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# **Inequality, Growth, Poverty and Lunar Eclipses: Policy and Arithmetic**

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## **ABSTRACT**

Alleviating poverty, mitigating inequality and achieving growth are all acknowledged goals of development, whatever the degree of success with which these goals might have been addressed in various economies of the world. Apart from questions of resolve and genuine commitment, what makes it hard to engage with these goals is that the pursuit of any one of them does not necessarily secure the ends of either or both of the other two. Such engagement requires a measure of conceptual clarity, an identification of normative priorities, and the deployment of carefully crafted policies that accommodate trade-offs among competing goals. In particular, policies such as the single-minded pursuit of growth as a panacea for all the difficulties of development appear to be misguided, and based on a faulty application of deductive reasoning to past experience. These issues are addressed here by attending to some elementary arithmetic revolving around the measurement of money-metric poverty and inequality, and the decomposition of poverty changes into effects attributable to growth and distributional changes.

## **INTRODUCTION**

Deprivation and disparity, regrettably, continue to be central features of economic development around the world, from Africa and South Asia to Southeast Asia and Latin America. Meanwhile, wealth inequality has been assuming alarming proportions even in high-income countries, most notably in the United States. Two strategies have been widely used to nurture attitudes of less than pressing urgency in dealing with these issues, and to

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This article draws on previous research in the field by both authors (see especially Basu, 2013a) and also on collaboration during the week of 22 April 2018 when S. Subramanian visited Cornell in New York City. We have benefited from discussions with a large number of people and, at the risk of omission, would like to thank Alaka Basu, Shaohua Chen, Tito Cordella, D. Jayaraj, Mala Lalvani, Peter Lanjouw, Tamara McGavock, Ambar Narayan, Zia Qureshi, David Rosenblatt, Jaime Saavedra, James Trevino and Vivian Hon. Finally, the authors are most grateful for the comments on the submission offered by four anonymous referees of the journal: the usual caveat, of course, applies.

perpetuate the status quo. The first is to carefully select the yardsticks for measuring poverty and inequality from the profusion of indexes, measures and norms available, so as to create a more benign picture of the state of the world than is dictated by reality. The second is to argue that the worst problems of deprivation will go away naturally as economic growth occurs, thereby lifting some of the direct responsibility from the shoulders of governments and international organizations.

The growth vs inequality debate deserves widespread participation because it raises intricate questions pertaining to development policy which are relevant for all of us. As people weigh in on one side or other of the debate, it begins to slant and constrain actual economic policies since these are crafted by political leaders invariably with an eye on the ballot box. So the debate can influence policy making on the ground and, through that, have deep consequences for human well-being.

The more contentious topic has been inequality: for the middle class, one's personal fortunes are generally not threatened by many of the standard concerns of welfare economics, whereas inequality, taken seriously, provokes an instinctive worry about its capacity to pinch one's own pocket. This view is prominently, even if not explicitly, in evidence in policy prescriptions for the redress of poverty which emphasize the importance of growth, while soft-peddalling the mitigation of inequality.

One approach to the problem which offers a potential for viewing the issues of poverty, inequality and growth in a more inclusive and less compartmentalized fashion is to stress the importance of improving the fortunes of the poorest sections of the population. An operationalization of this perspective is available, for instance, in the objective of maximizing what has been called the *quintile income statistic* (Basu, 2001, 2006). The World Bank's recent concern with the income status of the poorest 40 per cent of the population (World Bank, 2015) is an important input into redirecting global policy: it is a concern which, however, requires deeper and fuller elaboration for its policy implications to be better understood and assimilated.

Exactly which cut-off point is chosen — the bottom 20, 40 or 30 per cent of the population — depends on several practical considerations, and there is also a certain inevitable arbitrariness in this. In this article we shall work with the quintile income. The quintile income is just the average income of the poorest 20 per cent of a population, and its magnitude is deterministically influenced by the size of average per capita income, and the income share of the poorest quintile — a well-defined indicator of inequality referred to in Basu (2013a) as a 'shared prosperity index'. We shall argue that the quintile income is a naturally plausible indicator of money-metric poverty, changes in which will depend on changes in per capita average income, or, quite simply, *growth*, as well as changes in the value of the shared prosperity index, or, quite simply, *distributional changes*. It thus provides a convenient, if elementary, framework for a conjoint discussion of the phenomena of poverty, inequality and growth.

In this essay, which draws on earlier work of the authors (see particularly Basu, 2013a), we want to discuss these last-mentioned three themes. Specifically, we first wish to consider what may be a more rather than less persuasive way of measuring money-metric deprivation, one which captures the arguably principal normative concern that should inform any conception of income poverty, and is at the same time simple enough to be used in designing policy. Second, we want to take on the policy suggestion that the best way to deal with poverty and inequality is not to do anything directly about them and to rely instead on the market to spread the benefits of overall growth. The essay closes with a compact summary of the position advanced and defended therein.

