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Equity and Growth in Developing Countries

Old and New Perspectives on the Policy Issues

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There is no intrinsic tradeoff between long-run aggregate economic growth and overall equity. Policies aimed at helping the poor accumulate productive assets — especially policies to improve schooling, health, and nutrition — when adopted in a relatively nondistorted framework, are important instruments for achieving higher growth.

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Summary findings

The “stylized fact” that distribution must get worse with economic growth in poor countries before it can get better turns out not to be a fact at all. Growth’s effects on inequality can go either way and are contingent on several other factors.

Bruno, Ravallion, and Squire found no sign in the new cross-country data they assembled that growth has any systematic impact on inequality. Possibly measurement errors confound the true relationship, but they think it more likely that the relationship between growth and distribution is not as simple as some theories have held.

Since distribution does not worsen, growth reduces absolute poverty. Indeed, absolute poverty measures typically respond quite elastically to growth, and the benefits are certainly not confined to those near typical poverty lines.

Of course, one cannot say that growth *always* benefits the poor or that *none* of the poor lose from pro-growth policy reform. Only aggregate effects are studied. But for 17 of the 20 countries for which they assemble quite good data (from at least two surveys since the mid-1980s), the mean and the proportion of people living

below \$1 a day moved in opposite directions.

The gains to poor people from a distribution-neutral growth process will tend to be lower, the higher the extent of initial inequality. A smaller share of total income must imply a smaller absolute gain from a given increment to total income. Compensatory direct interventions can be important, provided they are integrated into a framework of fiscal and monetary discipline.

The evidence does not suggest that growth is always distribution-neutral, and it would be wrong to conclude that changes in distribution are of little consequence. The point is not that distribution is irrelevant or that it never changes, but that its changes are roughly uncorrelated with economic growth.

There is no intrinsic tradeoff between long-run aggregate efficiency and overall equity. Policies aimed at helping the poor accumulate productive assets — especially policies to improve schooling, health, and nutrition — when adopted in a relatively nondistorted framework, are important instruments for achieving higher growth.

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**EQUITY AND GROWTH IN DEVELOPING COUNTRIES:
OLD AND NEW PERSPECTIVES ON THE POLICY ISSUES***

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Introduction

Do the poor lose—either absolutely or relatively—from policies that promote aggregate economic growth? Does the answer differ between middle-income newly industrialized economies and low-income developing countries? These questions are not new and were very much at the center of the development debate some twenty years ago in the discussion of how to achieve '*redistribution with growth*' (Chenery et al., 1974). They have recently achieved renewed prominence as many countries adjust from the growth crises of the last two decades, and as others switch from centrally-planned systems to market-based ones. The claim has been made that growth-oriented reform policies of the kind usually advocated by the International Financial Institutions have worsened the lot of the poor.

The first section of this paper reviews recent evidence indicating that while income inequality differs significantly across countries, there is no discernable *systematic* impact over time of growth on inequality. Though there are exceptions, as a general rule sustainable economic growth benefits all layers of society roughly in proportion to their initial levels of living. Based on the evidence of the last three decades, there seems to be no credible support for the Kuznets Hypothesis. And there have been few cases of immiserizing growth.

In the second section we switch from long-run growth to issues of adjustment and transition. Here we argue that the key components linking growth, as a necessary condition for sustained poverty reduction, and adjustment (stabilization plus structural reform) as a necessary condition for aggregate growth recovery, come out strengthened from the recent growth crises and associated reform efforts. Obviously necessity is not sufficiency and we do not argue that growth *always* benefits the poor, or that *none* of the poor lose from any pro-growth policy reform. But we do contend that macroeconomic adjustment and structural reform are essential for sustainable growth recovery which in turn is necessary for a sustained reduction in aggregate poverty.

The first two sections of the paper support and strengthen the case for policies conducive to broad-based economic growth as part of a comprehensive poverty reduction strategy, as argued in the *World Development Report on poverty* (World Bank, 1990), and the associated Policy Paper (World Bank, 1991) on *Assistance Strategies to Reduce Poverty*. But a macro-policy environment conducive to growth is not enough. The second part of the poverty reduction strategy outlined in World Bank (1990)—namely promoting universal access to basic education, health and social

infrastructure (as well as the adoption of social safety nets, particularly in the process of recovery from a low-level growth crisis)—has in recent years received added support from new research on the *reverse linkage* from initial distribution of assets and income to subsequent growth. In the third section we review the evidence that high inequality countries, such as a number in Latin America and Africa, have lower growth and remain inegalitarian, whereas low inequality countries, such as many in East Asia, remain egalitarian and achieve rapid poverty reduction from the process of growth.

The theoretical underpinnings of this reverse linkage are only gradually being understood. Some lines of argument originate from political economy considerations: concentration of wealth, such as in land or human capital, lead to policies that protect sectarian interests and impede growth for the rest of society; inequality may also enhance political instability. Another argument has to do with credit-market imperfections, whereby investment in human and physical capital is confined to the owners of initial wealth. The policy implication is that reducing inequality, such as through securing wide access to basic education and health, not only benefits the poor immediately but will benefit all through higher growth.

The final section of the paper draws out implications for domestic policy and the IFIs.

I. How Does Growth Affect Distribution?

Recognizing that we are concerned about how the benefits of growth in aggregate incomes are distributed, the question arises as to whether there is any systematic tendency for inequality to change in the process of rising average affluence.¹ This is a long standing issue in development economics. A still widely held view is that economic growth in low-income countries will necessarily be inequitable, and this view has had considerable influence on thinking about development policy (amongst both advocates and critics of redistributive interventions). By this view "...the rich are usually the first to reap the benefits of national income growth" (Watkins,

¹ There are numerous measures of inequality that might be considered compelling, and in principle they can diverge greatly in their assessments of whether distribution has improved. In practice, however, for many of the purposes of measurement there appears to be considerable congruence amongst a number of these measures. We will rely heavily here on the most widely used summary statistic on distribution, namely the Gini index. There is also the question: inequality of what? Here we focus mainly on current income or consumption inequality; both may diverge from other measures that might be compelling such as inequality in life-time utility or inequality in "capabilities" (on the latter see Sen, 1992).

1995, p.34). Here we review the theories and evidence, and provide new results on more recent and improved data.

