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# Growth Strategies and Poverty Reduction

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## I. Introduction

The 20th century has witnessed unprecedented success in improving the living standards of people in most parts of the world. As the *Human Development Report 1997* succinctly observed, “In the past 50 years poverty has fallen more than in the previous 500” (UNDP 1997). The same period has also witnessed historically unprecedented increases in the overall economic prosperity of nations, as reflected, for example, in the growth of per capita national income. There can be little doubt that these two phenomena are very closely connected. By raising the level of personal incomes of the poor and by expanding the resource base of social provisioning, sustained economic growth must have laid the foundations on which the impressive record of poverty reduction of the past half century has been achieved.

But this simple cause-and-effect relation—which may be called the *growth–poverty nexus*—does not exhaust all there is to learn about the relationship between growth and poverty reduction. If growth is to serve the cause of poverty reduction to the best of its potential, a number of related questions need to be answered.

Does a strategy that maximizes the rate of growth also represent the best strategy for reducing poverty? Or is there is a tradeoff between maximizing the rate of growth and maximizing the rate of poverty reduction? What kind of growth-promoting policies are best suited to the goal of poverty reduction—in other words, can some growth strategies be classified as more pro-poor than others? In what ways, if at all, might the pro-poor growth strategies be different for different countries depending on their particular circumstances, including their initial conditions and the stage of development? Does the ability of growth to reduce poverty depend on the initial conditions of a country, in particular, on its initial income distribution? These are some of the questions the present paper attempts to answer.

The paper is structured as follows. Section II examines the empirical evidence on the relationship between growth and poverty reduction. There has been a good deal of debate in the past on whether economic growth is an effective vehicle for reducing mass poverty at a rapid pace. Until recently, this debate generated more heat than light, at least partly because it was based on fragmentary and often inaccurate data. The database has improved quite significantly over the last decade, however, and recent studies based on improved data sets clearly demonstrate that sustained

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economic growth leads to sustained poverty reduction, thus establishing the existence of a strong and positive growth-poverty nexus.

The paper goes on to argue, however, that the mere existence of a positive growth–poverty nexus does not imply that maximizing the rate of growth is always the right strategy for maximizing the rate of poverty reduction. This point is made in section III with the help a conceptual framework that explores the relationship between growth and poverty by using a set of relationships among growth, inequality, and poverty based on statistical evidence and theoretical arguments found in the literature. This framework shows that there are plausible scenarios in which the strategy of achieving the most rapid rate of growth may conflict with the objective of poverty reduction. This is presented not as an argument for abandoning growth *per se*, but as an argument against aiming at the maximal possible rate of growth regardless of circumstances.

While recognizing the importance of growth for poverty reduction, there still remains the question of what kinds of growth strategy are best suited to poverty reduction. The remainder of the paper is concerned with this question. Three different growth strategies are evaluated in terms of their potential for poverty reduction: the strategy of outward-oriented trade and industrial development (section IV), the strategy of agriculture-led growth (section V), and redistributive reform as a growth strategy (section VI). Some concluding observations are offered in section VII.

## II. The Impact of Growth on Poverty: The Statistical Evidence

In the late 1960s and the 1970s, it was fashionable to hold a skeptical view on the impact of growth on poverty. This skepticism was based on the notion that, barring fundamental socioeconomic changes, the process of economic growth will tend to tilt income distribution in favor of the rich, leaving little benefit for the poor. This notion derived support from the well-known Kuznets hypothesis, which claimed that as per capita national income rises from low initial levels, inequality first rises and then falls, giving rise to an inverted U-shaped relationship between income and inequality (Kuznets 1955). The original Kuznets hypothesis was based on the historical experience of developed countries. But its significance for the relationship between growth and poverty inspired a series of similar statistical investigations into the conditions obtaining in developing countries in the 1970s and the 1980s.<sup>1</sup>

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1. The findings of these early studies have been competently reviewed by Adelman and Robinson (1988) and Fields (1989b), among others.

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One major problem with these early studies was that they were based on highly questionable distribution data. Most of them drew upon the compendia of data compiled by Paukert (1973) and Jain (1975), who had put together data from a large number of countries and for different points in time. It has all along been known, however, that most of these data were not comparable to each other, as some of them were derived from sample surveys while others were nonsurvey estimates, and even the surveys were of different types—some with national coverage and others with only partial coverage of the population, some dealing with distribution of total household income and others dealing with only wage income, and so on.

Over the last decade or so, much effort has been made, mostly under the auspices of the World Bank, to remedy this situation and to create a comparable set of distribution data.<sup>2</sup> Fields (1989a) made a first attempt. He retained only those distribution data that (i) were based on household surveys rather than estimates drawn from national accounts statistics or other aggregate sources, and (ii) represented the whole population, rather than a part such as rural, or urban, or taxpayers, etc. However, many of the surveys he retained referred to the distribution of only wage income, rather than a comprehensive measure of either income or expenditure. This last deficiency has been removed by two new data sets, one created by Ravallion et al. (1991), Chen et al. 1991, Ravallion 1995, and Ravallion and Chen 1997; and the other by Deininger and Squire (1996a).<sup>3</sup> Although far from ideal, these data sets have for the first time made it possible to compare poverty and inequality across time and countries with a reasonable degree of consistency.

At the same time, internationally comparable income data has also become available in the form of Summers-Heston purchasing-power-parity-adjusted national income estimates. The simultaneous availability of the refined distribution data on the one hand and comparable national income data on the other has given impetus to a new wave of cross-country investigation of the relationship between income, distribution, and poverty. A great deal of new work has been done over the last decade or

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2. Outside the World Bank, an independent attempt to construct a comparable data set was made by Ram (1988), but subsequent work has largely ignored this set.

3. The main difference between them is essentially that Ravallion and colleagues apply more stringent criteria than Deininger and Squire. For instance, they accepted only those surveys for which they had either raw or tabulated data from which they could themselves calculate poverty and inequality, whereas Deininger-Squire accepted inequality estimates from “reliable” secondary sources. Furthermore, Ravallion’s distribution data are all converted in terms of fractiles of persons whereas in the Deininger-Squire set some are fractiles of persons and others are fractiles of households. Finally, while the Deininger-Squire set includes observations from the 1950s onwards, Ravallion and his colleagues do not use any pre-1980 data on the grounds that the quality of surveys has so vastly improved in most developing countries since 1980 that the new surveys are hardly comparable with the old ones even when they are based on the same methodology. Both these sets are being periodically updated and further refined.

so. These can be classified into two groups: those that investigate the impact of growth on inequality and thus indirectly shed light on the growth-poverty nexus, and those that directly investigate the nexus itself.

### **A. On the Growth-Inequality Relationship**

The hypothesis at issue here is the rising part of the Kuznets curve. If inequality does rise with income at the early stage of development, then it is quite possible that growth will bypass the poor in developing countries. Indeed, as noted before, the skeptical view on the relationship between growth and poverty drew its sustenance mainly from the rising part of Kuznets curve. But the current wisdom regarding the Kuznets hypothesis is that it can be dismissed for all practical purposes. Three kinds of evidence have been marshaled in support of this dismissal.

The first set of evidence comes from cross-country regressions using single observations for each country at a point in time. The most recent of such regressions, which are based on the new improved distribution data sets described above, have found no evidence for the existence of rising inequality at the lower end of the income scale (e.g., Deininger and Squire 1996b, Ravallion 1995, Ravallion and Chen 1997).<sup>4</sup>

Second, time series evidence for a number of countries shows that as per capita income has risen in most countries, inequality has shown no systematic pattern of change. It has fallen in about as many cases as it has risen (Fields 1989b, Deininger and Squire 1997).

The third set of evidence comes from cross-country panel regressions involving countries that have comparable distribution data for at least two points in time. Using such data, Ravallion and Chen (1997) regressed the change in the Gini coefficient on change in per capita income (or expenditure), and found no systematic relationship between the two.<sup>5</sup> In a similar vein, several authors have re-

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4. This is in contrast with the earliest cross-country regressions which did find such evidence using data for the 1960s and early 1970s (e.g., Adelman and Morris 1973, Ahluwalia 1976, Loehr and Powelson 1981), but in agreement with most of the later studies that used data for more recent periods (e.g., Bourguignon and Morrison 1985, Papanek and Kyn 1987, Anand and Kanbur 1993). Bruno et al. (1998) speculate that earlier studies that showed the upward rising part of the Kuznets curve were subject to an omitted variable bias, namely, a country-fixed effect arising from differences in the nature of data. In the earlier decades, low-income countries in Asia used consumption surveys, while richer Latin American countries used mostly income surveys; and since consumption inequality is naturally lower than income inequality, low income got to be associated with low inequality. As Asian economies are becoming richer, this effect is now getting blurred.

5. In fact, the authors did find a significant relationship, but a negative one, for the full sample. However, further analysis showed that the negative relationship owed itself entirely to the inclusion of the transition economies of Eastern Europe and Central Asia, who are in a rather special situation. Once these countries are removed from the regression, the coefficient turns out to be insignificant.

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gressed change in per capita income of the bottom quintiles of the population on change in per capita GDP and have found a positive coefficient that is not significantly different from unity. This means that if per capita GDP goes up, then per capita income of the bottom quintiles also rises in same the proportion, indicating that inequality remains stable in the face of rising per capita GDP (Roemer and Gugerty 1997, Gallup et al. 1998).

The Kuznets curve is thus nowhere to be seen. There is, however, another version of Kuznets' hypothesis, which is also relevant in the present context. While the original hypothesis related inequality to the level of income, this version relates inequality to the rate of growth of income, i.e., inequality is supposed to go up as the rate of growth of income goes up. But even this version finds little empirical support. For instance, using new improved distribution data, Fields (1989b) has found no systematic relationship across countries between the direction of change in inequality over time and the rate of growth of income.<sup>6</sup>

Thus neither the original version nor the rate-of-growth version of the Kuznets' hypothesis finds empirical support, especially from the new improved distribution data sets. These findings undermine the skeptical view on the relationship between growth and poverty, for if growth does not tend to create a more unequal distribution of income, then in general there is no reason to suspect that it will fail to reduce poverty.

### **B. On the Growth–Poverty Relationship**

Strictly speaking, poverty may fail to decline with rising per capita income even if distribution remains unchanged by some measure of inequality, if, for example, worsening of distribution at the lower tail is offset by an improvement in the middle income range at the expense of the very rich. But this rarely happens in practice. This is confirmed by studies that have attempted to test directly the relationship between growth and poverty. For instance, using the new improved data sets for distribution and poverty across a large number of countries and over a period of time, Fields (1989b) and World Bank (1990) have found that only in exceptional cases did higher income entail a rise in poverty.<sup>7</sup>

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6. Earlier, Ahluwalia (1974) and Fields (1980) had reached the same conclusion using older and more limited data.

7. Similar findings, based on older data, were reported by Ahluwalia et al. (1979) and Fields (1980).

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The evidence further shows that the exceptional cases in which poverty did rise despite rising income tended to be associated with slow growth of income. This was demonstrated by Fields (1989b) by assembling data for all countries that had comparable distribution surveys for at least two points in time. He defined the experience of a country between two successive surveys as a “spell”, and for each spell for each country he then observed the direction of change in poverty and calculated the growth rates of per capita income. His data revealed that poverty declined in all but one spell with growth rate above 3 percent, and the cases of rising poverty were concentrated in spells with growth rates of less than 3 percent. A probit regression across the spells confirmed that higher growth rate was associated with higher probability that poverty will decline.