### **SOME PITFALLS OF ‘TRICKLE DOWN’ THEORY**

Over the years, economics has improved vastly in terms of the availability of statistics, and the grounding of economic policy on data and evidence. Where economic policy making can do with some bolstering is in the use of theory and analysis. Indeed, the ubiquity of unreason is worrying. Having prior unbending categories and convictions can be a stumbling block to reasoning correctly. Here is an example. Ideologues often remark how openness of the economy is desirable, because there is no economy in the world that is totally closed and has grown. This entails two mistakes. First, it uses past evidence and induction improperly. (We shall discuss below similar mistakes in the context of growth and poverty.) Second, it involves misreading the evidence. In reality, there is a stark example of an economy that is totally closed and has grown rapidly. The example is the earth. The mistake occurs as a consequence of the categories in which people think about an economy. In fact, given that the earth is the only economy that we know that is totally closed, it would be accurate to make the following claim: all totally closed economies have grown rapidly. To jump from this to the conclusion that we should *therefore* close the economy to get rapid growth would be a similar mistake in deductive reasoning, this time in the opposite direction.

In keeping with the focus of this article, let us turn to anti-poverty policies and growth. The issue is best posed in terms of the paper by Dollar et al. (2013) which empirically analyses the relation between growth and poverty. This is an impressive study that draws on high-quality, survey-based data from 118 countries and brings in state-of-the-art statistics to deal with this challenge.<sup>1</sup> And it reaches an important conclusion, namely, that the bulk of growth in the incomes of the poor that took place over the last decades was driven by the overall income growth of economies. More specifically, by using the method of standard variance decomposition, the authors find that

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1. The paper by Dollar et al. (2013) revisits an earlier debate on the subject of growth and poverty (see, for instance, Datt and Ravallion, 2002; Dollar and Kraay, 2002).

77 per cent of the cross-country variation in growth in the incomes of the poorest 40 per cent of the population is explained by the growth of average incomes.<sup>2</sup>

The policy takeaway that some have, unfortunately, read into this important empirical finding is that to eradicate poverty we have to rely primarily on economic growth. So if we want to have pro-poor policies or promote shared prosperity, we have to bank on the benefits of growth to trickle down to the poor. What is being argued in this article is that while this empirical finding may be valid, the policy conclusion is wrong. It is an illustration of an interesting and, at the same time, common lapse in deductive reasoning. The lapse in question has two sources. Given that many fall into this trap, this is a point worth explaining.<sup>3</sup> First, the past, no matter how carefully studied, does not give us a surefire rule for what will work in the future. This ‘induction principle’ has long been a matter of philosophical dispute and we point this out only as something to be aware of when we take such a step, as indeed we often have to. But for now, let us go along with the ‘induction principle’; our main criticism is the next one. This relates to the error of deducing that, because something has worked in the past, there is little case for believing that anything else will work in the future: this is a wrong deduction, based on evidence that does not exist, on possible alternative measures which could, in principle, also work.

Here is another example of this common mistake. We often make assertions such as: in creating more jobs we have to rely on the private sector because studies show that 90 per cent of past jobs were created by the private sector. This assertion sounds plausible, but the use of the ‘because’ is wrong. Otherwise, we would have to accept someone in the USSR doing a study in the late 1980s and asserting that in creating jobs we have to rely almost entirely on the government because studies show that 99 per cent of past jobs were created by the government.

Let us suppose that we do not make the above mistake and carry out the induction from past experience correctly (to the extent that induction can be correct). Suppose we have evidence that overall growth works very effectively in eradicating poverty whereas giving children deworming medication works, but less effectively, in eradicating poverty. From this can we conclude that we should spend our effort on promoting overall growth instead of giving children deworming medication? The answer is ‘no’ because for that we need one more piece of information, to wit, whether we

2. An interesting subsequent study (Campos-Vazquez et al., 2013) shows that growth may be even better for the super-rich. When an economy grows, the top 10 per cent of the population sees more rapid income growth than the average person. Moreover, during downturns, the incomes of the very rich decline less than those of the average population, implying that fluctuations in overall GDP are good for the rich.

3. Part of this section was previously published as an article entitled ‘Reason and the End of Poverty’ (Basu, 2013b).

are more capable of promoting overall growth or administering deworming medicine. To see this more starkly, replace the words ‘overall growth’ with ‘lunar eclipse’: since we have no idea of how to promote a lunar eclipse, it will be immediately obvious that expending energy trying to do so will be a poor use of our effort, even though there is hard evidence that lunar eclipses eradicate poverty.

Where does this leave us in terms of actual policies? On jobs, it can be argued that the private sector has a critical role to play. In attempting to expand sustainable, economy-wide employment, one could advance the case for relying on the private sector (while allowing for the need to tweak policies to make the private sector more employment friendly). But the reason for this is not because 90 per cent of jobs in the past were created by the private sector. There are other reasons — open, of course, to argument — which are rooted in other kinds of evidence and also in economic theory.

Similarly, in the matter of poverty, as already argued in this article, there is a case for using special anti-poverty policy interventions, and for curbing the seemingly ungovernable tendency, witnessed widely, for inequality to increase. Some of these policies already exist and have been used. Some are novel ones or variants of existing policies that have to be crafted, using a combination of evidence and theoretical reasoning. There is no reason (and, in particular, no reason emanating from the sort of faulty inductive argument referred to earlier) why we must leave it all up to growth and trickle-down to do the job. To make our position clear, this is not a campaign against growth, only a questioning of the allegedly unique or overwhelming role of growth in promoting welfare and relieving poverty.<sup>4</sup> This may also be as good a place as any in which to admit to the guilt of more explicitness and elaborateness than was strictly necessary for conveying a simple idea. Our excuse for harping insistently, if tiresomely, on a truism is that it is perhaps a forgivable reaction to an obvious error that has been no less insistently and tiresomely harped upon in the literature.