1.1 The Kuznets Hypothesis

An influential argument as to why we might expect inequitable growth in poor countries was sketched by Kuznets (1955). This claims that inequality will increase in the early stages of growth in a developing country and then—after some point—it will begin to fall i.e., the relationship between inequality (on the vertical axis) and average income (horizontal) will trace out an inverted U. Kuznets did not set out a formal theory of why this might happen, but sketched an argument which has subsequently been formalized. As typically presented, the "Kuznets Hypothesis" assumes that the economy comprises a low-inequality and low-mean rural sector, and a richer urban sector with higher inequality. Growth occurs by rural labor shifting to the urban sector, such that a representative slice of the rural distribution is transformed into a representative slice of the urban distribution. Thus (by assumption) distribution is unchanged within each sector. Starting with all the population in the rural sector, when the first worker moves to the urban sector inequality must increase. And when the last rural worker leaves, it must clearly fall again. Between these extremes, the relationship between inequality and average income will follow an inverted U.²

Kuznets himself was tentative about the hypothesis. Yet it has found many supporters since, to the point of being deemed "fully confirmed" by Oshima (1970), a "stylized fact" by Ahluwalia (1976), and an "economic law" by Robinson (1976). Claims of support for the hypothesis can be found in a literature spanning 25 years.³ We shall argue that the evidence from cross-country data sets has been misleading because of omitted country-level effects. New studies using panel data and within-country time-series data do not support the hypothesis.

² See Anand and Kanbur (1993) for a more precise formulation, and necessary and sufficient conditions for the inverted U for six possible inequality measures.

³ An influential early example was Adelman and Morris (1971). At the time of writing the most recent example we know of is Ram (1995).

1.2 Cross-Country Studies

There have been enumerable tests of the Kuznets Hypothesis on cross-country data sets, by regressing a measure of inequality against a suitable function of average income, and seeing if that function follows an inverted U. We shall not review the earlier literature here and only note that these tests have typically been ad hoc, with no clear link to the assumptions of the hypothesis. Instead, we focus on a nagging concern about all the tests using cross-country data—namely, that there may be important country-level determinants of inequality (including past inequality) which are correlated with current income levels, and so lead to biased estimates. Indeed, such biases could arise solely from differences in the type of data. For example, income is a more common measure for inequality in many middle-income developing countries, notably in Latin America, whereas consumption is more common elsewhere, including among the Asian economies—many of which were closer to the bottom of the income ladder 20-30 years ago when the data used to test the hypothesis were set up. And since consumption inequality is bound to be lower than income inequality due to consumption smoothing, these differences alone would tend to yield an inverted U relationship even if none existed using the same welfare measure. With strong latent country-level effects there can be no guarantee that differences at one point in time will reveal how inequality will evolve with growth.

If such country-level effects were not in fact a problem, then one would expect to see the inverted U reappearing in later country cross-sections. So what do data since the mid-1980s suggest about the Kuznets Hypothesis? Using data from 63 surveys spanning 1981-92 covering 44 countries,⁴ we tried replicating a number of the specifications for testing the hypothesis typically found in the literature.⁵ This was done for both levels and changes over time, to eliminate the country-level fixed effect. In no case was there evidence of an inverted U, and in no case could one reject the null hypothesis that the regression coefficients were jointly zero. This

⁴ This is the same data set used in Chen, Datt and Ravallion (1994), which gives details.

⁵ We tried regressing the Gini index against a quadratic function of mean consumption (both linear and logs) as well as the Anand and Kanbur (1993) specification in which the Gini is regressed on the mean and the reciprocal of the mean. We also tried the specification proposed by Ram (1995) in which a quadratic function of the mean is used but with the intercept suppressed; while this test did suggest an inverted U, it appears to have very low power to reject the Kuznets Hypothesis; indeed, on suppressing the intercept one will find an inverted U between any two independent random variables with positive means (Ravallion, 1995b).

also confirms earlier results for smaller samples reported by World Bank (1990), Fields (1989), and Ravallion (1995a).⁶

It appears then that the cross-country inverted U found in many earlier tests of the hypothesis—mainly using compilations of distributional data for the 1950s to early 1970s—may well have become blurred, if not vanished, over time. This probably reflects how various omitted variables have evolved. The new data confirm earlier concerns that these omitted variables were creating an appearance of a cross-country inverted U which had little to do with the hypothesis. We would conjecture that with the growth seen in much of Asia, and the lack of it in much of Africa, the poor and low inequality countries of 20-30 years ago have split into two, blurring the old inverted U but (quite possibly) better revealing the true relationship.

1.3 Further Intertemporal Evidence

To avoid confusing the effects of independent country-specific characteristics (initial conditions) with those of intertemporal changes of policies or economic conditions, arguments for or against the existence of a Kuznets process should ideally be based on time-series evidence. Here we report on two exercises using time-series data. The first draws on panel data covering 45 developed and developing countries for the years 1947 to 1993. It contains 486 observations on Gini indices.⁷ And the second makes use of the most extensive time-series data for any single developing country, namely India.⁸

Table 1 gives decade averages of the Gini indices for each of the 45 countries for which reasonably comparable estimates are available for four or more surveys. While there is clearly variation over time (some of which could be differences between surveys and/or measurement errors), the data suggest substantially greater variation in inequality across countries at given time than over time for a given country. Indeed 92 percent of the variance in Gini indices by country and date is accounted for by cross-country variation whereas only 7 percent is accounted for by variation over time.

⁶ The latter paper allows for fixed country-level effects. Fields and Jakobson (1992) find that the inverted U "flips" to an ordinary U when one allows for fixed effects, but our data do not confirm this finding.

⁷ See Deininger, Squire and Zhang (1995) for further details.

⁸ See Ravallion and Datt (1995).

Table 1: Gini Indices 1960s-90s (Decadal Averages)^a

Country	Observations	1960s ^b	1970s	1980s	1990s	Trend ^c
Czechoslovakia	10	22.6	20.9	21.1	.	-
Bulgaria	25	22.1	21.9	23.0	27.3	0
Hungary	7	24.4	22.2	22.8	.	0
Poland	7	.	.	25.2	.	0
Spain	6	.	.	25.7	.	0
United Kingdom	31	25.0	24.3	27.3	32.4	+
Soviet Union	4	.	.	26.0	.	+
The Netherlands	9	.	28.1	28.6	.	+
Taiwan	26	31.2	29.3	29.0	30.5	0
Finland	6	.	30.7	31.0	.	0
Canada	23	31.6	31.6	31.5	27.6	0
India	29	31.5	30.9	31.4	31.1	-
China	12	.	.	31.5	36.2	+
New Zealand	11	.	31.4	34.1	.	+
Sweden	14	.	33.1	33.7	32.3	0
Indonesia	7	.	36.6	33.4	33.1	0
Pakistan	6	.	35.5	33.4	.	0
Norway	7	36.8	35.3	31.0	.	-
Korea	10	31.5	36.1	35.6	.	0
Japan	22	35.6	34.1	34.4	35.0	-
Italy	15	.	37.4	33.4	32.2	-
Bangladesh	9	33.5	34.8	37.3	.	0
USA	45	34.6	34.5	36.9	37.9	+
Australia	10	32.0	36.7	36.2	32.5	0
Belgium	8	36.4	42.0	29.6	35.8	0
Portugal	4	.	40.6	36.8	36.2	0
Germany, F	6	.	36.0	35.8	45.4	+
Cote D'Ivoire	5	.	.	39.1	41.4	0
Singapore	6	.	39.0	40.7	.	0
Venezuela	4	.	41.5	.	.	-
Sri Lanka	7	46.0	38.8	43.7	.	0
Tunisia	5	42.3	44.0	43.0	41.0	0
Philippines	6	42.9	45.3	40.0	.	0
Hong Kong	10	47.5	41.9	41.4	45.0	0
France	7	48.0	41.6	37.8	.	-
Thailand	8	42.0	41.7	37.8	50.2	+
Bahamas	11	.	48.2	44.4	43.0	-
Trinidad and Tobago	4	.	48.5	41.7	.	0
Costa Rica	5	52.6	46.1	45.1	.	0
Malaysia	5	.	51.5	48.0	.	0
Colombia	5	.	52.1	51.2	.	0
Mexico	4	55.3	49.7	.	.	-
Honduras	5	.	.	54.0	52.7	0
Chile	13	.	.	54.8	53.1	0
Brazil	7	.	59.0	55.6	.	0

