1. Introduction

A large majority of contemporary developing countries (outside of Central and South America) achieved political independence from colonial rule after the second world war. Those who came to power in them associated colonial rule with neglecting, if not actively preventing, a balanced development of their economies outside of export-oriented production. They were determined to transform their economies, primarily through industrialization. Indeed in some countries, such as pre-independence (and pre-partition) India, in the thirties and early forties, several groups had thought about, and published their own blueprints, for the development of India once it achieved independence.

It is natural and unsurprising, given the mass poverty in large populous countries such as China and India, that their leaders saw the single overarching objective of development as eradication of poverty. They recognized that poverty is a multifaceted phenomenon that went beyond inadequate incomes and was reflected in the then prevailing low life expectancy, high rates of infant, child, and maternal mortality and general morbidity, high rates of illiteracy (particularly of women) and low rates of school enrollment and completion, and extensive malnutrition (particularly high rates of stunting and wastage among children). Some of them included absence of participatory democracy as one important facet of poverty. However, they also believed in, and emphasized, the instrumental roles of rapid growth in income and better

*I thank William Easterly, Michael Lipton, Martin Ravallion, Suresh Tendulkar, Vinod Thomas, Christopher Udry, Gianni Zanini and an anonymous referee for their comments on an earlier version. Needless to say, they are not, and I am, responsible for any errors that still remain.*
distribution of the growing income for rapidly reducing all facets of poverty. These facts are best illustrated by the pre-independence plans of India.

The classic early study of poverty in India was by the engineer-statesman Sir Dadabhai Naoroji (1901), an Indian who was elected to the British House of Commons. During the colonial era there were a number of socio-economic studies of villages and the extreme poverty of villagers was their major theme (Mann 1916, 1948, Slater 1918). Mann, drawing on the pioneering study of Rowntree of England, estimated the proportion of the poor in the village he studied was 40 percent.¹

Naoroji did not offer a blueprint for development. Several other individuals and groups across the political spectrum did, starting from Sir M. Visveswaraya (1934), National Planning Committee (NPC) of Mahatma Gandhi’s Indian National Congress (Nehru 1946), the Indian Federation of Labour (Bannerjee et al. 1944), and a group of businessmen from Bombay (Thakurdas et al. 1944). On economic issues, the Mahatma did not see eye to eye with his foremost follower, Jawaharlal Nehru, who headed the NPC. Other followers of Mahatma had their own Gandhian Plan for Development (Agarwal 1960). Although the groups differed on the details of a development strategy, all agreed that the overarching objective of India’s development has to be the eradication of poverty and that poverty is not just lack of income. The NPC, which completed its work in 1940, is quite typical of the groups. Its objective

“was to insure an adequate standard of living for the masses; in other words, to get rid of the appalling poverty of the people...the irreducible, in terms of money, had been estimated by economists at figures varying from Rs. 15 to Rs. 25 per capita per month (at prewar prices)...[To] insure an irreducible minimum standard for everybody, the national income had to be greatly increased, and in addition to this increased production there had to be a more equitable distribution of wealth. We calculated that a really progressive standard of living would necessitate the increase of the national wealth by 500 or 600 per cent. That was, however, too big a jump for us, and we aimed at a 200 to 300 per cent increase within ten years.” (Nehru 1946, pp. 402-3, emphasis added).

¹Michael Lipton rightly chided me for not citing these studies in an earlier version of this paper.
Its “objective tests” for progress in poverty eradication included: the attainment of a balanced diet having a caloric value of 2400-2800 kilo calories per adult worker, improvement in clothing from the then consumption of 15 yards to at least 30 yards per capita per annum, housing standards to reach at least 10 square feet per capita, liquidation of illiteracy, increase in expectation of life and access to adequate medical facilities.

All groups (with the possible exception of the Gandhians) set great store on rapid growth of income and, in particular, industrialization as a means for eradicating poverty. Visveswaraya proposed the doubling of national income in ten years. Evidently NPC wanted to double, if not triple, incomes in ten years, and the group of businessmen proposed doubling per capita income in fifteen years. The NPC emphasized better distribution as well as growth in income. Interestingly the NPC had a sub-committee working on family planning and population policy. In the post independence era, except for the modest first five year plan (1951-56), all the subsequent five year plans set growth targets exceeding five per cent per year. Indian policy makers are by no means unique in seeing rapid income growth as the major instrument for poverty reduction—statements similar to those of the Indians could be found in development plans of many other countries. The assertion that is sometimes made that policy makers in developing countries were obsessed with growth and ignored problems of poverty and human development is a myth. What is not a myth, but a fact, is that barring a few, most developing countries did not achieve rapid growth.

Indeed, in contrast to the optimistic expectations of early development policy makers about the possibility of achieving a substantial reduction, if not elimination of mass poverty, through rapid income growth in a generation, if not sooner, the actual development experience in the five decades since the end of the second world war is decidedly mixed. A few countries of East Asia, other than China, have achieved sustained and rapid growth for more than three decades. In some countries of South East Asia and China, there has been rapid growth of GDP at rates close to 10 percent per year in the two decades since the eighties. In India there has been less spectacular, but more rapid growth since the eighties relative to the prior three decades. China and India are the world’s two most populous countries. The number of poor at the start of
their relatively rapid growth phase was very large. As such, the proportion of the population of the developing world whose lives were improved because of the reduction of poverty in these two countries is substantial. Rodrik (2000) points out that until the first oil shock of 1973 more than 40 developing countries grew at rates exceeding 2.5 percent per capita per year including 15 in Sub-Saharan Africa. Unfortunately barring a few (Botswana, Ghana, Lesotho Mauritius and Mozambique) there was little growth and even some decline in income in other Sub-Saharan African countries.

Data on income and its growth in many developing countries are subject to serious biases and measurement errors. Data on trends in income poverty, let alone on other facets of poverty, are even more problematic—more on data issues below. The World Bank (1999a) estimates that, based on data from countries for which at least one household survey was available during 1985-98, the proportion of people living on less than $1 a day (in 1985 purchasing power parity terms) in developing countries was about 24 percent in 1998 as compared to 28 percent in 1987. However, there was substantial variation in performance. In East Asia, China, South East Asia (until the recent financial crisis) and India, growth was accompanied by large reductions in some, and more modest reductions in others, in poverty levels. In contrast, “African economic performance has been markedly worse than that of other regions. During the 1980s, per capita GDP declined by 1.3 percent p.a., a full 5 percentage points below the average for all low-income developing countries. During 1990-94 the decline accelerated to 1.8 percent p.a. and the gap widened to 6.2 percentage points.” (Collier and Gunning 1999, p. 64) Of course, decline in per capita GDP need not necessarily be associated with a decline in non-income indicators of poverty. Indeed, until the recent AIDS crisis, indicators such as Life Expectance and literacy rose even in countries in which real income fell. Clearly if incomes continued to fall, such rises cannot be sustained. In any case, by and large, the association between income and non-income indicators of poverty is strong.

An association between aggregate growth and reduction in national poverty does not imply either a one-way causal relation between growth and poverty or even that the association would
hold for all countries and for all time periods. One has to identify the possible mechanisms through which, on the one hand aggregate growth could affect, positively or negatively, poverty at national or sub-national levels and, on the other, how levels and trends in poverty could influence growth, again in either direction. Clearly, there is no reason to presume that all such mechanisms need operate everywhere and at all times and even if some do, that they operate with the same intensity. Further, there may be leads and lags involved in their operation—for example, it could take several years before an acceleration in growth results in poverty reduction and also, only sustained increases in growth, and not any temporary and reversible increases, could bring about a reduction in poverty. For all these reasons, statements such as “Aggregate growth is not enough” or “No poverty reduction is possible without aggregate growth” could be both true and false, in the sense of being valid for some countries or some periods and not valid for other countries or periods.

