

## **National and International Poverty Lines: An Overview** **Don Sillers, U.S. Agency for International Development**

This paper offers a non-technical introduction to poverty lines, including national lines as well as the international “dollar-a-day” line used to track global progress in reducing extreme poverty. The aim is to provide a basic understanding of (1) how poverty lines are established and used; (2) the major sources of controversy surrounding the measurement and interpretation of poverty data; and (3) possible means of improving the measurement of poverty. In each case, the goal is to promote a broad understanding of the basic issues, rather than to offer a full review of the many technical issues lying beneath the surface.

**Background.** In 1996, the member nations of the Development Assistance Committee (DAC) established a set of International Development Goals, intended to galvanize efforts toward major development challenges and to establish benchmarks for tracking progress toward overcoming those challenges.<sup>1</sup> The first of these goals was “a reduction by one-half in the proportion of people living in extreme poverty by 2015,” relative to the base year of 1990. Four years later, the United Nations Millennium Declaration of 2000 re-endorsed the poverty goal as the first of the Millennium Development Goals (MDGs).<sup>2</sup> Both versions of the international poverty goal refer to the same standard of “extreme poverty:” per capita income of less than \$370 per year, or roughly \$1 per day. Much effort has gone into improving the methodology and data base needed to track progress toward meeting the poverty reduction goal. Despite considerable success with this effort, enormous controversy persists regarding whether or not satisfactory progress is being made toward achieving the poverty goal, and why or why not.

Why is global poverty so hard to measure? Two major factors stand out. First, in many developing countries, the household surveys that supply the raw data are conducted infrequently, use different and sometimes shifting methodologies, gather less-than-adequate kinds and amounts of data, and are analyzed using different levels of effort and technical competence. Second, the methodology used to link country data to the international “dollar-a-day” extreme poverty line involves several steps, each requiring serious compromises to bridge the gap between the kind of data needed to provide definitive answers and the data actually available.

**National poverty lines.** The “dollar-a-day” extreme poverty line represents an extension of the national poverty lines long used by governments to measure the incidence and severity of poverty among the population and to track progress in reducing poverty. National poverty lines are generally set with reference to the typical living conditions prevailing within a country’s borders. This practice reflects the broader point that the notion of poverty – “a condition of unacceptable deprivation” – is inherently a social construct. The standard of living deemed “unacceptable” generally rises alongside the living standards people see around them, which they come to view as the norm. In particular, richer countries tend to use higher poverty lines: the living conditions faced by a family living below the national poverty line in Bangladesh are likely to be very different from those of an “officially” poor family in Bolivia or Belgium.

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<sup>1</sup>*Shaping the 21<sup>st</sup> Century: The Contribution of Development Cooperation.* Organization for Economic Cooperation and Development, Development Assistance Committee, May 1996.

<sup>2</sup> Alongside the poverty goal previously established, the Millennium Summit added a parallel goal for halving the incidence of hunger.

The most common approach to setting national poverty lines is the “cost of basic needs” approach. This approach starts by identifying a minimally acceptable diet, based on local knowledge of the foods consumed by poor households; in low-income countries, this minimum diet is usually dominated by cheap sources of calories, with little other nutritional content. Next, the cost of obtaining this minimum diet at current market prices is calculated. Finally, an additional allowance is made for non-food necessities.<sup>3</sup> The resulting minimum expenditure figure – the estimated cost of obtaining a minimally adequate diet plus other necessities – forms the national poverty line. Thereafter, data from household surveys are analyzed to identify how many households are spending less per capita than the poverty line, and by how much; these figures provide the basis for the headcount poverty ratio and other poverty statistics.

Several points should be noted regarding national poverty lines.

First, although the procedure just described might appear to lead to similar poverty lines in different countries, it does not. In part, this is because the notion of nutritional adequacy is itself a function of prevailing social and economic conditions: a diet composed exclusively of starchy staples, a few beans, and a few vegetables might seem a natural feature of poverty in low-income countries, whereas richer countries presume that dietary adequacy involves greater variety, higher quality, and a greater role for prepared foods. More important, the non-food component of the poverty-line budget tends to rise with national income: for example, Indonesia sets its poverty line on the assumption that rural and urban households spend 80 and 77 percent of their income on food, respectively (Ravallion, 1994). In contrast, the United States poverty line assumes that food represents only a third of the poor household’s expenditures, with the remaining 67 percent devoted to non-food items (Fisher, 1997).

