

# The debate on globalization, poverty and inequality: why measurement matters

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What has been happening to the living standards of poor people in the world lies at the heart of the globalization debate. Indeed, as Amartya Sen has recently argued, the real concern of the so-called ‘anti-globalization’ protesters is surely not globalization per se, for these protests are among the most globalized events in the modern world; rather, their concerns seem to stem in large part from the continuing deprivations and rising disparities in levels of living that they see in the current period of globalization.<sup>1</sup>

Are their concerns justified? There is no denying the *perceptions* held by the critics of globalization that poverty and inequality are rising. For example, the website of the International Forum on Globalization confidently claims that ‘globalization policies have contributed to increased poverty, increased inequality between and within nations.’<sup>2</sup> Whether this is a valid generalization, or even a valid characterization for any specific group of countries, is another matter.

Both sides in the debate have sought support from ‘hard’ data on what is happening to poverty and inequality in the world. A ‘numbers debate’ has developed, underlying the more high-profile protests and debates on globalization. By some accounts, the proportion of people living in extreme poverty in the developing world fell sharply in the 1990s.<sup>3</sup> Other assessments, including those regularly published by the World Bank, suggest much more modest gains.<sup>4</sup> Yet others claim that globalization has led to greater poverty.<sup>5</sup>

\* The views expressed in this article are those of the author, and should not be attributed to the World Bank or any affiliated organization.

<sup>1</sup> Amartya Sen, ‘Globalization, inequality and global protest’, *Development* 45: 2, 2002, pp. 11–16.

<sup>2</sup> <http://www.ifg.org/store.htm>.

<sup>3</sup> Surjit Bhalla, *Imagine there's no country: poverty, inequality and growth in the era of globalization* (Washington DC: Institute for International Economics, 2002); Xavier Sala-I-Martin, ‘The world distribution of income (estimated from individual country distributions)’, mimeo, Columbia University, New York, 2002.

<sup>4</sup> The latest published update is Shaohua Chen and Martin Ravallion, ‘How did the world’s poorest fare in the 1990s?’, *Review of Income and Wealth* 47, 2001, pp. 283–300.

<sup>5</sup> International Forum on Globalization, *Does globalization help the poor? A special report* (San Francisco: International Forum on Globalization, 2001).

There have been similar disagreements about what has been happening to inequality. By some accounts, income inequality has been rising in the world,<sup>6</sup> while by others it has been falling, though not continuously.<sup>7</sup>

Whom should we believe? To answer that question, we need to probe more deeply into the sources of the differences between the conflicting assessments. This calls for closer scrutiny of the concepts being used, which are not always defined or used in the same way on the two sides of the debate. It also requires closer inspection of the data sources and methods of analysis, even when there is agreement on the concept one is trying to measure. Only then can one form a judgement as to what the available data can really tell us about progress against poverty and inequality in the new era of globalization. This article offers a non-technical commentary on the conceptual and methodological differences underlying the ‘numbers debate’ on globalization.

### **Ambiguous concepts make deceptive statistics**

Before trying to quantify anything, one must first be clear about the concept to be measured. Specialists are (typically) precise about these things, but that is not true everywhere in the popular debate on globalization.

Most observers have a reasonably clear idea about the difference between ‘poverty’ and ‘inequality’. As these terms are normally defined, poverty is about *absolute levels of living* – how many people cannot attain certain predetermined consumption needs. Inequality is about the *disparities in levels of living* – for example, how much more is held by rich people than poor people. Measures of poverty and inequality are typically based on household consumption expenditure or income normalized for differences in household size and the cost of living. Aggregate measures of poverty at country or global levels tend to get the most attention, though finer breakdowns (such as by geographical area or ethnic group) are often brought into the picture.

Some commentators are less careful about an equally important distinction lingering under the surface of the globalization debate: that between the ideas of ‘relative poverty’ and ‘absolute poverty’. The latter typically means that the poverty line has fixed purchasing power. Relative poverty typically means that the poverty line has higher purchasing power in richer countries or areas within countries. How much higher is a matter of debate; this depends on how important relative deprivation is to a person’s assessment of his or her well-being, and that is not something we know much about. Economists have traditionally assumed that people care only about their own consumption, but there is now a body of evidence suggesting that people do hold ‘social preferences’, and that

<sup>6</sup> See e.g. *ibid.* and James K. Galbraith, ‘Is inequality decreasing?’, *Foreign Affairs* 81: 4, 2002, p. 178, commenting on David Dollar and Aart Kraay, ‘Growth is good for the poor’, *Journal of Economic Growth* 7: 3, 2002, pp. 195–225.

<sup>7</sup> Including Bhalla, *Imagine there’s no country*, and Sala-I-Martin, ‘The world distribution of income’.

relative deprivation is an important determinant of welfare and behaviour.<sup>8</sup> There is wide agreement that a person's own income is far too narrow a basis for judging economic well-being. To the extent that this depends on relative income, measures of poverty in terms of welfare will need to use poverty lines that vary with the mean income of some relevant reference group. How that is put into practice in a convincing way is another matter.

