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$1.90 Per Day: What Does it Say?

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$1.90 Per Day: What Does it Say?

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Abstract

The World Bank's global poverty estimates suffer from deep-seated problems arising from a single source, the lack of a standard for identifying who is poor and who is not that is consistent and meaningful. The new choice of an international poverty line of $1.90 (2011 PPP) does not in any way resolve these problems. We present alternate estimates of global, regional and national poverty based on reasoning as to what the Bank's own method, consistently applied, would entail. These show an increase in the absolute number of poor since 1980 or 1990 for certain choices of poverty line. However, we recommend an approach to income poverty assessment that is altogether different, focusing directly on identifying the real requirements of human beings to attain income-dependent human capabilities.

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In a long anticipated decision, the World Bank recently announced new global estimates of poverty. For those who follow the issue closely, this is the latest round in a saga running now for at least 25 years, of a methodology that has not been placed on more solid foundations despite ample opportunity and institutional resources, and exposure to longstanding arguments that its flaws are so deep as to vitiate the entire exercise. The latest announcement is a disappointment. Once again, the Bank has adopted an approach that locks in previous mistakes, making minor modifications while in no way addressing the deeper criticisms that call for attention. The result is a set of results that, despite their seeming technical authority, should enjoy little credibility. Although the President of the World Bank has announced "good news"[3] that the proportion of poor people in the world is for the first time below ten percent, the basis of this claim is regrettably unsatisfactory.

In this paper, we present an overview of some the major issues that we have raised previously, and show how they continue to apply to the most recent Bank estimates of income poverty. As we demonstrate, there is a single basic problem at the root of the primary failings of the Bank's approach. We then demonstrate that taking the Bank's own stated approach seriously could lead to an alternate (much higher) set of poverty estimates, which we report. We do not present these as a last word, but rather as a demonstration of the seriousness of the uncertainties and of the need for an altogether new framework.

I. The Central Problem: Lack of Meaning

As we have discussed extensively elsewhere and has been increasingly widely recognized[4], there exist a series of seemingly unrelated problems with the World Bank's global poverty estimates, which in fact all derive from a single source: the lack of a criterion for identifying the poor which has a consistent substantive interpretation not to mention that is appropriate to the task. This is a problem that cannot be solved within the current approach but rather requires an altogether new one.

We will briefly review the difficulties this creates by examining different aspects of the Bank's approach and then present alternate poverty estimates.

I.1 The International Poverty Line

The latest international poverty line (IPL) has been fixed by the Bank is $1.90[5] in 2011 PPP dollars (i.e. this amount of purchasing power of US dollars in 2011[6]). A higher poverty line of $3.10 has also been identified. These two poverty lines have been claimed to "preserve the real purchasing power of the previous line (of $1.25 a day in 2005 prices) in the world's poorest countries". However, in what sense do they in fact

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[3] https://twitter.com/JimKim_WBG/status/650764018114818049

[4] See our earlier work and following that, e.g. Subramanian, S. (2012) and Klasen et al (2015).

[5] http://www.worldbank.org/en/news/press-release/2015/10/04/world-bank-forecasts-global-poverty-to-fall-below-10-for-first-time-major-hurdles-remain-in-goal-to-end-poverty-by-2030

[6] These are technically "international dollars" but they are required by definition to satisfy a normalization equation relating one international dollar to one US dollar. The claim is typically made that this constitutes equal purchasing power but this is in fact to make an inappropriate translation between a precise idea and a vague one.

correspond? Moreover, whether or not they correspond to each other, do they correspond to any substantive meaning? This question applies not only to the latest Bank "update" but to previous ones (in particular those replacing previous IPLs specified in the base years of 1985 with 1993, and 1993 with 2005). [For a comment on the previous update, see Reddy (2008)]

To answer these questions we might begin by asking what might be the Bank's own view of the matter. One accustomed Bank's argument is that the proof that the new poverty line is equal to the old one in purchasing power is that the poverty headcount ratio is very similar in the two cases[7]. However, such an argument would be nothing less than a non sequitur (or should we say, a nonsense?) as argued in relation to the Bank's previous two sets of estimates as well in Reddy and Pogge (2009) and Reddy (2008). We may think of the problem this way. Suppose that an arbitrary set of new PPPs were chosen, or indeed an especially perverse set (for example ones chosen to deliberately misrepresent the real level of purchasing power in each country). By starting at a low enough value of the IPL to be translated into local currencies using these PPPs and creeping up one could *always* find an IPL would suffice to generate exactly the same headcount as the previous PPPs did. Since this argument can be used to "rationalize" any set of PPPs it cannot be used to justify any one choice thereof. Whatever it does show (and in fact, we have just argued that it shows exactly nothing) it resoundingly does not show that the new PPPs maintain the purchasing power of the old ones, anywhere let alone everywhere. In any case, it is evident that this argument, even if it could be used to justify the way in which an IPL were updated, which it cannot, could not be used to justify the original choice of the IPL.

A second possibility is to ask whether the purchasing power of the 2011 IPL corresponds to that of the 2005 IPL. Unfortunately, the answer is in general no. The reason is that when the 2005 IPL is translated in local currencies and then updated using the consumer price indices (CPIs) of individual countries this leads to amounts of local currency in 2011 which are generally very different from those that would be implied by converting any given IPL directly using the 2011 PPPs.[8] As we have extensively discussed elsewhere this is a deep-seated problem that is intrinsic to the way in which PPPs are calculated and has to do with the fact that the evidential basis of the spatial price indices (PPPs)

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[7] Ferreira et al (2015), write on Page 39 that "The fact that this update yields relatively limited changes to what we thought we knew about global poverty is a result of the fact that these methodological revisions were deliberately designed so as preserve the real purchasing power of the $1.25 line in some of the world's poorest countries (and of the additional fact that, between 2005 and 2011), price level changes in these countries were not atypical of the developing world as a whole)." Whereas in the past the Bank explicitly argued (as we had noted in earlier work) that a new IPL can be taken to have preserved purchasing power *because* it results in similar headcounts, the claim appears to have been revised here to one that maintenance of purchasing power *leads to* similar headcounts. That would surely be true if it lead to no change in the local currency poverty lines in each country, but this change of IPL does lead to sizable such changes. The sense in which purchasing power equivalence is being appealed to is therefore obscure, leading to the appearance that a relatively unchanged headcount (in 2011) is being presented as support in itself for the new choice of IPL.

[8] Ferreira et al (2015), write that "we updated the line so as to keep its real value constant, in terms of the purchasing power of the poorest countries. Since the real poverty line has not changed much in real terms, overall poverty levels (for a given year) don't change much either". However, the poverty lines have indeed shifted in real terms in *every* country, according to the countries' own consumer price indices.

used is determined by the structure of the world economy in the year in which they are calculated but the reference point of a temporal price index (CPI) is the pattern of consumption of consumers in a given country. The resulting diversity of reference points leads to sizable inconsistencies. (For a measure from the Bank itself, which is not, however, given this interpretation, see Figure 3, p.55 in Ferreira et al (2015), the background paper released along with the new estimates). The Bank's own data shows that there is no way of choosing an IPL within their current method that will maintain its purchasing power within all countries, even remotely. We can calculate the 'equivalent poverty line' in 2011 local currency units for any given country by updating the 2005 IPL using its own CPI. These are reported in Table 1. Figure 1, below, indicates the distribution of the `equivalent poverty lines' (EPL)[9]. We find that seventy of the 117 developing countries have EPL below $1.90 (2011 PPP), but just about half (49 percent) of the world's population lives in countries with EPL below this threshold, if outlier countries are dropped (see note underneath Figure 1 below for details). This is a sort of median but not necessarily a happy one, insofar as the new chosen IPL is 'wrong everywhere' even if to an extent that varies in sign and magnitude. The Bank arrives at its IPL by using its preferred CPIs to update the IPLs of the 15 countries used in its immediately previous updating exercise (themselves chosen rather arbitrarily in the last exercise from a longer list) but as Klasen et al[10] (2015) shows the results depend to a not inconsiderable degree on the consumer price indices used for these countries. Although there is more than one way of arriving at the $1.90 IPL (as noted in Ferreira et al (2015)) this hardly makes it unassailable.

There is a basic conceptual issue here. One can seek to maintain purchasing power in which case one should, within the Bank's money-metric approach, fix the base line and use national CPIs for updating, as argued by Deaton (2003) and Klasen et al (2015). Alternatively, one can "update" the prices used for spatial comparison, but one *cannot* do both, but the Bank is precisely, as in the proverb, trying to eat its cake and have it.

As may be seen, the equivalent poverty lines vary widely, and making the new poverty line exactly equivalent (according to a country's own CPI) to the old for one country will necessarily lead to not doing so for others. The proportion of persons deemed poor moreover greatly depends on the specific choice made (see Figure 2, below, and Table 2). According to our own estimates, based on the Global Consumption and Income Project[11], choosing an IPL of $2.50 (2011 PPP) would raise poverty across the world by 38 percent as compared to choosing one of $2 (increasing the headcount ratio from 21 percent to 29 percent). This would not just change the poverty level globally but also affect the regional composition of poverty with South Asia contributing a significantly higher proportion of the world's poor.

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[9] This picture presents in a different way the information contained in Figure 4 of Ferreira et al (2015).

