

**Values, norms and poverty**  
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**Frontiers of Poverty Measurement in Economics**

**Talking Points**

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## **0. Outline**

I start in Section 1 with issues that arise in the measurement of poverty as conventionally defined, as a shortfall of income (or, better, consumption) relative to some standard or poverty line. I end in Section 3 with issues that arise when we try to measure poverty and deprivation in other dimensions, here health and education. In the middle in Section 2, I discuss some of the advantages and disadvantages of self-reported measures of poverty and well-being. Even as we move forward into different kinds of measures of different types of poverty, the conventional income measures are going to continue to play a major role in our measurement and perceptions of poverty, which is why Section 1 is the longest of the three. Both Section 2 and Section 3 address the multidimensional nature of poverty, and how to move beyond the conventional measures. Section 2 focuses on some of the issues that arise when we try to give greater weight in poverty measurement to poor peoples own perceptions of poverty.

### **1. Income and consumption based measures of poverty**

1.1 These are the standard measures that are used, not only by the World Bank around the world, but also in many industrialized countries such as the U.S. which is one of the few countries that publishes official annual counts of the numbers of people below a poverty line. The data for these counts come from nationally representative, randomly selected household surveys that collect data on household income and/or household expenditures. For many reasons, expenditures are the better measure of living standards, especially in poor, largely agricultural settings. The balance may tip more in favor of income in higher income countries. There have been great improvements in household survey practices in developing countries over the last two decades, in which the World Bank has played a major role. Data are available much more rapidly and there has been a great deal of experimentation on ways of collecting data. But there is much room for improvement in making the data accessible and readily usable by those surveyed. Accessibility should improve rapidly in the future, as it has in the U.S., though analytical capacity will be a constraint for longer.

1.2 In going from the data to measures of poverty, there are a number of outstanding problems. These can usefully be divided into problems associated with

- § defining the concept of level of living to be measured
- § accurate measurement of the level of living
- § defining the standards against which levels of living are to be compared

The first is the choice of which measure of consumption and income to use. The second involves statistical issues of sampling, survey design, the use of self-reported measures, and how to deal with the inevitable measurement error that remains. The third is the question of how to set the poverty line.

1.3 One of the most important unsolved questions of definition is how to pass from household measures of income or expenditure to individual measures of welfare, at least provided we remain within the income/consumption framework. There are two issues:

- § children versus adults: the cost of children relative to adults
- § economies of scale: the cost of two relative to the cost of one

These issues are logically independent of whether resources are equitably allocated within the household, which is another active frontier issue

- § intrahousehold allocation: particularly discrimination against females or girls, or perhaps the elderly.

1.4 The cost-of-children and economies of scale literatures have been active for more than a century, but have produced no consensus. Approaches include:

- § the analysis of behavior, e.g. of consumption patterns of households of different sizes and compositions, and somehow using the results to compute costs or scale economies
- § arbitrary but transparent formulas, e.g. number of equivalents is the square root of the number of adults, or number of equivalents is number of adults plus alpha times the number of children, all raised to the power of theta. alpha is the cost of a child relative to an adult, and theta measures (inversely) the extent of economies of scale.
- § asking people, as in the Tilburg method, where households of different sizes are asked how much they would need to be content with their lives, and relating their responses to their household size.

All of these approaches have problems. The first has produced no consensus on the assumptions needed for the somehow, and there are puzzles and paradoxes in the data that we do not understand, particularly in relation to economies of scale. The second makes no concession to local conditions, or to the formal or casual information to hand. For example, we think kids are relatively cheap in agricultural societies and expensive in the U.S., or we may think that a school nutritional program may lower child costs. The third often gives silly answers; for example, economies of scale are enormous, probably because there is no adequate way of handling heterogeneity of household tastes for children or for size.

I currently tend to recommend the arbitrary method, because of its transparency, and because it forces people to think about what is ultimately a *political* issue, which is how much does society think households need for kids or for household size to avoid being counted as poor, and thus treated differently. Decisions about these matters are of the first-order of importance for poverty assessment and for the targeting of anti-poverty policies. For example, because of the very different compositions and sizes of the households in which they live, the relative living standards and fractions poor among the *elderly* and *children* are typically sensitive to how economies of scale and child costs are handled. Most statements of the form children are more likely to be poor

than the elderly, (or vice versa), are based on assumption and not on measurement.