The measurement choice does matter. Roughly speaking, the more 'relative' your poverty measure, the less impact economic growth will have on its value. Those who say globalization is good for the world's poor tend to be undisguised 'absolutists'. By contrast, many critics of globalization appear to think of poverty in more relative terms. At one extreme, if the poverty line is proportional to mean income then it behaves a lot like a measure of inequality. Fixing the poverty line relative to mean income has actually been popular in poverty measurement in western Europe. This method can show rising poverty even when the standard of living of the poor has in fact risen. That is surely an extreme position that would seem hard to defend. While we can agree that relative deprivation matters, it appears to be very unlikely that individual welfare depends *only* on one's relative position, and not at all on absolute levels of living, as determined by incomes.

A further distinction is that between the ideas of 'relative inequality' and 'absolute inequality'. In applied work, economists typically mean 'relative inequality' when they talk about the effects of greater trade openness on inequality. Relative inequality depends on the *ratios* of individual incomes to the overall mean. (The precise nature of that dependence—the weight given to income disparities at different levels, for example—has been the subject of a large literature.<sup>9</sup>) So, if all incomes grow at the same rate then relative inequality is unchanged. A common finding in the academic literature is that greater trade openness has roughly the same effect on the growth rate of income at different levels of income.<sup>10</sup> Then openness can be said to be 'distribution-neutral' in that (relative) inequality is unchanged on average.

But that is not the only defensible concept of inequality. 'Absolute inequality' depends on the *absolute differences* in levels of living, rather than relative differences, as captured by the ratios to the mean. Consider an economy with just two household incomes: \$1,000 and \$10,000. If both incomes double in size then relative inequality will remain the same; the richer household is still 10 times richer. But the absolute difference in their incomes has doubled, from \$9,000 to \$18,000. Relative inequality is unchanged but absolute inequality has risen sharply.

<sup>8</sup> See e.g. the discussion in Ernst Fehr and Urs Fischbacher, 'Why social preferences matter: the impact of non-selfish motives on competition, cooperation and incentives', *Economic Journal* 112, 2002, pp. C1–33, and references therein. On the implications for poverty measurement, see Martin Ravallion, *Poverty lines in theory and practice*, Livings Standards Working Paper no. 133 (Washington DC: World Bank, 1998).

<sup>9</sup> For a recent survey see Frank A. Cowell, 'Measurement of inequality', in A. B. Atkinson and F. Bourguignon, eds, *Handbook of income distribution* (Amsterdam: North-Holland, 2000).

<sup>10</sup> See e.g. Dollar and Kraay, 'Growth is good for the poor'; David Dollar and Aart Kraay, 'Spreading the wealth', *Foreign Affairs* 81: 1, 2002, pp. 120–33.

Perceptions on the ground that ‘inequality is rising’ appear often to be referring to this concept of inequality. Indeed, in experiments used to identify which concept of inequality is held by people, it was found that 40 per cent of participants thought about inequality in absolute terms.<sup>11</sup> It is not that one concept is ‘right’ and one ‘wrong’. They simply reflect different value judgements about what constitutes higher ‘inequality’.

These value judgements carry considerable weight for the position one takes in the globalization debate. Finding that the share of income going to the poor does not change on average with growth does not mean that ‘growth raises the incomes (of the poor) by about as much as it raises the incomes of everybody else,’ as claimed by an article in *The Economist* magazine in May 2000.<sup>12</sup> Given existing inequality, the income gains to the rich from distribution-neutral growth will of course be greater than the gains to the poor. In the above example of two households, the income gain from economic growth is 10 times greater for the high-income person; to say that this means the poor share fully in the gains from growth is clearly to stretch the language. And the example is not far-fetched. For example, for the richest decile in India, the income gain from aggregate growth will be about 4 times higher than the gain to the poorest quintile; it will be 15–20 times higher in Brazil or South Africa.

The common empirical finding in the literature that changes in (relative) inequality have virtually zero correlation with rates of economic growth naturally carries little weight for those who are concerned instead about absolute inequality. The latter does tend to rise with growth, and fall with contraction. Across 117 spells between successive household surveys for 47 developing countries,<sup>13</sup> I find a strong positive correlation—a correlation coefficient of 0.64—between annualized changes in the absolute Gini index (in which absolute differences in incomes are not scaled by the mean) and annualized rates of growth in mean household income or consumption, as estimated from the same surveys. Yet there is virtually zero correlation (a coefficient of – 0.06) with relative inequality, as measured by the ordinary Gini index in which absolute differences are scaled by the mean.

A further source of confusion underlying the conflicting claims that have been made about what has happened to ‘inequality’ in the world in the current period of globalization stems from lack of clarity about whether one is talking about inequality between countries or between people (wherever they live). Some of the claims about rising ‘inequality’ have been based on the fact that, looking back over the last 40 years or so, initially poorer countries have tended to experience lower subsequent growth rates.<sup>14</sup> But of course countries vary

<sup>11</sup> Yoram Amiel and Frank Cowell, *Thinking about inequality: personal judgment and income distributions* (Cambridge: Cambridge University Press, 1999). Participants in these experiments were students in the UK and Israel.