[10] On page 15 (current draft) it is noted that "For three of these 15 countries they (*Jolliffe and Prydz, 2015*) do not use the CPI but an inflation rate from PovCal which tried to incorporate price changes faced by the poor more accurately. This way they get to $1.82. If one takes take out just one of these three countries where this ad hoc and very selective adjustments was made, i.e. Tajikistan where Jolliffe and Prydz find the national poverty line to be $3.18 in 2011 PPPs instead of $1.82 when using the WDI CPI, one would be back to a poverty line of $1.72."

[11] For further information see http://www.gcip.info, Lahoti, Jayadev and Reddy(2015) and Jayadev, Lahoti and Reddy (2015)

In any case, determining whether the 2011 IPL has the same purchasing power as the 2005 IPL cannot suffice to determine whether the IPL has an appropriate substantive meaning (in particular in terms of being sufficient to meet the basic requirements of human beings).

A third possible notion of "equivalent" purchasing power involves the idea that in both cases the IPL refers to the "same" substantive meaning in terms of basic human requirements. The Bank has made exactly this argument, both in relation to its current "update" and to previous ones, in all cases referring to a small set of poverty lines (15 lowest chosen from a much larger set by establishing a rather arbitrary cut-off point) ostensibly reflecting standards of identification of the poor in poorer countries themselves (and held constant between the last IPL-setting exercise and this one). Unfortunately, the particular selection of poverty lines, the means used to convert them into common units, the method of identifying one poverty line by averaging or otherwise aggregating information from the set of lines used, and even the claims that these poverty lines are actually those of poor countries[12] or that they have a meaningful reference in terms of basic human requirements are all highly questionable. Moreover the arbitrary and shifting methods used severely undermine the claim of consistency over time (For a still pertinent discussion of these points and others mentioned in this paragraph see Reddy (2009).) Until the just released revision, the Bank had also made frequent recourse (for one instance, see Ravallion, Chen and Sangraula (2008)) to the auxiliary argument that the poverty lines deemed to have been set by the poorest countries themselves were very similar as compared to those of less poor countries, which were in contrast deemed to increase with income. This claim depended in part on a visual trick and becomes even more strained when subsequent PPP base years are used (which is presumably why it has not been appealed to when attempting to justify the latest revision).[13] In any case, it would be difficult to argue that the poverty lines in question have a common substantive meaning, in light of the demonstrably different standards and methods of construction used and what is known about resulting variability.

I.2 The Translation of the Line into Local Currencies

The problem of the lack of an appropriate and consistent substantive meaning of the World Bank's poverty identification criterion not only foundationally undermines attempts to "update" the poverty line but it also infects the translation of the poverty line into local currency units.

As has been argued extensively in Reddy and Pogge (2009, and other writings by the same authors) there is no such thing as purchasing power in the abstract, but rather purchasing power must be defined in relation to a specific purpose, which in turn can be translated into an account of the specific commodities required to achieve that purpose. For example, if purchasing power over tradable necessities (such as food) is considered

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[12] In fact, many were produced by Bank consultants, leading to the impression that the procedure is one of "Bank preconceptions in, Bank preconceptions out". See Reddy (2009) op cit. for evaluation of all of these points. The list of poverty lines used by the Bank to set the IPL has not changed we are told (in Ferreira et al (2015)) between the last IPL determination exercise and this one.

[13] It depended on, among other thing, using a log-scale for the visual appearance of a 'flat portion' of the relevant curve. Compare for instance the different figures included within Figure 1 on pp. 10-11 in Klasen et al (2015). For an extensive discussion of the shifting basis of selecting and aggregating the poverty lines used see Reddy and Pogge (2009) and Reddy (2009).

rather than purchasing power over all goods and services then the local currency equivalent of a given US dollar amount is found by the ICP to be much higher (the population weighted geometric average across countries of 2011 food PPPs is 33 percent higher than for general consumption PPPs[14]). This is a point that continues to be relevant, as we shall see when we discuss alternate estimates below.

It is, however, equally significant that the basis for calculating PPPs as a broad average price level over goods and services reflects in practice, due to the methods used, the influence of the overall pattern of consumption in the world in a given year. This leads to "irrelevant commodities" and "irrelevant countries" affecting a PPP of a given country, and doing so in a way that reflects the global pattern in the year in question (for further details see Reddy & Pogge (2009) and Pogge and Reddy(2006)). This problem has been in no way attended to in the current revision despite the occurrence in the interim of a large-scale and ultimately anti-climactic ICP project on collecting poverty-related PPPs, the conceptual basis of which have been separately criticized in the works already cited. This is the static analogue of the dynamic problem of the havoc created by changes in base year, which raise or lower a country's PPP relative to its CPI change to a different and difficult to predict or interpret extent from country to country. This central problem is acknowledged in the Bank report justifying the new IPL[15] (unlike in earlier rounds) but is not addressed. The Bank's new procedure (see Ferreira et al (2015), p. 21) of continuing to use the old 2005 IPL and PPPs for countries with very high or low discrepancies ("delta") in this regard is essentially an ad hoc attempt to mitigate an intrinsic consequence of its own method.

The notion that use of the latest set of PPPs, (presented by the Bank in various reports over the years, including in its latest, Ferreira et al (2015), and in various public statements[16]) as being always best must come in for suspicion from this standpoint – as we have also argued in previous work. On the one hand the latest set of PPPs reflects the pattern of consumption in the latest year. On the other hand, it for the very same reason fails to reflect the pattern in earlier years. This may be especially a difficulty when dealing with assessments of trends over long periods of time. It is far from obvious, within the conceptual-framework of money-metric poverty assessment, why 2011 offers a better base year for examining trends between 1980 and 2015 for instance, than does 1990. (The same arguments of course, extend well beyond poverty assessment to a range of other economic analyses). It is a different and additional matter that the coverage and quality of price surveys have arguably improved, although the methodological changes introduced with the 2011 ICP survey have seen a degree of controversy in this respect.

II. Additional Issues

II.1 Intra-national price variation:

The International Comparison Program (ICP) defines PPP conversion factors for all countries at the national level. The Bank has defined sectorally-specific PPP's, for rural

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[14] PPPs for Individual Consumption Expenditure by Households.

[15] With reference to Deaton (2010) who followed Reddy and Pogge (2005, published 2010 but widely circulated and presented in draft versions from 2002) and Pogge and Reddy (2006) in recognizing this issue.

[16] http://www.ft.com/intl/cms/s/0/81b0ac66-61e5-11e5-9846-de406ccb37f2.html#axzz3nl2dk8oz

and urban areas for three large countries: India, China and Indonesia. For China in the 2005 ICP exercise data collection was limited to only eleven cities and hence its PPP is considered to be an urban PPP. For India, although data was collected in both rural and urban areas, Bank economists have proposed (See Ravallion (2008)) -- although this had not been a view they had put forward in regard to earlier rounds -- that the survey was more representative of urban areas. In Indonesia, although Bank economists judged that there was no survey bias, they nevertheless made an adjustment to account for differences in price levels between rural and urban areas. Similar adjustments to PPP's of these three countries have been incorporated in the latest update based on 2011 PPP's.

In principle, if such an approach is appropriate to use in certain countries it is not clear why it could not or has not been used for other large countries, such as Nigeria, or for smaller but still cumulatively populous ones. However, by far the more serious issue is that these sectorally-specific PPPs have been constructed by the Bank using very questionable back-of-the-envelope assumptions. On the surface, the idea of having a single price level for all of rural India is only a little less absurd than the idea of having a single price level for all of India or another such large country, but moreover, the specific methods used to construct that price level are poorly justified and can give rise to very reasonable questions. As a rough and ready approach, the Bank assumes (see Ravallion (2008) p.35 and footnote 9) that the ratio of rural to urban prices (and thus of sectoral PPPs) can be derived from the ratio of previously defined rural and urban poverty lines, and that the national price level (PPP) is a weighted average of the (unknown) rural and urban price levels, where the number of price points sampled by the ICP in its national PPP determination exercise defines the weights. The first equation specifies the ratio of the sectoral PPPs and the second their absolute level. The resulting two equation system gives rise to the Bank's estimates, but one could have imagined adopting other approaches such as to construct a rural-vs-urban price index by directly referring to unit-values from household surveys combined with a hypothetical basket or to apply price data used to generate official domestic price indices for different categories of workers (which are available in India for agricultural and industrial workers). The poverty lines used in the first equation represent, insofar as they are well-defined - which is quite questionable, especially given that the Bank uses official poverty lines for India which have come in for severe criticism from many sides of late - the presumed cost of obtaining basic human requirements. The differences between them thus reflect differences *both* in prices and in assumptions about the commodities that must be purchased in the two sectors to meet human requirements. The weights used in determining the relationship between national price level and sectoral price levels are for specific categories of goods for which price information is collected at all in rural areas (food, clothing and footwear) by the ICP, whereas the national PPP reflects prices of all goods. If the ratio of urban to rural prices for the goods not represented in the rural component of the survey are higher than for the represented goods, which there might be some reasons to believe, than the effect would be to understate the rural price level. There may thus be an implicit urban bias in this approach. A confusion and a distortion appear to be present in the exercise.

The Indian rural and urban poverty lines (see Table 3) employed by the Bank in its 2005 PPP base year exercise (see Ravallion (2008)) and in its current 2011 base year IPL

construction exercise were different.[17] If we take the ratio of the poverty lines as a measure of sectoral relative prices variations alone, as is implicitly supposed by the Bank, and calculate the ratios corresponding to the two years, then rural prices must be judged to have risen by almost 30 percent more than urban prices (as the ratio of urban to rural poverty lines declined from 1.51 to 1.22). In fact, the two prices rose at a comparable rate (76 percent in rural areas over the period as against 70 percent in urban areas) according to the sectoral price indices reported elsewhere for India by the World Bank's own Povcalnet website.

