

Poverty Reduction and Economic Growth:

A Two-Way Causality

Nora Lustig
Omar Arias
Jamele Rigolini

Inter-American Development Bank

Washington, D. C.

**Sustainable Development Department
Technical Papers Series**

Cataloging-in-Publication provided by

Lustig, Nora.

Poverty reduction and economic growth : a two-way causality / Nora Lustig, Omar Arias, Jamele Rigolini.

p.cm. (Sustainable Development Department Technical papers series ; POV-111)

Includes bibliographical references.

1. Poverty--Latin America. 2. Economic development. 3. Latin America--Economic conditions--1982- I. Arias, Omar. II. Rigolini, Jamele. III. Inter-American Development Bank. Sustainable Development Dept. Poverty and Inequality Unit. IV. Title. V. Series.

339.46 L868—dc21

When this report was written, Nora Lustig was Chief of the Poverty and Inequality Unit, Sustainable Development Department. Ms Lustig is currently the Rector of Universidad de las Américas in Puebla, Mexico. Omar Arias is a research economist in the Poverty and Inequality Unit. Jamele Rigolini is a doctoral candidate in Economics at New York University. This paper was presented at the seminar *La teoría del desarrollo en los albores del Siglo XXI*, which was held in Santiago Chile, August 28 and 29, 2001, under the auspices of the Economic Commission for Latin America and the Caribbean to commemorate the centenary of the birth of Raúl Prebisch. The authors are grateful for the valuable suggestions of Francois Bourgoignon and Suzanne Duryea in their review of an earlier version of the paper and to Cesar Bouillon for his comments.

The opinions expressed herein are those of the authors and do not necessarily reflect the official position of the Inter-American Development Bank.

March 2002

This publication (No. POV-111) can be obtained from:

Publications, Poverty and Inequality Unit
Inter-American Development Bank
1300 New York Avenue, N.W.
Washington, D.C. 20577

E-mail: povunit@iadb.org
Fax: 202-623-3299
Web site: www.iadb.org/sds/pov

Foreword

More than a third of the population of Latin America and the Caribbean, or approximately 180 million people, currently live in poverty. The urgency of the need to reduce poverty in the region is widely recognized and is reflected in the declaration of the Heads of State and Government of the region at the Summit of the Americas held in Quebec in 2001. At the time, the region's leaders pledged to reduce extreme poverty by half (compared to 1990s levels) by the year 2015. Since the 1990s, every region of the world (except Africa) posted higher per capita economic growth rates than Latin America and the Caribbean. Will the region be able to simultaneously increase economic growth and reduce poverty given its scarce fiscal resources?

The message of this paper is that the public policies needed to achieve these two goals do not have to be incompatible, but can complement each other. This report shows the importance of economic growth to achieve poverty reduction. It also shows that in countries with relatively more inequality economic growth is less effective in reducing poverty. The report argues that certain specific actions to reduce poverty can create a virtuous cycle by increasing economic growth in a way that reinforces the reduction in poverty and inequality and benefits the population at large while, in turn, promoting higher growth.

The Bank's commitment to reducing poverty and promoting economic growth is reflected in its recent replenishment of resources and is reinforced in its institutional strategy. This document is part of the research program that the Poverty and Inequality Unit and the Sustainable Development Department have developed to provide inputs for the Bank's strategy to reduce poverty and inequality. This document should become a valuable contribution to the efforts to identify economic and social policies that help achieve the twin goals of reducing poverty and promoting economic growth in a manner that benefits all segments of the population.

Gustavo Yamada
Chief, a.i.
Poverty and Inequality Unit

Contents

Introduction	1
Economic Growth and Poverty Reduction	2
Poverty Reduction and Growth	5
<i>Investment Capacity Constraints</i>	6
<i>Constraints for Human Capital Development</i>	7
<i>Constraints for Innovating and Securing Insurance</i>	9
<i>Adverse Shocks, Poverty and Growth</i>	9
<i>Poverty, Social Instability and Social Ills</i>	10
Final Considerations	13
Tables and figures	14
References	16

"... We ask ourselves the question: development, but development for what. The purpose of development is to integrate socially these large masses of the population that have been left behind in the process of economic development. If this is not done, development is incomplete and unjust. This is a fundamental problem in Latin America, which has to be solved in one way or another. Thirty years ago you could have said 'Well, let's wait for a few decades; this process of development will gradually improve the lot of the whole population.' But that has not come to pass."

Raúl Prebisch, 15 April 1971¹

¹ *Latin America: A Problem in Development*, Hackett Memorial Lecture, Institute of Latin American Studies, The University of Texas at Austin.

Introduction

The countries of Latin America and the Caribbean desperately need to return to a strong growth path. They also desperately need to reduce poverty. But where to begin? Should the region set its sights entirely on boosting per capita income and productivity, or focus on actions to improve conditions for the poor?

In their 2000 article "Growth *Is* Good for the Poor" World Bank economists David Dollar and Aart Kraay conclude that the poor benefit *pari passu* with the rest of the population from per capita economic growth, thereby highlighting once again the importance of growth for poverty reduction.¹ At the time, the article was viewed as a warning about a pendulum that—to some World Bank economists in particular—appeared to be swinging away from economic rationality toward approaches that downplay the importance of growth and play up the importance of social organization and citizen participation (the empowerment agenda) as fundamental in the fight against poverty. It is unfortunate

that these views have ended up set against one another when in so many cases they are complementary. As we shall discuss, economic growth is a necessary but insufficient condition for poverty reduction. Moreover, actions aimed at reducing poverty, including those on the empowerment agenda, can help boost economic growth.

The recent findings presented in this paper demonstrate yet again the importance of average growth in reducing poverty, and how pro-poor initiatives in turn can propel economic growth. We also discuss how the level of economic inequality affects the growth/poverty relationship: the more pronounced the inequality in a country, the smaller the impact of economic growth on reducing poverty. This paper does not attempt to offer an exhaustive review of the literature in this field; our aim is to illustrate how efforts to reduce inequality and poverty can achieve a twofold objective: improve the lives of the poor as well as of the general population.

¹ Dollar, D. and Kraay, A. (2000), *Growth is Good for the Poor*, World Bank Working Paper.

Economic Growth and Poverty Reduction

The inverse relationship between growth and poverty is depicted in Figure 1, which presents results for 65 countries. The panel on the left tracks the relationship between growth in average consumption of the poorest 20 percent of the population and average growth in per capita consumption. The right-hand panel plots the latter variable against the share of the population subsisting on less than one dollar a day (measured in purchasing power parity). The straight lines illustrate the average relationship obtained from simple regression analysis. This relationship holds even when controlled for differences in various indicators of countries' policy regimes. Figure 2 shows how the relationship between growth and poverty reduction holds when poverty is measured as the percentage of the poor population, with the data arranged by world regions, and for Latin American countries only. However, due to the striking diversity of experiences with growth episodes and poverty changes, we can note a significant dispersion around the average relationship in Figures 1 and 2. That is, in some countries and over some periods there is a significant drop in poverty as the economy grows; in others the response is much less appreciable.

