Initiative *for* Policy Dialogue

Based at Columbia University

iPD

Initiative for Policy Dialogue Working Paper Series

May 2009

How Many Poor People Should There Be?
A Rejoinder to Ravallion
Thomas Pogge

Poverty

HOW MANY POOR PEOPLE SHOULD THERE BE? A REJOINDER TO RAVALLION

Thomas Pogge

How many poor people should there be? To this apparently simple question, the world's

governments have given two unanimous answers. One is enshrined in the 1948 *Universal*

Declaration of Human Rights:

> Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care (Article 25).

> Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized (Article 28).

There is to be no poverty at all, then, at least no severe poverty that would jeopardize the

ability of human beings to meet their basic needs.

The other answer, also adopted unanimously, is rather different. It sets an acceptable severe-

poverty level for 2015, which is presented as a halving of such poverty by that date. The

interpretation of this goal keeps changing. At the 1996 World Food Summit in Rome, 186

governments agreed on "reducing the *number* of undernourished people to half their *present*

level no later than 2015."[1]

Greatly boosting the political importance of the $1/day poverty headcount statistics the World

Bank had been supplying since 1990, the first Millennium Development Goal (MDG) then

promised "to halve, by the year 2015, the *proportion of the world's people* whose income is

less than one dollar a day and the proportion of people who suffer from hunger."[2] The UN

and its MDG administrators have since decided that this proportion is to be calculated as a

percentage not of world population but of the faster-growing population of the less developed

countries, and that the benchmark year for this and all MDGs should be not the year of their adoption (2000), but 1990.[3] The fate of billions is gravely affected by these as well as by additional decisions about how the relevant calculations are performed by the World Bank. It is in this context that Sanjay Reddy and I have joined the poverty measurement debate.

One more piece of background. With some 18 million (30 percent) of human deaths each year attributed to poverty-related causes (WHO 2004: 120-25), the scale of the world poverty problem is staggering in human terms. But in economic terms, the problem is paltry. In 2000, and assessed at market exchange rates, the poorer half of world population had 1.12 percent of global wealth, and their aggregate shortfall from the median wealth level was under 2 percent of global wealth (Davies et al. 2006: 47, Table 10a). The Bank does not publish analogous information about the magnitude of existing poverty gaps at current exchange rates, which would convey a sense of the avoidability of global poverty. But we know that, at current market exchange rates, the global median income in 2002 was about $330 per annum and that the average income of those below was about half this much.[4] This means that, in 2002, the collective income of the poorer half of humankind, and their collective shortfall from the median, were both about $500 billion at current exchange rates. This amount is roughly equal to Spain's 2002 gross national income, or to five percent of that of the United States, or to the 2002 US military budget (which has since grown rapidly). It puts an upper bound on the economic magnitude of the global poverty problem, on the assumption that the global median income was then, and still is, almost everywhere sufficient to escape severe poverty. It shows that, for the sake of comparatively trivial gains, the world's governments — and we all — are keeping billions trapped in life-threatening poverty by imposing on them the heavy burdens facilitated by the global institutional architecture, such as debt obligations incurred by their rulers, public spending restrictions to ensure national debt repayment,

monopoly prices for medicines, and protectionist barriers to trade (Pogge 2008).

Coming to Ravallion's reply, let me emphasize strongly that our concern has always been with the soundness of the Bank's measurement methodology. We are not questioning the integrity of the Bank's researchers. Our main contact at the Bank has been Ravallion's colleague, Shaohua Chen. Without her prompt, full, patient, and cheerful collaboration, we could not have analysed and reconstructed the Bank's calculations to anything like the extent we have done. Ravallion is entitled to his Nixonesque protestation, of course (MR herein ***). But it is not responsive to anything we have written. Nor does his being no "real scoundrel" help show that his method is sound.

Responding to us, Ravallion writes:

> The fact that we judge the extent of consumption poverty in the world by the standards typical of low-income countries clearly does not mean that we are underestimating the extent of world poverty. Obviously if you use a higher standard you will get a higher poverty count. The "$1/day" line does not claim to be anything other than a poverty line typical of poor countries. To say that we are underestimating poverty by this method is like saying that one underestimates length using a ruler calibrated in inches rather than centimeters. If one knows how the ruler is calibrated there should be no confusion. (MR herein pp. ***)

This statement repeats many of the mistakes and confusions we have been criticizing. Let me go through them.