Recently, Roemer and Gugerty (1997) carried out a similar exercise with the Deininger-Squire data set, which is both bigger and more refined than the one utilized by Fields. As indicator of change in poverty during a spell, they measured the change in the average income of the bottom two quintiles of the population, and observed that out of 39 spells with growth rates of more than 2 percent, only six were characterized by rising poverty.<sup>8</sup>

These findings suggest that rising per capita income will generally lead to lower poverty, especially if the rate of growth is sustained at a reasonably high rate, which on current evidence would mean not less than 2-3 percent per annum.

Some recent studies have gone one step further and attempted to quantify the responsiveness of poverty to income growth by estimating the “growth elasticity” of poverty, i.e., the percentage change in poverty due to a 1 percent change in per capita income. For instance, Ravallion and Chen (1997) have found that the head-count index of poverty has a growth elasticity of -3.12, i.e., a 1 percent increase in per capita income was associated with a 3.12 percent reduction in poverty.

The same authors have also found that when alternative poverty lines were used to measure the incidence of poverty, the estimated growth elasticity was higher for lower poverty lines. The implication is that the incidence of extreme poverty was even more responsive to growth in average living standards than the incidence of moderate poverty. In other words, not only does growth help the poor, it apparently helps the poorest of the poor more than the moderately poor. Other authors

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8. These six spells were People's Republic of China (1986-92), Colombia (1970-78), Costa Rica (1971-77 and 1983-89), Dominican Republic (1984-89), and Greece (1981-88).

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such as Deininger and Squire (1996b), Roemer and Gugerty (1997), Timmer (1997), and Gallup et al. (1998) have come to same conclusion using somewhat different methodologies.<sup>9</sup>

These are quite remarkable findings. Together with the evidence presented earlier on the relationship between growth and inequality, these findings fly in the face of the skeptical opinion often voiced in the 1970s that economic growth in the developing world tends generally to bypass the poor, especially the poorest among the poor. The new evidence suggests strongly that growth does help the poor, including the poorest of the poor.

### **III. Rate of Growth, Pattern of Growth, and Pro-Poor Growth Strategies:**

#### **Some Conceptual Issues**

One obvious conclusion that follows from the preceding discussion is that it is time to ditch once for all any vestiges of antigrowth attitude that might still linger among those concerned for the poor. Growth is a powerful ally of the poor, not their enemy. There remains the question, though, of exactly what conclusions are to be drawn from this evidence as regards the choice of a growth strategy.

One facile interpretation of the evidence would be that since growth has a positive impact on poverty reduction, the strategy of maximizing the rate of growth would constitute a pro-poor growth strategy par excellence. This was indeed the underlying logic of the “growthmanship” of the 1950s and the 1960s. The explicit objective was to maximize the rate of growth, in the implicit belief that this was also the best strategy for helping the poor. The newly revived faith in the power of growth shares this objective of maximizing the rate of growth, in fact, the statistical evidence discussed above is now seen as a strong justification for pursuing this objective. We shall argue, however, that from the point of view of rapid poverty reduction, pursuit of the most rapid rate of growth may not always be the best growth strategy.

A growth strategy may be defined as a set of policies designed to promote economic growth by allocating resources, either indirectly by molding the structure of incentives, or directly by redis-

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9. One exception to this finding has been noted by Demery and Squire (1995). In an evaluation of several structural adjustment programs implemented in sub-Saharan Africa during the late 1980s and early 1990s, they have found that as economic growth revived in countries that successfully implemented these programmes, the poor have generally gained, but the poorest of the poor have sometimes become worse off. It is arguable, however, that what happens during the traumatic economic dislocations caused by economic crises and by the harsh medicine of structural adjustment designed to overcome those crises cannot perhaps be taken as representative of what happens in the normal process of economic growth.

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tributing resources between different sectors of production as well as between different owners of factors of production. Depending on the allocation of resources induced, any given growth strategy will lead to a certain rate of growth and a certain distribution of income among individuals. These effects on the rate of growth and the distribution of income—which together can be described as the “pattern of growth” induced by a growth strategy<sup>10</sup>—will determine the impact the strategy will have on the rate of poverty reduction. Different growth strategies will differ in their impact on poverty because they will induce different patterns of growth defined as above. We shall argue that the strategy of maximizing the rate of growth will not always induce the most pro-poor pattern of growth.

The argument is developed below with the help of a stylized model, but it needs to be emphasized that the model is used here for illustrative purposes only. The model captures only a few of the many causal links that may exist between growth and poverty in any specific economy, but it serves well enough to establish the general points we wish to make. The discussion proceeds in two steps. Under certain assumptions about the economy, we first establish a relationship between growth and distribution, and then use it to establish a relationship between growth and poverty.

### **A. A Stylized Model**

Consider an economy in which output depends on both physical and human capital. A homogeneous commodity is produced, which is either consumed or saved. The savings can be invested in either physical or human capital, and human capital is produced with the help of both physical and human capital.

We now make two important assumptions about the structure of the economy. First, we assume in the spirit of the two-sector model developed by Rebelo (1991) that the production process of the two forms of capital is characterized by differential factor intensities. In particular, human capital production is assumed to be more intensive in the use of human capital compared to the production of consumption-cum-investment good. Second, we assume that the poor have a lower propensity to save compared to the rich.

The first assumption establishes a link between the pattern of growth (i.e., whether human or physical capital accumulation is emphasized more) and the rate of savings. Output can be increased

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10. Note that on this definition, there is no sense in maintaining the traditional dichotomy between “the rate of growth” and the “the pattern of growth” that is often found in the literature, because the rate of growth is subsumed under the notion of pattern of growth. This point is further developed below.

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by the accumulation of either human or physical capital, but because of differential factor intensities, the route of output growth via physical capital accumulation involves greater reliance on savings than the alternative route through human capital accumulation.

The second assumption helps establish a relationship between savings and income distribution. It ensures that if the rate of savings is to be pushed very far, then it will become essential at some point to change the distribution in favor of the rich through measures such as tax/subsidy schemes, price interventions, or outright asset redistribution, etc.<sup>11</sup>

Combining the two assumptions, we can establish a relationship between growth and distribution via the mechanism of saving. If growth is pursued mainly via human capital accumulation, then the savings requirements will remain low (by the first assumption). As a result, it will be possible to accelerate the rate of growth with little or no change in income distribution (by the second assumption). Recall, however, that one needs human capital to produce human capital; so the rate of human capital accumulation will be constrained by the size of the existing stock of human capital.<sup>12</sup> Therefore, beyond a point further acceleration of growth will require a switch to the route of physical capital accumulation and hence a much greater savings effort, which at some stage will necessitate a worsening of income distribution (by the second assumption).<sup>13</sup> We thus have the following relationship between growth and inequality.

Up to a point, growth can be accelerated with little or no worsening of income distribution by following a growth strategy that relies relatively heavily on human capital accumulation, but as the growth rate is pushed further, inequality will have to rise because growth will then have to rely more heavily on physical capital accumulation.

Assuming for simplicity that income distribution does not worsen at all so long as human capital accumulation can be relied upon as the main engine of growth, we can graphically illustrate the

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11. Generalizing this idea, many development economists have argued that, barring a fundamental change in existing property relations, growth can only be accelerated in developing countries by enriching the already rich industrialists and landowners. See, for example, Griffin and Khan (1972) and Sheehan (1980).

12. The idea that the existing stock of human capital constrains the rate of human capital accumulation is central to the explanation of persistent differences in the growth of nations offered by Lucas (1988) in his pioneering model of endogenous growth. Note that this idea is also valid in an open economy context because of the political and cultural barriers that restrict the movement of people, as distinct from the movement of commodities and capital, across geographical boundaries.

13. This conclusion has also been reached by Galor and Tsiddon (1996) within the framework of a human capital model with credit constraint, but following a somewhat different line of reasoning than the one presented here.

growth-inequality relationship as a kinked line as in Figure 1.<sup>14</sup> In this diagram, rates of growth are shown on the horizontal axis and initial inequality is shown on the vertical axis. At a given level of inequality  $I_1$ , the rate of growth can be accelerated up to  $G_1$  without any change in inequality, but for growth rates higher than  $G_1$ , inequality rises monotonically (as the required savings rate rises monotonically with increasing reliance on physical capital accumulation.)

Any point on the kinked line is a feasible combination of growth and inequality. Note, however, that points above the line are also feasible. For instance, a point above the line could be reached by pursuing a growth strategy that yielded the same growth rate as given by a point vertically below, but relying more heavily on physical capital and less on human capital accumulation and therefore leading to higher inequality. The points on the kinked line thus represent the lowest levels of inequality that are feasible at given rates of growth. In this sense, the kinked line can be described as the *growth-equity frontier* of an economy with initial inequality  $I_1$ , and the growth rate  $G_1$  associated with the kink can be described as the *threshold growth rate* beyond which higher growth rates will necessarily entail higher inequality, other things remaining the same. As noted earlier, the threshold rate will depend on the size of the existing stock of human capital.

The growth-equity frontier will not be identical for all economies. It will depend, among other things, on the initial level of inequality. The argument turns on a link between inequality and human capital accumulation in the presence of credit market imperfections.<sup>15</sup>

The story goes something like this. The poor have lower levels of human capital than the rich; therefore, given the standard assumption of diminishing returns to capital, the poor would normally have a greater propensity to acquire human capital than the rich. But the poor happen to be credit-constrained while the rich are not; so unlike the rich, the poor cannot make optimal investments in health, education, etc. The actual size of the poor's suboptimal investment depends on their command over self-finance. Naturally, their command over self-finance will be higher in a society with greater initial equality of income distribution than in one with less equality, for a given level of per capita

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14. In fact, there is no *a priori* reason why the frontier cannot have a downward segment, i.e., there is no reason why inequality cannot fall when human capital accumulation is being used as the main engine of growth. Allowing for this possibility will not, however, alter the essence of our argument.

15. This link has been explored by a number of recent studies that purport to show that equality can be helpful for growth (e.g., Galor and Zeira 1993). Other mechanisms linking initial distribution with human capital formation also exist. These issues are further discussed in section VI below.

national income. Therefore, a more equal society will be able to accumulate more human capital, other things remaining the same.

Now recall that an economy's stock of human capital has an influence on its threshold growth rate, i.e., the larger the stock, the higher the threshold. It follows that a more equal economy will have a higher threshold rate of growth than a more unequal economy, other things remaining the same. The horizontal segment of the growth-equity frontier will therefore be longer for an economy with lower initial level of inequality (Figure 1).

All this can now be translated in terms of the relationship between growth and poverty reduction. What happens to poverty when growth rate picks up depends to a large extent on what happens to inequality. If inequality does not rise, as in the horizontal segment of the growth-equity frontier, faster growth will necessarily entail faster reduction of poverty. Even when inequality does rise, as in the upward-sloping segment of the growth-equity frontier, faster growth may still entail faster reduction of poverty so long as inequality rises only modestly in relation to growth. But if inequality rises sharply in relation to growth, i.e., if the rising segment of the growth-equity frontier is very steep, then beyond a certain point on the rising segment faster growth may well entail slower reduction of poverty.

