

## How have the world's poorest fared since the early 1980s?

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*We present new estimates of the extent of the developing world's progress against poverty. By the frugal \$1 per day standard, we find that there were 1.1 billion poor in 2001 — almost 400 million fewer than 20 years earlier. Over the same period, the number of poor declined by over 400 million in China, though half of this decline was in the first few years of the 1980s. The number of poor outside China rose slightly over the period. A marked bunching up of people between \$1 and \$2 per day has also emerged, with an increase over time in the number of people living under \$2 per day. Sub-Saharan Africa has become the region with the highest incidence of extreme poverty and the greatest depth of poverty. If these trends continue then the aggregate \$1 per day poverty rate for 1990 will be halved by 2015, though only East and South Asia will reach this goal.*

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## Introduction

A cloud of doubt hangs over our knowledge about the extent of the world's progress against poverty. A widely cited estimate from World Bank (2002) is that there were 200 million fewer poor in the world in 1998 than in 1980. This figure has been contested, and for good reasons. Deaton (2002a) contrasts this seemingly optimistic assessment of the world's progress against poverty with that in the *World Development Report, Attacking Poverty* (World Bank, 2000), which appeared to show little or no progress. Deaton (2002a) argues that the claim in World Bank (2002) was based on methodologically inconsistent estimates from two studies, namely Bourguignon and Morisson (2002) (up to 1992) and Chen and Ravallion (2000) (beyond that).<sup>2</sup> With reference to the relevant chart in World Bank (2002) (which he refers to as *Globalization*) Deaton writes:

“The historical data in this chart were assembled by François Bourguignon and Christian Morisson... They derive their estimates by applying (sometimes sketchy and outdated) distributional information to the consumption figures from national accounts data, a technique that is almost certainly the only methodology that would allow the construction of data for a century and a half. ... After 1993, when the Bourguignon and Morisson data end, *Globalization* uses the poverty estimates that were assembled by Shaohua Chen and Martin Ravallion.... But Chen and Ravallion's data from 1987 to 1993, which is when poverty increased, are dropped from the chart. In consequence, and without any new information, we go from an assessment that the number of poor people in the world was showing little or no decline from 1987 to 1998 in *Attacking Poverty* to an assessment, in *Globalization*, of a continuous and accelerating decline from 1980 to 1998.”

These concerns are too important to ignore. We agree with Deaton that the splicing of these different data sources is highly questionable. The only solution is to construct a new, internally consistent, series over the 1980s and 1990s.

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<sup>2</sup> Wade (2004) also questions the 200 million figure. However, misdiagnoses the problem, by confusing changes in the methods used to count the world's poor with the methodological issues related to the way World Bank (2002) used different data sources. In fact, the Chen-Ravallion estimates used in World Bank (2002) would be judged internally consistent by Wade's criteria. The Deaton critique is more persuasive since it is grounded on a well-researched understanding of the methods involved.

This paper offers a new assessment of progress in reducing poverty over 1981-2001 using consistent data and methods — closely following the methods underlying the *Attacking Poverty* numbers, which had been based on Chen and Ravallion (2000). In common with our past estimates, we draw on nationally representative surveys as much as feasible. The paper reviews our methods of measuring poverty from those surveys and notes any changes from past estimates, though we refer readers to other sources for further discussion of our methods and alternatives.<sup>3</sup> The new estimates presented here supersede all our previous estimates, in that we have re-calculated everything back in time on a consistent basis incorporating the new data.<sup>4</sup> This paper summarizes our results in a standard regional tabulation following past work. However, we have also created a web-based interactive tool, *PovcalNet* that allows users to access the primary distributions and so estimate poverty measures for alternative country groupings or for a selected set of individual countries (<http://iresearch.worldbank.org/povcalnet>).

A notable feature of these new estimates is that we go back to the early 1980s, allowing an assessment of the validity of the aforementioned claim in World Bank (2002). We have previously resisted going back this far, given our concerns about the coverage and quality of the survey data available for the early 1980s. Our efforts to expand coverage have helped allay our fears about reliability for the early 1980s. However, it is clear that our estimates for the first year in our series, 1981, are not as reliable as the rest of the series.

We find that the 200 million figure is probably an under-estimate. Indeed, our best estimates suggest that it is almost twice that number. That is good news. However, a closer

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<sup>3</sup> For a critical overview of our estimation methods see Deaton (2002b), which covers the main issues raised in the literature. Ravallion (2002a) replies to Deaton's comments; also see Ravallion (2003a) for further discussion.

<sup>4</sup> The latest individual country estimates, can be found at the web site: <http://www.worldbank.org/research/povmonitor/>. The latest year's estimates at country level are also published in the World Bank's *World Development Indicators* (see, for example, World Bank, 2004).

inspection of the data leaves little room for complacency about the world's progress against poverty. Indeed, the picture that emerges is one of highly uneven progress, with serious setbacks in some regions and time periods. And we find that the number living under \$2 per day rose.

It should not be forgotten that there are limitations to our measures. There are continuing concerns about aspects of the underlying data, including the Purchasing Power Parity exchange rates, the accuracy and comparability of the surveys used, and intrinsic limitations of the welfare measures based on those surveys. A potentially important example of the latter is the fact that our definition of poverty does not directly reflect inequality within the household.

The next section describes the coverage of the survey data. We then discuss the poverty line and exchange rates, followed by the measures of poverty. Our main results are then discussed before concluding.

### **Coverage of the household surveys**

This is our first attempt to estimate global poverty measures back to the early 1980s. Our last paper provided estimates starting in 1987 (Chen and Ravallion, 2000, 2001). In retrospect, starting the series in 1987 was an unfortunate choice, since the late 1980s and early 1990s was a difficult time for the world's poor, given sharply lower growth in both China and India. By going back further in time, we hope to get a clearer idea of the long-term trend.

We draw on 454 surveys covering 97 countries representing 93% of the population of all low and middle income countries (Part 2 member countries of the World Bank). Taking the most recent survey for each country, about 1.1 million households were interviewed. The surveys were mostly done by governmental statistics offices as part of their routine operations.

Our poverty measures are estimated from the primary (unit record or tabulated) survey data. We have not used any secondary sources for measuring poverty at each survey round

(unlike all other compilations of distributional data and global poverty measures that we know of), although we do use other data sources for interpolation purposes, given that the surveys of different countries do not coincide in time. Households are ranked by either consumption or income per person. The distributions are weighted by household size and sample expansion factors so that a given fractile (such as the poorest decile) should have the same share of the country-specific population across the sample. Thus our poverty counts give the number of people living in households with per capita consumption or income below the poverty line. The data come in various forms, ranging from micro data to specially designed grouped tabulations from the raw data constructed following our guidelines. Datt and Ravallion (1992) and Chen et al. (1994) describe our estimation methods for grouped data.

As in past work, we have tried to eliminate obvious comparability problems, either by re-estimating the consumption/income aggregates or the more radical step of dropping a survey. However, there are problems that we cannot deal with. It is known that differences in survey methods (such as in questionnaire design) can create non-negligible differences in the estimates obtained for consumption or income. For example, while one-week recall for food consumption is common in surveys, there are some countries that use a longer period, which is likely to give a lower estimate of consumption and hence higher measured poverty.

A specific problem that has received attention in the recent literature concerns the 55<sup>th</sup> round of India's National Sample Survey (NSS), for 1999/2000. There is a potentially serious comparability problem between this survey and previous NSS rounds; discussions of the problems with this survey can be found in Datt and Ravallion (2002) and Deaton (2002b, 2003). We used Deaton's (2003) adjusted distributions, in an attempt to assure greater comparability with previous NSS rounds. The official distributions from the 55<sup>th</sup> round give a lower poverty

rate in 1999/00 (32.3% below \$1 per day, as compared to 34.8% using Deaton's corrections). (The distributions are of course the same in the previous large sample survey, for which we obtain a \$1 per day poverty rate of 41.9%.) However, Deaton's correction requires an unchanging probability of being poor conditional on consumption of the goods that appear to have been unaffected by the change in survey design. Changes in relative prices can cast doubt on this assumption (Datt and Ravallion, 2002; Sen and Himanshu, 2003).

Possibly we are slightly over-estimating the decline in poverty in India between the 55<sup>th</sup> and previous rounds. An alternative approach to comparing the surveys for 1999/00 with the previous large sample survey of 1993 has been proposed by Sundaram and Tendulkar (2003). (This entails comparing estimates over time based on a mixed recall period, as distinct from the uniform recall period used by the official data and by Deaton; the comparison is only possible between these two surveys.) Using the Sundaram-Tendulkar distributions, the \$1 per day poverty rate for India falls from 38.7% to 32.3% between 1993 and 1999/00 — a 6.4% point drop, as compared to our estimate using the Deaton adjusted distributions of 7.1% points.

