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Who is *Not* Poor? Dreaming of a World Truly Free of Poverty

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When the World Bank dreams of "a world free of poverty," what should it be dreaming? In measuring global income or consumption expenditure poverty, the World Bank has widely adopted the $1 a day standard as a lower bound. Because this standard is based on poverty lines in the poorest countries, anyone with income or expenditures below this line will truly be poor. But there is no consensus standard for the upper bound of the global poverty line: above what level of income or expenditures is someone truly not poor? This article proposes that the World Bank compute its lower and upper bounds in a methodologically equivalent way, using the poverty lines of the poorest countries for the lower bound and the poverty lines of the richest countries for the upper bound. The resulting upper bound global poverty line would be 10 times higher than the current lower bound and at least 5 times higher than the currently used alternative lower bound of $2 a day. And in tracking progress toward a world free of poverty, the World Bank should compute measures of global poverty using a variety of weights on the depth and intensity of poverty for a range of poverty lines between the global lower and upper bounds. For instance, rather than trying to artificially force the global population of 6.2 billion (a billion is 1,000 million) into just two categories "poor" and "not poor," with the new range of poverty lines the estimates would be that 1.3 billion people are "destitute" (below $1 a day), another 1.6 billion are in "extreme poverty" (above $1 a day but below $2 dollar a day), and another 2.5 billion are in "global poverty" (above extreme poverty but below the upper bound poverty line).

Poverty reduction is the objective of the World Bank, and poverty measured by income or expenditure is one key dimension of poverty. In the standard measures of poverty reduction, the income gains of people above the poverty line count for nothing. The highest poverty line ever officially used to measure and track global poverty is $2 a day,[1] and by that standard 3.25 billion people are *not poor*. The unavoidable conclusion is that the income gains of 3.25 billion people count for nothing in the World Bank's objective of income poverty reduction. One would think that before

telling 3.25 billion people that their economic progress means nothing to your organization, you would have a firm analytical, empirical, or normative foundation. But that is not the case. There is no justification for using $2 a day as an upper bound global poverty line (GPL^{UB}) to define who is not poor.

Since the very notion of poverty is a social construct, any poverty line used as a particular empirical measure of poverty is also a social convention.[2] The appropriate range of poverty lines therefore depends on social context—who is setting the line, whose poverty is being measured, and to what purposes the lines are being put. Social acceptability, policy relevance, and spatial and intertemporal comparability are key criteria in establishing a poverty line in a particular context. The World Bank uses hundreds of different poverty lines in its dialogue with countries about their policies. It does not, and should not, impose an external standard for poverty lines. Similarly, nothing in this article addresses the setting of national poverty lines. But when the World Bank as an organization says that it "dreams of a world free of poverty," it should have its own definitions of *global* poverty against which to gauge progress toward that dream.

The World Bank should measure global income or expenditure poverty using a range of global poverty lines, with sets of intensity weights (discussed below) for each. A range needs a lower bound and an upper bound. The $1 a day standard deserves its wide acceptance as the lower bound global poverty line (GPL^{LB}): people below this line are indisputably poor. But a debate of how to set the upper bound for a global poverty line has been missing. The method for setting the standard for who is not poor has been entirely ignored.

The method for setting a GPL^{UB} proposed here results in a $10 a day standard—10 times higher than the current lower bound of $1 a day and 5 times higher than the de facto upper bound of $2 a day. The article defends this upper bound on grounds of methodological consistency, economic soundness, and as a better reflection of the World Bank's true poverty objective than a low upper bound. At this higher poverty line, the headcount rate of global poverty is roughly 40 percentage points higher—bringing 2.5 billion people into the definition of the "global poor" and so into the ambit of the World Bank's concern with poverty reduction.

Objectives and Poverty Lines

How does one choose between the economists' usual normative objective for policy analysis, improving a social welfare function, and poverty reduction as the objective? Whereas some economists argue that income gains should be counted equally at all levels, in practice nearly all social welfare functions are "inequality averse" and count gains to the poor more. The real difference between a social welfare and a poverty approach is that a poverty-reduction objective counts gains to the nonpoor

less—infinitely less in fact. Because a large class of both social welfare functions and poverty measures can be thought of as weighted integrals over income distributions and the mathematical form of a social welfare function can be quite flexible in how much concern is given to the poor, the only essential difference between the two is that poverty lines imply a level of income above which gains to income count for exactly zero. This is the essential difference because any combination of a poverty measure and a social welfare function is just another social welfare function. Thus, the only feature of a poverty measure that a social welfare function cannot represent is a zero weight above the poverty line.

Even among development economists, a poverty-reduction objective as an appropriate normative ordering for policy analysis is not widely embraced. As usual, Angus Deaton (1998a, p. 141) gives a succinct and accurate summary:

> For policy evaluation, the social welfare function is all that is required to measure welfare, including an appropriate treatment of poverty. While it is possible—and in my view desirable—to give greater weight to the needs of the poorest, I see few advantages in trying to set a sharp line, below which people count and above which they do not. Poverty lines and poverty counts make good headlines, and are an inevitable part of the policy debate, but they should not be used in policy evaluation. Perhaps the best poverty line is an infinite one; everyone is poor, but some a good deal more so that others, and the poorer they are the greater weight they should get in measuring welfare and in policy evaluation.

The reason why nearly all economists prefer the social welfare function over the poverty-reduction objective as the normative ordering for policy evaluation can be illustrated with five examples. Three examples show that the poverty-reduction objective is too often indifferent, and two examples show that it is too extreme. First, imagine a policy that raises the income of all individuals above the poverty line, while leaving the income of those below the poverty line unchanged. This new policy set is preferred by nearly any social welfare function, but a poverty-reduction objective ranks the two the same. Second, suppose that the very rich could be taxed at little welfare cost and the proceeds transferred to those just above the poverty line. This is again a preferred normative outcome for any sufficiently inequality-averse social welfare function but an indifferent one for a poverty-reduction objective. Third, change the framing by supposing that a policy created restrictions on competition that allowed the very rich to charge higher prices for a good consumed by the almost poor but not by the poor, transferring income from the almost poor to the rich. Even assuming away the inefficiency, any sufficiently inequality-averse social welfare function would rate this policy a loser, but a poverty-reduction objective still has no preference—it remains stubbornly indifferent to all changes above the poverty line.