How quickly growth can reduce poverty depends both on the initial income distribution and how it evolves over time. In societies with more unequal distributions the same growth rate makes far less of a dent in poverty. This is evident in Figure 3: in countries with a Gini coefficient of around 0.6, growth reduces poverty only half as quickly as in countries with a Gini of about 0.2. Latin America and the Caribbean, as is

well known, have some of the widest income disparities in the world, with Gini coefficients between 0.4 and 0.6 in most countries. Given these initial levels of inequality, the region requires a greater growth effort to reduce poverty. In a best-case scenario in which growth were spread with not changes in income distribution the region would have to post a 3.4 percent annual growth rate in per capita income, on average, in order to halve the percentage of people living on less than two dollars a day (in purchasing power parity) by 2015. This is more than twice the 1.5 percent average per capita growth recorded in the past decade, and would call for annual per capita growth rates of between 2 percent and 6 percent depending on the country. Countries with a high incidence of poverty would have an even more formidable task ahead of them. In Central America, for instance, achieving this target would require an average rate of growth in annual per capita income of 4.5, three times that region's average growth rate for the 1990s.²

How efficiently average growth will reduce poverty also depends on how the income distribution shifts as the economy grows. For instance, we could posit three different scenarios of identical average increases in per capita income: in one case only the earnings of the top income quintile rose (the distribution worsened); in another, everyone's income increased in the same proportion

² These figures come from poverty estimates in household surveys and simulations of the rate at which the US\$2 PPP income centile would have to grow in order to lower the share of the poor population in each country to half the 1990 level, *assuming no change in the income distribution.*

(no change in the distribution); and in a third instance only the bottom quintile's income climbed (the distribution improved). In the first case there clearly would be no absolute reduction in poverty; in the third scenario there will be a proportionally steeper reduction. In Mexico, for example, per capita real income rose by 4.8 percent annually between 1996 and 1998, but there was virtually no change in extreme poverty. Yet in Costa Rica, where per capita real income edged up by barely 1 percent annually between 1990 and 1998, poverty was reduced significantly.

How can we ascertain how much growth is benefiting the poor? One frequently used approach is to estimate the elasticity of the incidence of poverty with respect to growth, determined by the slope of the regression line illustrated in the right-hand panel of Figure 1. In this approach poverty is measured against some absolute poverty line that allows for international comparisons. Ravallion and Chen (1997) found elasticities ranging from -2.6 to -0.7 depending on the poverty line cutoff used. As Bourguignon (2000) points out, owing to the identity that links changes in mean income, income distribution and poverty, it is better in this kind of regression analysis to use poverty measures that capture the effect of distributional changes on poverty. One approach uses relative poverty measures, as in the case of Dollar and Kraay (2000) who calculated the elasticity of the average income of the poorest fifth of the population with respect to growth (the slope of the line in the left-hand panel in Figure 1) and found it to be not significantly different from one. In other words, for every 1 percent increase in per capita

income, the average income of the poorest quintile increases by 1 percent.

One drawback of these approaches is the arbitrariness of setting the poverty line or threshold at 20 percent to define who is poor. Foster and Székely (2001) propose a way out of this by using changes in the "generalized mean" as a dependent variable rather than the incidence of poverty (Ravallion and Chen, 1977) or the average income of the bottom quintile (Dollar and Kraay, 2000). This would make for elasticities of poverty reduction with respect to average growth that capture more generally the features of the distributional process and could help us infer more precisely how efficient growth is in reducing poverty (raising the income of the poorest).³ Using a database made up largely of Latin American and Caribbean countries⁴ the authors found that when the increase in income is weighted for all individuals similarly (the geometric mean), the elasticity is close to one, consistent with Dollar and Kraay's findings (2000). But as more weight is given to the income of the poorest, the elasticity declines. For instance, for the harmonic mean the elasticity is 0.93; when the lowest incomes are more heavily

³ In analytical terms, the "generalized mean" is $\mu_\alpha(x) = [(x_1^\alpha + \dots + x_n^\alpha)/n]^{1/\alpha}$ for $\alpha \neq 0$ and $\mu_\alpha(x) = (x_1 \cdots x_n)^{1/n}$ for $\alpha = 0$ (the geometric mean), where the parameter α defines the weighting of income X of individual i . When $\alpha = 1$, the "generalized mean" is the commonly used average; when it is below zero the income weighting is inverse to income ($\alpha = -1$ gives the harmonic mean): in other words, lower-earning individuals have greater weight in the calculation of the generalized mean.

⁴ The income data used come from 144 household surveys for 21 countries, three of them – (the United States, Thailand and Taiwan) outside Latin America, with highly comparable data within each country.

weighted the elasticity is no longer statistically different from zero. In other words, those living in extreme poverty benefit very little from growth.

One challenge in empirical analyses of the relationship between poverty and economic growth is to identify the direction in which the cause and effect is working. If the initial inequality level affects growth, then studies like those of Dollar and Kraay (2000) and Foster and Székely (2001) give biased estimates of the growth-poverty elasticity.⁵ In particular, the elasticity would be overestimated if countries with high inequality indices grow more slowly. Though there is a growing body of theoretical literature showing how inequality can hold back growth, empirical evidence based on cross-sectional data is inconclusive as to the sign or form of the relationship.⁶ Bourguignon (2001) suggests that, given the importance of idiosyncratic differences among countries in explaining the growth-inequality relationship, the better approach is to use microeconomic evidence for each country to examine the association. Some of the handful of microeconomic studies in this field come up with a negative inequality-growth correlation, among them Banerjee et al. (2001), Besley and Burgess (2000), and Banerjee, Gertler and Ghatak (forthcoming).

⁵ Another source of bias are income-measurement errors that can occur due to unreliable reports by respondents and/or owing to survey methodological differences between countries and over time.

⁶ For instance, Alesina and Rodrik (1994) and Persson and Tabellini (1994) found that inequality impacts negatively on growth, whereas Forbes (2000) found the opposite. In a recent empirical analysis for a cross-sectioned sample of countries, Banerjee and Duflo (2000) show that the relationship could be characterized by an inverted U curve.

Which growth pattern is the most pro-poor? To answer this question it is better to rely on country-specific studies with which we can investigate the complex interface of often countervailing factors. For example, a recent study on India found that growth has a greater impact on poverty when it is concentrated in rural areas and the initial education and infrastructure conditions are more favorable (Ravallion and Datt, 1999). Generally, a sole focus on maximizing per capita income growth may be less than successful in reducing poverty if the growth bypasses geographic areas or sectors in which the poor are concentrated, or fails to make intensive use of the most abundant factor of production available to the poor; namely, unskilled labor. To our knowledge no similar studies have been done for Latin America and the Caribbean.

