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POVERTY, INEQUALITY, AND DEVELOPMENT: ALLEVIATION OR EXACERBATION?

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"Poverty, Inequality, and Development: Alleviation or Exacerbation?"

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ABSTRACT

This paper shows that both in theory and in practice the choice of a relative inequality or absolute poverty measure of income distribution may make an important qualitative difference in assessing whether economic development is benefiting the poor. If one is primarily concerned with the alleviation of absolute poverty, it does not seem desirable to use relative inequality indices. To the contrary, it is more appropropriate to use absolute poverty measures such as the number of individuals or families with incomes below a constant real poverty line or the average gap between the incomes of the poor and the poverty line. Depending on the type of measure used, the results can look very different.

Inequality and poverty measures are found to disagree qualitatively in Brazil and India, but not in Taiwan. The Taiwan result is due to a combination of favorable outcomes: (i) The rapid growth of the economy and (ii) The decline in relative inequality. Taiwan's poor received a larger fraction of a larger total, so their absolute incomes unambiguously rose. Brazil, in contrast, satisfied (i) but not (ii), i.e., relative inequality increased in a rapidly-growing economy. The growth of income more than offset rising inequality, though, leading to higher absolute incomes for the poor. In India, however, neither (i) nor (ii) held, which may perhaps explain the majority of studies which show rising absolute poverty despite constant relative inequality.

One might speculate that these case studies represent a more general relationship between the rate of growth, the nature of growth, and the alleviation of poverty: rapid growth seems to reduce poverty unless

inequality is greatly exacerbated, but poverty is not likely to diminish when growth is lacking, at least within the existing economic order in a given country and in the absence of major (if not revolutionary) structural change. For most economies distributional rules are more or less fixed. From this, it follows that the economic position of the poor will be enhanced only when there is more to divide. The contrast between Taiwan and India is all too apparent. Alas, non-growth and non-alleviation of poverty seem to go hand in hand unless a far-reaching decision is made to change the rules for dividing assets, rewarding productive factors, and distributing society's goods and services. One dimension of that choice is the evenness or unevenness of the growth strategy pursued. In this respect, the three countries discussed above differ importantly.

Taiwan is reputed to have followed an unusually broadly-based growth path, improving the lot of large segments of the rural poor, encouraging small-scale industry, etc. India's non-growth was even too, the economic lot of the poor rising and falling with the weather and other external conditions. In contrast, Brazilian growth seems to have affected relatively few: employment in the modern sector and other relatively favorable occupations expanded, but only a small proportion of the labor force was involved. However, major sectors went nowhere: rural workers' wages and the urban minimum wage did not rise and whole regions remained underdeveloped. Perhaps future research will determine if the evenness of growth as well as the rate of growth are systematically related to the rate of alleviation of poverty and, if such a pattern is found, why.

At issue is a very basic point: what is the ultimate aim of economic development studies? I would suggest this question: what combinations

of circumstances and policies lead some countries to upgrade the economic positions of their poor at faster rates than others? The viewpoint expressed in this paper is that studying the magnitudes and structure of absolute incomes and poverty may be the best way of finding out the answers.

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"Among our century's most urgent problems is the wholly unacceptable poverty that blights the lives of some 2,000 million people in the more than 100 countries of the developing world. Of these 2,000 million, nearly 800 million are caught up in what can only be termed absolute poverty---a condition of life so limited as to prevent realization of the potential of the genes with which they were born; a condition of life so degrading as to be an insult to human dignity."

Robert S. McNamara, President, World Bank

A central concern among development economists is to gain an understanding of the determinants of poverty and inequality so as to effect their alleviation. Poverty and inequality in less developed countries (LDCs) have been studied in a number of different ways: constructing poverty profiles, estimating income-or earnings-generating functions, calculating Gini coefficients or other measures of inequality, accounting for inequality by decomposition analysis, figuring the inequality of incomes received from different functional sources, and computing inequality among various economic sectors or regions. This paper deals with one of these problems---that of measuring the extent of countries' progress toward the alleviation of poverty in the course of their economic development.

The plan of the paper is as follows. Section I presents alternative ways of measuring improvement over time in income distribution. Section II gives empirical evidence for a number of less developed countries, illustrating similarities and differences between the different measurement procedures. Section III summarizes the results and explores their implications for future studies of economic development.

I. Alternative Approaches to the Study of the Size Distribution of Income

A. Income as an Indicator of Economic Well-being

The maintained assumption of this paper (and of many other studies of less developed countries) is that income is a suitable indicator of economic well-being. In many countries, household surveys and population censuses yield information on the distribution of annual or monthly income. While current income is not an ideal measure of economic welfare, it is a close proxy for many families. Where available, supplementary data on wealth, housing conditions, infant mortality and other economic indicators are useful adjuncts to information on the size distribution of income.

It is probably safe to assert that economic well-being is closely related to the goods and services one consumes. This consumption, in most cases, depends monotonically and very nearly dollar-for-dollar on income. Hence, the central role of income distribution as a measure of economic position. It is easy to think of exceptions to these generalizations: the cripple who derives less satisfaction from goods and services than the fortunate among us who are well-endowed physically, the young couple receiving large and frequent gifts from their parents, the rich with large asset holdings who finance their consumption out of their wealth rather than from their earnings, and the peasant family which grows and consumes its own food and has little or no cash income deriving from the sale of a marketable surplus. In all these cases, cash income is an inaccurate measure of the individual's or family's command over economic resources. At issue is the severity of the inaccuracies, since some are undoubtedly more worrisome than others.

We should remember that the goal of many income distribution studies in less developed countries, including the present paper, is to assess

progress toward the alleviation of poverty and, more generally, to learn how the benefits of economic development are distributed. In other words, we want to assess changes in income distribution within a country over time. In time series comparisons, whatever biases and limitations there are in our data at one time may reappear the next time. If so, changes in current income are likely to parallel the changes in the "ideal" distribution of income.[1] This is not to say that more refined and better data are not of great importance, for indeed they are. What I mean to be arguing is that in the interim, in countries with comparable and reliable income distribution data from household censuses and surveys, I think we would do better to look at the available information to measure that country's progress rather than to look at nothing at all. Let us now explore the principal approaches to the study of income distribution.

