

Estimating international poverty lines from comparable national thresholds

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Abstract The World Bank’s international poverty line (IPL) of \$1.90/day at 2011 PPPs is based on a collection of national poverty lines provided in Ravallion et al. (World Bank Econ. Rev. **23**(2), 163–184, 2009), originally used to set the IPL of \$1.25/day at 2005 PPPs. This paper proposes an approach for estimating a more recent, complete and comparable collection of national poverty thresholds from reported national poverty rates, and then presents a set of IPLs based on this new database of national poverty lines. In contrast to the lines used to estimate the \$1.90 IPL, this approach produces national poverty lines that are (1) consistent with national poverty rates, (2) expressed in common units, and (3) provide greater support to the estimated IPL. These national poverty lines are used to estimate an extreme IPL, and three higher IPLs that are more relevant to higher-income countries. We provide evidence of the robustness and relevance of the \$1.90 IPL as a measure of extreme poverty for low-income countries.

Keywords Global poverty · Poverty lines · International comparisons · Adult-equivalence

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1 Introduction

The share of people living in extreme poverty, as assessed by the international poverty line (IPL) estimated by the World Bank, has become one of the most prominent indicators for assessing progress in global economic development. It has been a central indicator for the Millennium Development Goals and is now an important indicator among the Sustainable Development Goals. The most recent World Bank IPL of \$1.90 per day described by Ferreira et al. (2016) in this issue is the simple average of national poverty lines from the 15 poorest countries from a sample of 74 national poverty lines constructed by Ravallion et al. (2009).¹

The 15-country approach based on the RCS data has been critiqued for several reasons. One criticism of this approach is that 15 national poverty lines provide weak support for the IPL and results in a line that is sensitive to small changes in the underlying data (Deaton 2010; Reddy and Pogge 2008; Klasen et al. 2016). Deaton (2010) provides an example where changes in the composition of the 15-country reference group can result in changing the poverty status of millions of people. He further notes that the 15 countries represent only about 11 % of the total number of poor people in 2005.² In this paper, we offer two additional issues of concern for the current approach of basing the poverty estimate on 15 countries from RCS – the age of the lines and incomparability of the lines (resulting in a conceptually incoherent average value for the IPL). A second strand of criticism of the IPL itself is less linked to the methodology and more linked to the suggestion that the threshold is too miserly for all countries, but in particular for many developing countries of the world (e.g. Pritchett 2006).

This paper aims to address these critiques by proposing both a new dataset of national poverty lines and then an approach for estimating a new set of IPLs that addresses the issue of the official line as being too frugal or irrelevant. The next section elaborates on the critiques of the current 15-country approach, and then describes how we estimate a new set of national poverty lines that has greater temporal and spatial coverage, and are more comparable than the RCS sample. The subsequent section first follows an approach similar to RCS for finding the set of countries that use extreme, absolute poverty thresholds, argues that the data do not support this approach, and then offers an alternative method for setting a poverty line relevant for the poorest countries. A key finding discussed in the concluding section is that the new set of national poverty lines proposed in this paper provide evidence in support of the robustness and relevance of the \$1.90 IPL as a measure of extreme poverty. The paper also offers supplemental poverty lines that may be more relevant for higher income countries.

2 A new dataset on national poverty lines

Ever since the dollar-a-day poverty line was first introduced in 1990 (World Bank 1990), the guiding concept for how to estimate the IPL has been to collect a set of national poverty lines and then to base the IPL on a *typical* value of a sub-sample of the *lowest* of these

¹The national poverty lines, expressed in local currency units, are inflated based on national temporal deflators and converted into US dollars based on the 2011 Purchasing Power Parity (PPP) conversion factors. See Ferreira et al. (2016) for a more detailed discussion of the details of the \$1.90 line, and see Jolliffe et al. (2014) for more details on the history of the IPL along with some of the measurement challenges.

²We estimate this to be about 13 % in 2011 based on the official \$1.90-line estimates.