gini coefficient and the high/low ratio, suggesting that the middle class was hurt and that the extreme rich benefited or lost much less than the poorest 40 per cent. Finally, while per capita expenditures on health were severely curtailed by stabilization policies, falling from 7.0 per cent to 0.2 per cent, the remarkable fact is that infant mortality continued to decline, even if at a slightly lower pace (-2.7 per cent under recession as opposed to -2.9 per cent under early growth). In general, the qualitative symptoms of recession are consistent with those identified by time analysis: rapidly rising urban poverty and rising inequality. Only the extent of sensitivity to recession is greater than that revealed by time analysis.

Late growth was able to again reduce sharply the incidence of rural poverty (-2.1 per cent in Table 2). The distinctive feature of spell as opposed to time analysis is that urban poverty was also sharply reduced by late growth (-6.7 per cent), as opposed to rising under time analysis. As a consequence, total poverty fell with late growth (-2.9 per cent) as opposed to rising under time analysis. Like with early growth, there are strong qualitative differences between low and high growth. It is only with high growth that urban and total poverty fall. Similarly, it is only with high growth that inequality falls. With low growth, the richest 20 per cent are seen to benefit disproportionately, and it is only under high growth that income trickles down to benefit the poorest 40 per cent. We thus see, again, that it takes very high growth to unambiguously reduce both poverty and inequality. Even though per capita public expenditures on health recuperated only moderately from recession, infant mortality continued to decline rapidly. Spell analysis of the impact of growth thus shows how misleading the time analysis of growth can be. In as much as spell analysis gave a more pessimistic reading of early growth than time analysis, the reverse is true for late growth, with a more optimistic perspective on the role of growth in reducing urban and total poverty and in reducing Gini inequality.

In conclusion, there are some interesting contrasts between early and late growth and between growth and recession that result from this analysis. They are important to suggest the character of the relation between growth and equity that may hold in the future, as well as hypotheses to test with regression analysis. They are:

- Recession, per percentage point of change in GDP_{pc} , increases poverty much more than growth reduces it (asymmetry hypothesis).
- Gini inequality is similarly much more sensitive to decline than to growth.

- The poverty reduction effect of growth increases with growth, even though it should increase at a decreasing rate due to the nonlinear tail effects of the distribution of income (Anderson, 1964). This suggests that the poverty reduction effect of high growth may occur in part through inequality reduction effects.
- Inequality increases with low growth and only declines with high growth. In particular, with overall growth (early and late), Gini inequality may fall while high/low inequality rises, suggesting disproportionate gains for the richest 20 per cent.
- Late high growth may be more prone to reducing poverty than was early high growth. This, however, may be a post-recession recuperation effect which may not be sustained under full recovery.
- Late growth reduces mainly urban poverty, while early growth was reducing mainly rural poverty. This may be the consequence of a tapering off of rural migration as most countries have become heavily urbanized.

4. Regression analysis

In order to identify the causal relations at play in the determination of the number of rural and urban poor, the incidence of rural and urban poverty, Gini and high/low inequality, and infant mortality, we turn to regression analysis using the 35 spell points. For specific regressions, the number of observations will be less than 35 due to selective missing information.²

We postulate that changes in rural poverty are affected by the following variables:

- Economic growth: GDP_{pc} , growth in the value added of agriculture, and difference between agricultural growth and GDP growth which measures the sectoral bias in growth toward agriculture. Important is to contrast growth ($GDP_{pc} > 0$) to recession ($GDP_{pc} \neq 0$) periods. Among growth periods, we also contrast late growth to overall growth.
- Change in inequality, measured by both Gini and high/low.
- Migration in share of the rural population.
- Quality of growth: rate of inflation, occurrence of hyperinflation (inflation rate above 100 per cent), and instability of growth measured by the coefficient of variation of GDP_{pc} around trend.
- The macroeconomic context of growth: balance of payments position, and real exchange rate since agriculture tends to be more tradable.
- Structural context of growth: level of GDP_{pc} , share of agriculture in GDP, share of the rural population in total population, natural rate of population growth in the rural and urban sectors, total population growth, and initial conditions of poverty and inequality.

The determinants of urban poverty are the same as for rural poverty, except for migration which is measured in share of the urban population, and aspects of the macrocontext of growth that affect specifically the urban population such as the real wage. Determinants of the Gini and high/low include all the above variables. Migration is explained by all these variables, particularly GDP growth, agricultural growth, population growth, and real wage growth.