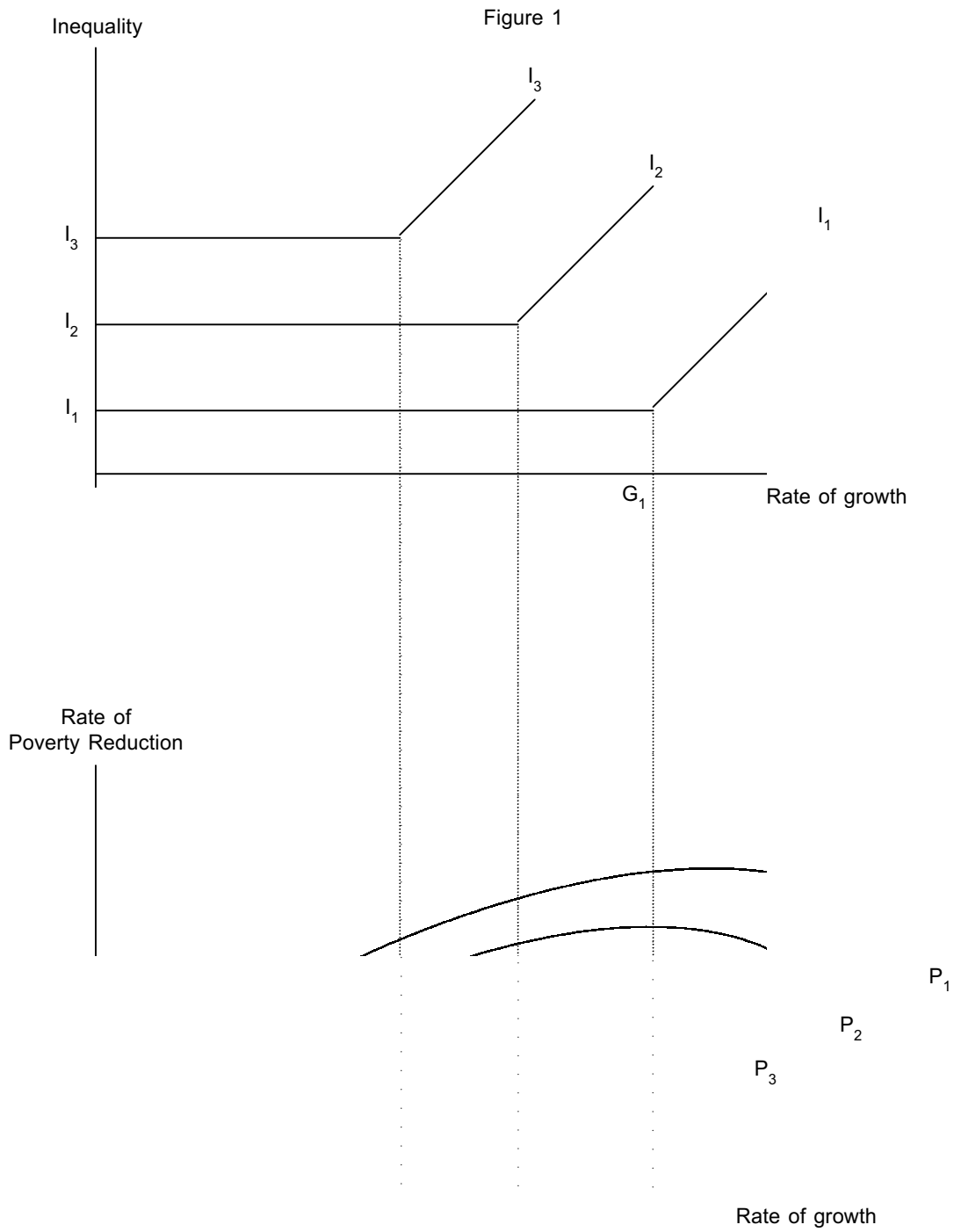
This last scenario is demonstrated in Figure 2. For each growth-equity frontier in Figure 1, there is a corresponding frontier in Figure 2 relating growth rates with rates of poverty reduction. Thus, the frontiers  $P_1$ ,  $P_2$ ,  $P_3$  in Figure 2 correspond to the frontiers  $I_1$ ,  $I_2$ ,  $I_3$  in Figure 1.<sup>16</sup> Each frontier of Figure 2 is initially upward rising, but after the growth rate crosses the threshold corresponding to the kinks in Fig 1, at some stage the frontier begins to slope downwards. The growth rate up to which the frontier keeps on rising is higher for economies with lower initial levels of inequality.

These ideas on the relationship between growth and poverty may be summarized in the form of the following three propositions:

*Proposition P.1:* So long as the rate of growth remains below the threshold corresponding to the kink of the growth-equity frontier, faster growth will reduce poverty faster.

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16. As drawn (lower frontiers in Figure 1 correspond to higher frontiers in Figure 2), these figures assume that at any given rate of growth the rate of poverty reduction is higher for economies with lower initial level of inequality. This assumption is justified by the empirical finding of Ravallion (1997) discussed in section VI below.



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*Proposition P.2:* If the rate of growth is pushed too far above the threshold, faster growth may eventually lead to slower reduction of poverty, depending on how steeply inequality happens to rise and how far the rate of growth is pushed.

*Proposition P.3:* Other things remaining the same, lower initial inequality enhances an economy's opportunity to pursue high growth rates without causing a slowdown in the rate of poverty reduction.

### **B. The Rate of Growth versus the Pattern of Growth: a False Dichotomy**

The second of the three propositions established above alerts us to the possibility that there may exist a tradeoff between the objective of maximizing the rate of growth and the objective of maximizing the rate of poverty reduction. In much of the recent literature on growth and poverty, it is recognized that the rate of growth is not the only thing that matters for poverty reduction, the pattern of growth also matters. But this recognition does not fully capture the message we are trying to convey. What is usually meant by this recognition is that a given rate of growth may be achieved in different ways, each with different implications for income distribution and poverty reduction. The policy prescription that follows from this recognition is that we should try to combine the strategy of maximizing the rate of growth with a set of policies that would induce the most pro-poor pattern of growth. There is no recognition here that sometimes the rate of growth may itself have to be compromised a little in order to have the maximum possible impact on poverty, which is precisely the point we are trying to make here.

Underlying the traditional view that the "pattern of growth also matters" is an untenable dichotomy between the rate of growth and the pattern of growth. This dichotomy must be abandoned if the possibility of a tradeoff between growth and poverty is to be contemplated. This point is best clarified by noting that in the framework of the model developed above the notion that "growth pattern also matters" can have three distinct meanings, and the traditional notion usually refers to just one of them.

The first meaning is that for any given growth rate, some patterns of growth will be more conducive to poverty reduction than others, for example, a growth pattern that relies on greater labor intensity of production would be more helpful than one that relies on greater capital intensity. This is the standard meaning. In terms of our framework, it means that the growth pattern associated with

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a point on a frontier in Figure 2 is more conducive to poverty reduction than a point directly below. The policy advice then is that one should always try to be on the frontier rather than inside it.

This is sound advice, but it does not exhaust the meaning of “growth pattern also matters”. In our framework, growth pattern matters not just because it affects poverty for given rates of growth, but also because it affects poverty through its influence on the rate of growth itself. In other words, the choice of growth pattern determines not just whether an economy will be on or inside its frontier but also where on its frontier it will be. This choice matters because some points on the frontier are better than others; in particular points closer to the peak of a frontier (see Figure 2) are better than points away from the peak, on either side. So, from the point of view of poverty reduction, the most desirable growth patterns are those that enable an economy to remain in the vicinity of the peak. This is the second sense in which the phrase “growth pattern also matters” can be understood.

The third meaning relates to the fact that the frontier itself is amenable to policy choices and to the growth patterns engendered by those choices. The scenario in which higher initial equality will extend the horizontal segment of the growth-equity frontier (Figure 1) would lengthen the rising segment of the growth-poverty-reduction frontier (Figure 2), allowing the economy to accelerate the growth rate farther without causing a decline in the rate of poverty reduction. A growth strategy that is bold enough to embrace a degree of egalitarian asset redistribution will help the poor in two ways: directly, by allowing them to earn higher income by using their newly acquired assets, and indirectly, by expanding the economy’s opportunity to pursue faster growth without sacrificing egalitarianism. It is this effect on the opportunity to pursue rapid but egalitarian growth that constitutes the third meaning of “growth pattern also matters”.

It should be clear that once all three meanings are recognized, it no longer makes sense to maintain the traditional duality that poverty depends on both the rate of growth and the pattern of growth. The pattern of growth is all there is to it, because the rate of growth itself is predicated on the pattern of growth. All one needs for analytical purposes, therefore, is a broad notion of “growth pattern” as defined above—one that determines not only whether an economy will be on or off the frontier but also where on the frontier it will be and what shape the frontier itself will take. The evaluation of alternative growth strategies in terms of their impact on poverty should then proceed by asking what kinds of growth patterns, broadly defined, are induced by each strategy. It is in this spirit that

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we attempt below an analysis of the poverty impact of several alternative growth strategies that have figured prominently in the past and current literature on development economics.

#### **IV. Trade Policy and the Growth–Poverty Nexus**

In recent discussions on what constitute pro-poor patterns of growth, outward orientation of the economy has come to occupy a pride of place. Policy advice from official development agencies as well as the dominant strand of academic literature emphasizes that the pursuit of an open trade regime that does not discriminate against tradables in general and exports in particular, and perhaps actively promotes them, is essential for achieving pro-poor growth in developing countries.

This view represents quite a reversal of the attitude toward free trade that dominated discussion on economic development in the middle of the present century, when the colonial era was coming to an end. At that time, to advocate an open trade regime for a typical developing country was seen as being tantamount to advocating the perpetuation of a colonial pattern of trade that was evidently not pro-poor. The essential characteristic of colonial trade was the existence of a small export-oriented sector that specialized in a narrow range of crops and mineral products destined for the markets of western developed economies and had very little linkage with the rest of the domestic economy, where most of the poor people eked out a subsistence living. In this dualistic setting, an open trade regime would have entailed little gain for the majority of the poor people.<sup>17</sup> This line of thinking was instrumental in bringing about the restrictive trade-regimes that fostered inward-looking import-substituting industrialization in most developing countries in the immediate postwar years.

In retrospect, it is fair to say that the fear that outward orientation would perpetuate the colonial pattern of trade in post-colonial countries was unduly exaggerated. To a large extent the colonial pattern of trade was an artificial construct fostered and propped up by colonial rulers for their own advantage; therefore, its persistence was not a necessary consequence of free trade in a post-colonial state. It is true that the particular specializations that underpinned colonial trade had an economic rationale in terms of comparative advantage based on natural resource endowments, and to that extent there was nothing artificial about it. What was artificial though was, firstly, the enclave

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17. Indeed, it has been argued by some that the pursuit of open trade regime in the context of colonial trade actually harmed the poor in many cases as the trade-induced expansion of the enclave—in the shape of an expanding plantation economy—encroached on the land of the peasant economy (e.g., Sri Lanka).

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nature of export production with little or no linkage to the overall economy and, secondly, persisting with the same specialization decade after decade with no attempt to diversify the economic structure or to climb the technological ladder through dynamic comparative advantage. The policies and institutions that helped sustain these adverse features were part and parcel of colonial rule, but post-colonial states did not have to carry them around.

Unfortunately, many of them did, especially in Sub-Saharan Africa, where most of the economies have continued to remain heavily dependent on the colonial pattern of trade. This has become a lingering source of economic distress as the terms of trade of their "colonial" exports have plummeted over the last few decades. Yet, it is arguable that such dependence was not inevitable. In recent years, Malaysia, and to a lesser extent Botswana, have shown how countries can take advantage of the colonial pattern of trade rather than be stymied by it, by adopting policies that promote linkages and diversification. Malaysia, in particular, has used its colonial legacy to great advantage by using it as a springboard for graduating into a more mature and diversified economy. The contribution made by its "colonial" exports to easing the foreign exchange constraint has helped in no small measure to transform Malaysia into the rapidly industrializing country that it is today.