Economists are averse to a poverty-reduction objective as a normative ordering not only because it too frequently lacks a preference but also because its preferences are too extreme when it has them. The fourth example concerns a tax-transfer scheme in which taxes on those above the poverty line are levied at rate $\tau(y - PL)$, but for whatever reason, a fraction δ of the amount raised disappears, and only $(1 - \delta)\tau(y - PL)$ is received by those below the poverty line. Even if δ is very near one so that the transfer is enormously inefficient, a poverty-reduction objective would prefer the transfer. So if \$1 million were taxed from those above the poverty line, \$999,999 were deposited into someone's Swiss bank account, and \$1 were transferred to the poor, a poverty-reduction objective would favor this policy. The fifth example is the converse. Suppose there was a very efficient scheme for taxing all incomes in which the tax incidence fell disproportionately on the rich but with some small amount of tax paid by those below the poverty line and with all the tax revenue transferred to the poor. Now consider expanding the scheme so that it also reaches people just barely above the poverty line and suppose that the cost of reaching them was less than that of reaching the poor. How much cheaper should it be to reach the almost poor before they are brought into the scheme? A poverty-reduction objective would never recommend expanding the program to the almost poor.

Of course, all these examples are artificial because they depend on comparing gains between those just below the poverty line and those just above it. If the poverty line were higher enough in any of these examples, the ranking of policies under a poverty-reduction objective could be reversed to agree with the ranking under a social welfare function. This suggests that policy analysis with a poverty-reduction objective and a range of poverty lines is less likely to produce anomalous results than one with a single poverty line—and every range needs an upper bound.

The Criteria for Setting the Range of Poverty Lines for the World Bank

That poverty measures are not grounded in mainstream economics and that poverty-reduction objectives are not widely accepted for policy analysis are not compelling arguments against the judicious use of poverty-reduction objectives. In many ways, the global poverty measures that are widely reported by the World Bank [headcount poverty rate, poverty gap, and squared poverty gap, based principally on the work of Chen, Datt, and Ravallion (1994) and Chen and Ravallion (2001)] in such publications as World Development Indicators and the World Development Report are similar to the human development index (HDI), widely used by the United Nations Development Programme, or measures of "unmet basic needs," widely used in Latin America. While none of these measures is grounded in mainstream welfare economics,

they have an important and legitimate twofold purpose: public policy advocacy and organizational coherence around a clear mission and mandate.

The World Bank's objective should be global and national poverty reduction, and making those objectives operational requires a specification of the range of poverty lines (and the weighting functions that define particular poverty measures). One range of global poverty lines would divide the world's population into three categories: those below the lower bound poverty line who are indisputably poor, those who are above the upper bound poverty line who are indisputably not poor, and those in between who are poor by some standards but not by others. The key question is: For the World Bank's use of a poverty-reduction objective in its global policy advocacy and its organizational mission and mandate, what are the best lower and upper bounds on poverty lines?

There is widespread agreement that the $1 a day standard is an acceptable lower bound. In setting poverty lines, there was a fear that using a high poverty line would lead to accusations that the World Bank was "overstating" poverty in order to expand its mandate or funding, thus detracting from effective advocacy. The decision was made to choose a lower bound that was so low that no one could reasonably dispute that anyone living below this line was poor. But the same reasons that make $1 a day a good lower bound—that it is ultrapenurious—make it a bad choice as an upper bound. By the $1 a day standard only 6.6 percent of Sri Lankans, 11.3 percent of Bolivians, 12.3 percent of Ivorians, and 15.2 percent of Indonesians are poor. No one is really comfortable saying that a standard this low is the only reasonable global standard for poverty. After all, the $1 a day standard is, by construction, well below nearly all national poverty lines.

Since there is agreement that measuring global poverty requires a range of poverty lines and that $1 a day is a reasonable lower bound, the only remaining problem is to set an upper bound. Setting an upper bound is fundamentally about deciding who is not poor.[3] The problem of deciding who is not poor goes deep. If poverty is an unacceptable deprivation in material well-being, this implies that well-being of the nonpoor is acceptable. Moreover, if poverty reduction is an organization's objective, then income gains above the upper bound count for nothing. Strikingly, the problem of setting an upper bound has received almost no attention (an important exception, discussed below, is Atkinson and Bourguignon 2000).

What are the criteria that the World Bank should use in producing a GPL^{UB}?

- For an international organization, global poverty lines should be "globally inclusive" (Atkinson and Bourguignon 2000) or, as Bhalla (2002) puts it (with a little help from his friend), in setting the poverty line we should "imagine there's no country." Equivalent levels of well-being should count equally no matter where a person lives.
- The method for computing the upper bound should be consistent with the method for computing the lower bound.

- Since poverty reduction is used for measuring progress toward organizational objectives, the upper bound should be consistent with the well-grounded analytics and a reasonable conception of the activities encompassed by poverty reduction as an objective so that it can comfortably be said that income gains above the upper bound really count for zero in an organization's normative objectives.
- Since poverty reduction is used for policy advocacy, the upper bound should truly be the point at which people are not poor, and deprivation at that level of income should truly be acceptable.

The following section shows that a standard such as $10 a day (or higher) is a defensible upper bound, whereas treating $2 a day as an upper bound is indefensible.

A Modest Proposal for Bound Global Poverty Lines and What They Might Mean

This section first describes how the lower bound poverty line was set and argues that the upper bound should be set symmetrically. It examines the empirical implications of the resulting upper bound poverty line—that roughly 2–3 billion more people are included in global poverty, and then shows that these implications for global poverty are not unreasonable.

Methodological Consistency for the Lower and Upper Bounds

A poverty line can be defined, using the usual expenditure function $e(p, U)$, as the minimal expenditures necessary to achieve a given level of utility, with characteristics X of household H and the prices the household faces:

$$\text{Poverty line}^H = e(\text{prices}^H, X^H, U^{\text{Poverty}})$$

The expenditure function approach emphasizes that the level of well-being below which someone is considered poor, U^{Poverty}, is a social (and political) issue, not a technical one. Once U^{Poverty} is chosen, there are many technical aspects to constructing a poverty line [Ravallion (1993) is a classic reference]. Making appropriate comparisons requires taking into account household characteristics (see, for example, Deaton 1998a, 1998b) and variations in prices across space and time (Bidani and Ravallion 1993; Suryahadi, Sumarto, and Pritchett 2003) and across reference groups (Pradhan and others 2003). But the choice of U^{Poverty} itself, the threshold level of what is an "unacceptable" level of well-being, is unavoidably entirely a social convention.