1.5 Measuring intrahousehold allocation and discrimination is difficult if we confine ourselves to income and consumption based approaches to living standards. This is not because discrimination never takes the form of unfair allocations of goods. But because surveys can only measure household expenditures, not individual expenditures, allocations cannot be directly measured. Again, there are extensive literatures on using household data to infer the allocations between different household members, or classes of household members, though these have (perhaps) not been very successful. For example, using my own methods, I and others have failed to find discrimination against girls in expenditures even in parts of the world where there is clear evidence of discrimination in health and education. The methods may be flawed, or there may be no discrimination in consumption, even when other discrimination is present. But most evidence on intrahousehold allocation (or mis-allocation) comes from non-income measures of living standards, such as education and health, which have the advantage of permitting direct measures at the individual level.

1.6 There is not space in these notes to cover issues of measurement errors in income and consumption, nor how to control them. What I want to emphasize here is simply that *measurement error is always present*. In even the best survey, carried out under the best conditions, estimates of household income and consumption are (usually very) noisy, and should only be thought of as broad indicators of the underlying theoretical concepts. When this is not recognized, serious errors can arise in interpreting and analyzing the data. For example, in a cross-sectional survey, there is a wide range of incomes and expenditures across households, and this range allows us to separate poor from rich households (for example) with at least some confidence in the results. However, some surveys have a panel element, and return to the original households a year, or several years after the first survey. From these panels, we can calculate changes in income or expenditure so that, in principle, we can look at income and poverty dynamics, whether the same people are always poor, or whether people move in and out of poverty. How often people have low incomes is also an important indicator of *vulnerability*.

But the data on income changes are much more subject to measurement error than were the data on income levels; put more precisely, the fraction of the variance accounted for by measurement error is much larger in changes than in levels. Measurement error makes it look like there is much more mobility than in fact is the case. Worse, there is no straightforward way of correcting things, nor of figuring out how much mobility is real, and how much is spurious from the measurement error. (Though the existence of multiple independent measures of income allows some assessment of the extent of measurement error.) As a result of these problems, the Panel Study of Income Dynamics in the US, the most famous and longest running (30 years) panel study in the world, no longer pays much attention to income dynamics, at least on a year to year basis, focusing on other issues. A creative example of the use of measurement error was the Council of Economic Advisors in the dying days of the Bush administration, desperately seeking good economic news, cited the degree of income mobility (a.k.a. measurement error in income) as evidence that the American Dream was alive and well.

I know of no good way of assessing income mobility and poverty dynamics over spans of a few years, especially in countries where real economic progress is slow. There are probably better ways of assessing *vulnerability* than looking at changes in incomes and consumption, for example by asking the sorts of questions frequently included in PRAs on difficult times in the past and on how they were handled. An important task for the future is to use what is being learned from these PRAs to design appropriate questions for nationally representative household surveys.

1.7 The choice of a poverty line is almost always controversial, and as is often the case with such issues, there is a good deal of politics posturing as science. World Bank standard practice is to work from nutritional status, and to use household survey data to calculate the level of income at which, on average, a recommended nutritional status is obtained. While such poverty lines are undoubtedly useful, and command a good deal of support nutrition, like motherhood, is always good, so that poverty lines based on food have an aura of goodness that is dangerous to criticize they have a good deal less scientific objectivity than is often supposed. Once again, the US official poverty line is an instructive example. While it is usually presented as scientifically derived from the cost of attaining a nutritionally adequate diet, a closer reading of the history shows that the science is essentially circular, and that the result was adapted to yield what was an essentially politically predetermined poverty line. There is much to be said for stripping away the scientific pretense more generally and recognizing instead that the poverty line is something that is a matter for political debate, and finding some method for letting people express their views. This might be overtly political, as when governments debate and set lines as part of the usual political process, or might be done by surveys in which people are asked what the poverty line ought to be. There are many ways of doing the latter.