<sup>12</sup> *The Economist*, 27 May 2000, p. 94, referring to Dollar and Kraay, ‘Growth is good for the poor’.

<sup>13</sup> The same data set used in Martin Ravallion, ‘Growth, inequality and poverty: looking beyond averages’, *World Development* 29: 11, 2001, pp. 1803–15.

<sup>14</sup> See e.g. Lant Pritchett, ‘Divergence, big time’, *Journal of Economic Perspectives* 11: 3, 1997, pp. 3–17.

enormously in population size. If one takes account of this, then the picture of rising inequality changes dramatically. Total inequality among people in the world can be thought of as having two components: the amount of inequality *between* countries and the amount *within* countries. Since one naturally weights by population when calculating overall inequality, the between-country component is also population-weighted. Given the population weighting, the between-country component has tended to fall, even though poorer countries have not tended to have higher growth rates.<sup>15</sup> The two largest countries in population terms naturally figure prominently in this finding. China and (more recently) India have enjoyed high growth rates and this has been a major contributing factor to lowering overall inequality in the world.

It cannot be denied that there is evidence of rising inequality within many countries, including China and India. Combining the between- and within-country pictures, there is no convincing sign of what could reasonably be called a significant trend increase in overall relative inequality between people in the world over the last 20 years or so; nor is there convincing evidence of a trend decline in relative inequality. Absolute inequality, on the other hand, is almost certainly rising over all.

### **The devil is in the detail**

Conceptual ambiguities are not the only reason for the conflicting claims one finds in the globalization debate. There are also differences in how the available data have been interpreted and differences in the underlying assumptions made in measurement.

Let us now focus on absolute poverty. All the estimates I have seen suggest a trend decline in the incidence of poverty and the total number of poor over the bulk of the 1980s and 1990s.<sup>16</sup> Progress has not been even over time. There is evidence of an increase in the number of poor in the late 1980s and early 1990s.<sup>17</sup> However, this sub-period is not typical, and it is not too surprising that progress against poverty was stalled then, given simultaneous macroeconomic difficulties in the two largest countries, China and India, on top of the weak growth in Africa. If one focuses instead on the period since about 1990, all sources I know

<sup>15</sup> See e.g. T. P. Schultz, 'Inequality in the distribution of personal income in the world: how it is changing and why', *Journal of Population Economics* 11: 3, 1998, pp. 307–344; Bhalla, *Imagine there's no country*.

<sup>16</sup> Bhalla, *Imagine there's no country*; François Bourguignon and Christian Morrison, 'The size distribution of income among world citizens, 1820–1990', *American Economic Review* 92: 4, 2002, pp. 727–44; Shaohua Chen and Martin Ravallion, *How did the world's poorest fare in the 1990s?*, Policy Research Working Paper no. 2409 (Washington DC: World Bank, 2000), <http://www18.worldbank.org/Research/workpapers.nsf/> and *Review of Income and Wealth* 47, 2001, pp. 283–300; Sala-I-Martin, 'The world distribution of income'; World Bank, *World development report: attacking poverty* (New York: Oxford University Press, 2000); World Bank, *Globalization, growth and poverty* (Washington DC: World Bank, 2002).

<sup>17</sup> Chen and Ravallion, *How did the world's poorest fare in the 1990s?*. This is apparently why Stanley Fischer (in 'Globalization and its challenges', Ely Lecture to the American Economics Association, forthcoming in *American Economic Review*, 2003, p. 8) claims that 'For some time it was the accepted view that the proportion of people living in poverty in the world has been declining but their absolute number has been increasing' (a view with which he then takes issue); Fischer refers to the 'World Bank' as the source.

of suggest a sustained decrease in the number of poor by any absolute standard. This is also evident if one looks at estimates going back to 1980 and before.<sup>18</sup>

While there appears to be broad agreement that absolute poverty is tending to fall, there are some large discrepancies among the available estimates of the rate of progress being made against absolute poverty. I will focus on two recent estimates. In the first, Bhalla presents estimates of the incidence of absolute poverty in the developing world that imply that the United Nations' Millennium Development Goal (MDG) of halving the 1990 'dollar per day' poverty rate by 2015 was in fact already reached in 2000.<sup>19</sup>

Contrast this with the World Bank estimates for the 1990s, which suggest that the MDG for poverty will be reached on time if the rate of progress since 1990 is maintained.<sup>20</sup> This implies a drop in the dollar per day poverty incidence of about 0.6 percentage points per year, which would be sufficient to halve the 1990s poverty rate by 2015.<sup>21</sup> On updating this estimate using the latest available data, we find a mean annual rate of decline in the 1990s of 0.7 percentage points per year, which (if maintained) would mean that the MDG for poverty would be achieved slightly ahead of time.<sup>22</sup>

These two sources differ in other respects. For example, Bhalla's estimates indicate that the incidence of poverty in South Asia is well below average for the developing world as a whole, while the Bank finds above-average poverty for that region. However, here I will focus on the difference in the aggregate numbers; similar reasons underlie the differences in regional composition.