In sum, economic growth is a crucial factor in poverty reduction, but the level of inequality affects its impact on poverty. We now shall offer theoretical and empirical evidence suggesting that the cause and effect runs in the opposite direction as well; that is, reducing poverty can help boost economic growth rates. This opens the door for a whole range of actions that can further improve the lot of the poor as well as their contribution to stepping up the pace of growth.

Poverty Reduction and Growth

Poverty can dampen growth when market imperfections (market failures, incomplete or uncompetitive markets) combine with investment indivisibilities, fixed costs, and strategic complementarities.

Indivisibility occurs when a minimum capital outlay must be made before an investment yields returns. Figure 4 illustrates this point: prior to minimum level I_o the return on investment is zero; the investment begins to yield a return only after this threshold is crossed. Add to this an imperfect credit market, and the poor will be unable to borrow the minimum they need to pay fixed costs. To cite but one example, farmers may have to put out money to buy equipment before they can bring in modern cropping technology. Likewise, for a poor family the rate of return to education may become attractive compared to the cost of putting off present consumption only when children complete at least basic or secondary education. The negative effects that credit constraints and investment indivisibilities for the poor may have on growth have been analyzed in the context of human capital investment (Galor and Zeira, 1993; Ljungqvist, 1993), and small-entrepreneurship prospects (Banerjee and Newman, 1993).

Strategic complementarities occur when one agent's optimal strategy depends positively on the strategies of other agents (Cooper and John, 1988). This can generate multiple equilibria, some of which may trigger low-growth paths and persistent-poverty traps ("bad equilibria"). Benhabib and Rustichini (1996), for instance, show how poverty

can generate low-growth equilibria by increasing incentives for expropriating the wealth that other agents amass in the economy. Inefficient equilibria can stem from coordination failures that occur because an individual's expropriation incentives depend on what other agents do. In the equilibrium scenario in which all agents try to expropriate, individual incentives to accumulate capital are weak, whereas incentives to expropriate are strong. The result is lower investment and slower growth. Conversely, when no one is expropriating everyone has an incentive to accumulate capital and not expropriate; the result is higher investment and more robust economic growth. Poverty traps also can result from multiple equilibria when there are fixed costs in human capital investment (Galor and Zeira, 1993), or credit rationing for a significant portion of the population (Piketty, 1997).

One important implication of this literature is that when poverty traps are the result of "bad equilibria," there is an opportunity to implement one-shot policies to move the economy toward more efficient equilibria. For instance, when the main roadblocks to human capital investment are fixed costs and household credit constraints, one-time up-front partial subsidies can ease these constraints and create an equilibrium with more skilled workers and stronger growth potential. It goes without saying that care must be taken to make sure that such policies are fiscally sustainable and create no perverse incentives.

Investment Capacity Constraints

Investment is critical for growth and to escape from poverty. Since fixed costs and indivisibilities are the norm, the poor may run into problems when they wish to invest because they are unable to come up with enough cash savings of their own, and they usually find themselves shut out of lending markets. Low-income levels are a fundamental reason why the poor cannot save enough money to finance productive investments. Furthermore, in the absence of formal financial institutions or services tailored to their needs, the poor may tend to save less than they would have were such institutions available to them. Moreover, informal financial institutions such as rotating savings and credit associations⁷ (ROSCAs) are often inefficient. Besley, Coate and Loury (1994), for example, found that some types of ROSCAs are less efficient than well-developed credit markets. Morduch (1999) offers evidence that the poor save more when they can turn to financial institutions geared to their needs.

The poor run up against yet another obstacle when they want to borrow: steep transaction costs and high interest rates that make credit a losing proposition. Driving up the cost of credit are adverse selection and moral hazard. To further complicate matters, the poor cannot come up with acceptable security for borrowing (De Soto, 2000). Adverse selection occurs because when a lender is unable to distinguish between risky and less risky projects he protects him-

⁷ ROSCAs are spontaneously formed saving circles in which each member regularly (e.g. monthly) contributes an identical sum of money and the pool is paid out to each member by rotation, using a lottery or some other prearranged mechanism.

self by hiking the interest rate, in turn discouraging prospective borrowers whose projects promise more certain, but lower, returns. Sometimes, the end-result of adverse selection is that some individuals who want to borrow and qualify for a loan face credit rationing (Stiglitz and Weiss, 1981). Moral hazard comes into play because when the poor have no collateral to offer –(and thus have nothing to lose) they have high incentives to make risky decisions. Here again, lenders end up raising interest rates to offset the heightened risk. In an analysis of various microfinance institutions Morduch (1999) showed that those that are financially sustainable have nominal interest rates ranging from 30 percent to 50 percent (Table 1).⁸

Piketty (1997) shows how credit rationing stemming from pronounced inequality can lead to multiple equilibria, the efficient ones characterized by low inequality, low interest rates and higher income levels and the inefficient ones by marked inequality, high interest rates and lower returns. Carter (1989), for one, found that when Nicaraguan small farmers had readier access to credit their output improved.⁹ Deininger and Squire (1998) found a negative correlation between unequal land distribution and economic growth in a sample of countries. These authors underscore the possibility that more equitable distribution of land eases the credit constraints that shut out lower-income populations (once they

⁸ One exception is the organization FINCA which has higher operating costs because it serves remote areas. See Morduch (1999) for details.

⁹ Caution is needed, however, since the microeconomic evidence for this relationship faces econometric difficulties owing to the selection bias that normally arises from the way in which credit access is afforded.

have collateral to put up) and this in turn boosts investment and growth. A number of studies show that access constraints and rights to landed property strongly influence productivity in rural areas of Latin America and other developing countries (see, for example, Banerjee, Gertler and Ghatak, 2001 and De Janvry et al., 2001).

According to this body of evidence, actions to foster the development of financial institutions and services that truly serve the needs of the poor are a potential growth booster as well. Foremost among these actions would be the development of financial institutions that help equip the poor to build savings and borrow through microfinance avenues, as well as adjustments to financial sector regulatory frameworks. In some cases subsidies to help defray fixed costs for equipment, machinery and human capital can be a more efficient approach to encourage the poor to invest more. Actions to lessen the moral hazard and adverse selection problem include bolstering property rights for the poor, land market reforms to give poor people readier access (including lease arrangements), and further development of institutional vehicles such as group credit.

