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Issues in the Measurement and Analysis of Income Distribution in Developing Countries: Some Comparative Perspectives

INTRODUCTION

It would be foolhardy (not to say foolish) to attempt in a brief space a well-balanced review of the whole complex of issues surrounding the distribution of income in developing countries. This paper has a much more modest aim – to take a critical look at some of the analytic and empirical work over the past years in order to see what lessons, if any, may be derived for future research and, more particularly, for the incorporation of distributive and policy–alleviating objectives into development policy.

The emphasis on policy is important because explicit or implicit policy objectives and judgements are likely to have important consequences for ostensibly technical issues of measurement as well as for more theoretical questions of analytic design and specification. As has frequently been noted in other areas of economics, the work of even the most academic of economists tends to be sensitive to perceptions of major areas of policy interest. And the evolution of work on distributive aspects of development has both derived from, and contributed to, the changing perspectives within which specific policy problems are perceived as requiring greater or lesser attention.

The rest of the paper, therefore, tries to follow this evolution by characterizing successive stages of research on income distribution in terms of the types of problems addressed and their links to the framework of development policy concerns. Particular studies are singled out for illustrative purposes but we have made no attempt to be comprehensive.

*The views expressed should not be interpreted as necessarily reflecting those of the World Bank.

STAGES OF RESEARCH

Growth, inequality and decile shares

In the policy environment of the 1950s and early 1960s, there was an emphasis on growth and the major policy focus was the improvement in per caput income. Distributional considerations took a secondary position to a concern with savings and capital accumulation. Indeed, one strand of thought in that period was that inequality might well be *necessary* for growth. The linkage came from acceptance of the current income theory of savings, according to which the rich were observed to save at a higher rate[1] Thus, higher savings out of a given pot required a higher inequality. This concern with savings and growth seems to have been a major influence on subsequent research[2] on the relationship between inequality and growth (that is, did higher inequality lead to higher growth) and between growth and inequality (that is, did higher growth lead to worsening inequality through differential savings rates, for example do the rich get richer?).

The growth-inequality relationship was given a specific sign by Kuznets, who postulated that:

> In the process of growth, the earlier periods are characterized by a balance of counteracting forces that may have widened the inequality in the size distribution of total income for a while, because of the rapid growth of the non-agricultural sector and wider inequality within it. It is even more plausible to argue that the recent narrowing of income inequality observed in the developed countries was due to a combination of the narrowing inter-sectoral inequalities in product per worker, the decline in the share of property income in total income of households, and the institutional changes that reflect decisions concerning social security and full employment. (1963, p. 67)

As mentioned by Bacha (1977) research 'tended to short-cut the inter-sectoral differentials stage' and instead of relating growth to inequality proceeded to relate inequality to the *level* of income. This testing was in search of what has now come to be known as the Kuznets inverted U-curve hypothesis, and it was mainly approached as an empirical issue.

Since historical data for individual countries was scarce, analysts were constrained to infer inter-temporal behaviour from cross-country evidence. The methodology employed was straightforward. Data on the size distribution of household income was converted into an inequality measure,[3] and this measure related to per caput income and/or growth. The literature generated by this triple thrust was enormous.[4] The basic results which emerged were:

(a) the empirical evidence, generally cross sectional, seemed to confirm the Kuznets hypothesis;[5]
(b) though some argued that the poor had become absolutely worse off (Adelman-Morris (1973)), the general finding was that this was not the case (Cline (1975)) but as implied by (a) above, the poor did seem to lose in relative terms.

The following two sections are devoted to a critical analysis of these and other results. The discussion is conducted at two levels: (a) the reliability of conclusions, and (b) their usefulness in terms of policy. The former is affected by the appropriateness of the methodology and the reliability of data. Two particular questions addressed are (i) availability of methodologically appropriate data and (ii) reliability of the available data.