In the rest of the paper, I first discuss in Section 2 the serious deficiencies in the data on national income and indicators of poverty and of growth. Section 3 is devoted to the mechanisms through which growth influences poverty and inequality as well as the mechanisms through which poverty and inequality influence growth. In Section 4, I will draw on available empirical evidence, focusing more on experience of individual countries such as India than on the scores of cross-country regressions in the recent empirical growth literature. I will refer to the latter more in a critical vein than as a means of learning about poverty and growth. In Section 5, I will offer a few concluding remarks.

1. **Time Series and Cross-sectional Data on Growth, Poverty and Inequality**

The two most widely used indicators of development are real national income per caput and its rate of growth. By definition real national income per caput is the ratio of deflated nominal national income (or value added) in any period and an estimated average size of the population during that period. In arriving at nominal value added, first, all activities that add value are to be included so that coverage is complete and, second, outputs and non-factor inputs
into each activity in the relevant period are quantified and properly valued so that quantification and valuation are correct. Unfortunately, in developing countries coverage is rarely complete and there are serious problems with methods often employed for quantification and valuation. Furthermore, there are reasons to believe that the biases and errors associated with incomplete coverage and problematic methods of quantification and valuation are likely to vary over time within a country and not comparable across countries.

Unless the biases as well as errors of measurement in the value of outputs and of inputs offset each other to a considerable extent, value added, which is the difference between the two, could be even more distorted. Further, even if there are no biases in either inputs or outputs but only independent measurement errors with, say, equal variance, then the error variance in value added will be twice that of the common variance of inputs and outputs.

Growth rates of income are often compared within countries over different periods and across countries. As is well-known, the relative price structure (across commodities and sectors) would shift over time as development proceeds and as different sectors experience different rates of technical progress within and across countries. Under these circumstances, the growth rate of conventional real income estimates over a given period would depend on whether the initial or the terminal year is used as the base and on the method of deflation (e.g. single or double deflation). Also, if coverage improves over time or if downward biases in income measurement go down, growth in income as measured would overstate the “true” growth. Equally, understatement of growth could also arise. This is not to say that these problems cannot be addressed. For example, through chain-linking the problem of using a single base year could be alleviated. And as the base year is changed to a more recent one, the opportunity is often used also to expand coverage and use more recent information and an ad hoc revision is made in the past data for the difference in coverage as compared to the old base year.¹

¹Such revisions could be quantitatively large. For example, the fiscal deficit of India’s central government was 8.3% of GDP using the GDP series with 1980-81 as base and 7.1% of GDP using the revised series with 1993-94 as base (Government of India 1999, Table 2.1).
In international comparisons, in addition, an exchange rate conversion is involved. Thus if some (official, black market, purchasing power parity (PPP) or whatever) exchange rate is used to compare the levels of income at a point in time between two countries and growth rates for each for a period preceding that time are computed using a constant domestic relative price structure, anomalous results can arise. A prime example of this is provided by World Bank (1999a, Tables 1.1 and 1.4). According to these tables, in 1997 India and China had GNP per capita of US$370 and US$860 (based on exchange rates of the Bank’s “Atlas” method) respectively and the average annual rate of growth of GNP per capita during 1965-1997 was 2.3% in India and 6.8% in China. Taken together, these levels and rates of growth would imply that China’s per capita GNP in 1965 was about 90 percent of India’s! No knowledgeable observer of the two countries would subscribe to this ranking. Ahmed (1994) illustrates a similar problem by comparing the actual PPP exchange rate converted GDP’s of a year with a forecast obtained by applying domestic GNP growth rate to the PPP converted GDP of some previous years. The differences seem substantial for many countries (see also Heston (1994)).

There is an important conceptual problem in computing growth rates for many small open developing economies with severely distorted foreign trade sectors. Clearly for such economies, the opportunity costs of traded commodities are their world market prices. However domestic resource allocation decisions are driven by distorted domestic prices. If distortions are severe, and domestic transformation of imported inputs into tradeable outputs is inefficient, it is possible that value added at world prices (computed by valuing tradeable inputs and outputs at world prices) in some activities could be negative, and indeed were found to be negative (Soligo and Stern (1965) for Pakistan, Bhagwati (1968) for India) in some developing countries. Of course value added at domestic distorted prices would always be positive. From a welfare perspective, as the manuals on project appraisal (e.g. Little and Mirrlees (1974) argued, only value added at world prices is the appropriate measure. Even if activities with negative value added at world prices are unimportant from the perspective of the economy as a whole, still the levels and growth rates of national income (i.e. value added) at world prices would differ from those at domestic
prices (Bhagwati and Hansen (1973)).

The measurement errors and biases in components of GDP, particularly those that have figured prominently in the recent cross-country growth regression literature such as savings, investment, foreign trade and capital flows as well as in data on demographic and human capital indicators are very serious. These issues are discussed in my overview (Srinivasan (1994)) and other papers published in the special issue on Data Base for Development Analysis (Journal of Development Economics, Vol. 44, No. 1, June 1994).

To be able to estimate the extent of poverty (income or consumption based) and inequality, obviously one needs data on distribution of income or consumption. Many countries, developed and developing, collect economic data on a regular basis through household surveys. Such surveys often include information on household income, consumption and savings: it is common to find that survey-based estimates of consumption or income and those derived from national accounts data differ substantially. I return to this issue below in the context of India. Deaton eloquently describes the problems in estimating income in developing countries through a survey as follows: "The concept of income is itself extraordinarily complex, and most people in developing countries have little reason to distinguish between business and personal cash transactions. A farmer who buys seeds and food in the same market at the same time may not appreciate that, when computing income, he should only deduct the expenditure on seeds from his receipts. Nor is a seller of street food likely to distinguish accurately between what is eaten by his customers and what by his family. A subsistence farmer, whose outgoings approximately equal his incomes, is quite likely to report that his income is zero. Even in developed countries the measurement of self-employment income is notoriously inaccurate. The problems are not entirely solved even by the detailed questioning of more sophisticated surveys, in which the surveyor, not the respondent, calculates income. And the national accounts data for household saving are not themselves reliable enough to provide a good cross-check that will show what sort of surveys do best or how they should be redesigned to do better" (Deaton (1989), p. 63).

In many developing countries several categories of income (particularly agricultural
income) are tax exempt. The exemption limit for taxable income is likely to be high relative to per capita income. Above all there is significant evasion and avoidance of income taxes. For all these reasons the use of tax returns is infeasible in putting together a size distribution of income. Besides, tax returns refer to units which could be individuals, nuclear families, and in India the so-called Hindu-undivided-family (an extended family which pools its income and expenditures). The distribution of income by such units is not particularly meaningful analytically.

The second major source of information on size distribution is household income and expenditure surveys, though many of these surveys are designed to estimate a national or a regional average accurately, and not for estimating the distribution. Thus a sample size that is adequate for estimating the mean consumption with reasonable precision could be inadequate to estimate mean incomes of individual decile groups with the same precision. Most surveys adopt the kitchen definition of a household, i.e. household consists of all individuals who usually eat out of the same kitchen in the reference period. For the purpose of analyzing the distribution of income and expenditure, the relevant units are families or family-like groups who pool their incomes and expenditures. A household by the kitchen definition need not coincide with such units.