The Appendix lists the surveys used, with their dates and whether we use consumption or income (a choice we return to). Population coverage varies greatly by region, ranging from 74% of the population of the Middle East and North Africa to 98% of the population of South Asia. Not all of the available surveys were included. The main reasons for excluding a survey were that essential data were missing (such as for the purchasing power parity exchange rates or consumer price indices used to update poverty lines over time), or that there were known to be serious comparability problems with the rest of the data set.

Naturally, the further back we go, the fewer the number of surveys. And coverage deteriorates in the last year or two of the series, given the lags in survey processing. A simple

but useful guide to the reliability of our estimates is to count the number of surveys by year. We give this count in Figure 1, and also the three-year moving total centered on each year (given that having a survey last year or next year can help greatly in estimating poverty this year). By this measure, our estimates around the mid to late 1990s are the most reliable while our estimate for 1981 is clearly the least reliable. We have only 15 surveys up to 1983, though it rises sharply to a total of 32 surveys for the period up to 1985. By contrast we have 86 surveys during 1986-90.

Most regions are still quite well covered, from at least the latter half of the 1980s (East and South Asia being well covered from 1981 onwards). Two exceptions stand out. Unsurprisingly, we have weak country coverage in Eastern Europe and Central Asia for the 1980s; most of these countries did not officially exist then. More worrying is the lack of coverage for Sub-Saharan Africa in the 1980s. Indeed, our estimates for the early 1980s rely heavily on projections based on distributions for the late 1980s. Table 1 gives the average survey year by region for each reference year. While Africa is clearly the region in which survey coverage has most improved when compared to our past estimates (Chen and Ravallion, 2001), the weakness of our coverage of Africa should be kept in mind when interpreting our results.

However, even in regions with seemingly good survey coverage in the 1980s, there are question marks about some of the data. The other side of the coin to the fact that household survey data for developing countries have improved in the 1990s is that they were not as good in the 1980s. Take the example of the largest country by population, China. We use newly available income distributions for China from surveys done in 1980 (rural areas) and 1981 (urban), kindly provided to us by the National Bureau of Statistics (NBS). However, China was only beginning to do national household surveys at this time, and naturally these early efforts were not as good (Chen and Ravallion, 1996). The sample sizes for these early surveys are



smaller than the other NBS surveys for China that we use; 16,000 randomly sampled households were interviewed for the 1980 survey in rural areas of China, and about 9,000 for the urban sample (in 1981) — by contrast the 1985 surveys for China had sample sizes of 67,000 in rural areas and 24,000 in urban areas (rising to 31,000 after 1985).

### **Exchange rates and poverty lines**

We have used the same Purchasing Power Parity (PPP) estimates for consumption as Chen and Ravallion (2001), which were produced by the World Bank's Data Group; the data sources and methods are described in Ahmad (2003). For 69 of our 97 countries, the PPPs are based on price and consumption basket data collected by the 1993 International Comparison Project (ICP). For almost all those countries that did not participate in the 1993 ICP, the Bank's PPPs are based on interpolations from cross-country regressions (as described in Ahmad, 2003). Two exceptions are China and India for which the Bank's PPPs are based on other sources; India's PPP was an update of the country's 1985 PPP while China's was based on a credible independent (non-ICP) study of prices levels in 10 cities of China (Ahmad, 2003). As in Chen and Ravallion (2000), there are five countries for which we use Penn World Tables (PWT) in preference to the World Bank's PPPs, namely Philippines, Mauritania, Ghana, Nicaragua and Uganda. For these countries the Bank's PPPs gave poverty rates that were implausibly high in our judgment, while the consumption PPPs for 1993 from PWT (Version 5.6) gave more believable estimates.<sup>5</sup>

The international poverty line in our work prior to Chen and Ravallion (2001) was set at \$1 per day at 1985 PPP (more precisely it was \$31 per month or \$1.02 per day; see Ravallion et

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<sup>5</sup> Note that, since we are using the same PPP rates as Chen and Ravallion (2001), we use PWT 5.6, which was the latest available PWT at that time. (PWT 6.1 has since become available).

al., 1991). The original \$1 per day poverty line was chosen as being representative of the poverty lines found amongst low-income countries (Ravallion et al., 1991). The same principle was applied by Chen and Ravallion (2001) in up-dating the poverty line using the new PPPs for 1993. Here it must be noted that the 1985 PPPs based on Penn World Tables (PWT) are not comparable with the Bank's PPPs at base 1993, both in terms of the primary data and the methods used. So one cannot simply adjust for inflation in the US between 1985 and 1993 to update the poverty line; indeed, that gives a line that is well above those found in low-income countries (Chen and Ravallion, 2001).<sup>6</sup> To be consistent with the original aim of using a poverty line that can be considered representative of the lines actually found in poor countries, we recalculated the \$ value of the original set of poverty lines using the new PPPs, and compared this to mean consumption, also calculated by the new PPPs. Following Chen and Ravallion (2001), the resulting poverty line is \$1.08 per day (\$32.74 per month) in 1993 PPP prices; this is the median of the lowest ten poverty lines within the set of countries used by Ravallion et al. (1991). This is the main poverty line we will focus on here, and we will refer to it as the "\$1 per day" line or "extreme poverty."

However, the poverty rate on this basis must be deemed a conservative estimate, whereby aggregate poverty in the developing world is defined by perceptions of poverty found in the poorest countries. (This is not a new observation, but was argued explicitly by World Bank, 1990, and Ravallion et al., 1991.) We also consider two broader definitions. In one, we count

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<sup>6</sup> Thus we do not accept the claims made by Reddy and Pogge (2002) and Wade (2004) that we have lowered the real value of the poverty line. They ignore the fact that there has been (in effect) a PPP devaluation of poor countries relative to the US with the switch from the 1985 to 1993 based PPPs, reflecting both the new ICP price data and differences in methods of measuring the PPP rate. For further discussion of the Reddy and Pogge criticisms of our methods see Ravallion (2002b).

as poor all those who would be judged so by standards more typical of middle-income countries. For this purpose we use a poverty line set at twice the \$1 per day line.

Our second definition allows for “relative poverty.” Chen and Ravallion (2001) proposed an operational approach for measuring relative poverty, building on Atkinson and Bourguignon (1999). Our measure of relative poverty assumes that a person is not poor if she meets the “\$1 per day” absolute consumption standard and consumes more than some proportion of the mean consumption in the country of residence. The constant of proportionality was set at one-third; this gave the best fit to the data set on poverty lines for developed and developing countries used in setting the \$1.08 poverty line (Chen and Ravallion, 2001). The relative poverty line for any country is then given by the larger of \$1.08 and one-third of mean daily private consumption per capita at 1993 PPP. We fix the real value of the relative poverty line over time for each country. So these poverty lines are relative between countries but absolute over time. (Chen and Ravallion, 2001, discuss this choice further.) Making the poverty lines relative over time would mean that for those countries with mean consumption above \$3.23 per day the poverty measures will be independent of absolute levels of consumption (and depend solely on the percentile of the population for which the Lorenz curve has a slope of one-third).

### **Measuring poverty from the surveys**

We compute three poverty measures. The first measure is the headcount index given by the percentage of population living in households with consumption or income per person below the poverty line. This is the easiest measure to interpret, but it has the well-known deficiency that it tells us nothing about differences in the depth of poverty below the line. We also give estimates of the number of poor, as obtained by applying the estimated headcount index to the population of each region (under the assumption that countries without surveys have the same

headcount index on average as those with surveys). We also give results for a third measure, the poverty gap index, which gives mean distance below the poverty line as a proportion of the poverty line (where the mean is taken over the whole population, counting the non-poor as having zero poverty gaps.) *PovcalNet* also gives estimates of the squared poverty gap, in which the individual poverty gaps are weighted by the gaps themselves, so as to reflect inequality amongst the poor (Foster et al., 1984).

In keeping with our past work, we aim to measure poverty in terms of household consumption expenditure per capita. Of the 454 surveys that we draw on, 247 allow us to estimate the distribution of consumption expenditures; this is true of all the surveys used in the Middle East and North Africa, South Asia and Sub-Saharan Africa. Whenever there is a choice we use consumption in preference to income, on the grounds that consumption is likely to be the better measure of current welfare. For about one quarter of the cases in which we do not have consumption distributions we still have survey-based estimates of mean consumption. For those cases we replace the income mean by the consumption mean leaving the Lorenz curve the same (i.e., all incomes are scaled up by the ratio of the consumption mean to the income mean). There is however no obvious basis for adjusting the Lorenz curve; one expects higher inequality in an income distribution than a consumption distribution for the same place and data.