Constraints for Human Capital Development

Human capital, in its broadest sense, comprises people's educational attainment, their health and nutrition. Cross-section studies in samples of countries to analyze the empirical determinants of growth are anything but conclusive regarding the impact of human capital. However, there is a great deal of uncertainty with respect to the correct specification for this type of re-

gression (Bils and Klenow, 2000; Krueger and Lindahl, 2000; Levine and Renelt, 1992; Sala-I-Martin, 1997). For example, the difficulty in obtaining measures of educational attainment that are comparable across countries can lead to measurement errors that bias estimates of the impact of education on growth (Bils and Klenow, 2000). Schooling also may have nonlinear effects on growth that are not properly captured by the linear regressions common to these studies (Azariadis and Drazen, 1990). Thus, when a more disaggregated education measure is chosen, higher education for males has a positive impact on growth (Barro, 2000). And, despite the fact that the findings regarding the direct effect of a population's level of schooling on present growth are ambiguous, the empirical evidence shows that it has a positive impact on investment (Romer, 1989), the adoption of more productive technologies (Benhabib and Spiegel, 1994), and future growth (Sylwester, 2000).

Accordingly, it is better to rely on the evidence from empirical microeconomic studies. There is solid evidence associating more schooling with higher income (see the surveys by Card (1999) for the United States and Psacharopoulos (1994) for international evidence) and with enhanced farm productivity (Schultz, 1988). Education may generate other important externalities that can indirectly propel growth (e.g. Wolfe and Zuvekas, 1997). For instance, how well a mother is educated is crucial for her children's learning in the home and hence for human capital accumulation in the family (Behrman et al., 1999). Sickly or poorly nourished workers may be less productive (Dasgupta and Ray,

1986).¹⁰ As a number of studies illustrate, the human body may be able to adapt to temporary malnutrition, but persistent malnutrition pushes down productivity (Deolalikar, 1988; Dasgupta, 1997). When poverty is severe, this effect is more pronounced (Subramanian and Deaton, 1996; Ravallion, 1997).

Poverty and inequality can affect human capital accumulation in various ways. The investment may hold little appeal for poor families primarily because of the opportunity cost of children and young people who could be working in their homes or bringing in outside paychecks (see, for instance, Strauss and Thomas, 1995). According to estimates by the International Labor Organization, in 1998 some 250 million of the world's children aged 5 to 14 were working; half of them were employed full-time. The evidence suggests that poor families' tight budgets are one of the main drivers of this problem (see Basu's survey, 1999). Aside from documenting the constraints on this kind of investment generally, some recent studies have demonstrated that returns to education are highly convex, that is, the rate of return is most attractive at fairly high levels of schooling (more so beyond basic secondary). In Mexico, for instance, an adult male who finishes university raises per capita household income by 62 percent; the increase is only 8 percent for a male obtaining a primary school diploma (Bouillon, Legovini and Lustig, 2001).¹¹ This means that families have to invest in their children's education over a span of many years. That being the case,

families may be underinvesting, from a social standpoint, in their children's education even if they have some degree of access to lending markets, because the investment takes too long to bear fruit

Human capital accumulation may also suffer if infants and young children are malnourished. The growth of millions of children is retarded because of fetal malnutrition. Though the rate and number of malnourished children in Latin America has declined in the past two decades, an estimated 10 million of the region's children under age 5 were undernourished in 1995 (10 percent of the total child population according to IFPRI, 2000). These children have dimmer survival prospects and, since their chances of recovery are slim once they reach their second birthday, they tend to continue to be malnourished as adults (IFPRI, 2000). Overall, undernourished children have weaker cognitive skills and learn less in school (see, for instance, Jamison, 1986) and Alderman and Hoddinott, 2001).

Hence the importance of education and health interventions both on the supply side (such as public spending on infrastructure and improvements in service and quality) and on the demand side for these services, for instance subsidies tied to investment in human capital for the poor (two examples are Mexico's *Progres*a program and Brazil's *Bolsa Escola* grants). Just as crucial are early-intervention programs in health and nutrition and basic infrastructure investment (running water, electricity, transportation) because of the synergies at work between sound nutrition and people's ability to use new learning technologies (distance learning institutes, distance high-school education).

¹⁰ IFPRI (1995) estimates that some 800 million people are living with food insecurity.

¹¹ Eventually, however, returns could drop if the stock of highly skilled labor increases very significantly.

Reforms to overhaul the institutional apparatus for social services delivery need to make sure that the poor have access to these services.

Constraints for Innovating and Securing Insurance

The adoption of new technologies (assuming no access constraints) is influenced by the stock of human capital and people's options for obtaining insurance against risk. Earlier we discussed how poverty could inhibit human capital investment. Another potential roadblock to productive and technological innovation is the dearth of insurance vehicles for the poor.

Though innovation ultimately will boost average income it also can introduce more risk. For instance, farmers who plant a new crop species may earn more but will also be exposed to greater risk of loss in the event of bad weather, or market ups and downs (see, for example, Rosenzweig and Binswanger, 1993 and Dasgupta, 1993). The risk also can increase during the learning period as producers learn by trial and error.

Since there are no insurance markets for them, the poor seek out alternative avenues to smooth consumption. These include borrowing (Eswaran and Kotwal, 1989; Roth, 1983), deaccumulation of buffer stocks during bad times (Deaton, 1989, 1991; Udry, 1995) and other informal inter-household insurance schemes (Townsend, 1994 and Udry, 1994). These arrangements can end up being less efficient than formal insurance markets. For example, the sale of production assets like livestock or other animals to make up for falling revenues can jeopardize farmers' future

productivity (Rosenzweig and Wolpin, 1993).

This highlights the importance of developing insurance schemes for the poor. The insurance industry needs enabling regulatory frameworks for the development of insurance services for the poor (health, life, and crop insurance, for instance). Countries need to establish social safety nets that guarantee minimum consumption levels and provide support for public programs that mitigate and diversify risk, such as technical support for crop switching and crop insurance that also help producers secure access to credit market.

Adverse Shocks, Poverty and Growth

The foregoing section laid out arguments in support of the tenet that reducing poverty can help propel growth. By the same token, keeping poverty from worsening during adverse situations can strengthen a country's growth prospects.

Aggregate shocks such as economic crises or massive natural disasters do more than increase transitory poverty, they can also cause poverty traps and dampen growth. As we saw earlier, in order to survive such adverse events the poor may pare their productive and human capital or simply stop investing in these resources. There is evidence that social indicators suffer at times of macroeconomic upheaval (see Lustig, 2000 and IDB, 2000 for details). During the "lost decade" of the 1980s infant mortality declined and average educational attainment improved in Latin America, but the gains came more slowly than in previous decades. One recent study suggests that 80 percent of the slowdown in edu

cational progress in Latin America in the past two decades can be ascribed to macroeconomic volatility (Behrman et al., 1999). When we look beyond the averages we see declines. In Mexico, for instance, there was an increase in infant mortality associated with nutritional deficiencies over that period.