<sup>18</sup> Bourguignon and Morrison, 'The size distribution of income among world citizens'; Sala-I-Martin, 'The world distribution of income'; World Bank, *Globalization, growth and poverty*. In *Globalization, growth and poverty*, the World Bank claims that 200 million people escaped absolute poverty in the world as a whole over 1980–2000. This estimate has been questioned by Robert Wade ('Are global poverty and inequality getting worse?', *Prospect* magazine, March 2002) and others on the grounds that it is obtained by combining different sources, namely the estimates of Bourguignon and Morrison, 'The size distribution of income among world citizens', up to 1992 and those of Chen and Ravallion, 'How did the world's poorest fare in the 1990s?', after that. Shaohua Chen and I have subsequently re-estimated our series back to the early 1980s to check the claim made in *Globalization, growth and poverty*. Data coverage and quality deteriorate as one goes back further in time. While recognizing this limitation, our estimates suggest that if anything the 200 million figure is probably an underestimate.

<sup>19</sup> Bhalla, *Imagine there's no country*.

<sup>20</sup> This assessment is based on the numbers reported in World Bank, *World development report: attacking poverty*, comparing 1990 and 1998.

<sup>21</sup> Sanjay G. Reddy and Thomas W. Pogge, 'How not to count the poor', mimeo (Barnard College, New York, 2002), and Wade, 'Are global poverty and inequality getting worse?' (though apparently drawing solely on Reddy and Pogge), argue that the World Bank's estimates (as reported in *Globalization, growth and poverty* and Shaohua Chen and Martin Ravallion, 'Household welfare impacts of China's accession to the WTO', mimeo, Development Research Group, World Bank, 2002) underestimate the level of poverty and overstate its rate of decline in poverty, though they do not present alternative estimates to support this claim. Elsewhere I have addressed in detail the methodological concerns raised by Reddy and Pogge: see Martin Ravallion, 'How not to count the poor: a reply to Reddy and Pogge', mimeo, Development Research Group, World Bank, 2002.

<sup>22</sup> This calculation was made by Shaohua Chen using the same methods documented in Chen and Ravallion, 'How did the world's poorest fare in the 1990s?', but updating the data set used there to include surveys not available at that time. The estimates for India in the 1990s used an adjustment method proposed by Angus Deaton in 'Adjusted Indian poverty estimates for 1999–00', mimeo, Research Program in Development Studies, Princeton University, 2001, to deal with a serious comparability problem between the 1999/2000 survey design and previous surveys.

How could two estimates of roughly the same thing be so different? Have we really achieved the MDG for poverty, 15 years ahead of time, as Bhalla claims? To answer this question we need to look inside the black box of poverty measurement.

To measure poverty one first needs a poverty line. Different people naturally have different ideas of what 'poverty' means. This is true between countries as well as within a given country. Richer countries tend to have higher poverty lines when converted to a common currency at exchange rates that attempt to assure purchasing power parity (PPP). Among poor countries, there is very little income gradient in the poverty lines—absolute consumption needs tend to dominate in a poor country. But, as incomes rise, societies naturally tend to alter their views of what minimum standard of living is deemed acceptable. So poverty lines rise with mean consumption.

Recognizing this feature of how poverty lines vary, how should we measure poverty in the world as a whole? Two approaches have been taken. The relative poverty approach uses poverty lines that increase with mean income of the country. For example, Chen and Ravallion have presented results for a relative poverty line which rises with mean income above a critical level, as determined by the aforementioned empirical relationship between actual poverty lines and mean consumption across countries.<sup>23</sup> This is arguably a better approach than setting a poverty line that is proportional to mean income, which tends to give either absurdly low poverty lines in poor countries, or absurdly high ones in rich countries.

However, all such relative poverty lines do not treat all people with the same level of consumption in the same way, and so the resulting measures would clearly lose meaning as measures of absolute income poverty. Since 1990, the World Bank has chosen instead to measure global poverty by the standards of what poverty means in poor countries, which generated the 'dollar a day' line.<sup>24</sup> This poverty line is then converted to local currency using the latest PPP exchange rates for consumption, and local consumer price indices are then used to convert the international poverty line in local currency to the prices prevailing at the time of the survey.

It is fully acknowledged that this is a conservative definition; while one could hardly argue that the people in the world who are poor by the standards typical of the poorest countries are not in fact poor, there are many more people in the world who are poor by the standards of middle-income countries. Some observers have argued that the World Bank has systematically underestimated the extent of poverty using its dollar a day line and argue that a higher line should be used;<sup>25</sup> still others have argued for a lower line. However, there is no escaping the fact that there is a degree of arbitrariness about any poverty line. Provided

<sup>23</sup> Chen and Ravallion, 'How did the world's poorest fare in the 1990s?'

<sup>24</sup> Martin Ravallion, Gaurav Datt and Dominique van de Walle, 'Quantifying absolute poverty in the developing world', *Review of Income and Wealth* 37, 1991, pp. 345–61; World Bank, *World development report: poverty* (New York: Oxford University Press, 1990); World Bank, *World development report: attacking poverty*.