Several methods have been proposed in the recent literature to estimate differences in rural and urban price levels give widely varying estimates of price differentials which in turn give rise to widely varying poverty estimates (E.g. Deaton and Dupriez (2011), Dikhanov (2010), Majumdar, Ray and Sinha (2014)). For India the World Bank's estimate of the extent to which rural prices are lower as reflected in the ratio of the rural to urban price level (and poverty headcounts accordingly also lower) is 51% whereas the estimate of the ICP is that the difference is only 3%, with other sources reporting estimates in between. We will not go into the particulars of these further here, as it suffices to say that it matters greatly which method of inter-sectoral adjustment is used as well as whether a sectoral adjustment is used at all. The Bank's chosen approach leads to the most optimistic portrayal of rural purchasing power and thus of the rural headcount. A measure of the impact of using sectorally adjusted PPPs for just three important countries is given by Table 4 below, based upon our own calculations using the GCIP.

As can be seen, estimates of the global poverty level are enormously affected by this *single* very questionable choice. Using ICP national PPP's for these three countries would substantially increase the poverty rates in them. Since these are poor and populous countries, it would result in the estimated number of poor persons in the world in 2011 increasing by an alarming 290 million. The trend of global poverty reduction is also affects, with the rate of poverty reduction from 1990 to 2011 appearing more favorable when sectoral PPPs are used, as the Bank has done in the recent period. The Bank has offered no sensitivity analysis nor discussed the impact of this choice, leaving open the question of why it made the particular choices that it did. Although taking note of intra-national specificities, including rural-urban differences, is in principle desirable, doing so in a manner that is both better justified and consistent across countries would be essential. Jolliffe and Prydz (2015) had argued that it may be appropriate to drop the use of sectoral adjustments for these countries when using the 2011 PPP's, with the argument being that there was urban bias in the 2005 ICP data collection round but does not exist in 2011 ICP data. This point of view pays no attention whatever to the reality of systematic price differentials within large countries, but treats the problem as merely one of getting the single "right" national PPP. This is a misunderstanding of the nature of the problem.

II.2 Mixing of Income and Consumption Surveys

[17] In particular, for the 2011 exercise the Bank has chosen to adopt the highly controversial Tendulkar committee lines, which were not taken up officially. Indeed, the Government of India appointed a second (Rangarajan) committee to take up the issue again due to the perception that the problem had been inadequately addressed (see e.g. http://articles.economictimes.indiatimes.com/2014-07-07/news/51133608_1_poverty-line-consumption-expenditure-tendulkar-committee) This seemingly arbitrary choice (to use neither the poverty lines that preceded nor followed it) would seem to have deserved some justification.

Previously, the World Bank had made an effort whenever it was faced with income rather than consumption surveys (which is the case in many countries, most especially in Latin America) to estimate consumption levels by converting the income into consumption estimates by multiplying them by the ratio of consumption- to income in the national income accounts. This was viewed as necessary because the international poverty line used by the Bank was and is defined in terms of a quantity of consumption. In very recent years, the Bank has changed to directly pooling data of both kinds and using them without further adjustment. The Bank claims, based on countries for which it has data of both kinds, that the choice of method makes little difference, although it admits that its new method lowers headcounts (Chen and Ravallion (2004)). Can the distortions caused by the share of bottom quintiles in income surveys being lower than in consumption surveys be assumed to "cancel out" those caused by the means being lower in consumption than in income surveys? Such a claim, that the use of the unadjusted pooled data come closer to measuring correctly the underlying unknown values, is not wholly plausible since the new method is identifiably inappropriate in two distinct ways, which cannot be *assumed* to negate each other. The Bank's "rough and ready" approach is very questionable, and indeed, in comparisons (which we discuss below) we find widely varying results depending on whether one consistently uses estimated income surveys, one consistently uses estimated consumption surveys, or one uses the pooled approach. In order better to estimate the underlying and unknown true values, when we estimate consumption poverty on the basis of income surveys for our own (GCIP) global poverty estimates we adjust *both* survey distribution and means in order to enhance comparability (more details on the "standardization" method we use, based on average statistical relationships, are present in Lahoti, Jayadev and Reddy (2015)). This differs both from what the Bank does now and from what the Bank did previously, which was to adjust means alone.

To illustrate the impact on poverty headcount ratios, we calculate them for a few of the countries for which both consumption and income data is available from the same survey[18]. We calculate consumption poverty headcount ratios using a single poverty line ($2.50 2005 PPP of consumption) for income surveys with no adjustment to distributions or means (current Bank method), for income surveys with no adjustment to distributions but with adjustment to means (old Bank method), for the actual consumption surveys, and by our own method (adjusted distribution and means). In practice, the GCIP would use the actual consumption survey wherever available rather than an estimated consumption survey but we report both here to compare them. The results are presented in Table 5. They show a difference in poverty estimates across the three methods, which vary by country, as the magnitude of the dependence on the method used depends on various factors (in particular the income and consumption survey distributions and means). It can be seen that in some cases the difference is small and in others more sizable. In these cases the new Bank method leads to lower headcounts than the old Bank method, but whether either method leads to lower or higher headcounts than do consumption surveys (which ought to be used wherever available) depends on the country.

II.3 Inadequate Country Data:

[18] We choose developing countries and years for which there are both types of survey after 2000, from the WIID database.

For a number of countries, national consumer price indices do not exist or are rejected by the Bank on grounds that they are implausible. In these cases, it undertakes ad hoc measures. While one can sympathize with the necessity to make such choices and indeed endorse the decision to be forthright about the judgments made, this choice is potentially consequential, as it includes a number of countries with sizable numbers of poor persons (such as Bangladesh) and may account for some of the discrepancy between Bank estimates and other estimates based on its own chosen $1.90 (2011 PPP) IPL. We have previously noted the finding that the choice of CPI can matter greatly for the "updating" of the IPL. This could thus create an impression of selective choice, unless the observer is rather trusting. Since the Bank has an entirely abstract conception of purchasing power there is no guidepost as to what is an appropriate consumer price index and what isn't beyond that "it looks right to us" and that is of concern even if judgment is an unavoidable part of applied work in a data poor environment.

For a number of countries and regions for which data does not exist the Bank also appears to have blown up regional estimates deriving from other countries to account for them. While this may be a reasonable choice the resulting uncertainties must be adequately recognized. For entire regions including the Middle East and North Africa, because of poor survey coverage it reports no regional results. It assumes *a priori* that there is no poverty in high-income countries but according to alternate data (such as the Global Consumption and Income Project, discussed further below) this is false, especially at higher poverty lines. (On these points see Ferreira et al (2015), p.28)

The sectoral adjustments and consumer price indices chosen may have been of consequence in enabling the Bank to achieve, quite remarkably, a similar regional distribution for 2011 to that which it attained using the 2011 PPP as it did using the 2005 PPP. This is not something that it was able to do in previous base year changes -- in particular in the shifts from the 1985 to 1993 and 1993 to 2005 base years, which led to some sizable changes in the regional composition of poverty.

II.4 The Upper Poverty Line

The Bank's new proposed upper poverty line of $3.10 is not justified but merely declared, as far as we can see[19]. It also stands in a slightly different ratio to the old higher poverty line ($2 in 2005 PPP) than does the new lower poverty line to the old lower poverty line, which would seem at odds with any claim of maintaining "equivalent purchasing power". As we shall see in the next section, however, the notion that even the upper poverty line can be viewed as satisfactory is very much in question.

III. Alternate Estimates – Banksier[20] than the Bank?

Our longstanding view has been that credible alternate estimates of global income poverty's level, trend and regional composition require a comprehensive new method (briefly sketched in the next section). However, for purposes of comparison with the

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[19] It receives a single mention in Ferreira et al (2015) in footnote 6, with no word of explanation.

[20] Re. the artist, Banksy, see https://en.wikipedia.org/wiki/Banksy. We use this title in case anyone is tempted to think that we present the estimates which follow as being alternate authoritative estimates. As we note, our constructive proposal is to reject the money-metric approach to global poverty estimation altogether and not merely to modify it.

Bank's new estimates we describe here the basis of alternate estimates, resulting from taking the Bank at its own word as to what the concepts used in constructing its poverty estimates involve. In order to do so we draw on the data of the Global Consumption and Income Project (GCIP), which can be used for global poverty estimation. (For comparison of our estimates and those of the Bank for various poverty lines, see Table 6). Our claim is not that they are correct estimates but rather that conceptually they are more warranted by the Bank's own method than the estimates that it reports.

The framework we use relies on the following idea, if the IPL is meant to reflect a reasonable poverty line, it must correspond to some conception of adequacy for basic human requirements. Even if the IPL is meant to reflect poverty lines defined in or for poor countries, as the Bank claims, this must be so if it is to be deemed appropriate for poverty assessment according to any ordinary language conception of what poverty is and why we care about it (see the recent clever and biting expositions by S. Subramanian (in particular Subramanian, 2015a; Subramanian, 2015b; Subramanian, 2015c) for an elaboration of the point). Further, the supposed interpretation of purchasing power parity conversion factors (PPPs) is that they preserve purchasing power across countries. In that case, the IPL chosen must suffice for purchasing the most basic requirements in the base country (the US) with regard to which the price indices are defined, in particular if those requirements are conceived of in absolute terms (i.e. without deferring especially to contextual specificities of that country). This seems an unavoidable consequence of claiming to preserve purchasing power when one uses PPPs. Referring to differences in standards across contexts or about differences in the purchasing power of currencies (for a second time) cannot avoid this logical implication.