I have already referred to the difficulties in conveying the economic concept of net income to respondents in household surveys in poor countries. Consumption expenditure is more easily understood. In any case, whether the data tabulated refer to income or consumption, at least four possible size distributions can be generated from the data, viz. distribution of households by total or per caput household income, of persons by total or per caput household income. Whether one reports per caput or per household distribution is extremely important since the two would differ substantially and inferences could be very sensitive to the distribution reported. Of course whether the same weight should be assigned to all persons in a household regardless of their sex and age is another issue, though poverty incidence or intensity is unlikely to be sensitive to the use of adult (male or female) equivalence scales. Often data on inequality measures such as the Gini coefficient are published without explicitly specifying to which of the four distributions the
coefficient refers. Even by his own very minimal standards, viz. that data be national in coverage, concepts of income and recipient unit be the same over time, and the data base be a national census or household survey, Fields (1994) finds that half of 70 available data sets for developing economies have to be rejected. Deninger and Squire (1996) have updated Fields (1994). Of course, if the problems highlighted by Deaton (1989) about income measurement in surveys are taken as seriously as they should be, and if stricter and perhaps more appropriate standards of reliability and clarity are applied, even more data sets will be rejected. Further, the surveys that are not rejected might be unrepresentative in that they are more likely to be from richer and advanced countries of the world.

A more relevant indicator than measures of concentration or relative inequality in the distribution of income for many countries is measures of the extent and intensity of poverty. The same household survey data are often used to measure inequality as well as poverty. In measuring poverty there are additional problems of international and intertemporal comparability arising from alternative definitions of what constitutes the poverty level of real income or expenditure and the relevant price index for converting it to nominal income.

A customary procedure for estimating the extent of poverty is to define a poverty line (i.e. an income or consumption expenditure threshold, usually for individuals) and poor are those individuals whose income or consumption is below the threshold. There are serious (and contentious, if not insurmountable) problems in defining meaningfully a poverty line income that could be used to distinguish the poor and non-poor, regardless of time and space. Adam Smith was well aware of the problems. He classified consumable commodities as either necessaries or luxuries. The bundle of goods consumed by the poor will obviously be largely of necessaries. In defining necessaries he had this to say:

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“By necessaries I understand, not only the commodities which are indispensably necessary for the support of life, but whatever the custom of the country renders it
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2It might be thought that there are no serious problems in defining a food-energy-method (FEM) poverty line and that culture-geography-time based differences on non-food components of the poverty basket could be allowed for by using different scaling factors to arrive at an aggregate consumption poverty line from the FEM poverty line. I have argued elsewhere that there are serious conceptual and measurement problems in defining energy requirements on which FEM rests (Srinivasan 1992).
indecent for creditable people, even of the lowest order, to be without. A linen shirt, for example, is, strictly speaking, not a necessary of life. The Greeks and Romans lived, I suppose, very comfortably, though they had no linen. But in the present times, through the greater part of Europe, a creditable day-labourer would be ashamed to appear in public without a linen shirt, the want of which would be supposed to denote that disgraceful degree of poverty, which, it is presumed, no body can well fall into without extreme bad conduct...Under necessaries therefore, I comprehend, not only those things which nature, but those things which the established rules of decency have rendered necessary to the lowest rank of people. (Smith (1937), pp. 821-22)

In sharp contrast to Adam Smith’s sensitivity to spatial and temporal variations (due in part to differences in cultural norms) in what constitutes as a bundle of goods and services consumed by the poor, contemporary analysts of poverty ignore them altogether. For example, the World Bank publishes estimates of the extent of poverty in individual countries and regions using alternative poverty lines of $1 a day or $2 a day at 1985 purchasing power parity (PPP) terms. Apart from the use of a common global poverty line, there are other problems with this approach.

First, is the use of PPP. Not many are aware that the commonly used Summers-Heston data set, actual price comparisons are used in computing PPP only for certain benchmark countries and years. The extension to other countries and years is by extrapolation through procedures which the authors themselves would admit to being rough and ready. There were as few as 16 benchmark countries in their Mark I and progressively more countries were included in later versions. For a country which is included for the first time in most recent Mark VI, the PPP based estimate of the exchange rate for all earlier years are extrapolations whose “reasonableness” is arguable. Second, their price comparisons are at best of national average prices. For poverty estimation, given that the poverty line is that level of income or expenditure which would enable an individual to purchase the poverty bundle of goods and services, the relevant prices are those that the poor face, and not national average prices. The poor often pay different and higher prices than the non-poor for the same goods that both groups buy, their consumption is likely to include more home-produced goods and services for which imputed prices are inevitably noisy and, of course, the poor consume different goods and different varieties of the same goods as compared to
the non-poor. Third, the only plausible reason for using a common poverty line is that it enables aggregation over countries and regions, allegedly on a comparable basis. But the policy relevance of such aggregate estimates is moot: policies that affect poverty are largely national and sub-national. Only the somewhat naive would believe that international policies that determine foreign aid and assistance from multilateral institutions to developing countries are largely driven by their levels of poverty. Under the circumstances aggregate poverty estimates are of limited, essentially propagandistic rather than analytical, value.3

Estimates of private consumption expenditure from household surveys often differ from those from national accounts. Figure 1 shows the trend in the ratio of per capita consumption expenditure from India’s national sample survey (NSS) and national accounts (NAS)—the ratio fell from 75 percent in 1974 to 50 percent in 1998! In the fifties and sixties, the two estimates were much closer to each other, rarely differing by more than 5 percent (Mukherjee and Chatterjee (1974), Srinivasan et al. (1974)). As noted in the two papers, there are many legitimate reasons for the difference. Still if the difference increases over time, there is a strong presumption that one or both estimation methods have deteriorated in reliability. However, if the increasing discrepancy is solely or largely due to increasing non-response of and under reporting of their consumption by non-poor households, it would not affect poverty analysis. On the other hand, if it is largely due to under reporting by all groups, it would. Let me illustrate with estimates of trends in poverty at the national level.

The trends in estimated poverty (head-count ratio of the proportion of poor in the Indian population) differ significantly—as seen in Figure 2—depending on whether NSS data are used for both the mean and distribution (among persons) of consumption expenditure or whether NAS mean and NSS distribution are used. The former shows no trend in poverty during the past reform

3In saying this I do not in any way mean to question the increasing emphasis on poverty alleviation in bilateral and multilateral assistance. Nor do I question the need continuing to urge such an emphasis. But my point is different: the aggregate numbers are of little help in monitoring progress in poverty alleviation. National (and sub-national data in relatively large nations) poverty data are the most useful for this purpose.
1990's while the latter shows a declining trend. The apparent lack of trend in the former is largely due to the absence of such a trend in rural poverty (Figure 3) since the nearly 70 percent of India’s population is rural. It so happens that NSS based poverty estimates of urban and rural India together declined substantially from around 50 percent to around thirty five percent between 1977 and 1990. GDP grew at an average rate of 5.7 percent in the 80's and over 6 percent in the 90's (excluding the crisis year of 1991-92). Without a satisfactory explanation for the declining trend in the ratio of NSS to NAS per capita consumption, one is faced with a dilemma. If one associated growth with poverty reduction, then one has to explain the failure of NSS based poverty to go down in the 90's in contrast to the 80's, but not much to explain if NSS distribution of NAS mean consumption are used to estimate poverty throughout. On the other hand, if one had no a priori grounds for associating between growth with poverty reduction, one is left with the problem of explaining such association in the NSS data in the eighties. I return to this issue in Section 4.