Most of the developing countries, however, failed to emulate this pattern. Instead, the fear of trade led them to raise protective walls behind which inefficient import-substituting industries were nurtured indefinitely. The accumulated evidence has clearly demonstrated the folly of this response: if the colonial pattern of trade was no friend of the poor, its replacement by inward-looking import-substituting industrialization was not of much help to the poor either.<sup>18</sup>

This was so for two reasons. First, this kind of industrialization could not ensure lasting growth. After an initial burst, growth petered out as inefficiency became entrenched and the domestic market served by inefficient industries became saturated; obviously, short-lived growth of this kind could not provide a lasting basis for long-term poverty reduction. Second, such growth as occurred tended to bypass the poor, as the capital-intensive nature of import-substituting industrialization inhibited the growth of employment and wages.

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18. It should be stressed, however, that the folly did not consist in the adoption of import substitution as such because in a late industrializing country industrialization cannot but proceed by substituting imported goods with at least some early protection; the problem lay in the failure to transform the protected industries into competitive ones.

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The tide has now turned in favor of outward-looking export-oriented growth, so much so that it is now claimed by many to be an essential element, if not the most important component, of any strategy for pro-poor growth. The argument is in two parts. First, growth of this kind will be both rapid and sustainable and hence will provide a lasting basis for poverty reduction. Second, the pattern of growth will be especially helpful for the poor as it will promote labor-intensive production. In short, growth is expected to be both rapid and egalitarian. In terms of the conceptual framework developed in section III, outward orientation should enable an economy to get closer to the growth-equity frontier while accelerating the rate of growth—an outcome that can be represented by movement from a point like C to one that is closer to  $T_1$  in Figure 1.

#### **A. Trade and Distribution**

The standard argument that outward-oriented growth is especially beneficial for the poor is based on the simplest version of Heckscher-Ohlin theory of comparative advantage. In a two-commodity two-factor world, characterized by perfect competition and free factor mobility within a country, this theory predicts that more open trade will promote the production of those commodities in which a country's more abundant resources are used more intensively. For a developing country with abundant labor and little capital, this typically means that trade will promote labor-intensive production, which should benefit the poorer segment of the population who have mainly their labor power to sell.

But the picture can be quite different in a more elaborate version of the theory, which allows for more than two factors and two commodities. Consider, for example, a three-factor world, in which a country is more abundantly endowed with land (natural resources) relative to labor and capital. Trade will promote specialization in land-intensive products in that country, and if capital happens to be complementary to land (as in mineral production), then freer trade may actually make the laborers poorer even though the country may have relatively more abundant labor compared to its trading partners. The existence of nontraded goods may also lead to a similar result if the nontraded sector happens to be more labor-intensive than the export sector.

Despite these theoretical ambiguities, the empirical evidence has generally been believed to offer overwhelming support to the simplest version of Heckscher-Ohlin theory. This evidence came largely from East Asia, where during the 1960s and 1970s employment and real wages of labor increased at an unprecedented rate, and the wage differentials between unskilled and skilled labor narrowed

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down. Some doubts have recently emerged, however, in the light of recent experience of Latin America where the wage differential between unskilled and skilled labor has widened in several countries following the opening up of their trade regimes (Robbins 1996).

Of course, greater wage inequality among unskilled and skilled workers does not necessarily imply that the poor unskilled workers of Latin America have lost out in absolute terms. The effect on absolute wages would depend on the mechanism underlying the widening of wage differentials. Two hypotheses have been suggested in this context, trying to explain the contrasting experience of East Asia in the 1960s and 1970s and that of Latin America in more recent years.

One hypothesis is based on the notion of technological bias. It starts from the premise that opening up of trade enables a country to absorb better the latest technologies that are available in the world market. It then suggests that technology has become more skilled-biased in recent years, so that countries that are opening up only recently are absorbing more skill-biased technologies than did countries that opened up a couple of decades earlier (Robbins 1996). The other hypothesis is based on the notion of effective factor proportions in the world economy. It begins by noting that the effective world supply of unskilled labor has increased enormously in recent years with the entry of large poor countries like the Bangladesh, People's Republic of China, India, and Indonesia into the world market. As a result, the middle-income countries of Latin America now find that their comparative advantage lies in commodities that are intensive in medium-skilled as opposed to unskilled labor (Woods 1996).

As Woods (1996) notes, the two hypotheses have two very different implications for the absolute wages of unskilled workers. The technological bias hypothesis allows that absolute wages might rise even though relative wages will fall, while the effective factor proportions hypothesis implies that both absolute and relative real wages will fall under standard assumptions. Empirical evidence has so far been unable to discriminate between these two hypotheses. One cannot be sure that freer trade has disadvantaged the poor unskilled workers of Latin America, but one can infer from the evidence of widening wage inequality that trade has failed to exert as strong a poverty-reducing effect in Latin America as it did in East Asia.<sup>19</sup>

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19. For a fuller discussion of the impact of trade on income distribution in both developed and developing countries, see Bhagwati (1998).

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The impact on poverty would of course depend not just on wage inequality but on the overall inequality of personal income distribution. It is, therefore, of interest to know what impact opening up of trade has had on overall inequality in the developing countries. The theoretical ambiguities discussed earlier as well as the divergent experience of East Asia and Latin America in respect of wage inequality suggest that one is unlikely to find a general pattern. This is confirmed by a cross-country analysis by Edwards (1997) in which changes in inequality between the 1970s and 1980s were regressed on changes in trade orientation along with a number of control variables (e.g., change in secondary education, inflation, GNP growth, and initial trade distortion). Several alternative measures were used to quantify the degree of trade distortion and the changes therein; all measures yielded similar results. The overall finding was that "...countries that initially had a more distorted external sector experienced an increase in inequality; trade reform, however, does not appear to have significantly affected changes in income distribution" (Edwards 1997, 209). In yet another cross-country study, Gallup et al. (1998) failed to uncover even the association between initial distortion and subsequent change in distribution. Using the openness indicators devised by Sachs and Warner (1995, 23), this study concluded that: "Foreign trade openness is just as good for the incomes of the poor, on average, as for the rest of the population."

The problem of causality no doubt bedevils these studies. Yet, they permit at least the negative conclusion that existing empirical evidence does not provide any support for the view that greater trade orientation leads inevitably to greater equality within developing economies. It then follows that any impact trade orientation might have on poverty will operate principally via growth. This is corroborated by a recent cross-country study by Stryker and Pandolfi (1997). They related changes in poverty as measured by human development indicators such as schooling, malnutrition, life expectancy, etc. to a number of policy and structural variables and found that greater trade orientation had no effect on poverty independently of its effect through growth.

## **B. Trade and Growth**

This leads us to consider the impact of trade orientation on growth. The recent success of East Asian economies has lent popularity to the idea that outward orientation is the key to rapid economic growth. The fact that these economies have achieved phenomenal growth of income along with equally phenomenal growth of exports has been interpreted by many as vindication of standard

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economic theory's prediction regarding the virtues of free trade. But this inference is being increasingly questioned on both theoretical and empirical grounds.

In the first place, the standard theory of trade actually says rather little about the effect of trade on growth. The virtue of free trade that this theory claims is simply a once-for-all rise in income stemming from static efficiency gains; nothing about the rate of growth can be inferred directly from this. In fact, when the standard theory of trade is combined with the standard neoclassical theory of growth, it can be shown that freer trade will do nothing to raise the steady-state rate of growth. It will, however, raise the steady-state level of income, and will also ensure a higher transitional rate of growth during the period when the economy is approaching the steady state (Corden 1971).

From the perspective of the standard neoclassical theory, therefore, greater trade orientation can be given credit only for a temporary acceleration of growth. Of course even a temporary acceleration is no mean achievement if it is sharp enough and can last long enough. After all, the East Asian economies have all but eliminated poverty by enjoying sharply accelerated growth for just two to three decades. From the point of view poverty elimination, therefore, it hardly matters if the growth rate now begins to decelerate.

The problem, however, lies not in the temporariness but in the magnitude of acceleration that can be attributed to trade. The usual estimates of static efficiency gains that can be expected from freeing up trade are in the range of 1-2 percent of GDP, which suggests only a minuscule acceleration in the transitional rate of growth.<sup>20</sup> With a broader notion of gains from trade (higher X-efficiency, greater capacity utilization, reduced wastage from rent-seeking, etc.) that many expect from freer trade, the estimates rise to 10-15 percent of GDP, but even that translates into less than a 1 percent acceleration in growth rate over two to three decades. Nothing spectacular can thus be claimed for the growth-enhancing effect of trade from within the standard neoclassical framework.

However, the emerging literature on endogenous growth theory allows one to say more. The open economy endogenous growth models of the kind developed by Lucas (1988) and Roemer (1990) show that outward orientation can actually raise the long-run steady-state rate of growth, not just transitional growth. In these models, growth depends, *inter alia*, on the productivity-raising effect

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20. See Havrylyshyn (1990) for a review of the evidence.

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of the creation and absorption of superior technology, and trade promotes growth by facilitating this process.

One problem, however, is that the theoretical predictions of this genre of models is not always unambiguous. It is generally necessary in this class of models to replace the standard assumption of perfect competition with that of imperfect competition; when this is done, trade can be shown, under certain assumptions, to hamper technological progress and reduce the rate of growth (e.g., Helpman and Krugman 1989, Rodrik 1992).

The more serious difficulty lies on the empirical side. All attempts to demonstrate the growth-enhancing effect of trade have come up against serious methodological and factual problems. Many studies have demonstrated positive cross-country correlation between growth of exports and growth of income, but they have generally left open the question of the direction of causality. One study that did explore the issue of causality, using Granger causality tests, came up with ambiguous results; in fact, for the majority of export-oriented developing economies causality was found to run in the opposite direction—from higher growth to higher exports (Jung and Marshall 1985). Another set of studies claims to have demonstrated the growth-enhancing effect of trade by showing a positive cross-country correlation between growth and the degree of openness of the economy (e.g., Sachs and Warner 1995, Edwards 1998). But the problem of causality still remains; furthermore, the measures of openness used in these studies have been found to have serious problems, which create ambiguity in interpreting the correlation (Rodriguez and Rodrik, 1999). Some authors have argued that the best way to demonstrate the productivity-raising effect of trade is to compare export-oriented industries with other industries within the same country. But as the reviews of the relevant evidence by Havrylyshyn (1990) and Tybout (1992) show, no clear-cut picture emerges from such comparisons either.

The most telling blow to the notion that trade promotes growth by raising productivity has come from some recent reevaluations of the East Asian experience. Using different methodologies, several authors have demonstrated that factor accumulation was the driving force behind East Asian growth and that productivity growth played a minor, if any, role (Lau and Kim 1994, Krugman 1994, Young 1995). Thus the endogenous growth perspective, which emphasizes the role of productivity growth, does not do much better than the standard neoclassical perspective, which emphasizes the role of allocative efficiency, in making a credible case for the growth-enhancing effect of trade.

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It can be argued, however, that allocative efficiency and productivity are not the only channels through which trade can promote growth but may work through factor accumulation as well. Findlay (1995) has demonstrated the theoretical possibility of this channel through an ingenious marriage between Heckscher-Ohlin theory of comparative advantage and Arthur Lewis's theory of a dual economy with surplus labor. In a labor-surplus economy, trade will lead to specialization in labor-intensive production, a la Heckscher-Ohlin; the resulting absorption of surplus labor in the modern sector will then allow rapid accumulation of capital, a la Lewis.

The quantitative significance of this process remains to be assessed though. In the context of the East Asian economies, for instance, it has to be remembered that capital accumulation was but one element of factor accumulation that was the driving force behind growth. According to the careful growth accounting of Young (1995), accumulation of raw labor and human capital together played quantitatively a more significant role than capital accumulation. And it is not known how much of capital accumulation itself can be attributed to trade.