Availability of appropriate data

What are appropriate data for the measurement of income inequality? Since concern is with welfare levels, a meaningful basis for comparison is with individual income rather than household income. This follows from the simple observation that individuals in a two-person household earning $4,000 cannot be presumed to be at the same welfare level as individuals in a four-person household earning $6,000. Adjustment of household income for family size has continuously been emphasized by Kuznets (1976): 'It makes little sense to talk about inequality in the distribution of income among families or households by income per family or household when the underlying units differ so much in size . . . . Before any analysis can be undertaken, size distribution of families . . . . must be coverted to distribution of persons (or consumer equivalents),' (p. 87). The issue is of more than theoretical importance since adjustments for family size can materially affect the estimates of inequality. Deaton (1981), for instance, finds that a re-ordering of households according to expenditure per caput in Sri Lanka decreases the Gini coefficient from 0.2535 to 0.2376. Lluch (1981) shows that in Brazil the per caput income distribution is substantially more equal than the household income distribution, that is the bottom 40 per cent has a share of 11.1 per cent (per caput) compared to a share of 8.7 per cent (household).

Apart from the unit of measurement, problems remain with the definition used to measure income and the 'proper' definition has received considerable attention in the literature. It has been convincingly pointed out that the distinction between measured current income and theoretically preferable estimates of permanent income is a non-trivial one. Lilliard (1977), using panel data for US households, finds that permanent income inequality is much less than current income inequality. Using a different methodology, and the assumption that work is a choice variable (that is a 'full income' model) Kuznic and DaVanzo (1979) arrive at full income estimates of inequality for Malaysia which are less unequal than the current income estimate (for example the bottom 40 per cent of individuals receive 9 per cent of actual income but 13.7 per cent of full income).

What these above considerations suggest is that conventional analysis of income distribution may be seriously misleading. Ahluwalia recognized this problem: 'There are a number of conceptual and definitional problems in measuring income inequality and available surveys do not display any uniform practice in handling these problems', (1976, p. 339). But the data are used, nevertheless, by Ahluwalia in obtaining the U-curve described earlier (see note[5]) and the effect of mixing per caput with household income distributions is ignored.

Reliability of available data

Notwithstanding the conceptual problems pointed to earlier, available income distribution data for most countries is notoriously deficient. In a comprehensive survey of income distribution data for Latin America, Altimir (1977) concludes on the basis of 49 different surveys and census results that 'the lack of nationwide coverage in a large number of the available surveys can rarely be compensated by using complementary sources', and 'to accept that a household survey or census accurately depicts "the" overall income distribution for the country in question would be extremely unwise as a starting point for analysis' (p. 91).

Uncritical use of data can be misleading even when the time-series data on inequality are available for a particular country. Korea, for instance, annually publishes results of urban and rural income surveys. On the basis of these data, Rao (1978) concluded that 'Korea is seen as a country which has been quite successful in combining rapid growth with improved equity' (p. 383). If true, this result would mean either that the Kuznets U-curve was not an appropriate representation of an average country behaviour,[6] or that policies followed by Korea have an 'abnormal' but desirable effect on income inequality.[7]

However, serious limitations of the Korean data were first pointed out by Choo in 1975, and 'adjusted' income distributions were constructed by Choo and Kim in 1978. Bhalla (1979) also adjusts the data for various 'omissions' in the surveys. (These omissions included all residents of townships (12.2 per cent in 1976), landless labourers, single households, and the very rich, among others.) These adjustments suggest that inequality in household incomes worsened during the time period 1970–76 (the share of the bottom 40 per cent of the households declined from 18 per cent of income in 1970 to 15.4 per cent in 1976) thus *reversing* the Rao conclusion mentioned earlier.

Like Korea, the Taiwan area's growth rate has also been impressive and it is of considerable interest to study the evolution of its inequality. But like Korea, Taiwan's income distribution data are questionable. Fei, Ranis and Kuo (1979) provide a detailed analysis of Taiwanese inequality, and themselves note that the data showing an increase in the income share of the bottom 40 per cent from 11.3 in 1953 to 20.3 per cent in 1964 are extremely questionable. Sample size is just one of the problems. In 1953, the sample size was 301 households; in 1964, 3,000. However, a major thrust of the analysis is in explaining the *decline* in inequality from a Gini level of 0.32 in 1964 to 0.29 in 1972. One of the stylized facts of the income distribution literature is the slow *change* in inequality that is observed in most countries in the absence of drastic redistributive policies. The change from 0.32 to 0.29 during an eight-year period is plausible. What is less plausible is that this change could have occurred in just two years. Closer inspection of data shows the following Gini levels: 1964:0.321; 1966:0.323; 1968:0.326; 1970:0.293; 1971:0.295; and 1972:0.290. Observations for 1964 to 1968 are undistinguishably close, as are the Ginis for 1970 to 1972. Such a break in the series suggests (but this is just speculation) that a significant change in

comparability – either in survey design, administration or coverage – took place during the period 1968 to 1970. In the absence of detailed attention to this question (the authors only discuss the limitations of pre-1964 data) it is difficult to place much weight on the figures.[8]