B. Income Distribution and Income Inequality

Despite popular parlance and practice, "income distribution" is not the same thing as "income equality (or inequality)." In a well-known book on the subject, Bronfenbrenner (1971, p. 27) writes: "By personal distribution we mean division of income (or wealth) by size, or more precisely, by size brackets of the income or wealth of economic units." [Emphasis in the original.] Later on (p. 43), he carefully distinguishes between the personal distribution of income and statistics such as the coefficient of variation which "measure the degree of inequality of a personal income

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[1] Note that this argument is made for the specific purpose of intra-country time series comparisons. For other purposes, such as international cross-section comparisons, the biases and limitations are more serious, rendering such comparisons tenuous.

distribution." [Emphasis added][1]

To illustrate the distinction between "income distribution" and "income inequality", consider the simple case of two countries, one of which has twice as much income as the other and that extra income is distributed proportionately over the population. For example, in two ten-person economies:

Y_A = (1, 2, 3, 4, 5, 6, 7, 8, 9, 10)

Y_B = (2, 4, 6, 8, 10, 12, 14, 16, 18, 20).

Are the income distributions in A and B the same or different? Economists answer the question ambiguously. On the one hand, the entire income distribution is in a different position---everyone in B has twice as much income as in A, and the total is twice as high too. So in one sense the income distribution is different. On the other hand, in each country, the poorest person's income is 10% of the richest person's, the second poorest's 20%, and so on. So in another sense, the distribution of income is the same. This example gets at the difference between the distribution of income and relative inequality in the distribution of income. In our example, I would prefer to say that absolute income distribution changed and relative inequality did not. In the remainder of the paper, the terms "income distribution" and "income equality (or inequality)"will be used accordingly.

It is insightful to contrast the way we usually think about income distribution from the way we are accustomed to think about the distribution of other economic or social magnitudes, for example, the distribution of education. For education, our concern is how many people have attained what level

[1]The distinction here is just like the difference in elementary economics between the definition of a multiplier (namely, the change in national income which results from a given exogenous change in a particular economic variable) and one measure of the multiplier (the reciprocal of the marginal propensity to save).

If a larger fraction of the population achieves literacy, let us say, we are inclined to regard that country's education system as having done "better". In making such a judgment, we usually do not think to ask whether more people had also completed university; nor do we compute a statistical measure of inequality of educational attainments, such as the variance or a Gini coefficient. Rather, our strategy is to pinpoint a target group whose upgrading we care most about and then to measure the rate of absolute improvement among that target group.

In studies of income distribution, the approach is ordinarily quite different. Most studies ask: "Did income distribution worsen?" Typically, that question is answered by examining either (i) how the income shares of particular deciles (or other groupings) changed, (ii) how the Lorenz curve shifted, or (iii) whether measures such as Gini coefficients, variance of incomes or their logarithms, etc. exhibit greater or lesser inequality. All these are relative inequality measures. In effect, then, by beginning with relative inequality measures rather than with absolute levels, the approach to studies of the distribution of income reverses the approach to studies of the distribution of other economic and social goods.

Let us now examine their various approaches to the study of income distribution in some detail.

C. Relative Inequality Approach

In most studies of income distribution in less developed countries, the income distribution measure under consideration is relative income inequality. Relative inequality is conveniently illustrated by a Lorenz curve as shown in Figure 1. The Lorenz curve depicts the income share of any cumulative percentage of the population, ordered from lowest income to highest. All relative inequality measures in current use are based on the Lorenz curve. The Gini coefficient, being most directly related, is the ratio of the area between the Lorenz curve and the 45° line (area A in Figure 1) to the total area (A+B). The Gini coefficient thus varies between zero and one, and the higher the coefficient, the greater the degree of relative inequality. The fractile measures in common use, such as the income share of the poorest 40% or richest 10%, can also be read directly from the Lorenz curve. Finally, there is a class of relative inequality measures which may be calculated from the data contained in Lorenz curves. These include many familiar indices such as the variance (or standard deviation) of income or its logarithm, the coefficient of variation, Kuznets ratio, Atkinson index, Theil index, and many others.[1]

In using one or more of these inequality measures, the judgment is typically made that social welfare (W) depends positively on the level of national income (Y) and negatively on the inequality in the distribution of that income (I). For example, taking the share of income of the poorest 40% of the population (S) as an index of equality and the Gini coefficient (G) as an index of inequality, these studies would hold that

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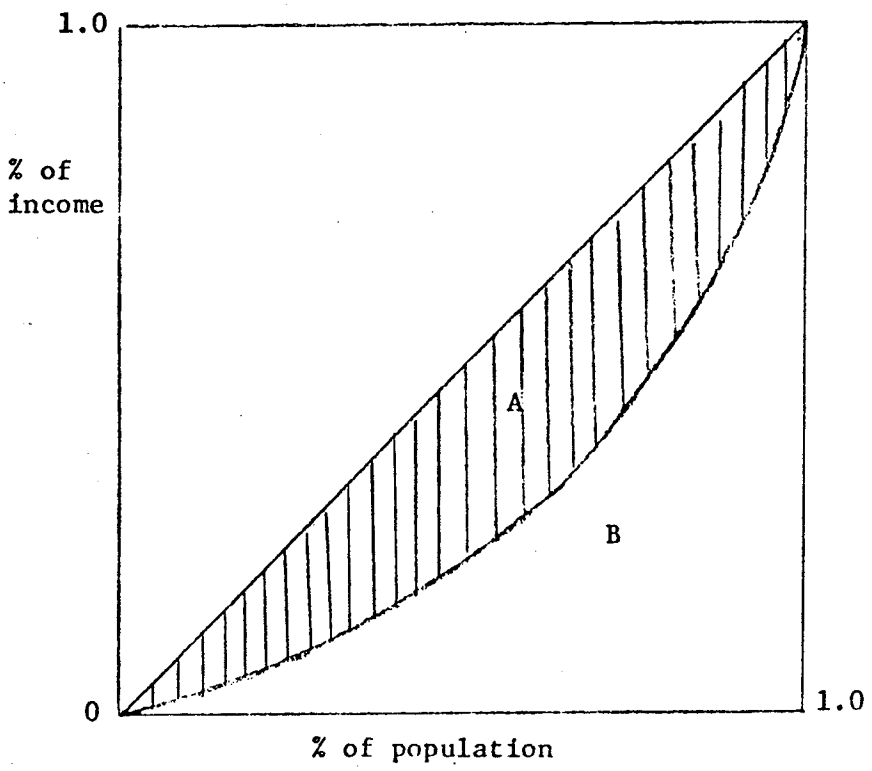
[1] Many references are available which give definitions and descriptions of these measures. See, for instance, Sen (1973).