a. The table includes all countries with four or more observations, based on household survey data with national coverage. All Gini indices are measured for the same indicator (either consumption or income) over time for a given country, though it varies between countries. This accounts for some of the cross-country differences, though on adding dummy variables for the type of data in a pooled model one still finds that the bulk of the variation is between countries rather than over time.

b. Rank correlations of inequality between decades: 1960s-70s: 0.909; 1970s-80s: 0.863; 1980s-90s: 0.849; 1960s-80s: 0.850.

c. The signs indicate the significance of the Gini time trends ("0" indicates no significant trend).

The inequality rankings of countries are thus highly stable over the decades; between the 1960s and 1980s the rank correlation coefficient is 0.85 (Table 1). The last column of Table 1 also gives the direction of the trend;⁹ a "0" in the final column indicates that the coefficient on time is not significantly different from zero at the 5 percent level, while a "+" ("-") indicates that it is significantly positive (negative). Only 17 countries out of 45 have a significant trend in inequality one way or another, and in 12 of the cases its value is small (+ or - 0.4 a year).

It is plain from Table 1 that there are strong country effects in inequality which could well entail appreciable biases in standard tests of the Kuznets Hypothesis.¹⁰ For example, if (as Table 1 suggests) past inequality is an important predictor of current inequality, and (as the arguments and evidence reviewed in part III will suggest) past inequality influences current incomes, then the standard cross-country regressions used to test the inverted U will be biased.

All this lends support to the view that failure to allow for country effects could be serious. The search for a general law linking growth and inequality must confront the fact that the vast bulk of the variation one finds is amongst countries, not over time. Further statistical tests on the data set confirm this point. If one allows for country-specific effects, none of the countries in the sample appear to follow the predictions made by Kuznets hypothesis (as mentioned in Deininger and Squire, 1995).

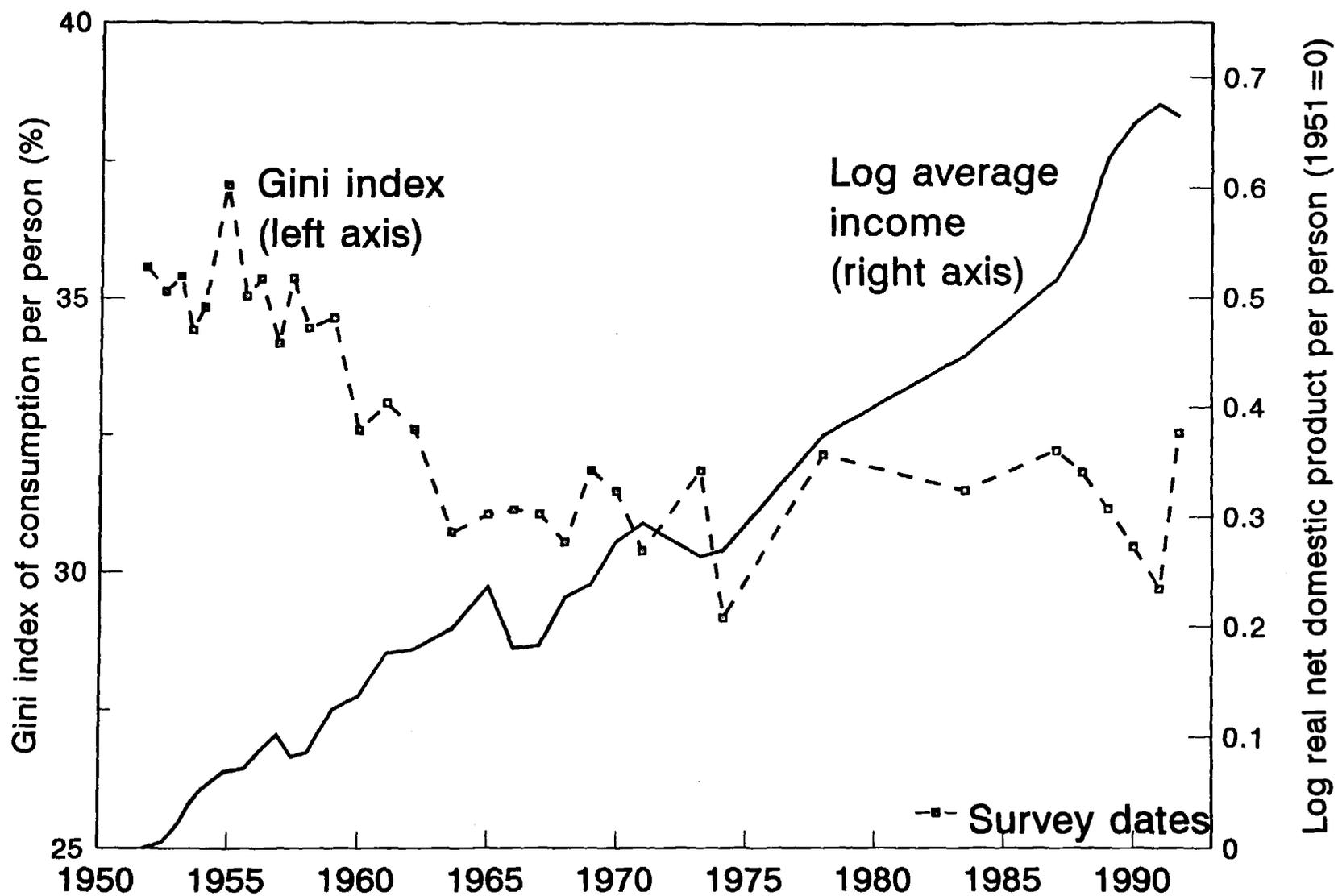
It is worth reviewing the data for India in more detail because it is one of the most extensive and reliable series, and because it bears on subsequent discussion. At the time of writing we could construct distributions of real household consumption expenditures per person in India from 33 nationally representative and reasonably comparable household surveys spanning the period 1951 to 1992.¹¹ Figure 1 plots India's Gini index and net domestic product per person from 1951 to 1991. There was a trend decrease in inequality up to about the mid-1960s, but no

⁹ These are based on ordinary least squares estimates of the coefficient on time.