Nonetheless, when one considers all the probable effects of trade—operating via allocative efficiency, productivity, and capital accumulation—it is reasonable to assume that the combined effect will in general be beneficial for growth. What is not warranted on the basis of existing knowledge, however, is to assign a preeminent place to outward orientation as a stimulus to growth.

### **C. Trade Policy Alone is not Enough**

The new orthodoxy in trade policy expects that outward orientation will reduce poverty in two ways: by speeding up the rate of growth and by inducing an egalitarian pattern of growth. The preceding review of evidence shows, however, that while there may be cases where outward orientation induced egalitarian growth, there is no evidence that this is the general pattern in developing countries. The existing empirical studies indicate a neutral distributional impact, on the average. This suggests that any general poverty-reducing effect must operate via the effect of outward orientation on the rate of growth of per capita income. Here again, a careful review of the evidence gives no reason to suppose that greater trade orientation can be given credit for spectacular acceleration of growth anywhere in the developing world, including the much-vaunted countries of East Asia that are often held up as the paradigmatic case of trade-inspired growth. This is not to deny that trade orientation can promote growth, and since its distributional impact is at least neutral, on the average,

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it will generally help reduce poverty. But the magnitude of such impact is, by all accounts, rather modest.

Latest research shows that trade can only be a powerful force for reducing poverty, if it is accompanied by complementary policies to overcome the disadvantages of the poor. East Asia is a prime example. Outward orientation has had an especially strong beneficial effect on the poor in East Asia, only because pro-poor complementary policies such as redistributive land reforms and widespread education interacted with trade policy to create a virtuous circle of growth and poverty reduction (Birdsall and Sabot 1995). These policies enabled the poor East Asians to acquire the human capital necessary for participating effectively in outward-oriented activities. At the same time, open trade policies raised the return to human capital and provided further stimulus to human capital acquisition, which in turn enhanced the population's ability to gain from outward-oriented activities, and so went the virtuous circle of reinforcing growth and reducing mass poverty at the same time.

The role of complementary policies may be just as important in other parts of the developing world as well, as shown by a couple of recent model-based simulations for Zimbabwe and Morocco. In Zimbabwe, outward-oriented trade policy reform (dismantling of import and foreign exchange controls, and reduction of import taxes to a low uniform rate) is shown to increase aggregate disposable household income significantly. However the least income gain accrues to smallholder farm households, which account for about four fifths of the poor in Zimbabwe, so the equity impact is unfavorable. Model simulation shows that the twin objectives of overall income growth and poverty reduction would be achieved much more effectively, if trade liberalization were combined with effective land reform and restructuring of government expenditure and taxation (Bautista et al. 1998).

Similarly, in Morocco, trade liberalization, especially in the form of removal of nontariff barriers, is found to have strong positive aggregate effects on factor incomes and household welfare, but it disfavors the rural poor, especially in rainfed areas. When combined with complementary domestic policies such as a nondistorting transfer program that fully compensates the owners of rainfed resources and skill upgrading for the rural labor force, trade liberalization can lead to a win-win outcome: the welfare of all household groups increases significantly more rapidly than if status-quo policies are followed (Lofgren et al. 1999).

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## **V. Sectoral Priorities from the Point of View of Pro-Poor Growth Strategies: The Case for Agriculture-led Growth**

In the early days of development economics, lively debates used to take place as to relative roles of industry and agriculture in the development process. The majority of people in the developing world, including the majority of their poor, used to live in rural areas and derive their livelihood from agricultural pursuits, which is still substantially true today. It would seem natural to think that an agriculture-focussed growth strategy would be the best way of helping the poor people of these countries. Yet, there was an influential view at that time, propounded most powerfully by Albert Hirschman, which held that these countries should emphasize industry more than agriculture. The reason, it was argued, lay in the allegedly weak linkage effects of agriculture relative to industry. It was feared that because of its poor linkage effects an agriculture-focussed growth strategy would fail to create enough dynamism in the overall economy, which in the long term would be no help to the poor after all.

Subsequent research on linkage effects has not, however, been kind to this view. Agriculture may have weaker production linkages, which is what Hirschman had focussed on, but it has been found to have very strong consumption linkages, which serve not only to generate strong growth for the overall economy but also a growth pattern that is especially favorable to the poor. The sheer size of agriculture in less developed economies ensures that a rapidly growing agriculture will create a large enough demand for nonagricultural products to provide a strong growth stimulus to the rest of the economy. And the nature of rural demand is such that it creates a bias for labor-intensive production in the overall economy, which is helpful for the employment and income of the poor.<sup>21</sup>

Yet, a revisionist view seems to be emerging in some quarters, which tends to play down the potential of an agriculture-biased growth strategy. One manifestation of this tendency is to attribute the East Asian miracle almost exclusively to export-oriented manufacturing, neglecting the role that agriculture played even before export orientation came to be the dominant feature of these economies. Another example is some recent debates on the performance of the Indian economy. India has made good progress in reducing poverty since the early 1970s where the proportion of poor population has come down from over 50 percent to just over 30 percent in two decades and a half. In certain quarters, this achievement has been attributed to the acceleration in industrial growth India

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21. Much of the evidence as well as general discussion of the issues involved can be found in Mellor (1991), Hazell and Haggblade (1993), and Delgado et al. (1998).

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has achieved in the last two decades due at least partly to economic liberalization that started slowly in the 1980s and gained momentum in the 1990s.

Careful empirical analysis has shown, however, that the major impetus to poverty reduction came in India from agricultural growth. Several kinds of evidence point to this conclusion.

Ravallion and Datt (1996) studied the interlinkage between the sectoral composition of economic growth and the urban-rural composition of poverty, using econometric methods to disentangle the various effects within and across sectors. The main conclusion was that rural economic growth was the main contributor to national poverty reduction, through both its direct effect within the rural economy and through spillover effects on the urban economy. In particular, rural growth reduced both rural and urban poverty, while urban growth reduced only urban poverty without leaving any discernible effect on rural poverty. Thus, almost the whole of rural poverty reduction and a part of urban poverty reduction came through rural economic growth, which essentially means agricultural growth in the Indian context.

Of course, the rural-urban distinction in income growth does not quite capture the differential impact of agricultural versus industrial growth. But the above finding was confirmed when the growth of national income was broken down by output-based sectors: it was found that primary (mainly agricultural) and tertiary sector growth reduced poverty in both rural and urban areas. By contrast, secondary (mainly manufacturing) sector growth brought little gain for the poor, either urban or rural.

The overwhelming importance of agricultural growth is also revealed by an analysis of the factors that explain why certain states in India have done better than others in terms of growth and poverty reduction. Datt and Ravallion (1997) used pooled cross-section time series data (for 15 states over 21 survey rounds) to explain the differential performance of the states in terms of their agricultural growth, nonagricultural growth, and a set of initial conditions, which included physical infrastructure and human capital. Their analysis shows that agricultural growth had a significant positive effect on average consumption and negative effect on poverty in rural areas, but nonagricultural growth (rural and urban combined) had no discernible effect on rural poverty.<sup>22</sup>

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22. The deviation of nonagricultural output growth from the trend did, however, have a significant effect on rural poverty: when growth was above the trend poverty declined, and when growth was below the trend, poverty increased. The authors conjecture that the deviation from trend in the state's nonagricultural output may be picking up the effects of changes in non-farm rural demand, while the trends are dominated more by the urban economy, which as the earlier results showed had negligible spillover effect on the rural economy. This conjecture cannot be directly verified at this stage owing to the absence of data on non-farm rural output growth at the state level. But if the conjecture is valid, it would strengthen the claim for the overwhelming importance of agricultural growth in India, because changes in rural nonfarm demand would reflect to a large extent the various linkage effects of agricultural growth.

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The importance of agriculture for poverty reduction has also been demonstrated for the countries of Latin America. This set of evidence is especially significant, for two reasons. First, since many of the Latin American countries belong to the middle-income rather than low-income category, one would expect a somewhat diminished role of agriculture. Second, unlike in Asia and Africa, poverty in Latin America is not a predominantly rural phenomenon. The debt and adjustment crisis of the 1980s has created a whole new class of new urban poor, but even before the crisis almost half of the poor population lived in urban areas. For both these reasons, one might have suspected that agriculture may not play a crucial role in reducing poverty in Latin America, but some recent analyses suggest otherwise.

De Janvry and Sadoulet (1995) have recently analyzed the linkage between growth, inequality and poverty in a number of Latin American countries for the period 1970-1990. Their analysis distinguished between rural and urban poverty, and looked separately at the periods of growth and recession in order to allow for the possibility that the effect of per capita income change on poverty might differ in the two periods. A couple of their findings are especially relevant in the present context.

First, changes in agricultural value-added are significantly related to rural poverty in periods of both growth and recession, where growth reduces poverty and recession increases it. By contrast, urban poverty is sensitive only to recession but not to the growth of urban income. In other words, only agricultural growth has been effective in reducing overall poverty in Latin America, urban income growth has played no part in this process.

Second, bias toward agriculture, as indicated by a positive deviation from the trend growth of agricultural income, had an independent effect on poverty, in addition to the effect of trend growth, especially in spells of recession. This means that when the overall economy was faltering, differential agricultural growth provided a source of vertical mobility.

One should be careful, however, in drawing lessons about the relative importance of agricultural growth vis-à-vis industrial growth for poverty reduction from the experience of India and Latin America. The observed relative weakness of industrial growth in these cases may lie not so much in any intrinsic inability of the industrial sector to match agriculture's capacity to reduce poverty, but in the nature of the industrial growth that has occurred. The capital-intensive nature of the predominantly import-substituting industrialization in India and Latin America has been well documented. The recent waves of liberalizing reforms may have begun to change that picture, but the reforms have been slow,

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incomplete, and halting. Under the circumstances, such industrial growth as has occurred must have had only a small effect on employment.

An indirect evidence of this comes from the study by Ravallion and Datt (1996), which shows that even though urban growth did reduce urban poverty to some extent, the impact was small, partly because the kind of growth that occurred led to a more unequal income distribution in urban areas. This unequalizing nature of urban growth is surely a consequence of inadequate employment creation. Given this inability of India's industrialization to create enough employment, it is hardly surprising that industrial growth had no spillover effect on rural poverty.

More broad-based evidence is presented by Bautista and DeRosa (1996), who investigated the relative growth-promoting effects of agriculture and exports through a cross-country regression covering 94 developing countries. They related the growth of these two variables to the growth of GDP and the growth of industrialization. In order to allow for the possibility that the relative importance of the two sources of growth might change over time, the analysis was done separately for two subperiods, 1970-1980 and 1980-1993. For the first subperiod, agricultural growth was found to dominate export growth in terms of their effects on both GDP growth and the rate of industrialization. For instance, the elasticity of GDP growth with respect to agricultural growth was four times as high as the elasticity with respect to export growth. The situation was very different for the second subperiod, however. While agriculture still remained a significant determinant of growth, it no longer dominated export. For GDP growth, the two sources turned out to be equally powerful for the latter period, but for industrial growth, export growth was more than twice as powerful as agriculture.

The authors explain this role reversal by noting that by the end of the 1970s most of the fast-growing economies, especially those in East and Southeast Asia, had graduated into higher levels of economic development in which the relative importance of agriculture had declined.<sup>23</sup> Accordingly, they interpret the contrasting findings for the two subperiods as corroborating the hypothesis that an agriculture-led growth is a more powerful strategy of poverty reduction in comparison with export orientation at the early stage of economic development, when economies are still predominantly agricultural.

