

The Impact of COVID-19 on Global Inequality and Poverty

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The COVID-19 pandemic has overturned years of progress on reducing global poverty and our ability to reach the first Sustainable Development Goal—to end extreme poverty by 2030. For the first time in two decades, poverty has increased globally. The World Bank’s latest estimates suggest that around 97 million people were pushed into extreme poverty—those living on less than \$1.90 a day—in 2020 due to the COVID-19 pandemic (Mahler et al. 2021). This number assumes that the pandemic impacted everyone in a country equally, yet there is evidence to suggest that the pandemic has disproportionately affected certain groups (Lustig et al. 2020, Egger et al. 2021, Narayan et al. forthcoming). The goal of this paper is to estimate the distributional impacts of the COVID-19 pandemic around the world and use those findings to generate more realistic estimates of the impact of COVID-19 on global poverty and inequality.

To that end, we start with the welfare distributions for 2019 available from PovcalNet covering 168 countries comprising more than 97% of the world’s population. To get estimates for 2020, we triangulate various data sources. Our preferred data source is actual income data from National Statistical Offices (NSOs). At the time of writing this proposal we were only able to use NSO data from 6 countries – highlighting the difficulty in collecting data in 2020.

Our novel addition to the literature is utilizing the high-frequency phone surveys conducted by the World Bank in collaboration with NSOs for 46 countries. These surveys filled the void left behind by the lack of household surveys in 2020. The phone surveys are less comprehensive than traditional household surveys, yet their mode of data collection means that they can be conducted even during strict quarantines and government shutdowns. In many countries, phone surveys are some of the only national surveys on what happened to households economically in 2020. While the phone surveys provide information on households’ change in income or consumption, they do not report the households’ initial level of income, nor do they report the size of the change in income. This means that to utilize the information in the phone surveys, we need to (a) map the income changes from the phone surveys to the 2019 welfare distribution and (b) estimate the size of the change in income for each household. To that end,

(a) we use multinomial logit regressions to map certain types of households (according to household and demographic characteristics) from the phone surveys to the 2019 welfare

distribution from PovcalNet (which is the latest household survey extrapolated to 2019). We estimate the probability of income gain, loss, or no change for these household types in the phone surveys and assign those probabilities to households of similar types in the 2019 welfare distribution.

(b) While that allows us to simulate whether households gained or lost income in 2020, we still don't know the size of those increases and decreases in income. To overcome this, we distribute the sectoral growth rates available from the World Bank's latest Macro and Poverty Outlooks (MPOs) to each household such that the aggregated distribution of household growth using our method is equivalent to the national per capita GDP growth rate in the MPOs.

We supplement the NSO and the phone survey data with data from country-specific studies in the literature and sectoral and national accounts growth rates available in national accounts.

In addition to the COVID-19-induced 2020 distribution, we also estimate a counterfactual 2020 welfare distribution without the effect of the pandemic. To do this, we grow the 2019 welfare distributions forward to 2020 using the per capita GDP growth forecasts available before the pandemic (October-2019 MPO). Having the counterfactual distribution gives us an idea of the net welfare change due to the pandemic.

In addition to the novel method employing the phone surveys, we aim to contribute to the literature by providing the first global and cross-country estimates of the impact of the pandemic on poverty and inequality that explicitly factor in the differential impacts it may have had along the distribution. Earlier work has analyzed the impact of the pandemic on global inequality (such as Deaton 2021) or global poverty (such as Mahler et al. 2021 and Sumner et al. 2021) while accounting for between-country inequality but not within-country inequality. A secondary contribution is to provide annual estimates of global inequality from 1990 to today. We will also be able to produce country-level and global anonymous growth incidence curves. This will reveal which parts of the income distributions that suffered the most economically from the pandemic.

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