In India, the updating of rural and urban poverty lines to reflect price changes is based on versions of the consumer price index for agricultural labourers (CPIAL) and Consumer Price Index for Industrial Workers (CPIIW). In fact, a simple average of CPIIW and a consumer price index for urban non-manual workers is used in updating urban poverty line. Until it was rebased in 1995, in the CPIAL commodity weights were based on expenditure proportions of 1960-61. In CPIIW the weights were based on expenditure patterns of 1958-59 until its rebasing in 1988. Price quotations are collected from shops in selected markets in villages and urban centres. Apart from the fact that agricultural labourers constitute only a fraction of the rural population, as Deaton and Tarozzi (1999, pp. 2-3) argue:

“For both indexes, and in order to maximize comparability over time, the specifications of items priced, the units, the shops, the markets, and the day and the time of the visits were held fixed throughout the life of the series. To the extent that there are problems with these price series, they are likely to come from the unusually long periods between revisions. Not only are the weights of these Laspeyres indexes long out of date by the time of transition, but there must also be concern about the continued representativeness of the villages, centres, and markets over such long periods. Whether or not the price indexes are seriously
affected is ultimately an empirical question.”

Deaton and Tarozzi (1999) provide an independent set of calculations for rural and urban price indexes using NSS data on expenditure patterns as well as unit values for commodities for 1987-88 and 1993-94, for India as a whole and for 17 of the largest states and the union territory of Delhi. Their calculations “show little apparent bias in the CPIIW, but suggest that the CPIAL may have been growing too quickly, consistently with what might be expected from using a long outdated Laspeyres rather than a chain-linked or superlative index. If this conclusion is accepted, it is likely that the decline in rural poverty rates has been understated in the official poverty counts. Indeed, we are led to suggest as a working hypothesis that, between 1987-88 and 1993-94, there was no great difference in the rate of decline of urban and rural poverty, at least according to the headcount measure” (p. 34-35).

If their calculations are accepted, the apparent lack of trend in rural poverty in the NSS data is explained by the use of wrong price deflator and not the failure of growth to be translated into poverty reduction.

This section can be summarized simply: there are serious conceptual problems, measurement errors and biases in the estimates of income growth as well as poverty. Estimated levels as well as time trends in poverty could be very sensitive to these errors and biases. If analyses are confined only to those countries with “good” data, a possibly serious selection bias would arise. For all these reasons any observed association (or for that matter lack thereof) between growth and poverty reduction cannot be accepted at face value.

1. Interrelationships Among Growth, Poverty and Inequality

Adam Smith was very clear about the direction of the relationship between growth and poverty: “it is in the progressive state, while the society is advancing to the further acquisition, rather than when it has acquired its full complement of riches, that the condition of the labouring poor, of the great body of the people, seems to be the happiest and the most comfortable. It is hard in the stationary, and miserable in the declining state.” (Smith (1937), p. 81)
In recent times, Arthur Lewis (1955), in his magisterial survey of growth, comprehensively discussed several aspects of growth including its relation to poverty. The last chapter of this work, entitled “Is growth desirable?” includes everything contemporary critics of growth have said and more! But, of course, Smith and Lewis wrote long before the recent revival of cross-country regressions and before President James Wolfensohn of the World Bank, and his then Grand Vizier for economics, Joseph Stiglitz, were perceived as supporting those who raised doubts about existence, direction and strength of the relationship (Wolfensohn and Stiglitz (1999))! Is Lewis’ balanced judgment in favour of growth still unassailable? Although I strongly believe it is, establishing it is so convincingly based on the development experience of the second half of the twentieth century is not easy, for theoretical as well as empirical reasons.

In exploring the mechanisms through which growth, poverty and inequality might be related to each other, it is useful keep in mind that all three are in general outcomes (i.e. endogenous variables) of proximate, and ultimate socio-economic-political processes, some of which could themselves be endogenous. This in turn implies that a one-way stable relationship between growth and poverty or vice versa need not exist. As such to talk of a growth elasticity of poverty, as if it is a “deep” parameter in the sense of Lucas is inappropriate. In principle, there could be factors that generate growth while at the same time reducing poverty and inequality, and others which promote growth at the cost of increasing poverty and/or inequality. In turn, there could be factors that reduce poverty and/or inequality while improving growth performance or alternatively reduce poverty and/or inequality at the cost of slower growth. The relevant factors would almost surely vary over time and space both in terms of their direction of influence and in their intensity. As such, cross-country and/or panel regressions, even those that attempt an

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4The distinguished columnist Paul Krugman makes a similar point in discussing the relation between growth and inflation when he says “it depends [on] what causes growth. If the economy grows because of an increase in supply...that lowers inflation. But if it grows because of an increase in demand...then the growth is inflationary” (Krugman, New York Times, May 5, 2000, p. Wk 21.)
econometric treatment of possible endogeneity of explanatory variables, are not the most appropriate tools for an empirical analysis of the relationships involved. Indeed for econometric treatment to be possible, the relevant relationships have to be derived from a well specified stochastic model applicable to all observations—a virtual impossibility in this context. Crude attempts to allow for temporal and spatial variations by including time and country dummies (intercept and slope) are not adequate. On the other hand, nuanced studies narrowly focussed on an individual nation (or an appropriate sub-national unit) and analyzing the trends in growth, poverty and inequality in depth, using historical, institutional as well as quantitative tools, are much more likely to help in understanding them. Unfortunately, cross-country regressions are far more plentiful than nuanced studies.

It is almost banal, but nonetheless true, that the sources of economic growth are essentially three: growth in inputs of production, improvements in the efficiency of allocation of

5My favorite, though unlikely to be original, characterization of “dummy” variables is that they are “dumb” variables: their regression coefficients quantify one’s ignorance (e.g. the negative coefficient, for Sub-Saharan Africa (SSA) countries in growth regressions quantify the growth effect of being SSA without telling one why it is negative and of particular absolute magnitude!).

6A legitimate and fair question is whether the data problems discussed earlier are any less serious in the context of country studies than they are in cross-country regression analysis. The answer is yes. First, such studies are less likely to depend solely or even largely on econometric analysis that is sensitive to data reliability. Second, it would be possible to draw on analyses that pertain to parts of the country or selected time periods for the whole country, an option that is unavailable in cross-country regression analyses.

7I am using the phrase “economic growth” somewhat loosely. Among other things, one has to distinguish between short-term (or transitional) growth and long-term (or steady state) growth. Whether or not a change in rate of accumulation of a factor of production or the efficiency of factor allocation has only transitional effects on growth depends in part on the technology of production. For example, an exogenous change in the rate of investment or opening the economy to foreign trade has only a transitional effect on growth in a Solow type two-factor (capital and labour)-constant-returns-to-scale growth model if the marginal product of capital declines to zero as capital increases indefinitely relative to labour. On the other hand, if the technology is such that the marginal product of capital is bounded away from zero, transitional as well as steady state growth effects could arise from an exogenous change in investment or foreign trade policy (Srinivasan (1995)).
inputs across economic activities, and innovation that creates new products, new uses for existing products, and brings about increases in the efficiency of use of inputs.

There are many factors that affect one or more of the three sources of growth: among these, three are particularly important.

**Openness to foreign trade and investment:** Being open to trade and investment contributes to each of the sources of growth. By enabling the economy to specialise in those activities in which it has comparative advantage, efficiency of the allocation of domestic resources is enhanced. By being open to capital, labour and other resource flows, an economy is able to augment relatively scarce domestic resources and use part of its abundant resources elsewhere where they earn a higher return. Clearly, efficiency of resource use in each nation and across the world is enhanced by the freedom of movement of resources. Finally, the fruits of innovation anywhere in the world become available everywhere in such an open world.