We started out with a critique of a certain sort of policy lesson that has tended — mistakenly, in our view — to be drawn from empirical exercises on the growth/inequality decomposition of poverty changes. It is useful, here, to spell out one plausible version of our argument. The relationship between the quintile income statistic,  $Q$  (our indicator of money-metric poverty), the quintile income share,  $s$  (our indicator of income inequality), and the per capita income,  $m$ , is straightforward:

$$Q = 5sm. \tag{1}$$

Suppose  $Q$  rises from  $Q_1$  in period 1 to  $Q_2$  in period 2, with accompanying changes in  $s$  and  $m$  from  $s_1$  to  $s_2$ , and from  $m_1$  to  $m_2$ , respectively. Suppose, further, that  $s_1 = s_2 = 0.07$ , that  $m_1 = 1000$ , and  $m_2 = 1200$ . Then,  $Q_1 =$

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4. For a more directly oppositional stance to the dictum of ‘growth is [always] good for the poor’, see the very important collection of essays in Shaffer et al. (2019).

70 and  $Q_2 = 84$ . These numbers thus describe a situation in which the quintile income has risen from 70 to 84, entirely because of an increase in per capita average income from 1,000 to 1,200, with no accompanying change in the income share of the poorest 20 per cent of the population. The observed empirical fact, in this example, is that the quintile income has increased by 20 per cent entirely because of a 20 per cent growth in average income, with no contribution being made by any change to the distribution of income. Surely this is not a reason to believe that growth is the sole engine of poverty reduction.

The same 20 per cent increase in  $Q$  could have been achieved with the average income being retained at its period-1 value of 1,000, if only direct pro-poor spending through redistributive taxation had succeeded in reducing inequality from an  $s$ -value of 0.07 in period 1 to 0.084 in period 2. Indeed, the same result for the quintile income could have been achieved without relying either solely on growth or on redistribution, but a little on both, for example, through an increase in the quintile income share from 0.07 to 0.0764 and an increase in per capita average income from 1,000 to 1,100. Or through any one of an infinite number of possible combinations of  $s$  and  $m$  in order to secure a given increase in  $Q$ . The point is just this: that something has happened one way is no reason for suggesting that this is the only way it could have happened, nor that it is the best way to make it happen.

The redress of poverty, the mitigation of inequality and the promotion of growth are all legitimate goals of policy. However, the pursuit of any one goal could well conflict with the pursuit of the other goals. This makes it risky to privilege the securing of any one single goal (such as maximization of the growth rate) over others. This is not least the case when we speak of inequality, which — beyond a point — is both intrinsically (morally) indefensible and politically unsustainable. Inequality, furthermore, is also instrumentally harmful — for cohesion, for efficiency, for public health outcomes, and for democratic governance. It is therefore a good thing to be alive to the plurality of beneficent goals confronting a policy maker, and to the difficulty of ensuring the simultaneous and unconflicted securing of all of these goals. The proposition is illustrated, with reference to poverty, inequality and growth, in the next section of the article.

## TARGETS AND POLICIES

The aim of this section is to illustrate how targets matter in shaping domestic policy. The discussion here is conducted in terms of fiscal policy and, in particular, taxation. This is purely for reasons of convenience, to illustrate in the simplest way the kinds of concerns to which the pursuit of multiple goals gives rise. The model, which draws on some of the earlier work of Basu (2006), is presented in a highly threadbare fashion, to show how shifting

targets, from overall growth, through growth of the poorest people, to an exclusive focus on inequality mitigation, leads to different policies on the ground.

Consider a society in which half the population is skilled and half unskilled. This is a static exercise and so what led to this predicament is unimportant for our current investigation. It will be assumed that the skilled people will be the rich ones and the unskilled the poor (even if this is not always an accurate reflection of reality). Hence, the goal of ‘shared prosperity’, focusing on the bottom 20 per cent of the population, will, in this model, translate to focusing on the income growth of the unskilled.

Suppose, if the tax rates are zero, each skilled person earns  $\$A$  ( $>0$ ) and each unskilled person earns 0. Now, let us introduce a simple system of proportional income tax,  $t$ , which is used by the government as a mechanism for redistribution. Remember this is no more than an illustrative exercise and, as such, this is an economy with no public goods, no defence expenditure and no security challenges. We will assume that as the government increases the tax rate, the skilled people choose to work less. In particular, if the income tax rate is  $t \in [0, 1]$ , the skilled person, it will be assumed here, earns an income of  $A(1 - t)^2$ . Hence, this person’s post tax income is  $A(1 - t)^2(1 - t) = A(1 - t)^3$ . We shall denote this, in brief, as:

$$Y(t) = A(1 - t)^3. \tag{2}$$

Since the unskilled people earn their income from transfers, via tax collection, and the number of unskilled people is the same as the number of skilled people, if the income tax rate is  $t$ , the income earned by each unskilled person,  $y(t)$ , will be given by:

$$y(t) = At(1 - t)^2. \tag{3}$$

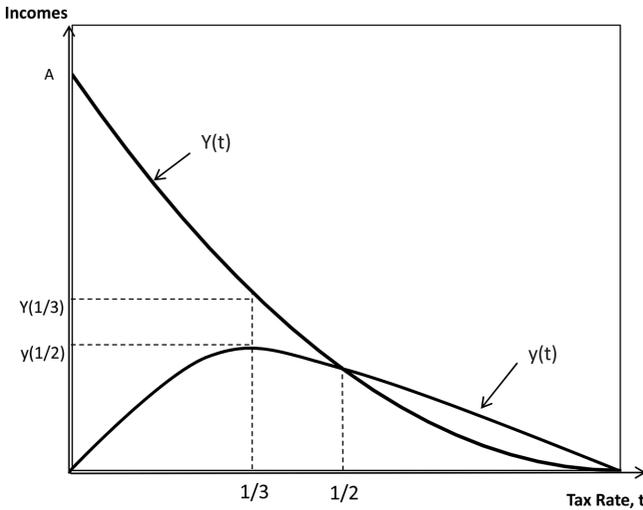
The average per capita income for this economy (recalling that each of the skilled and unskilled segments of the population accounts for one half of the total) is given by  $w(t) = (1/2)[Y(t) + y(t)] = (1/2)[A(1 - t)^3 + At(1 - t)^2]$ , or, simplifying:

$$w(t) = (1/2)A(1 - t)^2. \tag{4}$$

It is easy to illustrate the (post-tax) incomes of the skilled and unskilled workers, and of the entire population, in one graph. This is done in Figure 1, where the horizontal axis shows the tax rate,  $t$ , and the vertical axis is the incomes earned by each of the two groups of people. The relation between what we take to be our target or goal and the policy we choose (in this model, the only policy variable is the tax rate) is now easy to illustrate.

If we are utilitarian and are focused on aggregate income and overall growth, with no special attention to poverty eradication or inequality mitigation, we will be maximizing  $w(t) = (1/2)A(1 - t)^2$ . This will lead to an income tax rate of 0. The rich will earn  $A$  and the poor 0. Next, suppose we focus on the poor, unskilled population and want them to do as well as

Figure 1. A Stylized Model of the Potential Trade-off between Maximizing the Income of the Poor and Minimizing Inequality



Source: Authors' construction.

possible. In other words, we want to maximize  $y(t)$ . More strictly, our aim will be to maximize  $\min \{Y(t), y(t)\}$ , in the spirit of Rawls (1971). In the present case, this distinction does not make any difference. This leads to setting the tax rate at approximately 33 per cent or, more precisely,  $t = 1/3$ . Note from Figure 1 that when  $t = 1/3$ , unskilled people are as well off as they can be but the rich are richer than the unskilled. If we now aim not for overall welfare maximization, nor for the enhancement of the welfare of the poor, but solely on promoting equality, we will set an even higher tax rate, to wit,  $t = 1/2$ .<sup>5</sup>

The model illustrates nicely how there can be situations (as the one illustrated in Figure 1) where the only way to achieve total equality is by hurting the poor. In this model, as we raise the tax rate from  $1/3$  to  $1/2$ , we will get greater equality, but with the poor people becoming worse off. With minor modifications of the model, it is also possible to demonstrate that there are situations in which there is no necessary conflict between maximizing the income of the unskilled population and eliminating inequality, and other situations in which an insistence on perfect equality might only result in 'levelling down' the income of the rich without affecting the income of the poor. We do not actually carry through this demonstration, since the exercise can be performed quite easily by interested readers themselves. Our

5. Total equality is also achieved by setting  $t = 1$ , but we will not expend effort explaining why this is not a good idea.

objective, in this section, is simply to demonstrate the trade-offs between the goals of development.

In what follows, we discuss how the objective that we referred to earlier as the redress of poverty, the mitigation of inequality and the promotion of growth might be pursued through alternative stratagems that emphasize alternative combinations of the mixture. A prior requirement is a clear statement of measurement protocols. To this end, we consider, first, the measurement of poverty, and then the measurement of inequality.

### **MEASURING POVERTY: THE QUINTILE INCOME STATISTIC**

The ‘standard’ procedure for the measurement of money-metric poverty is in terms of the two-stage exercises of ‘identification’ and ‘aggregation’. ‘Identification’ typically consists of stipulating a threshold ‘poverty-line’ level of income, intended to separate the poor population from the non-poor population. ‘Aggregation’ is concerned with combining information on the poverty line and the distribution of incomes with a view to coming up with a real-valued representation of the extent of poverty in the society under review. The simplest and commonest index of poverty used in the theoretical and applied literature of poverty measurement is the so-called ‘headcount ratio’, which is simply the proportion of a population in poverty, that is, below the poverty line.