¹⁰ These effects may entail either an omitted dynamic effect of past inequality or some other omitted country-level fixed effect in the error term; either will bias standard tests on cross-sections of country data.

¹¹ The surveys were done by India's National Sample Survey Organization. To form the national distributions of real consumption from the NSO tabulations of nominal expenditure distributions, an allowance was made for urban-rural cost-of-living differences, and for differences in the rate of inflation between urban and rural areas; for details see Datt (1995).

Figure 1: Inequality and average income in India



trend in either direction after that. There is no sign that growth increased inequality, including during the period of higher growth in the 1980s. On running the Anand-Kanbur test equation appropriate to the Gini index one obtains, not an inverted U, but an ordinary U, though for most of the range of the data inequality falls as average income increases. However, if one takes first differences of the above equation (so that it is the change in the Gini index between surveys which is regressed on the change in average income and the change in its inverse) then the relationship vanishes. There is no sign in these data that higher growth rates in India put any upward pressure on overall inequality.

1.4 Other Lessons from Tests of the Kuznets Hypothesis

The fact that there are such strong country-level effects in distribution does not mean that distribution is unchangeable. Some of the observed variation (across countries and over time) is clearly due to differences in the underlying data and measurement errors. But the literature on testing the Kuznets Hypothesis has also suggested a number of other factors which appear to influence inequality, and explain at least some of the omitted country-level effects identified above. Kuznets (1966) speculates on a number of those factors, including shifting inter-sectoral inequalities, a declining share of (unequally distributed) property income, and policy changes concerning social security and employment. But, on all these, the data base for testing was weak at the time Kuznets was writing. That has changed.

Higher (primary and secondary) school enrolment rates tend to be associated with lower inequality, and the significance of the income variables tends to diminish when education is taken into account. The quantitative importance of this effect suggests that it may be policy-relevant: A one-percent increase in the percentage of the labor force that has at least secondary education increases the share of income received by the bottom 40 percent or 60 percent by between 6 and 15 percent (Bourguignon and Morrisson, 1990). Papanek and Kyn (1986) find that primary and secondary school enrollment has a quantitatively important effect on the income-share received by the poorest 40 percent. By contrast, it is significant but of low quantitative importance in reducing inequality (as measured by the Gini index). Human capital in primary and secondary education had a significant effect on reducing the Gini coefficient in Korea, and increasing the

share of the bottom 20 percent, whereas university education slightly increased the Gini and did not significantly affect the bottom share of the income distribution (Jung, 1992).

Mineral and agricultural exports would be expected to increase inequality to the degree that they produce concentrated rents. This is confirmed for developing countries where a sizable (greater than 5 percent) contribution of mineral exports to GDP was associated with a 4-6 percent decreases of the bottom 40 percent income share (Bourguignon and Morrisson, 1990). High importance (greater than 5 percent of GDP) of agricultural exports leads to greater inequality only if such exports are produced on large, rather than on small and medium farms. By contrast, Papanek and Kyn (1986), using data for developing as well as developed countries, fail to find significant effects, presumably since failure to correct for protection does not allow inferences concerning the international competitiveness of such exports.

Trade theory would predict that protection lowers the reward for the most abundant (most equally distributed) factor of production and increases returns to scarce factors, which are likely to be the more inequitably distributed. Presence of protection indeed seems to worsen income distribution (Bourguignon and Morrisson, 1990).

There is evidence for India that the sectoral composition of growth has played a role in the evolution of distribution. Recall that at the aggregate level, the data revealed little affect of growth on inequality. Which of the Kuznets' assumptions do not hold for India? At any one date, both mean consumption and inequality are higher in urban areas as he postulated. But the radical departure from the assumptions of Kuznets is in the nature of India's growth process. Growth under the Kuznets Hypothesis is driven by rural to urban migration, assuming that the means and distributions remain the same within each sector. However, Ravallion and Datt (1995) find that this process has been only a minor source of growth in India, the bulk of which has come from intra-sectoral growth; between 1970 and 1990, the Kuznets growth process accounted for only 6 percent of total consumption growth, while growth within the urban and rural sectors accounted for 20 percent and 74 percent respectively.

1.5 The Impact of Growth on Absolute Poverty

The still quite widely-held pessimism about the scope for reducing poverty through economic growth has rested in large part on the belief that growth would be inequitable in poor

countries. We have surveyed past and new evidence on this view, and rejected it as a generalization; yes, there have been cases in which growth was associated with rising inequality, but there have been at least as many cases of falling inequality. There does not appear to be any systematic tendency for distribution to improve or worsen with growth. On average then absolute poverty will fall. This is confirmed by the results of a number of recent studies (Fields, 1989; World Bank, 1990, 1995; Squire, 1993; Ravallion, 1995a; Lipton and Ravallion, 1995).

How responsive is poverty to economic growth? Regressing the rates of change in the proportion of the population living on less than \$1 per day against the rate of change in the real value of the survey mean for the 20 countries spanning 1984-93 we obtained a regression coefficient of -2.12 (with a t-ratio of -4.67); thus a 10 percent increase in the mean can be expected to result in roughly a 20 percent drop in the proportion of people living on less than \$1 per day.¹² This reflects in large part the density of people living around \$1 per day. But if we also consider "higher-order" measures of poverty the effect is even stronger; for the squared poverty gap index proposed by Foster et al., (1984) the corresponding elasticity is even higher at -3.46 (t=-2.98).¹³ This indicates that the gains are not confined to those near the poverty line. These results confirm those of Ravallion (1995a) on a smaller data set.

Somewhat smaller elasticities, but broadly similar results, are obtained if we look at the evolution of poverty over 40 years in India. Over 33 household surveys, the elasticity of the proportion of the population below India's official poverty line and mean consumption is -1.33 (t=15.19). For the squared poverty gap, the elasticity is -2.26 (t=10.22).¹⁴

But growth is only one of the factors that has influenced progress in reducing poverty, albeit an important one. The above regressions for rates of poverty reduction still leave a sizable

¹² It might be argued that this correlation is partly spurious, since both the survey mean and the poverty index were estimated from the same data. If instead we use an Instrumental Variables Estimator, using the growth rate in GDP per capita between the survey dates as the instrument then we get a very similar result, namely an elasticity of -2.15 (t-ratio=-3.24). Since the national accounts and census are largely independent of the household surveys our estimate of the elasticity appears to be robust.