Countries must have the right kind of mechanisms and tools are important to cushion the damage that such crises do to the human capital development of the poor. These can include arrangements to protect pro-poor public spending when structural adjustment policies need to be put into practice. Though this would appear to be a spurious recommendation, evidence shows that spending targeted to the poor tends to be even more procyclical than other social spending (Wodon et al., 2000). Politics may explain part of this, but in large measure it has to do with the absence of effective instruments to transfer resources to the poor. Rather than improvising, countries need social safety nets such as temporary or emergency employment programs, early childhood programs and conditional transfer programs along the lines of *Progresa* or *Bolsa Escola*.

Poverty, Social Instability and Social Ills

Another channel through which poverty can stall growth is by way of its relationship with social and political equilibria. Where social injustice is pervasive and people have no say in the political process poverty can trigger social upheaval and, ultimately, the kind of sustained violence that puts the brakes on growth. We know from the evidence that poverty and inequality associated

with geographic, ethnic, racial and gender factors take an economic toll on society at large that thwarts a country's growth potential. Likewise, the frustration that poverty breeds can trigger dysfunctional behavior and social ills – (crime, alcoholism, drug addition, domestic violence, early pregnancy) that trap the poor and exact high economic costs as well.

Recent growth theory has posited various links between poverty, social and political instability, and growth. For instance, when per capita income is very low, pressure from different social groups can prompt redistributive policies or inefficient political practices (inefficient tax systems and/or unproductive spending, corruption and lobbying) that weaken incentives for capital accumulation and stall growth (see, for instance, Benhabib and Rustichini, 1996). Poverty can erode social capital, which correlates positively with stronger capital accumulation and growth (Knack and Keefer, 1997). Social conflicts also can exacerbate the adverse effects of macroeconomic shocks on growth when the institutions in place to cushion such impacts are weak. Rodrik (1999) found that in strongly polarized societies with few civil or political freedoms and weak social safety nets, social conflicts drive the authorities to adopt policies to manage exogenous shocks that end up lowering productivity and slowing growth.

Social exclusion is associated (both as cause and effect) with a lopsided distribution of income, wealth, and opportunities and with lower prices and returns accruing to socially excluded groups from their productive activity, often as a result of overt discrimination or because, by virtue of their exclusion,

they are prevented from exploiting externalities in production. The staggering potential costs of social exclusion are today widely acknowledged. Social polarization nurtured by deep ethnic divisions can thwart the adoption of policies to foster macroeconomic stability and growth (Easterly and Levine, 1997). The failure to develop and fully tap the skills and creative potential of society's excluded population pushes down a nation's growth potential. As the evidence attests, human beings begin to develop skills and motivation at an early age; this process is affected by the learning environment in the home, school, and community (Heckman, 1995). Residential segregation can trap the children of poor families at very low education levels because there is not enough funding for schools in poor communities and because of sociological factors, such as externalities in group learning and the absence of role models. The result may be a perpetuation of poverty and inequality (Durlauf, 1996) and low-growth traps (Benabou, 1994). The experience of discrimination can alter a person's expectations of the likely returns of productive activities and lead to suboptimum investment levels. The effects of exclusion and discrimination on socioeconomic status can endure for generations, impervious to competitive market pressures (see, for example, Borjas, 1992 and Heckman, 1997).

The usual rationale for geographically targeted poverty reduction programs are the constraints and high costs of migration for residents of disadvantaged areas and the difficulties confronting public policymakers when they try to target individuals. Moreover, recent studies show that these programs can yield important externalities that af-

fect national growth. For instance, community capital can enhance returns to private capital investment (Ravallion and Jalan, 1996) and improvements in school quality can boost returns to education and workers' incomes in poor communities (Card and Krueger, 1992; Case and Yogo, 1999; Arias, Yamada and Tejerina, 2001).

Hence, public investment to develop infrastructure and productive capital in poor communities can improve the returns on poor families' investments and make for more robust and more equitable growth. There also is evidence that returns improve when the beneficiary population is involved in local investment initiatives (Adato et al., 1999).

According to the evidence, crime and violence, including domestic violence, are preponderant among Latin America's poor and marginalized, though cultural and sociological factors play an important role as well (see Kelly, 2000; Londoño and Guerrero, 2000 and Buvinic, Morrison and Shifter, 1999). In addition to the many non-economic reasons for combating these scourges, preventing and curbing them also can indirectly spur growth by preventing investment-dampening political and social instability and avoiding the severe economic toll such instability takes (see Bourguignon, 1998 and 1999). To go by recent estimates, the cost of violence and crime in Latin America comes to roughly one-tenth of regional GDP (Londoño and Guerrero, 2000), taking account of material and human capital losses, new investments forfeited, and public and private outlays for medical treatment and security services. Unwanted early pregnancy has a negative impact on the socioeconomic status of

low-income single mothers, cutting short their schooling, leaving them with fewer job prospects and increasing their demand for public assistance programs (Bronars and Grogger, 1994).

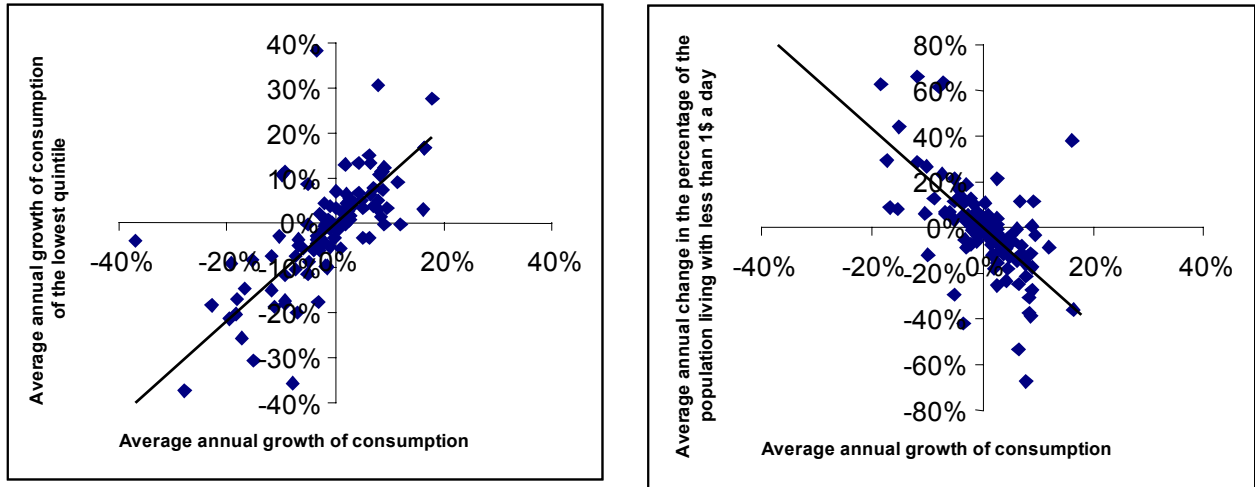
This being the case, initiatives targeted to reducing poverty and fostering social mobility do more than benefit individuals and society at large; they can enhance an entire nation's growth potential.