Visual inspection of the data in Figure 2 shows that there exists an inverse relationship between all four indicators of poverty (the number of urban poor (UP), the incidence of urban poverty (UP_0), the number of rural poor (RP), and the incidence of rural poverty (RP_0)) and GDP_{pc} . This relation is steeper for urban than for rural poverty, but dispersion is also larger for urban poverty. In Figure 3, we can also visualize an inverse relationship between inequality and GDP_{pc} , but this relation is much weaker, indicating that income only has a small role to play in the determination of inequality. In all cases, the two figures also suggest quite a bit of heterogeneity across countries, with countries like Chile, Uruguay, and Argentina systematically outperforming other countries in linking poverty reduction to growth. This tells

us that the cross-country analysis which we perform in this paper should be complemented by detailed country case studies as in Lustig's (1992) compilation.

4.1 Determinants of poverty

In explaining the annual growth rate in the number of poor and the incidence of poverty in the urban and rural sectors, we start by calculating the simple elasticities of poverty with respect to GDP_{pc} . This is done by estimating the rate of change of the endogenous variable (number of poor or incidence) as function of GDP_{pc} , with no other explanatory variable in the equation. These simple elasticities are as follows:

$$E(UP/GDP_{pc}) = -1.38$$

$$E(UP_0/GDP_{pc}) = -1.30$$

$$E(RP/GDP_{pc}) = -0.59$$

$$E(RP_0/GDP_{pc}) = -0.65.$$

These elasticities show that urban poverty is much more sensitive to income growth than rural poverty. These elasticities, however, capture many effects other than income. In order to purify the poverty effect of income growth from these other effects, and to identify the other determinants of poverty which are at play, we proceed with the following sequence of equations directed at testing specific propositions. The expected signs for the hypothesized relations are given in parentheses.

Equation 1: Basic model. Poverty is explained by GDP_{pc} (-), inequality measured by the Gini coefficient (+), indicators of the instability of growth (+), the rate of natural growth of the corresponding rural or urban population (+), migration (- for rural poverty and + for urban poverty), and a number of structural variables.

Equation 2: Test of the asymmetry hypothesis in the elasticity of poverty with respect to GDP_{pc} contrasting growth to recession periods. The poverty effects of growth and recession spells are contrasted by both different intercepts and different slopes with respect to GDP_{pc} during growth and recession. The hypothesis is that the elasticity of poverty with respect to GDP_{pc} is much greater under recession than under growth (both with negative signs since growth reduces poverty, while recession, with a negative change in GDP_{pc} , increases it).

Equation 3: Test of the non-linearity effect of growth on poverty. This is captured by introducing a quadratic term in $GDP_{pc}(+)$. The hypothesis is that higher growth rates tighten labour markets and contribute proportionately more to poverty reduction than lower growth rates.

Equation 4: Test of a differential income elasticity of poverty in late as opposed to early growth. This is done by introducing three intercepts (growth periods, recession periods, late growth periods) and three slopes (same three periods). There are alternative hypotheses to explain a differential poverty impact of late growth. One is that there may have been important structural changes during recession that altered the poverty effects of growth, for instance with concentration in the distribution of assets that would make growth more inequitable and lower the income elasticity of poverty. Conversely, another

hypothesis is that late growth in part reflects recovery from recession, with rapid resorption of the new poor and, consequently, a high income elasticity of poverty. As growth is sustained beyond recovery, this elasticity may well decline, a proposition which we cannot test due to yet insufficient data availability.

Equation 5: High/low characterization of inequality as opposed to Gini. The high/low indicator captures inequality effects that affect the extreme rich and the poorest. The hypothesis is that both middle income inequality effects, as measured by Gini, and extreme effects, as measured by high/low (+), were at play. We unfortunately do not have enough degrees of freedom to test the interesting hypothesis of differential roles of Gini versus high/low under recession and growth.

In estimating these equations, inequality and migration are treated as endogenous variables. They are consequently instrumentalized in order to avoid a simultaneous equations bias when used as explanatory variables. In reporting estimations of these equations, we always keep the growth and inequality variables, and report the other variables whenever they have significant coefficients.