Despite the nature and magnitude of problems alluded to above, it is far from our intention to dismiss the 'first' stage of research on income distribution in developing countries. Our purpose has been to document the various problems involved, and to caution against hasty or potentially misleading conclusions. The cross country analysis was forced on researchers, mostly due to lack of appropriate longitudinal country data. And, subject to appropriate caveats, much has been learned from this first stage research:

1 Policy makers, survey organizers and researchers are now much more sensitive and knowledgeable about appropriate data for the study of income distribution.
2 Reliable point estimates of income distribution for several countries are now available. This should be useful for any future studies on changes in income distribution.
3 The causation running from inequality to growth has been shown to be tenuous on both theoretical and empirical grounds.
4 As development proceeds, measures of relative inequality have been observed to remain fairly stable, or slightly worsen, providing weak confirmation for the Kuznets hypothesis.[9]

Absolute poverty – measurement and interpretation

A second stage of research on income distribution (started even before the above mentioned first stage results had been reached) reveals, in a classical manner, the influence of policy on research. By the late 1960s and early 1970s, increasing concern was being expressed at the inadequacy of growth alone to 'deliver the goods'. 'Trickle down' was alleged not to work at all or to work too slowly, so that indirect alleviation of poverty via growth needed to be complemented by direct attacks on poverty. The shift in policy emphasis was strongly articulated by McNamara in his speech in Nairobi in 1973 on the problems of the absolute poor. Subsequent research, instead of emphasizing a trade-off between growth and equity, took as the policy goal the achievement of redistribution with growth.[10]

One feature of this research was to eschew relative inequality concepts like the bottom 40 per cent in favour of analytic focus on the problems and living conditions of the absolute poor. This shift had distinct advantages in terms of policy. The former approach was not particularly useful since target groups were not well defined. Discussions of Gini coefficients or the bottom 40 per cent did not identify the regional or occupational classification of the poor. It was increasingly recognized that from a policy point of view, it was easier (and more desirable) to *affect* changes in income levels for identifiable poverty groups rather than to attempt to affect changes in overall measures of relative inequality; several of the old problems carried over into the new emphasis – in particular, problems relating to proper identification and measurement.

Attempts at a definition of poverty and the drawing of a 'poverty line' have a long, and controversial, history (see Sen, 1978). An important characteristic of these definitions is that they differ across countries and time-periods. A level of income that reflected wealth in 1920 in the United States may reflect poverty in 1980. Analogously, a rich person in India may be poor according to American criteria. Thus, the poor in the two societies cannot be added or compared in any meaningful sense. This non-comparability, however, does not negate the relevance of the definition in either society. Rather it reflects an inherently relativistic aspect of poverty. Both the absolute and relative notions of poverty are concerned with welfare and income levels of the poorest. This fact can cause confusion, but it is important to note the fundamental differences between the two concepts.

A definition of absolute poverty must be relatively invariant with respect to time and geographical differences. Implicit in any definition of absolute poverty must be the notion that *at* the 'dividing line' people in different time periods or groups are in some sense at comparable levels of welfare. In other words, the concept of absolute poverty requires a cardinal measure of minimum economic welfare which is sufficiently invariant over time or between social or national groups to permit meaningful comparisons. In contrast, income levels associated with relative poverty (the lowest 20 or 40 per cent) can and do vary over time or between groups and societies.

The absolute definition requires a common methodology for assessing poverty while relative poverty does not. These differences imply that the two cannot be treated in an 'equivalent' manner. However, it *is* the case that an absolute poverty measure has a relative component to it. Choices about the dividing line are determined at least in part by 'relative' considerations. Nevertheless, an absolute poverty definition attempts to reduce the relative component to a point where valid comparisons can be made. It is only in this sense that the measure is 'absolute'.

Are there any objective criteria which can be used to define the absolute poor? One school of thought rejected attempts to establish elaborate objective standards for the poverty line and instead opted for a fairly arbitrary absolute poverty level (Ahluwalia et al., 1979). However, another whole line of research has sought a more objective and explicit specification of the poverty line via a nutritional norms approach to the measurement of poverty.