**Policies that influence intertemporal resource allocation and risk taking decisions of consumers and producers.** Assume for a moment that policy changes are exogenous. Then an unanticipated permanent policy change, such as for example, in income or capital gains taxes, could influence the decisions to save and invest and thereby influence growth in the short run and possibly in the long run as well. To take another example, changes in public expenditures on education and health, if not offset by opposite changes in private expenditures, could influence household decisions regarding fertility and human capital accumulation. These decisions in turn affect growth by altering the time paths of physical and human capital formation as well as labour force participation rates. More generally, fiscal (tax and expenditure), monetary and exchange rate policies could in principle affect intertemporal resource allocation decisions and influence growth.

**Institutional changes:** Two very important institutions from the perspective of growth as well as poverty and inequality are markets and institutions of governance. Changes in institutions for risk taking and sharing, such as for example, replacement of informal risk sharing arrangements among members of a small community (e.g. households in a village) by transactions
in a well functioning and anonymous markets, would have significant effects on resource allocation (e.g. crops grown, investments in irrigation system, use of fertilizers, decisions on fertility and human capital accumulation and so on) and growth. Whether or not individuals, particularly the poor, have opportunities to shape the decisions that affect their lives, whether the legal system is impartial, efficient and not too costly in enforcing rights (including property rights) and contracts, whether political and administrative corruption is pervasive or absent, all influence growth directly or indirectly. To be fair, the practitioners of the cult of cross-country regressions do indeed try to capture institutional features by including in the set of explanatory variables some crude indices of aspects to governance (e.g. indices of civil and political liberties, proxies for the prevalence of rule of law, corruption indices and so on). Nonetheless, since the relationship between the features captured by such crude indices and growth is at best indirect and very much location and time specific, and possibly endogenous, the interpretation of the regression coefficients is fraught with ambiguities.

Before turning to factors that influence poverty or inequality, it should be observed that whether an individual (or a family or household of which the individual is a member) has income below the poverty line at a point in time depends of course on what she can earn from her assets including her labour. As long as she has access to competitive markets, and there are no policy or other distortions affecting market prices, her poverty reflects the inadequacy of her assets. An overwhelming majority of the world’s poor live in rural areas and depend on agriculture either as farmers with small land holdings or as landless workers for their livelihood. Inequality in land holdings has long been identified as a major factor in explaining rural poverty and, as such, land reform, i.e. redistribution of land, has been seen as an essential ingredient of any poverty alleviation policy. Inadequacy of earnings from current assets does not necessarily preclude the

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8The excellent and incisive surveys by Aghion et al. (1999) and Benabou (1996) cover the theoretical and empirical literature on growth and inequality. Banerjee and Duflo (2000) critically examine the empirical evidence on the correlation between growth and inequality.
possibility of an individual escaping poverty in the future.\textsuperscript{9} For example, an individual with access to opportunities for productive investment (such as for example in human capital) as well as finance for such investment can escape poverty in the future, provided the returns from investment are high relative to the cost of finance. Aghion et al. (1999) point out that “when capital markets are highly imperfect, and the production technology exhibits diminishing returns to capital, inequality in the distribution of wealth is bad for growth...as borrowers would tend to under invest in effort when effort is unobservable and there is limited liability” (pp. 1630-31). For this reason they find that there is scope for redistributive policies that are also growth enhancing. However it should be noted that it is not wealth inequality per se, but its coexistence with capital market imperfections and moral hazard, that makes it bad for growth. In any case, as Aghion et al. (1999) recognize, “If redistribution were financed through distortionary (ex-post) taxation, there would be two incentive effects which conflict with one another: the standard effect whereby taxation reduces net returns and therefore lenders’ incentive to invest, and moral hazard with limited liability which decreases the effort exerted by borrowers. Then, whether redistribution raises or reduces the rate of growth depends on whether the standard effect of taxation on those individuals with large wealth endowments is smaller or greater than the positive impact on the effort of those with small endowments” (p. 1631).

There will always be some individuals who are weakly connected to the income generation processes of the economy because of their idiosyncratic circumstances such as, for example, severe disabilities. By definition they have limited or no access to income earning opportunities and have to depend on private and public transfers for financing their consumption. Most of them are likely to be poor. Except in so far, as transfers are related to growth of incomes of others in the economy, growth per se is unlikely to alleviate their poverty. This fact was recognized long

\textsuperscript{9}I have, and will continue in the rest of this paper, to use the term poverty somewhat imprecisely without distinguishing between transient and permanent (lifetime) poverty, and between poverty of a subset of individuals, such as women and children, within households and poverty of households as a whole.
ago by Indian policy makers: in their blueprint for eradication of mass poverty in a fifteen year period (1961-1976) period (Srinivasan and Bardhan (1974), Chapter 1), they relied on growth to alleviate poverty of only those well connected with income generation processes of the economy.

Once we recognize the reality that in developing countries the set of markets are rarely complete and many of the markets that exist often are imperfect in their functioning, policy distortions are numerous and that institutions (administrative, legal, social and political) function imperfectly as well, the constraints that make a person poor and keep him in poverty become more numerous and complex in their interactions. For example, institutions that govern the functioning of labour markets, particularly labour laws that impede the flexibility and raise the cost of hiring and laying off workers, enforce relatively high minimum wages could increase poverty, both by reducing employment in relatively high wage sectors protected by labour laws and by pushing workers into those less well paid sectors outside the ambit of labour laws. Besides increasing poverty, such institutional constraints would reduce the growth potential of the economy as well.

The poor for various well known and understood reasons do not have access to less expensive credit from formal credit institutions such as commercial banks. If they are lucky, they may be members of a group which extends credit to each other on an informal basis at reasonable cost. If not, many have to obtain credit at much higher costs from moneylenders and other such informal sources or forego credit altogether. Any welfare gain that they could have obtained through consumption smoothing or the potential for their climbing out of poverty through availing of opportunities for investment with high returns are lost if they cannot get credit at modest cost. Clearly such severe credit constraints would dampen realized growth relative to potential growth. However, to the extent credit constraints reflect asymmetric information, moral hazard and enforcement problems, the impact of policy interventions to ease credit constraints is ambiguous since such interventions have two effects which go in opposite directions: a positive effect on growth by enabling the poor to invest in high return activities and a negative effect arising from exacerbation of incentive problems that are at the root of credit constraints.

An example of policy distortion is a trade restriction that protects capital-intensive
importables in a labour abundant small open economy. This hurts the poor who have only their labour to sell in two ways: first by reducing the returns to labour and, second, by raising the cost of their access to capital, as compared to a free trade equilibrium. Another example is a policy that forces farmers to sell part of their output of food crops at below market prices to state agencies that in turn resell the food to urban consumers (poor and non-poor) at subsidized prices. This policy hurts farmers, many of whom are often poor, directly by lowering their revenues, and indirectly through distortionary financing of subsidies to urban consumers. Both these policy distortions could dampen growth as well.

It would take me too long to discuss comprehensively and in depth all the exogenous factors that could influence growth on the one hand and, on the other hand, poverty and inequality. Some of these factors, particularly policies (e.g. trade policy), could be endogenous. The choice of policy instruments as well as the levels at which they are set, are often determined by domestic political economy considerations. As such, one has to analyze first the exogenous factors that shift political forces and interest groups and through them affect policy before one can assess the resulting effect on growth or poverty as the case may be.

It is clear that the three outcomes, growth, poverty, and inequality, are jointly determined endogenous variables through relationships that could vary over time and space and subject to significant leads and lags in time. The exogenous variables determining them would include not only deeper forces of technology and preferences but also on political economy. Even the most sophisticated of the cross-country regressions are inadequate to capture the complex and different (across time and space) relationships involved.

