Shortfall of Domestic Resources to Eradicate Extreme Poverty

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Abstract

JEL codes: Keywords:

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2.1 Data

The percentiles of each country's income (or consumption) are estimated by the Poverty and Inequality Platform (PIP) of the World Bank (ex-PovcalNet). This data is based on purchasing power parity (PPP) and given in constant 2017 $. PIP aggregates the most recent household surveys (60% of countries were surveyed between 2018 and 2021).

In low-income countries (those of greatest interest to us), PIP provides data on the per capita *consumption* (rather than income). Thereby, the data does not capture services procured by the government. Another potential concern with household surveys is that the aggregate (national) consumption they imply is generally lower than the one estimated in national accounts.[3,9] This discrepancy comes from measurement errors on both sides: on the one hand, household surveys suffer from underreporting of top incomes and large expenditures; on the other hand, national accounts do not properly account for informal work and tend to inflate agricultural output.[?] Furthermore, autoritarian countries have been shown to produce inflated GDP statistics, except for countries below the GDP threshold of eligibility for preferential loans by the World Bank.[8] While the ratio of Household Final Consumption Expenditures (HFCE) from national accounts is 44% greater than the aggregate value from household surveys, the "discrepancy ratio" is largest for middle-income countries, and is only 12% for low-income countries. Because household surveys are best suited to estimate consumption by the poorest, I use unadjusted PIP data in our baseline.

As a robustness check, I also re-derive our main results after adjusting aggregate consumption by the discrepancy ratio (computed using World Bank data). In line with the literature,[1,7] I impute the extra consumption to the top percentile. I do not perform the rescaling on the 15% of countries with HFCE lower than its aggregate consumption from PIP, and I assume a discrepancy ratio of +12% for the 20% of countries lacking data on HFCE.

As is common in this literature,[2,4,6] my baseline assumes "balanced growth", meaning that each percentile grows at the same rate between the country's survey year and

2030. I rescale incomes by the observed growth of GDP p.c. (in PPP) up to 2022 (using World Bank data) and by different methods for the 2022–2030 period. These methods include: extending the 2014–2019 growth trend (which excludes COVID years); extending the trend for growing countries and assuming no growth when GDP p.c. has contracted between 2014 and 2019; assuming a constant growth (of either 0%, 3%, 4.5%, 6%, or 7%); using IMF forecasts[5] (extended up to 2030 by replicating the 2026–2028 forecasted growth in 2028–2030); projecting future growth using an autoregressive quadratic model that predicts the 2011–2019 growth based on the 1991-2011 growth (then applied to 2022–2030 using the 2002–2022 growth). I deviate from this two-step procedure assess the original SDG goal, as I assume a constant growth of 7% starting in 2015.

2.2 The effect of balanced growth

To estimate global poverty rates, the World Bank scales up the percentiles measured in household surveys by the country's GDP growth between the survey year and the year of interest. I project global poverty rates and poverty gaps in 2030 using the same assumption of balanced growth (i.e., constant inequality), for a range of growth scenarios (Table 1).

Table 1: Global poverty rates and poverty gaps in 2030 under different growth scenarios. Poverty rates are expressed in % of world population and poverty gaps in % of world GDP. Poverty lines are in PPP $/day.

Growth scenario	Poverty rate			Poverty gap		
(Poverty line in $/day)	2.15	3.65	6.85	2.15	3.65	6.85
2022 Estimate	7.4	21.4	45.3	0.25	1.35	7.10
Trend (2014–2019)	6.3	14.4	35.3	0.18	0.81	4.21
Autoregressive projection	6.1	15.0	37.8	0.17	0.85	4.76
3% growth	5.2	15.3	38.5	0.14	0.74	4.41
7% growth	3.1	8.5	25.4	0.05	0.28	1.93
7% growth since 2015	1.1	3.1	16.5	0.01	0.08	0.73

My estimates of 2022 global poverty rates closely align with the 2019 estimates from the World Bank: 9% of the world population living with less than 2.15$/day, 24% below 3.65$/day, and 47% below 6.85$/day. The poverty gap is the cost that separates people below the poverty line from that line. For example, if 10% of the population earns 1.65$/day and 90% of the population earns more than 2.15$/day, the poverty gap is

$0.1 \cdot (2.15 - 1.65) = 0.05\$/\text{day}$. I estimate the extreme poverty gap at 0.25% of the world GDP. This is a first approximation of what it would cost to lift everyone out of extreme poverty, defined with the \$2.15/day poverty line.