Second, as the previous point suggests, many countries publish separate urban and rural poverty lines. In principal, doing so reflects the different prices and spending patterns found in urban and rural areas. In practice, it is often difficult to ensure that the two poverty lines represent a similar standard of living: research suggests that urban households spend more per calorie than do rural households with similar real incomes, but consume a more varied and nourishing diet. Urban poverty lines are typically set in a way that recognizes the higher prices paid, but ignores the better quality obtained. As a result, urban households are counted as poorer than they really are, relative to rural households (Deaton, 2001). Setting separate poverty lines requires that a sharp statistical distinction be drawn between urban and rural areas, whereas the reality is generally less clear-cut (Fox, 2003).

Third, a substantial minority of developing countries base their household surveys on household income, rather than household expenditure as described above.<sup>4</sup> Measuring household income is more difficult than measuring expenditures, so income-based surveys generally contain larger errors.

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<sup>3</sup> Countries using this general approach differ in how they factor in the non-food portion of the budget: the preferred method is to use data from household expenditure surveys to estimate the actual non-food expenditures of an average household whose spending on food just equals the minimum food budget (Ravallion 1994).

<sup>4</sup> Richard Adams (2003) recently assembled a set of household survey data from 50 developing and transitional countries, of which 18 were based on household income rather than expenditures.

Fourth, to be useful for tracking changes in poverty over time, it is important that the real value of the poverty line be held fixed. In principal, this should be accomplished by adjusting the poverty line for changes in the prices of those items on which the poor spend their income. In practice, the adjustment is usually based on changes in the overall price level, such as the consumer price index. To the extent that the poor spend their income on different mix of goods and services than do the general public, this practice can cause the real value of the poverty line to “drift.” In particular, the continuing decline in the price of staple foods relative to other goods and services seen in recent decades has led to a corresponding rise in the real value of any poverty line that is adjusted for general consumer price inflation, together with a corresponding overstatement of the number of people living under the original poverty line. Still, on balance it is probably better to live with this gradual drift than to keep updating the poverty line from scratch every few years: the latter approach risks undermining the basic goal of measuring progress in reducing poverty relative to a fixed standard (Deaton 2001, 2002).

**The “dollar a day” poverty line: toward international comparability.** For tracking poverty trends within a particular country, the precise level of the national poverty line is less important than the quality of the survey data used to track shifts in the distribution of household expenditures relative to the chosen line. So long as household expenditure data are well-measured and routinely updated, any fixed poverty line set along the general lines outlined above should do the job. However, the fact that poverty lines differ from one country to another makes it quite difficult to obtain meaningful comparisons of the number or share of poor people in any two countries, much less a meaningful estimate of the total number or share of the world’s population living in poverty. This situation poses an obvious challenge to any effort to track progress toward the Millennium Development Goal for poverty reduction, and for assessing the success of donor strategies focused on reducing global poverty.

To address this challenge, World Bank analysts working on the 1990 *World Development Report* developed the original “dollar-a-day” poverty line, which provided the first plausible methodology for linking poverty lines and poverty measures across countries.<sup>5</sup> To be more precise, the product of this effort was the “one-dollar-a-day at purchasing power parity at 1985 prices” line: adjusting for differences in the purchasing power of different currencies allows data from different countries to be placed on a common footing, at the cost of certain methodological complications. For concision, and to keep the purchasing power parity adjustment in plain sight, the phrase “one-dollar-a-day at purchasing power parity at 1985 prices” will henceforth be abbreviated as <sub>1985</sub>P\$1/day.

To understand both the advantages and complications involved in using the <sub>1985</sub>P\$1/day poverty line, a brief explanation of purchasing power parity may be helpful. It has long been recognized that official exchange rates give a poor measure of relative price levels in different countries, especially countries at very different levels of development. Part of the difference results from trade barriers and transport costs, but a much greater part from different prices of non-traded items. In particular, labor-intensive services tend to be cheaper in poor countries, meaning that comparisons based on official exchange rates tend to exaggerate the differences in incomes between rich and poor countries – the more so, the poorer the country. Using detailed information from price surveys, analysts have constructed purchasing power parity (PPP) exchange rates which provide a more accurate picture of relative incomes in different countries;

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<sup>5</sup> The analytical effort was led by Martin Ravallion and Shaohua Chen.

adjusted for PPP, an “international dollar” is supposed to provide the same purchasing power over each country’s output of goods and services as a U.S. dollar provides in the United States. For the low-income countries, where the great majority of the world’s extremely poor people live, PPP-adjusted exchange rates provide a dramatically different picture of living standards than do official exchange rates. For example, at official exchange rates, per capita income in Angola and India was \$710 and \$470, respectively in 2002. In international dollars, per capita income for the same year was estimated at P\$1,840 and P\$2,650, respectively – still far below income levels in the developed countries, but no longer disappearingly low (World Bank 2002). Moreover, as this example illustrates, adjusting for differences in purchasing power can completely change the picture of relative living standards among different developing countries: in this case, comparisons based on official exchange rates make Angola appear substantially richer than India, whereas using PPP-adjusted exchange rates dramatically reverses this ranking.