FIGURE 1

LORENZ DIAGRAM



W is positively related to Y and S and negatively related to G.[1]

The terminology of these studies is indicative---falling S or rising G are given the non-neutral term "worsening of the income distribution," and it is generally thought to be a bad thing when rising measured inequality is encountered.

Let us consider a simple hypothetical numerical example showing how these judgments are brought to bear in practice:

Example One.

Country	Rate of Growth	Share of Lowest 40%: Level	Share of Lowest 40%: % Change	Gini Coefficient: Level	Gini Coefficient: % Change
Both countries initially		.363		.082	
Country A later	11%	.333	- 8%	.133	+62%
Country B later	22%	.307	-15%	.162	+97%

Country B grew twice as fast as country A. However, relative income inequality as measured by the Gini coefficient and income share of the lowest 40%, seems to be "worse" in country B than in country A; that is, it would appear that the rich benefited at the expense of the poor, whose relative income share deteriorated. A development economist might question whether the higher rate of growth in country B was "worth it" in terms of income distribution, and a well-meaning development planner seeking to give very high weight to alleviation of inequality might go so far as to choose country A's policies over country B's.

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[1] In mathematical notation:

$$W = f(Y,S), \quad f_1 > 0, \; f_2 > 0$$

or

$$W = g(Y,G), \quad g_1 > 0 \quad g_2 < 0,$$

D. Absolute Poverty Approach

Now, let us consider another approach which looks directly at a country's progress in alleviating poverty among the very poorest.[1] We must first define what we mean by "poverty." Suppose we can agree that an individual is poor if his or her income falls below a specified dollar amount, with analogous figures for families of different sizes. The United States Agency for International Development, for example, makes use of the figure of U.S. $150 per capita in less developed countries;[2] the World Bank uses $50 or $75.[3] In other countries, the poverty line is set with respect to minimal nutritional adequacy.[4] Let us arbitrarily choose one of these figures as a poverty line and agree to hold it constant in real terms. Denote the poverty line by P*. "The poor" are those whose incomes are less than P*.

Most observers would share the following judgments about the extent of poverty (P):

(i) P is negatively related to the number of income recipients with incomes below the poverty line P*.

(ii) The larger is the average income of those below the poverty line, the lower is P.

(iii) Other things unchanged, the more unequal the distribution of income among the poor, the more severe is P.

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[1] Absolute income studies of less developed countries are the exception rather than the rule. Economists at the Institute of Development Studies, University of Sussex, have been taking an absolute income approach for some time; see International Labour Office (1970). More recently, the World Bank has begun to shift its focus as well; see Ahluwalia (1974). These studies are noteworthy precisely because they do differ from the usual approach.

[2] See A.I.D. (1975).

[3] See Ahluwalia (1974).

[4] For example, Ojha (1970) and Webb (1976).

In most studies, measures entering into these three judgments are computed separately. However, in a paper just published, Sen (1976) combines these measures and argues elegantly for the use of a composite index.[1]

Absolute poverty measures like those just presented have been used in research in the United States for many years; see, for example, Bowman (1973) or Perlman (1976). The main advantage of absolute poverty indices is that they provide direct measures of changes in the number of poor and the extent of poverty among them. Note, in contrast, that although poverty indicators can be computed from Lorenz curves or Lorenz curve-based inequality measures, this information is obtained only indirectly and often with considerable computational difficulty.

To see how the absolute poverty approach is applied, consider now another numerical example for a given country in an early and a later stage of its economic development. Assume the following hypothetical figures, where the poverty line is somewhere between $1 and $2:

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[1] The index recommended by Sen is

$$\pi = H[\bar{I} + (1-\bar{I})G_p],$$

where H = head count of the poor (i.e., how many there are),
I = average income shortfall of the poor (i.e., the gap between P* and the average income of those below P*), and
G_p = Gini coefficient of income inequality among the poor.
Thus, alternative specifications of the absolute poverty approach are:

(a) $W = f(H)$, $f' < 0$,

(b) $W = g(\bar{I})$ $g' < 0$,

(c) $W = h(\pi)$, where $\pi = H[\bar{I} + (1-\bar{I})G_p]$, $h' < 0$.

Example Two.

Country	Percentage of Labor Force in: High Wage Jobs (Real Wage = 2)	Low Wage Jobs (Real Wage = 1)	Rate of Growth of Modern Sector ("Modern Sector Labor Absorption Rate")
Both countries initially	10%	90%	
Country C later	20%	80%	100%
Country D later	30%	70%	200%

In both countries, the poor received the benefits of growth; but in country D, twice as many poor benefited. Other things equal, development economists would almost certainly rate country D as superior, and development planners would seek to find out what had brought about that country's favorable experience and adopt those policies in their own countries. In this second example, the preference is clear-cut, while in the previous example, the issue was open to doubt.

E. Relative Poverty Approach

The relative inequality and absolute poverty approaches are the two main ways in which distributional aspects of economic development have been considered. In addition, there is now a newer approach being promulgated by researchers at the World Bank and elsewhere known as the relative poverty measure.[1] This figure is the absolute income (in constant dollars) received by the poorest 40% of the population.[2]

Consider now a third example:

Example Three.

Country	Absolute Income of Poorest 40% of Population
Both countries initially	$40
Country E later	$40
Country F later	$40

[1] See, for example, Chiswick (1976).

[2] The choice of poorest 40% is purely arbitrary. What matters in this approa is the constancy of population share along with income variability among them.

Using the relative poverty measure, it appears that there was no improvement in absolute income of the poorest 40% in either case. One might ask: why grow if the poor do not share in the benefits of growth? In this third example, E and F both seem to have failed to alleviate poverty.

F. Comparison of the Three Approaches

In point of fact, countries A, C, and E are the same country, and countries B, D, and F the same country! Real-world economic development histories and policy projections are often presented in these different ways. Yet, as these examples make clear, how income distribution is studied---whether in terms of relative income inequality (as in example one), absolute incomes and poverty (example two), or relative poverty (example three)---may dramatically influence our perceptions of the outcome.