This approach emphasizes the consumption of one basic need – food. If it is assumed that a 'need' for food dominates all other needs (that is there is a low substitutability between food and other goods below the required level), then inadequate food intake can be used to represent absolute poverty.[11] Such a definition might then be meaningfully used for cross-country and inter-temporal comparisons. However, the specification of food inadequacy requires that a 'satisfaction' level be defined. This level can only have meaning in terms of nutrients like calories, proteins, vitamins and so on. In theory nutritional norms for each component of food can be used to test for adequacy. A 'short-cut' approach is to concentrate on calories under the

assumption that calorie intake is closely correlated with the intake of other nutrients. Then, a level of expenditure at which the 'required' calories are purchased can be defined as the poverty line. This point is inferred from the joint distribution of average calorie intake and average income per caput.

This straightforward methodology was followed by Dandekar and Rath (1971) for India and Reutlinger and Selowsky (1976). However, this intuitively appealing approach has had its share of detractors. A major critic of this methodology was Sukhatme (1977). The fundamental problems he found in this approach were (a) an assumed perfect, but invalid, correlation between malnutrition and absolute poverty; (b) an assumption that average requirements are minimum requirements; and (c) an assumption that inter-individual variations in requirements are negligible or non-existent. As Sukhatme illustrates, if data on a healthy population are collected, and if 'requirements' are normally distributed, then the above methodology will indicate that half of the healthy population is malnourished (and therefore poor) and the other half is over-nourished, that is the entire healthy population is unhealthy (and poor?).

Some of these criticisms can be overcome if average requirements are adjusted for inter-individual variations. This is essentially the view taken by Reutlinger and Alderman (1980) and by Sen (1980), who defends the caloric approach by stating, 'The level of income at which an *average* person will be able to meet his nutritional requirements has a claim to being considered as an appropriate poverty line', and 'considerations of average nutritional requirements can be used for one perspective on poverty even when nutritional requirements vary from person to person', (pp. 4,5). However, as shown in Bhalla (1980), even this modification does not render the caloric approach generally useful for defining absolute poverty. The major inherent drawback is caused by the low elasticity of calorie consumption with respect to income. Thus, even small measurement errors in calorie requirements or consumption translate into large variations in the poverty line and in estimates of the population in poverty. For example, calculations based on the relationship between per caput consumption and income for urban Brazil in 1974, [12] show that if average requirements are varied from 2,321 calories to 2,030 calories per caput (a change representing the FAO and ENDEF requirements, respectively) the estimate of the poverty line changes from 15,400 cruzerios to 4,000 cruzerios, and the estimate of population in poverty changes from 99 to 50 per cent. A 13 per cent change in requirements changes the poverty line estimate by 385 per cent. Such a high elasticity of the poverty line estimate to a small error in measurement is not conducive to rigorous or objective specification.

That such small errors are inevitable with calorie intakes/requirements and so on is documented in detail in Bhalla (1980). First, it is more difficult to estimate the extent of calories consumed than to ask consumers about other variables, for example consumption expenditures. Second, recommendations of requirements vary according to FAO and other agencies, for example the US Food and Nutrition Board. Third, individual countries may have their own estimate of requirements. Finally, survey estimates of

calorie consumption may vary from national food balance sheet estimates of consumption. Thus, without any consideration of conceptual problems relating to the use of average requirements, choice of 'data' alone would seem to determine whether 35 or 89 per cent of the population of Brazil is classified as malnourished/poor. Similarly, results published in Hanes (1974) would seem to indicate that 67 per cent of American males and 80 per cent of American females have a calorie intake below the FAO requirement levels.[13] If US recommendations are imposed, the corresponding 'malnutrition' figures are 46 per cent for men and 70 per cent for women. Since these results are based on individual intake data, these figures do not have any inherent biases. Comparison with other surveys (in particular the 1977–78 Nationwide Food Consumption survey) suggests that the Hanes data are fairly accurate. Thus, the inherent unreliability of the calorie approach would argue for extreme caution (if not rejection) in its use to establish an absolute poverty line.

