

Monitoring Global Poverty

DEAN JOLLIFFE, WORLD BANK
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40 YEARS OF THE LUXEMBOURG INCOME STUDY
GLOBAL POVERTY AND INEQUALITY SESSION



Poverty & Inequality Platform

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These slides were prepared for the 40th anniversary of the Luxembourg Income Study, held on May 25-26, 2023. Findings in these slides reflect the work of many people, including but not limited to, Aziz Atamanov, Andres Castaneda Aguilar, Samuel Tetteh Baah, Dean Jolliffe, Christoph Lakner, Daniel Mahler, Marta Schoch, Martha Viveros, Nishant Yonzan. The findings, views, interpretations in this presentation do not necessarily represent the views of the World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

Outline

I: Monitoring extreme poverty

- the international poverty line
- global profile of extreme poverty
- the data with call-out to LIS (=> broadening the focus to include lines & measures relevant to richer countries)

II: Higher poverty lines

III: Work to improve transparency, replicability, trust

The International Poverty Line
(currently \$2.15 in 2017 PPPs)

The international poverty line

- Since the introduction in 1990 of the 'dollar-a-day' international poverty line, the World Bank has monitored poverty using an international poverty line.
- The international poverty line reflects the typical national poverty line of some of the poorest countries in the world.
- These national poverty lines typically indicate the minimum cost of covering basic food and nonfood needs.
- People living on less than the international pov. line are in extreme poverty.
- This measure of poverty is used for the *first* of the World Bank's twin goals and for the *first* indicator of the Sustainable Development Goals.

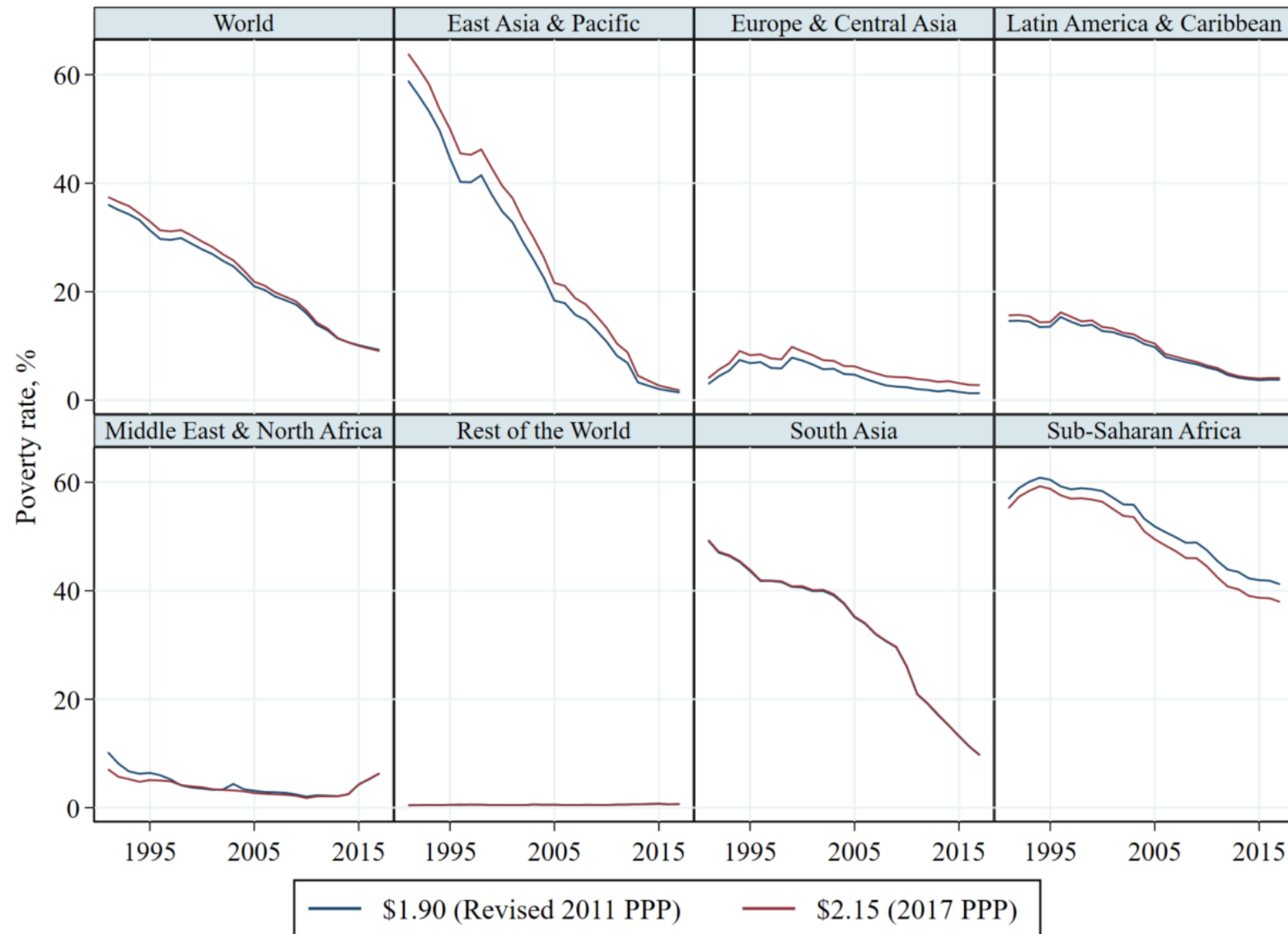


History of revisions to the international poverty line

- National poverty lines and household consumption are reported in local currencies. We use purchasing power parity (PPP) exchange rates convert them to the same currency and account for price differences faced by people.
- New PPPs are collected periodically, most recently in 2017. When PPPs are updated, the international poverty line is typically updated.

Source	World Bank (1990)	Chen and Ravallion (2001)	Ravallion et al. (2009)	Ferreira et al. (2016)	Jolliffe al. (2022)
ICP Data (PPPs)	1985	1993	2005	2011	2017
Method	Inspection (rounded)	Median	Mean	Mean (rounded)	Median
International Poverty line (ICP year USD)	\$1.01 (\$1.00) "Dollar-a-day"	\$1.08	\$1.25	\$1.88 (\$1.90)	\$2.15
Countries used in sample	Bangladesh, Indonesia, Kenya, Morocco, Nepal, Pakistan, Philippines, Tanzania	Bangladesh, China, India, Indonesia, Nepal, Pakistan, Tanzania, Thailand, Tunisia, Zambia	Chad, Ethiopia, The Gambia, Ghana, Guinea-Bissau, Malawi, Mali, Mozambique, Nepal, Niger, Rwanda, Sierra Leone, Tajikistan, Tanzania, Uganda	Same as Ravallion et al.(2009) (15 countries)	28 low-income countries

Revision to poverty line did not change trend in global poverty, relatively modest regional changes

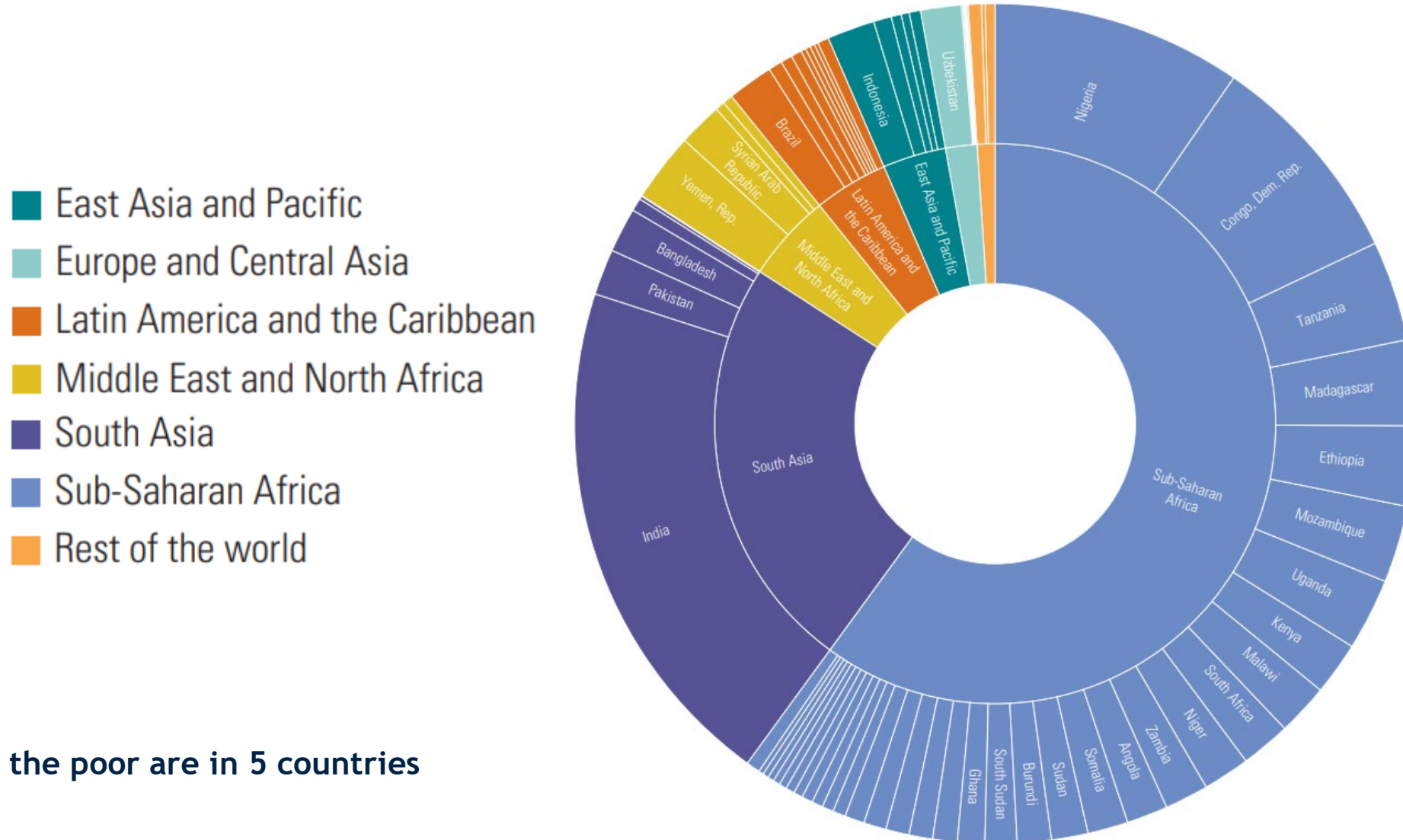


The data for setting the international poverty line

- **Previously:** \$1.90 poverty line (2011 PPPs) and \$1.25 poverty line (2005 PPPs) were derived as the average national poverty line of *15 poor countries*
- **Now:**
 - Larger, newer, more comparable sample of national poverty lines
 - International Poverty Line = median national poverty line for low-income countries, \$2.15 in 2017 PPPs
 - + higher lines derived as median national poverty line of LMICs and UMICs
 - Using the new data set and the 2011 PPPs also resulted in a poverty line of \$1.90 in 2011 PPPs.
- Technical details in WB Policy Research Working Paper [no. 9941](#)