The  $_{1985}$ P\$1/day poverty line emerged from an effort to find an internationally meaningful poverty line, as an input to the 1990 *World Development Report*. Ravallion et. al. examined 34 existing national poverty lines for a wide range of developing and developed countries. To put national poverty lines stated in local currency into a common standard, they first converted all poverty lines into international dollars at 1985 prices ( $_{1985}$ P\$), and plotted those poverty lines against per capita GDP in the same units.

Two important facts stood out from this plot. First, poverty lines for upper-income and middle-income countries tended to rise fairly steadily, in rough proportion to average consumption levels in those countries. Second, this pattern did not hold true for the poorest countries: rather, poverty lines for the 12 poorest countries in the sample were tightly clustered within a fairly narrow range. Averaging the highest poverty lines within this sample provided an “upper poverty line” of  $_{1985}$ P\$370 per year per capita. A second, “lower poverty line” was set toward the lower end of this range, at  $_{1985}$ P\$275 per year per capita, a figure that roughly corresponded to India’s national poverty line.<sup>6</sup> The 1990 World Development Report used the upper poverty line to estimate the number of people living in “poverty” in different regions, and the lower poverty line to measure the number of those living in “extreme poverty” (World Bank 1990).

Although either of these lines might, in principle, provide a suitable measure for tracking changes in world poverty, in fact the upper poverty line has prevailed, while the lower poverty line quickly faded from view. The success of the upper,  $_{1985}$ P\$370/year poverty line probably owes much to the fact that it falls within 1 percent of  $_{1985}$ P\$1/day, and was quickly rounded off and re-labeled as the “dollar-a-day” line, usually without the mysterious qualification “in purchasing power parity terms at 1985 prices.” Deaton (2001) captures the advantages clearly: “It is simple, easy to remember, and applies equally to all countries. It is denominated in a currency that is familiar to the relatively wealthy people who are the primary users of the measures, and who are the primary target for rhetoric based on them. The \$1-a-day [line] was originally selected as being representative of poverty lines in use in low-income countries...and thus is anchored in actual practice.” These rhetorical advantages also help account for the fact that neither a significant subsequent change in the way the poverty line is computed, nor nearly three decades of change in the value of the U.S. dollar, have changed the dollar-a-day *label*: the only serious competitor for attention within the international community is the \$2-a-day poverty

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<sup>6</sup> In both cases, the line was defined with reference to *consumption*, rather than income.

line, a much more lenient standard but one that is similarly easy for rich-country stakeholders in the development process to remember and relate to.

As just noted, the method used for calculating the international poverty line has changed since its inception. This change involved three elements. First, an expanded set of PPP price comparisons was used to update the basis for the international dollar from 1985 to 1993. Second, whereas the original PPP exchange rates were set to equalize the purchasing power of an international dollar over each country's overall production of goods and services (gross domestic product or GDP), the new poverty line used special PPP rates that equalized purchasing power over each country's *consumption* expenditures. Third, with these new PPP comparisons in hand, Ravallion and colleagues repeated the earlier process of choosing an international poverty based on actual national poverty lines, using the same set of countries used to derive the 1985 P\$1/day line. The researchers set the new line at the median of the 10 lowest poverty lines in that set: the result was \$1.08 per day at 1993 consumption purchasing power parity, or 1993 P\$1.08/day. Purely by coincidence, this new measure yielded an estimate of the number of people living in poverty in 1993 almost identical to that found using the original 1985 P\$1/day line: 1.3 billion. Since then, the 1993 P\$1.08/day line has been used as the international standard for measuring extreme poverty, though still labeled the "dollar-a-day" line (Chen and Ravallion, 2001).

Once the international poverty line is set in international dollars, it can be translated into a local-currency equivalent for each country using that country's PPP exchange rate for the base year (currently, 1993). Thereafter, the local-currency poverty line is adjusted for inflation using the local consumer price deflator. For example, the Honduran equivalent of \$1.08 per day at 1993 purchasing power parity and 1993 Honduran consumer prices was 2.098 lempiras per day.<sup>7</sup> By October 2004, inflation had increased this value to 9.76 lempiras per day.<sup>8</sup> Using the same approach, the international poverty line can be converted into a local-currency equivalent for each country, at current consumer prices.<sup>9</sup> National poverty statistics relative to the international poverty line can then be computed using data from local household surveys, regarding the share of the population whose income or expenditure falls below the local equivalent of the international poverty line, and by how far. Regional and global statistics can then be derived by summing up country-specific poverty data.

**International poverty statistics: areas of controversy and future directions.** The procedure just described sounds straightforward, even mechanical. If so, why have the international poverty estimates obtained using this method been so controversial? A full answer to this question is beyond the scope of this note, but several points provide a general sense of the sources of controversy.