A measure of what might just suffice in this respect is available. The Thrifty Food Plan[21] produced by the US Dept. of Agriculture Center of Nutrition Policy and Promotion established, with great care, the minimum cost of achieving "Recommended Dietary Allowances" in the United States[22]. It does so for a model family of a specified size and composition by collecting "scanner" price data from markets around the US and calculating the mathematical least cost of achieving the allowances at these prices (using linear programming techniques) and by subsequently modestly adjusting the amount to make some allowance for prevailing tastes. It then verifies that the amount suffices for cooking model recipes in a test kitchen. The allowance is based entirely on the supposition of home cooking and makes no reference to the costs of the kitchen or the cooking pots. By definition, the Thrifty Food Plan allowance does not suffice for *any* non-food requirement (e.g. for shelter, clothing, transportation etc.). It can therefore be taken as a lower bound on real requirements in the US. However, to take note of the possible criticism that the Thrifty Food Plan allowances are overly generous, we consider expenditure levels corresponding both to those allowances (based on per person per day costs in a family of four with two children of intermediate ages) and to *half* their value. In 2011, these amounts were respectively $5.04[23] and $2.52. These can be thought of as food poverty lines to which non-food requirements must be added, but have not been. Further, we apply both general consumption PPPs (as does the Bank) and food PPPs

[21] http://www.cnpp.usda.gov/USDAFoodPlansCostofFood

[22] The Plan was previously used to set food stamp allotments and is now the basis for determining amounts allowed under the Supplementary Nutrition Assistance Program.

[23] See http://www.cnpp.usda.gov/sites/default/files/usda_food_plans_cost_of_food/CostofFoodJun2011.pdf

more appropriate to food requirements in particular. Combining these possibilities leads to four alternative poverty lines and resulting poverty estimates. The different levels (and trends) of poverty associated with these lines may be observed in Figure 3 (and also in Table 7).

Selecting the Thrifty Food Plan's poverty line or even half of that leads to a substantial increase in poverty headcount ratios both globally and across all regions. Even if general consumption PPPs are used, moving from $1.90 IPL to half of the Thrifty Food Plan level nearly doubles the poverty headcount ratio in East Asia and South Asia. More than 80 percent of individuals in South Asia and Sub-Saharan Africa are found to live below the Thrifty Food Plan's poverty line of $5.04 per capita per day. Using the still more conceptually appropriate Food PPP's increases this rate across all regions and more than 90 percent of South Asians are found to consume below this level.

The poverty headcount or the absolute number of poor[24] according to the lower poverty lines ($1.25 2005 IPL, $1.90 2011 IPL and $2.52 2011 IPL) has declined since the 1980's, but the number has *increased* from 1980 if we use the thrifty poverty line ($5.04 IPL). (Figure 4) The number of poor peaked in 1990 for the lower lines and in 2000 for the higher lines. But the pace of decline is far slower for the higher lines and we are still above levels seen in 1990. (see Table 6 for regional estimates)

This is a rough and ready approach to generating alternate estimates that does not ask what would be the impact of further steps that might be taken to cause variation with the Bank's estimates, such as alternate choices of inter-sectoral price adjustments for large countries. However, the exercise suffices to prove the point that the Bank's approach does not suffice to generate credible estimates, within its own conceptual framework. In the event, the estimates that would arise from the alternate approach are rather higher.

We provide in Table 7 a detailed list of our alternate estimates for developing countries, based on preliminary GCIP assessments.[25] It may be seen in Table 5 that the trend of poverty reduction since 1980 is somewhat less favorable as one increases the IPL, even within a still modest range.

IV. A Better Approach:

In earlier work we have argued that there is a practical and realizable alternative for the assessment of income poverty. This involves focusing on anchoring poverty assessment in a clear identification criterion, possessing a consistent meaning and an appropriate substantive interpretation. Specifically, we advocate focusing on a conception of poverty that is absolute in the space of capabilities and relative in the space of commodities (see Sen (1983)). Such a capability-based approach to the assessment of income poverty leaves ample room for the use of non-income information to assess capabilities directly as well. These two approaches are complements and not substitutes. In various prior writings we have sketched what such an approach to assessing income poverty would

[24] For an incisive analysis of the reasons to be concerned with absolute numbers as well as relative proportions of the poor see Hassoun and Subramanian (2012).

[25] User discretion is advised, keeping in mind the motivation we have presented, which is internal to the Bank's own method. For some countries, which lack a food PPP, we do not report results in the relevant columns.

involve. At its core is the idea of fixing one or more set of reference capabilities (freedoms to achieve specific beings and doings) that a person must be deemed to be able to have in order to be non-poor.[26] Those capabilities that are typically income-dependent, such as adequate nourishment, are of special interest in relation to income poverty assessment, although the extent to which realizing specific capabilities is income-dependent would vary across contexts (dependent for instance on the extent to which a market economy prevails). These reference capabilities would be fixed across contexts, perhaps through a coordination exercise of the kind previously undertaken by the United Nations in relation to national accounts (which has given rise to the System of National Accounts, aimed at establishing comparability). Once the reference capabilities are fixed, it can be investigated which specific combinations of commodities possess the characteristics sufficient to attain these capabilities. For example, specific combinations of foods can generate the food energy or other nutrient requirements that might be specified. A reference set of characteristics of commodities might also be specified across contexts. (For instance, in the case of nourishment, food energy and nutrients are examples of such characteristics). Finally, the specific sets of commodities that possess the characteristics sufficient to attain the reference capabilities can be specified and priced explicitly. (This is very roughly the approach of the Thrifty Food Plan as it is of initiatives to explicitly determine the cost of attaining a decent standard of life in the UK by the Rowntree Foundation[27] or in Canada in the form of the Market Basket Measure[28]). In such an approach the poverty line corresponds not to a money amount but rather to the requirements of avoiding poverty (to put it colloquially, not to "$1 per day" but to "food in the belly": is the latter any worse for advocacy?). The reference commodities once identified can be periodically priced or adjusted. Although there is an important role for expert judgment in determining the mapping from capabilities to characteristics to commodities (e.g in the form of nutritionists' advice) this is a process that also necessarily involves a democratic component, both in the identification and validation of capabilities, and of commodities.[29]

How is this approach different from determining a sound poverty line for any given country? It isn't, but it adds something additional, which is the element of coordination across countries so that there is always a common reference at the level of capabilities. In effect, the development of poverty lines that have a common substantive interpretation generates bottom-up comparability that does away altogether with the need for an IPL, PPPs or other artifacts of the money-metric approach. In case there is doubt that such a thing is possible, it may be noted that this is in effect what the UN's International Civil Service Commission[30] or human resources consultancy firms[31] implicitly do when they develop or sell to corporations cost of living indices tied to specific, often very explicitly identified, understandings of what constitutes an adequate level of living (albeit far above the level needed merely to avoid poverty).

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[26] Sanjay Reddy and Thomas Pogge use the concept of basic human requirements rather than referring to capabilities, but present parallel ideas.

[27] https://www.jrf.org.uk/report/minimum-income-standard-uk-2015

[28] http://www.statcan.gc.ca/pub/75f0002m/2013002/mbm-mpc-eng.htm

[29] On the relation between poverty assessment and democracy, in addition to the body of work of Amartya Sen, in which this theme appears pervasively in distinct ways, see the essay ("Promise and Performance: Why We Need an Official Poverty Report") by Tony Atkinson here.

[30] http://icsc.un.org/secretariat/cold.asp?include=par

[31] https://www.imercer.com/content/cost-of-living.aspx

This is our preferred alternative, and we believe that it is feasible and desirable to catalyze democratic debate within countries on issues related to poverty as well as to facilitate regional and global poverty monitoring. It can begin with a small number of countries even in the absence of a larger effort at coordination. However, those who do not share our optimism in this regard can still agree that the uncertainties associated with current approaches to global income poverty assessment require greater attention. It is certainly hard to make sense of the signal failure to invest effort in any real alternative measure of income poverty despite the importance ostensibly attached to it in the era of development goals. The problem is not beyond public understanding, and it is rather too important to be left to a small group of technicians, pretending to precision[32].

[32] Is it too much to wish for enlightenment to come from the raison des clercs?

REFERENCES

Chen, S. and M. Ravallion (2004), "How Have the World's Poorest Fared Since the Early 1980s?", World Bank Policy Research Working Paper 3341.

Deaton, A. (2003), "How to Monitor Poverty for the Millennium Development Goals", *Journal of Human Development* 4.3, 353-378.

Deaton, A. (2010) "Price Indexes, Inequality, and the Measurement of World Poverty", *The American Economic Review*, *100*(1), i-34.

Deaton, A., & Dupriez, O. (2011), "Spatial price differences within large countries", manuscript, Princeton University.

Dikhanov, Y. (2010), "Income Effect and Urban-Rural Price Differentials from the Household Survey Perspective", ICP Global Office.

Ferreira, F. H., et al (2015). "A Global Count of the Extreme Poor in 2012: Data Issues, Methodology and Initial Results", World Bank Policy Research Working Paper 7432.