There is an important contrast in the role of migration in explaining the number of rural poor and the incidence of rural poverty. If migration is random among income levels in the rural sector, migration would reduce the number of poor but be neutral on the incidence of poverty. The role of migration on the incidence of poverty thus gives us a test of the income bias of migration. This bias of migration is fundamental in understanding whether a reduced incidence of rural poverty comes from migration or from vertical mobility in the rural sector.

The rate of rural–urban migration was measured as the ratio of the flow of rural migrants to rural population. To measure this rate, the data we have are:

$\mathcal{G} = \dot{N}RP / \dot{N}UP =$ natural rate of growth of rural population to that of urban population (we use the ratios computed by Lattes and Villa, 1994);

$UR =$ urbanization ratio = urban population / total population;

$P\acute{o}p =$ rate of growth of total population; and

$RP\acute{o}p =$ rate of growth of rural population.

From this we calculate the $\dot{N}RP$ as:

$$\dot{N}RP = P\acute{o}p / [(1/\mathcal{G}) UR + (1 - UR)]$$

and the rate of rural migration as:

$$M / RPop = \dot{N}RP - RP\acute{o}p,$$

where M is the annual flow of migrants. We then use the average value of $M / RPop$ for each spell.

In equations where the share of agriculture in GDP (measured as $Ag - GDP$ in equations in growth rates) is introduced as an exogenous variable, the estimated equation is of the type:

$$\frac{\Delta y}{y} = \alpha \frac{\Delta GDP_{pc}}{GDP_{pc}} + \beta \left(\frac{\Delta Ag}{Ag} - \frac{\Delta GDP}{GDP} \right).$$

In this equation, the estimated elasticity $\hat{\beta}$ measures the impact on y of a sectoral bias in growth toward agriculture, given GDP_{pc} growth. The elasticity of y with respect to value added in agriculture (Ag) is equal to:

$$\frac{y}{Ag} / \frac{\Delta Ag}{Ag} = \hat{\alpha} \frac{Ag}{GDP} + \hat{\beta} \left(1 - \frac{Ag}{GD} \right)$$

where $\hat{\alpha}$ and $\hat{\beta}$ are the estimates of α and β . These variable elasticities will be calculated at the average sectoral shares in each regression. Both the elasticity of y with respect to sectoral bias and with respect to value added in agriculture are interesting, and they will be reported separately.

4.1.1 Urban poverty

The results for the analysis of urban poverty are presented in Table 3³. Starting with the annual rate of growth in the number of urban poor, we see that the basic equation (equation 1) gives a good fit with an adjusted R^2 of 0.71 and with the following statistically significant effects: growth reduces poverty, while Gini inequality, hyperinflation, and natural growth of the urban population increase it. We see that the income elasticity of the number of urban poor (-0.46), when controlling for the other effects, is significantly less than the simple elasticity calculated above (-1.38). We calculated the beta-coefficients (β) to assess the relative importance of the exogenous variables in predicting the endogenous variable. This shows that GDP_{pc} is in fact the least important of the four exogenous variables in explaining poverty. Most important are the natural rate of population growth ($\beta = 0.58$) and inequality ($\beta = 0.47$). The test of asymmetry in the elasticity of poverty with respect to income between growth and recession periods (equation 2), shows that there is indeed a very strong asymmetry: the recession elasticity is -1.62 compared to the growth elasticity of -0.48 (not significantly different from zero). This asymmetry is also reflected in different constant terms. This contrast is represented in Figure 4⁴. It shows that it takes only one percentage point of GDP_{pc} loss to erase the poverty gains achieved by 3.4 percentage points of GDP_{pc} growth.

Estimation of equation 3 shows that there is no non-linear effect of growth on urban poverty. The same holds true when periods of growth and recession are separated. Estimation of equation 4 shows that there is a systematically higher poverty reduction effect associated with late growth compared to overall growth (significant negative intercept for late growth additional to the overall growth effect). However, the income elasticity for late growth is not statistically different from that for all growth, indicating that this greater ability to reduce urban poverty under late growth does not come through income growth. Finally, equation 5 shows that the high/low measure of inequality also significantly affects poverty but that its explanatory power is quite inferior to that of the Gini coefficient. This would tend to suggest that the "new poor" effect, which is better captured by Gini, dominated the urban inequality story during the 1970-1990 period.

Table 3 also presents results for the determinants of the incidence of urban poverty as opposed to the number of urban poor. Again, the elasticity calculated while controlling for other variables (-0.51 in equation 1) is much smaller than the simple elasticity calculated above (-1.30), showing that there are many intervening variables, like inequality and hyperinflation, that are related to both growth and poverty.