Specifically, in our examples, we have encountered the following differences. According to the absolute poverty criterion, B-D-F clearly dominates A-C-E on both growth and distribution grounds. Using the relative inequality criterion, it is difficult to judge; although B-D-F grew faster than A-C-E, inequality seems to have worsened.[1] Finally by the relative poverty criterion, both appear equally unsatisfactory, since neither country seems to have made progress in alleviating poverty; in fact, poverty was being alleviated in both, and at different rates.

To my mind, the failure of the relative poverty measure to record an income distribution change is worse than troublesome. These countries were alleviating poverty, yet the relative poverty measure is totally insensitive

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[1] Whether inequality really worsened, even in relative terms, is not entirely obvious, when one looks at the absolute figures presented in Example Two. The possibility that the usual relative inequality measures may not be satisfactory even for making relative inequality judgments in this type of growth is dealt with further in Fields (1976).

to this. On this basis, I would conclude that relative poverty measures are unsuited for gauging the distributional consequences of this type of growth. Hence, I will ignore the relative poverty measure subsequently.

Note that the difficulties with the relative poverty measure arise in cross sectional data, where we look at those who are the poorest 40% ex post at different times (i.e., disregarding the movement of specific individuals into and out of the poorest 40%). If we had longitudinal data, and were able to trace the progress of those individuals who were the poorest 40% ex ante, the problem would not arise. This is because their average income would be higher the faster the rate of modern sector enlargement growth. Unfortunately in the real world, we do not have longitudinal data, so the relative poverty approach has serious problems.

G. Exploring the Choice Between the Relative Inequality and Absolute Poverty Approaches

Concerning the relative inequality and absolute poverty approaches, the discrepancy between the two is based in part on a legitimate difference in value judgments, in part on a statistical pattern which in some respects is artifactual. Let us explore these discrepancies further and ask:

(1) What is it about the process of economic development that produces a discrepancy between the different approaches?

(2) In assessing the distributional consequences of growth, do we wish to give greater weight in our judgments to the allevation of absolute poverty or to the narrowing of relative income inequality?

The answer to the first question is that the discrepancy is produced by the unevenness of economic development itself. The pattern depicted exemplifies what I call "modern sector enlargement growth," which takes place when an economy grows by enlarging the size of its modern sector, the incomes (or

wages) within the modern and traditional sectors remaining the same. The discrepancy arises because this type of growth affects only some of the poor, not all. Consequently, those whose situations are not improved by this type of growth, and who therefore remain as poor as before, receive the same dollar amount, but it is a smaller part of a larger whole. From this, it follows that: (1) the absolute incomes of the poorest 40% are unchanged,[1] and (2) the Lorenz curve shifts downward at its lower end, and consequently those Lorenz-curve based measures of relative income inequality which are sensitive to the lower end of the income distribution register a "worsening" of the income distribution.

We should note that "modern sector enlargement growth" is not just the figment of some ivory tower academician's imagination. This pattern is widely-regarded as an essential ingredient of development. In their famous book, Fei and Ranis (1964) wrote: "...the heart of the development problem may be said to lie in the gradual shifting of the center of gravity of the economy from the agricultural to the industrial sector...gauged in terms of the reallocation of the population between the two sectors in order to promote a gradual expansion of industrial employment and output." This characterization is echoed by Kuznets (1966). Empirical studies, such as that of Turnham (1971), have documented the absorption of an increasing share of the population into the modern sector as growth takes place. In a case study of Indian economic development in the 1950's, Swamy (1967) found that 85% of the change in the size distribution of income was due to inter-sectoral factors (namely, growth in importance of the urban sector and growing per capita income differential between the urban and rural sectors) and only 15% to changing inequality within the two sectors. Thus,

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[1] Observe that some persons who were originally in the poorest 40% are now in the high income sector and different individuals now comprise the poorest 40%, but we cannot detect that movement in cross-sectional data (in which the sampling procedures are the same but different individuals are sampled). Longitudinal studies tracing the same individuals over time are needed, but this kind of data simply does not exist for a representative sample of the population in <u>any</u> less developed country.

modern sector enlargement comprises a large and perhaps even predominant component of the growth of currently-developing countries.

The other question posed above regards the choice between absolute and relative income measures in determining who does and does not receive the benefits of growth. The choice depends on basic ethical considerations, so let me be forthright about my own value judgments. For me, the plight of the poor in less developed countries is objective, to the extent that they do not have command over sufficient resources to feed and clothe themselves and avoid disease. Thus, to my mind, poverty is an absolute condition, requiring analysis in absolute terms.[1] I would therefore give predominant emphasis to data on changes in the number poor, the average extent of their poverty, and the degree of inequality among them.

Others have different concerns and make different judgments than I. They would give great weight to the subjective feelings of the poor who may feel relatively worse off if others' economic positions are improving and theirs are not. Observers who feel strongly about such relative income considerations are justified in using relative inequality measures.

What may not be justified, and there are many examples of this in the development literature, is the coupling of a concern over the absolute economic misery of the poor with reliance on calculations of changes in relative inequality over time. I fear this approach may be mistaken and misleading, quite apart from its logical inconsistency. For just as in the numerical example above, by assigning heavy weight to changes in the usual indices of relative income inequality and interpreting these increases as offsets to the economic well-being brought about by growth, important tendencies toward the alleviation of absolute poverty may be overlooked.

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[1] In richer countries like the United States, relative income comparisons may be more important, but my concern in the present paper is not with the U.S.

H. Conclusion

This section has pointed out the types of issues involved in establishing an income distribution criterion for assessing the progress of less developed countries toward reducing poverty. As I understand the intent of most development economists and planners, the primary goal of economic development, and of aid to that development, is to alleviate absolute poverty, and only secondarily to reduce relative inequality. If the alleviation of absolute poverty is the primary goal, and I agree that it should be, it seems logical to measure progress toward that goal directly using absolute poverty criteria, rather than indirectly by relative inequality or relative poverty indices. The numerical examples of this section have shown how differences among the various approaches may arise. If students of economic development or policy-makers use relative inequality measures when they care most about absolute poverty, they may be misled.

Unfortunately, this is not just idle speculation. Major differences arise between the different approaches in the actual experiences of several less developed countries. Some case studies are presented below.

II. Absolute Poverty Vs. Relative Inequality: Three Case Studies

The bulk of the literature on income distribution in developing countries is based on the assumption that figures on relative income inequality provide suitable indicators of changes in economic position of the poor. As Section I demonstrated, we may instead approach the question of changing income distribution from an absolute poverty perspective. From this point of view, the relevant questions deal with the determinants of incomes in general and of poverty in particular and how the numbers in poverty and the determinants of poverty have changed over time. It should be obvious that the relative inequality and absolute poverty approaches do not necessarily agree with one another in assessing the distributional consequences of growth in a particular country. Whether they do or not is an empirical question. Three case studies are presented below.