**Problems with PPPs.** Most of the problems with the international poverty estimates result from the difficulties involved in coming up with appropriate PPP exchange rates, capable of setting

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<sup>7</sup> Computed by multiplying \$1.08 times Honduras' 1993 consumption PPP exchange rate (1.943), published at [www.worldbank.org/research/povmonitor/PPP1993.htm](http://www.worldbank.org/research/povmonitor/PPP1993.htm).

<sup>8</sup> Computed by multiplying the figure for 1993 by the ratio of the Honduran consumer price index for October 2004 (140.7) to the value of the same index for 1993 (30.25). These data are published on a monthly basis in the IMF *International Financial Statistics*.

<sup>9</sup> For operational purposes, the Annex shows the results of similar calculations for other low- and lower-middle income countries.

local-currency poverty lines that are truly equivalent. That this is difficult should not really be surprising: success requires calculating the number of Indian rupees needed to allow a Guatemalan peasant, transported to Uttar Pradesh, to experience the same quality of life as in her original surroundings, and so forth for all other pairs of countries. Merely posing the question helps make clear the difficulty of finding a convincing answer (Deaton 2001).

In practice, estimating PPP exchange rates involves a rather complicated chain of calculations, with each link of the chain creating some room for error. For two countries that produce and consume a similar range of products and services in roughly similar proportions, the resulting errors tend to be fairly limited. In contrast, countries located in different regions of the world and living at very different levels of development tend to produce and consume quite different sets of goods and services, which may also differ considerably in terms of quality. To (partially) get around this problem, PPP calculations chain together a series of price comparisons between pairs of individual countries, in much the same way that each twig on a tree is linked to the trunk through a series of connections between increasingly larger branches (Rao, 2001). Like the connection between twigs on different branches of a tree, the calculated PPP exchange rate between any pair of developing countries tends to be quite indirect. Under these circumstances, even the most careful and conscientious efforts to set poverty lines with the same purchasing power will produce results that may reasonably be taken with a grain of salt.

An additional source of error arises from the fact that many developing countries have never participated in the detailed price surveys needed to determine PPP exchange rates against the international dollar. Where this is the case, regression techniques are used to provide rough estimates of PPP exchange rates for the excluded countries, based on information from other countries at a similar level of development that have carried out the necessary price surveys. This problem is gradually being resolved, as continuing rounds of price surveys under the International Comparison Program (ICP) extend to greater numbers of developing and transition countries: the 1993 PPP figures came from data collected from 110 countries, nearly double the 60 covered in the 1985 round. Still, this leaves a large number of (mainly smaller and poorer) countries for which only regression-based PPP estimates are available. Moreover, the results of the shift from the 1985 PPP estimates to the expanded set of 1993 estimates produced dramatic changes in the poverty lines and the estimated incidence of poverty for many poor countries, suggesting that the regression-based estimates contained fairly large errors (Deaton, 2001).<sup>10</sup> Indeed, the World Bank recently changed its published PPP rates for four countries back to the values estimated from the 1985 round, responding to persistent complaints that for these countries at least, the new estimates were less realistic than the old ones.

Finally, it must be borne in mind that current PPP estimates are based on the *overall* consumption pattern of each pair of countries. This raises two problems when using PPPs to calculate the local-currency equivalent of the international extreme poverty line: first, the composition of the consumption basket of poor households is likely to differ considerably from that of the non-poor; second, the fact that the non-poor spend more means that the spending patterns of the poor tend to receive relatively little weight in the national consumption basket. Together, these factors create the possibility that changes in the prices of goods and services that play little role in the spending patterns of the poor (such as cars or household servants) can

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<sup>10</sup> As previously noted, the estimated number of poor people worldwide produced by the two sets of PPPs was roughly equal, despite these large changes at the country level.

produce relatively large changes in national PPPs, and thus in the poverty lines computed using those PPPs. The same point applies in reverse to changes in the prices of staple foods and other items on which the poor do spend a large share of their income. Considerable attention is currently being paid to the possibility of computing a parallel set of “poverty” PPPs based on the consumption patterns of the poor, but movement along these lines is not likely to be rapid. In the meantime, users should regard the poverty lines and the poverty numbers produced with existing PPPs as the best that can be done with currently available data, rather than as definitive results (Rao, 2002).