An alternative to both the income and calorie approach to proverty measurement is the Basic Needs Approach. This method (Streeten and Burki (1978); ILO (1977); Grant (1978)) defines poverty in its most general form, that is a condition which reflects an inadequate purchase (or possession) of various commodities. Attempts at specificity have led to the following definition:

> There is not a single level of basic needs but a hierarchy. At the lowest level, basic needs are those that have to be met for *bare* survival. At the next level, basic needs may be defined as those that have to be met for *continued survival* and comprise a minimum of food and water, protection from *fatal* diseases and adequate shelter. At the third level, the satisfaction of basic needs covers continued *productive survival* and in addition protection from *debilitating* diseases, more food and some education. Finally, certain *non-material* needs may be added, like participation in making decisions affecting one's life and work, and the *relative* component of poverty (relative to the average income).
>
> (Streeten and Burki, 1978, p. 413, original italics).

Though the last attribute can be ignored, the definition of basic needs above is *roughly* comparable to a notion of absolute poverty. Even isolating the core basic needs – 'food (calories and proteins), clothing, safe drinking water and shelter' – there remain severe problems of estimation. Streeten and Burki estimate the number of people suffering from 'three core basic needs' to be approximately 800 million people in 1975, but it is doubtful that their measurement methodology can satisfy criteria pertaining to cross-country and inter-temporal comparisons.

Nevertheless, the concept of basic needs may serve a useful function in formulation and implementation of policy. The direct provision of some basic needs (running water, electricity, education, and so on) may be more effective than more general or more indirect measures of increasing welfare; moreover, specific targets are more easily defined. What is being contended here is that basic needs and absolute poverty are separate and distinct concepts, though obviously an overlap is present.

Absolute poverty – interpretation of data

Even if proper definitions are available, the problem of proper definition, and inference, remains. Given the political and policy importance of the subject, researchers should be cautious in inferring conclusions. For instance, a healthy debate in India ensued over whether absolute poverty (measured as the percentage of population below an 'arbitrarily' defined income line) had declined during the period 1960–61 to 1967–68. Bardhan (1974), Minhas (1974) and Vaidyanathan (1974) all found *different* estimates of poverty in 1967–68, though all concluded that poverty had not declined, and indeed shown some increase.

If persistent, an increase in poverty would be alarming. However, Ahluwalia's (1977) analysis outlines the importance of end-points in poverty analysis. In his study on poverty in rural India, Ahluwalia presents a profile of time-series of poverty in different states of India, 1957–58 to 1973–74. This 'time-series shows a pattern of *fluctuations*, with the incidence of poverty falling in periods of good agricultural performance and rising in periods of poor performance. Given the importance of weather induced variations in Indian agriculture, there can be little doubt about the important of such fluctuations and it is *crucial* to keep these in mind in assessing underlying trends' (1977, p. 319, our italics).

What the debate caused by choice of deflator and end-point underscores is the extremely complex nature of the subject. The fact that analysis of trends in absolute poverty suggests no immediate pulling of a policy lever, should not blind us to its importance. It is of grave policy concern to know about the welfare levels of the poor and their changes. This feedback can be related to growth performance, and the efficacy of various policies can be compared and assessed. Finally, it is a test of 'trickle-down': to what extent, and how fast, does per caput growth translate into the growth of incomes of the poor – a result that can only be achieved by time-series data rather than from cross-country regressions.

The final 'interpretation' issue relates to the inference of time-series behaviour from cross-country evidence. Unlike other variables (for example income elasticity of demand for food) cross-section estimates of poverty (or inequality) cannot be easily translated into time-series behaviour. This is because the control for initial conditions is crucial for analysis.

Analysis of data from Sri Lanka illustrates this point clearly. During the 15-year period 1963–1977, Sri Lanka was spending almost 10 per cent of its GDP on social programmes. It is of considerable interest, therefore, to measure the results of this unusually high expenditure. According to World Bank data, Sri Lanka does appear to be a 'positive' (or good) deviant with respect to *four* important social indicators – life expectancy, fertility, infant mortality and adult literacy. Cross-country regression data for 1975 confirms this tendency (Isenman, 1980, p. 239). An example of the possible deviation magnitudes involved has been measured by Sen using Isenman's life expectancy equation (data for 1975 or closest year):

$$1n\ (\textit{life expectancy}) = 3.2 + 0.132\ 1n\ (\text{per caput income}),\ R^2 = 0.7.$$

> From this, it is easily calculated that the income per caput corresponding to Sri Lanka's life expectancy of 69 years is $2,684 as opposed to its actual value of $130 in 1975 US dollars. Thus, the per caput income of Sri Lanka would have to be raised by a factor of 20.65 for it to have its *actual* life expectancy as its expected life expectancy based on income (Sen, 1980, p. 45).