<sup>25</sup> Examples include Wade, 'Are global poverty and inequality getting worse?' and Reddy and Pogge, 'How *not* to count the poor'.

one is consistent across countries, one can test whether the regional comparisons and assessments of progress over time are robust to such differences.

Having set a poverty line, one counts how many people live below it. Over the last 20 years there has been considerable expansion in the coverage and frequency of the household surveys that allow one to calculate the proportion of the population living in households with consumption expenditures and/or incomes per person below the poverty line. Such surveys are currently the most widely used source of data for measuring poverty in the world.

It is important to recognize that there are numerous problems associated with these surveys. In the international comparisons of the 'dollar a day' poverty rates carried out by the World Bank, only surveys that meet certain quality criteria—arguably quite minimal criteria—are included. The surveys must be nationally representative and include a sufficiently comprehensive consumption or income aggregate (including consumption or income from own production), and it must be possible to construct a correctly weighted distribution of consumption or income per person.

The Bank's researchers found that the latter requirement was often not met by pre-existing data sources, so they have insisted on being able to get back to the original 'raw' household-level data sets, rather than relying on summarized tabulations from secondary sources, to ensure that the calculations are done consistently. By building up the global poverty numbers from the primary data—either the raw micro-data or special-purpose tabulations designed to meet uniform quality criteria—past errors or inconsistencies in estimating distributional statistics can be dealt with. The latest published update used over 300 surveys since the mid-1980s, representing 90 countries, for measuring global poverty.<sup>26</sup> At the time of writing, the database includes 400 surveys representing 100 countries.

Nonetheless, there are still numerous comparability problems across these various surveys. For example, some use income to measure well-being while some use consumption. There are also problems in the questionnaires used—such as differences in recall periods for consumption—that significantly affect the results obtained. Some observers in the globalization debate have chosen largely to ignore these differences. Yet others find casual anecdotal observations more persuasive. For example, Secor quotes an academic contributor to the globalization debate as rejecting existing quantitative data showing lower inequality in Indonesia than Australia; the support given by the academic for his claim that the existing data are wrong is that 'You can check that out by going to the capital city and driving in from the airport. You can see it ain't so.'<sup>27</sup> Thankfully, most observers would not find a drive into the capital city from the airport more persuasive than a well-designed nationally representative sample survey of households (as is done in both Australia and Indonesia).

<sup>26</sup> Chen and Ravallion, 'How did the world's poorest fare in the 1990s?'

<sup>27</sup> Laura Secor, 'Mind the gap: the debate over global inequality heats up', *Boston Globe*, 5 Jan. 2003, [http://www.boston.com/dailyglobe2/005/focus/Mind\\_the\\_gap+.shtml](http://www.boston.com/dailyglobe2/005/focus/Mind_the_gap+.shtml).



But even if the surveys are entirely accurate, it must be acknowledged that the measure of poverty obtained can still miss important aspects of individual welfare. Using household consumption ignores inequalities within households. Nor does it reflect people's concerns about uninsured risk to their incomes and health, or their feelings about relative deprivation, as already discussed. A conventional poverty measure can hardly be considered a sufficient statistic for judging the quality of people's lives.

Even putting these concerns to one side, there are numerous differences in the methods used to measure the incidence of poverty in the world.<sup>28</sup> How one deals with the diversity in the underlying survey data is an important factor. Some researchers have indiscriminately mixed distributions that vary in important ways. For example, some are distributions of household (not per capita) income; and the 'poorest  $x$  per cent' refers to households in some surveys while in others, following the methods used by the Bank's researchers, it refers to people. These differences can make marked differences to the measures one obtains of poverty and inequality. The fact that household (rather than per capita) distributions were more common in the 1960s and 1970s than in the 1980s and 1990s also biases comparisons over time, given that household distributions tend to show higher inequality (given that, when measuring inequality between individuals, inequality within households is invariably ignored for lack of data). Signs of falling inequality may simply reflect this fact, rather than a real change in distribution.

However, these differences may well be less important than others. While many researchers prefer to use the consumption expenditures or incomes reported in surveys, some have preferred to anchor their poverty measures to the consumption or GDP means obtained from a country's national accounts.<sup>29</sup> This method ignores the absolute levels of consumption or income found in all these surveys. By exploiting the mathematical properties of poverty measures, the published quintile shares from surveys are combined with the published national accounts aggregates to generate estimates of the incidence of poverty. This method tends to show a higher rate of poverty reduction over the last 20 years than the survey-based method.

The researchers who measure poverty using the national accounts admit that they are doing so partly as a matter of convenience; it is just a whole lot easier to do it this way than by going back to all those messy micro household-level data sets. But they also argue that it is better to obtain mean household consumption or income from the national accounts rather than from the surveys that were designed for that purpose. To support this claim, they argue that surveys tend to underestimate mean household consumption and income (especially income).<sup>30</sup>

<sup>28</sup> For a detailed discussion of the differences between the methods used by, for example, Bhalla in *Imagine there's no country*, and the World Bank see Martin Ravallion, 'Have we already met the millennium development goal for poverty?', *Economic and Political Weekly* 37, 16 Nov. 2002.