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23. An additional factor, not mentioned by the authors, was that the rate of agricultural growth had actually decelerated in the second subperiod as compared with the first; see their Table 1.

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There are a number of methodological problems with this approach though, some of which the authors themselves recognize. The main problem is that of causality – the methodology does not allow for the possibility that causality may also run from GDP growth and industrial growth to the growth of agriculture and exports. There is also the possibility of omitted variable bias since no other variable except the two sources of growth are included in the regression. In addition, there may be a problem in treating agriculture and exports as two separate variables, because a part of the exports might originate from agriculture, as it in fact did for several of the countries in East and South-east Asia at the early stage of their export drive. Moreover, the two sources of growth may also causally affect each other, which means that their true effects cannot be determined within a single equation framework.

Some authors have used the alternative technique of general equilibrium modeling in order to get a better hold over the causality issue. In a seminal exercise, Adelman (1984) used a computable general equilibrium model for the Republic of Korea to address the question of whether agriculture-led growth or industrial export-led growth was the superior strategy for the country. Model simulation was done over a 15-year period starting from 1963, the year around which the Republic of Korea did in fact embark on export-led growth. The agriculture-led strategy was defined as one in which the agricultural terms of trade remained constant, and agriculture's share in public investment was initially doubled and then gradually brought down to the base level by the end of the simulation period. The industrial export-led growth strategy was defined as one in which exporting sectors were given 60 percent subsidies, import tariffs were eliminated, and the domestic currency was depreciated by 10 percent.

Simulation results showed that the two strategies generated roughly the same rate of industrial growth. However, the agriculture-led strategy was found to generate a higher rate of overall GDP growth and a faster rate of poverty reduction. The latter result was a consequence of both faster output growth and a more equal distribution of income resulting from a higher rate of labor absorption. Export-led growth is expected to be labor-intensive for developing economy, but these results show that agriculture-led strategy can be even more labor-intensive. While the strategy of export-led growth has generally been credited with ensuring both rapid growth and greater equity in the Republic of Korea and other East Asian countries, Adelman's results show that the alternative strategy of laying greater emphasis on agriculture was in fact more effective on both counts.

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The important role that agriculture played in both stimulating growth and reducing poverty in East and Southeast Asia cannot be overemphasized (Bautista and DeRosa 1996, Bautista 1999). In contrasting the differential performance of this region as compared to the rest of the developing world, attention has usually been focussed on their difference in trade orientation, but their difference in agricultural performance is no less revealing. In the 1970s, for instance, agriculture grew at 4-5 percent in Indonesia; Malaysia; Thailand; and Taipei, China as against less than 3 percent in South Asia and less than 2 percent in sub-Saharan Africa. These differences in the rates of agricultural growth in the three regions correlate neatly with their differential performance in terms of both overall growth and poverty reduction.

Can the agriculture-led strategy avoid a growth–equity conflict? It should be noted, that although rapid agricultural growth has generally been conducive to both overall economic growth and poverty reduction, it does not follow that a strategic focus on agriculture will necessarily resolve the growth–equity conflict. Much depends on the distribution of land and infrastructure. In East and Southeast Asia, agriculture did resolve the growth–equity conflict because an egalitarian land reform and broad-based development of infrastructure allowed wide dispersion of the benefits of agricultural growth. But elsewhere, where the initial conditions were different, results could be different too.

For example, in the early days of Green Revolution in rice-based agriculture in South and Southeast Asia, it was believed by most analysts that given the unequal access to land and other resources among the rural populace, the benefits of the Revolution would be captured almost exclusively by the rich. It was feared that the poor would be left behind and may even be harmed (e.g., Bardhan 1970, Byres 1972, Griffin 1974). That was first seriously challenged by Ahluwalia (1978a, 1978b) who ran a time-series regression between poverty and agricultural value-added for the period from 1956/1957 to 1973/1974, and found agricultural value-added to have a significantly negative relationship with poverty.

Ahluwalia's pioneering analysis was further extended and refined by others. Saith (1981), for instance, pointed out a weakness of the statistical specification used by Ahluwalia. He noted that the estimates could be subject to omitted variable bias since an important variable not included in the regression was the cost of living index whose year-to-year fluctuations could have a significant effect on poverty. At about the same time, working at the International Food Policy Research Institute,

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Dharma Narain was arriving at a specification similar to Saith's, but from a different direction. He wanted to explore the hypothesis that higher food prices aggravate poverty; and in order to isolate the effect of prices, he used agricultural production and time-trend as additional variables. Thus two quite different lines of enquiry converged on a common economic relationship in which poverty was related to an agricultural output variable, a price variable and a time-trend.

Narain did not live to publish his final results, but his friends and admirers have christened this relationship as the "Dharm Narain relation" and explored its statistical and economic implications in great detail in Mellor and Desai (1985). Narain's original regression has been refined and updated to 1977/1978 by Ahluwalia (1985) and Gaiha (1989), and further refined and updated to 1983 by Bhattacharya et al. (1987) and Ghose (1989). All these extensions and refinements lent support to Ahluwalia's original contention that as far as the time series evidence shows, growth tends to reduce poverty even in the specific institutional setting of rural India, which many thought would inhibit the trickle down process.

Initial cross-section evidence, however, seemed to indicate otherwise. In a pioneering work, using the National Sample Survey (NSS) data for 1977/1978, Bardhan (1985, 90-1) concluded that "...the evidence on trickle-down effects of growth on poverty are at best rather mixed and occasionally quite negative. Agricultural Growth and productivity improvements in general tend to help raise incomes all around, but certain types of growth processes generate negative forces for the poor, particularly in an institutional setting of highly unequal distribution of assets and access to resources."

There are, however, good reasons to suspect that the specification of his regression equations was not sharp enough to permit the kind of conclusions he reached. All that his coefficients can reveal is the distributional effect of private ownership of agricultural equipment reflecting the new technology, after abstracting from their growth-mediated effects.<sup>24</sup> If these "partial" effects have been found to be harmful for the poor, that is not ground enough for concluding that the overall effect of large-farmer dominated growth is also harmful. In fact, subsequent cross-sectional analyses that avoided

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24. For example, one set of regressions showed that while growth of agricultural output tended to reduce poverty, greater use of oil engines and electric pump-sets tended to accentuate it. It also showed that regions with a higher proportion of large farmers were subject to greater poverty. Since oil engines and pump-sets tended to be privately owned by larger farmers, these findings led Bardhan to conclude that even though agricultural growth in general seems to be helpful for the poor, large-farmer-dominated growth that is dependent on private ownership of modern equipment need not be. The problem with this conclusion is that since the "growth" variable is included among the regressors, the coefficients of oil engines and pump-sets may fail to capture their growth-mediated effect on poverty.

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this specification problem confirmed the time series finding that agricultural growth did lead to the reduction of poverty in rural India (e.g., Sundrum and Tendulkar 1988, Mahendra Dev 1988). Further confirmation has come from more recent studies using pooled cross-section and time series data, covering a long time span from the 1950s to the early 1990s (e.g., Datt and Ravallion 1998).<sup>25</sup>

Yet, there are reasons to believe that unequal access to resources did play a role in attenuating the poverty reduction effect of agricultural growth in India. In their rigorous study of the effect of agricultural growth on rural poverty in India, Datt and Ravallion (1998) have found that the bulk of the gains to the poor came through rising average income rather than improved distribution. The small amount of gain that did come from improved distribution were confined in the late 1950s and early 1960s, when agricultural growth had not yet picked up and reduction of poverty was sluggish. But when growth did pick up after 1970 and poverty began to fall appreciably, it was almost entirely the rise in average income that made poverty fall; distribution remained more or less unchanged. It is noteworthy that this was also the period when India embarked upon a series of poverty alleviation programs, most of which appear to have had some beneficial effect on poverty, as indicated by micro evidence. The fact that overall rural income distribution did not improve despite these interventions perhaps indicates that the growth process in Indian agriculture was actually unequalizing. It is just that the unequalizing effect was not strong enough to completely offset the poverty-reducing effect of rising per capita income.

Elsewhere, where land distribution is much more unequal than in India, the unequalizing effect has been stronger, and the poverty reducing effect has been correspondingly weaker. For instance, the Philippines experienced almost as rapid a rate of agricultural growth as the rest of Southeast Asia in the period 1965-1980, and yet its record of poverty alleviation is distinctly poorer, largely because of its unequal land distribution (Bautista 1995). For Latin America, the study by de Janvry and Sadoulet (1995) discussed earlier has noted that even though a sectoral bias toward agriculture contributes to faster poverty reduction, it also leads to a more unequal distribution of income, as the fruits of this bias are appropriated mostly by the rich. This finding implies that without a more equal

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25. For detailed analysis of the poverty-reducing effect of agricultural growth spurred by Green Revolution in South and Southeast Asia, see, among others, Pinstrip-Anderson and Hazell (1985), Hazell and Ramaswamy (1991), David and Otsuka (1994), Hanumantha Rao (1994) and Osmani (1998).

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distribution of land, the poverty-reducing effect of an agriculture-biased growth strategy will not be as strong as it otherwise could be.<sup>26</sup>

It has been argued that quite apart from technological bias toward the rich, the phenomenon of increased commercialization of agriculture that is often induced by technological progress can also give rise to a growth–equity conflict. Several channels have been identified through which the poor can become absolutely worse-off as a result of growing commercialization.

In the first place, whatever may be the gain for the producers of cash crops, landless and near-landless people who have to depend on the market for their food may suffer from reduced availability and higher prices. The argument that higher export earnings will enable a country to maintain the level of food supply by importing food from outside may be cold comfort for them, because they may not have the purchasing power to induce the market to import basic food items instead of the relative luxuries that cash crop producers and others may desire. Thus, unless commercialization of agriculture is accompanied by public intervention to modify market supply of food—something that is not looked upon particularly favorably in the new economic environment—there is a distinct possibility that some of the land-poor households might lose out, at least in the short run.

Second, the shift from subsistence to commercial crops sometimes brings with it reduced control of women over household income. This can happen if women are relatively more involved in subsistence production and men are more involved in cash crop production as in many parts of Africa, or if women lose their title to land in the process of converting traditional food crop land into modern cash crop land. If this happens, then household food security may decline even if income rises.

Finally, households shifting toward the market in pursuit of higher income might end up exposing themselves more to sudden shocks to food security because of uncertainties in the market. It is true that even the most commercialized households tend to maintain a certain amount of subsistence production as a hedge against uncertainty. But this strategy cannot ensure that food security will not worsen. If the agents are rational, then the extent of hedging would be optimal given the information they have and the constraints they face, but optimality in this sense does not preclude the possibility that food security might worsen, it only means that things might have been worse! Rationality and free choice are therefore no guarantee against diminished food security.

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26. See also de Janvry and Sadoulet (1993).

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But the probable equity effects of commercialization are not all one-sided. There are pathways through which poor may actually gain. First, insofar as the shift toward the market occurs because production for the market entails higher rates of return on land and labor, such a shift will increase household income, which in turn will improve household food security. Second, experience shows that the benefit of improved technology, inputs, and infrastructure that are usually pressed into service for producing cash crops can rub off onto the production of food crops as well, so that total food production may not decline even if land and labor inputs shift away from it. Third, even if food production declines, increased export earnings from cash crops should enable a country or a region to import enough food to maintain the overall level of food availability. Finally, insofar as the shift is partial, i.e., subsistence production is not given up entirely, market orientation will contribute toward diversification of livelihood structure and thereby improve a household's ability to cope with lean times and occasional crises.

