# Proposed SDG 10.1.3 Indicator (Palma) metadata

(Proposed new indicator 10.1.2 (Palma) metadata template)

The metadata used for the construction of the proposed indicator 10.1.3 (the Palma ratio) is the same as that used in shared prosperity (indicator 10.1.1) so this metadata template is the same used by the World Bank to construct and report on the shared prosperity indicator.

# 1. Data reporter

# 1.a. Organisation

World Bank (WB)

# 2. Definition, concepts, and classifications

# 2.a. Definition and concepts

#### Definition:

The **decile shares** focus on particular parts of the distribution of income or consumption: Households are first ordered according to their welfare per capita, such that the first decile contains the 10% of the population with the lowest welfare and so on. Decile shares measure the share of total welfare belonging to each decile. The **top 10 to bottom 40 ratio** (also known as the Palma ratio) compares the welfare share of the richest tenth of the population to the poorest 40 percent.

#### Concepts:

The Palma ratio measures the income distribution at the tails. Since the change in welfare distribution occurs predominantly at the top and bottom of the distribution, with the income share of the middle half about a half across countries and time, the Palma ratio is in important measure of income distribution at the tails. The Palma ratio can be decomposed into regional and global.

## 2.b. Unit of measure

Ratio.

## 2.c. Classifications

Not applicable

# 3. Data source type and data collection method

## 3.a. Data sources

The Global Database of income distribution is prepared by the World Bank's Global Poverty Working Group, which comprises poverty measurement specialists of different departments of the World Bank Group. The database's primary source of data is the World Bank Group's Poverty and Inequality Platform (PIP), an interactive computational tool that allows users to replicate the World Bank Group's official poverty estimates. The datasets included in PIP are provided and reviewed by the members of the Global Poverty Working Group. The choice of consumption or income to measure Gini for a country is consistent with the welfare aggregate used to estimate extreme poverty rates in PIP, 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 rates 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 data are 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 welfare.

# 3.b. Data collection method

To generate measures of welfare that are reasonably comparable across countries, the World Bank Group has a standardized approach for choosing time periods, data sources, and other relevant parameters. For more details on the methodology, please visit the <u>PIP Methodology Handbook</u>.

# 3.c. Data collection calendar

Source collection is ongoing by the Global Poverty Working Group of the World Bank; the distribution of income share by deciles relies on the same data used for estimating shared prosperity (indicator 10.1.1) and poverty (indicator 1.1.1).

### 3.d. Data release calendar

Data used to construct income distribution is from households' surveys.

## 3.e. Data providers

The World Bank typically receives data from National Statistical Offices (NSOs) directly. In other cases, it uses NSO data received indirectly. Please see the section on data sources for further details.

## 3.f. Data compilers

World Bank (WB)

## 3.g. Institutional mandate

Not applicable

# 4. Other methodological considerations

# 4.a. Rationale (

Given the problems with the current shared prosperity indicator, the Palma ratio can provide crucial additional evidence on why the shared prosperity target 10.1 is not being met, by looking at relative trends in income between the poorest and richest citizens. This is vital because the income of the middle deciles tends to remain largely stable at around half of total income, and inequality is mainly driven by changes in the top 10% and bottom 40%. While growth is necessary for improving economic welfare in a society, ensuring fairness is key. And since the middle of the income distribution captures roughly half of the income, ensuring fairness means paying enhanced attention at the tails.

# 4.b. Comment and limitations

#### **Data availability**

The same challenged faced in poverty estimates also affect the proposed indicator since they use the same data sources. Lack of updated household survey data is problematic. For policy purposes it is important to have indicators for the most recent period possible for each country. The selection of survey years and countries needs to be made consistently and transparently, achieving a balance between matching the time period as closely as possible across all countries, including the most recent data, and ensuring the widest possible coverage of countries, across regions and income levels. In practice, this means that time periods will not match perfectly across countries. This is a compromise: while it introduces a degree of incomparability, it also creates a database that includes a larger set of countries than would be otherwise possible.

#### Data quality

Like for poverty rates, estimates of income distribution are based on income or consumption data collected in household surveys. The same quality issues applying to poverty rates apply here. Specifically, measuring household living standards has its own complications. Surveys ask detailed questions on sources of income and how it was spent, which must be carefully recorded by trained personnel. Income is difficult to measure accurately, and consumption comes closer to the notion of living standards. Moreover, income can vary over time even if living standards do not. But consumption data are not always available: the latest estimates reported here use consumption for about two-thirds of countries.