<sup>29</sup> This is the method used by Bhalla, *Imagine there's no country*, Sala-I-Martin, 'The world distribution of income' and UNCTAD, *The least developed countries report* (Geneva: United Nations, 2002).

<sup>30</sup> For evidence on this point for developing and transition economies see Martin Ravallion, 'Measuring aggregate economic welfare in developing countries: how well do national accounts and surveys agree?', *Review of Economics and Statistics*, forthcoming 2003.

They point to the discrepancies between survey aggregates and national accounts aggregates. To some extent these discrepancies reflect differences in the coverage and definitions of the two data sources. The differences also stem from measurement errors in both sources.

However, for the purpose of estimating the extent of poverty it is actually immaterial which data source gives the better estimate of average household consumption or income. The key question is which gives the better estimate of the poverty measure—for that is, after all, the object of the exercise. Even if one agrees that the national accounts are right, there is no reason for assuming that the errors in the surveys leave inequality unaffected. For various reasons (including fear of taxation or legal action), the rich tend to underreport their incomes, and this is thought to be a much more serious problem (both in its absolute level and proportionately) than for the poor. It has not been established, and is quite unlikely from what we know, that the discrepancy between these two data sources is entirely due to underestimation of consumption or income levels in the surveys, but that they still get inequality right. More plausibly, underestimation of mean income from a survey tends to come hand-in-hand with an underestimation of the extent of inequality.

To see why anchoring poverty measures to the national accounts can go so wrong, consider the following simple example. The true but unobserved distribution of income is (say) 1, 2, 3 (person 1 has an income of 1, person 2 has income 2, person 3 has 3). The poverty line is slightly above 1, so the true poverty rate is  $1/3$ . We do a survey, and the three people respond that their incomes are 1, 1.5 and 2. Income of person 2 is underestimated by one quarter, while it is underestimated by one-third for person 3. The survey gives the right poverty rate. However, the survey underestimates the true mean; the survey mean is 1.5. Now let's assume (for the sake of argument) that the national accounts do give the right mean of 2. If we assume that the survey underestimation is distribution-neutral, then we multiply all three incomes by  $4/3$ . The 'corrected' incomes are 1.3, 2 and 2.7—implying that there is no poverty. We get the mean right, but the poverty measure is way off the mark.

This is just an example. However, it may not be far from some actual cases. One study found that the mean income of the 10 highest-income households in each of 18 surveys for countries in Latin America was generally no more than the average salary of the manager of a medium to large firm.<sup>31</sup> Clearly there is massive underreporting by the rich.

Careful data work has also been revealing about the sources of the discrepancies between surveys and national accounts, and has thrown considerable doubt on methods of measuring poverty that assume that the national accounts get the mean right while the surveys get inequality right. For India it has been found that for categories of consumption accounting for over 75 per cent of the

<sup>31</sup> Miguel Székely and Marianne Hilgert, 'What's behind the inequality we measure? An investigation using Latin American data', mimeo, Office of the Chief Economist, Inter-American Development Bank, Washington DC, 2000.

consumption of the poor, the divergence between the national accounts and the national household surveys is small.<sup>32</sup> Simply multiplying all incomes or consumptions by a single number so that the survey gives the same mean as the national accounts results in a serious overstatement of the consumption expenditure of the poor and hence produces a spurious reduction in the head-count index.

Recent research has studied how poverty and inequality measures from survey data can best be corrected for the tendency of richer households not to want to participate in such surveys. Results for the US suggest that without such corrections, surveys tend appreciably to underestimate both the mean and the extent of income inequality, but that these two effects are roughly offsetting for measures of poverty.<sup>33</sup> Very little correction is needed for the incomes of the poorest few deciles, but the correction factors are as high as 30–50 per cent for the richest decile. Again, this shows just how wrong one can be in assuming that the income underestimation in surveys is distribution-neutral.

The key point is that simply correcting the survey mean will not necessarily get you a better measure of poverty—even if you believe that the national accounts give you the correct mean for measuring poverty, which is far from obvious. If you don't believe the overall survey mean, how can you believe the distribution of income obtained from the same survey?

### **Dubious claims about the welfare impacts of globalization**

People on both sides of this debate have been quick to draw conclusions about the impacts of 'globalization' from their favourite poverty numbers. The title of a recent book by the International Forum of Globalization asks: 'Does globalization help the poor?' and the book answers with a confident 'no'. The back cover of Bhalla's 2002 book, *Imagine there's no country: poverty, inequality and growth in the era of globalization*, asks: 'Who has gained from globalization?' and answers with equal confidence: 'the poor'. Yet readers of neither book will come away any wiser about the answer to these questions than when they started. In fact, neither book contains the sort of analysis that would be needed credibly to attribute the claimed changes in poverty and inequality to 'globalization'. We are not given any evidence that would allow one to identify the role played by greater openness to external trade (as one aspect of globalization) in the distributional changes observed, as against other factors such as rising agricultural productivity, demographic factors, changes in the distribution and returns to education, and internal policy reforms.