We see that the results are basically the same, although, as could be expected, the incidence of poverty is somewhat more difficult to explain than the level of poverty.

4.1.2 Rural poverty

Table 4 gives the results for the analysis of rural poverty. In general, we know that the data are not as strong in characterizing rural poverty because the household surveys do not fully capture production for home consumption. If there were strong reallocations of labour during different phases of the economic cycle, in particular if the degree of labour market participation fell during recession and rose during expansion, the data overestimate the poverty effect of recession and the income gain effect of recovery, exaggerating the effect of growth on poverty.

Rural poverty is more difficult to explain than urban poverty due to these data problems and to the heterogeneity of rural poverty, and R^2 s are consequently lower than in explaining urban poverty. In progressing through the same five equations, we see the following. In equation 1, both \dot{GDP}_{pc} and the differential of agricultural over GDP growth significantly reduce poverty. While inequality has no role, the low quality of growth, measured by its instability (coefficient of variation of \dot{GDP}_{pc} around trend), increases poverty. The rate of natural growth of rural population increases poverty while rural migration reduces it, both with elasticities of equal magnitudes. Equation 2 shows again that there is a strong asymmetry in the income elasticity of poverty between growth and recession, but it is quite different from that observed with urban poverty: for the urban, growth was beneficial and recession was devastating; for the rural, by contrast, recession is not important, but growth is powerful in reducing poverty, and this through overall \dot{GDP}_{pc} (-0.41) as well as through a sectoral bias toward agricultural sector growth (-0.47). Under recession, the income elasticities are not significantly different from zero.

Equation 3 shows that there is no non-linearity in the role of income on poverty. Equation 4 shows that late growth is more powerful in reducing poverty than overall growth. Both the intercept and the income elasticity are higher, with a late growth elasticity equal to -1.47 (see Figure 4). We calculated the beta coefficients for this best-fit equation. They show that the most powerful forces on the number of rural poor are \dot{GDP}_{pc} ($\beta = -0.28$), followed by migration ($\beta = -0.26$) and agricultural growth ($\beta = -0.18$). In late growth, \dot{GDP}_{pc} ($\beta = -0.52$) is largely the most powerful source of poverty reduction. Equation 5 shows that the high/low measure of inequality increases poverty, with a stronger explanatory power than Gini in equation 1. This captures the fact that there is more extreme poverty in the rural than in the urban sector, and that it is extreme as opposed to middle class poverty that contributes to the number of rural poor.

In explaining the incidence of rural poverty, there are a few interesting differences compared to explaining the number of poor. We saw that migration is a powerful force in reducing the number of rural poor. However, migration has no impact on the incidence of poverty. This suggests that migration is neutral between poor and nonpoor, i.e., that it is neither the poor nor the nonpoor who migrate differentially. The other interesting contrast, shown by equation 4, is that biased growth toward agriculture is more important in reducing the incidence of poverty during recession periods than during periods of growth. Thus, while overall growth is more important than differential agricultural growth in reducing poverty (viz the beta coefficients), during recession, when GDP growth fails, it is vertical mobility in agriculture, pulled by agricultural growth, that is the source of reduction in the incidence of poverty, however modest. This would suggest that overall income growth and the pull of migration are the dominant factors in poverty reduction, and that vertical mobility in agriculture is secondary to those, except during periods of recession when it is the only factor at play for poverty reduction.

4.2 Determinants of inequality

To analyse the determinants of inequality, we follow the same steps used for the analysis of poverty. The simple elasticities of inequality with respect to income are:

$$E(\text{Gini}/\text{GDP}_{pc}) = -0.38$$

$$E((\text{high}/\text{low})/\text{GDP}_{pc}) = -0.84.$$

This suggests that inequality at the extremes of the distribution of income was more sensitive to growth and recession than middle income inequality

The results of regression analysis are given in Table 5 where the determinants of change in Gini and in the high/low ratio are analysed successively. In the basic equation (equation 1), GDP_{pc} reduces Gini with an elasticity of -0.44 . Structural features of the economy also matter. The level of GDP_{pc} and the share of agriculture both reduce the rate of change in Gini. The first suggests that it gets harder to increase inequality, and conversely easier to reduce inequality, at higher levels of GDP_{pc} , a hopeful proposition. A higher share of agriculture in GDP similarly suggests that it is easier to reduce inequality in more agrarian economies. Demographic forces also affect inequality. A higher natural growth rate of rural population increases inequality, while a higher natural growth rate of urban population and a higher rate of urban migration reduce inequality. This is due to the fact that the level of poverty is higher in rural areas.