Taking all the effects together, the actual impact of commercialization on the poor has generally been found to be positive. A comparative study of commercialization in developing countries undertaken by the International Food Policy Research Institute has found that, with few exceptions, commercialization benefits the poor by generating employment and raising agricultural productivity. Both the households that are commercializing production and the hired laborers receive direct income benefits. Furthermore, in all but one study area, the increased household income generated by commercialization was associated with an improvement in the nutritional status of children in the household.<sup>27</sup>

This is not to deny that commercialization can have adverse consequences for the poor. But this generally happens when the farmers do not have secure property rights over their resources. Indeed, some of the worst cases of apparent failures of commercialization cited in the literature, such as eviction of small tenants by profit-hungry commercializing landlords, can be traced mainly to poor enforcement of property rights than to the process of commercialization itself (von Braun 1995).

Yet another possible source of unequalizing growth is widening regional disparity that may be induced by technological progress. Numerous studies on India have shown, for instance, that the

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27. For an extensive review of the literature on the effects of commercialization, see among others Binswanger and von Braun (1991), von Braun and Kennedy (1994), and von Braun (1995).

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states and districts that experienced more rapid infrastructural development, especially irrigation infrastructure, did better in terms of both growth and poverty reduction. Furthermore, it has been noted that the areas that were already better endowed with irrigation facilities were generally the ones that developed the facilities even more, at least in the early stage of the growth spurt. There would thus appear to exist an inherent tendency for regional disparities to widen. As a consequence, the poor farmers of the laggard regions may even become absolutely worse off, if the overall effect of technological progress is to lower the prices of crops and to raise the costs of inputs.

If impoverishing effect of this kind does exist, it would give rise to a real conflict between the objectives of growth and poverty reductions. Evidence suggests, however, that India may have been able to avoid this conflict at least since the second phase of the Green Revolution that commenced after the mid-1970s. The reason lies in the ability of the second generation Green Revolution technology to develop high yielding seeds that were suitable for rainfed areas. Since the 1980s, the adoption of high-yielding varieties has proceeded the fastest in rainfed areas, and not in the irrigated areas, and that is where productivity has also grown the fastest.<sup>28</sup> As a result, widening regional disparity is no longer a necessary consequence of rapid agricultural growth.

So long as technology favored the more developed areas, the quest for rapid growth would have required concentration of public investment in those areas too, thereby reinforcing the unequalizing tendency. But in a recent study, Fan and Hazell (1997, 1997) have argued that the marginal productivity of irrigation has fallen sufficiently in the major irrigated areas of the country to warrant a new approach. Their analysis shows that the strategy of concentrating public investment in the rainfed areas now provides the best opportunity for both accelerating agricultural growth and reducing poverty. Since this strategy would bring benefits to many of the areas that were previously left behind, it would appear that reorientation of public investment is capable of generating a growth process that can avoid the growth-equity conflict.

One should, however, note that even if this conclusion is true for India, it need not be true generally. Consider the case of the People's Republic of China, for example. It is well-known that since around the mid-1980s the People's Republic of China's economic growth has been characterized by rising inequality, with the result that the rate of poverty reduction has drastically fallen in comparison

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28. See the discussion in Kerr and Kolavalli (1999) and Evenson et al. (1999).

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with the first half of the 1980s. This rise in inequality is essentially a reflection of rising regional disparity, as regions with backward infrastructure are increasingly being left behind. Can redirection of public investment towards these lagging regions be a win-win policy as in the case of India?

The analysis of Ravallion and Jalan (1999) suggests that it might not be. The lagging areas seem to suffer from a spatial externality that makes for a lower rate of return to investment in comparison with the more advanced regions. If this is true, redirection of public investment toward these areas will involve a sacrifice of overall growth. Yet, faster pace of poverty reduction requires that public investment should be redirected toward these areas. A growth-equity conflict obviously looms large.<sup>29</sup>

In summary, while an agriculture-led growth strategy may be the best route of reducing poverty in those developing economies that still remain predominantly agricultural, it cannot be claimed that such a strategy does not involve any growth-equity conflict. The conflict will obviously exist if land distribution is highly unequal, the property rights of the poor are not clearly defined, or technology is biased toward the more advanced regions. In any case, distributional issues must be addressed if the poverty-reducing effect of growth is to be maximized by lessening, if not resolving, the growth–equity conflict.

## **VI. Redistributive Reforms, Growth, and Poverty**

Traditionally, more egalitarian distribution of income and assets has been seen to have two conflicting effects on poverty. For any given level of average income, a more egalitarian distribution would generally mean less poverty—this is the positive effect. On the other hand, greater equality was believed to be detrimental to the growth of average income for such reasons as reduced savings, reduced incentive for wealth creation, etc. Slower growth, in turn, would mean slower reduction of poverty operating through the growth-poverty nexus—this is the negative effect. The positive effect ensures less poverty today, while the negative effect implies more poverty in future compared to what might have been if distribution had been less egalitarian today. In consequence, pro-poor redistributive policies were seen to entail an intertemporal trade-off of poverty in favor of the present at the expense of future.

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29. It is possible, however, that the return to public investment in laggard areas is not fully captured in this study, since the study was conducted in the early stage of the Chinese government's recent drive toward greater rural investment.

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By and large, mainstream economic thinking has tended to frown upon this tradeoff, implicitly making the judgement that the future loss in terms of slower reduction of poverty was too high to justify striving for less poverty today through redistribution of income and assets. As a result, redistributive policies have seldom figured in the standard policy advice given to the developing countries. This is not to suggest that those who offer such advice do not value egalitarian distribution as a means of reducing poverty or even as a goal in itself, but this goal is to be pursued through means other than redistributive policies. The favored means are those that are likely to result in egalitarian growth. This is indeed the rationale for according a preeminent place to policies such as outward orientation and investment in human capital in the antipoverty strategy of the World Bank and other policy advisers. These policies are expected to promote growth and egalitarian distribution at the same time—hence their presumed superiority over redistributive policies.

This line of thinking no longer seems valid, however, in the light of recent advances in our understanding of the links between distribution and growth.<sup>30</sup> Among the many ideas that have emerged in this literature two are especially relevant in this context. Firstly, for any given rate of growth, the rate of poverty reduction may be faster in economies with higher initial level of equality. Secondly, contrary to conventional wisdom, greater equality may actually be beneficial for growth. If true, the two propositions together suggest that redistributive policies will ensure not only less poverty today but also a faster reduction of poverty in the future, because on one hand average income would grow faster, and on the other the power of growth to reduce poverty will also improve. Redistributive policies need not, therefore, involve any intertemporal tradeoff; they may in fact be regarded as growth strategies *par excellence*.

The first proposition is in the nature of an empirical regularity, first noted by Ravallion (1997). Using high-quality distributional data for 23 developing countries at two points in time, he estimated what he calls the growth-elasticity of poverty—the rate at which poverty declines in response to an increase in the rate of growth—and found this elasticity to vary considerably with the initial distribution of income. For instance, at the lowest Gini index in the sample (0.25) growth elasticity of poverty (as measured by the headcount index) was 3.33, while at the highest Gini index (0.59) it was

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30. Kanbur and Lustig (1998) provides an excellent discussion of the reasons behind the revival of interest in distribution issues.

1.82. Thus, for any given rate of growth, the power of growth to reduce poverty was nearly doubled as one moved from the least equal to the most equal country in the sample.

The virtue of equality is further strengthened by the second proposition, which states that the rate of growth may itself be higher with higher initial equality. Over the last decade or so, a growing number of theoretical studies have explored the various channels through which greater equality in the distribution of income and assets could lead to a faster rate of growth. Four main channels have been identified, namely endogenous fiscal policy, capital formation under credit constraint, endogenous schooling and fertility decisions, and sociopolitical instability.<sup>31</sup>

According to the endogenous fiscal policy theories, distribution of income determines government's choice of fiscal policy, which in turn affects the rate of growth. Consider the case where government wants to pursue a redistributive fiscal policy by imposing a tax on capital income and by redistributing the proceeds uniformly across the population. The government wants to choose as high a tax rate as possible in order to maximize the scope for redistribution, but at the same time it wants to ensure that the chosen rate is not considered too high by the majority of the people.

Such a tax rate is found by applying the "median voter theorem". Note that since redistribution will take place at the expense of the rich, the richer a person is, the lower will be his preferred rate of tax. In general, an individual's preferred tax rate will vary negatively with his income. Given this pattern of preferences, the tax rate preferred by the person located in the middle of the income distribution—the so-called median voter—will play a crucial role. The government will choose a tax rate that is marginally lower than the one preferred by the median voter, because that is the highest possible rate that will not be considered too high by the majority.<sup>32</sup> The chosen tax rate will be lower for a more equal distribution of income, because for any given level of per capita income, a more equal distribution will imply higher income for the poorer half of the population and thus a lower tax rate preferred by the median voter. The lower tax rate in turn will entail less damage to incentives and hence faster growth.<sup>33</sup>

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31. For extensive reviews of these theories, see in particular Alesina and Perotti (1994), Benabou (1997) and Perotti (1996).

32. The majority in this case will consist of the poorer half of the population plus the person whose income is marginally higher than that of the median voter.

33. Different versions of this class of models have been developed by Alesina and Rodrik (1994), Bertola (1993), Perotti (1993), and Persson and Tabellini (1994).

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The second group of theories also link equality with growth through capital accumulation, but unlike the endogenous fiscal policy theories they focus on capital accumulation by poor faced with a credit constraint. These theories have dealt with both human and physical capital (the strand dealing with human capital has already been mentioned in section III). The underlying idea is simply that credit constraint prevents the poor people from either acquiring physical capital or educating their children as much as they would have liked. A more equal distribution of income will then enable more of them to finance capital acquisition out of their own resources, and hence promote faster accumulation of capital. It is of course true that while enhancing the poor's command over self-finance, a more equal distribution will also reduce that of the rich, but this will not have any adverse effect on capital accumulation as the rich have ready access to the credit market. On the whole, then, a more equal society will be able to accumulate more capital and grow faster, other things remaining the same.<sup>34</sup>

The third group of theories draws the link between distribution and growth via people's decision to have children and to educate them. An equal distribution of income is supposed to affect the schooling and fertility decisions in a manner that would help to promote economic growth. To see how this link works, first note that schooling and fertility decisions are usually intertwined. The decision to give more education to children usually goes with the decision to have fewer of them. This is known in the literature as the "quantity versus quality" tradeoff, where people who want to improve the "quality" of children tend to reduce their quantity.

The extent of this tradeoff depends on the cost of raising children and the cost of educating them. These costs are often related to the level of household income. For a poor family, the cost of educating children can be quite high, especially in terms of opportunity cost, i.e., income foregone. Young children of poor families are known to contribute significantly to household income, especially in the rural areas of the developing world. If these children are to be sent to school, household income will go down substantially at least in the immediate future. For richer families, however, this opportunity cost is negligible relative to their total income. On the other hand, the cost of raising an extra child is pretty low for a poor family, given the bare minimum of food, clothing, and shelter with which they are accustomed to. For richer families, this cost is not so small. Besides, their opportu-

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34. The pioneering papers in this tradition are Galor and Zeira (1993) on human capital, and Aghion and Bolton (1997) and Banarjee and Newman (1991, 1993) on physical capital.

nity costs of raising children will also be high if working mothers have to give up well-paid jobs, or if they have to employ paid workers to look after the children.