¹³ The corresponding Instrumental Variables Estimate is -4.11 (t=-2.36).

¹⁴ Using the rate of growth in consumption per person from the national accounts as an instrument, the Instrumental variables Estimates are -1.47 (t=6.51) for the head-count index and -2.51 (t=4.50) for the squared poverty gap.

share of the variance in country performance unaccounted for by growth. Some of this is measurement error. But, measured changes in inequality do have a strong independent explanatory power; indeed, rates of poverty reduction respond even more elastically to rates of change in the Gini index than they do to the mean. Regressing the change in the log of the proportion of the population living on less than \$1 per day on the change in the log of the survey mean and the change in the log of the Gini index across 20 countries with two reasonably comparable observations in the period 1984-92 one obtains an elasticity to the mean of -2.28 ($t=-6.07$) while the elasticity to the Gini is 3.86 ($t=3.20$).¹⁵ So even seemingly modest changes in overall inequality can entail sizable changes in the incidence of poverty. When combined with the tests of "augmented" Kuznets Hypotheses discussed above, we can postulate a number of other factors that matter through their influence on inequality, including education, the trade regime, and the sectoral composition of growth. Later we will see whether some or all of these factors might also matter to the poor via their impact on growth.

II. Do Pro-growth Reforms Have Adverse Distributional Effects?

So far we have argued that the rate of overall economic growth has no systematic impact on inequality. Yet, it has been argued that some of the policy changes advocated to promote growth increase inequality. For example, real devaluations can promote growth, but they also impact on inequality, though the direction of that effect is not obvious on *a priori* grounds. Here we look more closely at the role played by economy-wide policy changes. In particular, we ask: Do the economy-wide factors (including macroeconomic policy changes) which are likely to increase the overall rate of economic growth also have distributional implications?

2.1 Adjustment and Transition

For much of the developing world, the 1980s was a period of rapidly rising servicing costs on foreign debt, external terms-of-trade shocks, and fiscal and external imbalances entailing an unsustainable excess of aggregate demand over supply. Adjustment programs were introduced to help restore macroeconomic balance, by combining fiscal contraction—cutting government

¹⁵ The elasticity to changes in the Gini index is even higher if one uses a measure of poverty which better reflects distribution amongst the poor; using the "squared poverty gap" index, the elasticity to the Gini rises to 8.07 ($t=2.49$), while the elasticity to the mean is -3.79 ($t=-3.61$).

spending and/or raising taxes—with supply-side measures aimed at reducing inefficiency, such as by cutting trade distortions or wasteful parastatals. Unless there is an exceptionally rapid supply-side response, somebody's consumption must fall. The distribution of the burden of adjustment has been one of the most debated issues in development studies over the last decade. The issue has been of even greater significance in the centrally planned economies that are now privatizing and placing much greater reliance on market solutions. What can we say about the impact of adjustment and transition on the poor?

Many countries were not well equipped with relevant household level data for monitoring welfare impacts of policy reform at the time that adjustment began in the early 1980s. This has improved since. Yet even with good data, it can be difficult to isolate the role played by adjustment. Poverty may have risen during an adjustment period; but it may have risen even further without adjustment. Much of the criticism of adjustment policies may have to do with the observation of real hardships that are temporarily incurred at the stabilization stage, yet would in all probability be much greater were the crisis allowed to deepen further.

One of the few clear patterns to emerge from the new household-level evidence on the evolution of poverty indicators during adjustment is that the poverty measures tend to move with the mean consumption or income of households, increasing in recession and falling in recovery (Lipton and Ravallion, 1995, section 5.3).

What happens to the rate of growth in the adjustment to a deep crisis is therefore of crucial importance. In this respect, an important link to likely outcomes for the poor can be found in recent findings of relatively speedy growth recovery (in GDP though not in investment) after deep inflation (and growth) crisis (Bruno and Easterly, 1995). The median per capita growth rate in a group of 13 successful stabilizers from more than 40 percent inflation shifted from -4 percent in the years up to and including the first year after stabilization to a positive 1.5 percent in the second year and close to 4 percent in the third and beyond. Even when aggregate growth remains temporarily negative as inflation already falls, it is not at all clear which way the distributional

outcome goes, as income groups whose *nominal* income is not tied to inflation, or whose income taxes are withheld at the source, will gain in relative terms as inflation falls drastically.¹⁶

The income distributional impacts of adjustment depend heavily on the economy's initial conditions, including its openness, and the extent of flexibility in its output and factor markets, thus pointing to the importance of market reforms as an important conditioning environment. Actual experiences in distributional shifts during adjustment have been diverse. For example, in the Philippines adverse distributional effects resulted in higher poverty despite (modest) growth in the late 1980s (Balisacan, 1993). A small improvement in distribution helped the poor during adjustment in Indonesia during the mid-1980s (Ravallion and Huppi, 1991). Dorosh and Sahn (1993) argue that the distributional effects of real devaluations will tend to be pro-poor in a number of African countries, since the rural poor tend to be net producers of tradable goods.¹⁷ The diversity of initial conditions warns against generalizations on the distributional impacts of adjustment.

A common presumption is that countries under shock face a dynamic trade-off; living standards may fall in the short term during adjustment (relative to non-adjustment), but they will rise in the longer term. However, this trade-off could well be overstated. For example, Peru initially avoided adjustment, and poverty rose sharply in 1985-90 (Glewwe and Hall, 1994). Yet the subsequent period of more orthodox reforms quickly saw positive growth and falling poverty measures in 1991-94 (Favaro and MacIsaac, 1995).

2.2 Evidence from Three Regions

In this subsection, we review the evidence now available for Sub-Saharan Africa and Latin America, the two regions most closely associated with adjustment, and then turn to the evidence for the transitional economies of Eastern Europe and the Former Soviet Union.

¹⁶ This, for example, was the case for wage earners as against profit earners in the Israeli stabilization of 1985. Measurement is complicated by the fact that inflation during the household survey period will generally put an upward bias on inequality measures defined on nominal incomes (Kakwani, 1987); conversely, stabilization will impart a downward bias.

¹⁷ Lipton and Ravallion (1995) review other recent arguments and evidence on the impacts of adjustment on the poor.

New encouraging results have been recorded for some countries in Africa. Demery and Squire (1995) use household survey data at two points of time in the mid-eighties to early nineties to assess the change in poverty in the six African countries for which such data are available. They find that the five countries experiencing improvement in an index measuring performance in fiscal, exchange rate, and monetary policies also saw poverty decline, whereas the one country in the sample that witnessed a deteriorating policy performance also suffered increased poverty (Table 2).