Equation 2 addresses the question of asymmetry in the elasticities of Gini with respect to GDP_{pc} and agricultural growth between spells of growth and spells of recession. Like poverty, inequality is more sensitive to recession than to growth: recession increases inequality more than growth reduces it. The elasticity under growth is -0.13 (not significantly different from zero) while the elasticity under recession is -0.69 . Agricultural sector growth increases inequality during spells of recession. This suggests that the benefits from agricultural growth are concentrated among the nonpoor or, in other words, that the peasantry and the landless do not share equally in the benefits from agricultural growth when the overall economy is in recession. Other studies have suggested that agricultural growth is often accompanied by expansion in the use of machinery and expansion of the livestock sector, both of which are labour displacing. This observation comes in contrast to the information given by the regression coefficient of the share of agriculture which suggests that countries with larger agricultural sectors can reduce inequality more easily: a larger agriculture is naturally more progressive, but agricultural growth is regressive. There is also an asymmetry between growth and recession, with the elasticity under growth equal to 0.04 (not significantly different from zero) and the elasticity under recession to 0.47 . Additional variables enter significantly in explaining inequality. One is growth in the real wage which reduces inequality.

Equation 3 tests for non-linear effects of growth and finds that there may be decreasing returns to growth when GDP_{pc} is positive and less than 3 (see Figure 5). Finally, the last two equations test for a differential late growth effect. The results are difficult to interpret. *Equation 4* shows no differential late growth effect. *Equation 6* suggests an unequalizing effect of late growth with an elasticity of 0.34 , but a lower constant term (-1.22). The net effect on inequality is consequently not clear (see Figure 5).

Analysis of the high/low indicator of poverty shows some interesting differences compared to the Gini indicator. The regressive effect of agricultural growth is higher with the high/low indicator, suggesting that the very unequal distribution of land concentrates unequalizing benefits among the richest 20 per cent. The non-linear effect of growth is also strong on growth (Figure 5), but difficult to interpret in recession since recession decreases inequality (GDP_{pc} being negative).

4.3 Infant mortality

The graphs of infant mortality in Figure 6 suggest no relation with income and a negative relation with public expenditures on health. However, this relation is anchored on just a few outlying points and consequently fairly weak. The best fit for the relation between the annual rate of growth of infant mortality (IM) and the annual rate of growth of public expenditures on health (EH) is:

$$IM = -3.09 - 0.13 EH, R^2 = 0.24, \text{ Adjusted } R^2 = 0.21.$$

(7.65) (2.85)

Other variables tried included poverty, inequality, and GDP_{pc} , but with no success.

Public expenditures on health are measured in US\$ per capita. In this regression, the constant term captures the time trend effect and it is strong, showing an annual drift in the reduction of infant mortality of 3.09 per cent per year. As other analysts have observed (Beccaria et al., 1992; Berg et al., 1994), the decline in infant mortality has been highly resilient to the crisis. A small inflection in the decline in infant mortality was due to falling public expenditure budgets on health during recession. However, the (short run) elasticity of infant mortality with respect to public expenditures on health is -0.13 , which is low.

5. Summary and conclusions

We conclude by presenting two summary tables of the results obtained and discussing their content. The first, Table 6, makes a contrast of the results obtained by time analysis, spell analysis, and regression analysis. The contrasts in the results obtained between the three approaches are sobering as they show that not only do results differ quantitatively but very often qualitatively as well. If we believe that spell analysis is superior to time analysis, and regression analysis superior to spell analysis, in establishing causalities, some of the main qualitative contrasts that the three approaches reveal are as follows, suggesting instances where fallacious inferences had been made from the previous time and spell analyses.

- (i) *Incidence of rural poverty (RP_0)*: all three approaches coincide in showing rapidly declining poverty during growth, mildly declining poverty during recession, and very rapidly declining poverty during late growth.
- (ii) *Incidence of urban poverty (UP_0)*: the three approaches are consistent under recession, but give opposite results under growth and late growth.