Our previous estimates for China in Chen and Ravallion (2001) relied on income Lorenz curves but we used the survey means for household consumption expenditure per capita supplied by NBS. For this update we have been able to obtain complete consumption distributions from NBS back to 1990. To maintain consistency with our methods for other countries we have switched to consumption (for both the distribution and the mean) from 1990 onwards, though we have no choice but to keep our old method for the 1980s. However, this raises a concern about

comparability between our estimates for the 1990s for China with those for the 1980s. To assess if this is a problem, we also calculated our estimates for the 1990s using the old method. Table 2 compares the two sets of estimates for the 1990s. They match up quite closely, so the comparisons over time do not appear to be of concern. Chen and Ravallion (2004) discuss this and other issues concerning China's poverty and inequality data in greater detail.

One important difference with Chen and Ravallion (2001) is that when only an income distribution is available, we do not follow our past practice of re-scaling mean income by one minus the national saving rate. This practice was questioned by Deaton (2002b), and in Chen and Ravallion (2001) we noted the implications of dropping this re-scaling. Since then we have assembled surveys for 27 countries for which we have both consumption and income distributions, so we could test this assumption in our past work by calculating the poverty measures using both consumption and income for the same country. We found only a small difference and statistically insignificant difference between the two sets of estimates; consumption had a lower mean but also lower inequality, with the effect that poverty measures were quite close. The mean headcount index for consumption was 17.8% using the \$1 per day line, as compared to 21.2% for income; the difference is not statistically significant ( $t=0.73$ ;  $n=27$ ). For the \$2 line, the mean headcount index was slightly higher for consumption (48.2% versus 44.8% for income) but again the difference is not statistically significant ( $t=0.49$ ). So we abandoned our past practice of re-scaling the mean for income surveys. The main implication is that our poverty measures for Latin America (where income surveys are more common than elsewhere) drop a few percentage points.

Having converted the international poverty line at PPP to local currency in 1993 we convert it to the prices prevailing at each survey date using the country-specific official

Consumer Price Index (CPI).<sup>7</sup> The weights in this index may or may not accord well with consumer budget shares at the poverty line. In periods of relative price shifts, this will bias our comparisons of the incidence of poverty over time, depending on the extent of utility-compensated substitution possibilities for people at the poverty line.

To estimate regional poverty at a given reference year (1998, say) we "line up" the surveys in time using the same method as in our past work. We started the series in 1981 and made estimates at three yearly intervals, though there were too few surveys for 2002, so we estimated for 2001 instead. We thus make estimates for 1981, 1984, 1987, 1990, 1993, 1996, 1999, 2001. We refer to these as the "reference years," as distinct from the "survey years" which are spread over the interval 1979-2002 (Figure 1).

Of the 97 countries, 9 have only one survey; 19 have two surveys and 69 have three or more surveys over the period. If there is only one survey for a country then we estimate measures for each reference year by applying the growth rate in real private consumption per person from the national accounts to the survey mean — assuming that the Lorenz curve for that country does not change.<sup>8</sup> This seems the best option for dealing with this problem, though there can be no guarantee that the Lorenz curve would not have shifted or that a survey-based measure of consumption would have grown at the same rate as private consumption in the national accounts. For example, growth in the latter might reflect growth in the spending by non-profit organizations — which are not separated from households in the national accounts for most developing countries — rather than household spending (Ravallion, 2003b).

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<sup>7</sup> Note that the same poverty line is generally used for urban and rural areas. There are two exceptions. In China and India, we estimate poverty measures separately for urban and rural areas and use sector specific CPIs. In the case of India, we also use a corrected version of the rural CPI (the Consumer Price Index for Agricultural Laborers) as discussed in Datt and Ravallion (1998).

<sup>8</sup> For Nigeria we used the GDP per capita growth rate. Substantial changes in Nigeria's method of calculating private consumption made it impossible to construct a consistent series for consumption.

When the reference date (1993 say) is between two surveys (1989 and 1995 say), one option would simply be to interpolate between the two surveys. However, this ignores the extra information we have from the national accounts data. Ignoring this information could be particularly problematic when there is a long time period between surveys. To bring the extra information available from national accounts into the picture we proceeded as follows. We first estimate mean consumption at the reference year using the national accounts growth rate between the survey year and the reference year. Based on the example here, we have two means at the reference year based on two surveys,  $M_{93}(89)$  and  $M_{93}(95)$  where  $M_{93}(t)$  is the estimated mean for 1993 using the survey for year  $t$ . Based on the 1989 distribution and  $M_{93}(89)$ , we get the  $H_{93}(89)$ , the headcount index obtained using the 1993 mean and the 1989 distribution. Similarly, based on the 1995 distribution and  $M_{93}$ , we get  $H_{93}(95)$ . Then the poverty headcount for 1993 is estimated by the weighted average of  $H_{93}(89)$  and  $H_{93}(95)$ .<sup>9</sup>

## Results

Table 3 gives our estimates of the headcount indices for \$1.08 at 1993 PPP for 1981-2001 at three-year intervals. The table also gives our results for twice this line. Table 4 gives the corresponding counts of the number of poor for each poverty line.

Over the 20 year period, we find that the percentage of the population of the developing world living below \$1 per day was almost halved, falling from 40% to 21% over 1981-2001. (Expressed as a proportion of the population of the world, the decline is from 33% to 18%. This

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<sup>9</sup> Thus  $H_{93} = [(1995-1993)/(1995-1989)].H_{93}(89) + [(1993-1989)/(1995-1989)].H_{93}(95)$ . In a small number of cases this method did not give sensible results in that either  $M_{93}(89)$  or  $M_{93}(95)$  was outside the interval  $[M(89), M(95)]$  even though the NA growth rates were positive for both 1989-93 and 1993-95. In these cases we ignored the national accounts data and fell back on simply estimated  $M(93)$  using the growth rate in survey means between 1989 and 1995.

assumes that there is nobody living below \$1 per day in the developed countries.) The number of poor fell by 390 million, from 1.5 billion in 1981 (Table 4).

There was clearly more progress in some periods than in others. As we have already noted, the late 1980s and early 1990s were a difficult period for the world's poor, with low growth in both China and India. Once growth was restored, the rate of poverty reduction by the \$1 per day standard in the 1990s had returned to its long-term trend. The percentage below \$1 per day fell from 28% to 21% over 1990-2001, which is about the same trend decline (in percentage points per year) as for 1984-2001 as a whole. The number of poor fell by about 130 million in the 1990s. The poverty measures for \$2 per day follow a broadly similar pattern over time, though with a less dramatic decline in the early 1980s, and even stronger signs of stagnation in the period around 1990 (Table 3).

Our estimates suggest less progress in getting over the \$2 per day line. The poverty rate by this higher standard has fallen from 67% in 1981 to 53% in 2001 (Table 3). This has not been a sufficient decline to prevent a rise in the number of people living below \$2 per day, from 2.4 billion to 2.7 billion (Table 4). Thus the number of people living between \$1 and \$2 has actually risen sharply over these two decades, from about 1 billion to 1.6 billion. This marked “bunching up” of poor people just above the \$1 line suggests that a great many people in the world remain vulnerable to aggregate economic slow downs.

*Regional differences.* Performance against poverty has not been uniform across regions. Indeed, there have been notable changes in regional poverty rankings over this period. Looking back to 1981, East Asia was the region with the highest incidence of extreme poverty in the world, with 58% of the population living below \$1 per day. South Asia had the next highest poverty rate, followed by Sub-Saharan Africa, Latin America, Middle East and North Africa and



lastly, Eastern Europe and Central Asia. Twenty years later, Sub-Saharan Africa had swapped places with East Asia where the headcount index had fallen to 15%, with South Asia staying in second place. Eastern Europe and Central Asia had overtaken the Middle-East and North Africa. The ordering of regions is not, however, robust to the choice of poverty line, with South Asia edging out Africa for the highest headcount index in 2001 using \$2 per day, and with South Asia edging out East Asia for the highest index in 1981.