Table 2: Macroeconomic Policy and Poverty in Africa

Country	Change in Percent Poor (percentage points per annum)	Change in Macro Policy (weighted score of macro-policy variables)
Cote d'Ivoire	+5.30	-1.65
Kenya	-0.28	+0.45
Nigeria	-1.44	+1.79
Tanzania	-1.83	+2.76
Ghana	-1.95	+1.35
Ethiopia	-3.60	+0.55

Source: Demery and Squire (1995).

These results cannot be extrapolated to the rest of the continent; policy implementation varied widely and on balance poverty has almost certainly increased.¹⁸ Nor can it be concluded that all the poor benefitted in the countries that saw declining poverty on average; the surveys reveal that some among the poor suffered greater deprivation. And it cannot be claimed that causality from macroeconomic policy to poverty has been established. Nevertheless, the data do confirm that improvements in macroeconomic policy are consistent with declines in poverty *even in the short run*. This is in turn consistent with evidence on growth; poverty fell where growth was positive and increased where growth was negative. Indeed, Demery and Squire show that the change in poverty was primarily determined by the change in mean income with changes in

¹⁸ See Chen et al., (1994), who also show that countries without adequate poverty data tend also to have worse macro performance, so compilations of available poverty data may well under-state the problem.

inequality playing a secondary role and, at least in this sample, working in the opposite direction to growth as far as the poor are concerned.

In the Latin American context Morley (1994) has likewise recorded a close relationship between growth and outcomes for the poor in the adjustment process. Reviewing periods of recession (falling per capita income for at least two years) and periods of recovery, he finds that poverty increased in 55 of the 58 cases of recession, and in 22 out of 32 recoveries poverty fell. Contrary to the results from the sample of six African countries, Morley finds that recessions were accompanied by rising inequality (the poor suffered doubly) while recoveries were associated with falling inequality (the poor benefited doubly). But, as in the African sample, the changes in poverty could be attributed mainly to changes in mean income.

Evidence is also now appearing for the transitional economies of Eastern Europe and the Former Soviet Union which again points to the importance of changes in aggregate GDP but also to a systematic trend towards greater inequality. As might be expected the large drops in GDP in these countries have been reflected in substantially higher levels of poverty. What is more interesting is the tendency towards greater inequality. These countries began the period with some of the lowest Gini coefficients in the world. The transition has entailed consistent association between growth and inequality: they have both deteriorated (Milanovic, 1995).

Thus we find evidence of a systematic worsening of inequality in the transitional economies as GDP has declined, but observe no simple relationship between growth and inequality in the adjusting countries, although the shifts in the Gini coefficient at least in Africa appear to have been larger during the adjustment phase than during periods of stable growth. We conclude from this discussion that successful adjustment usually leads to growth recovery which will in general also reduce poverty. We end this section with two qualifications.

First, it is important to stress that the detailed policy response, particularly in the composition of public expenditure cuts, can greatly affect the poverty outcomes of adjustment. In some cases, aggregate budget contraction has been combined with rising shares (and occasionally rising absolute levels) of public spending in the social sectors, including targeted transfers (Ribe et al. 1990; World Bank, 1990, Ch.7; Selowsky, 1991). In Indonesia, the careful mix of public spending cuts during adjustment, and the rapid currency devaluations, helped

mitigate the short-term consequences for the poor of declining growth (Thorbecke, 1991). Maintaining public infrastructure can also be crucial to the success of reform programs. The fiscal "crunch" often tempts governments to cut these infrastructural sectors. There is another lesson here for the nature of fiscal retrenchment during stabilization.

And second, we have said nothing about other dimensions of poverty, including human development, which may not be adequately reflected in income or consumption-based measures (Sen, 1992). It is beyond our scope to go deeply into the non-income dimensions of welfare. But there is evidence to support two claims: i) that progress in reducing income poverty is instrumentally crucial to progress against most non-income dimensions of poverty; and ii) that incomes are not all that matter, and indeed, for some non-income dimensions command over market goods may well be secondary to command over key publicly-provided social services, notably access to basic health care and schooling.¹⁹ Cuts in key categories of social spending during adjustment can entail heavy burdens on poor people, both in the short-run and long-run.

III. How Does Distribution Affect Growth?

So far we have looked at how growth might alter distribution. We now consider the possibility of a reverse causation. There are a number of ways in which this could happen.²⁰ We focus on two: credit constraints and political economy. Both have potential implications for the accumulation of capital, especially human capital, and growth. The first affects the *access* of the poor to education while the second affects incentives and the *returns* to education.

3.1 Credit, Distribution and Growth

By preventing the poor from making productive investments (such as schooling) credit constraints arising from asymmetric information perpetuate a low and inequitable growth process. Furthermore, the more inequitable the initial distribution (and, hence, the greater the number of poor and typically credit constrained people) the more severe this effect will be. A number of authors have examined credit market imperfections in general equilibrium models with lumpy

¹⁹ On these issues see Anand and Ravallion (1993) and Bidani and Ravallion (1995).

²⁰ Quite generally, when markets are incomplete there will be efficiency implications of changes in distribution (Hoff, 1993). Some specific examples in the literature are reviewed in Lipton and Ravallion (1995, section 5.1). The following discussion draws in part on Deininger and Squire (1995).

investment (Banerjee and Newman 1991, Tsiddon 1992, Saint-Paul and Verdier 1992, Galor and Zeira 1993). The main result is that, where credit market constraints prevent the poor from making productive indivisible investments, inequalities in the wealth distribution can have significant negative impacts on growth. What can policy do? Here we review three possible actions: provision of credit, redistribution of assets, and tax-subsidy interventions.

Intervention in credit markets aimed at channeling credit directly to rationed groups via subsidized interest rates may well reduce growth even further. In a dynamic perspective such interventions are likely to cause efficiency-decreasing distortions and rent-seeking behavior, thus further reducing efficiency and equity (Bencivenga and Smith, 1991).

An alternative approach entails equalizing the distribution of assets both to increase the poor's ownership of capital directly and to increase their access to credit markets. A large number of analytical models have stressed the importance of the initial distribution of endowments, and the potentially large increases in social welfare that could be gained by an initial redistribution of assets (including Banerjee and Newman 1993, and Chatterjee 1991). Evidence from Asian countries (Japan, Taiwan, and Korea)—where externally imposed land reform was followed by high growth—appears to support the hypothesis. But in many situations such redistribution may be possible only with full compensation. Whether, and under what circumstances, such schemes will then pass the scrutiny of careful evaluation has yet to be determined.²¹ There are often less ambitious but still potentially important opportunities for giving poor farmers greater security of tenure in places where land rights are ill defined.