1.8 A more radical method of dealing with the poverty line is to do without one, for example, by recognizing that everyone is poor, though those with more resources have less claim on our attention than those with fewer. Alternatively, we can admit that poverty lines can only be set with great uncertainty, and confine ourselves to policy prescriptions and statements about poverty that are robust to a range of values. Recent research has shown that both these approaches tend to lead us back to earlier methodologies based on social welfare functions, or on explicit distributional weighting.

## **2. Self-reported measures of well-being**

2.1 Recent work on poverty measurement has paid greater attention than previously to various self-reported measures of well being. There are many different self-reported measures, some involving income and consumption. Do you have enough money to get by? Do you get enough food? Are some much broader? Do you consider yourself poor? Some relate to the individual respondent, as in these examples, or to others, as in who is poor in this village? but people can also be asked about poverty lines in general, as in What is the least amount of money a family of two adults and three children would need so as to stay out of poverty in this neighborhood or village? Traditional income and consumption measures are also self-reported, but self-reported measures of well-being typically allow the respondent much greater freedom in interpreting well-

being in his or her own terms, without being forced to consider only income or consumption adequacy. In this sense, self-reported measures belong to class of measures that goes beyond income that will be considered in Section 3. But unlike those measures, we do not know whether the respondent is thinking of income, health, education, vulnerability, social isolation, or some other concept of poverty. In some ways, this is an advantage. We know that people cite many factors other than income deficiency when they think about poverty, and by letting the respondent confront the poverty question directly, we put the definition where it belongs, with the person experiencing poverty. There are no experts in poverty who can decide whether someone is poor or not, or what is or is not a legitimate poverty factor.

2.2 There is a great deal of experimentation currently going on using various self-reported measures in various settings, and there is great interest in comparing and contrasting the results of these exercises with traditional income-based poverty measures. Here are a number of points that arise:

- § There are cases where accepting someone's own assessment of their living standards gives the wrong answer. People may be accomplices in their own deprivation. For example, if discrimination against or abuse of girls is seen as normal, people who experience it will not perceive themselves as poor. People norm their expectations relative to their experience so that, for example, experiments have shown that paraplegics report themselves as well-off as people who are not paraplegics. Yet approaches to well-being based on capabilities would regard the paraplegic as deprived. Public policy is unlikely to be indifferent to there being more paraplegics.
- § A more mundane version of the above arises when there is heterogeneity across people which itself affects behavior. An important example arises with the Tilburg scales in 1.4 above. People who think children are not very costly are likely to have more children. So those who have a lot of kids report that the money they need to get by is not much more than those who have few kids, and because we are comparing different kinds of people, the comparison understates the costs of children.
- § Peoples assessment of poverty may not be what we want for policy. For example, if villagers think someone who has no sons is poor, or that old age automatically brings poverty, does that mean that cash transfers or a health clinic have no affect on poverty?
- § There is a large literature in psychology on how people perceive their own welfare, and some of the mechanisms are not an appropriate basis for public policy. For example, if people are trapped on the hedonic treadmill they need ever more consumption to attain the same level of welfare. Should official policy lines follow the treadmill upwards, or to put it differently, should we keep people poor now so that they do not develop expensive tastes later? Experiments show that the human brain is not equipped to integrate or average utility (or welfare) over time. As a result, people make all sorts of choices that are not in their own interests, and which they subsequently recognize as not being in their own interests. Should public policy make the same mistakes by accepting their own assessments?

Some people give silly or willfully misleading answers to questions, as when someone says that it would take an income of \$2 million dollars to avoid poverty in their neighborhood. There is no objective crosscheck for such opinions, so that it is hard to evolve systematic rules for handling such information.

As with all solicitation of opinions, there is a concern that the answers are sensitive to the precise wording of the question.