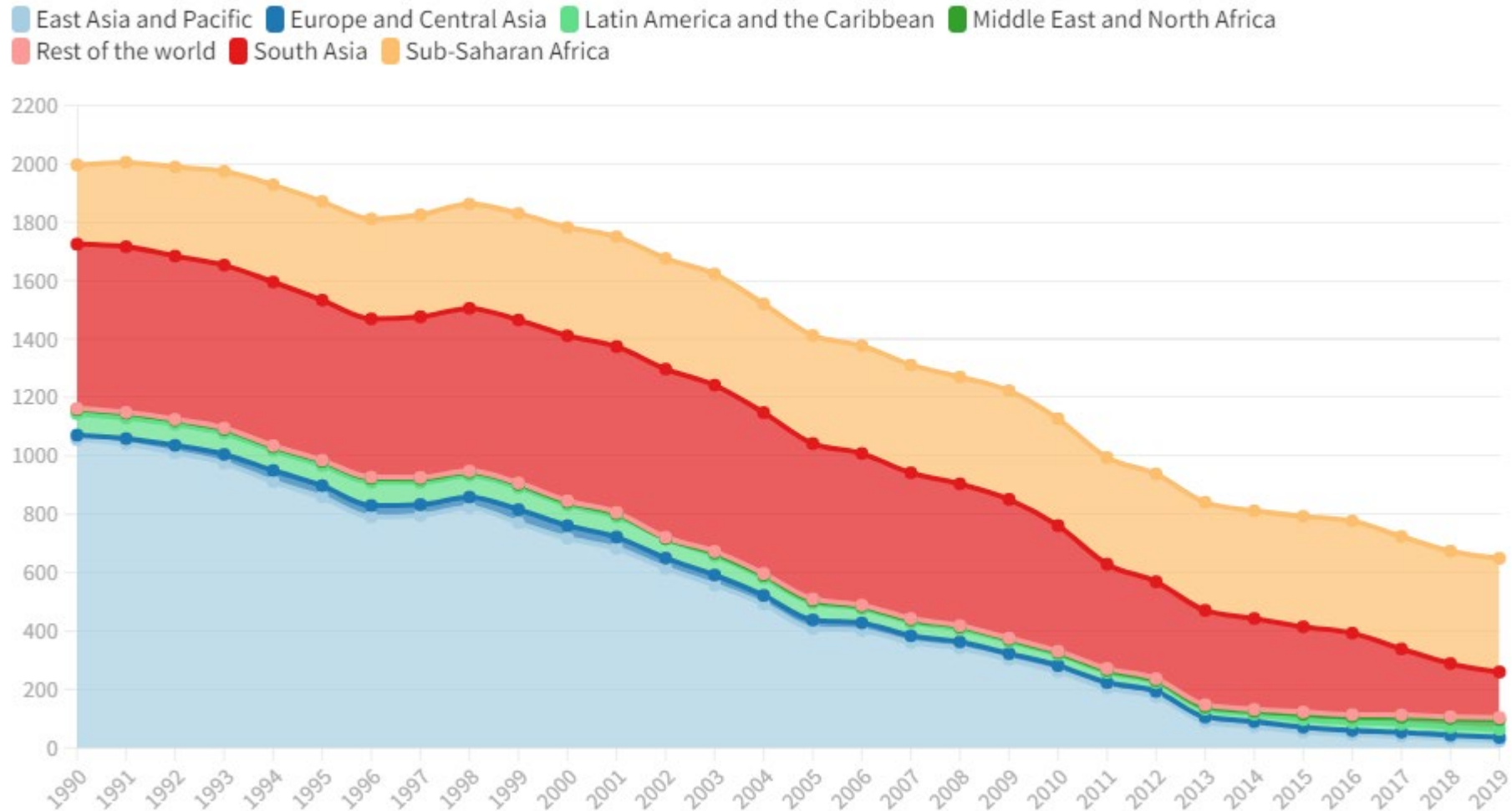
Global profile of extreme poverty

Where do those in extreme poverty live? concentrated in Sub-Saharan Africa



Half the poor are in 5 countries

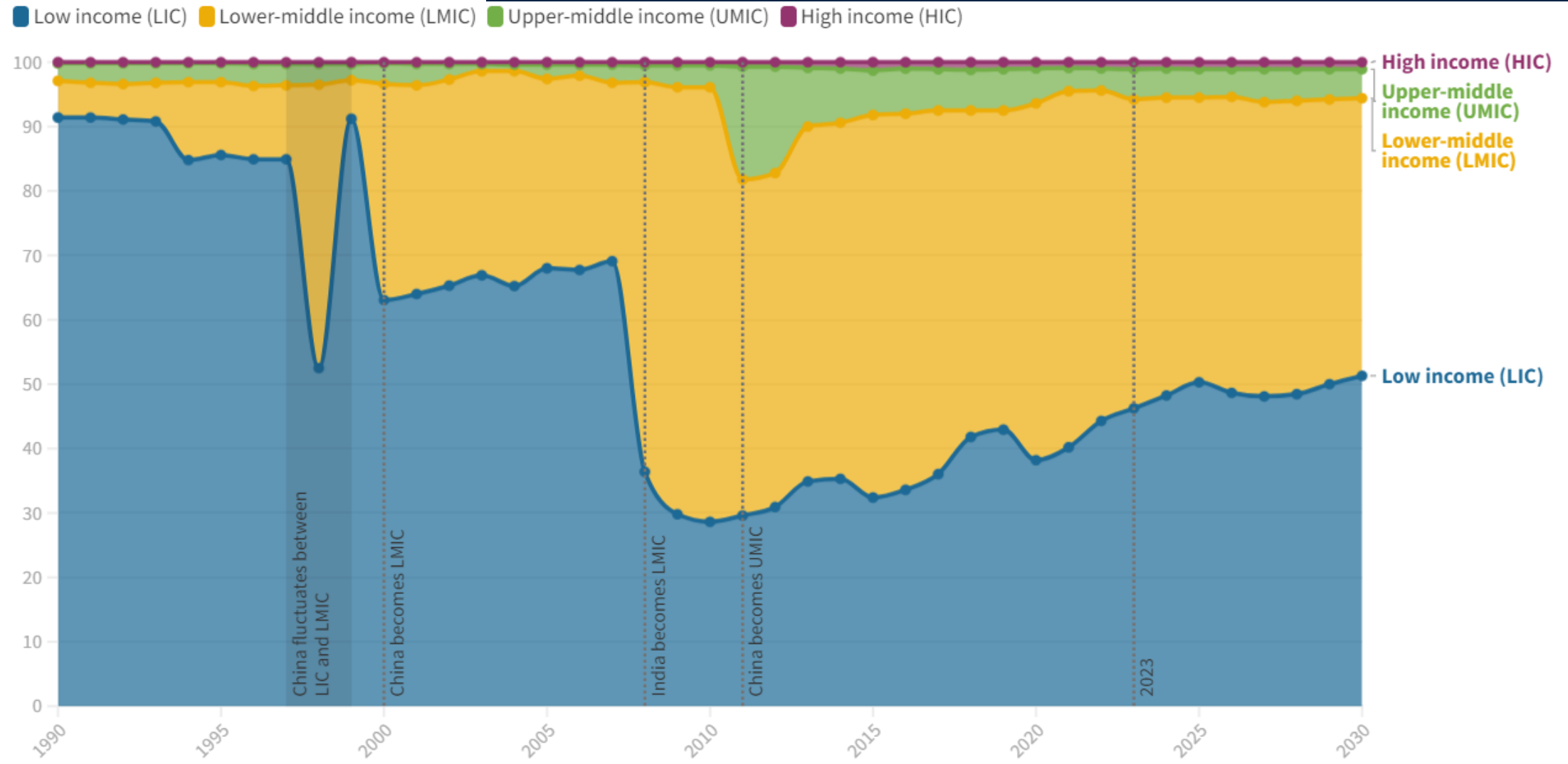
Three decades ago, the majority of the world's poor lived in East Asia & Pacific



Source: <https://blogs.worldbank.org/developmenttalk/end-extreme-poverty-getting-back-pre-covid-19-reduction-rates-not-enough>