If the informational imperfections that cause credit rationing cannot be eliminated, governments can seek ways around them by subsidizing education and taxing future wages. Assuming that higher education is reflected in higher lifetime earnings, governments can provide subsidies to schooling and finance them through a tax on future earnings, without having to deal with the problems involved in identifying individual ability (Hoff and Lyon, 1994). It can be shown that policies mandating compulsory schooling, financed by a proportional tax on wage

²¹ Ongoing Bank involvement in market-assisted land reform operations in South Africa and Colombia would provide an opportunity to test this empirically.

income, increase economic growth and, by distributing from agents with high human capital endowment to those with less, make the intragenerational distribution of income more equal (Eckstein and Zilcha, 1994). Where it is very difficult to identify the "type" of individual agents *ex ante*, or if access to credit markets is highly unequal, such policies can be desirable.

3.2 Political Economy

The preceding discussion suggests that amongst economies characterized by credit rationing, those with a more equal distribution of wealth will accumulate more human capital and grow faster than those marked by a more inegalitarian distribution. High inequality will also make it easier to adopt distortionary policies that will negatively affect individuals' investment decisions, stifle growth, and conceivably generate political instability.

The most common mechanism used to establish a link between political forces and economic outcomes is the notion of the *median voter*. According to this argument, the median voter's distance from the average capital endowment in the economy will increase with wealth inequality, thus leading him or her to support a capital tax rate that is higher the more unequal the distribution of wealth. This in turn would reduce incentives for investment in physical and human capital resulting in lower growth.

However, the median-voter model may not be a plausible description of the political process governing decision-making in most developing countries. An alternative mechanism relies on lobbying. Greater wealth allows the rich to spend more resources on lobbying activities to obtain differential treatment. In the extreme form, the ability to lobby would be directly proportional to the amount of economic assets owned by an individual. A model that utilizes this assumption is provided by Persson and Tabellini (1992) who draw a connection between high concentration of land, landowners' ability to successfully lobby government for preferential tax-treatment of this asset, and the ensuing over-investment in land. Such disproportionate taxation of non-landowning groups leads to increasing inequality over time and to slower growth.

Inequality of asset ownership is also at the root of the many models that relate inflation to inequality of the distribution of income. The key idea is that inflation imposes losses on certain groups and that such losses are distributed very inequitably. While inflation taxes holders of money assets (i.e., the rich), access to foreign currency and capital flight allows them to shift the

burden of inflation to the poor (Verdier and Saint-Paul, 1993). This opens not only the possibility for the rich to "park" their assets abroad and then approve inflationary policies (as these would be financed by the poor), it could also form the basis for strategic behavior of the rich (in support of "populist" policies) that could give rise to the typical "stop-and go" policy cycles observed in many Latin-American countries (Laban and Sturzenegger, 1992). Similarly, Ozler and Tabellini (1991) model the "class struggle" between workers, capital, and the government and—based on the capitalists' ability to invest in a risk-free foreign asset at the world interest rate—show there is a broad range of situations where domestic investment and growth would be negatively associated with inequality in the distribution of assets.

In contrast to median-voter models, lobbying models can incorporate dynamic effects and strategic behavior. If politicians are self-interested, the ability of the rich to offer high bribes, and the inability of the poor to resist taxation, can lead to path-dependent equilibria (Brainard and Verdier, 1994); for example, industries affected by a negative shock may choose whether to adjust or to lobby for protection depending on the type of politician in power. Adjustment will be slower, the more responsive politicians are to lobbying, in which case growth-reducing policy interventions would be expected to increase with overall wealth-inequality.

Recent models have emphasized that major policy decisions, in particular the adoption of macro-economic stabilization measures, can be understood in the framework of a bargaining game between different social groups. While many factors beyond the distribution of income can influence bargaining power, income distribution plays an important role. Models that describe economic stabilization as a strategic game between the rich and the poor show that stabilization—being associated with an increase in aggregate productivity—is more likely to be delayed, the greater the inequality of the income distribution (Alesina and Drazen 1991). The reason is that an unequal distribution of income (or differential access to "financial technology" that could be used to diversify risk) implies that waiting reduces the utility of the rich only marginally while imposing large costs on the poor. This would, in turn, increase the probability that in the end the poor will give in and shoulder all of the cost of adjustment. The model can also be used to show that even if (often under external pressure or acute fiscal crisis) adjustment measures are adopted, the lack of social consensus or the perception by some groups that they

have to pay a disproportionate share of adjustment costs may lead to backsliding as soon as the external pressures subside (Laban and Sturzenegger, 1994).

3.3 The Evidence

The arguments reviewed above suggest that greater income inequality will lead to lower investment in physical and human capital and hence to slower growth. There have been a number of recent attempts to test this hypothesis. Data quality is unusually worrying here. While household survey methods have improved greatly in the last 10-15 years, a large question mark must be attached to the quality and comparability of the historical data on distribution in the 1950s, 1960s and 1970s which have been used to test the impact of initial distribution on growth.²² And (unlike the tests of the Kuznets Hypothesis), the noisy inequality variable is now on the *right hand side*, so there must be a general presumption that standard estimators will give biased results. While these and other issues of data and econometric specification should not be under-rated,²³ they take us beyond our present scope.

The tests that have been reported in recent literature confirm a negative impact of initial inequality on growth, both in developed as well as developing countries (Alesina and Rodrik, 1994; Persson and Tabellini, 1994; Clarke, 1994). For a sample of nine OECD countries, analysis of 20-year growth rates starting from 1830 show that the income share of the top quintile is negatively related to growth; it explains about 20 percent of the variance of growth rates across countries and an increase of one standard deviation in this share decreases the growth rate by half a percentage point (Persson and Tabellini, 1994). For a sample of developing and developed countries, Clarke (1993) shows a robust, though quantitatively small, relationship between initial inequality and growth that holds for different econometric specifications and independently of the regime type. In addition, the empirical prediction that high inequality in landownership is associated with lower capital accumulation and growth is confirmed for samples of 35 and 50

²² Some of the "data points" in these older compilations were not even based on household surveys, but were synthetic estimates—let alone that the quality of the survey data sets used was highly variable; for an overview of these issues see Fields (1994). Recent compilations have gone some way toward eliminating these problems (Chen et al., 1994).

²³ The inclusion of the initial average income variable on the right hand side of these equations explaining the rate of growth also raises concerns about bias in the estimators widely used in this literature.

countries (Persson and Tabellini, 1994). There is also evidence from a cross-section of 70 countries for the period 1960-85 that economic inequality increases political instability and reduces physical capital investment (Alesina and Perotti, 1993).

But the verdict is not yet in on how strong or robust is the impact of initial inequality on future growth. For example, in one test, Fishlow (1995) reports no significant effect once one controls for Latin America (with simultaneously high inequality and low growth for much of the period).²⁴ As in tests of the Kuznets hypothesis discussed in section 1.2, there may well be regional effects in the cross-sectional relationship, though that fact alone does not mean the relationship is spurious—like the Kuznets Hypothesis, the real test will be in how the regional effects evolve over time. Further empirical work is clearly needed, and the better distributional data now available should stimulate future research into the role of initial inequality.