Hassoun, N., & Subramanian, S. (2012). "Variable Population Poverty Comparisons", *Journal of Development Economics*, Vol. 98, No. 2

Jayadev, A., Lahoti, R., & Reddy, S. G. (2015). Who Got What, Then and Now? A Fifty Years Overview from the Global Consumption and Income Project. *A Fifty Years Overview from the Global Consumption and Income Project (May 4, 2015)*.

Jolliffe, D., & Prydz, E. B. (2015). "Global Poverty Goals and Prices: How Purchasing Power Parity Matters" World Bank Policy Research Working Paper, (7256).

Klasen, S. et al (2015): "International Income Poverty Measurement: Which Way Now?", Courant Research Centre Discussion Papers No. 184: Goettingen.

Lahoti, R., Jayadev, A., & Reddy, S. G. (2014), "The Global Consumption and Income Project (GCIP): An Introduction and Preliminary Findings", working paper.

Pogge, T., & Reddy, S.G. (2006), "Unknown: The Extent, Distribution and Trend of Global Income Poverty", *Economic and Political Weekly*, 2241.

Ravallion, M. (2008). "A Global Perspective on Poverty in India", *Economic and Political Weekly*, 31-37.

Ravallion, M., Chen, S., & Sangraula, P. (2009), "Dollar A Day Revisited", *The World Bank Economic Review*.

Reddy, S. G. (2009), "The Emperor's New Suit: Global poverty Estimates Reappraised" in *Poor Poverty: The Impoverishment of Analysis, Measurement and* Policies (United Nations Series on Development), ed. by Jomo Kwame and Anis Chowdhury, 2011, pp. 87-110.

Reddy, S. (2004). "A Capability-Based Approach to Estimating Global Poverty" *In Focus*, *4*, 6-8, UNDP International Poverty Centre.

Reddy, S. G. (2007). "Poverty Estimates: How Great Is the Debate?" *Economic and Political Weekly*, 491-496.

Redd, S. (2009), “How Not to Count the Poor”, in Debates in the Measurement of Poverty , ed. Joseph Stiglitz, Sudhir Anand and Paul Segal, published by Oxford University Press in 2010.

Reddy, S. (2008). The World Bank's New Poverty Estimates: Digging Deeper into a Hole. *Challenge*, Vol. 51, No. 6.

Sen, A. (1983), “Poor, Relatively Speaking” *Oxford Economic Papers*, 153-169.

Subramanian, S. (2011). The Poverty Line: Getting it Wrong Again. *Economic & Political Weekly*, *46*(48), 37-42.

Subramanian, S. (2012). *The Poverty Line*, Oxford India Short Introductions. Delhi: Oxford University Press.

Subramanian, S. (2010). “Identifying the Income-Poor: Some Controversies in India and Elsewhere”, Courant Research Center Discussion Paper No. 46, Goettingen.

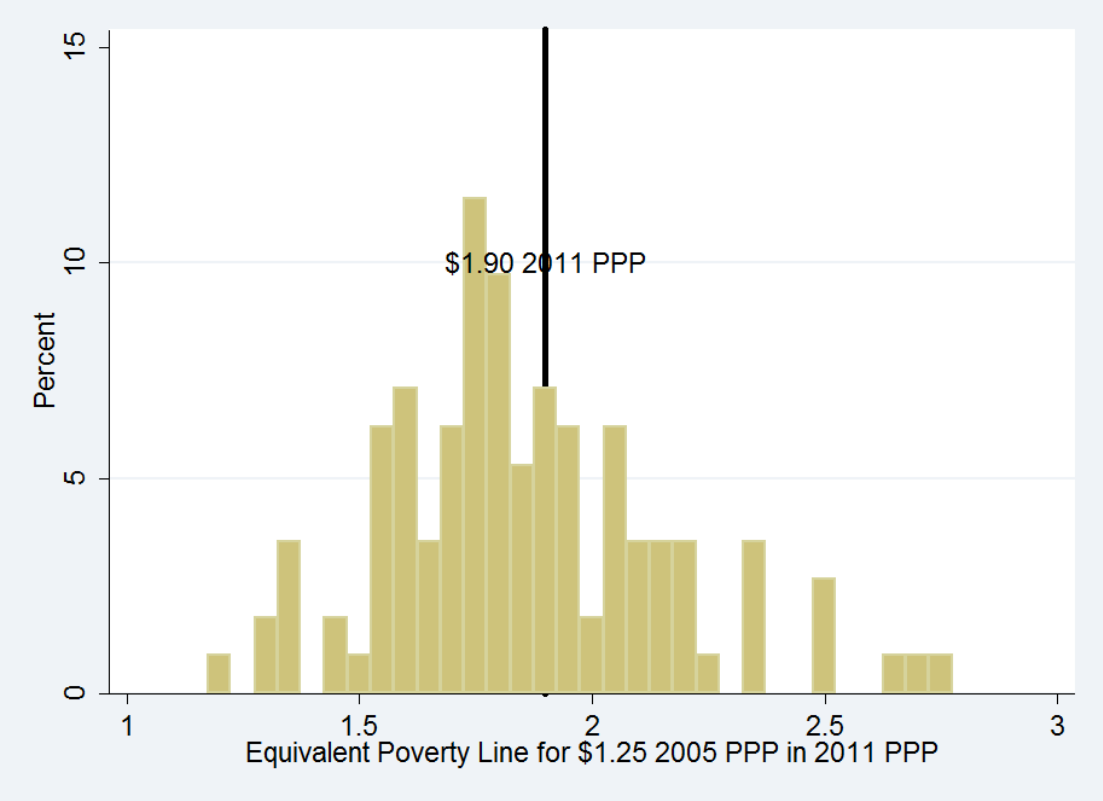
Subramanian, S. (2015a, August 7), “Controversy over Poverty Line” *The Tribune*. Retrieved from http://www.tribuneindia.com/news/comment/controversy-over-poverty-line/116527.html

Subramanian, S. (2015b, July 24), “Identifying the Poor”, *The Tribune*. Retrieved from http://www.tribuneindia.com/news/comment/identifying-the-poor/110420.html

Subramanian, S. (2015c, August 21), “’Price-corrected’ Poverty Lines”, *The Tribune*. Retrieved from http://www.tribuneindia.com/news/comment/-price-corrected-poverty-lines/122283.html

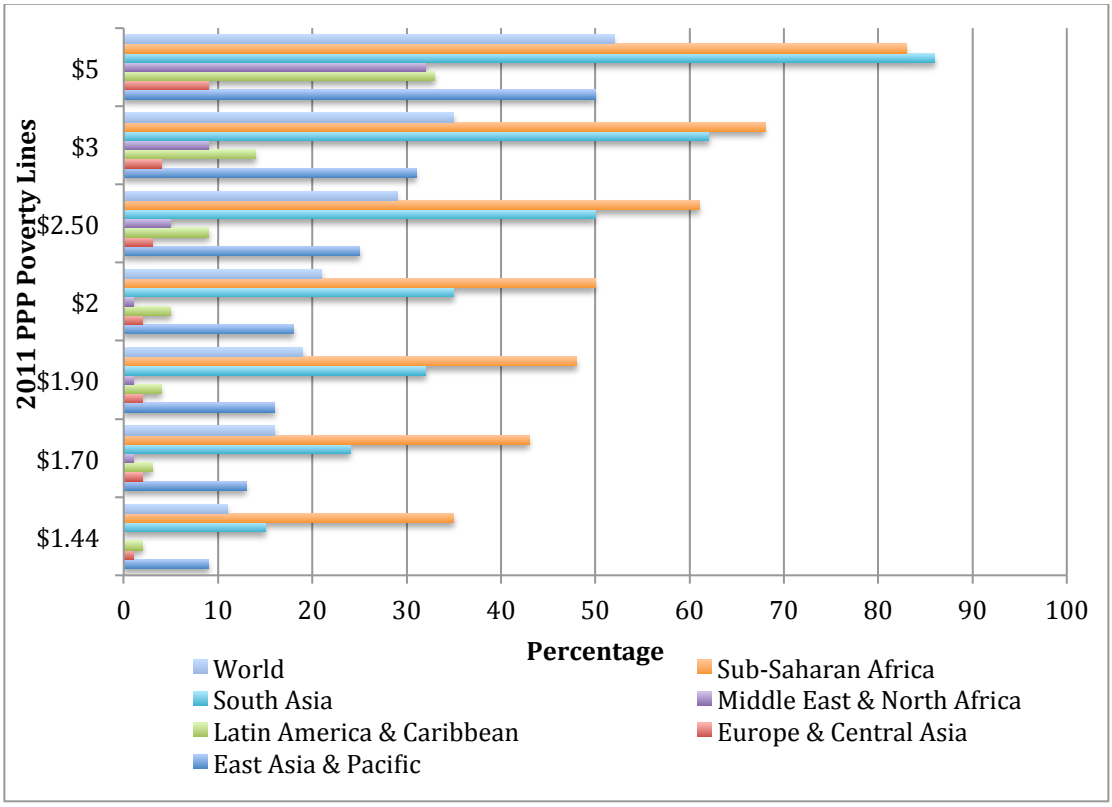
TABLES AND FIGURES

Figure 1: Equivalent Poverty Line in 2011 PPP for $1.25 2005 PPP for developing countries



Source: GCIP; Inflation Data: WDI
Note: We do not include Sudan, Turkmenistan, El Salvador and Tajikistan are not included in the sample as the equivalent poverty line for these countries are outliers (>10 or <1.2)

Figure 2: World and Regional Headcount Ratios for various 2011 PPP poverty lines for 2010