Despite the settled and extensive employment of the procedure described above for the measurement of poverty, there is reason for reservation with such an approach. Specifically, the headcount ratio (or any other meaningful measure of poverty) is typically an increasing function of the poverty line. This creates a built-in incentive for political leaders to pitch the poverty line ‘low’, without adequate regard for the norm which, after all, ought to reflect a level of income needed to escape some at least of the basic aspects of deprivation that constitute poverty. Low poverty lines will typically depress poverty magnitudes and could even encourage flattering poverty trends. The incentive for manipulating statistical outcomes to suit the policy maker’s preferences in the matter, is undeniable. It is also arguable that poverty lines, in practice, have tended to be specified without reasonable regard for adequacy: this is true, for instance, of the Indian Planning Commission’s official poverty lines, the US Federal Government’s poverty lines, and the World Bank’s ‘dollar-a-day’ poverty lines (see Reddy and Pogge, 2010).

This problem can, in principle, be rectified. What we would need to do is to specify minimal levels of various ‘basic human functionings’ (Sen, 1983, 1985) needed in order to avoid deprivation in ‘functionings space’ (a ‘functioning’ being what Sen has called ‘a state of being or doing’, in the dimensions, for instance, of nutrition, shelter, mobility, knowledge, health and so on). The commodity requirements needed to meet these minimal functionings levels must then be reckoned, and then costed and aggregated

in order to arrive at a reasonable poverty line. While this route to rectification is plausible, it begs the question of why poverty should not be measured directly in the space of functionings, by resorting to any of a number of multidimensional indices of poverty that have been proposed in the literature<sup>6</sup> (see, among others, Alkire and Foster, 2011; Atkinson, 2003; Bourguignon and Chakravarty, 2003; Chakravarty and d’Ambrosio, 2006; Jayaraj and Subramanian, 2010; Pattanaik et al., 2012; Ray and Mishra, 2012).

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6. See, in this connection, the plurality of poverty-related indicators — including multidimensional measures — that have been suggested in the Report of the Commission on Global Poverty set up by the World Bank under the Chairmanship of the late Sir Anthony Atkinson (World Bank, 2017). It seems relevant to point out that the Commission was set up when one of the authors of the present article was with the World Bank, and that the other author was a member of the Commission’s Advisory Board. We mention this here in response to a comment from an anonymous referee who inferred the identity of the first author and wanted this essay to reflect more openly on the Bank’s poverty measure. In the spirit in which the referee has invited us to speak on the subject, we would like to state the following. It is a matter of fact that the Commission has nowhere in its Report endorsed the World Bank’s International Poverty Line, nor its methodology of assessing poverty based on such a poverty line. Many countries of the world had already signed into the World Bank’s ‘dollar-a-day’ approach to assessing global poverty, so that there was little freedom available, in either the formulation or the execution of the brief before the Commission, for deviating radically from the World Bank’s extant procedures for estimating global poverty. This is apparent from the following quotes from the Commission’s Report: ‘the Commission is charged with one quite specific technical question — (1) How should the World Bank measure of extreme poverty be monitored between now and 2030? And it is charged with a more general question — (2) What other kinds of poverty indicators should guide policy? *It should be noted that the specific technical question takes as given its starting point the World Bank 2015 level of 1.90 PPP-adjusted dollars a day per person. Although the Report begins by summarizing the history of the World Bank measure leading up to this figure, the Commission was not asked to redo this analysis*’ (World Bank, 2017: 2, emphasis added); and ‘In chapter 1 of the Commission Report, the World Bank’s extreme poverty definition is taken as a “governmental standard.” It reflects a political judgment about the extent of ambition on the part of the Member States of the United Nations: the members of the UN have signed up to this particular poverty target. *An alternative poverty line may be more intrinsically defensible, but it does not have the same claim on political leaders.* Chapter 1 is therefore concerned with the implementation of the \$1.90 standard, *taking it as a given*’ (ibid.: 3, emphasis added). The roles of the two present authors in the Commission on Global Poverty involved doing one’s best in a difficult situation — one means to this end being to suggest other kinds of poverty measures to guide poverty. A perspective sympathetic to this orientation is available in a review of the Commission’s Report by Michail Moatsos (2018). It may be added that one particular recommendation in the Report, which is a major component of the present essay, was rejected by the World Bank. This is Recommendation 17: ‘The indicator for the shared prosperity goal should be unambiguously stated as raising the living standards of the bottom 40 percent in each country (*not confounded with their relative share*), and extended to include an indicator identifying the growth of per capita real consumption of the bottom 40 percent of the world distribution of consumption’ (World Bank, 2017: 149, emphasis added). This recommendation is one which the World Bank ‘does not currently plan to pursue’ (World Bank, 2016: 6). By the time of this decision, one of the present authors who had earlier been with the World Bank was no longer so — which is not to suggest that things would have necessarily been otherwise in the alternative event!

If what matters is invariance of the poverty norm in the space of functionings — and this is precisely what the term ‘poverty line’ entails — then there is a case for assessing poverty multidimensionally in functionings space, without the intermediation of income. The poverty-line approach, in other words, interprets income as a means to an end (the end of avoiding deprivation in functionings space). A more reasonable view of money-metric poverty would be that income is an end in itself, namely that escaping ‘low’ levels of income is a valuable functioning in and of itself.