**Problems with household surveys.** A second source of problems in nailing down precise poverty numbers are the household surveys used to estimate the number of households living below the poverty line, whether national or the local-currency equivalent of the international line. In certain cases, changes in sampling methodology have made it difficult to disentangle the extent to which changes in measured poverty incidence reflect actual changes in the living conditions of the poor, versus the effects of the change in methodology. The most notorious recent example was that of India, which began applying a new survey methodology in the late 1990s. Data from the new surveys showed poverty rising during the 1990s, despite relatively rapid growth in national income, leading to widespread charges that India’s economic reforms had made life worse for the poor. Subsequent analysis of the household survey data suggests that these results were mainly an artifact of the change in sampling methodology, and that the incidence of poverty had actually declined substantially over the decade – slightly less than indicated by the national accounts data, but far more than had been suggested by the household survey data as originally analyzed. Nevertheless, the issue remains intensely controversial, with proponents and opponents of reform tending to rely on the poverty estimates that back up their positions (Deaton, 2002).

A second issue with household surveys concerns the possibility that some households are either refusing to participate in the surveys at all, or are systematically under-reporting their incomes or consumption levels. In most cases, attention focuses on the behavior of households at the upper end of the income distribution; to the extent that these households are the ones whose incomes are most severely under-measured, it opens the possibility that shifts in the income distribution are taking place without being fully reflected in official statistics of household consumption and income distribution. This might not be a major problem if the degree of under-reporting were constant, but several countries have experienced a large and growing divergence between the income or consumption measured by household surveys, and that measured by national accounts data. The divergence has led to vigorous controversy over which data – national income accounts or household surveys – should be regarded as more reliable for purposes of estimating changes in poverty, with strong advocates on both sides of the question. In many countries, as in India, the two sources can lead to very different conclusions regarding the extent to which progress against poverty is being achieved (compare, for example, Bhalla, 2002 with Chen and Ravallion, 2001).

A third issue, partly related to the second, concerns the relative weight placed on household survey data versus national income accounts in tracking international changes in poverty over time. As just suggested, there is room for doubt about the accuracy of household survey data in many countries. Nevertheless, it must be emphasized that household surveys provide the *only* direct information on the distribution of income and consumption. Unfortunately, most developing countries conduct household surveys quite infrequently, in contrast to the national

income data which they normally publish on an annual basis. As a result, any effort to track changes in global poverty must decide whether to restrict attention to information from household surveys as it emerges, or to use the growth of national income, combined with some assumption about how distribution of income is changing, to bridge the periods between household surveys. Here again, the choice of methodology can lead to radically different conclusions about the pace of poverty reduction in the world, with strong advocates of different approaches. In general, published estimates that have relied exclusively on new household survey data have shown respectable progress in reducing world poverty, with a good chance of reaching the MDG poverty goal by 2015 (World Bank 2003, Chen and Ravallion 2001). In contrast, those that incorporate national income changes have suggested much more rapid progress, concluding that the MDG poverty goal has already been attained by 2001. (Sala-i-Martin 2002, Bhalla 2002)

**Future directions and ongoing issues.** Experience with current data sources and methods of estimating poverty numbers has suggested room for improvement in certain areas. The most urgent priority is to expand the range of countries – especially poor countries – for which PPP exchange rates are based on direct measurement of the actual local prices of goods and services rather than being “guesstimated” using regression methods. A major effort along these lines is currently underway: as of this writing, the International Comparison Project is nearing the completion of the 2003-2006 (“ICP 2004”) round of price surveys, which will provide direct PPP data for around 150 countries worldwide. Most of the 40 countries added since the 1993 round are developing countries, with an especially large expansion in the number of participating countries in sub-Saharan Africa. When the final results are released in 2006, the resulting PPP estimates should provide a much stronger basis for estimating the number of people living in extreme poverty worldwide, and for tracking progress toward the Millennium Development Goal of cutting extreme poverty in half. It is also widely expected that the expanded database will lead to dramatic changes in the estimated numbers of people living in poverty in many of the countries for which solid price data will become available for the first time.

A second priority is the need for PPP price indices that focus directly on the consumption basket of the poor, as opposed to the general population. Discussions of this topic have been prominent in recent conferences on PPP. The main constraint here is funding: conducting a parallel set of consumption surveys in order to identify the appropriate weights for the poverty price index in each country would substantially increase the cost of the current effort to measure PPPs (Reddy and Pogge, 2002; Deaton, 2001; Rao, 2002).