A. Brazil

One of the most interesting and controversial cases of economic development is that of Brazil. Over the decade of the 1960s, the real rate of economic growth was 79%. After allowing for a high population growth rate, real income per capita grew at 32% over the decade, a substantial achievement by LDC standards. For the latter years of the 1960s and the first part of the 1970s, Brazil experienced rates of growth approaching 10% per annum. On this basis, the Brazilian case was widely heralded as an "economic miracle."

Then, a sudden cloud appeared on the horizon. In an exceptionally influential paper, Fishlow (1972) examined the distributional question of who received the benefits of this growth. Using the Gini coefficient of inequality and the income share received by the richest 3% of the population,

Fishlow observed a "worsening" of the relative income distribution during the 1960s despite the rapid economic growth of the latter years. A similar qualitative conclusion was reached subsequently by Adelman and Morris (1973, p. 1) based on the income share of the poorest 40%. Some of the data underlying these conclusions are presented in Table 1.

The finding that income inequality in Brazil had become greater gave pause to many. As a result, there is now widespread disagreement about the desirability of taking Brazilian economic and social policies as a model for other developing countries to follow. It is probably fair to say that, because of Fishlow's paper, the Brazilian experience is no longer regarded by most observers as "miraculous."

It should also be noted that many economists in the field, although not Fishlow himself, inferred from this evidence that the growth which had taken place had been at the expense of the poor; see, for instance, Foxley (1975). A softer inference from the Brazilian data is that the poor did not share in the benefits of Brazilian growth. I submit that both inferences are incorrect and arise from the use of relative inequality rather than absolute poverty measures. The conclusions which follow are drawn from another paper [Fields (1977)], to which the reader is referred for additional details.

I should begin by pointing out that my research used Fishlow's own data. I did not challenge any of the underlying numbers. To make absolute poverty comparisons, we need data on changes in the number of persons with incomes below a constant real poverty line defined according to Brazilian standards and the average incomes among them.[1] For this purpose, Fishlow's data do not quite suffice, since they are expressed in current rather than constant cruzeiros. Hence, exactly comparable figures cannot be calculated

[1] Following Fishlow's precedent, I took the poverty line to be the minimum wage in the poorest region of the country (the Northeast).

TABLE 1

DATA ON INCOME DISTRIBUTION IN BRAZIL

	1960	1970
Gini Coefficient of Inequality, Total Economically Active Population[a]	0.59	0.63
Income Share of Richest 3.2%[a]	27%	33%
Income Share of Poorest 40% (estimated)[b]	10%	8%

a) Source: Fishlow (1972)

b) Source: Adelman and Morris (1973).

from published sources, so an approxmiation is needed. I adopted a simple linear scheme.

The derived data clearly demonstrate that the cumulative percentage of population was lower in 1970 than in 1960 for every income bracket, as may be seen in Figure 2. This means that the economic growth which took place in Brazil over the decade of the 1960's reached persons at all income levels, and not just those at the top.

The finding that the absolute income distribution improved came as a surprise to me. To confirm its validity, I looked further. Some of my data are reported in Table 2. These data reveal that the percentage of the economically active population with incomes below the Brazilian poverty level declined during the decade, those who remained poor were less poor than before in real absolute terms, and the rate of growth of income among the poor was at least as great as the rate of growth among the non-poor. More precisely, my conclusions concerning the changes in income distribution in Brazil in the 1960s were:

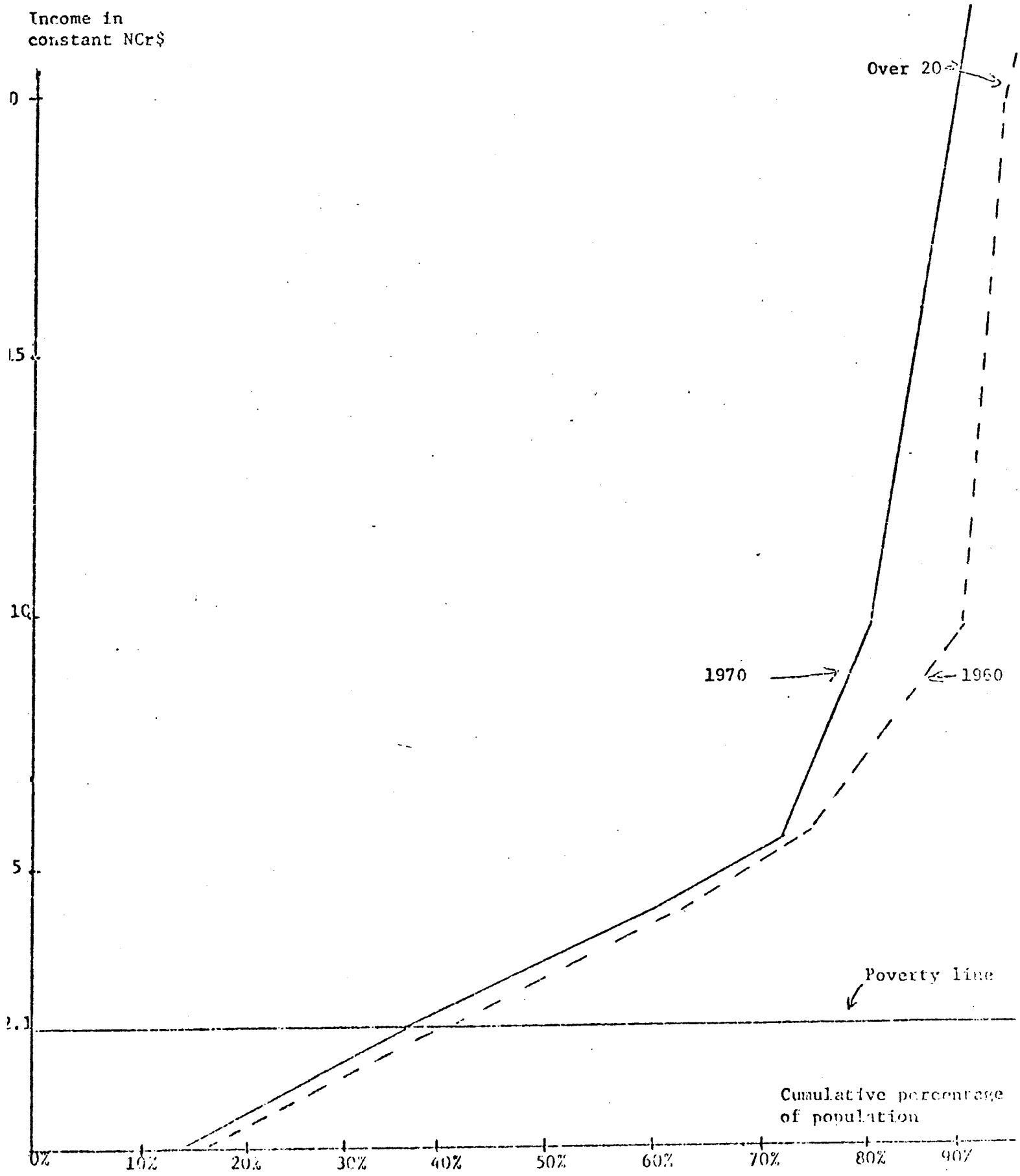
(1) The entire income distribution shifted in real terms, benefiting every income class.