The composition of world poverty has changed noticeably over the period. The number of poor has fallen in Asia, but risen elsewhere. There has been dramatic progress in East Asia, where the Millennium Development Goal (MDG) of halving the 1990 “\$1 per day” poverty rate by 2015 was already reached in 2001. China’s progress against absolute poverty was a key factor. Looking back to 1981, China’s incidence of poverty (measured by the percentage below \$1 per day) was roughly twice that for the rest of the developing world; by the mid-1990s, the Chinese poverty rate had fallen well below average. There were 400 million fewer people living under \$1 per day in China in 2001 than 20 years earlier, though a staggering half of this decline was in the period 1981-1984 (Table 4). This was huge progress for the world’s poor. The most plausible explanation would appear to be China’s reforms starting in the late 1970s; the reforms de-collectivized agriculture and introduced the “household responsibility system” giving farmers considerably greater control over their land and output choices (Chen and Ravallion, 2004c, discuss this and alternative explanations for China’s success against absolute poverty.) This was a one-off event, suggesting that the sharp drop in global poverty by the \$1 per day standard in the early 1980s was also unusual. There was a further drop of 120 million in the poverty count between 1993 and 1996. This is generally attributed to the substantial, but short-lived, increase

in 1994 in the procurement price for foodgrains paid by the government, which effectively made a large income transfer to the rural sector (see World Bank, 1997).

Table 5 gives the trend rates of decline in the headcount index for the “\$1 per day” line. The long-run trend decline in the global poverty rate over 1981-2001 is 0.86 percentage points per year. The period 1984-2001 is more indicative of the overall trend, given the unusual large decline in extreme poverty between 1981 and 1984 due to China’s de-collectivization. Focusing on the 1990s could also be considered deceptive, given that it started with relatively high poverty, given the stalled growth in China and India around this time. For the period 1984-2001, the trend is 0.66 percentage points per year.<sup>10</sup>

For the developing world outside China, the headcount index for \$1 per day fell from 32% to 23% over 1981-2001. This was not sufficient to prevent a rise in the total number of poor, which went from 850 million in 1981 to 880 million in 2001. The decline in the headcount index over time in the developing world excluding China was close to linear (Figure 2), with a trend decline of 0.42 percentage points per year (with a standard error of 0.029).

Turning to specific regions, the number of poor has also fallen in South Asia, from 475 million in 1981 to about 430 million in 2001. The poverty rate in that region fell from 52% to 31%. The South Asia series suggest a remarkably robust trend rate of decline in the \$1 per day headcount index of 1% point per year (Table 5). (For South Asia a linear trend clearly fits better than an exponential one.) If maintained, this will be sufficient to reach the MDG. The critical value needed to reach the MDG of  $-0.83$  points per year is also outside the 95% confidence interval of  $(-0.87, -1.09)$  for our estimate of South Asia’s trend rate of poverty reduction.

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<sup>10</sup> This assumes that the trend is linear rather than exponential (linear in logs). The exponential trends are 2.9% per year using all eight years and 2.5% per year ignoring the first year.

The extent of the “bunching up” that has occurred between \$1 and \$2 per day is particularly striking in both East and South Asia, where we find a total of 1.2 billion people living between \$1 and \$2 per day in East and South Asia combined, roughly equally split between the two regions. While this points again to the vulnerability of the poor, by the same token it also suggests that substantial further impacts on poverty can be expected from economic growth, provided that it does not come with substantially higher inequality.

There is less sign of progress against poverty outside Asia. We find an increase in the number of poor in Latin America, with roughly constant poverty rate over time (10% for \$1 per day; 25% for \$2, which is closer to poverty lines found in that region). The Middle East and North Africa region was experiencing a marked downward trend in the poverty rate during the 1980s, but in the 1990s the rate stabilized at around 2% for \$1 per day and a little over 20% for \$2 per day.

We find a rising incidence and number of poor in Eastern Europe and Central Asia (EECA) comparing the 1990s with the 1980s. Very few people live below \$1 per day in this region. The poverty rate by the \$2 standard rose from almost 2% in 1981 to 20% in 2001. However, the paucity of survey data for this region in the 1980s should not be forgotten. Thus our estimates are heavily based on interpolations, which do not allow for any changes in distribution. One would expect that distribution was better from the point of view of the poor in EECA in the 1980s, in which case poverty would have been even lower than we estimate. We also see some signs of recent progress for the poorest in ECA, though it is clearly too early to say if this represents a change in trend.

The incidence of poverty in Sub-Saharan Africa has fluctuated around a mean of 45% for the \$1 per day line (75% for \$2 per day), with no significant trend in either direction (Table 5).

The number of poor has almost doubled in Sub-Saharan Africa over 1981-2001, from 164 million to 316 million living below \$1 per day. The share of the world's poor by this measure living in Africa has risen from 11% in 1981 to 29% in 2001.

Table 5 also gives the critical rate of decline in poverty needed to achieve the MDG by 2015. (For this table we dropped Eastern Europe and Central Asia and the Middle East and North Africa since there were so few people living below this line in 1990.) These actual trend rates of decline in the aggregate \$1 per day poverty rate would be sufficient to achieve the MDG if progress were to be maintained until 2015. However, the variation over time indicated by our series points to a need for caution. For the full time period we have studied, the critical trend needed to reach the MDG is just outside the 95% confidence interval for the estimated trends. So we can claim with 95% confidence that the trend over 1981-2001 exceeds that needed to halve the 1990 headcount index for \$1 per day. However, as we have noted, 1981-84 was an unusual sub-period, and our estimate for 1981 is also the weakest of the series in terms of the survey data coverage. The critical trend for the MDG is within the 95% confidence interval for the period 1984-2001. Based on the series starting in 1984, we can only say with about 90% confidence that the aggregate trend will exceed the critical value needed to halve the 1990 poverty rate.

*Poverty gap indices.* So far we have focused solely on the headcount index. Table 6 gives the poverty gap indices. Comparing Tables 3 and 6, it can be seen that the regional rankings in terms of the poverty gap index are the same as those for the headcount index, and the changes over time follow the same patterns.

The most striking feature of the results in Table 6 is the depth of poverty in Africa, with a \$1 per day poverty gap index of 20%, as compared to 6% for the developing world as a whole.

Furthermore, the mean income of Africa's poor has been falling over time (Table 7). (Noting that the poverty gap index ( $PG$ ) is related to the headcount index ( $H$ ) as  $PG=(1-M)H$  where  $M$  is the ratio of the mean income of the poor to the poverty line.) The mean income of those living under \$1 per day in Africa was \$0.64 per person per day in 1981 and fell to \$0.60 in 2001. For the \$2 line, the mean income of Africa's poor remained roughly constant. By contrast, the overall mean income of the poor in the developing world as a whole tended to rise over time, from about \$0.70 in 1981 to \$0.77 in 2001 by the \$1 line, and even more markedly for the \$2 line, from \$1.02 to \$1.25. Poverty has become shallower in the world as a whole, but not in Africa.

The fact that the mean income of the poor is lowest in Africa implies that, unless inequality falls sufficiently, it will take more growth to have the same proportionate impact on Africa's poverty gap as for other regions. This is borne out by calculating the elasticities of the poverty gap index to growth in the mean holding inequality constant (so that all levels of income grow at the same rate). The higher the mean income of the poor the higher the absolute elasticity of the poverty gap index to the overall mean.<sup>11</sup> This elasticity is -1.3 for Sub-Saharan Africa in 2001 versus -3.9 in (say) South Asia (both for the \$1 per day line). The corresponding elasticities for other regions in 2001 are -3.3 for East Asia (-3.2 for China), -3.7 for Eastern Europe and Central Asia, -1.8 for Latin America, -4.3 for the Middle East and North Africa (though this is deceptive, given that proportionately fewer people live below the \$1 per day line; using the \$2 line the elasticity falls to -2.8). The overall elasticity for the developing world in 2001 is -2.5. The elasticity has fallen (in absolute value) over time in Africa, though only slightly (from -1.4 in 1981), but has risen in the developing world as a whole (from -1.9 in 1981).

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<sup>11</sup> In particular, it is readily verified that when all levels of income grow at the same rate, the elasticity of the poverty gap index to the overall mean is  $-M/(1-M)$  where  $M$  is the ratio of the mean income of the poor to the poverty line.

*Relative poverty.* So far we have focused on absolute poverty measures, which aim to treat the same consumption level the same way no matter what country a person happens to live in. To see how much our results might be affected by making an allowance for relative deprivation, Table 8 gives our estimates of the extent of relative poverty, whereby the poverty line is the larger of \$1.08 per day and one third of mean consumption in 1993 (as discussed in section 3). Figure 4 graphs the numbers of poor by region, analogously to Figure 3.