The $1 a day standard was first adopted for *World Development Report 1990: Poverty* (World Bank 1990). Ravallion, Datt, and van de Walle's (1991) analysis of the national poverty lines of 36 poor countries found that while poverty lines tended to increase with country mean income, there seemed to be a lower bound below which poverty lines did not go even as countries got poorer. The choice was made to adopt the social convention that the global poverty line lower bound should be based on the poverty lines of the 10 poorest countries. That was the method: choose a GPL^{LB} near the national poverty lines of the poorest countries.

There is widespread belief that the $1 a day standard is determined by the cost of achieving a nutritionally adequate diet or of meeting basic physical needs and hence is grounded in biological facts and so is not merely a social convention. This is a myth, and while its serves the cultural function that myths often play admirably, it is factually false on two levels.

First, nutritional requirements never uniquely determine the food poverty line. Any calorie-based food poverty line can be expressed as the product of the number of calories and the cost per calorie, where the cost per calorie is determined by choosing a food basket. As people's income increases, the composition of their food basket changes in many ways: they eat more attractive staples (rice or wheat over cassava); they eat more fruits, vegetables, eggs, dairy, and meat; and they tend to eat more processed food (noodles). Nearly all these changes imply that the cost per calorie of people's actual consumption basket increases with income. The "nutritional requirements" method that is often applied by World Bank analysts uses the actual consumption basket of a "reference group" (usually households from a range of the income distribution). Other approaches use other methods of setting the consumption basket. But any method of setting the food basket (which determines the cost per calorie, which determines the food poverty line, and which determines the poverty line) is completely a social convention, not a biological fact.[4]

Second, the $1 a day global poverty line is not the average of all poverty lines set by the nutritional requirements approach. What pins down $1 a day as the GPL^{LB} is not a nutritional requirements approach, but rather a social convention by which the World Bank chose to adopt only the poverty lines of the poorest countries in setting the lower bound. Countries with higher average incomes that used exactly the same nutritional requirements approach would produce national poverty lines higher than the $1 a day line.

Myths aside, as a social convention for setting a lower bound of who is indisputably poor, using the standards of the poorest countries is very persuasive. So persuasive that this article proposes that the upper bound should be set in the same way: an upper bound of who is indisputably not poor using the standards of the richest countries is equally persuasive.

This is a particularly appropriate social convention for the World Bank, which is controlled by its shareholders quite directly. The proposed method simply adopts the

notion that the rich country shareholders of the World Bank mean the same thing by *poverty* no matter the color of people's skin or the country of their birth. The counterargument—that unacceptable deprivation in well-being at a global level is lower than the standard that rich countries apply to their own citizens—would violate the goal of a globally inclusive standard for poverty. When the relevant group is the local community or a region or a country, it is legitimate to adopt a socially relevant standard or a poverty line that is limited to a geographically delineated reference group. But for global poverty, the upper bound should be global.

Current practice in the World Bank is to report global poverty measures for only two poverty lines, the $1 a day and the $2 a day standards. As this makes the $2 a day standard the highest poverty line for which poverty figures are ever reported, it inevitably leads to the interpretation, however unintended, that the $2 a day standard is the GPL^{UB}.[5] But there is absolutely no methodological foundation for the $2 a day standard as an upper bound. Whereas it may be roughly the poverty line of some middle-income countries, this would justify it only as one of many possible intermediate poverty lines or as an alternative lower bound but not as an upper bound.

Implementing a High Upper Bound: How Many People are "Not Poor"?

There are a variety of ways of implementing a GPL^{UB}, based on rich country standards. The method best suited for the organizational realities of the World Bank might be to have each World Bank shareholder declare its standard for a global poverty line, with the proviso that the standard for global poverty can be no lower (but could be higher) than the poverty line (or its equivalent) that the country uses for its own citizens. As with many other decisions made by the World Bank, the global poverty line could be a shareholder-weighted average of member country-proposed poverty lines. A companion paper (Pritchett 2003) shows that this (and many other plausible methods) produces a GPL^{UB} that is at least $10 a day (often much higher). For purposes of illustrating the implications of a higher upper bound standard, the $10 a day standard will be used here, in part because, at exactly 10 times the lower bound, it has nice "focal point" value.

The obvious implication of raising the global poverty line is that fewer people are not poor. Table 1 reports the two different estimates of the population falling into four categories: *destitute* (below $1 a day), *extreme poor* (below $2 a day), *global poor* (below $10 a day), and *not poor* (above the GPL^{UB}).

One estimate (labeled "author's calculation") uses data on real GDP per capita in purchasing power terms to establish the mean income and the assumption of log-normality along with distributional data to estimate the distribution of income. A uniform scaling factor is applied across all countries to reproduce exactly the estimate of poverty at the $2 a day standard reported in *World Development Indicators*

Table 1. Estimates of Headcount Poverty Rates and Number of Poor People Using Various Global Poverty Lines

International standards for degrees of poverty	Income or consumption expenditure per capita ($ in 1985 prices and P$ in 2000 prices)		Share of world population below this poverty line (headcount poverty, percent)			Number of poor people[a]	
	Per day	Per year	World Bank (2003)	POVCAL[b]	Author's calculation (described in text)		
Destitute	$1/P$1.50	$365/P$547	19.6	17.9	20.5	World Bank (2003)	1.21
						POVCAL	1.1
						Author's calculation	1.3
Extreme poverty	$2/P$3.00	$730/P$1,095	46.8	49.9	46.8 (by assumption)	World Bank (2003)	1.68
						POVCAL	2.0
						Author's calculation	1.6
Global poverty	$10/P$15.00	$3,650/P$5,475		81.5	87.9	World Bank (2003)	0
						POVCAL	2.0
						Author's calculation	2.5
Not poor	Above any upper bound poverty line			18.5	12.1	World Bank (2003)	3.3
						POVCAL	1.1
						Author's calculation	0.75

Source: Author's analysis as described in text.

[a]Calculated by applying headcount rates to a population of 6.2 billion.

[b]POVCAL does not have data for high-income countries, so headcount poverty rates of zero at $2 a day and 10 percent at $10 a day are assumed for these countries.