Similar surveys may not be strictly comparable because of differences in timing, sampling frames, or the quality and training of enumerators. Comparisons of countries at different levels of development also pose problems because of differences in the relative importance of the consumption of nonmarket goods. The local market value of all consumption in kind (including own production, particularly important in underdeveloped rural economies) should be included in total consumption expenditure, but in practice are often not. Most survey data now include valuations for consumption or income from own production, but valuation methods vary.

The statistics reported on Gini by the World Bank are based on consumption data or, when unavailable, on income data. Analysis of some 20 countries for which both consumption and income data were available from the same surveys found income to yield a higher mean than consumption but also higher inequality. When poverty measures based on consumption and income were compared, the two effects roughly cancelled each other out: there was no significant statistical difference.

Invariably some sampled households do not participate in surveys because they refuse to do so or because nobody is at home during the interview visit. This is referred to as "unit nonresponse" and is distinct from "item nonresponse," which occurs when some of the sampled respondents participate but refuse to answer certain questions, such as those pertaining to income or consumption. To the extent that survey nonresponse is random, there is no concern regarding biases in survey-based inferences; the sample will still be representative of the population. However, households with different incomes may not be equally likely to respond. Richer households may be less likely to participate because of the high opportunity cost of their time or because of privacy concerns. It is conceivable that the poorest can likewise be underrepresented; some are homeless or nomadic and hard to reach in standard household survey designs, and some may be physically or socially isolated and thus less likely to be interviewed. This can bias both poverty and inequality measurement if not corrected for.

# 4.c. Method of computation

#### Palma ratio (computation from the World Bank):

Imagine that we order all households according to their welfare per capita, such that the first decile contains the 10% of the population with the lowest welfare and so on. Decile shares measure the share of total welfare belonging to each decile. Formally, the decile share of decile d*d* is given by:

$$decileshare_d = rac{\sum_{i \in d} y_i}{\sum_{i=1}^N y_i}, d \in \{1,2,\ldots,10\}$$

This formula holds for both micro and grouped data. For grouped data, ordered welfare levels, yiy*i*, are the product of the mean and the first derivative of the GQ or Beta Lorenz function at the respective rank in the distribution.

The Palma ratio is calculated as:

Income share of the richest  $10\% \div$  income share of the bottom 40%

#### **4.d. Validation** (DATA\_VALIDATION)

The raw data are obtained by poverty economists through their contacts in the NSOs, and checked for quality before being submitted for further analysis. The raw data can be unit-record survey data, or grouped data, depending on the agreements with the country governments. In most cases, the welfare aggregate, the essential element for poverty estimation, is generated by the country governments. Sometimes, the World Bank constructs the welfare aggregate or adjusts the aggregate provided by the country.

#### 4.e. Adjustments

Not applicable

# 4.f. Treatment of missing values (i) at country level and (ii) at regional level

#### At country level

Not applicable

#### At regional and global levels

Not applicable

#### 4.g. Regional aggregations

The Palma ratio can be decomposed into country, regional and global levels aggregation.

# 4.h. Methods and guidance available to countries for the compilation of the data at the national level

Countries may refer to the report "On the Construction of a Consumption Aggregate for Inequality and Poverty Analysis". The report is available here: <u>https://documents.worldbank.org/en/publication/documents-reports/docu-</u> <u>mentdetail/099225003092220001/p1694340e80f9a00a09b20042de5a9cd47e</u> Oxfam, Development Finance International, Centre for International Cooperation at the New York University and UNAIDS

# 4.i. Quality management

The quality of the estimates is managed through the World Bank's Global Poverty Working Group.

# 4.j. Quality assurance

The poverty estimates released by the World Bank are quality checked by members of the Global Poverty Working Group.

# 4.k. Quality assessment

Assessments of the quality behind poverty estimates are often available in World Bank Poverty Assessments and in Global Poverty Monitoring Technical Notes.

# 5. Data availability and disaggregation

The latest version of the PIP database has Palma ratio for 168 counties.

# 6. References and Documentation

# URL:

[1] https://pip.worldbank.org

#### **References:**

The Global Database of Gini Index, World Bank, <u>https://pip.worldbank.org/key-inequality-indicators</u>, Poverty and Inequality Platform, World Bank.