Source: GCIP

Figure 3: Alternate 2011 PPP Poverty Lines Headcount Estimates for the World

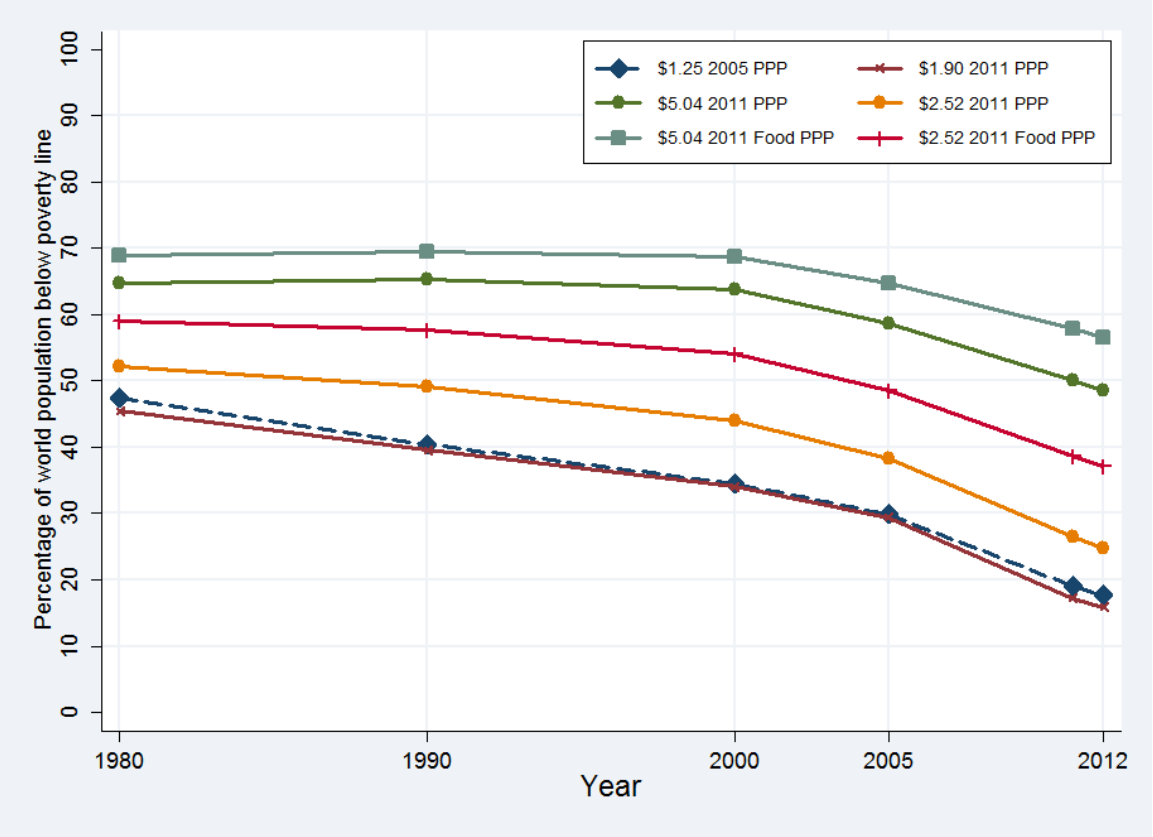


Figure 4: GCIP estimates of the number of poor in the world for alternate poverty lines

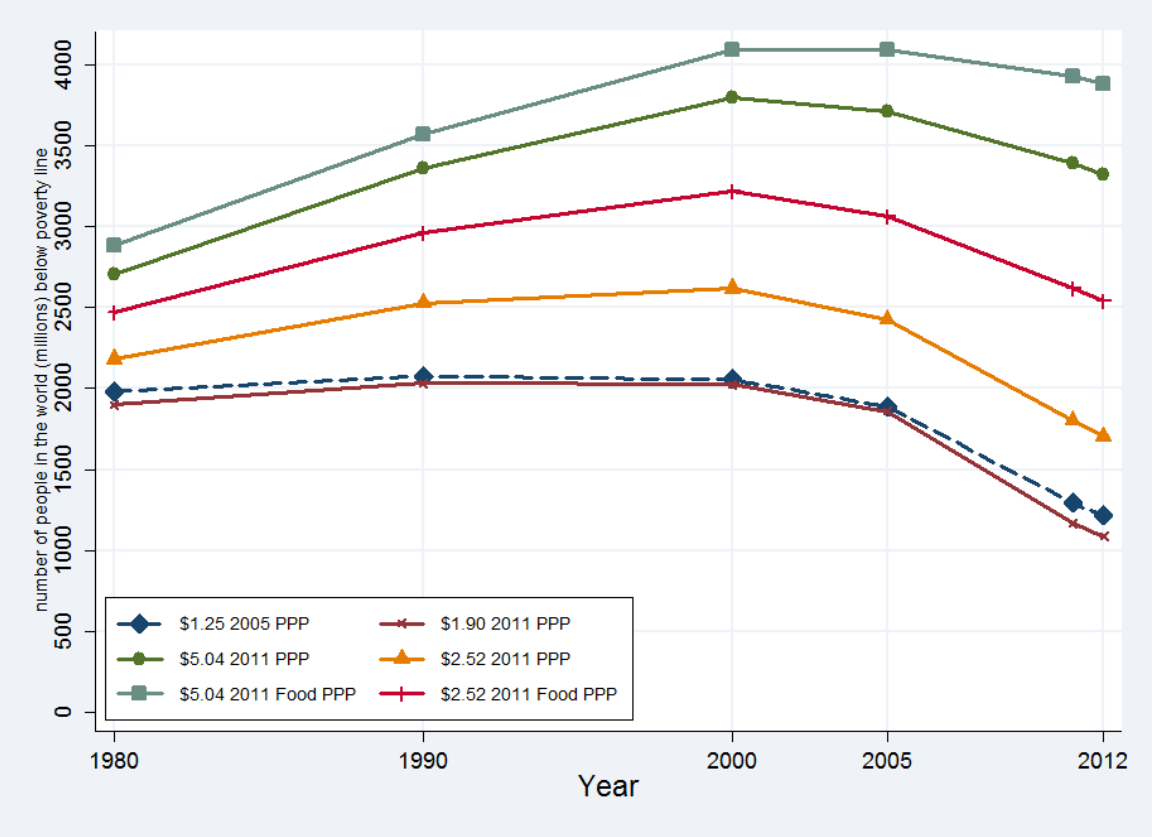


Table 1: Equivalent Poverty Line for $1.25 2005 PPP, in 2011 PPP (Developing Countries)

Country	Equivalent Poverty Line
Yemen, Rep.	2.76
Jordan	2.71
Egypt	2.67
Angola	2.52
Iraq	2.52
Zambia	2.51
Kenya	2.37
Uzbekistan	2.35
Madagascar	2.33
Azerbaijan	2.33
Sao Tome and Principe	2.27
Nigeria	2.21
Lao	2.20
Cabo Verde	2.19
Fiji	2.19
Sri Lanka	2.17
India	2.15
Syrian Arab Republic	2.15
Philippines	2.13
Nepal	2.12
Guatemala	2.09
Congo, Rep.	2.08
Suriname	2.08
Cote d'Ivoire	2.07
Guinea	2.07
Pakistan	2.06
Cambodia	2.06
Burundi	2.05
Bangladesh	2.05
Thailand	2.04
Comoros	2.01
Bhutan	1.98
Liberia	1.97
Indonesia	1.96
Malaysia	1.96
Mali	1.96
Mauritania	1.95
Algeria	1.95
Sierra Leone	1.93
Vietnam	1.92
Cameroon	1.92
Venezuela	1.92
Taiwan	1.90
Haiti	1.90
Rwanda	1.89
Armenia	1.88
Ethiopia	1.88
Afghanistan	1.86
Benin	1.86
Togo	1.86
Morocco	1.85
Chad	1.83
Moldova	1.83

Dominican Republic	1.82
Namibia	1.81
Georgia	1.81
Kyrgyz Republic	1.80
Central African Republic	1.80
Timor-Leste	1.80
Senegal	1.79
Djibouti	1.79
Panama	1.79
Guinea-Bissau	1.79
Maldives	1.78
Mauritius	1.77
Honduras	1.77
Belize	1.77
Gabon	1.76
Swaziland	1.76
Montenegro	1.75
Tanzania	1.75
Uganda	1.75
Paraguay	1.75
South Africa	1.75
Turkey	1.74
West Bank and Gaza	1.73
Bulgaria	1.73
Nicaragua	1.71
Kazakhstan	1.70
Niger	1.70
Iran	1.69
Hungary	1.68
China	1.68
Costa Rica	1.68
Bolivia	1.66
Jamaica	1.64
Lesotho	1.64
Guyana	1.64
Mozambique	1.62
Colombia	1.62
Burkina Faso	1.61
Serbia	1.61
Botswana	1.61
Brazil	1.59
Tunisia	1.58
Argentina	1.58
Peru	1.56
Albania	1.55
Gambia	1.54
Macedonia, FYR	1.54
Romania	1.53
Malawi	1.53
Bosnia and Herzegovina	1.53
Ecuador	1.49
Ghana	1.46
Congo, Dem. Rep.	1.45
Mexico	1.37
Ukraine	1.36
Seychelles	1.35

Papua New Guinea	1.33
St. Lucia	1.31
Belarus	1.29

Table 2: Headcount Ratio (% Poor) for 2010 by Region for Various 2011 PPP Poverty Lines

	2011 PPP Poverty Lines						
	$1.44	**$1.70**	**$1.90**	**$2**	**$2.50**	**$3**	**$5**
East Asia & Pacific	9	13	16	18	25	31	50
Europe & Central Asia	1	2	2	2	3	4	9
Latin America & Caribbean	2	3	4	5	9	14	33
Middle East & North Africa	0	1	1	1	5	9	32
South Asia	15	24	32	35	50	62	86
Sub-Saharan Africa	35	43	48	50	61	68	83
World	11	16	19	21	29	35	52

Table 3: Parameters Used in Sectoral Adjustment of PPP's for Select Countries

	2011			**2005**		
	Ratio of Urban to Rural Poverty Lines	**Share of Urban ICP Data Collection Points**	**PPP-National**	**Ratio of Urban to Rural Poverty Lines**	**Share of Urban ICP Data Collection Points**	**PPP-National**
China	1.29	0.76	3.7	1.37	1	4.09
India	1.22	0.74	14.98	1.51	0.72	15.6
Indonesia	1.19	0.61	4091.9	1.41	0.57	4192

Table 4: Poverty headcount and ratio as defined by $1.25 (2005 PPP) poverty line using sectoral vs. national poverty lines for 2011.