Final Considerations

The evidence presented in this paper suggests that pro-growth actions and those directly targeted to improving the lives of the poor are very often mutually reinforcing. The more this complementarity is tapped the more effective economic growth can be in reducing poverty. And the more countries do to

eliminate constraints that are keeping the poor from being active, constructive partners in society, the greater the potential for growth and efficiency. One pending item on the research agenda is a rigorous analysis of the order of magnitude of the benefits and costs of concrete programs to implement these actions.

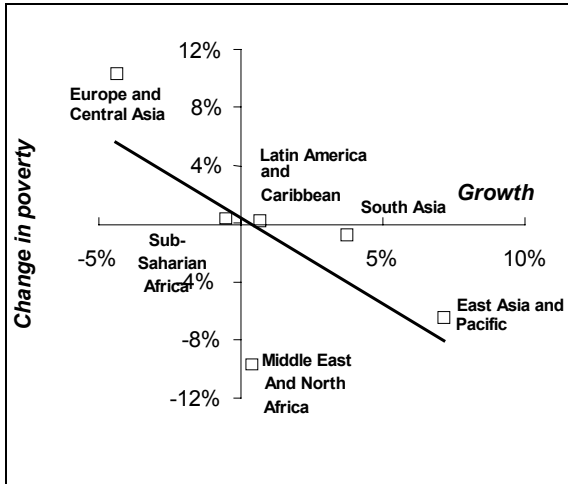
Figure 1: Growth and Poverty Reduction in the 1980s and 1990s



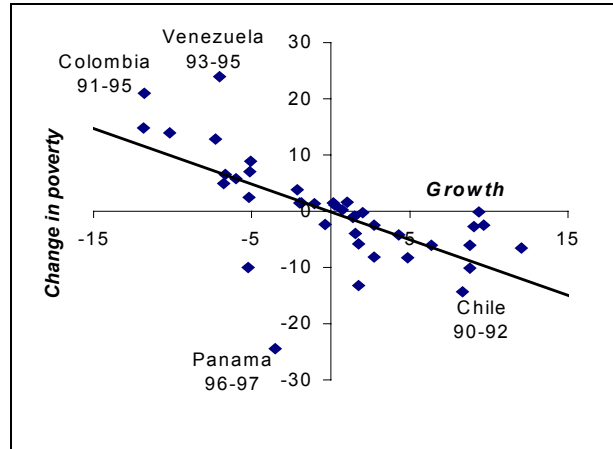
Source: *World Development Report 2000/2001: Attacking Poverty*. World Bank, Washington, D.C.
 Note: The data, drawn from Chen and Ravallion (2000), span 65 developing countries in the 1980s and 1990s.

Figure 2: Growth and Poverty Reduction Worldwide and in Latin America

Economic growth was a driving force in poverty reduction in the 1980s and 1990s
 ...across the world ...



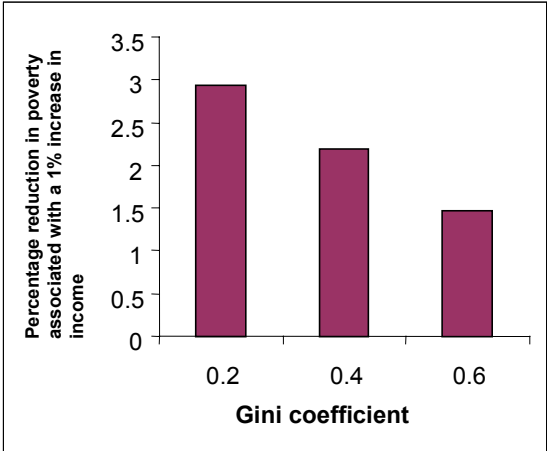
...across Latin America ...



Source: Left panel: *World Development Report 2000/2001: Attacking Poverty*. World Bank, Washington, D.C. Right panel: Based on data from Chen and Ravallion (2000).

Note: The change in poverty refers to the annual percentage change in the share of the population living on less than one dollar a day (in purchasing power parity) in the left-hand panel, and less than two dollars a day in the right-hand panel. Growth refers to average annual GDP growth in the panel to the left and average annual growth in consumption, based on household surveys, in the right-hand panel.

Figure 3: Growth, Inequality and Poverty Reduction



Source: *World Development Report 2000/2001: Attacking Poverty*. World Bank, Washington, D.C.

Figure 4: Fixed Costs and Investment Indivisibility

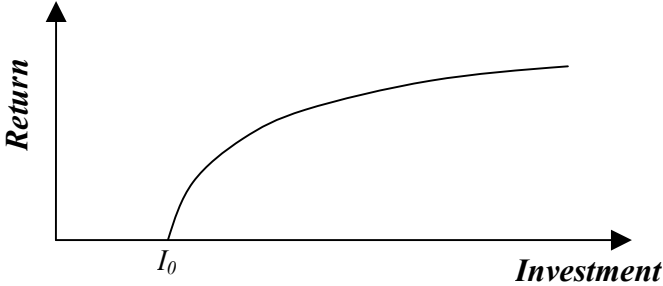


Table 1: Features of Selected Microcredit Programs

	Grameen Bank (Bangladesh)	Banco Sol (Bolivia)	Bank Rakyat Unit Desa (Indonesia)	Badan Kredit Desa (Indonesia)	FINCA (Village Banks)
Average loan size	\$134	\$909	\$1007	\$71	\$ 191
Typical repayment term	1 year	4-12 months	3-24 months	3 months	4 months
Requires group-liability loan	Yes	Yes	-	-	-
Requires collateral	-	-	Yes	-	-
Target population	Poor	Primarily non-poor	Non-poor	Poor	Poor
Financially sustainable	-	Yes	Yes	Yes	-
Nominal annual lending rate	20%	47.5 - 50.5%	32 – 43%	55%	36 – 48%

Source: Morduch (1999), p. 1574.