Under growth: falling poverty in time analysis, rising in spell analysis, and insignificant under regression.

Under late growth: very rapidly rising poverty under time, very rapidly falling poverty under spell analysis, and insignificant effect of growth under regression analysis.

- (iii) *Gini inequality*: all three analyses coincide in finding no inequality effect of growth and increasing inequality under recession. The three approaches disagree for late growth: very rapidly rising inequality under time analysis, falling poverty under spell analysis, and insignificant effect under regression.
- (iv) *High/low inequality*: All three analyses agree on the rapidly unequalizing effect of recession. However, they disagree over the effects of growth and late growth: while inequality increases with growth and late growth under spell analysis, it is insignificant under regression analysis.

Rural poverty and the impact of recession on urban poverty are the only two robust sets of results. Other results are very sensitive to the approach followed. As noted by Lustig (1993), it is indeed easy to obtain contradictory results with the existing data according to the methodology followed.

The other result is the set of elasticities of poverty (RP , RP_0 , UP , and UP_0) and inequality (Gini and high/low) with respect to GDP_{pc} , value added in agriculture, sectoral bias toward agriculture, Gini, high/low, the share of population in agriculture, and the share of agriculture in GDP, summarized in Table 7. These elasticities together with the regression equations estimated in Tables 3, 4, and 5 give us the following conclusions:

1. There is a negative relation between all indicators of poverty and GDP_{pc} growth. However, this relation hides a fundamental asymmetry between rural and urban poverty. For rural poverty, the link between poverty and income comes from growth: periods of growth and especially periods of late growth have been effective in reducing the magnitude and the incidence of rural poverty, while this relation is insignificant during periods of recession. For urban poverty, the link between poverty and income comes from recession: periods of recession create a very sharp increase in poverty, while growth and late growth have insignificant effects on poverty. In late growth, while GDP_{pc} growth has not been an instrument of urban poverty reduction, there is a fixed effect favouring poverty reduction that is not associated with growth. This could result, for instance, from the operation of social funds and other antipoverty programmes which are effective at reducing poverty, but which delink it from growth. While there are still few observations available to better qualify the nature of late growth, in particular to separate recovery out of recession from sustained growth beyond recovery, the lack of linkage between growth and poverty should be worrisome for those intent on relying on growth as the main instrument of urban poverty reduction.
2. *Growth* in agricultural value added, as well as a growth pattern biased toward agriculture, have been effective in reducing the number of rural poor and the incidence of rural poverty. The benefits of a sectoral bias toward agriculture tend, however, to be captured principally by the rural rich, resulting in a rising high/low measure of inequality. In spells of recession, a bias toward agriculture has also been effective in reducing the incidence of rural poverty: when the economy as a whole is faltering, differential agricultural growth provides a source of vertical mobility, in spite of rising Gini inequality. This is encouraging for the role of agricultural and rural development in poverty reduction. However, this poverty reduction effect seems to have been lost in late growth. In addition, the unequalizing effect of agricultural growth toward the upper end of the distribution of income suggests that the benefits of agricultural growth for poverty reduction are partially wasted through this rising inequality. These last two observations stress the need to relink poverty reduction to growth in agriculture (de Janvry and Sadoulet, 1993) and to manage directly inequality in order to improve the poverty reduction effects of growth.
3. *Rural poverty* is more sensitive to growth (negatively) than to recession (positively). By contrast, urban poverty is more sensitive to recession than to growth. The elasticity asymmetry hypothesis is thus reversed between rural and urban poverty. Urban poverty is more sensitive to economic downturns, and less responsive to economic growth, in addition of the burden of migration. As countries become increasingly urbanized, and urban poverty dominates numerically over rural poverty, the importance of stable growth in avoiding the poverty ratchet effect of economic fluctuations on urban poverty will become increasingly important in the fight against poverty. Slower growth with less income fluctuations will often be a more effective instrument of poverty reduction than higher but more unstable growth.
4. *Urban poverty* is more sensitive to Gini inequality than rural poverty. The same applies to the incidence of poverty in the two sectors. This in part reflects the fact that most rural poverty is located farther away from the poverty line, making it less sensitive to distributional changes (for 1986, CEPAL (1990) estimates the incidence of extreme poverty to be 30 per cent in the rural

sector compared to 11 per cent in the urban sector). In addition, there is a strong time drift among the determinants of migration which makes rural poverty less sensitive to changes in inequality. Poverty is less strongly related to high/low poverty than to Gini poverty as the former indicator fundamentally captures income effects on the nonpoor.