As one would expect, the incidence of relative poverty is noticeably higher for Eastern Europe and Central Asia, Latin America, and the Middle East and North Africa. Indeed, the relative poverty rate in Latin America overtakes South Asia in the early 1990s, making Latin America the second poorest region by this measure. And Eastern Europe and Central Asia overtakes East Asia by the mid-1990s. While there are marked changes in regional rankings, the aggregate trends over time are quite similar. (This is of course a consequence in part at least of the fact that our relative poverty lines are absolute over time.) The incidence of relative poverty in the developing world as a whole is 29% in 2001, down from 50% in 1981. The total number of poor by this measure rises to 1.5 billion in 2001, down from 1.8 billion in 1981. However, the total number of poor by our relative poverty measure has shown no trend decline since the mid-1980s. And excluding China, the number of relatively poor has remained around 1.2 billion, though showing a slight upward trend in the 1990s.

## **Conclusions**

We have offered new estimates of the extent of poverty in the developing world over the period from 1981 to 2001. We have followed past practice in focusing primarily on an international poverty line that accords with poverty lines typical of the poorest countries. For this purpose we used a poverty line of about \$1 per day, though we have also considered a line set at

twice this value, as well as a relative poverty line that rises with average consumption when this exceeds about \$3 per day. We have drawn on newly available household surveys and all past estimates have been revised in the light of all new data. Our estimates appear to be more internally consistent and comparable over time than past estimates, including those of World Bank (2002), which argued that there were 200 million fewer poor at the end of twentieth century than 20 years earlier.

We find that the 200 million figure is an underestimate. Indeed, we find a figure almost twice that size, entailing a near halving of the 1981 poverty rate of 40% by 2001.

The precise time period one considers is crucial, however. Progress against extreme poverty has been uneven over time. The most dramatic reduction in poverty was in the early 1980s; about half of the 390 million drop in the \$1 per day poverty count between 1981 and 2001 occurred in the first three years of that period. This coincided with the sharp drop in extreme poverty in China in the aftermath of the reforms that (amongst other things) abandoned the socialist mode of agricultural production in favor of the household-based farming and freer markets for farm produce. This contrasts with the period 1987-93 in which the number of people living under \$1 per day stayed roughly constant at around 1.2 billion. There was more progress in the 1990s, once growth had been restored in the most populous countries, China and India. There were 100 million fewer poor by the \$1 per day standard at the end of the 1990s than at the beginning. For assessing overall trends we have argued that one should focus on the period 1984-2001.

While the overall picture is good news, it is no cause for complacency. The 390 million fewer poor by the \$1 per day standard over 1981-2001 are still poor by the standards of middle-income developing countries, and certainly by the standards of what poverty means in rich

countries. And our estimates indicate that the number of people under \$2 per day has actually risen. Clearly a great many people remain poor and vulnerable to aggregate economic slow downs.

Nor has this aggregate progress for the poorest over the 1980s and 1990s been shared by all regions. The dramatic progress against poverty in the early 1980s owes much to China. If one focuses on the developing world outside China then the number of poor by the \$1 per day standard has changed rather little — indeed, it has risen slightly. The composition of world poverty has changed noticeably. Numbers of poor have fallen in Asia, but risen elsewhere. The share of the world's poor living in Africa has risen dramatically. Not only has Africa emerged in the 1990s as the region with the highest incidence of poverty, the depth of poverty is also markedly higher than that found in other regions — suggesting that without lower inequality economic growth in Africa will have a harder time reducing poverty in the future than elsewhere.

If it is maintained over 2001-15 then the trend rate of decline in the incidence of poverty by the \$1 per day standard over 1984-2001 will be sufficient to halve the 1990 aggregate headcount index by 2015, consistent with the Millennium Development Goals. However, this goal will have only been reached in one part of the world — East and South Asia.



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**Table 1: Average date of the surveys used for each reference year**

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	1981	1984	1987	1990	1993	1996	1999	2001
East Asia	1981.5	1984.6	1987.4	1990.4	1992.5	1996.1	1999.1	2000.4
Eastern Europe and Central Asia	1988.2	1988.1	1988.3	1989.6	1993.6	1995.7	1998.9	1999.7
Latin America and Caribbean	1983.2	1984.7	1986.6	1990.4	1992.5	1996.1	1998.1	2000.1
Middle East and North Africa	1987.1	1987.8	1988.1	1990.0	1993.0	1996.0	1998.0	1998.2
South Asia	1980.9	1983.9	1987.2	1989.7	1993.0	1995.9	1999.0	1999.4
Sub-Saharan Africa	1988.6	1988.3	1989.6	1990.2	1993.0	1995.1	1996.6	1997.0
<b>Total</b>	<b>1982.8</b>	<b>1985.3</b>	<b>1987.7</b>	<b>1990.2</b>	<b>1992.8</b>	<b>1995.9</b>	<b>1998.5</b>	<b>1999.4</b>

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Note: Population-weighted mean for all the surveys used to estimate the poverty measures for each reference year (Appendix).

**Table 2: Estimates for China by old and new methods**

	<u>Headcount index (%)</u>		
	Poverty line	Old method: Income distribution with adjustment to the mean	New method: Consumption distribution with consumption mean
1981	\$1.08	63.76	
	\$2.15	88.12	
1984	\$1.08	40.99	
	\$2.15	78.49	
1987	\$1.08	28.45	
	\$2.15	67.41	
1990	\$1.08	31.53	33.01
	\$2.15	69.93	72.64
1993	\$1.08	29.46	28.36
	\$2.15	64.59	68.13
1996	\$1.08	16.91	17.38
	\$2.15	50.63	53.36
1999	\$1.08	16.42	17.77
	\$2.15	47.19	50.05
2001	\$1.08	16.51	16.64
	\$2.15	44.45	46.67

**Table 3: Headcount indices of poverty**

	% living below \$1.08 per day at 1993 PPP							
	1981	1984	1987	1990	1993	1996	1999	2001
East Asia	57.7	38.9	28.0	29.6	24.9	16.6	15.7	14.9
Of which China	63.8	41.0	28.5	33.0	28.4	17.4	17.8	16.6
East Asia excluding China	42.0	33.5	27.0	21.1	16.7	14.7	11.0	10.8
Eastern Europe and Central Asia	0.7	0.5	0.4	0.5	3.7	4.3	6.3	3.6
Latin America and Caribbean	9.7	11.8	10.9	11.3	11.3	10.7	10.5	9.5
Middle East and North Africa	5.1	3.8	3.2	2.3	1.6	2.0	2.6	2.4
South Asia	51.5	46.8	45.0	41.3	40.1	36.6	32.2	31.3
Of which India	54.4	49.8	46.3	42.1	42.3	42.2	35.3	34.7
South Asia excluding India	42.2	37.0	41.0	38.7	33.1	19.7	22.9	21.0
Sub-Saharan Africa	41.6	46.3	46.8	44.6	44.1	45.6	45.7	46.4
<b>Total</b>	<b>40.4</b>	<b>32.8</b>	<b>28.4</b>	<b>27.9</b>	<b>26.3</b>	<b>22.8</b>	<b>21.8</b>	<b>21.1</b>
Total excluding China	31.7	29.8	28.4	26.1	25.6	24.6	23.1	22.5
	% living below \$2.15 per day at 1993 PPP							
	1981	1984	1987	1990	1993	1996	1999	2001
East Asia	84.8	76.6	67.7	69.9	64.8	53.3	50.3	47.4
Of which China	88.1	78.5	67.4	72.6	68.1	53.4	50.1	46.7
East Asia excluding China	76.2	72.0	68.4	63.2	56.7	53.2	50.8	49.2
Eastern Europe and Central Asia	4.7	4.1	3.2	4.9	17.3	20.7	23.8	19.7
Latin America and Caribbean	26.9	30.4	27.8	28.4	29.5	24.1	25.1	24.5
Middle East and North Africa	28.9	25.2	24.2	21.4	20.2	22.3	24.3	23.2
South Asia	89.1	87.2	86.7	85.5	84.5	81.7	78.1	77.2
Of which India	89.6	88.2	87.3	86.1	85.7	85.2	80.6	79.9
South Asia excluding India	87.3	84.0	85.0	83.5	81.0	71.3	70.5	69.0
Sub-Saharan Africa	73.3	76.1	76.1	75.0	74.6	75.1	76.0	76.6
<b>Total</b>	<b>66.7</b>	<b>63.7</b>	<b>60.1</b>	<b>60.8</b>	<b>60.2</b>	<b>55.5</b>	<b>54.4</b>	<b>52.9</b>
Total excluding China	58.8	58.4	57.5	56.6	57.4	56.3	55.8	54.9