(2) There was a small decline in the fraction of the economically active population classified as below the poverty line, but those who remained "poor" experienced a marked percentage increase in real income.

(3) The percentage increase for those below the poverty line was greater than the increase for those not in poverty, and may well have been twice as high or more.

(4) The relative income gap between "poor" and "non-poor" persons narrowed in terms of ratios although the absolute gap widened.

FIGURE 2. BRAZILIAN SIZE DISTRIBUTION OF INCOME, 1960 AND 1970



Source: Fields (1977).

TABLE 2

SOME DATA ON ABSOLUTE INCOMES AND POVERTY IN BRAZIL, 1960 AND 1970

	1960	1970 estimated	Rate of growth 1960-1970
Percentage of economically active population with incomes below the poverty line	37.0%	35.5%	
Mean real income of the poor (NCr$'000)	0.8	1.3	+63%
Mean real income of the non-poor	8.3	10.6	+28%
Mean real income of the economically active population	5.5	7.3	+32%
Income difference, non-poor minus poor	7.5	9.3	
Income ratio, non-poor relative to poor	10.4	8.2	
Proportion reduction in poverty gap			41%

Source: Fields (1977).

(5) The bulk of the income growth over the decade accrued to persons above the poverty line. A similar pattern is observed for the United States, an allegedly more egalitarian society.

(6) The poverty gap in Brazil was cut nearly in half between 1960 and 1970.[1] The United States reduced its poverty gap by the same percentage over the same decade.

In summary, my reexamination of the income distribution data from Brazil showed that the poor in Brazil did benefit from the economic growth that took place during the 1960s.[2] In light of the rising Gini coefficients and income shares of the very rich, the finding that the same data are consistent with non-trivial improvements in the economic position of the poor is a startling one. However one regards the Brazilian model of development, emiseration of the poor was not one of its features. In this case, exclusive reliance on relative inequality comparisons led many to overlook important tendencies toward the allevation of absolute poverty.

We shall consider the implications of the Brazilian findings further after reviewing changes in relative income and absolute poverty patterns in India and Taiwan, where the situations were quite different.

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[1]The poverty gap is the total cumulative income shortfall of the poor, i.e., the sum of the differences between each poor person's income and the poverty line.

[2]In stating this conclusion, I in no way wish to condone either the persistence of the severe poverty that remains, or the apparent lack of a strong commitment by the Brazilian authorities to alleviate the current plight of the poor in this generation, or some of the more authoritarian measures reputed to have been used to assure social stability.

B. India

India is, of course, a very poor country which is growing very slowly.[1] India offers abundant data on the distribution of income and consumption dating back to the 1950's. Given the richness of the data in so poor a country with so large a research establishment, it is not surprising that we find a multitude of income distribution studies. Some of the findings from some of the more important of these are reported in Table 3.

The data in Table 3 differ with respect to the concept of income or consumption employed, the procedures by which the figures were derived, and the years for which the distributions were estimated. The remarkable feature about the relative inequality data is that no clear pattern of change emerges. More specifically:

(1) Overall, as measured by the Gini coefficient, relative income inequality shows no particular trend.[2]

(2) The Gini coefficient within the urban sector may have risen somewhat, suggesting greater inequality, but the evidence is mixed.

(3) The Gini coefficient within the rural sector seems to have declined, suggesting lesser inequality, but as with the urban Gini coefficient, no strong tendency is found.

(4) Possibly, the income share of the bottom 20% rose and the share of the top 20% fell nationwide, together suggesting diminished inequality, but both changes are small.

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[1] Per capita income is under $100. During the 1960's, per capita private consumer expenditure grew by less than 1/2 % per annum; see Dandekar and Rath (1971, p. 40).

[2] Since Lorenz curves crossed, other relative inequality measures would probably have yielded similarly inconclusive results.

TABLE 3. ESTIMATES OF RELATIVE INCOME INEQUALITY IN INDIA, VARIOUS YEARS AND STUDIES

A. Study by Bhatty (1974) -- Data from NCAER

Income Distribution Measure	Year 1961-62	1964-65	1967-68	1968-69
Gini Coefficient of Household Income Distribution, Rural India	0.41	0.35	0.46	0.43

B. Study by Ojha-Bhatt (1974) -- Data from NSS and National Accounts

Income Distribution Measure	Year 1953-55	1963-65
Share in Personal Disposable Income		
Bottom 20%	7%	7%
Top 20%	50%	48%
Gini Coefficient		
National	0.371	0.375
Urban	0.392	0.448
Rural	0.341	0.319

C. Study by Ranadive (1973) -- Data from NSS and National Accounts

Income Distribution Measure	Year 1953-54	1961-62
Share of Total Personal Disposable Income		
Bottom 20% - Estimate A	7.50%	7.80%
Bottom 20% - Estimate B	7.20%	7.60%
Top 20% - Estimate A	44.34%	45.47%
Top 20% - Estimate B	45.89%	46.70%
Gini Coefficient		
Rural	0.340	0.317
Urban	0.453	0.487

TABLE 3 (Continued)

D. Study by Ahmed and Bhattacharya (1972) --

Income Distribution Measure	Data from NSS and National Accounts	
	Year	
	1956-57	1963-64
Share of Pre-Tax Personal Income		
Bottom 20%	6.9%	7.6%
Top 20%	49.4%	45.6%
Gini Coefficient	0.418	0.372

E. Study by Bardhan (1974) --

Income Distribution Measure	Data from NSS				
	Year				
	1958-59	1960-61	1963-64	1967-68	1968-69
Gini Coefficient of Common Exp.					
Rural	0.340	0.321	0.297	0.293	0.310
Urban	0.348	0.350	0.360	0.345	0.350

Source: Bardhan (1974).