(1) Ravallion is right that one is not underestimating the length of a table when, measuring in inches, one assigns it the number 50 — even if, measured in centimetres, its length is 127. He is right to suggest that it would be silly to object, to one method and the results it delivers, that another method would deliver different results. But we are not raising this silly objection. Our objection is that the Bank is using a method that is seriously flawed in the following

ways.

(2) To fix the *level of its international poverty line* (IPL) — which it uses to identify the poor before counting them — the Bank uses "a poverty line typical of poor countries." We object that domestic poverty lines are questionable inputs as some such lines may not reflect a level of income or consumption sufficient to meet basic human requirements.

Ravallion responds that it does not matter how high or low we fix the IPL. Once it is understood how this line is calibrated, there should be no confusion: poverty is whatever the Bank's method measures.[5]

Indeed, there is no confusion. But it does matter how high or low the IPL is set. This matters to the reported headcount trend, which looks ever prettier the lower the IPL is set.[6] It also matters insofar as millions go hungry above the Bank's IPL and are consequently ignored in the MDG-1 exercise and by the affluent.

Is the Bank's IPL set at a reasonable level? One can approach this question by converting the Bank's IPL into the currency of one's own country and year, using the conversion methods the Bank uses while claiming that they preserve equivalence of purchasing power. Following this approach, we find that, in the US in 2008, monthly income or consumption of $50 would get a person counted as non-poor.[7] People living on this amount — $600 per year — in the US would be *extremely* poor: unable to meet their basic needs.[8] Insofar as the Bank's conversions indeed preserve purchasing power equivalence, we can conclude that its IPL is equally inadequate when converted into local currency unit (LCU) amounts for other country/year settings. Insofar as the Bank fails to register as poor many people who cannot

meet their most basic needs, its criterion of poverty is at odds with how its readers understand this word. More importantly, by systematically ignoring very large numbers of people in life-threatening poverty, the Bank is providing misleading information to policy makers about the distribution and trend of severe poverty, and grossly misleading information to all of us about the magnitude and seriousness of our responsibility to structure the world economy so that severe poverty is reliably avoided.

(3) For *deriving the $1/day IPL* from the list of 1993 domestic poverty lines, Ravallion has "taken an average of the lines for the poorest countries" (MR herein pp. ***). But how does one average over 1993 amounts denominated in many different currencies? And how, more generally, does one compare individual incomes and consumption expenditures denominated in diverse currencies?

Such *cardinal* comparisons — presupposed in averaging — are not as straightforward as Ravallion's analogy to lengths makes them seem. The income of a poor Indian may be higher than that of a poor Mexican in terms of the amount of rice each can buy and yet lower in terms of the amount of meat or gasoline. The comparison of incomes — or expenditures or domestic poverty lines — denominated in different currencies must somehow aggregate over such price data to arrive at an overall judgment of the form: the Indian's Rupee income is worth n times as much as the Mexican's peso income.

The Bank's comparisons have been relying on general-consumption purchasing power parities (PPPs). In particular, the Bank has since 2000 been using such PPPs of 1993 to convert 1993 domestic poverty lines into 1993 US dollars (USD). It then selects and averages the lowest results to arrive at its IPL of $32.74 per person per month. And it finally uses the

same PPPs again to convert this IPL back into the various 1993 LCUs.[9]

Reddy and I have long been pointing out that the quality of the PPPs so heavily relied upon by the Bank's method is highly questionable, especially for the most important countries China and India. These cautions were confirmed by a recent re-evaluation of PPPs undertaken by the Asian Development Bank, which concluded that the USD values the Bank had assigned to China's and India's currencies should be lowered by nearly 40 percent. When these new values are substituted for the ones the Bank has been using, then

> the number of people in China living below the World Bank's dollar-a-day poverty line is 300m – three times larger than currently estimated. … The ADB's announcement also indicates that the number of dollar-a-day poor in India is closer to 800m than the current estimate of 400m (Keidel 2007).[10]

Accepting the ABD's valuations of the Chinese and Indian currencies would force an upward revision of the Bank's 2004 poverty count by about 600 million from the current 950 million level.[11] The magnitude of the possible errors suggests that it might be better to seek a more direct method of deciding whether a person is poor or not — a method that does not require as inputs data about the prices and consumed quantities of all commodities in all countries. I return to this point in the final section.