2003 (World Bank 2003).[6] By this higher standard, 88 percent of the world's population is among the global poor or, put differently, only 12 percent of the world's population is definitively not poor. At the $2 a day standard, 53 percent of the world's population is reported to be not poor—a difference of 2.5 billion people. A second calculation, using the POVCAL poverty estimation tool now available on the World Bank's website (http://www.worldbank.org/lsms/tools/povcal), produces estimates of headcount poverty of 17.9 percent at $1 a day, 49.9 percent at $2 a day, and 81.5 percent at $10 a day. Again, 2 billion people are in global poverty but not in extreme poverty.

The estimates are somewhat crude, but refinements will not overturn the basic point:[7] a poverty-reduction objective with a low poverty line such as $2 a day as an upper bound implies that, on a completely arbitrary basis, billions of people count for nothing in the World Bank's poverty-reduction objectives, who would count using a higher GPLUB that is consistent with rich country standards.

Table 2 presents estimates of headcount poverty rates for several countries to make the implications of the various poverty lines as stark as possible. Using $2 a day as an upper bound implies that income gains to people in the 17th percentile in Brazil or the 18th percentile in Turkey do not contribute to global poverty reduction. Even in poor countries like Côte d'Ivoire or Egypt, the $2 a day standard would imply that gains to people near the median income have zero value in reducing global poverty. In contrast, at the proposed higher poverty line, nearly everyone in poor countries is "globally poor" and only people in roughly the top quintile in middle-income countries like Brazil, Mexico, and Turkey are "not poor."[8]

Tables 1 and 2 report only the headcount poverty rate. One argument against high poverty lines is that by making nearly everyone globally poor, they render the

Table 2. Estimates of Headcount Poverty Rates for Global Poverty for Selected Countries

| | | World Bank (2001) estimates | | $10 a day (P$15) | |
| | | $1 a day (P$1.50) | $2 a day (P$3.00) | Author's calculation[a] | POVCAL |
Country	Year				
United States	2001	0	0.07	12.1	—
Brazil	1997	5.1	17.4	66.7	78.5
Turkey	1994	2.4	18.0	79.1	85.1
Mexico	1995	17.9	42.5	92.2	86.2
Côte d'Ivoire	1995	12.3	49.6	98.9	98.4
Egypt	1995	13.1	52.6	99.7	98.5
India	1997	44.2	86.2	99.9	99.5

Source: World Bank (2001) (table 4) and author's analysis as described in the text.

[a]Estimates are based on the assumption of log-normality (using Gini coefficients to estimate variance of the log normal). In each case, GDP per capita in purchasing power parity terms is scaled to match reported $2 a day estimates from the World Bank (2001) and so the $2 and $10 a day estimates are comparable.

headcount measure—which, it is argued, is the only poverty measure most people can understand—virtually useless. But this is a weak argument, as everyone acknowledges that the headcount cannot be taken seriously as a policy objective at *any* poverty line. Perhaps using a reasonable GPL[UB] would help to highlight the importance of using weights in constructing poverty measures rather than relying on the headcount.

### Estimates of Global Poverty with a High Upper Bound are Reasonable

Several arguments can be made for why the claim that most very poor countries are "globally poor" is believable.

First, Dani Rodrik (2005) calculated the income in purchasing power parity terms of the "rich" (defined as the top 10 percent) in a poor country (defined as the bottom 10 percent of countries) and the "poor" (defined as the bottom 10 percent) in a rich country. By this calculation, the income of a "rich" individual in a "poor" country is P\$2,800 (P\$7 a day), whereas the income of a "poor" individual in a "rich" country is nearly three times as high at P\$8,640 (P\$23 a day). It is not surprising, therefore, that if the poverty line were set so that the bottom 10 percent of the richest country population is taken as 'globally poor' that even someone well above the 90th percentile in the poorest 10 percent of countries would be globally poor. Figure 1, adapted from *World Development Report 2006: Equity and Development* (World Bank 2006), shows the 90th/10th percentile ratios for selected countries. Although based on different data than the calculations above, the basic point comes through clearly. Even after adjusting for purchasing power, the 10th percentile of the U.S. income distribution is well above the 90th percentile of nearly all poor countries.

There is still some resistance to the view that "the rich" in poor countries are globally poor. One reason is the confusion of "the rich" in the economist's sense of being in the upper percentiles of the income distribution—top 20 percent, 10 percent, or 5 percent—with "the rich" in the popular sense of *Forbes* magazine or the newspaper society pages or F. Scott Fitzgerald's "Let me tell you about the very rich. They are different from you and me." The typical wages paid to experienced servants or drivers for an expatriate family or a super rich family in New Delhi place these individuals well above the 95th percentile for urban households (and hence easily into the 99th percentile nationwide). These servants of the super rich in the capital are the "income distribution rich" in India. Thus, it is a gross misconception to associate "the rich" in India exclusively with the super rich Tatas or Oberois or Ambanis or Birlas or Mittals (one of whom was the world's third richest person in a recent list), who make up just a small fraction of the top percentile of the income distribution.

This misconception is perpetuated by reference to the percentiles of the income distribution without emphasizing that the absolute gap that separates the "average"

Figure 1. Between Country Comparison of Income or Consumption Expenditure Box–Whisker Plots for the 10th and 90th Percentiles, Mean and Median
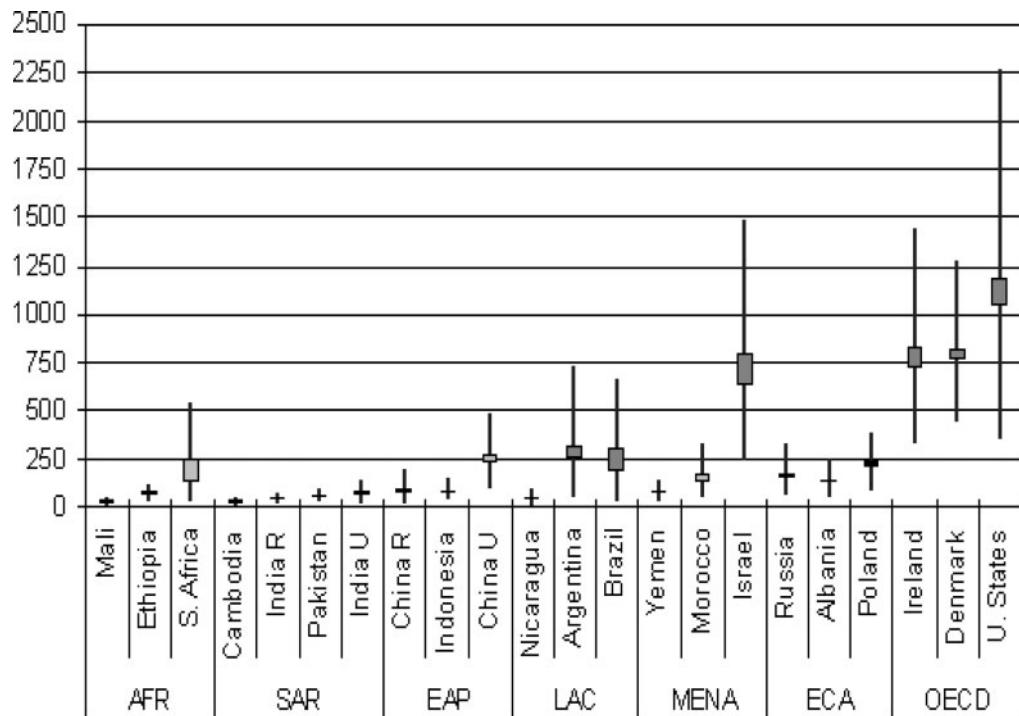
Note: Years range from 1996 to 2002 as measured by adjusted (1993 purchasing power parity) monthly income or consumption.