	1990*		2011	
	% Poor	# of Poor (Millions)	% Poor	# of Poor (Millions)
Country	Bank's Adjusted PPP's			
China	60.4	686.0	6.4	86.0
India	49.3	454.0	24.1	294.5
Indonesia	54.3	97.0	16.2	39.5
Total		1237.0		420.0
	ICP National PPP's			
China	71.6	813.5	13.2	177.5
India	65.7	604.7	39.9	487.7
Indonesia	63.4	113.3	19.3	47.1
Total		1531.5		712.3

Table 5: Percentage of Poor (defined by $2.50 2005 PPP Consumption Poverty line) in select countries.

Country	Survey Year	Income Survey with no adjustment	Income Survey with means adjusted	Consumption Survey
Angola	2009	71.5	76.9	80.2
Bolivia	2000	46.3	48.9	32.9
Nepal	2010	66.7	71.6	70.7
Uganda	2000	81.3	83.5	80.3
Uzbekistan	2001	81.3	89.5	96.2

Table 6: Comparison of Estimates of Headcount Ratio (% Poor) by Regions between GCIP and World Bank

	2011				2000				1990			
	GCIP		World Bank		GCIP		World Bank*		GCIP		World Bank	
	$1.25 2005 PPP	$1.9 2011 PPP	$1.25 2005 PPP	$1.9 2011 PPP	$1.25 2005 PPP	$1.9 2011 PPP	$1.25 2005 PPP	$1.9 2011 PPP	$1.25 2005 PPP	$1.9 2011 PPP	$1.25 2005 PPP	$1.9 2011 PPP
East Asia & Pacific	12.2	13.5	7.9	8.5	36.4	39.5	35.9	37.5	57.0	59.9	57.0	60.8
Europe & Central Asia	2.3	2.0	0.5	2.7	5.2	6.0	3.8	7.8	3.1	3.2	1.5	1.9
Latin America & Caribbean	2.3	3.3	4.6	6.5	4.7	6.8	11.0	14.1	5.8	9.1	12.6	17.7
Middle East & North Africa	5.7	2.0	1.7		3.2	2.5	4.8		4.7	3.3	5.8	
South Asia	34.5	27.0	24.5	22.3	51.6	43.4	45.0	41.2	65.3	57.4	54.1	50.6
Sub-Saharan Africa	48.7	46.1	46.9	44.3	59.5	55.8	59.4	58.1	55.9	52.8	56.8	56.0
World	19.1	17.2	14.2	14.5	31.8	30.8	29.0	29.0	40.4	39.6	36.5	37.1

* World Bank numbers are from 1999

Note: GCIP uses ICP PPP's for all countries. World Bank uses separate rural and urban PPP's for India, Indonesia and China. GCIP converts both means and distribution from income surveys into equivalent consumption means and distributions, while Bank does not make any such adjustments. The World Bank estimates are from Table 8 Pg. 52 Ferreira et.al (2015).

Table 7: GCIP Headcount Ratio Estimates for Alternate 2011 PPP Poverty Lines (General Consumption (GC) and Food PPPs): INITIAL, Use with caution.

	$1.25 2005 PPP	$1.90 2011 PPP	$5.04 2011 PPP	$2.52 2011 PPP	$5.04 2011 Food PPP	$2.52 2011 Food PPP
2012						
East Asia & Pacific	10.9	12.1	42.1	19.3	54.9	30.1
Europe & Central Asia	1.8	1.5	7.7	2.4	9.5	2.1
Latin America & Caribbean	2.2	2.9	26.2	6.1	28.8	8.9
Middle East & North Africa	7.7	3.7	36.2	8.5	59.6	27.1
North America	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	30.5	23.3	81.8	41.7	90.9	66.2
Sub-Saharan Africa	47.7	45.1	81.8	58.2	83.9	72.3
World	17.7	15.9	48.5	24.9	56.6	37.1
2005						
East Asia & Pacific	22.9	25.5	63.2	36.5	73.0	50.9
Europe & Central Asia	2.9	2.9	11.6	4.2	15.7	4.0
Latin America & Caribbean	3.3	6.1	39.6	13.0	40.3	15.5
Middle East & North Africa	2.3	1.3	35.3	5.5	65.4	25.2
North America	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	49.5	41.4	90.1	60.9	96.1	81.6
Sub-Saharan Africa	54.4	51.2	83.7	64.1	84.0	74.9
World	26.2	25.1	58.4	35.7	65.8	48.2
2000						
East Asia & Pacific	36.4	39.5	74.4	51.7	80.9	64.8
Europe & Central Asia	5.2	6.0	24.7	9.5	30.2	13.5
Latin America & Caribbean	4.7	6.8	38.7	13.5	40.0	16.7
Middle East & North Africa	3.2	2.5	37.6	7.6	65.4	26.5
North America	0.0	0.0	0.0	0.0	0.0	0.0

South Asia	51.6	43.4	91.1	63	96.3	82.6
Sub-Saharan Africa	59.5	55.8	84.3	67.1	84.0	75.5
World	31.8	30.8	63.6	42.0	70	54.1
			1990			
East Asia & Pacific	57.0	59.9	82.9	69.8	86.2	78.1
Europe & Central Asia	3.1	3.2	18.9	5.7	25.4	9.3
Latin America & Caribbean	5.8	9.1	42.2	16.1	44.9	20.3
Middle East & North Africa	4.7	3.3	41.7	9.1	68.2	30.3
North America	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	65.3	57.4	94.4	75.1	97.0	88.6
Sub-Saharan Africa	55.9	52.8	82.1	64.0	82.4	72.7
World	40.4	39.6	65.4	49.2	69.5	57.7
			1980			
East Asia & Pacific	78.3	77.9	84.7	80.0	87.1	82.9
Europe & Central Asia	0.7	1.2	16.4	3.5	25.5	9.1
Latin America & Caribbean	4.2	6.5	32.2	10.9	35.8	15.4
Middle East & North Africa	10.3	7.3	47.2	14.8	69.5	36.7
North America	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	65.8	57.5	94.4	75.8	96.9	89.0
Sub-Saharan Africa	47.8	45.7	76.3	56.6	78.5	66.1
World	47.5	45.5	64.7	52.2	68.9	59.0
Developing World	62.0	59.3	81.6	67.7	85.3	75.4

Table 8: GCIP Headcount Estimates (in Millions) for Alternate 2011 PPP Poverty Lines: INITIAL, Use with caution.

	$1.25 2005 PPP	$1.90 2011 PPP	$5.04 2011 PPP	$2.52 2011 PPP	$5.04 2011 Food PPP	$2.52 2011 Food PPP
2012						
East Asia & Pacific	234.4	260.6	904.9	414.1	1179.5	646.6
Europe & Central Asia	16.0	13.2	68.6	21.8	84.9	18.8
Latin America & Caribbean	12.8	17.2	155.0	36.4	170.7	52.7
Middle East & North Africa	25.8	12.4	122.1	28.6	200.6	91.4
North America	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	503.1	384.4	1348.8	687.9	1499.5	1092.1
Sub-Saharan Africa	421.6	398.7	723.5	514.4	741.5	639.4
World	1213.8	1086.5	3322.9	1703.2	3876.8	2541.0
2005						
East Asia & Pacific	468.6	522.6	1295.9	748.8	1495.8	1042.3
Europe & Central Asia	25.6	25.5	101.1	36.3	136.4	35.1
Latin America & Caribbean	17.9	33.3	215.9	71.0	219.5	84.4
Middle East & North Africa	6.7	3.9	105.2	16.4	194.9	75.3
North America	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	742.1	620	1350.1	912.8	1417.4	1202.5
Sub-Saharan Africa	399.8	376.7	615.1	470.8	617.3	550.5
World	1660.76	1581.93	3683.3	2256.1	4081.3	2990
2000						
East Asia & Pacific	715.8	777.5	1463.5	1017.2	1590.5	1275.1
Europe & Central Asia	44.7	51.2	212.7	81.9	259.5	115.9
Latin America & Caribbean	23.8	34.6	197.0	68.6	203.6	85.1
Middle East & North Africa	8.6	6.9	103.2	20.9	179.4	72.7