These relationships suggest that as a family climbs up the income scale, the cost of raising children will go up while the cost of educating them will go down. Parents will then be more inclined to limit fertility and to educate their children, i.e., to trade off quantity for quality. It follows, then, that, for a given level of per capita income, a society with a more equal income distribution will have lower fertility and higher education than one with a less equal distribution, because a more equal society will have fewer poor families. Both these consequences—lower fertility and higher education—will in turn help a poor economy to grow faster.<sup>35</sup>

The sociopolitical instability theories essentially formalize the age-old idea that gross inequalities are likely to incite violence, rebellion, or attempts to sabotage the established order on the part of those who feel relatively deprived. The resulting breakdown in the rule of law will create uncertainty in the enforcement of property rights, which in turn will discourage investment and reduce the rate of growth. By implication, a more equal society will enjoy greater certainty of property rights and hence more robust growth.<sup>36</sup>

The proponents of these theories have also generally tried to test them by using the framework of cross-country regression. The standard procedure is to add an inequality variable on the right hand side of a typical Barro-type growth regression. The initial tests almost invariably came up with a negative sign of the inequality variable, thus lending support to the theories. But these tests were subject to a couple of special problems, in addition to the usual ones associated with cross-country regressions. Firstly, the inequality variable was measured from poor-quality distribution data, with all the problems of noncomparability and nonreliability discussed in section II. Secondly, since the test was done through a reduced form equation, it was not possible to discriminate between the alternative theories.

Perotti (1996) has tried to address both these problems. He has used carefully screened distributional data, and tried to discriminate among alternative theories by deriving testable implications that are different (but not mutually exclusive) for different theories. Using a sample comprising both

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35. The model of endogenous fertility developed by Becker et al. (1990) implies this particular linkage between distribution and growth, although the paper itself does not address the distribution issues directly.

36. Examples of this class of models are Alesina and Perotti (1996) and Gupta (1990).

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developed and developing countries, he has confirmed the earlier finding that inequality does appear to have a negative effect on growth. He also finds that among the four mechanisms discussed above, there is strong empirical support for the instability mechanism and somewhat weaker support for the endogenous schooling and fertility mechanism, but not much support for the other two.

More significant in the present context, however, is the finding that inequality had no impact on growth in the subsample of poor countries (defined as having per capita income of less than \$1,500 in 1985 PPP dollars). None of the mechanisms linking inequality to growth seemed to operate for these countries. It used to be said that equality is a luxury only the rich countries can afford, because while the quest for equality might retard growth, the rich countries can afford to make the necessary sacrifice. Perotti's findings would now seem to suggest that even if equality promotes rather than retards growth, it is again only the rich countries that can enjoy this happy congruence between equality and growth—they can eat the cake and still see it enlarge—while the poor are left out of the party.

Further reflection shows, however, that such a negative conclusion may not really be warranted. In the first place, as Perotti himself notes, the nonsignificance of the inequality variable in the subsample of poor countries may merely reflect the econometric problem of errors in variable. It is possible that despite all the attempts to screen distributional data for noncomparability and nonreliability, there still remain serious measurement errors in the data of poor countries in comparison with the rich.

The preceding argument implies that the negative effect of inequality on growth could be true as much for the poor countries as for the rich, it is only the measurement error that hides the fact for the poor countries. Even if this is dismissed as a triumph of hope over facts, and the finding is taken at its face value, it still follows that the evidence provides no support for the traditional view that the quest for equality will retard growth. This conclusion establishes at least a weak case for adopting redistributive policies as a component of antipoverty strategy.

It is arguable, however, that the case for redistributive policies is in fact much stronger, Perotti's finding notwithstanding. There are two fundamental reasons why his finding cannot be taken as decisive evidence for the inability of redistributive reforms to promote growth in poor countries, even if all the issues of data problems are left aside.

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The first reason lies in the very nature of the regression equations that form the basis of this finding. All one can infer from these equations is that *incremental* changes in inequality have no effect on growth. That leaves open the question of what happens when radical reforms are undertaken to bring about large changes in the distribution of income. There are in fact some plausible models in which small reduction in inequality will not promote growth, but large changes will. These models are characterized by a threshold effect. For example, in the models of human capital formation with credit constraint, the poor household may face such a severe constraint that a small increase in income will not be enough to overcome the minimum threshold of fixed costs that are involved in acquiring human capital.<sup>37</sup> A large-scale redistribution will solve this problem.

In fact, when one recalls that the recent theoretical interest in the growth-promoting effect of equality has its origin in the experience of East Asia, one should realize that it is large-scale redistribution that is really relevant. What happened in East Asia were not marginal changes in tax expenditure policies that can only tinker with the distribution, but radical land reforms that fundamentally altered the distribution of income. There are good reasons to suppose that if greater equality did have a growth-promoting role in East Asia, it was only because distribution was altered so radically.

It is instructive in this context to recall an argument Jeffrey Sachs once made to explain the contrasting growth performance of East Asia and Latin America. He started from the well-trodden ground that East Asia grew more rapidly because it adopted a more export-oriented policy compared to Latin America, but then made the novel point that it was actually the more egalitarian distribution of East Asia that enabled it to adopt more export-oriented policies (Sachs 1987).

The argument went as follows. The adoption of export-oriented policies requires a realistic exchange rate, which typically calls for devaluation in the developing countries. Effective devaluation, however, lowers the real wage rate while raising the relative price of tradables. This means that the owners of land producing tradable agricultural crops will gain and landless workers will lose from devaluation. In Latin America, where land is heavily concentrated among a few landlords, devaluation would therefore imply huge gains for a few at the cost of the majority of rural population. This was not politically feasible; in consequence, effective devaluation and export-oriented growth proved difficult in Latin America. By contrast, radical land reforms in East Asia had ensured that its agricul-

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37. Examples of this class of models are Perotti (1993) and Aghion and Bolton (1997).

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ture was dominated by a large number of nearly equal sized peasant farmers, with hardly any landless laborer. So, almost everybody was to gain from devaluation, and in roughly equal measure. This made devaluation and, therefore, the adoption of export-oriented policies politically feasible in East Asia.

In the context of the present discussion, the key point of this story is that devaluation was feasible because it made almost all the farmers in East Asia gainers, with hardly a loser in sight. This in turn was only possible because of a radical land reform that had created a community of equal farmers; marginal tinkering with income distribution would not have done the trick.

The second reason why Perotti's finding cannot be regarded as decisive is that it deals exclusively with the distribution of private income. This focus may be too narrow, especially in the context of human capital formation. For improving the education and health of poor children, public provision of good quality services may be more important than small increments in the private incomes of their parents. The celebrated examples of People's Republic of China, Costa Rica, the Indian state of Kerala, and Sri Lanka prove this point.<sup>38</sup> In poor areas, where private schools and health facilities have not developed because the potential clientele are too poor to make the necessary investment worthwhile, higher private incomes on the part of the poor will fail to buy any extra education or health services. Public provision will be much more effective in this situation. This line of argument suggests that redistributive policies that take the form of greater public provisioning for the poor may well be growth-promoting, even though redistribution of private incomes may not always be.

It follows from the preceding argument that if one wants to test the effect of equality on growth with the help of cross-country regression, then it may not be enough to include only a measure of private income distribution. More revealing would be the inclusion of a variable reflecting the distribution of human capital so as to capture the distribution of both private income and public provisioning. In a recent cross-country regression, Birdsall and Londono (1997) actually included such a variable, educational inequality. Their results show that when both income and educational inequality are included in the growth regression, the former turns out to be insignificant but the latter is robustly significant. This finding indicates that a broader concept of redistribution may well be growth-enhancing.

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38. For further elaboration and illustration of this argument, see Dreze and Sen (1989).

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This study also found that the effect of educational equality on growth of income is nearly twice as strong for the poor as for the population as a whole. This means that redistributive policies that preferentially augment the human capital of the poor will contribute to poverty reduction in two ways: by raising the growth of average income and by tilting the final distribution in favor of the poor. The latter point is consistent with the empirical regularity mentioned earlier that higher initial equality makes for higher growth elasticity of poverty reduction.

### VII. Conclusion

The last two decades have seen a great revival in economists' faith in the power of economic growth. In a sense this is a throwback to the decades immediately following the Second World War, when "growthmanship" reigned supreme, only to lie low in the 1970s. Despite the essential similarity, however, the revived faith in growth does not represent a straightforward imitation of the immediate postwar views. There is at least one fundamental difference. The postwar growthmanship did not much concern itself with the question of whether some particular patterns of growth were especially beneficial for the poor. Maximizing the rate of growth was the primary concern. By contrast, the new view recognizes that not just the rate but the pattern of growth is also fundamentally important.

Although the emphasis on the pattern of growth is the distinguishing feature of the new view, there is a danger that the revived enthusiasm for growth might slip into a kind of growth fundamentalism in which maximizing the rate of growth is again seen to be the best way of reducing poverty.<sup>39</sup>

This is certainly the general tone of a spate of empirical studies that have recently been carried out for assessing the impact of growth on poverty (see section II). Most of these studies arrive at the conclusion that with rare exceptions, growth helps the poor. While this conclusion has its usefulness, especially as a counter to the antigrowth sentiment that might still linger in some quarters, there is a danger of reading too much into it. The implication typically drawn from these findings is that faster growth will reduce poverty faster, which is just another way of saying that maximizing the rate of growth is equivalent to maximizing the reduction of poverty, in other words, there is apparently no tradeoff between growth and poverty reduction.

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39. A cautionary note against this tendency was earlier voiced by Lipton (1997) and Kanbur (1998).

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The propensity to ignore the possibility of such a tradeoff is one of the more worrying aspects of the current enthusiasm for growth. A good example of this propensity can be found in a recent influential World Bank document on the strategy for poverty reduction in sub-Saharan Africa (World Bank 1997). The main thrust of this report is to reassure policymakers that there exists a set of “win-win” policies that can accelerate growth and at the same time reduce poverty rapidly in sub-Saharan Africa, so that neither needs be sacrificed for the sake of the other.

Even a quick reading of the document makes it clear, however, that this message is but a triumph of hope over logic. For example, one component of the so-called “win-win” strategy is said to be “pro-poor public expenditure patterns” (World Bank 1997, 11). But it is not explained why such expenditure patterns won’t be inimical to growth, at least in the short to medium term, especially if the existing stock of skill and knowledge is concentrated disproportionately among the rich. Another example is “sectoral policies that encourage employment of the poor”; but what is the guarantee that technologies that encouraged employment a bit less and boosted productivity more would not lead to faster growth? Questions like these are not even addressed. This reluctance to face up to the possibilities of tradeoffs can be ultimately damaging, by justifying the single-minded focus on the rate of growth and detracting from the need for paying attention to the pattern of growth.

A related problem is that that even when attention is paid to the pattern of growth, there is a propensity to single out a particular pattern of growth that has come to be associated with the notions of outward orientation and trade liberalization. It stands to reason that if a labor-abundant poor country adopts an outward-oriented growth strategy, the poorer people will gain because the considerations of comparative advantage will dictate that the country specializes in labor-intensive activities. It is, therefore, reasonable to suggest that the move toward outward orientation should constitute an important element of a country’s poverty-reducing growth strategy. The problem, however, lies in trying to accord this idea the most privileged status in the concept of poverty-reducing growth, to the exclusion of all else, as several recent studies have attempted to do. A number of recent studies show that a liberal trade policy is likely to have a significant effect on poverty, only when combined with other instruments of policy, including redistribution of assets.

The present paper has been motivated by an explicit recognition of these shortcomings of the currently predominant view. Firstly, it has argued that despite the observed positive relationship

between growth and poverty reduction, it does not necessarily follow that faster growth will reduce poverty faster. Secondly, it has argued there is a case for laying much greater emphasis on agricultural growth and redistributive reforms than is currently done when we come to think about pro-poor growth strategies.

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