More careful analytical work has attempted to identify the causal effects of (for example) greater trade openness on aggregate inequality, with controls for at least some of the other factors that are likely to matter. A number of attempts

<sup>32</sup> K. Sundaram and Suresh D. Tendulkar, 'NAS–NSS estimates of private consumption for poverty estimation: a disaggregated comparison for 1993–94', *Economic and Political Weekly*, 13 Jan. 2001, pp. 119–29.

<sup>33</sup> Johan Mistiaen and Martin Ravallion, *Survey compliance and the distribution of income*, Policy Research Working Paper no. 2542 (Washington DC: World Bank, 2002).

to throw empirical light on the welfare effects of trade liberalization have been made using aggregate cross-country data sets, whereby levels of measured inequality or changes over time in measured inequality and/or poverty are combined with data on trade openness and other control variables.<sup>34</sup> An example can be found in the careful econometric analysis using cross-country panel data sets conducted by Dollar and Kraay,<sup>35</sup> who find no sign that greater openness to external trade is either good or bad for (relative) inequality, and hence that the poor tend to benefit (absolutely).

However, there are also reasons to be cautious in drawing implications from these studies. There are concerns about data and methods, and it is unclear how much power cross-country data sets have for detecting any underlying effects of greater openness or other covariates. The attribution of inequality impacts to trade policy reforms per se is particularly problematic.

One way in which the correlations (including lack of correlation) found in these studies can be deceptive is that starting conditions vary a lot among reforming countries. Simply averaging across this diversity in initial conditions can readily hide systematic effects of relevance to policy. For example, countries differ in their initial level of economic development. It is often argued that greater openness to external trade will have very different effects on inequality depending on the level of economic development—increasing inequality in rich countries and decreasing it in poor ones.<sup>36</sup> However, the opposite outcome is possible when economic reforms, including greater openness to external trade, increase demand for relatively skilled labour, which tends to be more inequitably distributed in poor countries than in rich ones. There is some evidence of a *negative* interaction effect between openness to trade and initial GDP per capita in regressions for inequality across countries.<sup>37</sup>

These problems can be dealt with using more sophisticated methods to analyse the compilations of country aggregates, for example allowing for nonlinearities through interaction effects between trade openness and initial conditions. However, the problems go deeper. Aggregate inequality or poverty may not change with trade reform even though there are both gainers and losers at all levels of living. In cases in which the survey data have tracked the same families over time, it is quite common to find considerable churning under the surface.<sup>38</sup>

<sup>34</sup> Examples include François Bourguignon and Christian Morrison, 'Income distribution, development and foreign trade', *European Economic Review* 34, 1990, pp. 1113–32; S. Edwards, 'Trade policy, growth and income distribution', *American Economic Review, Papers and Proceedings* 87: 2, 1997; Hongyi Li, Lyn Squire and Heng-fu Zou, 'Explaining international and intertemporal variations in income inequality', *Economic Journal* 108, 1998, pp. 26–43; Mattias Lundberg and Lyn Squire, 'Growth and inequality: extracting the lessons for policy-makers', mimeo, World Bank, 1999; Robert Barro, 'Inequality and growth in a panel of countries', *Journal of Economic Growth* 5, 2000, pp. 5–32; Dollar and Kraay, 'Growth is good for the poor', 2002.

<sup>35</sup> Dollar and Kraay, 'Growth is good for the poor'.

<sup>36</sup> Adrian Wood makes a qualified argument along these lines in *North–South trade, employment and inequality: changing fortunes in a skill-driven world* (Oxford: Clarendon Press, 1994).

<sup>37</sup> Barro, 'Inequality and growth in a panel of countries'; Ravallion, 'Growth, inequality and poverty'.

<sup>38</sup> Bob Baulch and John Hoddinott compile evidence for a number of countries: 'Economic mobility and poverty dynamics in developing countries', *Journal of Development Studies* 36: 6, 2000, pp. 1–24.

Some people have escaped poverty while others have fallen into poverty, even though the overall poverty rate has moved rather little. Numerous sources of such diverse impacts can be found in developing country settings. For example, geographic disparities in access to human and physical infrastructure between and within developing countries can impede prospects for participating in the growth generated by reform, and these disparities tend to be correlated with incomes.<sup>39</sup>

Consider the case of China, which has recently undertaken a major trade reform, namely its accession to the WTO in 2001. One cannot possibly understand how this reform will affect the population simply by looking at its impact on (say) the aggregate poverty rate or overall inequality. Crucial to understanding its impact is the economic geography of poverty and how this interacts with the geographical diversity in the welfare impacts of policy reform. In the aggregate, the results of recent work by Chen and Ravallion indicate a small positive impact on mean household income, with slightly lower poverty in the short term as a result of the reform.<sup>40</sup> However, there is still a sizeable, and at least partly explicable, variance in impacts across types of household. Rural families tend to lose; urban households tend to gain. There are larger impacts in some parts of the country than others; for example, one finds non-negligible welfare losses among agricultural households in the north-east—a region in which rural households are more dependent on feed grain production (for which falling relative prices are expected from WTO accession) than elsewhere in China.