5. *Migration*, in response to both a strong time drift and the pull of GDP_{pc} growth, has been a powerful mechanism of rural poverty reduction. However, this migration has been neutral between poor and nonpoor, with the result that it has left the incidence of rural poverty unchanged. The neutrality of migration lowers the effectiveness of migration in reducing rural poverty (as compared to a situation where it would be the poor who migrate), and implies high inflows of population into the urban areas per unit of rural poverty reduction, in turn reducing the ability of cities to lower the urban incidence of poverty. Migration has also been effective in reducing Gini inequality as it shifts population from, on average, lower income rural areas to, on average, higher urban areas.
6. Like poverty, *inequality* is related to GDP_{pc} growth. However, like urban poverty, this link comes through recession, when falling incomes sharply increase inequality, and not from growth. Growth has thus been ineffective in reducing inequality, and this includes late growth as well. We have seen that reducing inequality is one of the powerful instruments for reducing poverty, particularly urban poverty. However, it is not growth that can be relied upon to reduce inequality. Reducing inequality requires special interventions that target the poor for inequality reduction. In addition, special interventions are needed to link inequality reduction to growth, a fundamental missing link in Latin America's struggle against poverty.
7. *Infant mortality*, as an indicator of social welfare, is unrelated to GDP_{pc} and weakly related to public health expenditure per capita. The dip in health expenditures in the 1980s led to a small slowdown in the rapid progress in the reduction of infant mortality.

The overall conclusions are, *first*, that wide swings in economic performance are highly costly in the slow struggle against inequality and poverty and the consolidation of a middle class. A few points of recession can erase the poverty gains of several points of GDP_{pc} growth. This argues for more conservative management of the economies, as opposed to seizing opportunities for faster but more unstable growth. This is particularly important if the middle class is the clientelistic backbone of democratic governments. And this is different from putting into place safety nets under the form of social funds, which are necessary but not sufficient for this purpose once economic recovery has been achieved. *Second*, the observed link between income and poverty is highly misleading: only in the rural sector have GDP_{pc} and agricultural growth been effective in reducing poverty, and late GDP_{pc} growth has been excellent. In the urban sector, this link comes from recession, not from growth. With poverty reduction high on the political agenda, and an approach to poverty reduction through social funds both ineffective and politically unsustainable in the long run, relinking poverty reduction to growth is the great challenge ahead to Latin American governments. *Third*, agricultural growth and a bias toward agriculture in growth have been important in reducing rural poverty. However, these effects have been lost in late growth. For countries where rural populations are still significant, this suggests the urgency of also relinking poverty reduction to growth, in particular by mounting effective programmes of rural development that combine access to land, productivity gains for small farmers, and employment creation in agriculture and in rural non-farm activities. *Fourth*, cities have had a remarkable capacity of absorbing populations and the poor in the face of intense rural migration that has displaced poverty to the cities. However, much of this absorption has been in the informal and small enterprise sectors, the fastest sectors of employment creation in the last decades (PREALC, 1990). Urgent is to promote productivity gains in those sectors of employment so that they would be more effective at not only labour absorption, but also at poverty reduction. *Finally*, growth

has systematically failed to serve as an instrument of inequality reduction, with the link between inequality and income established in recession, not in growth. Persistent extreme inequality, and reproduction of these inequalities in spite of growth, remain hurdles to poverty reduction and democratic achievements in Latin America. Reducing Gini inequality can be a powerful instrument of urban poverty reduction. Inequality as a political issue figured prominently in the classical development debates of the 1960s and led to programmes of land reform, mass education, and social welfare. While gains on the social welfare front have been most impressive, addressing squarely the issue of inequality, and linking inequality and poverty reduction to growth, should be at the top of the agenda for the political stabilization of economic recoveries and for the consolidation of democratic gains.

Notes

1. Among middle-income countries for which data are available in the World Bank's *World Development Report 1993*, the share of income received by the poorest 40 per cent is 11.6 per cent in Latin America, 12.6 per cent in Africa, 15 per cent in South East Asia, 16.7 per cent in the Middle East, and 20.2 per cent in South Asia.

2. For each regression, the specific spells that are used are reported in footnote of the corresponding regression results tables.