(4) Even if prices were uniform in each country and general-consumption PPPs were then calculated for all currencies to everyone's satisfaction, reliance on such PPPs in the context of the Bank's poverty measurement exercise would still be highly problematic. We make two objections in particular. One objection is *commodity irrelevance*. Generally, the more spending some commodity attracts, the more its price will influence calculated PPPs. This is problematic because many commodities are irrelevant to poverty avoidance. Used for purposes of poverty assessment, PPPs are influenced far too much by the prices of luxury

goods and services, which the poor cannot afford and do not really need, and influenced far too little by the necessaries that are most needed by the poor and on which they concentrate their spending.[12] The fact that an income suffices to meet basic human needs is no assurance, then, that a PPP-equivalent income in another country is similarly sufficient. In poor countries, prices of necessaries are often higher, and prices of services lower, than what the PPP to the USD would suggest.

Happily, the Bank seems to have accepted this point and to be in the process of elaborating PPPs for the poor (PPPPs) based on the actual consumption pattern of the poor. This is an extremely complex undertaking because of the interdependence of three identifications. To ascertain what the poor are actually consuming, the Bank must be able to identify who the poor are. To do this, the Bank must identify the level of the IPL and the PPPPs for converting this line into all currencies. To identify the level of the IPL, which the Bank does by averaging the lowest domestic poverty lines, the Bank needs PPPPs to make those domestic lines comparable. Each of the required identifications — of PPPPs, of the poor, and of the IPL — thus presupposes the other two. This circularity problem will apparently be attacked through a complex iteration procedure to be explained alongside the new poverty figures due out in August or September 2008.[13]

This revision may be a step forward insofar as it cuts down the influence of price data about commodities that are irrelevant to the avoidance of poverty. Still, the revision is not fully satisfactory because the observed spending pattern of the poor sometimes fails to disclose what they need most. Unmet needs, ignorance, and advertising often lead poor people to spend much of their income on alcohol, tobacco, or quackery. Yet, unlike higher food prices, a higher price of cigarettes does not make them poorer in an intuitive sense: does not reduce

their ability to meet their basic needs. Conversely, millions of poor people worldwide have AIDS. Nonetheless, most of them spend nothing on expensive antiretrovirals, the only effective therapy for their disease. This fact does not show that the price of antiretrovirals is for them irrelevant. In fact, this price is killing many of them. The observed spending pattern of the poor — itself heavily influenced by existing prices and other extraneous factors (tobacco advertising) — is not then a good indicator of what they require to meet their basic needs.

(5) The revision also fails to address our other objection to the use of PPPs: *country irrelevance*. Considering two countries in isolation, the PPP rate is calculated on the basis of the prices and consumed quantities of all commodities. For example, the more that is spent on services in the US, the more of an influence the prices of services in India and the US will have on the PPP of the Indian Rupee to the USD. Given that services are (relative to other commodities) especially cheap in India versus the US, high service consumption in the US raises the assessed purchasing power of the Indian Rupee and hence the assessed spending power of the Indian poor. Clearly, the spending habits of Americans are irrelevant to whether persons in India should count as poor. But with the use of PPPs, they are deemed relevant.

The problem is compounded once third countries enter the picture. Bilateral PPPs calculated without regard to other countries would not satisfy transitivity.[14] But it is, for various reasons, highly desirable that PPPs be transitive[15] — so that

$$PPP(A,B) \cdot PPP(B,C) = PPP(A,C).$$

To achieve such transitivity, the calculation of PPPs involves a final step that adjusts all

preliminary bilateral PPPs to one another in a way that guarantees transitivity. This adjustment has the consequence that the PPP assigned to any local currency is affected by the prices and spending patterns not only of its home country and the US, but also of every other country. In the Bank's method, then, the classification of persons as poor or non-poor is influenced not merely by the LCUs she has and the prices she faces, but also by the prices and spending patterns of all countries included in the PPP exercise.