Source: World Bank 2006, figure 3.6.

individual from the rich (in the 95th or 99th percentile) is small compared with the gap between the rich and the super rich. For instance, in India the difference in annual per capita income in 1999/2000 between the median per capita income and the 95th percentile was around P$1,750. Using tax data to estimate the gap between the 99th percentile and the 99.5th percentile, Banerjee and Pikety (2005) find that it was four times as large—almost P$7,000—as the gap between the "typical" person and the "income distribution rich" at the 95th percentile. The Indian super rich at the 99.99th percentile with annual incomes of about P$160,000 per person are very rich indeed—and they have incomes astronomically higher than even those in the 95th percentile.

   A more serious argument against the view that the "the rich" in poor countries are globally poor is that even if one accepts that the purchasing power conversions are correct on average for comparing national aggregates, comparing the incomes of various parts of the income distribution is not legitimate. People frequently claim

that the rich in poor countries live much better on the same income than people in rich countries because labor is so much cheaper in poor countries. But the question is not whether labor and prices are much cheaper in poor countries—of course they are—and that is why all income comparisons are adjusted using purchasing power currency conversions rather than official exchanges rates. The question is whether the well-being of the richer households in poor countries is substantially understated relative to that of the poor with equivalent purchasing power incomes in rich countries.

One way of checking for systematic bias is to examine whether some nonmonetary indicator of well-being—for example, child mortality, malnutrition, child education, or a proxy such as share of income spent on food—varies systematically between the rich in poor countries and the poor in rich countries. Consider the case of child mortality among the richest 20 percent of the population (as measured by an asset index; Gwatkin and others 2001; Filmer and Pritchett 2001) for 45 poor countries ordered by their average purchasing power-adjusted gross domestic policy (GDP) per capita (figure 2). For all countries with average GDP per capita below the $2 a day, threshold child mortality among the richest 20 percent of households is more than 10 times the average among the poorest in Organisation for Economic Co-operation and Development (OECD) countries. For all countries with GDP per capita of less than $10 a day, child mortality is still much higher among the richest 20 percent of the population and is more than three times the OECD average.

Thus, comparing infant mortality rates suggests that the highest quintile in even middle-income countries is worse off than the poorest quintile in the OECD. The companion paper (Pritchett 2003) performs the same exercise for malnutrition, schooling attainment, and the food share, with similar results. Thus, there is no reason to believe that purchasing power-adjusted indicators of income systematically overstate the well-being of the rich in poor countries compared with the poor in rich countries—if anything, the opposite is true.

A related point is the concern that an exclusive focus on the income or expenditure dimension of poverty is inconsistent with other goals, such as the Millenium Development Goals for education or health or nutrition. But as the companion paper (Pritchett 2003) shows at some length, as $2 a day households have not put all their children in school, infant mortality is not low, and malnutrition still exists. If the poverty line were defined as the level of income at which people typically achieve acceptable levels of the Millennium Development Goal indicators (such as universal primary school completion), it would be set at about $10 a day.

Another common reaction to the proposed upper bound is that the $1 a day and $10 a day poverty lines are just too far apart. But statistics provides intuition only about how large ranges or confidence intervals should be in units scaled by standard deviations not in absolute terms. Since the lower and upper bound poverty lines are based on country poverty lines that are related to country incomes, the poverty lines

Figure 2. Child Mortality among the Richest 20 Percent of Households
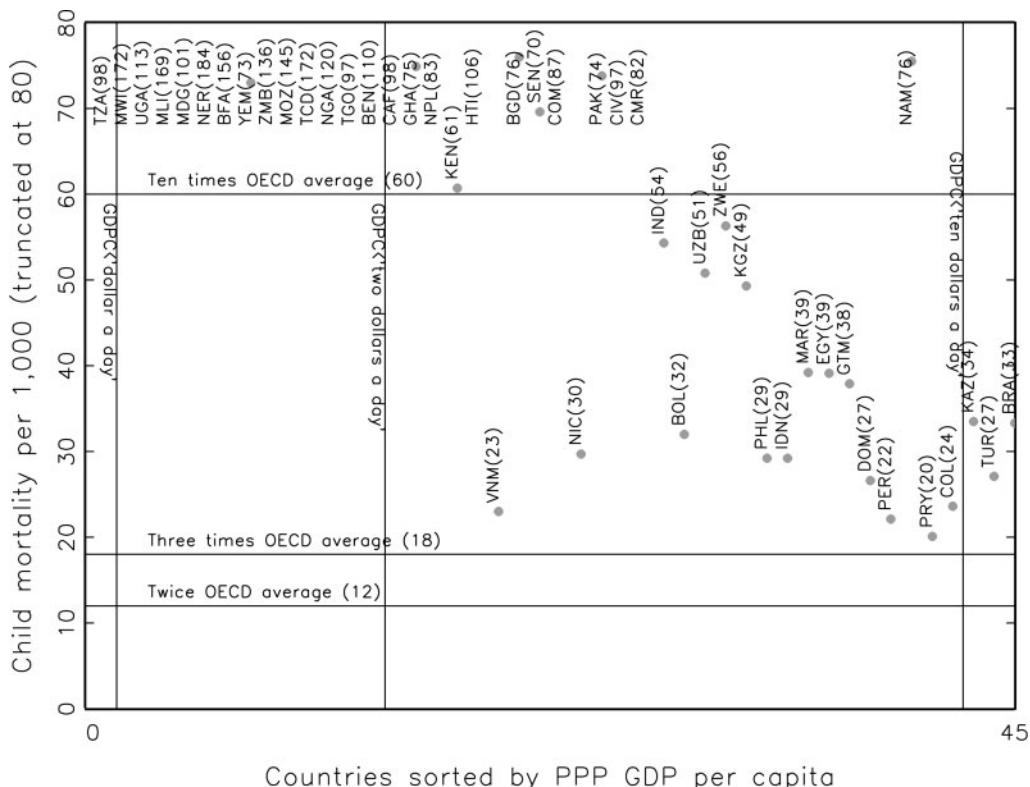
Source: Author's calculations based on Filmer and Pritchett (2001).