References

- Adato, M., T. Besley, L. Haddad and J. Hoddinott. 1999. Participation and Poverty Reduction: Issues, Theory, and New Evidence from South Africa. Washington, D.C.: IFPRI and World Bank
- Alderman, H. and J. Hoddinott. 2001. Assessing the Impact of Early Childhood Malnutrition on Academic Achievement and Adolescent Height in Rural Zimbabwe. World Bank, mimeo
- Alesina, A. and D. Rodrik. 1994. Distributive Politics and Economic Growth, *Quarterly Journal of Economics*, 109(2), 465-90.
- Arias, O., G. Yamada and L. Tejerina. 2001. Education, Family Background and Racial Earnings Inequality in Brazil. Inter-American Development Bank, mimeo
- Azariadis, C. and A. Drazen. 1990. Threshold Externalities in Economic Development, *Quarterly Journal of Economics*, 105(2), 501-526.
- Banerjee, A. and A. Newman. 1993. Occupational Choice and the Process of Development, *Journal of Political Economy*, 101(2), 274-98.
- Banerjee, A. and E. Duflo. 2000. Inequality and Growth: What Can the Data Say? NBER Working Paper 7793. National Bureau of Economic Research. Cambridge, MA.
- Banerjee, A., P. Gertler and M. Ghatak. 2001. Empowerment and Efficiency: Tenancy Reform in West Bengal, forthcoming in *Journal of Political Economy*.
- Banerjee, A., D. Mookherjee, K. Munshi and D. Ray. 2001. Inequality, Control Rights, and Rent Seeking: Sugar Cooperatives in Maharashtra, *Journal of Political Economy*, 109(1), 138-190.
- Barro, R. 2000. Inequality and Growth in a Panel of Countries, *Journal of Economic Growth*, 5(1), 5-32.
- Basu, K. 1999. Child Labor: Cause, Consequence, and Cure, with Remarks on International Labor Standards, *Journal of Economic Literature*, 37(3), 1083-1119.
- Behrman, J., S. Duryea and M. Székely. 1999. Schooling Investments and Macroeconomic Conditions: A Micro-Macro Investigation for Latin America and the Caribbean. Inter-American Development Bank, mimeo.
- Behrman, J., A. Foster, M. Rosenzweig and P. Vashishtha. 1999. Women's Schooling, Home Teaching, and Economic Growth, *Journal of Political Economy*, 107(4), 682-714.
- Benabou, R. 1994. Education, Income Distribution, and Growth: The Local Connection, NBER Working Paper 4798. National Bureau of Economic Research. Cambridge, MA.
- Benhabib, J. and M. Spiegel. 1994. The Role of Human Capital in Economic Development: Evidence from Aggregate Cross-Country Data, *Journal of Monetary Economics*, 34(2), 143-73.
- Benhabib, J. and A. Rustichini. 1996. Social Conflict and Growth, *Journal of Economic Growth*, 1(1), 125-42.
- Besley, T., S. Coate and G. Loury. 1994. Rotating Savings and Credit Associations, Credit Markets and Efficiency, *Review of Economic Studies*, 61(4), 701-19.

- Besley, T. and R. Burgess. 2000. Land Reform, Poverty Reduction, and Growth: Evidence from India, *Quarterly Journal of Economics*, 115(2), 389-430.
- Bils, Mark and P. Klenow. 2000. Does Schooling Cause Growth? *American Economic Review*, 90(5), 1160-83.
- Borjas, G. 1992. Ethnic Capital and Intergenerational Income Mobility, *Quarterly Journal of Economics*, 107(1), 123-50.
- Bouillon, C., A. Legovini and N. Lustig. 2001. Rising Inequality in Mexico: Household Characteristics and Regional Effects. Inter-American Development Bank, mimeo.
- Bourguignon, F. 2001. The Distributional Effects of Growth: Micro vs. Macro Approaches. World Bank, Washington, D.C. and Delta-Paris, mimeo.
- Bourguignon, F. 2000. The Pace of Economic Growth and Poverty Reduction. World Bank, Washington, D.C. and Delta-Paris, mimeo.
- Bourguignon, F. 1999. Crime, Violence and Inequitable Development, in J. Stiglitz and B. Pleskovic (eds.), Proceedings of the Annual World Bank Conference on Development Economics. Washington, D.C.
- Bourguignon, F. 1998. Crime as a Social Cost of Poverty and Inequality: A Review Focusing on Developing Countries. World Bank, Washington, D.C. and Delta-Paris, mimeo.
- Bronars, S. and J. Grogger. 1994. The Economic Consequences of Unwanted Motherhood: Using Twin Births as a Natural Experiment, *American Economic Review*, 84(5), 1141-56.
- Buvinic, M., A. Morrison and M. Shifter. 1999. Violence in Latin America and the Caribbean: A Framework for Action. Washington, D.C.: Inter-American Development Bank.
- Card, D. and A. Krueger. 1992. Does School Quality Matter? Returns to Education and the Characteristics of Public Schools in the United States, *Journal of Political Economy*, 100(1), 1-40.
- Card, D. 1999. The Causal Effect of Education on Earnings, *Handbook of Labor Economics*, Vol. 3, Elsevier Science.
- Carter, M. 1989. The Impact of Credit on Peasant Productivity and Differentiation in Nicaragua, *Journal of Development Economics*, 31(1), 13-36.
- Case, A. and M. Yogo. 1999. Does School Quality Matter? Returns to Education and the Characteristics of Schools in South Africa. NBER Working Paper W7399. National Bureau of Economic Research. Cambridge, MA.
- Chen, S. and M. Ravallion. 2000. How Did the World's Poorest Fare in the 1990s? World Bank Working Paper. Washington, D.C.
- Cooper, R. and A. John. 1988. Coordinating Coordination Failures in Keynesian Models, *Quarterly Journal of Economics*, 103(3), 441-63.
- Dasgupta, P. and D. Ray. 1986. Inequality as a Determinant of Malnutrition and Unemployment: Theory, *Economic Journal*, 96(384), 1011-34.
- Dasgupta, P. 1993. *An Inquiry into Well-Being and Destitution*. New York: Oxford University Press.
- Dasgupta, P. 1997. Nutritional Status, the Capacity for Work, and Poverty Traps, *Journal of Econometrics*, 77(1), 5-37.