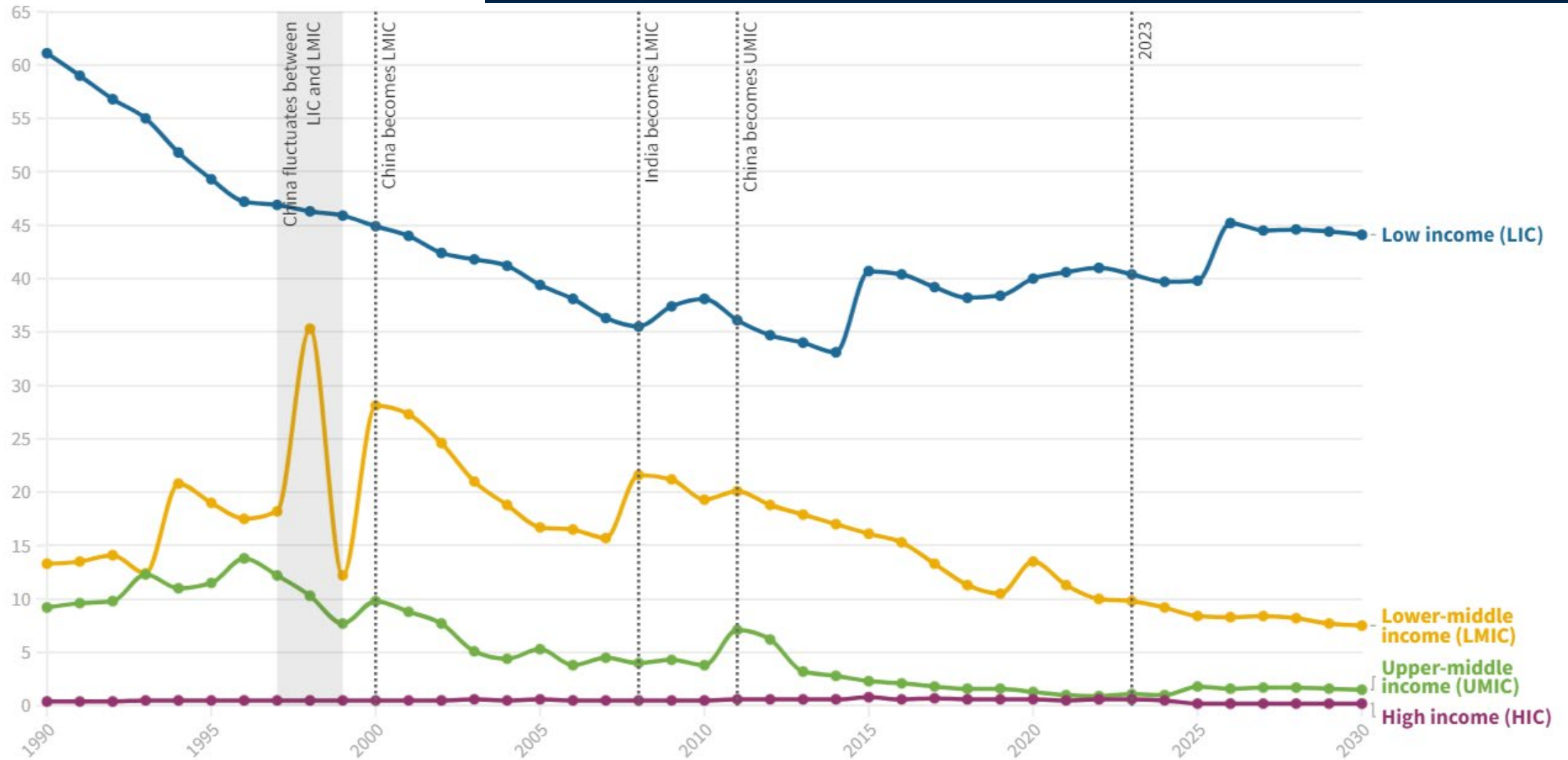
Share of global poor (%), evolving classification

Poverty population by income level



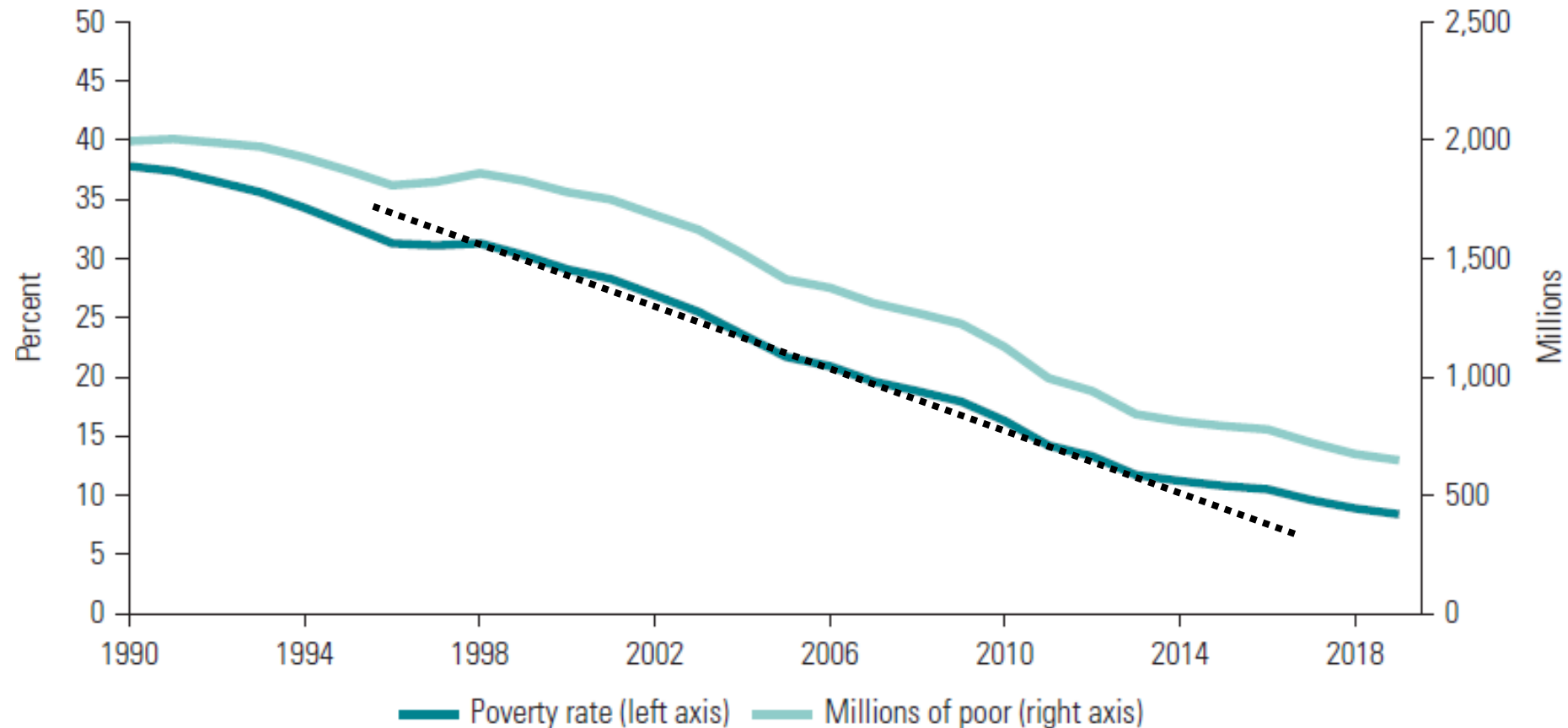
Source: [Poverty and Inequality Platform, Historical income classifications](#) • The figure shows the share of the global extreme poor (measured at the international poverty line of \$2.15 per person per day) by country income group. The 'evolving' income group classification changes from year to year. Classifications refer to fiscal years (FY) and are here matched to the year of their release. For example, the FY23 classification, released in July 2022, is here tied to 2022. The 'current' income group classification uses the FY23 classification in the entire graph.

Poverty rate by income level



Source: [Poverty and Inequality Platform, Historical income classifications](#) • The figure shows the extreme poverty rate (measured at the international poverty line of \$2.15 per person per day) by country income group. The 'evolving' income group classification changes from year to year. Classifications refer to fiscal years (FY) and are here matched to the year of their release. For example, the FY23 classification, released in July 2022, is here tied to 2022. The 'current' income group classification uses the FY23 classification in the entire graph.

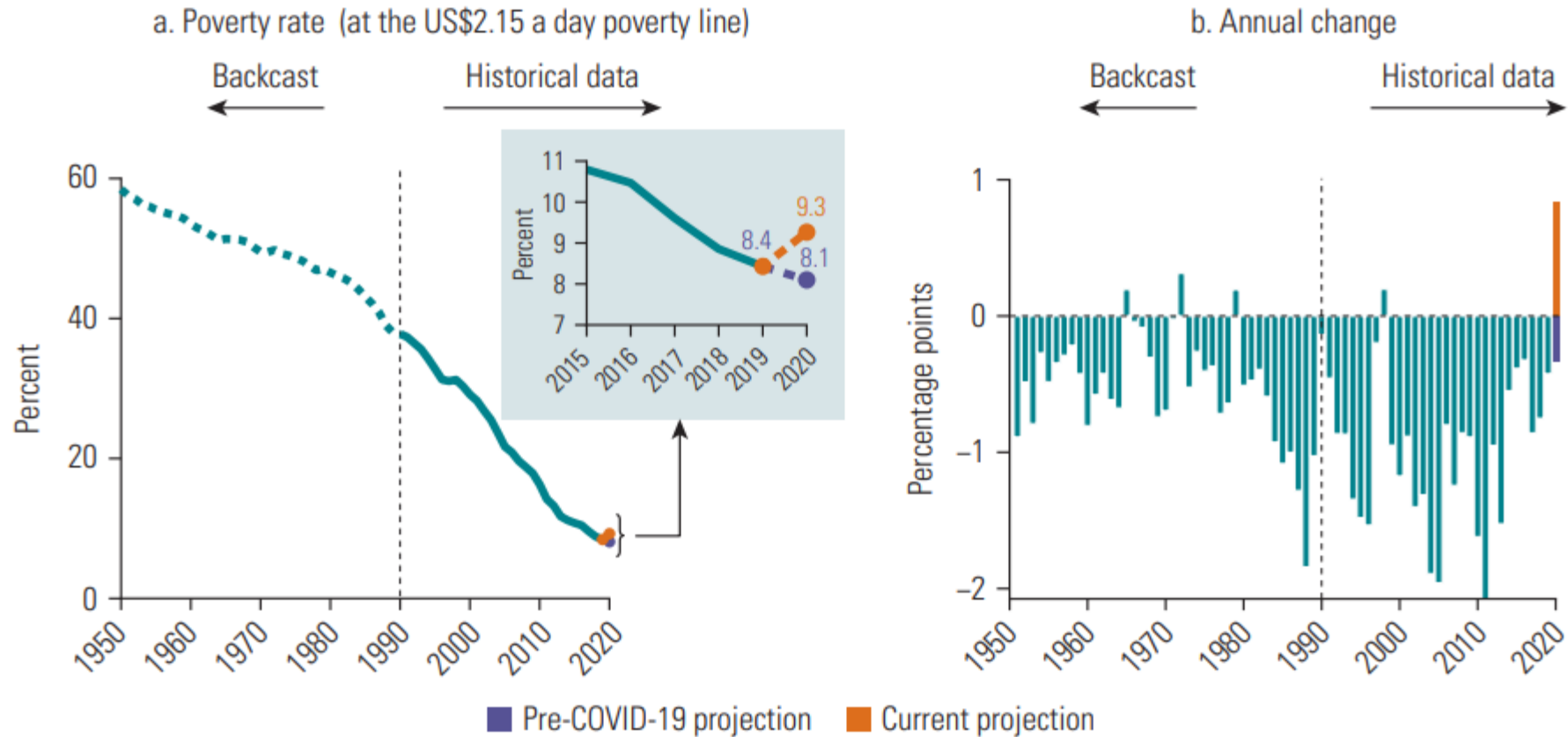
1990 – 2014: remarkable progress in reducing poverty After 2014, significant slowdown