The third area, much more controversial, focuses on ways to reduce or eliminate the sensitivity of poverty estimates to changes in measured PPP exchange rates. Interest in this topic has been spurred by the fact that the shift from 1985 to 1993 PPP rates led to substantial changes in the estimated local-currency equivalent of the dollar-a-day line for many countries, and consequently to substantial changes in country- and regional-level poverty estimates. Note that the problem here is not one of new estimates of changes in poverty over time, but of new estimates of poverty *for the same year*. In other words, the revised poverty numbers resulted not from a change in the living conditions of the poor, but from a change in the statistical methods used to assess those conditions. One suggestion for eliminating sensitivity to future changes in PPP estimates is to set local-currency poverty lines on a once-and-for-all basis, either by applying local household survey data on a consistent basis in each country, or by using PPP exchange rates for the base year. Once these national poverty lines were set, they would remain fixed thereafter, revised



only for changes in local inflation. After that, changes in the incidence of poverty in each country would be tracked using only information from that country; global poverty estimates would be built up from these national estimates. Proponents of this approach acknowledge that it would lock into place somewhat different poverty lines for each country, but argue that this drawback is outweighed by the advantages of building global poverty estimates up from a set of national estimates calculated against stable national poverty lines (Deaton, 2001, 2002) The discussion continues.

The fourth and final issue raised here concerns not the technical procedures used to measure poverty at the international level, but rather the proper standard to use in making this calculation. As Lant Pritchett has recently noted, choosing an international poverty line based solely on the standards of the poorest countries in the world strongly conditions the way we think about the prevalence of poverty in the developing world (Pritchett, 2003.) First, despite the official designation of the one-dollar-a-day standard as the *extreme* poverty line, there is a strong tendency to drop the qualifier and simply refer to the international *poverty* line, full stop. Second, virtually all discussion of international poverty numbers and trends focuses exclusively on a single measure: the poverty headcount ratio. With the headcount, any person or household living below the poverty line is counted as “poor,” whereas all those living above the line are counted as “non-poor.” This either/or measure encourages a tendency to think of poverty in similarly bimodal terms: that living conditions within each group are relatively uniform, while differing sharply between the two groups. When combined with the choice of a very low poverty line as the main focus of attention, this approach encourages the notion that eliminating global poverty is simply a matter of pushing households across the one-dollar-a-day line, at which point they have escaped from poverty and should be of no further concern to either donors or domestic policy makers.

As Pritchett emphasizes, the reality is completely different: the majority of households *above* the one-dollar-a-day line experience living conditions that would be considered appalling in the developed world, including high rates of malnutrition, infant and child mortality, and other measures of deprivation. To encourage clearer thinking about the actual prevalence of poverty in the world, Pritchett suggests realigning the international poverty line with those used in the donor countries: in the vicinity of 15 dollars per day. Meanwhile, the one-dollar-a-day standard would be given a more descriptive label, such as the “desperation line.” These and related changes would clarify the reality that, by the standards prevailing in the industrialized countries, *almost everyone* in the developing world is poor – albeit to different degrees. If this approach were adopted, progress in raising the incomes of those living closest to the bottom would be considered especially important, but further progress – toward a standard of living considered minimally acceptable in the developed countries – would no longer be discounted or ignored.

**Conclusion.** The effort to generate an internationally comparable poverty line has established a basis for tracking changes in global poverty, with reference to the Millennium Development Goal of cutting poverty in half over 25 years. This effort has also highlighted the difficulties involved in translating an international poverty line into local-currency equivalents for each poor country. A major data-gathering effort is currently underway to ensure that global poverty estimates are as reliable as possible; in the meantime, active debate continues over ways to improve current methodologies for measuring poverty.

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## Annex: Calculating PPP Conversion Factors and “\$1-a-day” Poverty Lines

This annex shows how to calculate the value of the “\$1-a-day” measure of extreme poverty in terms of local currency at current prices. This calculation simply adjusts the original estimate of the \$1-a-day line, based on 1993 prices, for accumulated price inflation since 1993. The table on the following pages shows the results for a number of developing and transition countries, using the most recent data on consumer prices available at the time of writing.

The calculation requires three pieces of information:

1. The 1993 consumption purchasing power parity (PPP) exchange rate for the country in question, available at <http://iresearch.worldbank.org/PovCalNet/jsp/index.jsp>
2. The country’s Consumer Price Index (CPI) for 1993.
3. The country’s CPI for the most recent month available, preferably using the same base as the figure for 1993. In the table that follows, all price data are stated relative to the base year of 2000: that is, the CPI for 2000 is set at 100.0, while the CPI for all other years is stated in terms of their value relative to 2000. These data were taken from various issues of the *International Financial Statistics*, published monthly by the International Monetary Fund.

With these three pieces of data in hand, the current PPP exchange rate is calculated by adjusting the 1993 PPP for cumulative inflation since 1993. That is,

$$\text{current PPP} = \text{1993 PPP} * [\text{CPI}_{\text{current}}/\text{CPI}_{1993}]$$

For example, to find the equivalent of Kenya's 1993 PPP exchange rate in terms of current Kenyan shillings, multiply Kenya’s PPP at 1993 prices (11.77 shillings to the dollar) times the ratio of Kenya's most recent CPI (December 2004) to its value in 1993 (139.0/51.10, both relative to 2000=100). In other words,

$$\text{Dec. '04 PPP} = 11.77 \text{ shillings}/\$ * (139.0/51.10) = 11.77 * 2.720 = 32.02 \text{ shillings}/\$$$

Finally, calculate the current value of the “\$1-a-day” poverty line (\$1.08 per day in PPP at 1993 prices) by multiplying the result by 1.08. In the case of Kenya, the “\$1-a-day” poverty line equals 34.58 shillings per day at December 2004 prices (1.08 \* 32.02).