The revision toward PPPPs mitigates this problem. If the poor spend little on services, then the price of services in other countries will have little influence on the calculation of their currencies' PPPPs. But such calculations will still be excessively affected by the prices of commodities that are important only elsewhere. For example, if potatoes figure prominently in the spending of the poor in some countries, then India's PPPP will be significantly influenced by what potatoes cost in India and elsewhere. And the classification of Indians as poor or non-poor can then be significantly affected by potato prices even if potatoes are not, and cannot plausibly become, part of the diet of the Indian poor.

(6) Once the Bank has converted its chosen 1993 amount of $32.74 into all other currencies, it uses national consumer price indices (CPIs) to convert the results into LCUs for other years.

We object to this step as well. Tracking price changes in nationally consumed commodities, a country's CPI is influenced most by the commodities on which most is spent. Reliance on CPIs thus courts, once more, the risk of losing track of the prices of basic necessaries. Falling prices of necessaries may raise the real standard of living of poor people, even while their incomes are flat and the CPI is rising. Conversely, falling prices of electronics or services

may cause the CPI to fall, even while biofuel demand is raising food prices. When this happens, poor people on constant incomes become even poorer in real life, but richer in the Bank's statistics.

This problem could be mitigated by constructing — in analogy to PPPPs — consumer price indices for the poor. Such CPIPs would cut down the influence of the prices of non-necessaries. But they would also, implausibly, cut down the influence of the prices of necessaries that, because of their high price, are barely consumed by the poor. As far as I know, no revision toward CPIPs is currently being contemplated.

(7) Perhaps the most compelling evidence one can have that a method is no good is that its applications deliver mutually inconsistent results. We have presented such evidence (both analytic and empirical), showing that the Bank's method is not robust with respect to the PPP base year chosen. Unfortunately, this objection was not understood. We were certainly not saying that new data should be ignored — a proposition Ravallion rightly refutes at length.

What then were we saying? The Bank's method requires comparing currency amounts from different countries and years. The Bank makes these comparisons in two steps. It converts each LCU amount to its 1993 equivalent, using the national CPI. It then converts the result into its 1993 USD equivalent, using 1993 PPPs. In this way, any income, consumption expenditure, and domestic poverty line — regardless of year, country, or amount — can be mapped onto a common cardinal scale.

Our objection is that this method delivers different comparisons for different PPP base years. A comparison of two monthly incomes — say 280 Canadian dollars (CAD) in 1980 with 831

Australian dollars (AUD) in 1999 — yields different results depending on the year whose PPP is used in the conversion. Here is the way the Bank currently compares such amounts:

$$CAD\ 280\ (1980) = CAD\ 544\ (1993) = \$426\ (1993)$$

$$AUD\ 831\ (1999) = AUD\ 743\ (1993) = \$558\ (1993)$$

But if the same two local currency amounts are compared via 1985 PPPs, then they turn out to be exactly equivalent. (We know this, because the Bank used 1985 as its PPP base year until 1999.) The choice of 1993 rather than 1985 as PPP base year raises the assessed purchasing power of *all* AUD amounts — prices, incomes, consumption expenditures — in all years by 31 percent relative to that of all CAD amounts. And the choice of 1985 rather than 1993 as PPP base year raises the assessed purchasing power of *all* CAD amounts in all years by 31 percent relative to all AUD amounts. The outcome of such income comparisons thus is heavily influenced by a factor that is obviously irrelevant to these comparisons: namely by the Bank's arbitrary choice of PPP base year.[16]

As our Table 1 (herein p. ***) demonstrates, such base year sensitivity — some of even much larger magnitude — is common across rich and poor countries alike. It is bound to occur, because the conversions based on CPIs and PPPs are based on very different consumption patterns: the Canadian CPI is based on the Canadian consumption pattern, the Australian CPI on the Australian, and the PPPs of 1985 and 1993 are based on the international consumption patterns of those years. No wonder, then, that different conversion paths yield diverse results.