In line with the last sentiment, money-metric poverty is sensibly interpreted in terms of the income status of the income-poorest sections of a population. One measure that has this property, along with other normative qualities in the spirit of Rawls (1971), is the per capita income of the population below a certain cut-off. In an early formulation of this measure, the cut-off focused on the per capita income of the poorest quintile or 20 per cent of society (see Basu, 2001).<sup>7</sup> The World Bank’s (2015) stated goal of ‘shared prosperity’ is based on a higher cut-off of 40 per cent.<sup>8</sup>

Where we place the cut-off to define the disadvantaged section will always be questionable. If it is placed too high, the per capita income will get very close to the per capita GDP and hence it will be a case of information duplication. The data on the very poorest people tend to get somewhat blurred because for the very poor there is often no steady source of income and because the income they have comes from multiple, informal sources, which are not always easy to document. One reasonable cut-off that avoids the extremes at either end of the income spectrum is 20 per cent: this gives us the quintile income statistic, which we shall label  $Q$ . We maintain that  $Q$  is a direct indicator of money-metric poverty, as such — one which sees the achievement of a satisfactory level of income as a desirable end in and of itself. Poverty, in this view, is a declining function of  $Q$ .

Focusing on per capita income and growth of the bottom 20 per cent has several advantages.<sup>9</sup> One advantage is the simplicity of  $Q$ ; in order to have a goal that is used on the ground and is easily comprehensible to practical policy makers without being easily manipulable by them, it is essential to keep it simple.  $Q$  also satisfies the standard welfare axioms of anonymity

7. For related analysis, see Narayan et al. (2013); Rosenblatt and McGavock (2013); Subramanian (2018); Virmani (2008).

8. Note that the World Bank’s ‘shared prosperity index’ is an indicator of inequality, not poverty. The absolute average income level of the poorest 40 per cent of the population would be a money-metric indicator of poverty. In our article, we employ both the quintile income *share* and the quintile income *level* as indicators of inequality and poverty respectively.

9. One practical difficulty that needs to be mentioned, however, is in the nature of a data problem: *distributional* data (which would be typically required to estimate percentile shares and levels of incomes) are often available in national sample surveys (NSS) (and on consumption rather than income), while data on per capita average income are generally available in national accounts statistics (NAS): and NSS and NAS estimates do not often coincide. Indeed, in many countries they have displayed a diverging trend over time, confronting data analysts with difficulties in coming up with consistent time-series poverty statistics.

(namely that a permutation of incomes across individuals leaves the value of  $Q$  unchanged), and the weak Pareto principle (namely, that an increase in every person's income will increase the value of  $Q$ ). Further,  $Q$  has the attractive property that while it focuses on the poorest 20 per cent, it does not altogether lose sight of those above the cut-off.<sup>10</sup> This is because if the policy maker applies all attention, single-mindedly, to the poorest 20 per cent, those above the 20 per cent mark could fall below it in the next period and automatically come into the policy maker's focus of attention. Moreover, if the poorest 20 per cent become better off because of government intervention, and the rest are ignored to the extent that those above the 20 per cent cut-off become worse off than those who were originally below the 20 per cent mark, then the growth rate of per capita income of the poorest 20 per cent of the population will be negative. In other words, such a policy will be deemed to be a failure. All these properties are also true for the World Bank's shared prosperity measure which uses a cut-off of 40 per cent.<sup>11</sup>

#### MEASURING INEQUALITY: THE QUINTILE INCOME SHARE

We take the view that the extent of inequality that prevails in the world today is intolerably high (see Milanovic, 2012 for a comprehensive study of the state of income inequality in the world; see also Anand and Segal, 2008; Bourguignon and Morrisson, 2002). The growth in global inequality becomes even more profoundly evident if we move away from the dominant convention of measuring inequality in purely relative terms, and also allow absolute and 'intermediate' measures (see Atkinson and Brandolini, 2010; Bosmans et al., 2014; Niño-Zarazúa et al., 2017). As we have observed earlier, extreme inequality is undesirable as an end state in itself and, as it happens, also for instrumental reasons. To have individuals living at such levels of disparity as they do today raises inherent ethical questions pertaining to basic human dignity, but it also causes collateral damage to the economy (Birdsall, 2001) and creates social and political tensions (Esteban and Ray, 1991). Huge concentration of wealth in the hands of a few can also lead to an unwarranted concentration of political power. Hence, in the ultimate analysis, extreme inequality is an assault on democracy. This being

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10. In some ways a conceptually superior alternative is to focus on the average of the growth rates of the incomes of the poorest 20 or 40 per cent. This implicitly gives greater weight to achievements accruing to a poorer person within the bottom segment. But this requires data on each person's, or minimally each household's, income growth over time. Unfortunately, such data are not available and are unlikely to be available in the near future.

11. The anonymity property, which has been discussed here as a desirable quality, has received some interesting criticism in the context of conceptualizing inclusive growth. Thus Grimm (2007) argues that since policies are meant to have an effect on the poor, what we want to study is the impact on the initially poor instead of the impact on the (possibly changing) cohort of those who happen to be poor at each point of time.

a normative matter, we cannot compel the reader to accept this view, but we do state it explicitly so that our position is presented in unequivocal terms.