are far apart because the income gaps across countries are so large. One standard deviation below mean (natural log) GDP per capita (in P$985) is about $3 a day, whereas one standard deviation above the mean is $28.80 a day—a ratio of 9.35. So, if the poor were defined as those more than one standard deviation below the international mean (log) income and the not poor as those more than one standard deviation above that mean, with the remainder being poor by some standards and not by others, then if GDP per capita were log normally distributed, the lower and upper bounds would be expected to be at about a ratio of 10:1, with 16 percent poor, 16 percent not poor, and 68 percent poor or not poor depending on the standard.

A slightly different line of argument is that poor people in rich countries are not "really" poor. At $2 a day, essentially no one in the United States is poor: not inner city African–Americans living in crime-infested neighborhoods, not Native Americans on rural reservations where unemployment tops 50 percent, not immigrants in the informal economy working two and three jobs, or not people living in declining

rural areas. No one is saying that these people are as poor as the poor in Africa or rural India or that they deserve equal concern (again, any reasonable poverty measure is intensity weighted). But asserting that the $2 a day standard should apply globally for poverty is to assert that the living standard of everyone in the United States is globally acceptable. Again, poverty as a social construct can be debated, but I personally do not have a normative objective function in which no American is poor.

Atkinson and Bourguignon (2000) address the problem that the low poverty lines of $1 a day and $2 a day do not adequately capture world poverty. They stress that a standard for global poverty should be inclusive because "national boundaries have no intrinsic status." They also propose the use of very high poverty lines. The principal difference is that they regard the higher poverty lines as based on "relative" poverty. Their empirical measure assumes a person is poor if that person has an income either below the absolute poverty line of $1 a day or below 40 percent of the mean GDP per capita of the country of residence. The second measure implies some very high poverty lines: in 2003, it would be $41 a day in the United States.

The principal objection to this approach is that it does not meet the authors' own criterion of being "world inclusive" because poverty depends on where a person lives. By their proposed poverty standards, someone living at the mean income in India (and so above $1 a day) is not among the global poor, but someone living at 35 percent of mean GDP per capita in France is among the global poor—despite the fact that the income of the person in France (as always, adjusted for purchasing power) is four times higher. Moreover, every nonmonetary indicator of well-being (health, nutrition, and schooling) also suggests that the Indian household at the 50th percentile is much worse off than the French household at 40 percent of GDP per capita. There certainly seems to be little evidence that people at the 40th percentile in OECD countries care so much about their relative deprivation that they would accept a much lower absolute standard of living but higher relative rank by moving to a much poorer country where they would find themselves at, say, the 50th percentile. The goal of a "world inclusive" standard for poverty would suggest a common set of poverty lines.

What a Higher Upper Bound Poverty Line Would Mean for the World Bank

Poverty reduction is rightly the World Bank's mission and mandate: its dream should be a world free of poverty. But that vision is seriously compromised if the dream ends abruptly and arbitrarily at $2 a day. A low upper bound for the global poverty line (such as $2 a day) creates needless inconsistency between a poverty-reduction measure and the organization's mission and mandate in at least four ways: arbitrary exclusion of concern for people with low levels of well-being, inconsistency with

national poverty lines, inconsistency with a broad development agenda for global equity, and inconsistency with a goal of broad-based growth.

Less Arbitrary and More Robust

The $2 a day standard is arbitrarily an upper bound poverty line and so cannot be taken as precise. But because a low upper bound poverty line such as the $2 a day standard cuts through a very thick section of the world income distribution, minor imprecision has big implications. If the standard were only $0.45 a day higher (a tiny amount in a rich country), 500 million people change from not poor to poor. At just 10 percent higher, some 220 million people—the population of a country, the size of Indonesia, or twice that of Bangladesh—would be included in the objective of poverty reduction. In contrast, the $10 a day upper bound cuts across a thinner part of the income distribution. Adding $0.45 per day to the poverty line would add just 36 million people to those considered to be poor, not 500 million.[9]

National Poverty Lines within the Global Range

In its engagement in national policy and lending the World Bank should use national poverty lines that are relevant to the social and economic realities of the country. With a high upper bound global poverty rate, the World Bank can comfortably engage in country-based policy dialogue around any sensibly set national poverty line that lies between its lower and upper global bounds. A low global upper bound such as $2 a day puts many national poverty lines above that upper bound, creating a potential contradiction in the poverty agenda.

One of the lines of criticism of the World Bank by the Meltzer Commission report (IFIAC 2000) and others is crudely summarized—if poverty is your objective, get out of most countries because they have very few poor people. Many others have used the World Bank's consistent reporting of global poverty only at low poverty lines to argue that the World Bank should get out of International Bank for Reconstruction and Development (IBRD) lending and into grants exclusively because it should not be providing assistance only in places where "global poverty" is very low. Adopting a reasonable upper bound poverty line (and using a more broadly conceived notion of poverty, along the lines of World Bank 2001) dissipates the force of these arguments in a consistent and reasonable way.[10]

A Development Agenda for Nations

A low upper bound makes it difficult to engage in the broad range of issues that are crucial to development. When poverty reduction is the objective, any public policy action—reducing corruption, improving service delivery, reforming the financial

sector, improving port infrastructure, raising school quality, and improving health system financing—has to be considered from the perspective of how it benefits the poor. There is no justification for a monopoly on defining what "the poor" means in this context. And a focus on poverty reduction is itself no reason to exclude the 2–3 billion people who are below a reasonable GPL^{UB}.