In summary, given the inconclusiveness of the individual findings, the contradictory indications as to whether inequality increased or decreased, and the small magnitudes of the changes as compared with probable errors in sampling and measurement, it appears warranted to conclude that the pattern of relative inequality in India remained essentially unchanged.

A leading Indian economist, P.K. Bardhan, takes issue with relative inequality measurements of income distribution. He contends: "For a desparately poor country like India, there are many who believe that no measure of inequality which is in terms of relative distribution and is independent of some absolute poverty standard can be entirely satisfactory."[1] Accordingly, he has calculated estimates of the percentage of the population below a constant absolute poverty line: Rs. 15 per capita per month at 1960-61 prices in the rural sector, Rs. 18 in the urban sector.[2] His

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[1] Bardhan (1974, p. 119).

[2] In Bardhan (1974, pp. 119-124), he describes how these poverty lines are computed. The minimally-adequate diet for a moderately active adult as recommended by the Central Government Employees Pay Commission consists of 15 oz. of cereals, 3 oz. of pulses, 4 oz. of milk, 1.5 oz. of sugar and gur, 1.25 oz. of edible oils, 1 oz. of groundnut and 6 oz. of vegetables per day, totaling 2100 calories and 55 grams of protein. To figure the family income required to achieve this diet, Bardhan works out the cost per adult, adjusts for family make-up by the adult-equivalent ratio, expands to a requisite family income figure using the ratio of food to non-food expenditures, divides by family size to obtain a per capita amount, and finally deflates by the official Agricultural Labour Consumer Price Index for the appropriate year for the rural poor and by the official Working Class Consumer Price Index for the urban poor.

results, shown in Part A of Table 4 are striking: Bardhan estimates that absolute poverty worsened greatly in India over the 1960's even though relative inequality did not.[1] Note particularly the comparison with Bardhan's own relative inequality estimates in part E of Table 3.

Several other studies have also estimated absolute poverty changes in rural India. Bardhan's conclusion that absolute poverty increased in India during the 1960's was sustained in a paper by Ojha (1970) published contemporaneously with Bardhan's original work (1970). Defining poverty according to consumption of foodgrains rather than in rupees, Ojha found that the incidence of absolute rural poverty increased considerably between 1960-61 and 1967-68 (see Part B of Table 4). Further corroborating evidence may be found in a study by Vaidyanathan (1974), who estimated that real per capita consumption declined for each fractile group in rural population and the proportion below a constant absolute poverty line increased. (Part C).

Before accepting the conclusion that absolute poverty worsened in India in the 1960's, we should also take note of contradictory evidence presented by another eminent Indian economist, B.S. Minhas. In a 1970 study, Minhas reported a decline in absolute rural poverty (see Part D of Table 4). The discrepancies in the findings of the various studies are due to a number of methodological differences: the use of adjusted versus unadjusted consumption data, application of different price deflators, and measurement of the poverty line at a different amount. It is beyond the scope of the present paper to attempt to resolve these differences.[2]

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[1] Bardhan (1974, p. 131) notes: "The direction of change in the estimates of poverty is the same if one takes the various alternative minimum standards for the poverty line suggested in the literature." (Emphasis in the original.)

[2] Readers seriously interested in knowing whether absolute poverty "really" increased or decreased in India may pursue the debate in greater detail. In addition to the studies mentioned above, for further bibliographic references, see Srinivasan and Bardhan (1974), Sarma et. al (1975), and Sen (1976).

TABLE 4

ESTIMATES OF ABSOLUTE POVERTY IN INDIA IN THE 1960's

A. Study by Bardhan (1974)	1960-61	1964-65	1968-69
Rural, percentage below Rs. 15 per capita per month*	38%	45%	54%
Urban, percentage below Rs. 18 per capita per month*	32%	37%	41%

B. Study by Ojha (1970)	1960-61		1967-68
Rural, percentage whose consumption of foodgrains was below nutritional norms	52%		70%

C. Study by Vaidyanathan (1974)	1960-61	1964-65	1967-68
Rural per capita expenditure (monthly) by fractile group*			
0-5%	Rs. 6.3	9.0	7.0
5-10%	8.4	10.6	8.7
10-20%	10.3	10.6	8.7
20-30%	12.5	12.4	10.6
30-40%	14.5	13.3	12.4
40-50%	16.4	15.1	14.3
50-60%	18.8	17.5	16.4
60-70%	21.4	22.2	19.1
70-80%	25.1	23.8	22.4
80-90%	31.8	30.2	27.7
90-95%	40.9	35.8	34.6
95-100%	72.2	65.7	51.0
All groups	21.5	20.3	18.0
Rural population, percentage with per capita consumption below Rs. 20 per month, NSS data*	60%	60%	68%

D. Study by Minhas (1970)	1960-61	1964-65	1967-78
Rural, percentage below Rs. 20 per annum	46%	39%	37%

* In 1960-61 prices.

In summary, whether absolute poverty was alleviated or exacerbated in Indian economic development depends on which study you believe. For our purposes, the most important finding is that in India, as in Brazil, relative inequality measures are found to suggest one set of conclusions with respect to changing income distribution while absolute poverty comparisons suggest another. Interestingly, the nature of the discrepancy is exactly reversed: indications of more absolute poverty (or less, in the case of Minhas' study) despite apparently constant relative inequality in India, alleviation of absolute poverty despite rising relative inequality in Brazil. These discrepancies are disturbing indeed.

C. Taiwan

Unlike the cases of Brazil and India, when one analyzes recent Taiwanese experience from either a relative inequality or an absolute income perspective, the qualitative conclusion is the same: the poor shared in that country's economic development, their incomes increasing at an above-average rate. Data on Taiwanese income distribution are shown in Table 5.