The Bank's choice of PPP base year obviously also affects profoundly who is classified as

poor. Let me illustrate this by considering China and Bangladesh which, as it happens, are related like Australia and Canada: The choice of 1993 rather than 1985 as PPP base year raises the assessed purchasing power of all Chinese amounts in all years by 31 percent relative to all Bangladeshi amounts — and *vice versa*. Now take any pair consisting of a Bangladeshi person in year A living below the Bank's IPL and a Chinese person in year B living above this IPL and no more than 31 percent above the Bangladeshi. For each such pair, if 1985 is chosen as PPP base year, then the Chinese person is deemed poorer than the Bangladeshi. If 1993 is chosen, then the Bangladeshi is deemed poorer than the Chinese. The choice of base year affects then the classification of at least one of the two persons. The Bank's method makes the poverty classification of millions of people — today and in past and future years — dependent on the arbitrary choice of PPP base year. This is bad, because the Bank's choice of PPP base year is no more significant to the real situation of human beings than the weather on Jupiter.

(8) If we want to assess income poverty through a headcount measure, then we should find a more direct method than the Bank's: a method that focuses on the prices a person faces in order to determine whether her income suffices to meet her basic human requirements.

Ravallion misunderstands this proposal of ours in two respects. He writes that "they appear to be proposing to price a single bundle of goods in each country relative to a reference country" (MR herein pp. ***). What we have in fact proposed is to assess each person's income against "the cost of purchasing commodities containing relevant characteristics (for example, calorie content)" (herein p. ***) that are needed to achieve the basic requirements of human beings.

Ravallion also writes that we "ignore an important lesson from the literature on nutrition and poverty (and from common sense), namely that a given food energy intake can be attained in multiple ways, requiring very different levels of income" (MR herein pp. ***). We are not quite so ignorant. Our proposal was to define the poor as those whose income affords them *no* acceptable way of meeting their basic human requirements, given the cultural and environmental conditions they face. To be sure, what these nutritional and other basic requirements are, and what counts as an acceptable way of meeting them are matters for debate. There is certainly some need for judgment in specifying a poverty criterion of this kind, as there is in any poverty assessment exercise. But making such contestable judgments in the specification phase is certainly much better than choosing a criterion that — even after it has been fully specified — makes its results depend on arbitrary contingencies such as the Bank's choice of PPP base year and the prices and consumption patterns in all countries on earth. We have moreover argued that making such judgments should involve transparent participatory processes. This would be in contrast to the approach of the Bank which eschews public consultation behind a false façade of science-like objectivity.

Ravallion claims that "the Reddy and Pogge (RP) critique collapses under even moderate scrutiny" (MR herein pp. ***). For the sake of the poor, one can only hope that the scrutiny of some readers will not be quite so moderate.

[1] Rome Declaration on World Food Security, 1996, www.fao.org/wfs, my emphasis.

[2] *UN Millennium Declaration*, General Assembly Resolution 55/2, 2000, www.un.org/millennium/declaration/ares552e.htm, my emphasis.

[3] Holding fixed the Bank's counting method, these two revisions to the state Millennium Declaration goals have increased, by roughly 250 million, the number of those whose confinement below the Bank's poverty line in 2015 will be deemed acceptable. See Pogge 2004 and Pogge 2008: 11-13.

[4] Data gratefully received from Branko Milanovic of the World Bank.

[5] Analogous to Edwin Boring's (1923) famous definition of intelligence as whatever these tests measure — or indeed Joan Robinson's (1932) definition of economics.

[6] This is easily verified on the Bank's website, which permits users to obtain headcount figures for any poverty line they choose. For the 1987-2004 period, for example, the Bank reports a drop of 19 percent in the number of people below its chosen ("$1/day") IPL ― and an *increase* of 1 percent in the number of people living on less than twice this amount ("$2/day"). See econ.worldbank.org/povcalnet, accessed 18 August 2008.

[7] In accordance with the Bank's method, I have here converted its IPL ― defined as $32.74 per month in 1993 US dollars (USD) ― via the US consumer price index (www.bls.gov/data/inflation_calculator.htm, accessed 18 August 2008). The Bank is currently adjusting its IPL, and will henceforth be fixing it at $1.25 per day in 2005 USD (Ravallion, Chen, and Sangraula 2008). By this new definition, annual income of $514 per year is sufficient to qualify a US resident as non-poor in 2008

(www.bls.gov/data/inflation_calculator.htm, accessed 18 August 2008). By the Bank's first definition of "$1/day" ─ $31 per month in 1985 USD ─ being non-poor in the US in 2008 would require $760 annually per person.