Source: World Bank, Poverty and Inequality Platform, <https://pip.worldbank.org>.

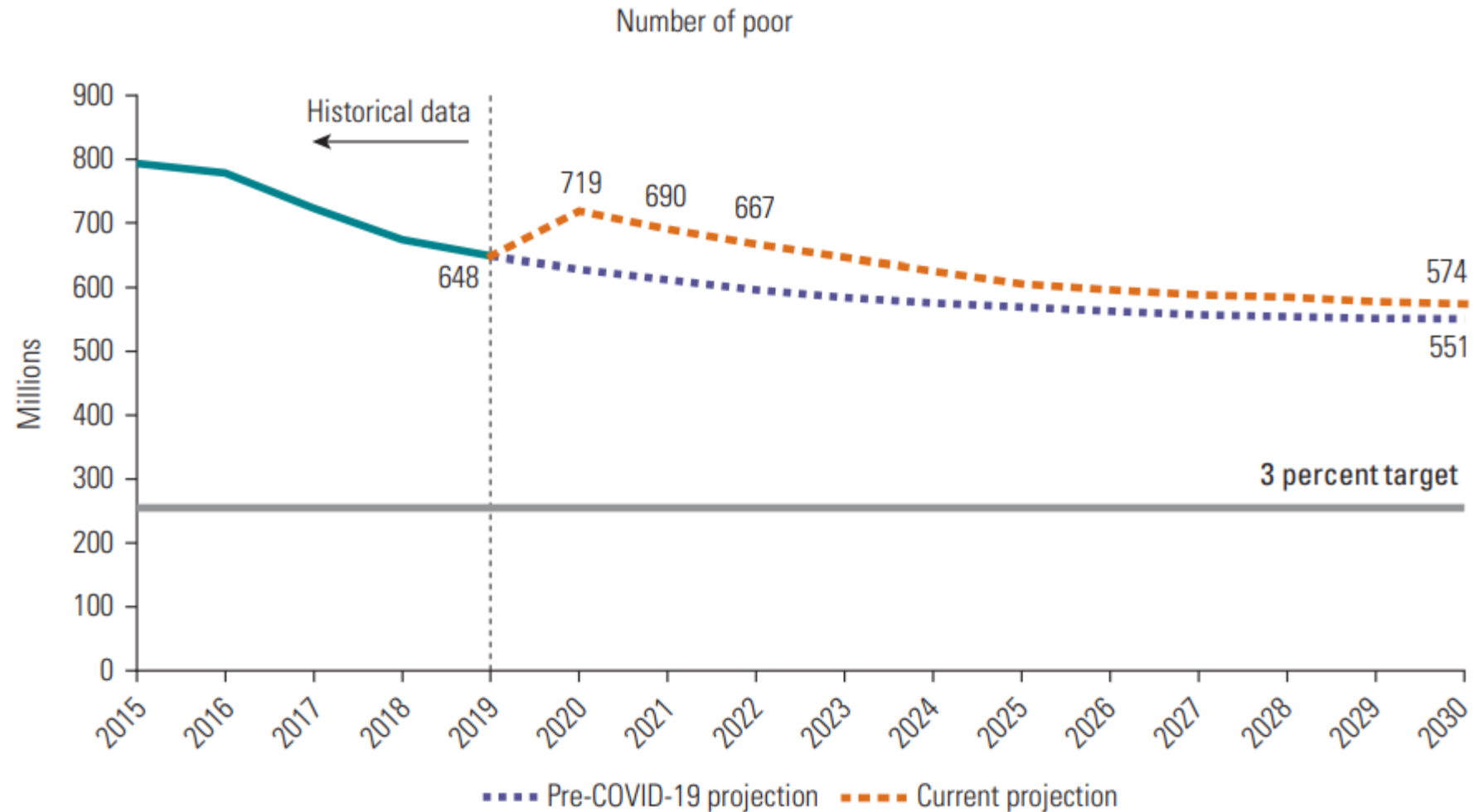
Note: The figure shows the poverty rate and number of poor at the international poverty line of US\$2.15 (2017 PPP) per person, per day. See box 1.1 for more details on the adoption of 2017 PPPs that are used for monetary poverty measures throughout the chapter. PPP = purchasing power parity.

The COVID-19 pandemic was a historic shock to global poverty



Source: 2022 Poverty and Shared Prosperity Report and Mahler, Yonzan, Lakner. 2022. "The Impact of COVID-19 on Global Inequality and Poverty." World Bank Policy Research Working Paper 10198.

Forecasting poverty reduction: Completely off path to 3% by 2030



LIS in the global estimates of extreme poverty

Overview of survey data used for global poverty monitoring

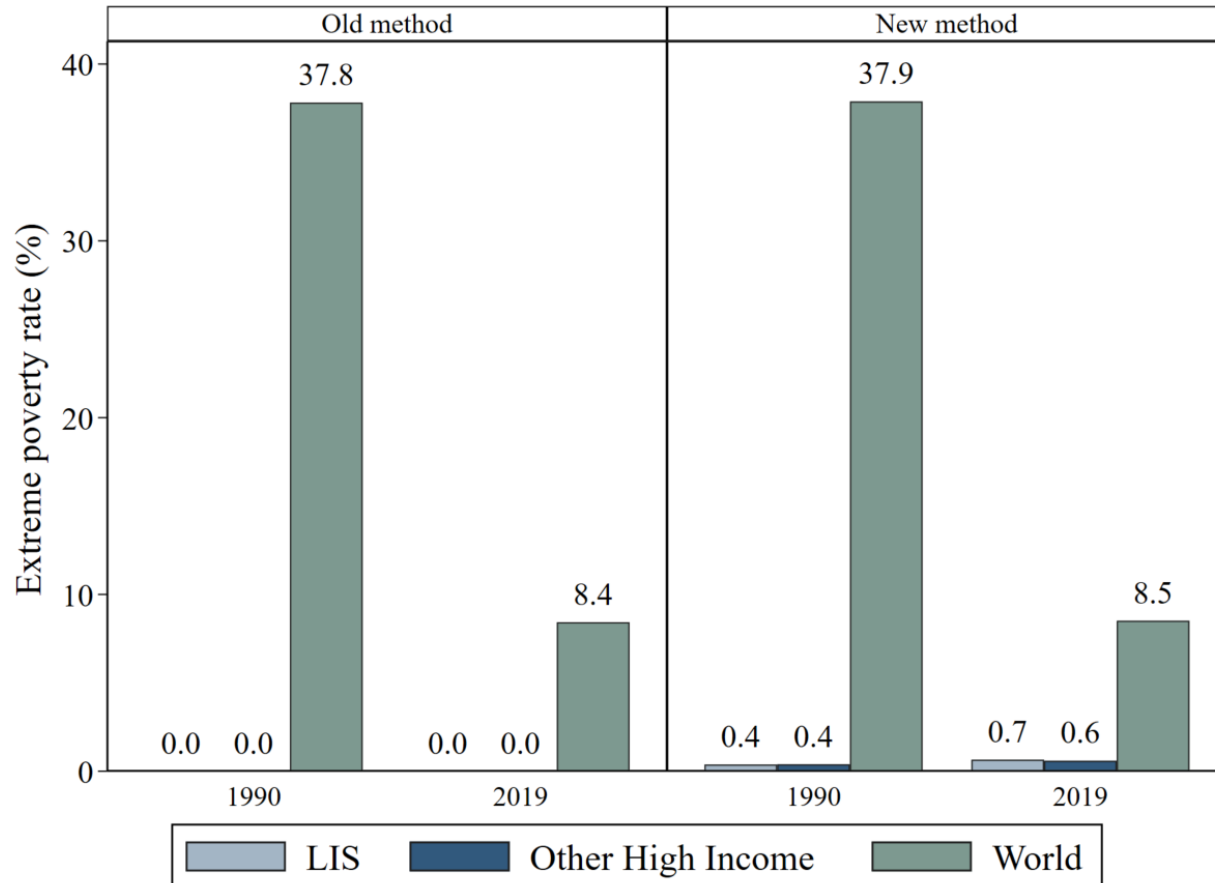
1968 - 2022

Region	Number of countries	Number of survey-years	Median of last survey years	Share (%) of extreme poor in 2019
East Asia & Pacific	21	160	2018	3.7
Europe & Central Asia	30	569	2020	1.7
Latin America & Caribbean	25	456	2020	4.2
Middle East & North Africa	12	67	2014	5.6
South Asia	7	55	2019	24.4
Sub-Saharan Africa	45	213	2017	59.4
Other—High-income Countries (HICs)	28	599	2020	1.0
<i>HICs for which LIS data are used</i>	<i>9</i>	<i>208</i>	<i>2018</i>	<i>0.7</i>
World	168	2,119	2018	100.0

(1) Australia (2) Canada (3) Germany (4) Israel (5) Japan (6) South Korea (7) Taiwan, China (8) United Kingdom (9) United States

- We download household-level data in 400 bins from LISSY.
- LIS data are treated as microdata, NOT grouped data, in the Poverty and Inequality Platform (PIP).