**Table 4: Numbers of poor**

	Number of people living below \$1.08 per day (million)							
	1981	1984	1987	1990	1993	1996	1999	2001
East Asia	795.6	562.2	425.6	472.2	415.4	286.7	281.7	271.3
Of which China	633.7	425.0	308.4	374.8	334.2	211.6	222.8	211.6
Eastern Europe and Central Asia	3.1	2.4	1.7	2.3	17.5	20.1	30.1	17.0
Latin America and Caribbean	35.6	46.0	45.1	49.3	52.0	52.2	53.6	49.8
Middle East and North Africa	9.1	7.6	6.9	5.5	4.0	5.5	7.7	7.1
South Asia	474.8	460.3	473.3	462.3	476.2	461.3	428.5	431.1
Of which India	382.4	373.5	369.8	357.4	380.0	399.5	352.4	358.6
Sub-Saharan Africa	163.6	198.3	218.6	226.8	242.3	271.4	294.3	312.7
<b>Total</b>	<b>1481.8</b>	<b>1276.8</b>	<b>1171.2</b>	<b>1218.5</b>	<b>1207.5</b>	<b>1097.2</b>	<b>1095.7</b>	<b>1089.0</b>
	Number of people living below \$2.15 per day (million)							
	1981	1984	1987	1990	1993	1996	1999	2001
East Asia	1169.8	1108.6	1028.3	1116.3	1079.3	922.2	899.6	864.3
Of which China	875.8	813.8	730.8	824.6	802.9	649.6	627.5	593.6
Eastern Europe and Central Asia	20.2	18.3	14.7	22.9	81.3	97.8	113.0	93.3
Latin America and Caribbean	98.9	118.9	115.4	124.6	136.1	117.2	127.4	128.2
Middle East and North Africa	51.9	49.8	52.5	50.9	51.8	60.9	70.4	69.8
South Asia	821.1	858.6	911.4	957.5	1004.8	1029.1	1039.0	1063.7
Of which India	630.0	661.4	697.1	731.4	769.5	805.7	804.4	826.0
Sub-Saharan Africa	287.9	326.0	355.2	381.6	410.4	446.8	489.3	516.0
<b>Total</b>	<b>2450.0</b>	<b>2480.1</b>	<b>2477.5</b>	<b>2653.8</b>	<b>2763.6</b>	<b>2674.1</b>	<b>2738.8</b>	<b>2735.4</b>

**Table 5: Trend rates of change in the \$1 per day headcount index**

Trend rates of change in the headcount index for \$1.08 per day (% points per year)	1981-2001	1984-2001	Critical rate for halving the 1990 headcount index (% points per year)
East Asia	-1.87* (0.32)	-1.36* (0.19)	-0.59
Of which China	-1.99* (0.40)	-1.37* (0.26)	-0.66
Latin America and Caribbean	-0.03 (0.04)	-0.10 (0.03)	-0.23
South Asia	-0.98* (0.05)	-0.95* (0.05)	-0.83
Of which India	-0.91* (0.10)	-0.83* (0.12)	-0.84
Sub-Saharan Africa	0.12 (0.09)	0.00 (0.08)	-0.89
<b>Total</b>	<b>-0.86*</b> <b>(0.12)</b>	<b>-0.66*</b> <b>(0.06)</b>	<b>-0.56</b>

Note: Trends estimated by linear regression on time. Standard errors in parentheses.

\* indicates that the trend is significantly different from zero at the 1% level. All regressions were tested for first-order serial correlation in the errors using the Lagrange Multiplier tests. The null hypothesis of serial independence could not be rejected in any case.



**Table 6: Poverty gap indices**

Poverty gap index as %	\$1.08 per day							
	1981	1984	1987	1990	1993	1996	1999	2001
East Asia	20.58	11.11	7.69	7.65	6.13	3.52	3.57	3.35
Of which China	23.41	11.82	8.17	8.87	7.34	3.82	4.18	3.94
Eastern Europe and Central Asia	0.18	0.14	0.11	0.11	0.84	1.25	1.86	0.75
Latin America and Caribbean	2.75	3.45	3.36	3.57	3.52	2.36	4.03	3.36
Middle East and North Africa	1.00	0.76	0.61	0.49	0.27	0.39	0.53	0.45
South Asia	16.06	13.86	12.35	11.00	10.21	8.97	6.63	6.37
Of which India	17.27	14.99	12.68	11.09	10.86	10.55	7.22	7.08
Sub-Saharan Africa	17.03	19.65	20.10	19.07	19.24	19.80	20.10	20.53
<b>Total</b>	<b>13.92</b>	<b>10.20</b>	<b>8.64</b>	<b>8.23</b>	<b>7.62</b>	<b>6.44</b>	<b>6.20</b>	<b>5.99</b>
	\$ 2.15 per day							
	1981	1984	1987	1990	1993	1996	1999	2001
East Asia	47.20	36.45	29.36	30.55	27.22	19.95	18.94	17.78
Of which China	50.82	37.92	29.67	32.94	29.85	20.33	19.79	18.44
Eastern Europe and Central Asia	1.43	1.16	0.87	1.35	5.49	7.06	8.25	5.87
Latin America and Caribbean	10.66	12.44	11.48	11.81	12.04	9.25	10.97	10.20
Middle East and North Africa	8.81	7.36	6.80	5.69	5.05	5.74	6.54	6.14
South Asia	45.78	43.02	41.86	39.92	38.84	36.52	32.98	32.35
Of which India	47.22	44.68	42.52	40.43	40.10	39.93	34.89	34.43
Sub-Saharan Africa	38.54	41.77	42.14	40.77	40.53	41.24	41.79	41.42
<b>Total</b>	<b>35.02</b>	<b>30.79</b>	<b>27.86</b>	<b>27.80</b>	<b>26.82</b>	<b>23.76</b>	<b>23.05</b>	<b>22.20</b>

**Table 7: Mean income of the poor in \$ per day**

	\$1.08 per day							
	1981	1984	1987	1990	1993	1996	1999	2001
East Asia	0.69	0.77	0.78	0.80	0.81	0.85	0.83	0.83
Of which China	0.68	0.77	0.77	0.79	0.80	0.84	0.82	0.82
Eastern Europe and Central Asia	0.81	0.80	0.76	0.85	0.83	0.76	0.76	0.91
Latin America and Caribbean	0.77	0.76	0.74	0.73	0.74	0.84	0.66	0.70
Middle East and North Africa	0.86	0.86	0.87	0.85	0.89	0.87	0.86	0.87
South Asia	0.74	0.76	0.78	0.79	0.80	0.81	0.85	0.86
Of which India	0.73	0.75	0.78	0.79	0.80	0.81	0.86	0.86
Sub-Saharan Africa	0.64	0.62	0.61	0.62	0.61	0.61	0.60	0.60
<b>Total</b>	<b>0.70</b>	<b>0.74</b>	<b>0.75</b>	<b>0.76</b>	<b>0.76</b>	<b>0.77</b>	<b>0.77</b>	<b>0.77</b>
	\$2.15 per day							
	1981	1984	1987	1990	1993	1996	1999	2001
East Asia	0.95	1.13	1.22	1.21	1.25	1.35	1.34	1.35
Of which China	0.91	1.11	1.21	1.18	1.21	1.33	1.30	1.30
Eastern Europe and Central Asia	1.50	1.55	1.57	1.56	1.47	1.42	1.41	1.51
Latin America and Caribbean	1.30	1.27	1.26	1.26	1.27	1.33	1.21	1.26
Middle East and North Africa	1.50	1.52	1.55	1.58	1.61	1.60	1.57	1.58
South Asia	1.05	1.09	1.11	1.15	1.16	1.19	1.24	1.25
Of which India	1.02	1.06	1.10	1.14	1.15	1.14	1.22	1.23
Sub-Saharan Africa	1.02	0.97	0.96	0.98	0.98	0.97	0.97	0.99
<b>Total</b>	<b>1.02</b>	<b>1.11</b>	<b>1.15</b>	<b>1.17</b>	<b>1.19</b>	<b>1.23</b>	<b>1.24</b>	<b>1.25</b>