The Sri Lankan record in enhancing social welfare is commendable and unambiguous. What *is* questionable is Sen's assertion that 'there is little doubt that the *social welfare programmes* of Sri Lanka place it at an advantaged position in terms of poverty removal and *longevity* increase given its income level' (1980, p. 44, our italics). In order to obtain a proper estimate of the effect of these programmes, *initial* conditions would have to be controlled for and one method of doing this would be to estimate the model in terms of first differences, that is 1975 level *minus* the 1963 level. This is not done either by Isenman or Sen. However, Table 1 of Isenman's paper suggests 'little' role for the social welfare programmes during 1963–1973. In this time period, life expectancy increased little (albeit from a high level) – 63 to 66 years, and infant mortality dropped from 56 to 46.[14] Thus, it is highly probable that Sri Lanka would appear deviant even with 1963 data for itself and 1975 data for other countries.

CONCLUDING REMARKS

Despite the problems and pitfalls which researchers have faced (and which may have been given disproportionate attention in this paper) the past fifteen or twenty years have been an extraordinarily fruitful period of research on income distribution in developing countries. There has been a substantial accumulation of empirical data along with considerable progress in the clarification of conceptual issues arising in both theory and measurement. Moreover, this is one area where research efforts have been closely tied to questions of direct policy concern.

What conclusions may be drawn for future research directions? One that emerges clearly from the discussion in the previous sections is the importance of maintaining an historical perspective in any research on distributive issues. Perhaps the greatest current need on the empirical side is for time-series and longitudinal studies in order to decrease reliance on questionable inferences from cross-sectional survey. Closely related to this is the need for continuing analytic and empirical efforts to forge closer and better links between the economic and functional status of identifiable groups and the processes determining income generation, asset accumulation and access to economic oppotunities. This implies a shift away from analyses of size distribution *per se* towards investigation of the structure and operation of factor markets and the manner in which particular groups are affected by and respond to changes inherent in economic development.

Finally, and in many ways most important, the work on distributive

aspects of development has been a major contributor to a broader view of development – one in which levels of economic welfare are seen as important determinants of the pace of economic growth. One of the potentially most rewarding frontiers for future research lies in the exploration of the relation between income levels and the contributions to growth arising from human resource development.

NOTES

[1]Both the other theories of savings behaviour – the life-cycle and permanent income – do not postulate any dependence of the savings rate on the level of per caput income and therefore imply a zero effect of inequality on aggregate savings. This result is rejected by Bhalla's (1980) study of savings behaviour amongst rural households in India. However, Musgrove's (1980) cross-section study of 30 countries shows an insignificant effect of inequality on savings rates.

[2]Until, of course, the next major directional change – the concern with the absolute poor – see section on absolute poverty.

[3]A separate literature developed on the generation of inequality measures with desirable qualities. Popular measures included the Gini coefficient, the log. variance of incomes, the Theil index and the cumulative income shares of households ranked according to household income, for example the bottom 40 per cent.

[4]See Cline (1975) and Ahluwalia (1976) for a partial listing.

[5]In the most detailed study on the subject, Ahluwalia (1976), found the share of the bottom 40 per cent $= 70.6 - 44.4 \ln GNP^2 + 8.3 (\ln GNP)^2 + 12.0$ (socialist dummy), where GNP is in per caput terms. In this U-shaped curve, the turning point (that is the point beyond which income inequality would improve after deteriorating) was observed to occur at US $468 (1965-71$) –a level which included most LDCs.

[6]Time-series income distribution data for Taiwan also shows an increase of *equality* with growth. The data problems associated with Taiwan are discussed below.

[7]The former conclusion would follow because, as mentioned earlier, a cross-country regression is essentially used to derive implications about individual country behaviour over time. And the Korean data directly provides the latter result.

[8]We would like to thank Rakesh Mohan for discussions on this matter.