Having noted the endogeneity of the outcomes, let me now turn to the relationships among them.\(^{10}\) A negative relationship between growth and poverty is hypothesized from the

\(^{10}\)Once leads and lags are also recognized, so that an endogenous variable of one period becomes a pre-determined variable in the next (e.g. this period’s growth, in part, determines next period’s inequality and is, in turn, again in part, determined by last period’s inequality). The dynamics of the system could be complicated, with possibilities of “virtuous” and “vicious” cycles and even chaotic behaviour!
presumption that more rapid growth is the outcome of factors that raise the returns to the income-
earning assets of the poor--for example, if the economy’s comparative advantage is in goods and
services in the production of which the assets of the poor are intensively used, an exogenous shift
in trade policy which encourages the production of such goods and services will alleviate poverty
and increase the growth rate, at least in the short run, as long as a part of the gains in efficiency is
invested in accumulation of human and physical capital. A more rapid growth, to the extent it
raises government revenues, and part of the extra revenues are devoted to public expenditures on
goods and services (such as education, health, sanitation and hygiene) that are disproportionately
consumed by the poor, could reduce non-income facets of poverty such as poor health, high infant
mortality and morbidity, lower life expectancy etc. For the sake of brevity, I will not list other
ways in which more rapid growth could be associated with lower income and non-income facets
of poverty.

In principle, more rapid growth could be associated with increases in poverty and/or
inequality, at least temporarily. For example, Kuznets suggested that growth sparked by
reallocation of resources from low-inequality-low-productivity sectors to high-productivity-high
inequality sectors could raise inequality initially until the transfer process was complete and forces
reducing inequality took over. The literature empirically testing this Kuznets relationship is vast
but inconclusive (Anand and Kanbur 1993). More rapid growth could increase poverty by eroding
the asset base of the poor such as common property resources to which they had free access; more

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11This argument assumes that either the losers from the shift in trade policy are compensated and
the gainers invest part of their gains or in the absence of compensation, any reduction in
investment by losers is more than compensated by the increase in investment by gainers.

12It so happens that in the eighties and nineties labour intensive manufactured exports from
developing countries penetrated the markets of developed countries to a greater and greater
extent. This was also the period when real wages of less skilled workers stagnated and those of
skilled workers increased in developed countries. Some have attributed this increase in skill
premium to increased competition from exports of developing countries. Aghion et al. (1999)
describe possible factors including import competition that could explain the rise in skill
premium and the associated rise in inequality. I will not discuss the literature on skill premia
since the focus of this paper is poverty and inequality in developing countries.
rapid growth resulting from a shift in public expenditure away from the provision of or subsidies on goods and services of importance to the poor towards public investment in growth promoting infrastructure would raise poverty; more generally, poverty will increase from unsustainable growth brought about inflationary finance or accumulation of public debt, the cost of which is in part passed on to the poor once the growth collapse occurs, as it must.

I should add that unsustainable growth arising from, for example, excessive borrowing (i.e. debt-led unsustainable growth), fiscal expansionism or even accumulation of factors subject to diminishing returns in the absence of total factor productivity growth, could be associated with temporary reductions in poverty, while growth lasts. But being unsustainable, such growth cannot last but has to end, often in a crisis which could reverse the temporary reductions in poverty. In India, the growth that occurred in the eighties prior to economic reforms in 1991 was unsustainable, led as it was by rising fiscal deficits that were financed by costly borrowing at home and abroad. Soviet style rapid growth is an example of growth from increasing rates of investment that could not be sustained.

I have thus far been using the terms poverty and inequality interchangeably. This is obviously not appropriate, if poverty is viewed in absolute terms (e.g. proportion of the population having incomes below a threshold) and inequality in relative terms (e.g. measures, such as the Gini coefficient and variance of the distribution of income (or its logarithm)). The distinction between the two is important conceptually and from a policy perspective: for example, growth that increases the incomes of everyone including the poor, but in greater proportion for the non-poor, will be associated with lower poverty and higher inequality. Such growth would be desirable from a social welfare perspective (i.e. all Pareto improvements desirable) as long as social welfare is sensitive to individual welfare and is free of envy. Whether it is sustainable from a political perspective is another matter altogether.

Early development economists, such as Arthur Lewis (1955) emphasized the importance of savings and the associated accumulation of physical capital for accelerating growth. We now know that it is not just the rate of investment in capital (human or physical) but also whether there
are incentives for its efficient use across activities and over time that is important for growth. Given their focus on savings and investment, and the natural presumption that the rich save a greater proportion of their income, they argued that greater inequality in the distribution of income, with a larger proportion of a given total income accruing to the rich, would augment savings, and hence, investment.\footnote{Since they were concerned with long-term growth and, also somewhat naively as it turned out, in the ability of the state to smooth fluctuations through fiscal and monetary policies, they did not waste their time on whether potential savings will be invested in full or frustrated in part. As such, business cycles did not play any role in their analysis. In the recent literature, macroeconomic volatility is viewed as a possible channel through which inequality affects growth. Aghion et al. (1999) describe a simple model in which only a fraction of savers can invest in high return projects while everyone has access to low return project and one’s borrowing is restricted to a proportion of one’s wealth. Because those invest, and those who save, are not identical, a link between inequality and volatility arises. Investors accumulate debt during booms and eventually reach their borrowing capacity while savings continue to rise, so that part of the savings have to be invested in low return projects thus triggering a slump. They conclude “If the fraction of the population with high-yield investment possibilities is small enough and/or the credit multiplier low enough, there will be continuous oscillations of the investment level. Such volatility of investment in turn implies that there are unexploited production possibilities and hence the long-run growth rate is lower than it could be” (p. 1629). The cycles in this model are reminiscent of those in the old fashioned multiplier-accelerator models with floors and ceilings on output (Hicks 1950).} Political scientists in the fifties and sixties viewed democratic societies with powerful labour unions as prone to redistributive taxation that taxed heavily the rich savers. Thus, greater inequality or non-democratic regimes would be associated with faster growth from these perspectives. More recently, it has been argued that the political legitimacy of growth promoting regimes (authoritarian or democratic) depends on whether the fruits of growth are widely shared, and as such, lower inequality in the distribution of income is viewed as facilitating the adoption of growth promoting policies (World Bank 1993). Of course, poverty and absence of means of old age security other than support from one’s own children, could encourage greater fertility among households, greater participation of children in the labour force, and lower investment in their human capital. The net effect could be lower growth. By the same token, greater public expenditures on health, education, sanitation and hygiene financed by lower
expenditures on, say, economic infrastructure could improve non-income facets of poverty while reducing growth. But this positive effect on the poor could be offset in part by the fact that the poor have no option, such as for example investing in small generators or using private courier service for offsetting the failures of poorly performing public power and postal systems. There are many possible ways in which changes in poverty and inequality could affect growth in one direction or the other, of which I have discussed only a few. As noted earlier, leads and lags as well as non-linearity in the relationships could induce complicated dynamics as well. Banerjee and Duflo (2000) find a non-linear (inverted U) relationship between growth and changes in inequality and stress that imposing a linear structure on a truly non-linear relationship could lead to serious misinterpretations.

1. **Interrelation Among Growth, Poverty and Inequality: Empirical Literature**

From the discussion of the complexity of the interrelationships, the myriad factors influencing them in one direction or the other and the possibility that whatever interrelationship there is, could be time and location specific, it should be clear that only from careful studies of individual countries (in fact, of appropriate sub-regions of large countries) over a sufficiently long period of time in which there were sufficient changes in policy regimes, institutions, technologies and preferences one would be able to identify the relationships involved. I am not aware of any such study for any developing country. The individual country studies that are available, inadequate they are to varying degrees, nonetheless are more informative in ways than cross-country studies. Quibria (1994, Volume 1, 1996, Volume 2) reports on rural poverty in several Asian countries. Urban poverty in Asia is the topic of Pernia (1994). I will discuss the case of India below.