**Table 8: Relative poverty measures**

	Headcount index of relative poverty (%)							
	1981	1984	1987	1990	1993	1996	1999	2001
East Asia	63.15	44.45	33.92	35.31	30.17	21.48	20.86	19.69
Of which China	63.76	41.01	28.45	33.01	28.36	17.38	17.77	16.64
Eastern Europe and Central Asia	8.11	7.53	6.41	7.77	22.65	23.17	27.17	21.49
Latin America and Caribbean	40.55	45.37	42.34	43.28	44.97	39.39	38.98	39.77
Middle East and North Africa	37.36	33.40	21.80	19.29	17.58	17.16	18.26	16.91
South Asia	58.17	50.65	47.72	41.45	40.33	36.87	32.09	31.41
Of which India	62.55	54.50	49.43	42.07	42.31	42.25	35.33	34.70
Sub-Saharan Africa	45.93	50.48	51.27	47.61	47.56	48.71	49.66	50.18
<b>Total</b>	<b>50.1</b>	<b>42.0</b>	<b>36.6</b>	<b>35.3</b>	<b>34.9</b>	<b>30.6</b>	<b>29.8</b>	<b>28.8</b>
	Number of poor (millions)							
	1981	1984	1987	1990	1993	1996	1999	2001
East Asia	871.3	642.9	515.2	563.7	502.6	371.4	373.1	358.8
Of which China	633.7	425.2	308.4	374.8	334.2	211.6	222.8	211.6
Eastern Europe and Central Asia	34.9	33.3	29.2	36.2	106.8	109.6	128.9	102.0
Latin America and Caribbean	149.1	177.6	175.6	189.8	207.8	191.3	198.1	208.3
Middle East and North Africa	67.1	66.1	47.3	45.8	45.0	46.8	52.8	50.8
South Asia	536.2	498.6	501.4	464.5	479.4	464.1	426.9	432.8
Of which India	439.6	408.6	394.8	357.4	380.0	399.5	352.4	358.6
Sub-Saharan Africa	180.5	216.4	239.3	242.2	261.6	290.0	319.5	338.2
<b>Total</b>	<b>1839.2</b>	<b>1634.9</b>	<b>1508.0</b>	<b>1542.1</b>	<b>1603.2</b>	<b>1473.2</b>	<b>1499.4</b>	<b>1490.8</b>

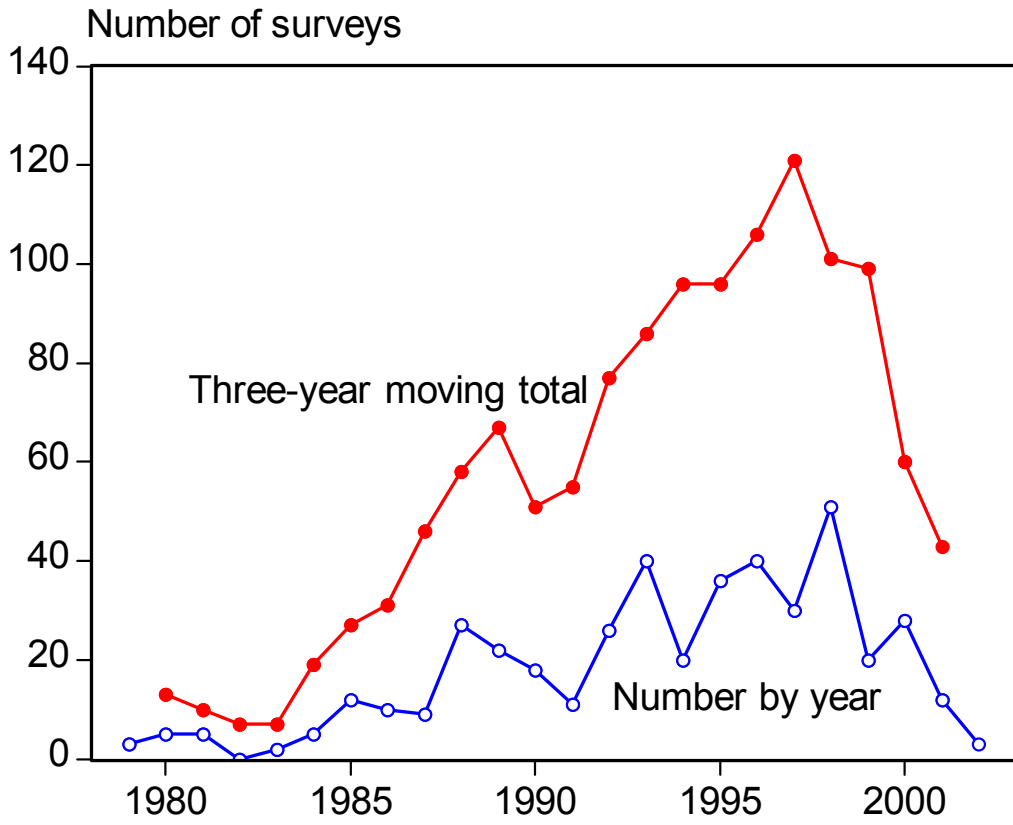
## Appendix: Survey data set

Region	% of 2001 population represented	Country	Survey dates	Welfare indicator		
East Asia	96.11	Cambodia	1997	Expenditure		
		China	1980, 1981, 1984, 1985, 1987, 1990, 1990, 1992, 1993, 1996, 1999, 2001	Income Expenditure		
		Indonesia	1981, 1984, 1987, 1990, 1993, 1996, 1999, 2002	Expenditure		
		Laos	1992, 1997	Expenditure		
		Malaysia	1984, 1987, 1989, 1992, 1995, 1997	Income		
		Mongolia	1995, 1998	Expenditure		
		Philippines	1985, 1988, 1991, 1994, 1997, 2000	Expenditure		
		Thailand	1981, 1988, 1988, 1992, 1996, 1998, 1999, 2000, 2002	Income Expenditure		
		Vietnam	1992/93, 1998	Expenditure		
		Eastern Europe & Central Asia	97.32	Albania	1997, 2002	Expenditure
				Armenia	1988, 1996, 1996, 1998	Income Expenditure
				Azerbaijan	1988, 1995, 2001	Income Expenditure
				Belarus	1988, 1993, 1995, 1998, 1999, 1996-2000	Income Expenditure
				Bulgaria	1989, 1992, 1994, 1995, 1997, 2001, 1993, 1996	Expenditure Income
Croatia	1998, 1999, 2000, 2001, 1988, 1998			Expenditure Income		
Czech Republic	1988, 1993, 1996			Income		
Estonia	1988, 1993, 1995, 1998			Income		
Georgia	1989, 1996, 1997, 1996, 1998-2001			Income Expenditure		
Hungary	1989, 1993-1996, 1998			Income		
Kazakhstan	1988, 1993, 1993, 1996, 2000			Income Expenditure		
Kyrgyz Republic	1988, 1993, 1996, 1998, 1993, 1997-2001			Income Expenditure		
Latvia	1988, 1993, 1995, 1998			Income		
Lithuania	1988, 1993, 1994, 1996, 2000, 1996, 1998, 2000			Income Expenditure		
Macedonia	1988	Income				