[9]Historical data for the US suggests no change in inequality in the period 1948–1970 (Chiswick and Mincer, 1972) and improvement in the period 1929–50 (Williamson and Lindert, 1980). Indian data suggests that there has been virtually no change in inequality since 1950 (Bardhan 1974). A theoretical formulation for the inevitability of the Kuznets curve has been provided by Robinson (1976).

[10]The policy shift in *research* was heralded by an important new book, Chenery et al., *Redistribution with Growth*, 1974.

[11]Empirical support for this intuitive view is provided by the fact that the poor often devote about 60–80 per cent of their budget to food purchase (Bhanoji Rao, 1981).

[12]These data are from the highly respected ENDEF Nutrition Survey. Further, the low calorie intake-income elasticity relationship is typical of most countries.

[13]This result is observed for the age-group 25–34 years. Similar results are observed for other age groups.

[14]During the preceding 10 years the changes were from 53 years to 63 years (life expectancy) and from 71 years to 56 years (infant mortality).

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DISCUSSION OPENING – SUSUMU HONDAI

The authors of this paper have focused their discussion on the analytical and empirical work over the past years in order to see what lessons may be derived for future research and for policy formulation to alleviate the poverty problem.

At the early stage of theoretical development, there was a great emphasis on growth, and distributional considerations took a secondary position. Indeed it was thought that inequality might well be necessary for growth. Since historical data for individual countries was scarce, most analyses done to infer intertemporal behaviour were from cross-country evidence.

However, these analyses utilized data which were not always appropriate or reliable. Most of the problems associated with the data mentioned in the paper are already well recognized. In relation to per caput and household income data, the authors have pointed out that meaningful basis for income distribution analysis is individual income rather than household income, since the welfare level of the individual depends on individual income. But the most important justification for looking at families rather than individuals is the fact of widespread income sharing within families. In a family, both economically active and dependent persons are included. The family is the unit that decides how to allocate the distribution of goods and services among its members. Another reason for choosing the family as a recipient unit is the difficulty in many situations of attributing incomes or earnings to a specific individual as in family-run farms or business. Still another is that property is jointly held, so that the income from the property is jointly received and not assignable to any one family member.

The next development of the research on income distribution mentioned in the paper was direct attacks on poverty. From the policy point of view, it is more meaningful to effect changes in income levels for identifiable poverty groups than to attempt to effect changes in overall measures of relative inequality for the contemporary developing countries. In this discussion, the authors identified the problems for defining poverty and made a detailed analysis associated with three definitions of poverty, arbitrary absolute poverty level, nutritional norms and the basic human needs approach. All the income adjustment and other fine points mentioned are useful and indeed indispensable in measuring the true extent of the poverty problems in LDCs.

With all the attention paid to theoretical complexities and definitional problems, I fear we may be moving quite far from where we want to be. The major goal in measuring absolute poverty is to quantify the extent of economic misery in a country or in the world so as to be able at a later time to assess progress toward its alleviation and more generally to learn how much the benefits of economic development are distributed. In other words, we ultimately want to assess changes in income distribution over time. In time-series comparisons, whatever biases and limitations there are in our definitions of poverty and in the data used to measure it at one time may reappear next time. If so, the indicated changes in the unadjusted data are likely to parallel the changes in the ideal distribution of income. What is important about the absolute line in a dynamic development context is that it be held constant in real terms. Thus, the usual types of figures on income, although not ideal in many respects, may serve as a useful guide to the economic position of the poor. Definitional issue and measurement complexities need to be addressed; but attention to them sometimes diverts attention from more pressing concerns: what produces poverty and is absolute poverty being alleviated with economic growth?

An important point in the aspect of absolute poverty is to gain a clear understanding of determinants of incomes at individual and household levels. Studies breaking down income inequality, for instance, those done by Fei, Ranis and Kuo, 1979, demonstrate that in the countries for which empirical studies are available, variations in labour income account for a larger fraction of total income inequality than do variations in all other income sources combined. This is partly because labour's functional share is higher than any other and partly because labour is the predominant income source. Hence an understanding of labour income inequality and its causes will be a central issue to the study of income distribution in developing countries. To attack this issue, we have to direct our research efforts more towards human capital analysis and earning function analysis. Analysis of the earning function examines the functional relationship between the income of a recipient unit and the factors thought to determine income. Future analyses in these areas will clarify functional income distribution which has been neglected for a long time and yield a high pay-off for intellectual effort.