[8] The unabridged version of our paper (www.socialanalysis.org) cites USDA 1999 as evidence that such an amount is not nearly sufficient to meet even just the food needs of a human being. The elaborately designed thrifty food plan presented in this publication is an equal-cost revision of the Economy Food Plan first presented in 1961 "as a nutritionally adequate diet for short-term or emergency use." The lowest cost stated for this minimal diet was $80.40 per person per month in 1999. In that year, the Bank would have counted as non-poor people living in the US on $37.75 per person per month (www.bls.gov/data/inflation_calculator.htm, accessed 19 August 2008). Even if they spent *nothing* on clothing, shelter, and health care, such "non-poor" people could not have bought even half the USDA's emergency diet.

[9] Though the Bank's new IPL (see note 7 above) will use a different base year (2005) and presumably differently derived conversion factors (PPPPs), it will be based on the same basic three-step procedure.

[10] This estimate is disputed in Chen and Ravallion's contribution to this volume. They point out that the ABD focused on eleven Chinese cities. And it is true, of course, that prices across China vary widely with location ─ albeit more by province than by rural/urban (Heston 2008). But this fact counts against the Bank's method, which allows poverty assessments to be heavily affected by attributed PPPs that assume that all Chinese (or all "rural" Chinese) are facing the same prices.

[11] The Bank is apparently engaged in such revision now (see econ.worldbank.org/povcalnet). But analysing the differences between its current and forthcoming poverty statistics will be difficult, because the Bank is at the same time also revising its IPL and possibly also its method of purchasing power conversion.

[12] For example, rice accounts for a fraction of one percent of household spending in the US and other affluent countries, and its price therefore plays a very small role in determining the PPP of the Indian rupee. But the price of rice is of very great significance for the real value of the rupees that poor people in India have available to them.

[13] Many thanks to Shaohua Chen for conveying information used in this paragraph, which I hope to have summarized accurately. See also Ravallion, Chen, and Sangraula 2008, 19-21.

[14] Intuitively speaking, transitivity fails because the left side of the equation in the text is substantially influenced by the spending pattern in country B, while the right side is not so influenced at all.

[15] One pertinent reason is this. If PPPs were not transitive, then the Bank's poverty measurement exercise would not be robust with respect to base country. Then the relation between the domestic poverty lines of any two countries would change depending on which currency they are converted into and compared in.

[16] Another way of bringing out the problem involves a circular journey of conversions. Using the Bank's method, we can convert our CAD 280 (1980) via 1985 PPPs into AUD 831 (1999) and then convert this amount back via 1993 PPPs into CAD 367 (1980). The blatent

failure of transitivity — CAD 280 (1980) is surely not equivalent to CAD 367 (1980) —

shows that the Bank's conversions do not preserve equivalence.

References

Davies, J., S. Sandstrom, A. Shorrocks and E. Wolff (2006), *The World Distribution of Household Wealth*. WIDER, available at www.iariw.org/papers/2006/davies.pdf.

Heston, A. (2008), 'The 2005 Global Report on Purchasing Power Parity Estimates: A Preliminary Review,' *Economic and Political Weekly*, 15 March: 65-69.

Keidel, A. (2007), 'The Limits of a Smaller, Poorer China,' *Financial Times*, November 13, available at www.ft.com.

Pogge, T. (2004), 'The First UN Millennium Development Goal: a Cause for Celebration?' *Journal of Human Development*, 5: 377-397.

Pogge, T. (2008), *World Poverty and Human Rights*, second edition. Cambridge: Polity Press.

Ravallion, M., S. Chen, and P. Sangraula (2008). "A Dollar a Day Revisited." World Bank Policy Research Working Paper 4620 (May 2008), 19-21, available at papers.ssrn.com/sol3/papers.cfm?abstract_id=1149123.

USDA (1999). *Thrifty Food Plan, 1999*. Washington D.C.: USDA. The relevant cost table is available at www.cnpp.usda.gov/Publications/FoodPlans/1999/CostofFoodNov99.pdf.

WHO (World Health Organization) (2004). *The World Health Report 2004*, Geneva: WHO Publications (also at www.who.int/whr/2004).