Consider two quick examples, using poverty rates in Côte d'Ivoire as an illustration. In 1995, headcount poverty was 12.3 percent at $1 a day, 49.6 percent at $2 a day, and 98 percent at $10 a day (see table 2). Thus, by the descriptions of poverty proposed in table 1, very few people were destitute, about half were extremely poor, and nearly everyone was globally poor. With an upper bound of $2 a day, half the population of Côte d'Ivoire was not poor. What are the development issues that should be on the table in Côte d'Ivoire, and how is this list affected by poverty lines? Suppose the World Bank were to support an action that would reduce corruption or improve schooling or transport and would benefit everyone in Côte d'Ivoire by an equal absolute amount. By the goal of reducing global poverty with a high upper bound, this is a big gain. But with a $2 a day standard, this project risks being judged a failure because half of the benefits went to the not poor.

In a second example, suppose that by supporting some combination of policy and institutional reforms, the World Bank were able to contribute to the acceleration of economic growth by 5 percentage points in Côte d'Ivoire, sustained over 10 years. Suppose that this growth were distributionally neutral, with everyone's incomes increasing by the same proportional amount. A big development success, right? Wrong. Using the $1 a day standard, the "poor" would receive only about 3.5 percent of the total gains, and so if the poverty-reduction objective is taken literally then $96.50 of every $100 in gains from these reforms had zero value because it went to the not poor.[11] So with low poverty lines, a poverty-reduction objective becomes a rhetorical trap: reform that ignites broad-based growth in a very poor country— where among the richest 20 percent of the population the infant mortality rate was 63.3, where one child in three did not finish grade five, where malnutrition affected one in nine children—is a failure because almost $97 of every $100 does not reach the "poor." Moving to a $2 a day standard mitigates this problem somewhat, but it remains severe. A high poverty line, however, makes it clear that accelerated broad-based growth in Côte d'Ivoire is a huge gain for poverty reduction.

It is increasingly understood that poverty reduction requires a broad array of activities that include both systemic changes and targeted activities. While microfinance projects might reach the poorest of the poor, a well functioning financial system also contributes to development. While targeted transfers help the poorest children attend school, overall improvements in learning achievement are also needed for development. While the poorest people need empowerment to protect them from abuse by the police and the legal apparatus, countries also need a police and legal apparatus that works for all. While the poorest people in rural areas need

all-weather connecting roads, development requires national highways as well. A development institution like the IBRD, for instance, should be engaged in global poverty reduction in a way that balances actions aimed at reaching the poorest of the poor with actions aimed at broad-based development of poorer countries. The exclusive use of low global poverty lines is a needlessly narrow foundation for development activities that would reduce global poverty at a reasonable standard for who is poor and who is not poor.

A Global Policy Agenda

Poverty is high on the world's agenda today, with debates about how to promote "pro-poor" growth and about whether globalization has been favorable to the poor. But the quantitative answers to these questions hinge on how *poverty* is defined. For instance, in India there is some evidence that the rapid economic growth of the 1990s, which many people associate with increased globalization of the Indian economy, reduced poverty as measured by the national poverty line less than expected (for example, Deaton and Kozel 2005). Does this mean that globalization was not pro-poor? Of course not. Broad-based growth in India is enormously pro-"global"-poor, a point that consistent use of a high GPL^{UB} alongside the low national poverty line would make abundantly clear.

That is not to say that efforts to make growth more pro-poor by national standards are not important in India and elsewhere—they are. But the high growth rates in India, China, and Vietnam during a period of increased market orientation have been accompanied by what is likely the most rapid reduction in global poverty in the history of humankind (Besley and Burgess 2003). The question of whether such broad phenomena as globalization have been good for the global poor should not be limited to whether they have been good for the destitute (a separate and also interesting question) or whether they have been relatively good for those below national poverty lines.

A high GPL^{UB} is useful in discussions of inequality because it puts differences across individuals within countries and across countries on the same footing. Nearly all measures of inequality are made and reported country by country. Also, national poverty lines often depend on national income and so emphasize comparisons only within countries. But far and away, the greatest component of inequality is the differences across countries (Bourguignon and Morrison 2002). Poverty has been reduced primarily through economic growth that has enabled mean incomes in poor countries to gain on incomes in rich countries (Kraay 2004).

Although it may serve some interests to take international inequality off the table, there is no reason to focus exclusively on national inequalities. Nor is there any reason not to make poverty comparisons based on the notion that all people can attain the standards of living now enjoyed in OECD countries. As *World Development Report*

2006: Equity and Development (World Bank 2006) stresses, there is no reason why a typical Indian citizen should be compared only with other Indians. There is no reason why equity as fundamental fairness should not be compared on a global basis.

Conclusion

This article has reviewed the major lacuna in the World Bank's measurement of global income or consumption expenditure poverty, which is one important element of its broader objective of multidimensional poverty reduction: how to set the GPL^{UB}. Everyone agrees that there is no uniquely adequate poverty line, but rather that a range of poverty lines should be considered. There is little disagreement that the widely adopted $1 a day standard is a very conservative, and hence reasonable, lower bound. But whereas the notion that people living on less than a $1 a day are poor is widely accepted, the notion that people living on $1.01 a day are not poor is not. However, there is no agreement on what would constitute a reasonable upper bound—and very little discussion. A GPL^{UB} should be set so that it is agreed that people above that line are not poor. If poverty reduction is the objective, then the income gains to those at the upper bound should really merit more than zero concern.

The World Bank's practice of reporting regional and aggregate global poverty measures only at two alternative lower bounds—$1 and $2 a day—creates the temptation to interpret the higher of the alternative lower bounds as the upper bound. There is no methodological, analytical, organizational, or normative basis for treating $2 a day as an upper bound, and doing so creates serious problems.

There is a very simple and obvious solution: adopting a methodologically consistent procedure for setting the lower and upper bound poverty lines. Just as the national poverty lines of the poorest countries were adopted as the lower bound, the national poverty lines of the rich countries can be used to establish an upper bound. The goal would be to estimate those who are poor by various standards—the destitute (below a lower bound), the not poor (above an upper bound), and a broad range of people who are poor by some standards but not by others.

The implications of adopting a high GPL^{UB} are not trivial. Between 2 and 3 billion people considered not poor at a low upper bound are considered globally poor by this higher standard. And while the headcount measure is analytically problematic as a normative objective with any poverty line, with a high poverty line the issue of the appropriate weights in the poverty measure becomes even more important. These new multiple measures of poverty with different intensity weights should be added to the reporting of poverty measures at the lower bound of the $1 a day standard (perhaps relabeled 'destitution') and the intermediate bound of $2 a day (perhaps relabeled "extreme poverty").