Once inflated to the prices of a recent period, the PPP exchange rate and poverty line can be kept up-to-date using an estimate of current inflation rates. For example, the Central Bank of Kenya recently estimated consumer price inflation at 12.43 percent for the 12 months ending in February 2005, equivalent to a monthly inflation rate of just under 1 percent. Over the 3 months from December 2004 to March 2005, this inflation rate would raise consumer prices by roughly 3 percent, leading to an estimated “1-a-day” poverty line for March 2005 of 35.62 shillings per day (34.58 \* 1.03).

For reference, the table on the following pages applies this approach to compute PPP exchange rates and the local-currency equivalent of the “\$1-a-day” international poverty line for a number of low- and middle-income countries, based on CPI data for the most recent period reported in the *International Financial Statistics* of February 2005.

**Table 1: Local-Currency Equivalents of “\$1-a-day” International Poverty Line**

	Units of local currency equal to \$1 at PPP		Units of local currency equal to \$1.08 international poverty line at PPP		Date of "most recent prices"	CPI 1993, 2000=100	Latest CPI, monthly average 2000=100
	At 1993 prices	At most recent prices	At 1993 prices	At most recent prices			
Albania	22.689	61.78	24.504	66.72	Nov-04	41.611	113.3
Argentina (urban)	0.77793	1.26	0.84016	1.36	Dec-04	93.322	151.5
Armenia	0.6565	157.69	0.7090	170.30	Dec-04	0.488	117.2
Azerbaijan	13.837	..	14.944	..	..	0.966	
Bangladesh	12.701	21.27	13.717	22.97	4th Q 03	68.309	114.4
Bolivia	1.7112	3.13	1.8481	3.38	Dec-04	62.086	113.4
Botswana	1.3879	3.49	1.4989	3.77	Nov-03	54.791	137.7
Brazil	0.0178176	1.35	0.0192430	1.46	Dec-04	1.931	146.6
Bulgaria	7.5877	1,034.61	8.1947	1,117.38	Nov-04	0.913	124.5
Burkina Faso	103.39	173.57	111.66	187.45	Dec-04	66.121	111.0
Burundi	56.305	253.09	60.809	273.33	Nov-04	30.46	136.9
Cambodia	513.29	..	554.35	..	..	0.000	110.3
Cameroon	142.4	251.73	153.8	271.87	Jun-05	60.755	107.4
Central Afr. Rep	108.51	184.57	117.19	199.34	3rd Q04	64.022	108.9
Chile	208.07	359.26	224.72	388.00	Dec-04	64.519	111.4
Colombia	200.29	811.92	216.31	876.88	Dec-04	32.612	132.2
Costa Rica	54.043	220.05	58.37	237.65	Dec-04	39.393	160.4
Cote d'Ivoire	159.1	298.72	171.8	322.62	Aug-04	60.238	113.1
Croatia	2.0223	6.14	2.1841	6.63	Dec-04	36.855	111.9
Dominican Rep.	4.173	16.10	4.507	17.39	Oct-04	59.825	230.8
Ecuador	832.07	14,831.66	898.64	16,018.20	Dec-04	9.672	172.4
Egypt, Arab Rep.	1.1641	2.27	1.2572	2.45	Oct-04	64.580	126.0
El Salvador	4.4697	7.53	4.8273	8.13	Dec-04	67.977	114.5
Estonia	3.1389	10.98	3.3900	11.86	Dec-04	33.244	116.3
Ethiopia	1.2977	1.84	1.4015	1.99	4th Q 03	78.002	110.7
Gambia, The	2.4494	3.66	2.6454	3.95	May-03	83.548	124.7
Ghana	323.918	4,326.59	349.831	4,672.71	Nov-04	16.613	221.9
Guatemala	1.8501	4.39	1.9981	4.74	Dec-04	57.704	136.8
Guyana	31.443	..	33.958	..	..	..	
Honduras	1.9427	9.04	2.0981	9.76	Oct-04	30.245	140.7
Hungary	47.696	190.00	51.512	205.20	Dec-04	32.509	129.5
India	7.0162	14.64	7.5775	15.81	Oct-04	57.165	119.3
Indonesia	635.65	2,489.04	686.50	2,688.17	Nov-04	36.851	144.3
Jamaica	11.809	50.70	12.754	54.76	Nov-04	35.774	153.6
Jordan	0.29667	0.40	0.3204	0.43	Aug-04	82.358	109.9
Kazakhstan	0.36589	57.47	0.39516	62.07	Nov-04	0.853	134.0
Kenya	11.77	32.02	12.71	34.58	Dec-04	51.10	139.0
Lao PDR	209.93	3,267.89	226.72	3,529.32	Oct-04	9.957	155.0
Latvia	0.15331	0.43	0.16557	0.46	Dec-04	41.957	116.9
Lesotho	1.1214	2.63	1.2111	2.84	Jul-04	57.805	135.5
Lithuania	0.65442	2.35	0.70677	2.54	Dec-04	28.659	102.8