3. In discussing the significance of estimated coefficients, we use a t-statistic threshold of 1.3 which usually corresponds to an 80 per cent significance two-tailed test.

4. In this figure, the vertical axis represents $UP_0^{\dot{}}$ - $\sum_k \hat{\alpha}_k z_k$ where the z_k are all the exogenous variables

other than GDP_{pc} , and $\hat{\alpha}_k$ are the estimated coefficients in the regression. The lines are the estimated relations $\hat{\alpha}_0^t + \hat{\alpha}_1^t GDP_{pc}$

for $t =$ growth and recession periods. Dotted lines correspond to non-significant coefficients.

Please contact the ILO for the Tables and Figures Information

References

- Altimir, Oscar. 1992. "Cambios en las desigualdades de ingreso y en la pobreza en América Latina". Instituto Torcuato di Tella, Buenos Aires. May.
- Anderson, W.H.L. 1964. "Trickling down: The relationship between economic growth and the extent of poverty among American families", in *Quarterly Journal of Economics*, November, pp. 511–524.
- Beccaria, Luis, Julio Boltvinik, Juan Carlos Feres, Oscar Fresneda, Arturo Leon, and Amartya Sen. 1992. *América Latina: El reto de la pobreza, características, evolución y perspectivas*. Bogota: UNDP.
- Berg, Elliot, Graeme Hunter, Tom Lenaghan, and Malaika Riley. 1994. "Trends in living standards in Latin America and Africa in the 1980s: UNICEF myths and statistical realities". Bethesda, Maryland: DAI.
- Carroll, Thomas. 1992. *Intermediary NGOs: The supporting link in grassroots development*. West Hartford, Conn.: Kumarian Press.
- CEPAL. 1990. "Magnitud de la pobreza en América Latina en los años ochenta". Santiago, Chile: CEPAL.
- de Janvry, Alain, and Elisabeth Sadoulet. 1993. "Rural development in Latin America: Relinking poverty reduction to growth", in Michael Lipton and Jacques van der Gaag, eds., *Including the poor*. Washington D.C.: World Bank.
- de Janvry, Alain, Elisabeth Sadoulet, and Linda Wilcox Young. 1989. "Land and labor in Latin American agriculture from the 1950s to the 1980s", in *Journal of Peasant Studies*, Vol. 16, No. 3, April, pp. 396–424.
- Fields, Gary. 1989. "Changes in poverty and inequality in developing countries", in *The World Bank Research Observer*, Vol. 4, No. 2, July.
- IDB-UNDP (Inter-American Development Bank and United Nations Development Programme). 1993. *Reforma social y pobreza*. Washington D.C.: IDB.
- Lattes, Alfredo, and Miguel Villa. 1994. "La redistribución territorial de la población en América Latina: tendencias recientes". Santiago, Chile: CELADE.
- Lustig, Nora (ed.). 1992. *Confronting the challenge of poverty and income distribution in Latin America*. Washington D.C.: Conference held at the Brookings Institution.
- Lustig, Nora. 1993. "Poverty in Mexico in the 1980s: 'The Answer, my Friend...'" . Washington D.C.: Brookings Institution. December.
- Morley, Samuel. 1992. "Structural adjustment and the determinants of poverty in Latin America". Conference on Poverty and Inequality in Latin America, Brookings Institution, Washington D.C., May.
- Morley, Samuel. 1994. "Poverty and distribution in Latin America: Evidence from the past, prospects for the future". Washington D.C.: The Inter-American Development Bank, Social Agenda Policy Group.
- Peek, Peter. 1993. "Poverty and GDP: The Latin American experience since 1970". Geneva: ILO. Mimeographed.

- PREALC. 1990. "Employment and equity: The challenge of the 1990s". Santiago, Chile: ILO-PREALC. October.
- Psacharopoulos, George, Samuel Morley, Ariel Fiszbein, Haeduck Lee, and Bill Wood. 1993. "Poverty and income distribution in Latin America: The story of the 1980s". Washington D.C.: World Bank, Human Resources Division.
- Salamon, Lester. 1994. "The rise of the nonprofit sector", in *Foreign Affairs*, Vol. 73, pp. 109-122.
- van der Hoeven, Rolph and Frances Stewart. 1993. "Social development during periods of structural adjustment in Latin America". Occasional Paper 18, Interdepartmental Project on Structural Adjustment. Geneva: ILO. December.