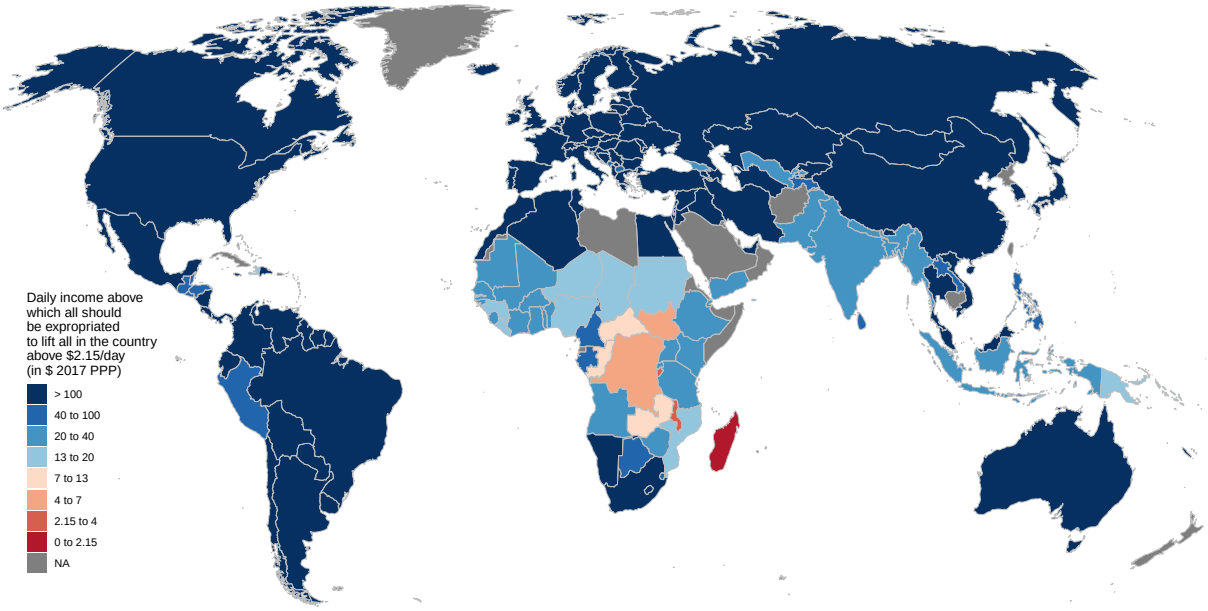
Assuming that each country will continue to grow at the same rate as in the recent past, I estimate that 6% of the world population will live in extreme poverty in 2030. I find very similar estimates using a simple yet realistic model to predict a country's growth (an autoregressive projection based on its growth over the last 20 years). If each country grows by 3% each year, extreme poverty would decline slightly more than in the realistic projections, at 5%. Although steady growth reduces poverty, growth alone cannot achieve the first SDG: If the world grows by 7% each year, the extreme poverty rate would still be 3% in 2030. Even if the world had experienced a 7% growth rate starting in 2015 (when the SDGs were adopted), extreme poverty would not be completely eliminated, at 1% of the world population in 2030. As we cannot rely on growth alone to eliminate poverty, let us add domestic redistribution to the equation.

2.3 Antipoverty caps

To fill the poverty gap at the least welfare cost, the cost should be borne by the wealthiest. Indeed, if it were possible to expropriate top income individuals without reducing their activity, the welfare-maximizing transfer would consist of capping top incomes to finance an income floor. In reality, an income cap would deter economic activity, but abstracting from the distorsive aspect of the policy, the income cap required to fill the poverty gap can be used as a coarse but telling proxy for the capacity of domestic resource mobilization.

Taking as a baseline the scenario with a balanced growth at a rate of 3%, I estimate the income cap that each country should impose to fill the extreme poverty gap with the exproriated income (Figure 1).

Figure 1: Income cap eradicating extreme poverty (in $/day). In this idealized policy, all income above the cap is transferred to the extreme poor and lift them at $2.15/day, assuming away distorsions and under a growth of 3% over 2022–2030.



2.4 Antipoverty taxes

2.5 The credible potential of domestic redistribution

2.6 The potential of global redistribution

3 Discussion

Methods

Data quality.

Data and code availability

All data and code of as well as figures of the paper are available on github.com/bixiou/domestic_poverty_eradication.

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