There has been some criticism that the focus on the growth rate of the per capita income of the poorest 40 per cent ignores inequality. This criticism is misplaced. Each nation already tracks the growth rate of the per capita income of its entire population and these data are widely available; as soon as we see the growth rate of the bottom 40 per cent next to this figure, it will be immediately obvious as to whether the poorest 40 per cent are falling behind the rest of the population or catching up. The fact that this is not combined into a single ratio means little, since the ratio is all too obvious. (Even here, care should be taken to note that equal rates of growth across income quantiles are only minimally 'equitable': growth rates that decline as we go up the quantile ladder would reflect the desirable fact that equity demands higher growth rates on lower base levels of income.) Moreover, there is some literature showing that what the poorest 40 per cent lose goes largely to the top 10 per cent of the population (Green, 2012; Palma, 2011). Hence, the notion of 'shared prosperity', captured in the income share of the poorest 40 per cent, has some interesting connections to the idea of polarization in society (see, for example, Esteban and Ray, 1991; Zhang and Kanbur, 2001). The measure of inequality we ourselves advance is  $s$ , the proportion of total income accounted for by the poorest 20 per cent of the population, or, simply, the *quintile income share*.

As with most distributional criteria, a focus on the bottom 20 or 40 per cent also has weaknesses. As Rosenblatt and McGavock (2013) note, two nations with the same per capita income and with Lorenz curves that intersect at the 40 per cent population mark will be judged identical by this criterion, no matter what the income distributions look like elsewhere. Indeed, this criticism can be taken a step further. It is possible to think of two nations, 1 and 2, with the same per capita income such that nation 1 has weak Lorenz dominance over nation 2, and yet, by our criterion, the two societies are adjudged identical. In other words, the Lorenz curves do not intersect at the 40 per cent population mark but connect there, with one curve lying above the other everywhere else. Given the importance of Lorenz dominance as a concept (see, for instance, Anand, 1983; Atkinson, 1970; Moyes, 1987; Sen, 1997; Sheshinski, 1972), this is indeed an observation of some significance. To see this clearly, consider two societies each having a population of five and national income of 100. The incomes of all five individuals in the two societies are as shown in Table 1.

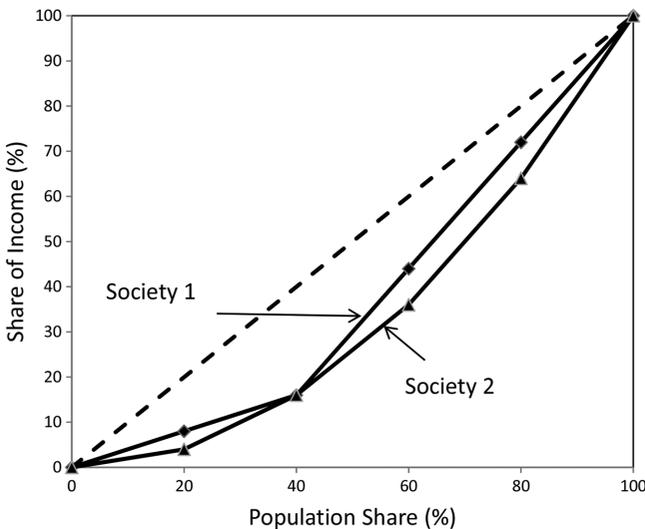
Note that both societies have the same per capita income, namely 20; and the per capita income of the poorest 40 per cent people in both societies is 8. Hence, by the criterion of the quintile income share, both societies are identical. However, if we plot the Lorenz curves of the two societies, as is done in Figure 2, it is immediately obvious that society 1 weakly Lorenz-dominates society 2. Indeed, society 1 strictly Lorenz-dominates society 2 almost everywhere. This is a valid criticism; but to counter-balance this

*Table 1. Hypothetical Income Distributions*

Individuals	Incomes	
	Society 1	Society 2
1	8	4
2	8	12
3	28	20
4	28	28
5	28	36

Source: Authors' construction.

*Figure 2. Hypothetical Income Distributions and Lorenz Dominance*



Source: Authors' construction.

critique one has only to keep in mind that it is useful to have a criterion which is understood by most people, is easily applicable, is not grossly implausible, and has the crucial virtue of simplicity to commend it.

Given equation (1) above, it is quite a simple matter to decompose a change in poverty over two points of time into a change attributable to the growth in mean income and the change attributable to distributional variation. Such an empirical exercise has indeed been performed by Subramanian and Lalvani (2018) in order to study the change in urban poverty in India between 2004–05 and 2011–12. Among other things, the authors examine how much better poverty performance might have been if the observed growth of mean income had been more equitably distributed; and how the same change in poverty as that which was actually obtained might have been achieved with a greater emphasis on equality and considerably less emphasis on growth. What this sort of exercise reveals is the arithmetic of different routes to the

*Table 2. Poverty in 2030 at \$1.25 per day PPP (assuming country-specific National Accounts-based growth rates of the past 20 years)*

Region	Headcount Poverty (%)	Number of Poor (millions)
East Asia and Pacific	0.6	12.0
Europe and Central Asia	0.7	3.5
Latin America and the Caribbean	4.4	30.3
Middle East and North Africa	1.7	7.2
South Asia	4.4	91.3
Sub-Saharan Africa	36.5	492.0
<b>Total Developing World</b>	<b>8.8</b>	<b>636.3</b>
<b>World</b>	<b>7.7</b>	<b>636.3</b>

Source: Basu (2013a: Table 3).

same target. In reality there will be questions of which routes are feasible. This will depend on the general equilibrium interdependencies within the economy, and also the nature of institutions within which the economy is embedded, as the growing literature in New Institutional Economics reminds us. However, to the extent that the routes we try to navigate depend on recognizing that more than one route exists, illustrations of the type just mentioned — and much of the analysis in this article — may be viewed as a preliminary exercise to encourage alternative policies aimed at attending to this major challenge of our time.