Past analyses in the literature that simply averaged over these differences inevitably missed a great deal of what matters to the debate on policy. Reforms may well entail sizeable redistribution between the poor and the rich, but in opposite directions in different countries or different regions within countries. One should not be surprised to find that there is no correlation between growth and changes in inequality, or that there is no overall impact of policy reform on inequality. Yet there are real welfare impacts under the surface of this average impact calculation. Claims made about the distributional impacts of trade reform using cross-country comparisons are of questionable relevance for policy in any specific country.

### **Lessons on how to achieve pro-poor growth**

What is ‘pro-poor growth’? By one definition, it is a situation in which incomes of the poor grow at a higher rate than those of the non-poor.<sup>41</sup> The problem with this definition is that distributional changes can be ‘pro-poor’ with no

<sup>39</sup> In the context of China’s lagging poor areas, see Jyotsna Jalan and Martin Ravallion, ‘Geographic poverty traps? A micro model of consumption growth in rural China’, *Journal of Applied Econometrics* 17: 4, 2002, pp. 329–46.

<sup>40</sup> Chen and Ravallion, ‘Household welfare impacts of China’s accession to the WTO’. The study used a general equilibrium model to estimate the effects of the trade reform on prices and wages and a large household survey to estimate the household-level welfare impacts.

<sup>41</sup> See e.g. Nanak Kakwani and Ernesto M. Pernia, ‘What is pro-poor growth?’, *Asian Development Review* 18: 1, 2003, pp. 1–16, who define pro-poor growth as a situation in which the actual change in poverty over time is greater than the change that would be expected if inequality (strictly the Lorenz curve) did not change.

absolute gain to the poor, or even falling living standards for poor people. Equally well, 'pro-rich' distributional shifts may come with large absolute gains to the poor. An alternative definition of pro-poor growth is therefore offered: namely, growth that reduces poverty by some agreed measure.<sup>42</sup>

Among those who know the survey-based evidence, there is unlikely to be much disagreement with the claim that economic growth is typically (though by no means invariably) pro-poor, in the specific sense that absolute poverty (measured against a poverty line with fixed real value) tends to fall with growth. Many observers have gone from this observation to conclude that policies that are known to be good for growth are good for poverty reduction.<sup>43</sup> This does not follow. Growth-promoting policies often have distributional implications that cannot be ignored if one is interested in the impacts on poverty.

The case of India is instructive. Poverty incidence in India has been falling at a trend rate of about one percentage point per year since about 1970, and the country appears now to have returned to this trend decline since the macro-economic difficulties of the early 1990s.<sup>44</sup> However, performance has been uneven between states. Some states have been doing far better than others, both in the longer term and in the wake of economic reforms over the past ten years. But the growth rate needed to achieve this trend decline has been rising over time. The responsiveness of national poverty incidence to both non-agricultural output per capita and agricultural yields has been declining over time, especially for non-agricultural output.<sup>45</sup>

Here the geographical composition of India's growth has played an important role: widening regional disparities and limited growth in lagging areas has made the overall growth process less pro-poor over time. By and large, economic growth in India has not occurred in the states where it would have the most impact on poverty nationally. These differences in the impact of growth on poverty relate in turn to differences in access to infrastructure and social services (health care and education) that make it harder for poor people to take up the opportunities afforded by aggregate economic growth.<sup>46</sup>

Such heterogeneity in the impact of growth on poverty holds important clues as to what else needs to be done by governments, on top of promoting economic growth, to promote poverty reduction. According to some observers, 'such actions are not needed ... Growth is sufficient. Period.'<sup>47</sup> The basis of this claim is the evidence that poverty reduction has generally come with economic growth. But that misses the point. Those who are saying that growth is not

<sup>42</sup> Martin Ravallion and Shaohua Chen, 'Measuring pro-poor growth', *Economics Letters* 78, 2003, pp. 93–9.

<sup>43</sup> For example, Fischer argues that 'the surest route to sustained poverty reduction is economic growth. Growth requires good economic policies' ('Globalization and its challenges', p. 3). Fischer then goes on to discuss policies that are thought to be good for growth.

<sup>44</sup> Gaurav Datt and Martin Ravallion, 'Has India's post-reform economic growth left the poor behind?', *Journal of Economic Perspectives* 16: 3, 2002, pp. 89–108.

<sup>45</sup> *Ibid.*; Martin Ravallion and Gaurav Datt, 'Why has economic growth been more pro-poor in some states of India than others?', *Journal of Development Economics* 68, 2002, pp. 381–400.

<sup>46</sup> Ravallion and Datt, 'Why has economic growth been more pro-poor in some states of India than others?'

<sup>47</sup> Bhalla, *Imagine there's no country*, p. 206.

enough are *not* typically saying that growth does not reduce absolute income poverty, which (as an empirical generalization) is hard to deny. They are saying that combining growth-promoting economic reforms with the right policies to help assure that the poor can participate fully in the opportunities unleashed by growth will achieve more rapid poverty reduction than would be possible otherwise. Redressing the antecedent inequalities of opportunity within developing countries as they open up to external trade is crucial to realizing the poverty-reducing *potential* of globalization. That is the real challenge facing policy-makers striving for pro-poor growth.