A Response to Nicole Rippin

This note was prepared in response to a recent briefing by Nicole Rippin, 'A Response to the Weaknesses of the Multidimensional Poverty Index (MPI): The Correlation Sensitive Poverty Index (CSPI)'[1], published on the German Development Institute website. In the paper, the author proposes a new index, which she says overcomes the 'methodological weaknesses' of the MPI. While we warmly welcome constructive academic debate on these important issues, Rippin's article includes a number of mistakes and misunderstandings about the MPI which we seek to clarify here, whilst also highlighting the valid grounds for constructive debate about how to improve the way we measure poverty.

The four main critiques are addressed in detail below. In summary:

- There are several reasons why the MPI treats **indicators independently**. Not only is this consistent with Sen's capability approach, but it also reflects the fact that correlations between indicators are low in practice and no evidence exists to favour one type of relationship over others between MPI indicators.
- While the MPI does not directly capture **inequalities**, a key benefit of the measure is how easily it can be broken down by indictor, region and intensity. Such analysis – some of which has already been carried out, with more in-depth work ongoing – shows inequalities in how the intensity of poverty is distributed among the poor.
- The **MPI cutoff** reflects the purpose of the measure – to be an internationally comparable measure across developing countries that reflects those living in *acute* multidimensional poverty (those that experience multiple deprivations simultaneously).
- The MPI involves no **under or over estimation of poverty** – instead it provides a consistent picture of the prevalence of acute poverty across different countries and can be used to focus attention on the 'poorest of the poor'.

The first of Rippin's four critiques is that the MPI doesn't capture correlations between indicators. She writes, "It is rather safe to say that, for instance, proper sanitation and safe drinking water are related to health as well as education indicators." However, there is no firm international evidence in favour of one type of relationship between pairs of indicators over others (certain dimensions may work as substitutes, while others may work as complements, and these may change over time or in the presence of 3rd dimensions). Tracking each indicator independently is also consistent with Sen's capability approach if each indicator is a proxy for an intrinsically important functioning. Furthermore, the empirical evidence shows that correlations between indicators are often low in practice. In the case of India, for example, the correlation between deprivation in drinking water and nutrition is 0.06, between drinking water and child mortality is 0.04. The correlations with the educational indicators are about 0.08; the correlations between deprivation in the health and education indicators with deprivation in the sanitation indicator are slightly higher but below 0.18. The highest correlation coefficient is between deprivations in flooring and cooking fuel at 0.52. But this is precisely why the MPI has a 'nested weighted' structure, where the six living standard indicators (with higher correlations) have a weight of 1/18 adding up to a 1/3 weight if a household is deprived in all of them simultaneously.

---

[1] http://www.die-gdi.de/CMS-Homepage/openwebcms3.nsf/%28ynDK_contentByKey%29/ANES-8NUCKV/$FILE/BP%2019.2011.pdf

The second critique is that the MPI does not capture inequality among the poor. However, two points. First, if data were cardinal, the Alkire Foster measure M_2 would reflect inequality among the poor in terms of their depth of deprivation in dimensions. Second, while the MPI value doesn't reflect inequality in the breadth or percentage of deprivations poor people experience, the MPI is easily decomposable by indicator, regions and levels of poverty intensity (or inequality measures constructed therefrom). It is a key benefit of the MPI that the overall result can be 'unpacked' in this way, which visibly reveals inequalities among the poor. We agree with Rippin that this feature is important in any poverty measure.

In the MPI, each person has a 'deprivation score' which is the percentage of dimensions in which they are deprived. The figure below presents the distribution of deprivation scores by decile, and shows the percentage of MPI poor people who experience different intensities of poverty (in this example, in India). These results show how deprivations are distributed among a population (inequality) and can be tracked over time to see whether a country is reducing merely the incidence of poverty or is focusing on the neediest group (those with the greatest intensity of poverty).[2]

Intensity of Deprivation Among MPI Poor in India (MPI results 2011). These results can be tracked over time, giving policymakers strong incentives to focus policies on the poorest of the poor.
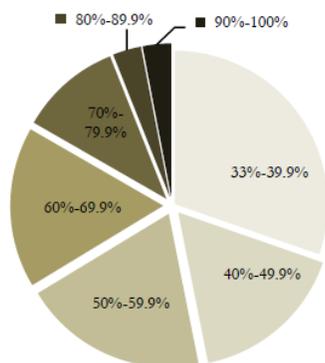
Intensity of Deprivation Among MPI Poor

The third critique is that the MPI poverty cutoff is arbitrary (a person must be deprived in one-third of weighted indicators in order to be multidimensionally poor). The selection of any poverty cutoff (including those used in income poverty measurement) always entails a normative decision requiring good justifications and robustness analysis against other possible choices. We have done both. The justification for the 1/3 cutoff *is not*, as Rippin claims, that if we used the so-called union approach (by which a person is poor if she is deprived in *any* indicator) one would get unacceptably high rates of poverty in certain countries. The MPI uses a 1/3 cutoff because it aims to capture the acutely poor; namely those that experience various deprivations simultaneously. We argue that *multidimensional* poverty should refer to people experiencing *multiple* deprivations and not just one, which might be due to reasons other than poverty itself.[3] A union approach would instead be suitable if the goal was to consider all deprivations (for example, as human rights) and if the data were understood to be exceedingly accurate reflections of deprivations, but this is a no less a normative choice.