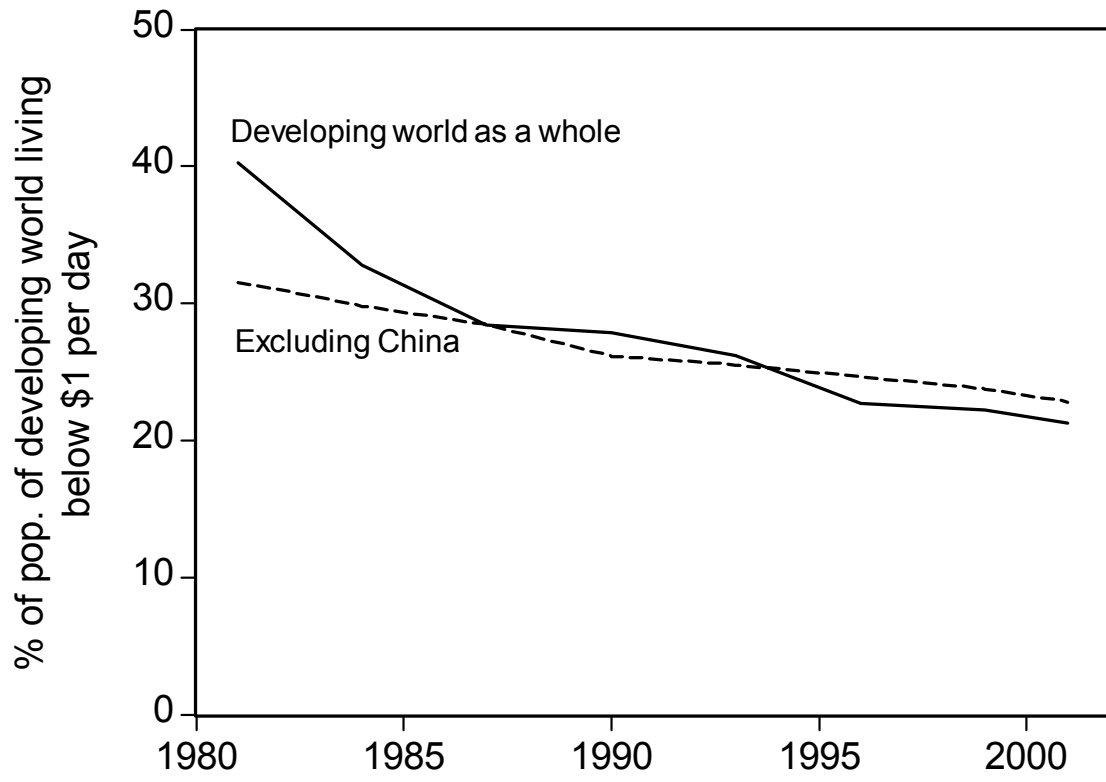
		1998	Expenditure
	Moldova	1988, 1992, 1997	Income
		1997-2001	Expenditure
	Poland	1985, 1987, 1989, 1993, 1998	Income
		1990, 1992, 1993-96	Expenditure
	Romania	1989, 1992, 1994	Income
		1998, 2000	Expenditure
	Russian Federation	1988, 1993	Income
		1993, 1996, 1998, 2000	Expenditure
	Slovak Republic	1988, 1992, 1996	Income
	Slovenia	1987, 1993, 1996, 1998	Income
	Tajikistan	1998	Expenditure
	Turkey	1987, 1994, 2000	Expenditure
	Turkmenistan	1988, 1993, 1998	Income
	Ukraine	1988, 1992, 1997	Income
		1995, 1996, 1999	Expenditure
	Uzbekistan	1988, 1993	Income
		1998, 2000	Expenditure
Latin America & Caribbean	95.31		
	Argentina	1980, 1982, 1989, 1992, 1996, 1998, 2001	Income
	Bolivia	1986, 1990, 1997, 1999	Income
	Brazil	1981, 1984, 1985, 1987, 1988-89, 1990, 1993, 1995-98, 2001	Income
	Chile	1987, 1990, 1992, 1994, 1996, 1998, 2001	Income
	Colombia	1980, 1988, 1989, 1991, 1995-96, 1998-1999	Income
	Costa Rica	1981, 1986, 1989, 1990, 1993, 1996-1998, 2001	Income
	Dominican Republic	1986, 1989, 1992, 1996, 1998	Income
	Ecuador	1988, 1994-95, 1998	Income
		1994-95	Expenditure
	El Salvador	1989, 1995-98, 2000	Income
	Guatemala	1986, 1989, 1998, 2000	Income
	Guyana	1993, 1998	Expenditure
	Honduras	1986, 1989-90, 1992, 1994, 1996-1999	Income
	Jamaica	1988-94, 1996-2000	Expenditure
	Mexico	1984, 1992	Expenditure
		1989, 1995, 1996, 1998, 2000	Income
	Nicaragua	1993, 1998	Expenditure
	Panama	1979, 1989, 1991, 1995-98, 2000	Income
	Paraguay	1990, 1995, 1997-1999	Income
	Peru	1985, 1994, 1996	Expenditure
		1994, 1996, 2000	Income
	St. Lucia	1995	Income
	Trinidad and Tobago	1988, 1992	Income

		Uruguay	1981, 1989, 1996-1998, 2000	Income
		Venezuela	1981, 1987, 1989, 1991, 1993, 1995-98	Income
Middle East & North Africa	74.05	Algeria	1988, 1995	Expenditure
		Egypt, Arab Rep.	1991, 1995, 2000	Expenditure
		Iran	1986, 1990, 1994, 1998	Expenditure
		Jordan	1987, 1992, 1997	Expenditure
		Morocco	1985, 1990, 1998/99	Expenditure
		Tunisia	1985, 1990, 1995, 2000	Expenditure
		Yemen	1992, 1998	Expenditure
South Asia	98.09	Bangladesh	1983/84, 1984-85, 1988, 1992, 1996, 2000	Expenditure
		India	1977/78, 1983, 1986-91, 1993/94, 1995/96, 1999/2000	Expenditure
		Nepal	1985, 1995	Expenditure
		Pakistan	1986/87, 1990/91, 1992/93, 1996/97, 1998	Expenditure
		Sri Lanka	1980, 1985, 1990, 1995	Expenditure
Sub-Saharan Africa	77.86	Botswana	1985/86, 1993	Expenditure
		Burkina Faso	1994, 1998	Expenditure
		Burundi	1992, 1998	Expenditure
		Cameroon	1996	Expenditure
		Central African Rep.	1993	Expenditure
		Cote d'Ivoire	1985-88, 1993, 1995, 1998	Expenditure
		Ethiopia	1981, 1995, 2000	Expenditure
		Gambia	1992, 1998	Expenditure
		Ghana	1987, 1989, 1998	Expenditure
		Kenya	1992, 1994, 1997	Expenditure
		Lesotho	1986, 1993, 1995	Expenditure
		Madagascar	1980, 1993, 1999	Expenditure
		Mali	1989, 1994	Expenditure
		Malawi	1997	Expenditure
		Mauritania	1988, 1993, 1995, 2000	Expenditure
		Mozambique	1996/97	Expenditure
		Namibia	1993	Expenditure
		Niger	1992, 1995	Expenditure
		Nigeria	1985, 1992, 1997	Expenditure
		Rwanda	1983/85	Expenditure
		Senegal	1991, 1994	Expenditure
		Sierra Leone	1989	Expenditure
		South Africa	1993, 1995, 2000	Expenditure
		Swaziland	1994	Expenditure
		Tanzania	1991	Expenditure
		Uganda	1988, 1992, 1996, 1999	Expenditure
		Zambia	1991, 1993, 1996, 1998	Expenditure
		Zimbabwe	1990/91, 1995	Expenditure

Figure 1: Number of surveys by year

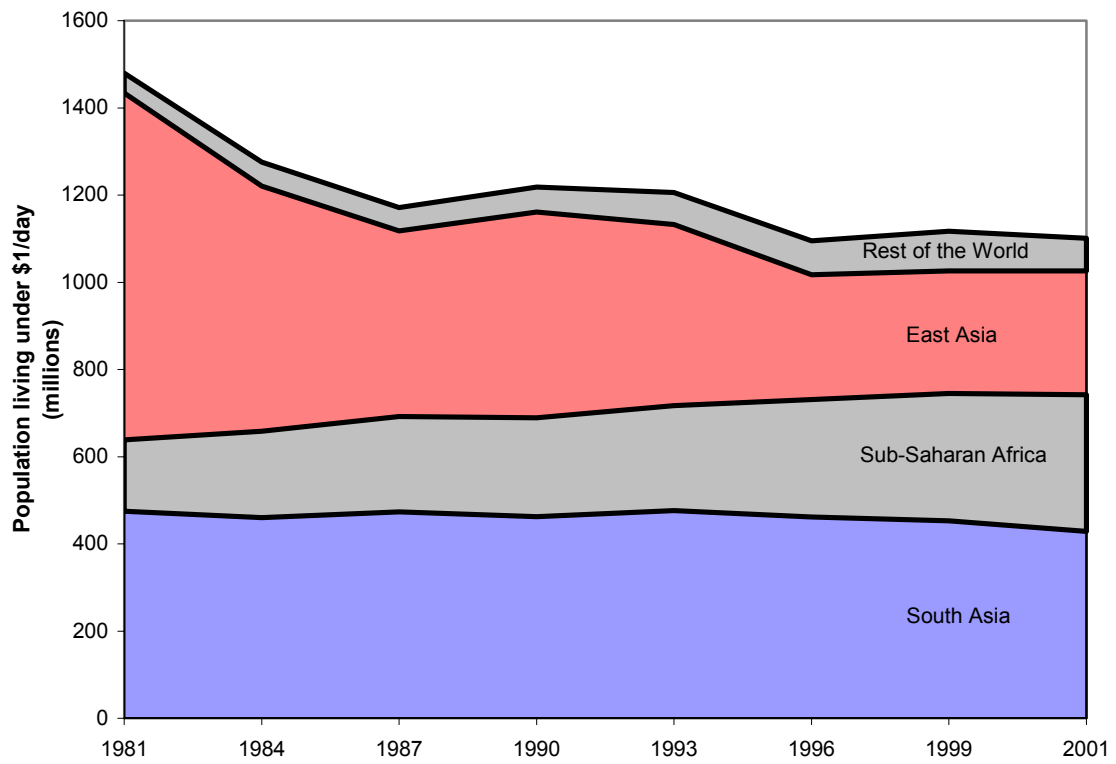


**Figure 2: Poverty incidence in the developing world 1981-2001**





**Figure 3: Numbers of poor by region: absolute poverty using the \$1 per day line**



**Figure 4: Numbers of relatively poor people**