As noted earlier, a positive association between growth and reduction in poverty is seen in several large countries with a high incidence of income poverty; such, for example, China, India and Indonesia (until the financial crisis) and also in other countries in Southeast Asia such as the Philippines. As noted earlier, a few Sub-Saharan African countries such as Botswana, Lesotho
and Mauritius enjoyed high growth. The association with income growth of non-income facets of poverty is also evident: there has been a general improvement of life expectancy, rates of infant and child mortality, educational attainments and so on, although some of the gains achieved are being threatened by the AIDS epidemic in some countries of Sub-Saharan Africa and Asia.

Tables 1 and 2 bring out the association between growth and poverty. What is noteworthy, and calls for deeper analysis, is that only 6 out of a sample of 87 countries to which Table 1 refers had sustained and rapid growth over the two decades, 29 had moderate or improved growth in the 1990's, and 52 countries failed to achieve sustained growth.

India is almost unique among developing countries for which household survey based data on consumption expenditure are available for nearly five decades. The Indian data strongly support the association between growth and poverty reduction. If we ignore the growing divergence between estimates of aggregate consumption expenditure between national accounts and national sample survey, and use only the data from the sample survey, it is found that until the late seventies, the proportion of the country’s population deemed poor did not show a declining trend. It fluctuated between a low of 43 percent in 1952 to a high of 62 percent in 1966-67 (Table 3). Then between 1977-1978 and 1990-1991, just prior to the introduction of systemic reforms of the economy following a severe economic crisis, the national poverty ratio declined significantly from 48 percent to 35 percent. The macroeconomic stabilization measures adopted at the same time as systemic reforms in July 1991 resulted in the stagnation of real GDP in 1991-92 relative to the previous year. A fall in total agricultural output by two percent, and more importantly of foodgrains by 4.2 percent in the same year because of poor weather coincided with macroeconomic stabilization. The two together certainly contributed to a rise in poverty ratio to 41 percent in 1992. Since then poverty ratio has stagnated at about 35 percent.

It is no surprise that prior to the late seventies poverty ratio did not decline. After all, during the three decades 1950-1980, India's GDP limped along at an annual average rate of growth of 3.5 percent while population was growing at 2.2 percent per year. During 1980's India's GDP growth rate accelerated to an average of 5.8 percent per year, a rate that was exceeded by
only 9 out of 123 countries (World Bank 1999b, Table 11). The growth acceleration was associated with the reduction in poverty ratio noted earlier. GDP growth resumed after 1991-92, the year of stabilization, and has averaged at 6.1 percent per year in the 1990's. Again, this growth rate was exceeded in relatively few, viz. 19 out of 137, countries (World Bank 1999b, Table 11). Yet, even with systemic reforms since July 1991 and the resumption of GDP growth, there has been apparently no further significant decline in poverty ratio.

Until the reforms of 1991 the downward trends in rural and urban poverty since the mid seventies were similar, with poverty levels in urban areas being significantly lower. Since 1990, the trends began to diverge, with urban poverty continuing to decline while rural poverty stagnated (Figure 3). I have already referred to the finding of Deaton and Tarozzi (1999), that once proper deflators are used, the divergence disappears. Even if this were not the case, one could still attribute a large part of the divergence to the fact that the reform process has thus far left agriculture and rural areas largely untouched. Indeed this conclusion is reinforced by the fact that in more urbanized states poverty continues to decline in the post reform period. There is a revealing divergence in the trends in rural poverty between two groups of states in the post reform period. This is seen in Figure 4. In the states of Andhra Pradesh, Gujarat, Kanataka, Kerala, Maharashtra, West Bengal and Punjab, the trends in rural poverty began to diverge from that in the states of Bihar, Madhya Pradesh, Orissa, Rajasthan and Uttar Pradesh from 1977-78, the year when the downward trend in poverty in India began. In the first group, poverty continued to decline in the post reform period, albeit at a slower rate. There was no such decline in the second group.

Besides their greater poverty, the second group of states have higher rates of illiteracy (particularly among females). In terms of other social indicators such as rates of infant mortality, school drop-out rates etc., they are poorly placed relative to the first group. They are also more rural and more dependent on agriculture. Except for Punjab, all other states in the first group are coastal while all the states in the second are inland. I suggest that all these factors taken together put the second at a relative disadvantage in exploiting the opportunities created by the reforms.
Datt (1997, 1999), Datt and Ravallion (1992, 1997, 1998a, 1998b) and Ravallion and Datt (1996a, 1996b, 1999) have analyzed the determinants of and factors (including policy instruments) that influence the trends in poverty. Before drawing on their most recent (1999) paper, let me summarize their findings in earlier papers as cited in the World Bank (1997). First, poverty ratio goes down by one percent for every one percent increase in net domestic product per capita.14 Second, a decomposition of the changes in poverty ratio into a growth component (i.e. growth in mean consumption) and a redistribution component shows that nearly 87 percent of the observed decline in poverty ratio was accounted by the growth component. Third, the sectoral composition of growth matters in that rural economic growth contributes far more to poverty reduction than urban economic growth. Fourth, initial conditions relating to human resources and infrastructural development accounted for a sizeable share of the differences between states in reducing rural poverty.

In their most recent paper (Ravallion and Datt 1999) they allow "for multiplicative interactions of the sectoral composition of growth with initial conditions in determining the evolution of state level poverty" (p. 3). The authors point out,

"Broadly speaking, our results can be interpreted as indicating that non-farm economic growth was less effective in reducing poverty in states with "poor" initial conditions in terms of rural development (in both absolute terms and relative to urban areas) and human resources. Low farm productivity, low rural living standards relative to urban areas and poor basic education all inhibited the prospects of the poor participating in growth of the non-farm sector.

Rural and human resource development appear to be strongly synergistic with poverty reduction though an expanding non-farm economy. Amongst the initial conditions we have found to matter significantly to prospects for pro-poor growth, the role played by initial literacy is particularly notable. For example, more than half of the difference between the elasticity of the head count index of poverty to non-farm output for Bihar (the state with lowest elasticity) and Kerala (the highest) is attributable to the latter's substantially higher initial literacy rate" (Ravallion and Datt 1999, p. 20).

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14As I argued earlier, viewing parameters of a relationship between two endogenous variables (in this case, poverty and net domestic product) as stable and as reflecting deeper processes is incorrect.
Turning now to cross-country studies, a recent, and in many ways among the most careful (econometrically) study is that of Dollar and Kraay (2000). They define the poor as “the bottom one fifth of the population” so that by definition, the proportion of the poor at all times and in all countries is 20 percent. Thus poverty goes down from their perspective if and only if the mean real income of the bottom 20 percent goes up. Thus, their relative definition of poverty precludes any simple comparison of results of Dollar and Kraay with those of other studies using an absolute definition based on national or international (e.g. $1 a day) poverty lines. Their data on income of the poor and mean income relate to “80 countries covering four decades, giving us 236 episodes in which we can link growth in income of the poor to growth in overall income” (p. 2). They estimate variants of a basic regression of the logarithm of per capita income of the poor on the logarithm of average per capita income, a bunch of control variables and a country fixed effect. They allow for measurement errors and endogeneity of control variables as well as for the omission of possibly relevant control variables. They also test for over identifying restrictions. Their control variables included proxies for openness, capital account restrictions, rule of law, and democratic institutions, inflation rate, government consumption and expenditures on social sectors as a proportion of total government spending and primary school enrollment. Given the problems arising from poor and possibly biased data on income distribution, the time and location specific nature of the relationships involved etc. one has to be very careful not to read too much into these results other than their being suggestive for further analysis.