The author is similarly simply mistaken when she claims that changing the poverty cutoff would affect country rankings. We showed in 2010 that 94.5 percent of all possible comparisons between pairs of indicators were robust to a change of the poverty cutoff between 20 and 40 percent, meaning that one country is unambiguously less poor than another, independently of whether we require people to be deprived in 20, 30 or 40 percent of the weighted indicators, which are a reasonable range of cutoffs for multidimensional poverty (Alkire and Santos, 2010, p. 61).

---

[2] More broadly, the method underpinning the MPI – the Alkire-Foster method for measuring multidimensional poverty, wellbeing and inequality – can easily be used to create poverty measures for different contexts using different dimensions, cutoffs and weights.

[3] "One deprivation may not represent poverty. For example, a household containing a slim fashion model or a grandfather who wants to cook only on a woodstove with very good ventilation would have one MPI deprivation but perhaps should not be considered poor." (Alkire and Santos, p. 19).

In contrast, the very high poverty incidence figures for measures that use a union approach, such as the Correlation Sensitive Poverty Index (CSPI) proposed by Rippin, could be difficult to justify to national governments and unhelpful in focusing attention on the poorest of the poor.

Finally, the claim that the MPI over-estimates poverty in poorer countries by ignoring people deprived in less than a third of the weighted indicators, and under-estimates poverty in less-poorer countries, by leaving out those that are deprived in certain indicators is simply invalid. Again it is prudent to return to the purpose of the measurement exercise. The MPI is an internationally comparable measure of *acute* poverty and its results reflect *acute poverty rates*. It is intuitive to expect to see low rates of acute poverty in less-poor countries and high rates of acute poverty in poorer countries. This involves no under or over estimation - instead the MPI provides an internationally comparable picture of the prevalence of acute poverty across different countries. Rippin claims that the supposed 'inflated' poverty rates may create difficulties given budget constraints. Yet budget allocation reflects priorities and the fact that an international index reveals a high poverty rate should be considered by policymakers (who can always tailor this method for their own context) – especially as it is possible to eradicate such poverty. As Sen wrote, "the non-availability of public resources to help eliminate severe deprivations should not make us redefine poverty itself."[4] Instead the MPI helps ground prioritization in the intensity of deprivations experienced by each household. By targeting those most acutely poor, both components of the MPI – incidence and intensity – will be reduced and policymakers will be recognised for improvements in both areas.

A final comment is that Rippin does not mention some of the challenges that could arise in using the CSPI. First, is its interpretation. When she writes that Niger "has a MPI poverty rate of 64.2%; the corresponding CSPI poverty rate is 47.5%" this is mixing a headcount ratio (for MPI) with an index value (CSPI) which precisely does *not* reflect the percentage of people in Niger who are multidimensionally poor (which, using the union approach for MPI, would be 92.4%). Second, the CSPI cannot be decomposed, after identification, by dimension. Yet it is this property that has made the MPI uniquely powerful – its ability to be a 'high resolution' lens on how people are poor. It might further the academic discussion if these issues were addressed.

To conclude, while the MPI is certainly not the final word in poverty measurement, it has several beneficial features which make it a useful tool for poverty analysis. Rippin's questions about how to analyse inequality among the poor are certainly valid and plural methodologies for this are useful. However, measures such as the CSPI could face challenges in providing policy guidance because of their complexity and inability to be broken down by dimension. The other criticisms were not accurate and have, we hope, been clarified. Further research is underway at OPHI to understand other uses of the MPI and we look forward to further constructive exchange on those matters.

References

Alkire, S. and Foster, J. 2011. Counting and Multidimensional Poverty Measurement. *Journal of Public Economics*.

Alkire, S. and M.E. Santos. 2010. Acute Multidimensional Poverty: A New Index for Developing Countries. *OPHI Working Paper 38*.

Alkire, S. J.M. Roche, M.E. Santos, S. Seth. 2011. Multidimensional Poverty Index 2011: Brief Methodological Note

Alkire, S. J.M. Roche, and S. Seth. 2011. Subnational Disparities in Multidimensional Poverty Across Developing Countries. *OPHI Research in Progress 32a*

Sen, Amartya K. 1982. *Choice, Welfare and Measurement*. Oxford: Basil Blackwell.

Sen, Amartya K. 1992. *Inequality Reexamined*. Cambridge: Harvard University Press.

---

[4] *Inequality Re-examined* 1992 page108; see also Sen's article 'Description as Choice' in (1982).

Background - What is the MPI?

Alkire and Santos (2010) introduced the Multidimensional Poverty Index (MPI) to measure 'acute' multidimensional poverty across countries motivated by the Adjusted Headcount Ratio proposed by Alkire and Foster (2007, 2011). Alkire and Santos use a poverty cut-off while aggregating the deprivations. A person is identified as poor if the person is deprived in one-third of the weighted indicators.[5] There are key features of the MPI, in addition to its *appealing simplicity*, that make it useful in application. First, the MPI can be expressed as the product of two intuitive measures that have meaning on their own: the *incidence of poverty* or the headcount ratio and the *intensity of poverty* or the average deprivation share across those who are identified as poor using the poverty cut-off. Moreover, the MPI has a straightforward interpretation: it reflects the proportion of weighted deprivations that the poor experience in a society out of all the total potential deprivations that the society could experience. Second, the MPI is decomposable across population subgroups and thus it is possible to calculate the poverty level of a given population subgroup.

---

[5] Please see Alkire, Roche, Santos, and Seth (2011).