### **3. Poverty in broader perspectives: health and education**

3.1 Perhaps a better title would be poverty in *different* perspectives. The two that have attracted the most attention are education and health, and there is wide recognition that neither is subsumed under income based measures of poverty. As emphasized by Amartya Sen, looking at life expectancy as a measure of well-being can give a very different picture of deprivation than looking at income. Across countries, although per capita GDP is correlated with life expectancy, there are many exceptions, and the correlation is quite weak for countries with per capita GDP above about \$500. And within countries, there are groups and areas of low life expectancy within rich countries, and groups and areas with high life expectancy in poor countries. Of all the possible non-income measures of well-being, life-expectancy for health and years of education for education are the easiest to work with, if only because, like income, they are cardinal measures that can be manipulated in the way that economists are used to manipulating income. Other measures of health and education, although obviously important and informative about deprivation, are harder to turn into poverty measures in the ways that have been devised for income and consumption. Indeed, the convenience of both life expectancy and years of education may be misleading.

3.2 On education, years of education is the obvious measure, and comparing education across different groups can do much. For example, in South Africa, there are sharp differences in years of education by race, with Whites averaging 12 years of education and Blacks only 8 years. But as is increasingly recognized, quality of education is also important and the raw differences in years of education understates the deprivation of Black children in South Africa. Class sizes are bigger at the end of apartheid, twice as large for Blacks as Whites. And schools attended predominantly by Blacks have fewer facilities like libraries, science laboratories, and sports equipment.

3.3 Life-expectancy is only one measure of health well-being. Conventional statistics of life-expectancy are period measures, which do not relate to the experience of anyone now alive, but relate to a hypothetical individual who experiences at each date of life the age-specific mortality rate currently experienced by people of that age now alive. But if conditions are changing, and if mortality at each age depends on conditions experienced up to that time, life expectancy as usually calculated is not even an unbiased estimate of life expectancy for someone born today.

3.4 In much of the literature on deprivation and inequality in health, the focus is not directly on

life expectancy but on mortality. In poor countries, mortality at any given age is higher for poorer people for a host of obvious reasons; access to clean water, adequate nutrition, safe jobs, lack of overcrowding, and safety from (at least some) infections are more common among the better off. In recent years it has become clear that there is a similar gradient in health across income groups in industrialized countries on the other side of the epidemiological transition, where infectious diseases have been replaced as the main causes of mortality by chronic conditions, such as heart disease and cancer. Perhaps surprisingly, in the rich countries, the higher mortality associated with lower income does *not* come from higher mortality among the poor; the mortality gradient appears to extend all the way up the income scale. Those just below the top are more likely to die than those at the very top. In consequence, we cannot use mortality (or for that matter, life-expectancy) as a measure of deprivation, or at least not unless we are prepared to accept that everyone is poor to a lesser or greater degree.

3.5 When we work with income or consumption as a measure of well-being, we can go a long way by (temporarily) thinking of money as welfare. With mortality, where the link is much less direct, all sorts of problems arise. For example, in Britain and the U.S., age specific mortality rates have generally fallen since World War II. Yet, mortality has fallen more for richer, better-educated people than it has fallen for poorer, less-educated people. Poor people seem less able to benefit from the changes in knowledge and technology than do the rich, perhaps because money and education make it easier to change your behavior. From one point of view, the change in knowledge and technology has improved everyone's life chances. From another point of view, which is much more frequently expressed, health inequalities are increasing because the ratio of the mortality rate for poor to the mortality rate of the rich is wider now than it was forty years ago. But if instead of looking at the dead, we look at the living, the ratio of probability of not-dying for the rich to the ratio of not-dying for the poor is *smaller* now than forty years ago. According to the same data, health inequalities have *decreased*. Such apparent paradoxes make it clear that the concepts of inequality and deprivation have not been properly thought through. The measurement structure that we are used to for income doesn't apply for health.

3.6 The relationship between income and mortality is still an enormously fruitful field of enquiry where much is not understood. In the US, income is a much more powerful prophylactic than other commonly emphasized remedies, such as abstaining from cigarette smoking, keeping in shape, or having good access to health care. Exactly why we do not know. In poor countries, the links seem much more obvious, but the data do not yet exist that would allow us to parse out the role of income from the immediate environmental factors with which it is correlated. Such measurement remains an important challenge.