Methodology for computing the indicator on Shared Prosperity for the Global Database of Shared Prosperity (GDSP) circa 2007 – 2012

Global Poverty Working Group\textsuperscript{1, 2}

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The World Bank Group’s goal of promoting Shared Prosperity has been defined as fostering income growth of the bottom 40% of the population in every country. To measure this goal, an indicator on shared prosperity was created and defined as the annualized average growth rate in per capita real consumption or income of the bottom 40% of the welfare distribution in a country (henceforth denoted as G40), where the bottom 40% for every period and country is defined anonymously.

Choice of surveys, years and countries
While all countries are encouraged to estimate G40, the Global Database on Shared Prosperity (GDSP) can only include a subset of countries that meet certain considerations. The first important consideration for a global database on shared prosperity is comparability across time and across countries. Given that these numbers would need to be compared within each country over time and across countries for (roughly) the same period, comparability along both dimensions will be critical. That said, there are limits to such comparability since household surveys are infrequent in most countries and are not aligned across countries in terms of timing. Consequently, comparisons across countries or over time should be made with a high degree of caution.

The second consideration is the coverage of countries, with data that is as recent as possible. Since shared prosperity must be reported at the country level, there is good reason to obtain as wide a coverage of countries as possible, regardless of their population size. Moreover, as the utility of this database depends on how current the information is, it is important to use the data for as recent a period as possible for each individual country.

The criteria for selecting survey years and countries must be consistent and transparent, and should achieve a balance between competing considerations: (i) matching the time period as closely as possible across all countries, while including the most recent data; and (ii) ensuring the widest possible coverage of countries, across regions and income levels. Achieving any sort of balance between (i) and (ii) implies that periods will not perfectly match across countries. While this suggests that G40 across all countries

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\textsuperscript{1} The Global Poverty Working Group (GPWG) is an interdisciplinary technical working group established to improve the quality and frequency of poverty and inequality data and comprises poverty measurement specialists of different departments of the World Bank.

\textsuperscript{2} This note was prepared by Christina Wieser with comments provided by Nobuo Yoshida, Roy Katayama, Hiroki Uematsu, Juan Feng, and Umar Serajuddin.
in the database will not be ‘strictly’ comparable, the compromise is worth making to create a database that includes a larger set of countries.

Construction of GDSP circa 2007 – 2012
Growth rates in the GDSP are computed as annualized average growth rate in per capita real consumption or income over a roughly 5-year period. For the 2015 update, the rules for selecting the initial survey year (T₀) and final survey year (T₁) are as follows:

i. The most recent household survey available (year T₁) is selected for a country, provided it is not before 2010.

ii. The initial year (year T₀) is selected as close to (T₁ - 5) as possible, with a bandwidth of +/- 2 years; thus the gap between initial and final survey years ranges from 3 to 7 years.

iii. If two surveys are equidistant from (T₁ - 5), ceteris paribus, the more recent survey year is selected as T₀.

iv. The comparability of welfare aggregates (consumption or income) for the chosen years T₀ and T₁ is assessed for every country. If comparability across the two surveys is a major concern for a country, the earlier three criteria are re-applied to select the next best survey year(s).

Countries that do not have surveys that meet rules i to iv above are excluded from the GDSP. Even though all countries are encouraged to estimate G40 using their available data, some countries may be excluded from the GDSP to maintain some degree of comparability of G40 across countries. For countries that do meet the rules above, G40 is computed by: (a) estimating the average real per capita household income of the bottom 40% of the consumption or income distribution in years T₀ and T₁; and (b) computing the annual average growth rate between these years.³ Growth of average per capita household income of the population is computed similarly, replacing the bottom 40% with the total population.

As of September 8, 2015, no country shows data for 2015 in the GDSP. As a result, rule (i) above is identical to “2012 with a bandwidth of +/- 2 years”, however, preference is given to a five year interval, and therefore, this round of GDSP is called “GDSP circa 2007 – 2012.”

What is included in the GDSP
For each country, the GDSP includes: (a) mean per capita consumption or income for the bottom 40% and for the total population; (b) annualized growth in mean consumption or income per capita for the bottom 40% and the total population; (c) the survey years defining the period for which growth rates are calculated; and (d) the type of welfare aggregate used to calculate the growth rates. The mean

³ How exactly step (a) is carried out depends on whether micro or grouped data are used for the calculation. PovcalNet has a mix of micro and grouped data, depending on the country. The G40 computations for Europe & Central Asia and Latin America & Caribbean regions use micro data. With micro data the steps to calculate average consumption or income of the bottom 40% are simple: sort households by per capita household consumption or income to identify the bottom 40%, and compute the average per capita consumption or income of this group, weighting per capita consumption or income by household size and sample weights as appropriate. To understand how the calculation is done with grouped data, refer to documentation for PovcalNet (http://iresearch.worldbank.org/PovcalNet/index.htm?0,2).
consumption or income figures are expressed in terms of purchasing power adjusted dollars per day at 2011 prices (2011 PPP dollars\(^4\)). Annualized growth rates are calculated between the survey years, using a compound growth formula.\(^5\)

**Source for the GDSP**

The GDSP was prepared by the Global Poverty Working Group (GPWG), a group comprised of poverty measurement specialists of different departments of the World Bank Group to ensure consistency of numbers on shared prosperity and quality control.

The PovcalNet database of the World Bank Group is used as the primary source for the GDSP. PovcalNet\(^6\) is an interactive computational tool that allows users to replicate the World Bank Group’s official estimates of poverty measured at the international poverty lines (e.g., $1.90 per day per capita). The datasets included in PovcalNet are provided and vetted by the GPWG.

The choice of consumption or income to measure G40 for a country is made according to which welfare aggregate is used to estimate extreme poverty in PovcalNet unless there are strong arguments for using a different welfare aggregate. The practice adopted by the World Bank Group for estimating global and regional poverty is, in principle, to use per capita consumption expenditure as the welfare measure wherever available; and to use income as the welfare measure for countries for which consumption is unavailable. However, in some cases data on consumption may be available but are outdated or not shared with the World Bank Group for recent survey years. In these cases, if data on income are available, income is used for estimating G40.\(^7\)

**Acknowledgments**

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\(^4\) With the exception of Bangladesh, Cambodia, Cape Verde, Jordan and Lao for which the 2005 PPPs were used.

\(^5\) The annualized growth rate is computed as \(\frac{Mean\ in\ T_1}{Mean\ in\ T_0} \left(\frac{1}{T_1 - T_0}\right) - 1\)

\(^6\) Additional details can be found under http://iresearch.worldbank.org/PovcalNet/index.htm?0,0

\(^7\) In general, most middle income countries in Latin America and the Caribbean, as well as Europe and Central Asia are now using income as a well-accepted measure of poverty and well-being. Therefore data on income are more readily available than data on consumption and as a result, income is used to estimate G40.
(all GPVDR); Juan Feng, Umar Serajuddin (all DECDG); Dean Jolliffe, Diane Steele, Kihoon Lee, Prem Sangraula, and Shaohua Chen (all DECRG).

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