The authors in fact do not over-interpret their results which suggest, notwithstanding the variation around the estimated relationship, that the effect of growth on income of the poor is the same in rich and poor countries; incomes of the poor do not fall more than proportionately during economic crises; the poverty-growth relationship is stable in recent years; policies that promote overall growth also benefit the poor; good rule of law and fiscal discipline benefit the poor as much as the rest of the population; inflation is more harmful to the poor than for the rest; finally, there is no evidence that formal democratic institutions as well as public spending on health and education have systematic effects on the poor.
Bénabou (1996) surveys many cross-country regression results on inequality and growth. His focus is primarily “on mechanisms by which income distribution (whether endogenous or exogenous) can affect output growth, rather than the reverse effects [e.g. Kuznets Curve] from the level of development to inequality” (p. 16), he also asks (and answers without fully resolving it) an interesting empirical question: are countries “converging to the same level of inequality or are there permanent differences” (p. 18).

After surveying 23 reduced form regressions of average growth in per capita GDP over some long period on initial inequality and several controls including initial income, initial stock of human capital or its proxies and regional dummies, he concludes:

“These regressions, run over a variety of data sets and periods with many different measures of income distribution, deliver a consistent message: initial inequality is detrimental to long-run growth. The magnitude of this effect is consistent across most studies: a one-standard-deviation decrease in inequality raises the annual growth rate of GDP per capita by 0.5 to 0.8 percentage points.” (Bénabou (1996), p. 13)

The consistency of the message and the stability of the magnitude of the effect of inequality on growth across reduced form regressions, while they call for deeper analysis, are not in themselves adequate reasons for dismissing the critics of cross-country regressions. Bénabou also discusses several theories through two unifying models, “The first integrates the political-economy and imperfect-capital-markets theories. The second one deals with social conflict and the security of property rights” (p. 16). Three sets of theories are analyzed: in the first, asset markets are complete and distributional effects arise solely through the balance of power in the political system; in the second, the distribution of wealth has macroeconomic implications due to imperfection in asset markets; the third is based on the idea that socio political conflict reduces the security of property rights, thereby discouraging accumulation. Several theoretical propositions are derived which are of interest not only in their own right but also for interpreting empirical results

Bénabou is absolutely right in his view that “... the gap between the scope of the theoretical literature and the scarcity of direct evidence makes further empirical work a high priority: signs of the adverse effects
of redistribution on growth remain elusive (to put it mildly), and inferences about the role of credit constraints far too indirect. With respect to socio political conflict, there remains room for theoretical and empirical work to move closer to one another. Existing models provide many valuable insights but few robust results about the effects of income inequality on conflict, whether conflict will be open or latent (off the equilibrium path), fully predictable or uncertain.” (pp. 60-61).

In contrasting the experiences of South Korea and the Philippines, he emphasizes that stylized theories are not a substitute for detailed case studies. Aghion et al. (1999) express similar views. After stressing the limitations of cross-country regressions, they conclude “A thorough test of the theories we have discussed would therefore require other types of evidence, such as time-series analysis and controlled experiments that test the microfoundation of our analysis.”

In contrast to the use of formal theory by Aghion et al (1999), Benabou (1996) and Banerjee and Duflo (2000) motivate and interpret the findings of cross-country regressions. Barro (2000) starts with an informal discussion of the ways in which inequality could affect growth and of possible determinants of inequality. He then incorporates the mechanisms suggested by the informal discussion into his familiar growth-panel regressions. He does not find, as Bénabou did in his summary of 23 studies, any relation between inequality and growth or investment. Although he finds support for the Kuznets hypothesis of increasing inequality at the initial stages and decreasing inequality at the later stages of development, he also concludes that this relationship does not explain much of the variations across countries and over time.

1. **Conclusions**

   Poverty is a multifaceted phenomenon that includes, but goes beyond, lack of adequate income. The overarching objective of development in many countries has been and continues to be the eradication of all facets of poverty. Rapid as well as well distributed growth in income has always been viewed as an instrument for achieving this objective. Although only a few developing countries succeeded in sustaining rapid growth for a long period and in reducing poverty significantly, the evidence suggests an association between episodes of rapid growth and
Policies and processes can be identified a priori, some of which would be expected to generate sustained growth and poverty reduction while others either would not lead to growth or to poverty reduction or both. The interesting and important analytical issue is why we see the former set of policies and processes only in a few countries. In analyzing this issue, it is clear that a comparative (across nations, sub-national units and time spans) framework is most appropriate. Such a framework is essential not only for arriving at analytical and policy conclusions of wide applicability but also for testing the robustness of conclusions.

There are broadly two strategies for an empirical analysis in a comparative mode. One strategy is primarily econometric, the most ubiquitous example being the use of cross-country regressions, the best of which are motivated by a well-articulated theoretical framework. The other strategy is to do a set of detailed country studies but based on a common framework, using a variety of analytical tools from theory, history and econometrics and firmly grounded on the relevant socio-political-economic institutions of the countries involved. In principle, though not always in practice, the two strategies could complement each other: cross-country regressions could be used as an efficient engine to identify average patterns in the data as well as the outliers from the average.\textsuperscript{15} The country studies could be especially useful in identifying the specific features of the country, period or sector or policy that led to a particular observation being an outlier. Just as results of regressions are more useful if the range of explanatory variables is wider, the results from comparative country studies would be more useful the greater is the range of variations across countries studied in institutions, policies, performances and time periods covered. Whichever strategy is adopted, in designing policies or tendering advice on the design of policies, one has to allow for factors and variables not included in the regressions or in the country

\textsuperscript{15}After surveying the literature on cross-country growth regressions, Temple (1999), while remaining a sceptic (“The most interesting findings are rarely convincing, while the more reliable ones hold few surprises”), nonetheless concludes that “cross-country research provides a useful complement to other investigative techniques, and for some questions of interest, it may even be the only way forward” (p. 151).
analyses, but nonetheless are relevant. This inevitably leads to the use of judgment and the associated possibility of differences even among policy makers and advisers who agree on the lessons from regressions and country studies.

There have been relatively few comparative country studies involving countries differing sufficiently widely in relevant dimensions such as the ones on trade and industrial policies, going back to those sponsored by the National Bureau of Economic Research in the seventies and the World Bank later. Recent analysts have followed the strategy of cross-country regressions. In this paper I have pointed out the serious limitations of these regressions. Yet results from such regressions, particularly if they are consistent in direction and magnitude across regressions, should not be dismissed out of hand, but used as inputs into further theoretical and empirical analysis. Theory helps interpret the interrelationships among the variables found in the regressions. Further empirical analysis could unearth factors and variables that are specific to a country or period excluded from the regression analysis that explain significant departures from the average patterns identified by the regression.

Among the consistent and robust findings in the cross-country regression literature is the importance of outward orientation to growth. Other consistent, but not so robust, findings relate to the significance of macro-economic stability and aspects of what has come to be called “good governance,” including participatory democracy, for sustained growth, political stability and poverty alleviation. Last, but not least, is the association over time and across counties between rapid growth and poverty reduction. An example of non-robust findings is the relationship between alternative exchange rate regimes and macroeconomic performance.

The challenge is to go beyond the general findings and explore why ostensibly similar policies and processes generate growth as well as poverty reduction in some contexts and not others; for example, what specific features of a participatory democracy are conducive to favourable outcomes and whether these features could in principle be present even if other features of democracy are not. I am convinced that complementing cross-country econometric analysis with more in depth and nuanced country studies in a comparative mode is the best
strategy to meet this challenge.
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