IV. Conclusions

The "stylized fact" that distribution must get worse in poor countries before it can get better turns out not to be a fact at all. Effects of growth on inequality can go either way and are contingent on a number of other factors. There is little sign in the new cross-country data we assembled of any systematic impact of growth on inequality. Possibly measurement errors are confounding the true relationship. But we think it more likely that the relationship between growth and distribution is by no means as simple as some theories in development economics have postulated.

If distribution is unchanged then growth will reduce absolute poverty. Indeed, absolute poverty measures typically respond quite elastically to growth, and the benefits are certainly not confined to those near the poverty line.

One should be clear about what can and cannot be concluded from our results. Let us reiterate that it would not be correct to say that growth *always* benefits the poor, or that *none* of the poor lose from pro-growth policy reforms. Here we are only looking at broad aggregates. Cases of sufficiently adverse distributional impacts to wipe out the aggregate gains to the poor do appear to be unusual; indeed, for 17 of the 20 countries for which we can assemble quite good

²⁴ Though Clarke reports that the inequality effect on growth is robust to this and other changes in specification.

data from at least two surveys since the mid-1980s, the mean and the proportion of people living below \$1 per day moved in opposite direction. But there can be large differences between countries in the extent to which even a distribution-neutral growth process will impact on absolute poverty. The gains to poor people from such a growth process will tend to be lower the higher the extent of initial inequality; under distribution-neutrality, a smaller share of total income must imply a smaller absolute gain from a given increment to total income. And even in countries with initially low inequality and a growth process which brings rapid and sizable gains to most of the poor, some will not be in a position to take advantage of the new opportunities, and some may well lose. There can be an important role here for compensatory direct interventions, providing they are well integrated into the general policy framework, in keeping with overall fiscal and monetary discipline.

Nor does the evidence suggest that growth is always distribution-neutral. And it would also be wrong to conclude that changes in distribution are of little consequence. Indeed, we find that poverty measures respond quite elastically to changes in distribution; our cross-country data suggest that a 10 percent increase in the Gini index is typically associated with roughly a 40 percent increase in the proportion of the population living on less than \$1 per day (holding the mean income constant). The point is not that distribution is irrelevant, or that it never changes, but rather that its changes are roughly orthogonal to economic growth.

While there is little convincing evidence in our view that growth tends to alter distribution in a systematic way, there are more compelling (theoretical and empirical) arguments as to why initial distribution matters to the extent and nature of subsequent growth. This link can operate through credit market constraints, by limiting the ability of the poor to invest. The negative effect on growth is strengthened if distortionary policy-interventions in favor of the rich further undermine the poor's incentives to invest.

Thus there is no intrinsic trade-off between long-run efficiency and equity. In particular, policies aimed at facilitating accumulation of productive assets by the poor—when adopted in a relatively non-distorted framework—are also important instruments for achieving higher growth. The problem should not be posed as that of choosing between growth and redistribution.

When one puts these two halves together—one on the impact of growth on distribution, and one on the reverse causation—we can begin to see the structure and some of the details of a joint model of distribution and growth, and hence of poverty. The extent to which this is a truly simultaneous model is a moot point; distribution appears to affect growth more than growth affects distribution, though this interrelationship is still being researched. There is also a dynamic structure to this joint model, in which initial conditions (of average incomes, inequality, and other factors) do matter. Within this structure, a common set of policy-relevant explanatory variables can be identified, of which basic education is one of the more robust predictors of *both* variables; higher proportions of men and women with good basic schooling entails a better distribution of a larger total income.

Countries which give priority to basic human capabilities in schooling, health and nutrition not only directly enhance well-being, but are also more likely to see improving income distributions and higher average incomes over the longer term. There are often also ways in which governments can help relieve the credit constraints facing the poor, though even means-tested credit subsidies will typically not be the best way; reducing transaction costs and helping people organize themselves have often proved to be better approaches. A more equitable distribution of physical assets, notably land, can also help greatly (both directly and by relieving credit constraints on investment by poor people), though the policy implications are not as straightforward as with health and education. The sectoral composition of economic growth has also been emphasized as an important factor. Sectoral biases against the rural sector in pricing, exchange rates, and public investment are not in the interests of either higher growth or better distribution. And sound macroeconomic policies appear to be essential for sustained growth, and either have no systematic effect on distribution, or have potentially adverse short-term impacts but which are typically not strong enough to outweigh the gains to the poor from growth. Paying attention to the *composition* of public expenditures in the adjustment program and to the inclusion of effective safety nets for the poor will help improve the distributional outcome in the transition to a pro-poor growth recovery.

Some of the key factors in achieving an equitable growth path, such as better schooling, also raise the current living standards of poor people, in both "income" and "non-income"

dimensions. The nature of the dynamic interaction of initial conditions with future growth and distributional change can also have important policy implications. Countries with poor initial conditions (due in part to past policies) will tend to diverge from the rest. It may only be possible to overcome this if the lagging countries can get a large enough "jump start" and here there may be an especially important role for international development assistance, as private capital flows usually come in only at a later stage of the reform process. There will undoubtedly remain areas of social policy or infrastructure in which private capital will not participate even after successful reform.

The upshot of all that one knows at the present juncture is that promoting growth is good because it is a *potentially* and (in most case) *actually* important vehicle for improving the living standards at *all* levels, and we now have a better idea about the *policies* that lead to growth, ranging from the fundamental institutional and market incentives to the promotion of macro stability. While these policies should be pursued in all countries, we now suspect that these will be less effective and/or less well implemented in high-inequality countries. Thus reducing inequality is good because it will benefit the poor both immediately and in the longer term through higher growth.

Apart from the details of structural and macro-policy interventions that have already been mentioned, there are two major aspects that our analysis highlights for the changing role of the International Financial Institutions. First, there is an important implication in the area of greater *selectivity* among countries. Obviously the IFIs should support growth-promoting policies in *all* countries. But the focus should be on countries that are clearly committed to reform. It appears that low-inequality countries may well be more likely to be responsive to the need for reforms, and more able to implement them in a shared-growth fashion. Testing commitment in high-inequality countries would seem especially important. Up-front actions that are both growth-promoting and equity-enhancing may be the only realistic solution but even this—experience shows—does not necessarily guarantee sustainability. The second important implication comes from the externality that appears to be associated with improvement in the distribution of assets and income; future generations benefit because future growth will tend to be higher through better policies and better access to credit markets. If further research establishes the strength and

robustness of this result, then it has an important policy implication: the IFIs should be willing to *subsidize* actions that encourage redistribution, especially investment in basic education and land reform.

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