The danger with rhetoric is that people might take it seriously. If the World Bank says that "everything we do should be judged in terms of poverty reduction" and then reports exclusively on measures of global poverty at low poverty lines, this creates an unnecessary tension. There is no empirical evidence or compelling analytical rationale that exclusively applying low poverty lines is good for the poor in any case. A poverty discourse based globally on three standards: destitution, extreme poverty, and global poverty, combined with a national policy discourse based on national poverty lines, arguably provides the most solid basis for the World Bank's organizational mission and policy advocacy. Everything the World Bank does should be about poverty—with the right definitions of poverty.

Notes

1. Inflation wrecks havoc with the use of simple focal point numbers like $1 a day or $2 a day. Since the $1 a day standard was created based on 1985 purchasing power parity-adjusted current units (normalized to U.S. prices), there has been roughly 50 percent inflation in those prices in the 15 years to 2000. This means that the $1 a day standard is really about $1.50 a day in 2000 prices and the $2 a day standard is about $3 a day. To reduce confusion, poverty lines based on 1985 prices are shown simply as $1 a day or $10 a day, whereas those based on 2000 prices use the notation P$ for purchasing power-adjusted current units normalized to U.S. prices. Thus $1 a day and P$1.50 a day or $10 a day and P$15 a day refer to the same standard, with the P$ notation simply indicating adjustment for inflation in the base currency.

2. As World Bank (2001) emphasizes, poverty is a complex, multidimensional phenomenon, which makes any unmodified use of the word *poverty* problematic. The only dimension of poverty considered here is a single monetized measure of well-being, which in empirical practice is a measure either of income or of consumption expenditures. This is not to assert that this measure captures the most important dimension of poverty. The broad definition of poverty in World Bank (2001) supports many different kinds of poverty measures: "human capability poverty" as a deprivation in human capabilities (Sen 1999), "empowerment poverty" as unacceptable deprivation in control over important dimensions of one's life, "human investment poverty" as an unacceptable deprivation of children's ability to attain the skills they need to be productive adults in a modern society, and even Adam Smith's notion of "shame poverty" or an unacceptable deprivation in the ability "to walk in public without shame." For simplicity, the word *poverty* is used in this article without any modifier to mean income or consumption expenditure poverty.

3. The implications of setting the bound too low and of saying that someone is not poor when they are poor have not been fully explored. There is an analogy with the statistics of type I and type II errors. Conventions about the levels of type I error (such as the 1 percent, 5 percent, and 10 percent levels of statistical significance) are purposely conservative, even when these lead to low power (a high probability of failing to reject a hypothesis that is false, or a type II error). But there is no compelling case for why a poverty line should be set conservatively enough to avoid "falsely" saying that someone is poor

when they are not. Thus, using two extreme lines has some appeal. One can be sure that someone below the lowest line is truly poor—but there is a good chance that someone just above that line is also poor. By the same token, one can be reasonably sure that someone above the GPL^{UB} is not poor, but at some risk that even some who are below the line are also not poor.

4. Once it is shown that the food poverty line is determined by the choice of the quality of foods in the basket and that choice is a social convention about the level of well-being that defines poverty, then it is no longer clear why food has pride of place. That is, if the quality of food in the food basket is determined by a "conversation" about the appropriate level of well-being at which it is appropriate to say that people are poor in a given social situation, then why not also include a convention about housing or clothing or transport or health care? No good reason, really. Moreover, a "subjective" approach to setting a poverty line—simply asking people what they think a poverty line should be—is a common approach and has equal claim to legitimacy as the nutritionally based approaches since both are determined by social convention. One could combine approaches and use subjective responses to pin down a level and expenditure functions to maintain comparability.

5. Even those who argue that the World Bank has mismeasured progress on poverty adopt by default the $2 a day standard (see Sala-i-Martin 2002a; 2002b; *The Economist*, March 11, 2004; and the response by Ravallion 2004).

6. This is an examination of the implications of various poverty lines, not an independent estimate of poverty in the world.

7. These numbers are also consistent with (Sala-i-Martin 2002a, 2002b) distribution of income based on a crude "eyeball" estimate of almost 19 percent poverty at $2 a day and more than 70 percent for poverty at $10 a day. These estimates are mentioned with some caution as Ravallion (2004) points out that this means of computing poverty is riddled with methodological problems. However, while this method does produce estimates that are "too low" in absolute levels, over time his $1 a day estimates correspond almost exactly to the $2 a day estimates from official World Bank sources, and his $2 a day estimate corresponds to the 19.6 percent poverty estimate of World Bank (2003). In any case, only the difference in headcount poverty rates between the two poverty lines is relevant, not the absolute level at any given poverty line.

8. This clear alternative creates a very simple test of whether this article has simply created and attacked a straw man. The World Bank publishes annual reports that include a variety of poverty measures—such as the *World Development Indicators* and the *World Development Report*. With POVCAL, it is technically easy to compute poverty measures at a variety of poverty lines. If the $2 a day standard is not an upper bound, then at least one official publication should be willing to report measures of global poverty by country and for regional aggregates at the World Bank's real upper bound. If $2 a day is the World Bank's GPL^{UB}, then it should be defended as such. The intermediate position—"the highest poverty line we will ever officially publish poverty measures for is not our upper bound"—seems indefensible.

9. The exact figures depend on the assumption of log-normality of each country's income distribution, and so are illustrative only.

10. The assertion of a high upper bound is not a self-serving rationalization to maintain lending. It is a reassertion of the core mission and mandate of the World Bank for development. Moreover, it is the practice of using a lower bound as an upper bound that never had any rationale. In any case, nothing about setting the poverty line asserts that World Bank *lending* is the key value added. The World Bank offers a complex array of services and levels and types of engagement according to country circumstances. To argue that it is legitimate to be engaged with Turkey or Mexico, or Brazil or Egypt in the interests of global poverty is not to deny the possibility of substitutability between private and multilateral lending. The debates about World Bank value added and effectiveness are conceptually distinct from the question of whether, no matter how effective, the actions could contribute to the objectives.

11. In World Bank (2001), the 1995 consumption shares were 3.1 percent for the bottom 10 percent and 7.1 percent for the bottom 20 percent. If the poor are 12.3 percent of the population, they account for something like 3.5 percent of consumption.

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