Poverty in the 'developing world' vs. whole world



Note: Other High Income refers to all high-income countries, including nine countries for which LIS data are used.

- circa Fall 2013, headline poverty estimate focused on poverty in the world (rather developing world). Assumed no extreme poverty in high-income countries.
- Since Fall 2017, with inclusion of data from high-income countries, including LIS, poverty in HICs in global poverty estimates.
- While inclusion of LIS data in extreme poverty estimates has relatively small effect on extreme poverty estimates, ...
- ... our use of LIS data has been much more about *broadening our toolkit for monitoring poverty* (in accord with Atkinson recommendations).
- In PovcalNet/PIP, high-income countries were/are classified as “Other High Income”.

Higher poverty lines

Limitations of the \$2.15 line

The \$2.15 poverty line is a **frugal**, **absolute**, and **monetary** standard for measuring poverty. Many people who live on more than \$2.15 per day could be considered poor, for example:

Higher standards

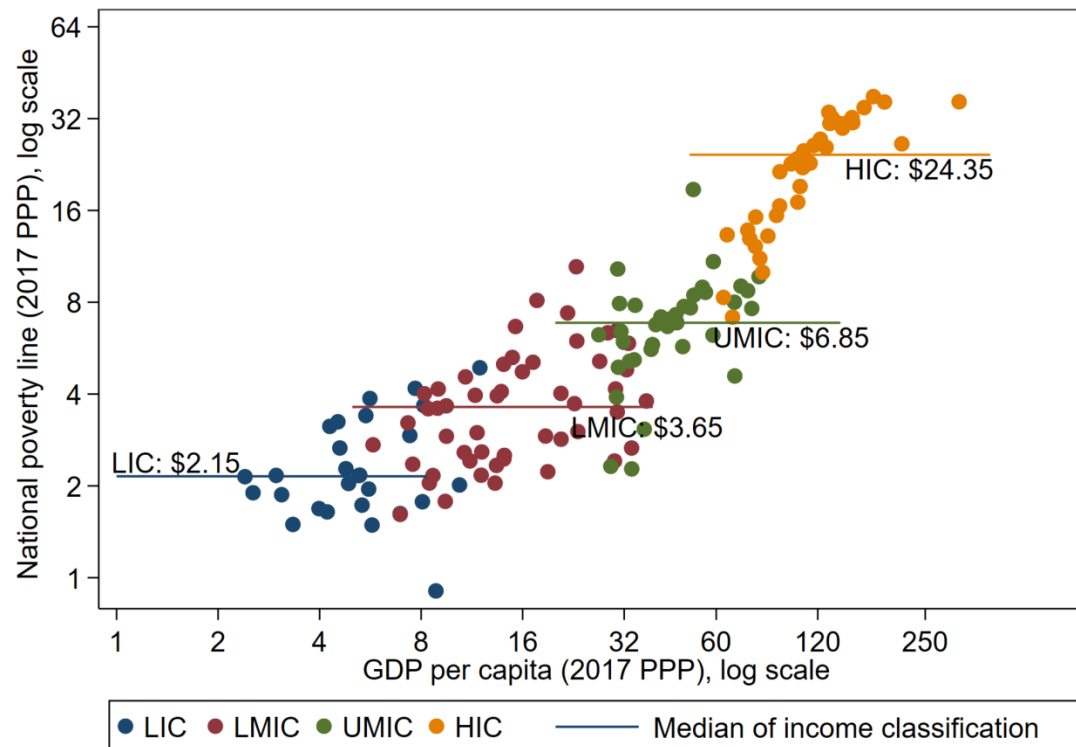
An individual who lives on less than \$3.65 or \$6.85 day

Relative standards

Basic needs may vary across countries.

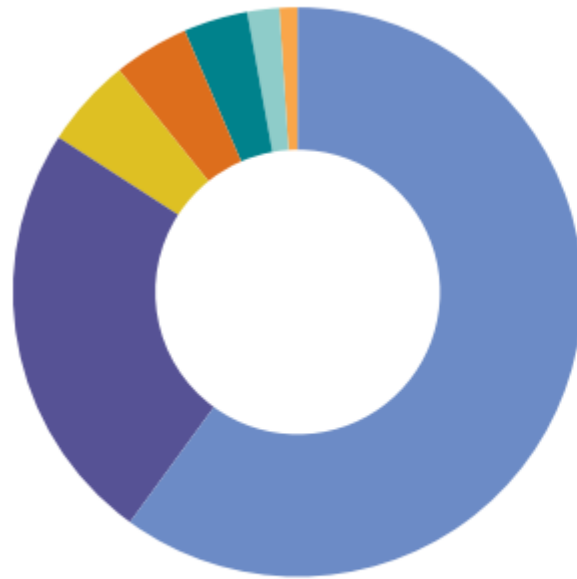
Global poverty lines, 2011 & 2017 PPPs

Income classification	Median (\$) (2011 PPP)	Rounded	Observations	Median (\$) (2017 PPP)	Rounded	Observations
Low income (LIC)	1.91	1.90	33	2.15	2.15	28
Lower-middle income (LMIC)	3.21	3.20	32	3.63	3.65	54
Upper-middle income (UMIC)	5.48	5.50	32	6.85	6.85	37
High income (HIC)	21.7		29	24.36	24.35	38

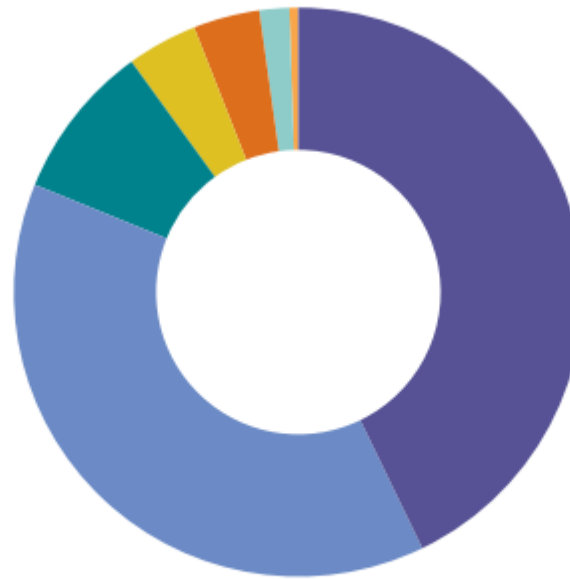


At higher poverty lines, the regional distribution of the global poor changes

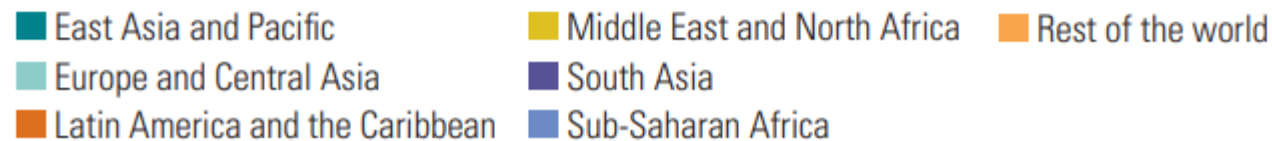
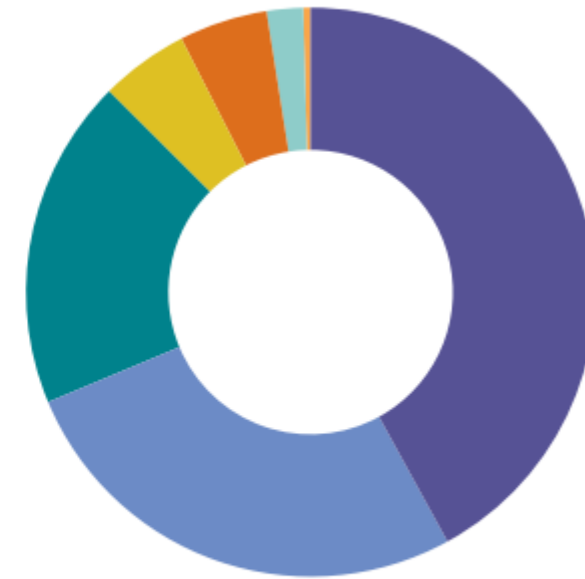
a. Number of poor, US\$2.15



b. Number of poor, US\$3.65



c. Number of poor, US\$6.85



Relative standards

Societal poverty: Using a poverty line that increases as countries get wealthier

- Societal poverty reflects idea that as countries get wealthier, the standard of meeting basic needs increases.
- The wealthier a country, the more resources one needs not to avoid social exclusion.
- The World Bank introduced the societal poverty line (SPL) in 2018:

$$SPL = \max[2.15, 1.15 + 0.5 * \text{median}]$$

ESTABLISHING A NEW SOCIETAL POVERTY LINE

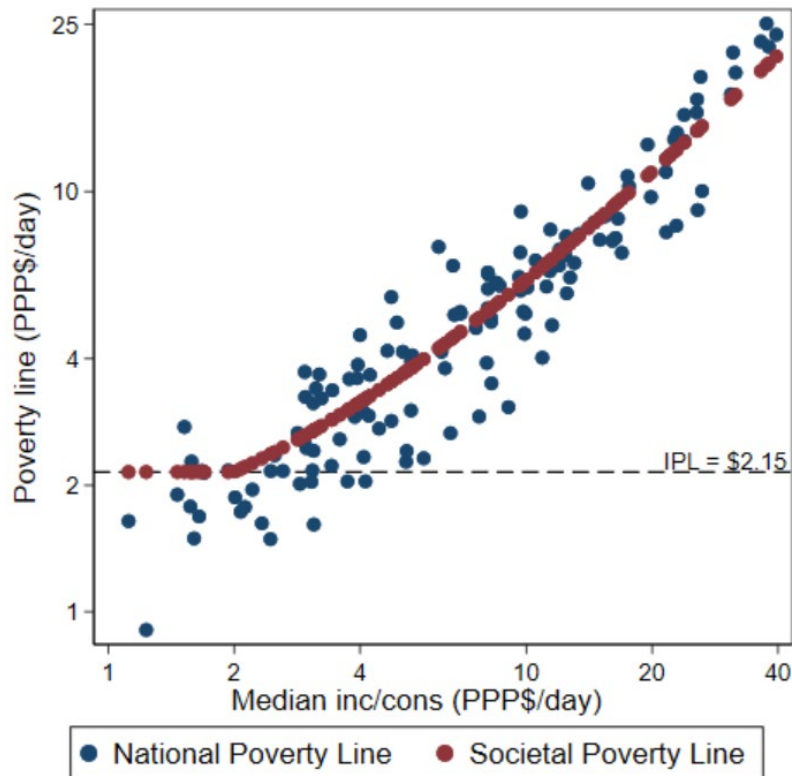
Being poor is relative.