	Units of local currency equal to \$1 at PPP		Units of local currency equal to \$1.08 international poverty line at PPP				
Madagascar	530.32	2,689.82	572.75	2,905.01	Oct-04	29.495	149.6
Malawi	1.5221	23.75	1.6439	25.65	Sep-04	11.081	172.9
Malaysia	1.5794	2.12	1.7058	2.29	Dec-04	79.857	107.2
Mali	124.89	200.70	134.88	216.76	Sep-04	65.897	105.9
Mauritania	81.77	132.25	88.31	142.83	4th Q 03	70.918	114.7
Mexico	2.1018	9.14	2.2699	9.87	Dec-04	28.866	125.5
Mongolia	52.482	505.48	56.681	545.92	Aug-04	12.916	124.4
Morocco	3.0818	4.01	3.3283	4.33	May-04	81.697	106.3
Mozambique	807.99	6,249.44	872.63	6,749.39	May-04	21.152	163.6
Namibia	1.4776	3.57	1.5958	3.86	Nov-04	55.561	134.3
Nepal	9.2357	17.55	9.9746	18.96	Nov-04	62.188	118.2
Nicaragua	6.24	16.48	6.74	17.80	Oct-04	49.399	130.5
Niger	100.62	178.93	108.67	193.25	May-04	58.371	103.8
Nigeria	11.516	100.53	12.437	108.57	Oct-04	19.898	173.7
Pakistan	8.272	18.05	8.934	19.49	Dec-04	55.825	121.8
Panama	0.445	0.51	0.481	0.55	Jun-04	92.241	105.1
Paraguay	749.09	2,219.47	809.02	2,397.02	Sep-04	47.994	142.2
Peru	0.925	1.94	0.999	2.09	Dec-04	52.169	109.2
Philippines	10.975	22.28	11.853	24.07	Dec-04	60.582	123.0
Poland	8.3302	33.91	8.9966	36.62	Nov-04	27.956	113.8
Romania	196.64	16,099.10	212.37	17,387.03	Oct-04	2.672	218.8
Russian Fed.	186.36	..	201.27	..	..	..	..
Rwanda	54.828	175.25	59.214	189.27	May-04	38.638	123.5
Senegal	127.66	204.07	137.87	220.40	May-04	65.372	104.5
Sierra Leone	234.01	1,176.01	252.73	1,270.09	Oct-04	25.052	125.9
Slovak Republic	10.104	24.24	10.912	26.18	Dec-04	54.071	129.7
Slovenia	74.56	191.95	80.52	207.31	Dec-04	49.952	128.6
South Africa	1.672	3.45	1.806	3.72	Nov-04	61.072	125.9
Sri Lanka	12.85	34.89	13.88	37.68	Nov-04	55.464	150.6
Swaziland	1.209	2.99	1.306	3.23	Oct-04	53.359	131.9
Tanzania	118.127	416.09	127.577	449.38	Nov-04	32.336	113.9
Thailand	13.452	19.80	14.528	21.39	Dec-04	73.155	107.7
Tunisia	0.348	0.51	0.375	0.55	Dec-04	76.680	111.9
Turkey	5,933.8	1,183,010	6,408.5	1,277,651	Dec-04	1.632	325.3
Uganda	259.972	452.57	280.770	488.77	Oct-04	66.922	116.5
Uruguay	2.612	16.01	2.821	17.30	Dec-04	25.753	157.9
Venezuela	38.029	1,327.3	41.071	1,433.5	Nov-04	6.650	232.1
Vietnam	1,596.5	..	1,724.2	..	Nov-03	..	..
Zambia	223.421	2,419.5	241.295	2,613.1	Sep-04	13.703	292.1
Zimbabwe	2.285	68.24	2.468	73.70	2002	14.207	424.3

Sources: For 1993 PPP exchange rates, see <http://iresearch.worldbank.org/PovCalNet/jsp/index.jsp>

For CPI price data, IMF *International Financial Statistics*, various issues.

3<sup>rd</sup> Q 04= average value for third quarter of 2004