- Deaton, A. 1989. Saving in Developing Countries: Theory and Review, Proceedings of the World Bank Annual Conference on Development Economics. Washington, D.C.
- Deaton, A. 1991. Saving and Liquidity Constraints, *Econometrica*, 59(5), 1221-48.
- Deininger, K. and L. Squire. 1998. New Ways of Looking at Old Issues: Inequality and Growth, *Journal of Development Economics*, 57, 259-287.
- De Janvry, A., G. Gordillo, J.-P. Platteau and E. Sadoulet. 2001. *Access to Land, Rural Poverty and Public Action*. New York: Oxford University Press.
- Deolalikar, A. 1988. Nutrition and Labor Productivity in Agriculture: Estimates for Rural South India, *Review of Economics and Statistics*, 70(3), 406-13.
- De Soto, H. 2000. *The Mystery of Capital. Why Capitalism Triumphs in the West and Fails Everywhere Else*. New York: Basic Books.
- Dollar, D. and A. Kraay. 2000. Growth Is Good for the Poor. World Bank Working Paper. Washington, D.C.
- Durlauf, S. 1996. A Theory of Persistent Income Inequality, *Journal of Economic Growth*, 1(1), 75-93.
- Easterly, W. and R. Levine. 1997. Africa's Growth Tragedy: Policies and Ethnic Divisions, *Quarterly Journal of Economics*, 112(4), 1203-50.
- Eswaran, M. and A. Kotwal. 1989. Credit as Insurance in Agrarian Economies, *Journal of Development Economics*, 31(1), 37-53.
- Forbes, K. 2000. A Reassessment of the Relationship between Inequality and Growth, *American Economic Review*, 90(4), 869-87.
- Foster, J. and M. Székely. 2001. Is Economic Growth Good for the Poor? Tracking Low Incomes Using General Means. Inter-American Development Bank, mimeo.
- Galor, O. and J. Zeira. 1993. Income Distribution and Macroeconomics, *Review of Economic Studies*, 60(1), 35-52.
- Heckman, J. 1995. Lessons from the Bell Curve, *Journal of Political Economy*, 103(5), 1091-1120.
- Heckman, J. 1997. The Value of Quantitative Evidence on the Effect of the Past on the Present, *American Economic Review*, 87(2), 404-08.
- Inter-American Development Bank. 2000. *Social Protection for Equity and Growth*. Washington, D.C.: Inter-American Development Bank and Johns Hopkins University Press.
- International Food Policy Research Institute. 1995. *A 2020 Vision for Food, Agriculture, and the Environment*. Washington, D.C.
- International Food Policy Research Institute. 2000. Annual Report, 1999-2000, Washington, D.C.
- Jamison, D.T. 1984. Child Malnutrition and School Performance in China, *Journal of Development Economics*, 20(2), 299-309,
- Kelly, M. 2000. Inequality and Crime, *Review of Economics and Statistics*, Vol. 82 (4), 530-539.

- Knack, S. and S. Keefer. 1997. Does Social Capital Have an Economic Payoff? A Cross-Country Investigation, *Quarterly Journal of Economics*, 112(4), 1251-88,
- Krueger, Alan and Mikael Lindahl. 2000. Education for Growth: Why and For Whom, NBER Working Paper W7591. National Bureau of Economic Research. Cambridge, MA.
- Levine, R. and D. Renelt. 1992. A Sensitivity Analysis of Cross-Country Growth Regressions, *American Economic Review*, 82, 942-963.
- Ljungqvist, L. 1993. Economic Underdevelopment: The Case of a Missing Market for Human Capital, *Journal of Development Economics*, 40(2), 219-39.
- Londoño, J. L. and R. Guerrero. 2000. Violencia en América Latina: Epidemiología y costos. In *Asalto al desarrollo: Violencia en América Latina*, J. L. Londoño, A. Gaviria and R. Guerrero, R. (eds.). Washington, D.C.: Inter-American Development Bank.
- Lustig, N. 2000. Crises and the Poor: Socially Responsible Macroeconomics. Sustainable Development Department Technical Paper Series No. POV-108. Washington, D.C.: Inter-American Development Bank.
- Morduch, J. 1999. The Microfinance Promise, *Journal of Economic Literature*, 37(4), 1569-1614.
- Persson, T. and G. Tabellini 1994. Is Inequality Harmful for Growth? *American Economic Review*, 84(3), 600-621.
- Piketty, T. 1997. The Dynamics of the Wealth Distribution and the Interest Rate with Credit Rationing, *Review of Economic Studies*, 64(2), 173-89.
- Psacharopoulos, G. 1994. Returns to Investments in Education: A Global Update, *World Development*, 22(9), 1325-43.
- Ravallion, M. 1997. Famines and Economics, *Journal of Economic Literature*, 35(3), 1205-42.
- Ravallion, M. and G. Datt. 1999. When is Growth Pro-Poor? Evidence from the Diverse Experiences of India's States. World Bank Policy Research Working Paper 2263. Washington, D.C.: World Bank.
- Ravallion, M. and S. Chen. 1997. What Can New Survey Data Tell Us about Recent Changes in Distribution and Poverty? *World Bank Economic Review*, 11(2), 357-382.
- Ravallion, M. and J. Jalan. 1996. Growth Divergence due to Spatial Externalities, *Economics Letters*, 53(2), 227-32.
- Rodrik, D. 1999. Where Did All the Growth Go? External Shocks, Social Conflict, and Growth Collapses, *Journal of Economic Growth*, 4(4), 385-412.
- Romer, P. 1989. Human Capital and Growth: Theory and Evidence. NBER Working Paper 3173. National Bureau of Economic Research. Cambridge, MA.
- Rosenzweig, M. and H. P. Binswanger. 1993. Wealth, Weather Risk and the Composition and Profitability of Agricultural Investments, *Economic Journal*, 103(416), 56-78.
- Rosenzweig, M. and K. I. Wolpin. 1993. Credit Market Constraints, Consumption Smoothing, and the Accumulation of Durable Production Assets in Low-Income Countries: Investment in Bullocks in India, *Journal of Political Economy*, 101(2), 223-44.
- Roth, H. 1983. *Indian Moneylenders at Work*. New Delhi: Manohar Publishers.

- Sala-I-Martin, X. 1997. I Just Ran Two Million Regressions, *American Economic Review*, 87(2), 178-83.
- Schultz, T. P. 1988. *Education Investments and Returns. Handbook of Development Economics* Amsterdam: Elsevier
- Stiglitz, J. and A. Weiss 1981. Credit Rationing in Markets with Incomplete Information, *American Economic Review*, 71(3), 393-410
- Strauss, J. and D. Thomas. 1995. Human Resources: Empirical Modeling of Household and Family Decisions, *Handbook of Development Economics*, Chapter 34.
- Subramanian, S. and A. Deaton. 1996. The Demand for Food and Calories, *Journal of Political Economy*, 104(1), 133-62.
- Sylwester, K. 2000. Income Inequality, Education Expenditures, and Growth, *Journal of Development Economics*, 63(2), 379-98.
- Townsend, R. 1994. Risk and Insurance in Village India, *Econometrica*, 62(3), 539-91.
- Udry, C. 1994. Risk and Insurance in a Rural Credit Market: An Empirical Investigation in Northern Nigeria, *Review of Economic Studies*, 61(3), 495-526.
- Udry, C. 1995. Risk and Savings in Northern Nigeria, *American Economic Review*, 85(5), 1287-1300.
- Wodon, Q., N. Hicks, R. Bernadette and G. Gonzalez. 2000. Are Governments Pro-poor but Short-sighted? Targeted and Social Spending for the Poor during Booms and Busts. World Bank. Washington, D.C.
- Wolfe, B. and S. Zuvekas. 1997. Non-Market Effects of Education, *International Journal of Education Research*, 27.
- World Bank. *World Development Report 2000/2001: Attacking Poverty*. Washington, D.C.: World Bank.