In a poor country, one may only need clothing and food to perform work, whereas in a richer society, one may also need access to internet, a phone, and a vehicle.

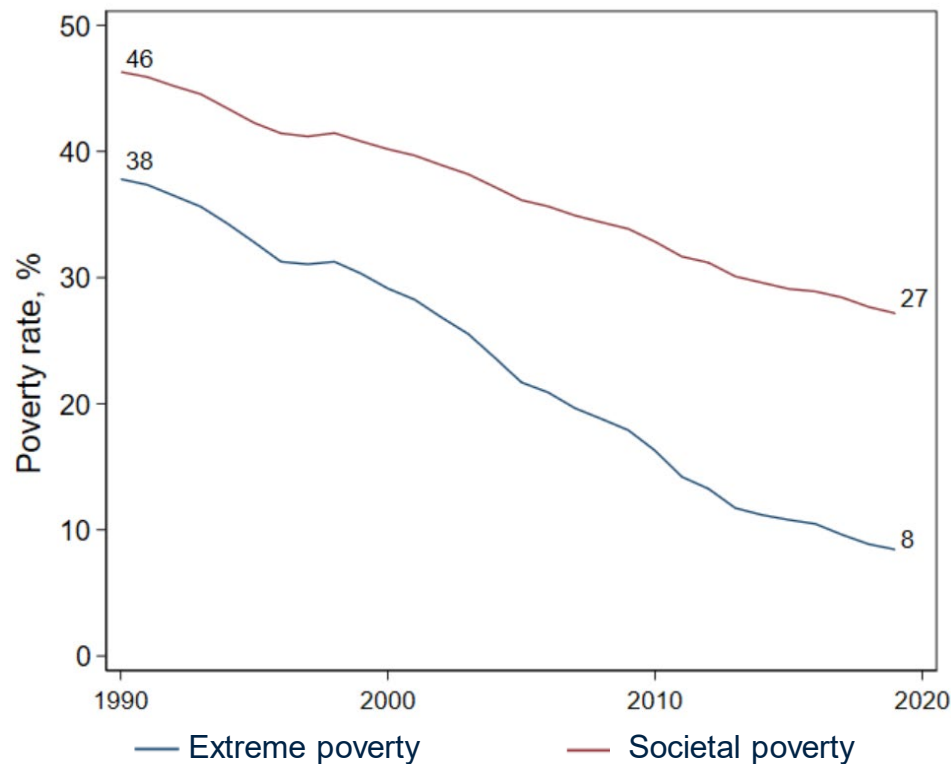


Societal poverty 3 times larger than extreme poverty

How countries define basic needs increases with income



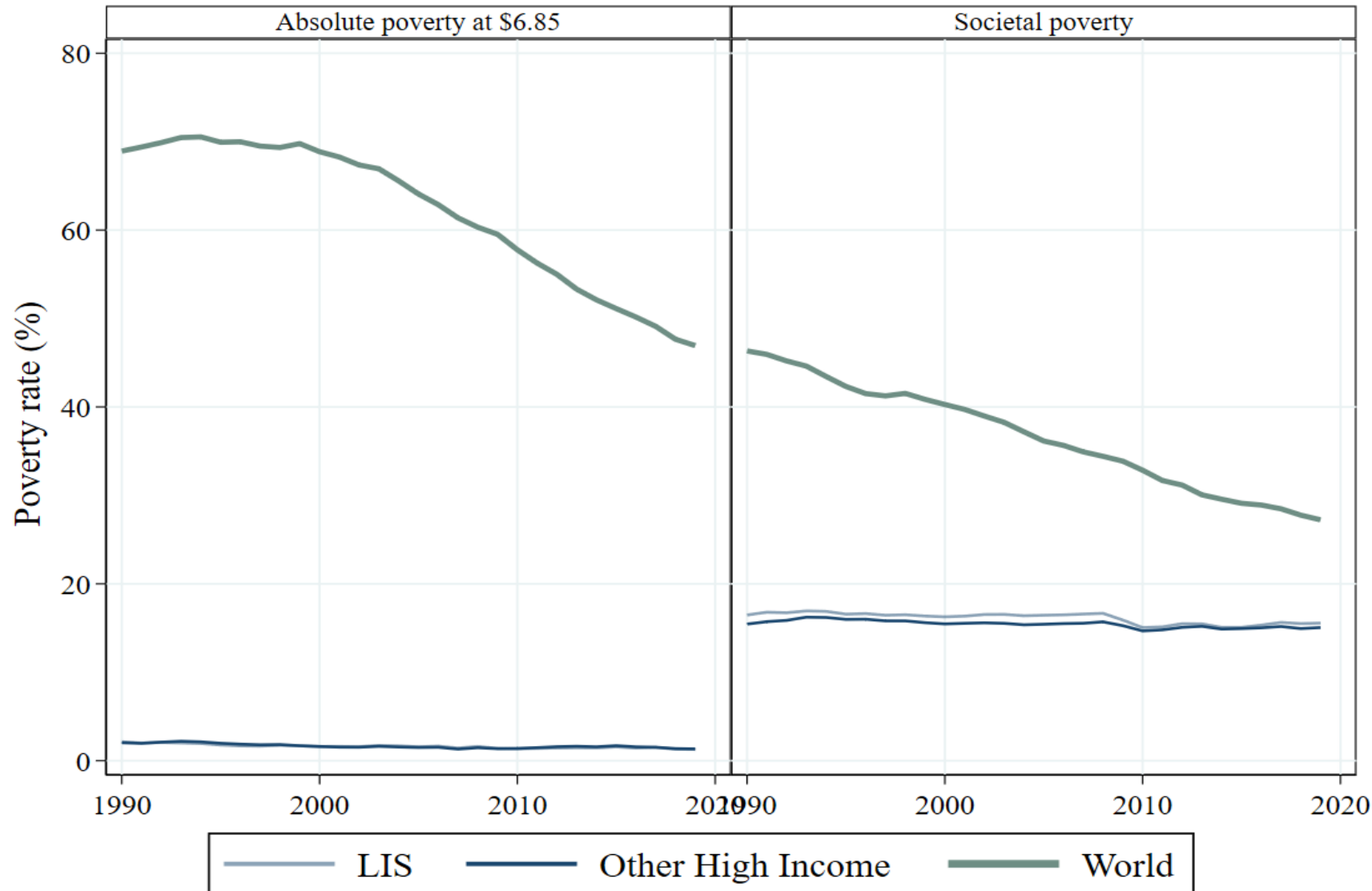
Societal poverty declines more slowly with growth because the poverty line increases



Societal poverty is hybrid of absolute & relative poverty; Declines, slowly, over time

- The societal poverty line reflects average assessments of social & economic basic needs at different levels of development. $SPL = \max(\$2.15, \$1.15 + 0.5 \times \text{Median})$