Row (1) of the table indicates that per household income nearly doubled in real terms between 1964 and 1972. This extraordinary achievement is well-known to development economists. Less well-known are the distributional aspects of that growth. These are reported in rows (2) - (5). We see in rows (2) and (3) that two measures of inequality---the Gini coefficient and the ratio of incomes of the top decile to the bottom decile---both declined, the latter more than the former. Other measures of inequality also show declining relative inequality over the period.[1] Rows (4) and (5) present the absolute real incomes of various decile groups. We see that the income

[1] Fei-Ranis-Kuo note that most of the change took place after 1968, which marked the end of the labor surplus.

TABLE 5

INCOME DISTRIBUTION IN TAIWAN, 1964 and 1972.

	1964	1972	Rate of Increase, 1964-72 (%)
(1) Mean income per household at constant 1972 prices, measured in thousands of NT$	32.5	61.0	+88%
(2) Gini coefficient	0.328	0.301	-9%
(3) Ratio of income share of top 10% to bottom 10%	8.6	6.8	-21%
(4) Income share of poorest 20%	7.7%	8.6%	+12%
(5) Mean income at 1972 constant prices (in thousands of NT$):			
First decile (lowest)	NT$ 9.9 ('000)	NT$ 20.6 ('000)	+109%
Second "	15.2	30.2	+98%
Third "	18.9	36.1	+91%
Fourth "	22.0	41.1	+87%
Fifth "	25.3	46.2	+83%
Sixth "	28.5	52.1	+83%
Seventh "	32.9	59.6	+81%
Eight "	38.7	69.0	+78%
Ninth "	48.8	83.4	+71%
Tenth "	84.5	128.8	+53%

Sources: Kuo(1975, Tables 5 and 6) and
Fei-Ranis-Kuo (forthcoming, Diagram 1).

share of the poorest decile increased, which in a rapidly-growing economy implies even more rapidly-growing incomes among the very poorest. A comparison of the rates of growth of real incomes by decile grouping (row (5)) shows a clear pattern: highest rates of income growth at the lowest end of the income distribution. Thus, the poor in Taiwan did share substantially in that country's economic development, both absolute poverty and relative inequality declining.

D. Conclusion

This section has examined changing patterns of income inequality and poverty in three countries. The results exhibit some important differences. Data from Brazil suggest a "worsening" of the income distribution, insofar as the Gini coefficient was noticeably higher in 1970 as compared with 1960, the share of income received by the very richest rose, and by one estimate the share received by the very poorest may have fallen. However, using an explicitly poverty-oriented approach focusing on absolute rather than relative incomes, we find that the poor in Brazil do seem to have shared in economic development, albeit to a limited extent. Among other things, the percentage increase in income of those below a Brazilian poverty line was at least as great and possibly double the percentage increase of those above the line.

In India, the situation is quite different. Relative income inequality did not change noticeably. Some observers have inferred from this that although India did not grow very fast it had at least "held the line" on income distribution. When the figures are re-examined from an absolute poverty perspective, we see that they did not hold the line at all. Rather, absolute poverty appears by most accounts to have increased considerably.

Only in Taiwan do the relative inequality and absolute poverty approaches

give similar qualitative assessments. There absolute poverty was reduced as the poor shared in economic development.

Let us now consider some implications of these conclusions.

III. Conclusions

The main lesson from this paper is that in practice as well as in theory the choice of a relative inequality or absolute poverty approach may make an important qualitative difference in assessing whether economic development is benefiting the poor. If one is primarily concerned with the alleviation of absolute poverty, it does not seem desirable to use relative inequality indices. To the contrary, it is more appropriate to use absolute poverty measures such as the number of individuals or families with incomes below a constant real poverty line or the average gap between the incomes of the poor and the poverty line. Depending on the type of measure used, the results can look very different.

It is instructive to analyze why the inequality and poverty measures agree qualitatively in Taiwan but not in Brazil and India. The Taiwan result is due to a combination of favorable outcomes: (i) The rapid growth of the economy and (ii) The decline in relative inequality. Taiwan's poor received a larger fraction of a larger total, so their absolute incomes unambiguously rose. Brazil, in contrast, satisfied (i) but not (ii), i.e., relative inequality increased in a rapidly-growing economy. The growth of income more than offset rising inequality, though, leading to higher absolute incomes for the poor. In India, however, neither (i) nor (ii) held, which may perhaps explain the discrepancy between some studies which show rising absolute poverty (Bardhan, Ojha, Vaidyanathan) and those which report the opposite (Minhas).

One might speculate that these case studies represent a more general relationship between the rate of growth, the nature of growth, and the alleviation of poverty: rapid growth seems to reduce poverty unless inequality is greatly exacerbated, but poverty is not likely to diminish

when growth is lacking. This speculation sounds suspiciously like the "grow now, redistribute later" and "trickle down" schools of thought of the 1960's. But that is not what I am saying. Rather, I would argue that within the existing economic order in a given country, and in the absence of major (if not revolutionary) structural change, any economy's distributional rules are more or less fixed. From this, it follows that the economic position of the poor will be enhanced only when there is more to divide. The contrast between Taiwan and India is all too apparent. Alas, non-growth and non-alleviation of poverty seem to go hand in hand...unless a far-reaching decision is made to change the rules for dividing assets, rewarding productive factors, and distributing society's goods and services. One dimension of that choice is the evenness or unevenness of the growth strategy pursued. In this respect, the three countries discussed above differ importantly.

Taiwan is reputed to have followed an unusually broadly-based growth path, improving the lot of large segments of the rural poor, encouraging small-scale industry, etc.[1] India's non-growth was even too, the economic lot of the poor rising and falling with the weather and other external conditions. In contrast, Brazilian growth seems to have affected relatively few: employment in the modern sector and other relatively favorable occupations expanded, but only a small proportion of the labor force was involved.[2] However, major sectors went nowhere: rural workers' wages

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[1] See, for example, Ranis (1974).

[2] See Fields (1977, Table 3) and Morley and Williamson (1975).

and the urban minimum wage did not rise and whole regions remained underdeveloped.[1] Perhaps future research will determine if the evenness of growth as well as the rate of growth are systematically related to the rate of alleviation of poverty and, if such a pattern is found, why.

At issue is a very basic point: what is the ultimate aim of economic development studies? I would suggest this question: what combinations of circumstances and policies lead some countries to upgrade the economic positions of their poor at faster rates than others? The viewpoint expressed in this paper is that studying the magnitudes and structure of absolute incomes and poverty may be the best way of finding out the answers.

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[1]See Fishlow (1973a, 1973b).

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