North America	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	712.6	599.5	1258.5	871.1	1311	1124.5
Sub-Saharan Africa	384.5	360.3	544.1	433.3	542.2	487.4
World	1890	1830	3779.04	2492.8	4086.3	3160.8
			1990			
East Asia & Pacific	997.6	1048.7	1451.0	1222.5	1509.3	1367.6
Europe & Central Asia	25.8	26.2	156.3	47.4	210.3	77.4
Latin America & Caribbean	24.9	38.9	181.2	69.2	192.9	87.3
Middle East & North Africa	10.6	7.5	93.4	20.3	152.7	67.9
North America	0.0	0.0	0.0	0.0	0.0	0.0
South Asia	741.5	651.2	1071.2	852.6	1101.3	1005.3
Sub-Saharan Africa	274.9	259.6	403.3	314.6	404.8	357.4
World	2075.3	2032.1	3356.5	2526.6	3571.3	2962.8
			1980			
East Asia & Pacific	1174.5	1168.6	1271.0	1200.3	1307.4	1244
Europe & Central Asia	4.7	7.7	103.5	22.4	161.3	57.2
Latin America & Caribbean	14.8	22.7	112.6	38.1	125.2	53.8
Middle East & North Africa	17.8	12.6	81.4	25.6	120	63.4
North America	0.0	0.0	0.0	0.0	0	0
South Asia	595.2	520.0	853.6	685.6	876.3	804.7
Sub-Saharan Africa	176.5	168.5	281.5	208.9	289.4	243.9
World	1983.4	1900.1	2703.7	2180.9	2879.62	2467.03

Table 9: Initial[33] GCIP Estimates of Headcount Ratio by Country for Alternate 2011 PPP Poverty Lines for the year 2012 (for Developing Countries).: Use with special caution

	$1.25 2005 PPP	$1.90 2011 PPP	$5.04 2011 PPP	$2.52 2011 PPP	$5.04 2011 Food PPP	$2.52 2011 Food PPP
Albania	0	0	32.2	1.7	54.7	11.2
Algeria	1.4	1	33.8	6.7	62.8	22.5
Angola	38	25.6	73.5	37.9	89.1	62.6
Argentina	0	0	14.5	0		
Armenia	0.9	1.1	51.2	9	84.7	37
Azerbaijan	0	0	6.1	0	0	0
Bangladesh	36.8	31	89.7	52.9	96.7	81.7
Belarus	0	0	0	0	4.7	0
Belize	4	5.5	40.2	12.4	65.8	30.5
Benin	50.6	51.7	89.3	66.1	96	84.7
Bhutan	1.2	0.3	38.8	7.5	61.2	21.3
Bolivia	6.1	8.6	40.9	15.3	61.1	29
Bosnia and Herzegovina	0	0	0	0	6.6	0
Botswana	9.8	13.4	46.2	21	61.7	33.9
Brazil	0	0	17.7	1		
Bulgaria	0	0	10.9	0	25.3	3.4
Burkina Faso	40.3	50.5	92	67.5	97.6	89.1
Burundi	69.2	64.4	95.7	79.4	98.8	93.4
Cabo Verde	11	6.5	49.7	16	71.9	35.7
Cambodia	10.2	6.5	73.4	21.9	90.5	54.2
Cameroon	22.9	22.5	73.3	36.8	87.6	60.2
Central African Republic	56.7	59.1	89.9	70.7	96.4	88.2
Chad	34.1	35.7	82.2	49.7	93.4	73.8
China	12.2	14.8	44.7	21.7	57.9	31.7
Colombia	0	1.8	32.7	8	47.5	16.9
Comoros	44	41.7	78.2	53.2	88.9	71.4
Congo, Dem. Rep.	82.3	89.2	98.6	93.8	99.7	98.3
Congo, Rep.	35.6	31.4	79.9	45.3	94.8	76.5
Costa Rica	0	0	9.9	0	24	2.7
Cote d'Ivoire	33.2	29.5	76.9	42.7	91	68
Djibouti	18.9	20.4	62.1	29.7	80.2	47.7
Dominican Republic	0	0	26.8	3.5	41.8	11.7
Ecuador	0.1	4.7	39.9	11.7	59.6	24.6
Egypt	24.3	12.9	53.8	22	81.6	51.4
El Salvador	0	0	0	0	0	0
Ethiopia	28.3	29	88.6	48.8	96.8	81

[33] User discretion is especially advised with country estimates, as errors might exist due to unidentified data issues in some country-level data.

Fiji	4.8	2.4	41.7	8.5	54.2	16.3
Gabon	0.5	1.8	35.1	8.2	68.2	30.5
Gambia	38	47.9	86.6	61.5	95.7	84.2
Georgia	14.9	16.3	60.6	25.7	83.5	50
Ghana	10	22.3	78.4	38.6	0	0
Guatemala	11.4	8.9	46.6	17.2	66.3	33.3
Guinea	40.7	35.2	90	54.6	98.6	91
Guinea-Bissau	43.9	48	93	66.8	97.9	88.3
Guyana	8.6	11.2	43.8	17.5		
Haiti	56.8	56.8	90.8	70	95.9	84.7
Honduras	9.4	11.2	47.5	19.3	63.7	32
Hungary	0	0	4.7	0	13.8	0
India	34.1	26	83.9	45	92.3	67
Indonesia	16.8	15.2	69.4	30.2	85	54.2
Iran	0	0	23	2.7	47.8	14.3
Iraq	3.2	0	36.5	3.2	73.5	23.3
Jamaica	0	0	28	3.7	52	19.2
Jordan	0	0	1.4	0	27.6	0
Kazakhstan	0	0	6.5	0	17.8	0
Kenya	33.3	23.7	70.1	36.3	86.8	60
Kyrgyz Republic	5	6.3	57	15.4	87.6	48.2
Lao	30.2	21.8	81.5	39	95.3	77
Lesotho	53.8	59.4	88.6	69.8	94.5	82.8
Liberia	62.6	60.3	95.3	76.4	98.7	93.1
Macedonia, FYR	0	0	27.1	4.5	39.5	11.4
Madagascar	88.6	82.2	98	90.4	99.3	97
Malawi	61.2	71.9	95.9	83	98.7	94.8
Malaysia	0	0	3	0	17.9	0
Maldives	0	0	21.2	0.5	24.5	1.9
Mali	53.2	51.2	94	69.4	98.4	87.8
Mauritania	26.3	25	77.5	39.1	92.3	68.5
Mauritius	0	0	15.7	0	35.3	5.2
Mexico	1.1	2.6	27.5	5.7	31.1	7.1
Moldova	0	0	20	0	42.9	6.6
Montenegro	0	0	7.4	0	18	0.4
Morocco	1.2	1.3	31.5	4.2	60.6	19.9
Mozambique	52.6	61	93.6	74.7	0	0
Namibia	0.7	1.1	45.3	7.5	70	30.9
Nepal	16	11	72.5	25.5	89.1	53
Nicaragua	7.5	9.4	42.9	16.1	67.7	33.3
Niger	40.6	49.8	95.2	71.4	98.9	93.3
Nigeria	66.1	58.5	92.5	72.2	98.1	91.2
Pakistan	10.8	6.8	78.2	23.1	94.3	64.9
Panama	0	0	21.6	3.1	38	11.6

Papua New Guinea	35.7	52	86.9	64.5		
Paraguay	0	0.6	25	5.4	40.7	14
Peru	0	3.1	34.4	9.2	50	18.1
Philippines	19	14.3	61.9	26.6	78	45.8
Romania	0	0	20	0	33.2	4
Rwanda	59.4	59.7	91.8	73	96.4	87.7
Sao Tome and Principe	41.4	30.7	85.9	48.2	96.5	78.8
Senegal	34.5	37.5	85.5	53.3	95.1	78.7
Serbia	0	0	7.3	0	18.2	0.1
Seychelles	0	0.3	18.3	1	41.7	7.1
Sierra Leone	56.2	55	94.3	72.7	98.7	93.3
South Africa	27.6	30.3	64.8	39.9	73.3	49.7
Sri Lanka	2.9	1.4	43.9	6.3	73.9	30
St. Lucia	20	37	84.4	52.4	92.5	71
Sudan	17.2	0	0	0	0	0
Suriname	0	0	20.7	2.1	46	16.2
Swaziland	42.2	45.5	81.7	57.4	90	72.3
Syrian Arab Republic	0	0	37.1	0		
Taiwan	0	0	0	0	0	0
Tajikistan	2.9	19.5	82.4	36.1	95.8	72.7
Tanzania	42.1	47.6	92	65.9	97.3	87.2
Thailand	0	0	14.3	0	36.8	4.6
Timor-Leste	21.8	25.4	88.5	46.8		
Togo	51	52.1	87.6	64.8	95.8	84.2
Tunisia	0	0	25.1	4	49.1	14.7
Turkey	0	0	12.4	0.1	22.6	4.4
Turkmenistan	0	0	0	0		
Uganda	37.8	42.2	85.7	57.4	93.4	76.3
Ukraine	0	0	0	0	14.2	0
Uzbekistan	49.8	35.2	89.9	54.8		
Venezuela	6.6	6.4	42.3	13.5	0	0
Vietnam	1.9	1.7	35.8	7.4	64.4	22.5
West Bank and Gaza	0	0	4.2	0	14.5	0
Yemen, Rep.	17.3	3.9	58.7	12.7	91.3	59.8
Zambia	73.9	63.1	91	74.1	95.7	86.6