LIS and poverty at higher lines -- \$6.85 and the societal poverty line



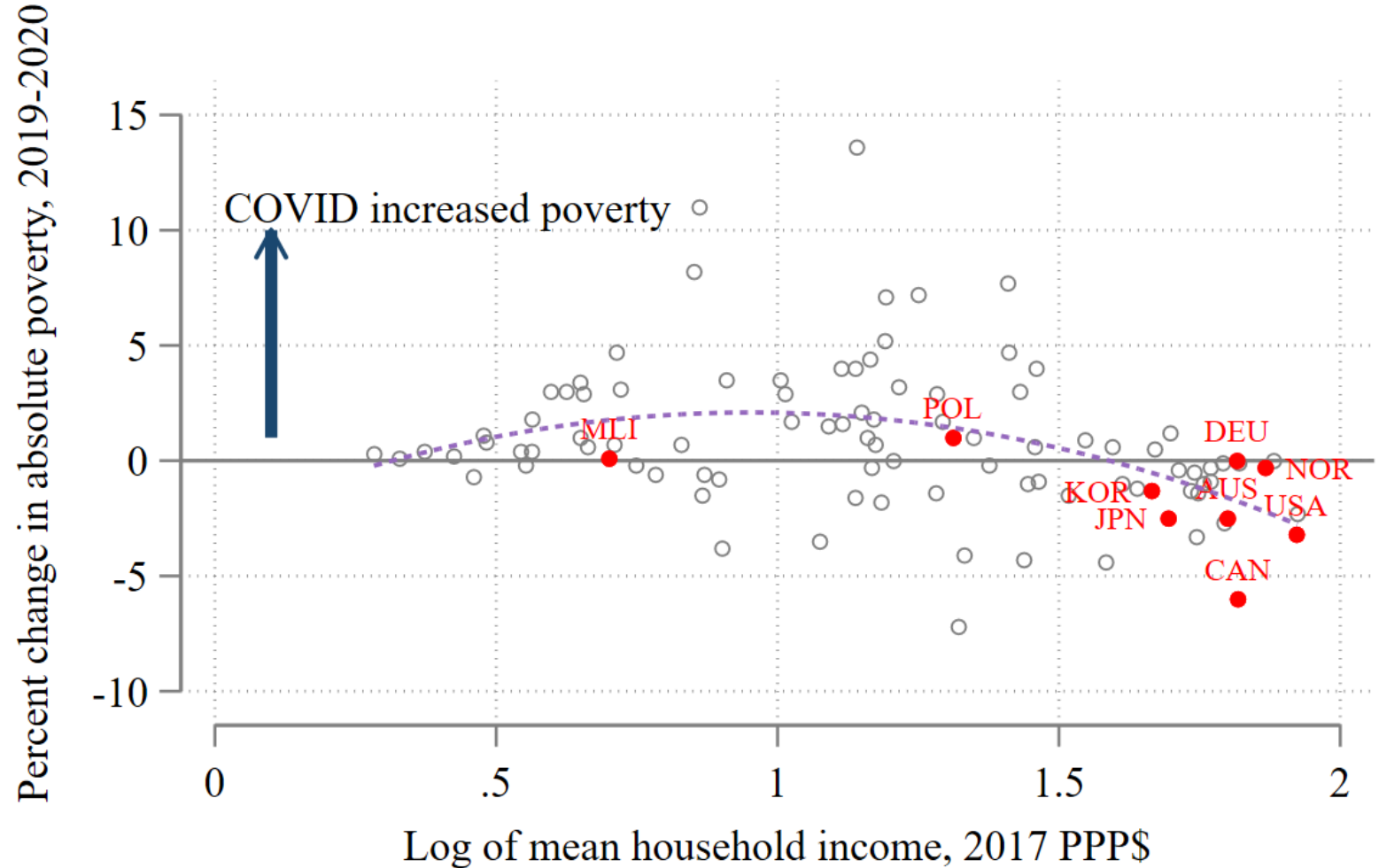
(A) About half of the world's population lives on less than \$6.85 a day, still very low rates in our LIS data and 'other high income'.

(B) Societal poverty in LIS and other high income countries has been steady at just under 20% over last three decades

(C) Note: LIS means the 9 LIS countries used in PIP

COVID & Poverty at higher lines: Poverty largely declined in richer countries during COVID

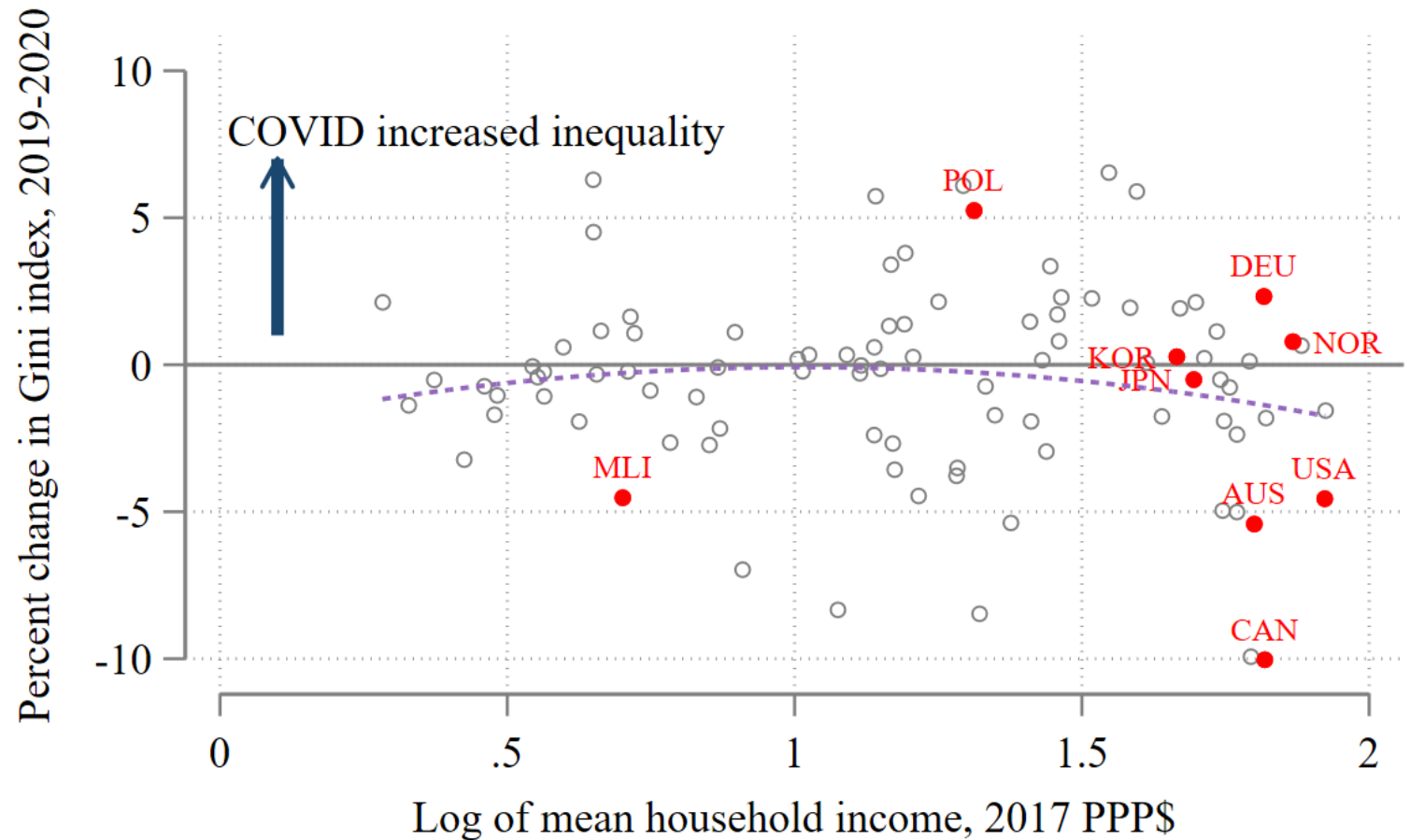
- Each dot represents the percent of people who crossed the SPL (societal pov line) anchored in 2019.
- Poverty changes were higher for countries with relatively medium income.



Source: Mahler et al. 2022, updated

Estimated changes in inequality were mixed in 2020.
Inequality went up in as many countries as it went down in 2020.

- Inequality changes were mixed. However, largely, richer countries saw a decline in inequality in 2020.

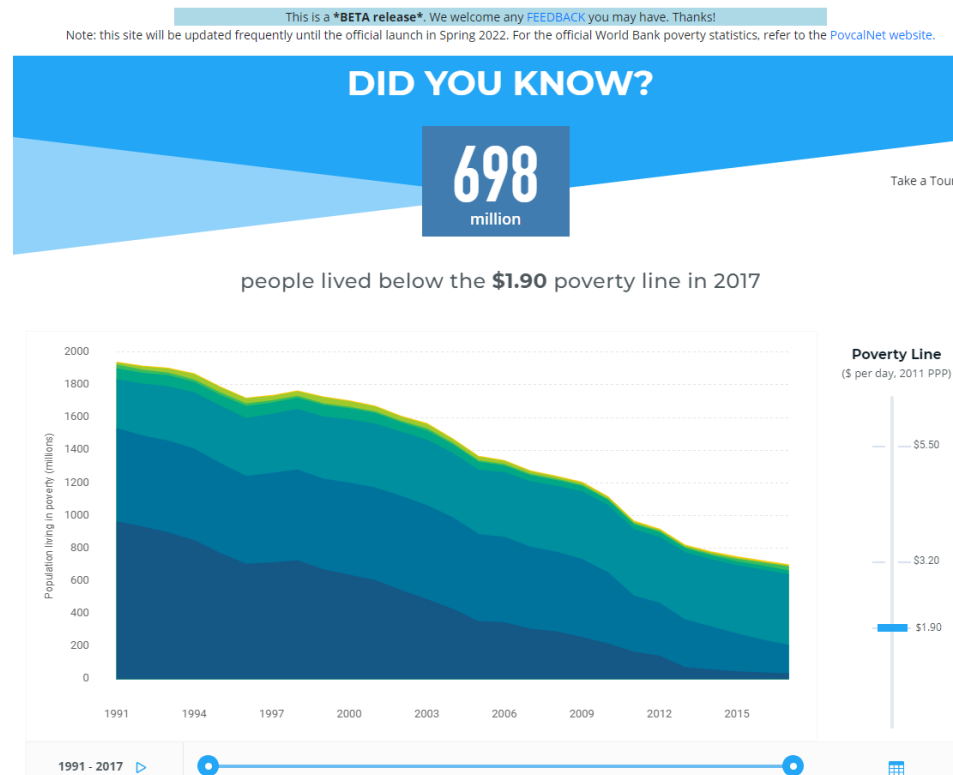


Source: Mahler et al. 2022, updated

Work to improve transparency, replicability, trust

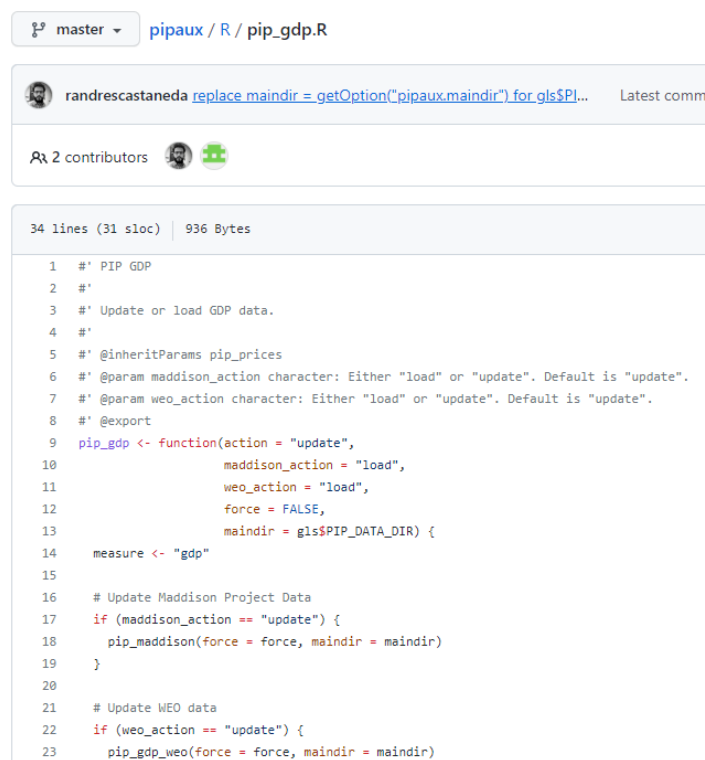
Quality, accessibility, and transparency