### CONCLUDING OBSERVATIONS: GROWTH AND OTHER INSTRUMENTS

In addressing the problem of poverty, one is forced to grapple with an age-old question:<sup>12</sup> can growth alone do it or do we need specially targeted policy interventions by government?

Let us begin with some relatively mechanical exercises, for which even the traditional headcount ratio of poverty will serve our purpose, even though this measure typically understates magnitudes and exaggerates trend declines when the poverty line is pitched low, as is the case with the World Bank’s International Poverty Line. One such exercise is to assume that each nation will grow at rates that it did on average during the past two decades and the distribution of income will remain unchanged. If this happens over the next 17 years,<sup>13</sup> it is easy to calculate that global poverty will decline to 7.7 per cent. In other words, we will not make the World Bank’s (2015) target of less than 3 per cent poor.

Table 2 describes the global breakdown of where we will be in terms of poverty in 2030 if there is growth of the above kind. During the first decade

12. The literature debating this is large; see, for instance, Bhagwati and Panagariya (2013); Dreze and Sen (2013); Himanshu (2008); Lopez-Calva and Lustig (2010); Rieff (2013); Rodrik (2005).

13. The initial year, in this exercise, is 2013.

*Table 3. Poverty in 2030 at \$1.25 per day PPP (assuming country-specific National Accounts-based growth rates of the past 10 years)*

Region	Headcount Poverty (%)	Number of Poor (millions)
East Asia and Pacific	0.2	3.5
Europe and Central Asia	0.1	0.6
Latin America and the Caribbean	3.9	27.3
Middle East and North Africa	3.8	16.4
South Asia	2.5	52.0
Sub-Saharan Africa	26.4	356.1
<b>Total Developing World</b>	<b>6.3</b>	<b>455.9</b>
<b>World</b>	<b>5.5</b>	<b>455.9</b>

Source: Basu (2013a: Table 4).

of this century, growth in most nations was, however, faster than in the preceding decade. What happens if we assume that all countries will grow at that faster rate from now till 2030? Table 3 gives the regional breakdown of where the world will be if this more optimistic scenario prevails over the next 13 years. Unfortunately, even with this rosier projection, global poverty will reach 5.5 per cent, and so we will still be far away from our target.

Certainty about the economic future is the province of the foolish and we have no intention to go down that path. It is possible that growth over the next decade and a half could be much faster than what we have seen or that growth will naturally become more generous towards the poor. However, if the past is any indicator of what is to come, these scenarios must be discounted as unlikely. In brief, based on the simple projections above, it appears reasonable to assert that reliance on growth alone is unlikely to get us to the target. We need policy interventions, from well-designed micro-interventions targeted at the poor, through reasonable taxation policy, to a stable macroeconomic environment.<sup>14</sup> Further, even if growth alone will do the job, why not step on the other pedals to move faster towards the target of ending chronic poverty and mitigating the great, and shameful inequalities that prevail in the world today?

14. It may be worthwhile to point out that, while large organizations such as the World Bank do not easily shift their normative stance, the work on shared prosperity and the introduction of new measures do seem to have had some influence. This is evident from policy statements that have emerged from the World Bank in recent times and also from documents such as the ‘Stockholm Statement’ that was issued on 15 November 2016 following a meeting organized by the World Bank and the Swedish International Development Cooperation Agency (SIDA) (see [www.sida.se/globalassets/sida/eng/press/stockholm-statement.pdf](http://www.sida.se/globalassets/sida/eng/press/stockholm-statement.pdf)). It is evident that the Stockholm Statement, the signatories of which included four former chief economists of the World Bank, is an attempt to distance the World Bank from the Washington Consensus, which was really a consensus ‘between 15th and 19th street’ of the city, where the IMF, the US Treasury and the World Bank are situated, as Joseph Stiglitz pointed out in a much-cited interview (see Komisar, 2000).

The simple argument put forward here is that there is a lot that we know and there is reason to believe that there is much more to be known in terms of exactly how to design interventions. From the broad sweep of history, and the experience of countries as diverse as China, Brazil and India, we know that direct interventions by the state to mitigate malnutrition and provide health services and education can make a difference; and indeed there is an argument to be made that instead of waiting for growth to do this, interventions on these fronts can actually step up the growth rates of economies (Dreze and Sen, 2013). We find little basis for excessive optimism in favour of growth or excessive pessimism toward redistributive and directly pro-poor policies. At the least, there seems to be no reasonable empirical or analytical basis for such beliefs.

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