- All estimates can be accessed through the Poverty and Inequality Platform (PIP) (www.pip.worldbank.org).
- PIP is a comprehensive platform for all the World Bank's poverty and inequality data
- The data can also be accessed through API-based solutions
- Where data sharing agreements permit, the anonymized microdata are accessibly through PIP's Statistics On-Line (SOL) tool (www.pip.worldbank.org/sol)



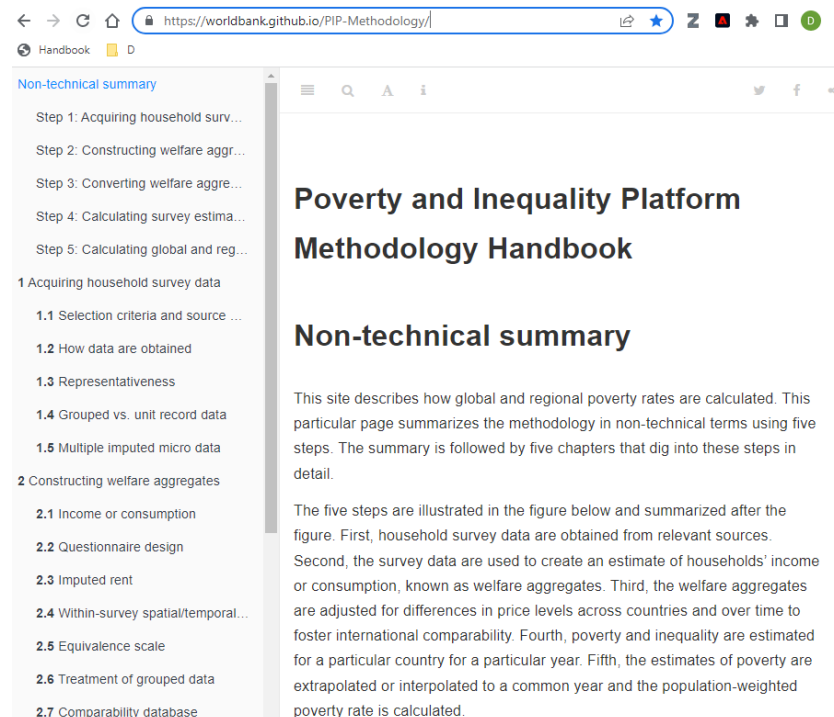
Quality, accessibility, and transparency

- All code necessary to create the poverty estimates are publicly available (<https://github.com/PIP-Technical-Team>)
- A description of the entire methodology is available in a technical handbook (<https://worldbank.github.io/PIP-Methodology/>)



The screenshot shows a GitHub repository for the file `pip_gdp.R`. The repository is owned by `randrescastaneda` and has 2 contributors. The file is 34 lines long (31 sloc) and 936 Bytes. The code is as follows:

```
1 #' PIP GDP
2 #'
3 #' Update or load GDP data.
4 #'
5 #' @inheritParams pip_prices
6 #' @param maddison_action character: Either "load" or "update". Default is "update".
7 #' @param weo_action character: Either "load" or "update". Default is "update".
8 #' @export
9 pip_gdp <- function(action = "update",
10                    maddison_action = "load",
11                    weo_action = "load",
12                    force = FALSE,
13                    maindir = gls$PIP_DATA_DIR) {
14   measure <- "gdp"
15
16   # Update Maddison Project Data
17   if (maddison_action == "update") {
18     pip_maddison(force = force, maindir = maindir)
19   }
20
21   # Update WEO data
22   if (weo_action == "update") {
23     pip_gdp_weo(force = force, maindir = maindir)
```



The screenshot shows the website <https://worldbank.github.io/PIP-Methodology/>. The page title is "Poverty and Inequality Platform Methodology Handbook". The page content is organized into a table of contents with a "Non-technical summary" section. The "Non-technical summary" section is highlighted and contains the following text:

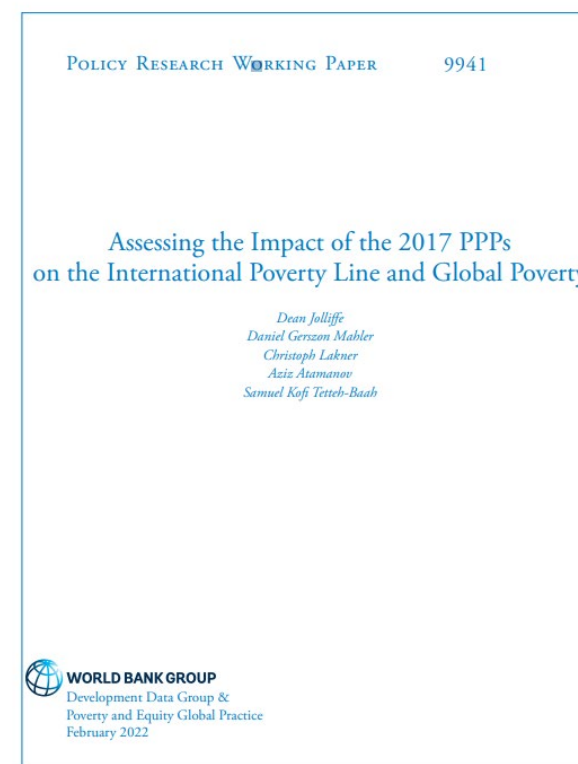
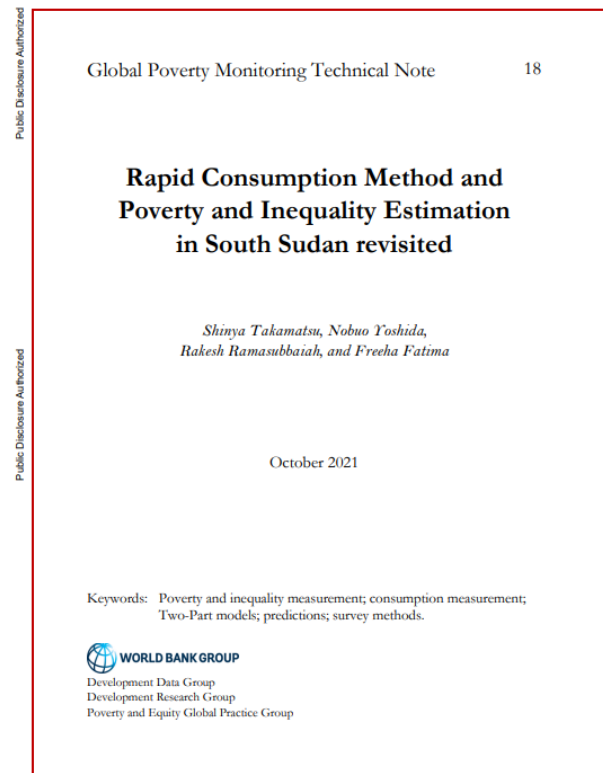
Non-technical summary

This site describes how global and regional poverty rates are calculated. This particular page summarizes the methodology in non-technical terms using five steps. The summary is followed by five chapters that dig into these steps in detail.

The five steps are illustrated in the figure below and summarized after the figure. First, household survey data are obtained from relevant sources. Second, the survey data are used to create an estimate of households' income or consumption, known as welfare aggregates. Third, the welfare aggregates are adjusted for differences in price levels across countries and over time to foster international comparability. Fourth, poverty and inequality are estimated for a particular country for a particular year. Fifth, the estimates of poverty are extrapolated or interpolated to a common year and the population-weighted poverty rate is calculated.

Quality, accessibility, and transparency

- All major methodological decisions are peer reviewed internally and/or externally and documented through Global Poverty Monitoring Technical Notes or Policy Research Working Papers.



PIP using Stata: Installation

- ▶ Install PIP Stata module from github by running the following command in Stata (It will be available from SSC soon.)

```
net install github, from("https://haghish.github.io/github/")
```

```
github install worldbank/pip
```

- ▶ Note that there might be an issue when installing from Github if connected to the VPN. We recommend disconnecting from the VPN.
- ▶ For details see: <https://worldbank.github.io/pip/>
- ▶ Please report any other issues installing the wrapper here: <https://github.com/worldbank/pip/issues> or send an email to pip@worldbank.org

PIP resources

- PIP how to videos: <https://pip.worldbank.org/use-pip>
- Detailed methodology: <https://worldbank.github.io/PIP-Methodology/>
- Data updates and related publications:
<https://pip.worldbank.org/publication>
- FAQs: <https://pip.worldbank.org/faqs>
- Questions/comments/concerns: pip@worldbank.org
- Citation: World Bank. (2022). Poverty and Inequality Platform (**version {version_ID}**) [Data set]. World Bank Group. www.pip.worldbank.org. Accessed {date}.

Tremendous scope for LIS – World Bank synergies & collaboration

- Learn from LIS expertise, particularly in high-income countries
- As noted by many, there is much to be learned from better understanding income-consumption-wealth linkages
- As PIP expands ... more countries with income only
 - low-income countries get richer, we are seeing more of the measurement challenges and opportunities faced in data collection in high-income countries (e.g., nonresponse, respondent burden, innovative instruments)
- As LIS expands ... more MICs, more interest in consumption
- Better measures of wealth important for both

