

# Available data and estimates of the impact of the COVID-19 pandemic on global poverty

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<https://blogs.worldbank.org/opendata/impact-covid-19-coronavirus-global-poverty-why-sub-saharan-africa-might-be-region-hardest>*

COVID-19 is taking its toll on the world, causing deaths, illnesses and economic despair. But how is the deadly virus impacting global poverty? Nowcasting global poverty is not an easy task. It requires assumptions about how to forecast growth and how such growth will impact the poor, along with other complications such as how to calculate poverty for countries with outdated data or without data altogether. All of this goes to say that estimating how much global poverty will increase because of COVID-19 is challenging and comes with a lot of uncertainty. Others have tried to answer the question using general equilibrium models or by exploring what will happen if all countries' growth rates decline a fixed amount. Here we'll try to answer the question using household survey data and growth projections for 167 countries.

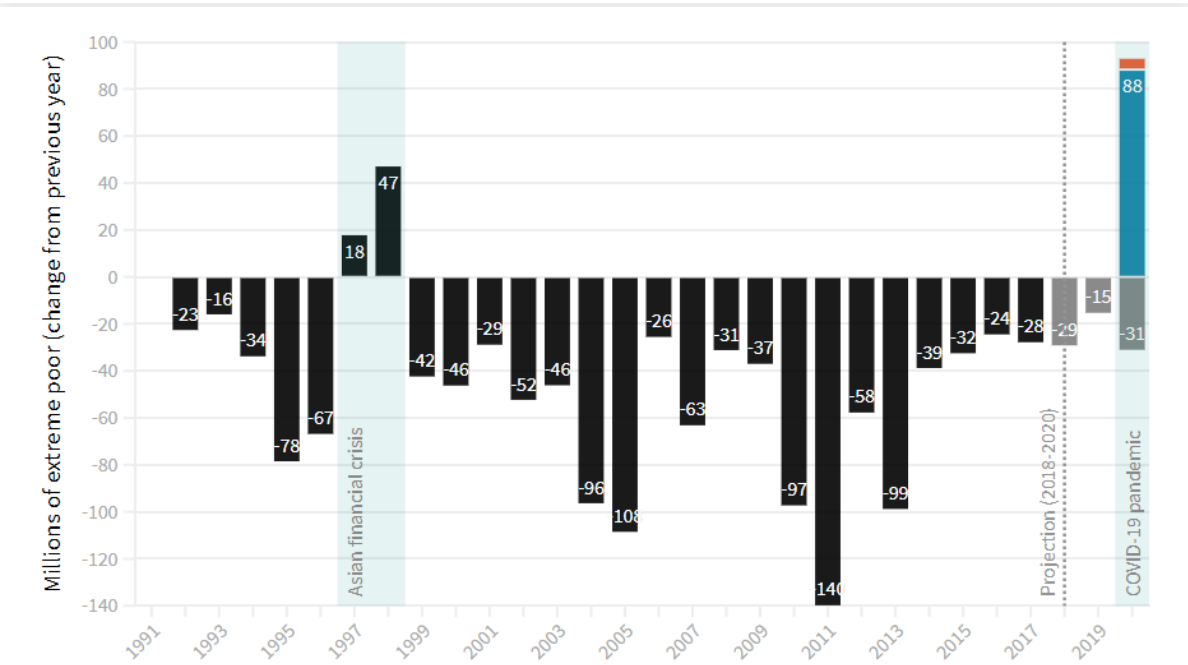
In particular, we take the welfare distributions for the 167 countries in PovcalNet (an online tool provided by the World Bank for estimating global poverty) for 2019 – the latest year currently published -- and extrapolate forward to 2020 and beyond using the growth projections from the World Bank's Global Economic Prospects (GEP), the World Bank's Macro and Poverty Outlook (MPO), or IMF's World Economic Outlook (WEO). Our approach assumes that countries' growth accrues equally to everyone, or in other words that COVID-19 does not change inequality within countries (more on that below). Comparing these COVID-19-impacted poverty estimates with estimates that use editions of the aforementioned sources of growth data launched before the pandemic spread globally, allows for an assessment of the impact of the pandemic on global poverty. Of course, other factors may have also worsened (or improved) countries' growth outlooks but it's safe to say that most of the changes in the forecasts will be due to COVID-19. The number of COVID-19-induced new poor is calculated as the difference between poverty projected with the pandemic and poverty projected without the pandemic.

In our most recent edition, to predict poverty in 2020 that account for COVID, we use the GEP growth forecasts from January 2021, and for the pandemic free world, we use GEP growth forecasts made in January 2020. The January 2021 growth forecasts contain two scenarios—

baseline and downside—allowing us to explore two different scenarios for how the pandemic may impact poverty. The downside scenario assumes that outbreaks persist longer than expected, forcing lockdown measures to be maintained or reintroduced, while the baseline scenario is more optimistic.

Figure 1 shows the annual change in the number of global extreme poor from 1992 to 2020. Each bar represents the net number of people who have either moved out of extreme poverty if they were poor in the last year or moved into extreme poverty if they were not poor in the previous year. Before COVID-19, the only other crisis-induced increase in the global number of poor in the past three decades was the Asian financial crisis, which increased extreme poverty by 18 million in 1997 and by another 47 million in 1998. In the two-decades since 1999, the number of people living in extreme poverty worldwide has fallen by more than 1 billion people. Part of this success in reducing poverty is set to be reversed due to the COVID-19 pandemic. For the first time in 20 years, poverty is likely to significantly increase. The COVID-19 pandemic is estimated to increase extreme poverty by between 88 million (baseline estimate) and 93 million (downside estimate) in 2020. Considering those who would have otherwise escaped extreme poverty but will not due to the pandemic (i.e. 31 million in 2020), the total COVID-19-induced new poor in 2020 is estimated to be between 119 and 124 million.

**Figure 1: Annual change in the number of extreme poor (in million), 1992-2020**

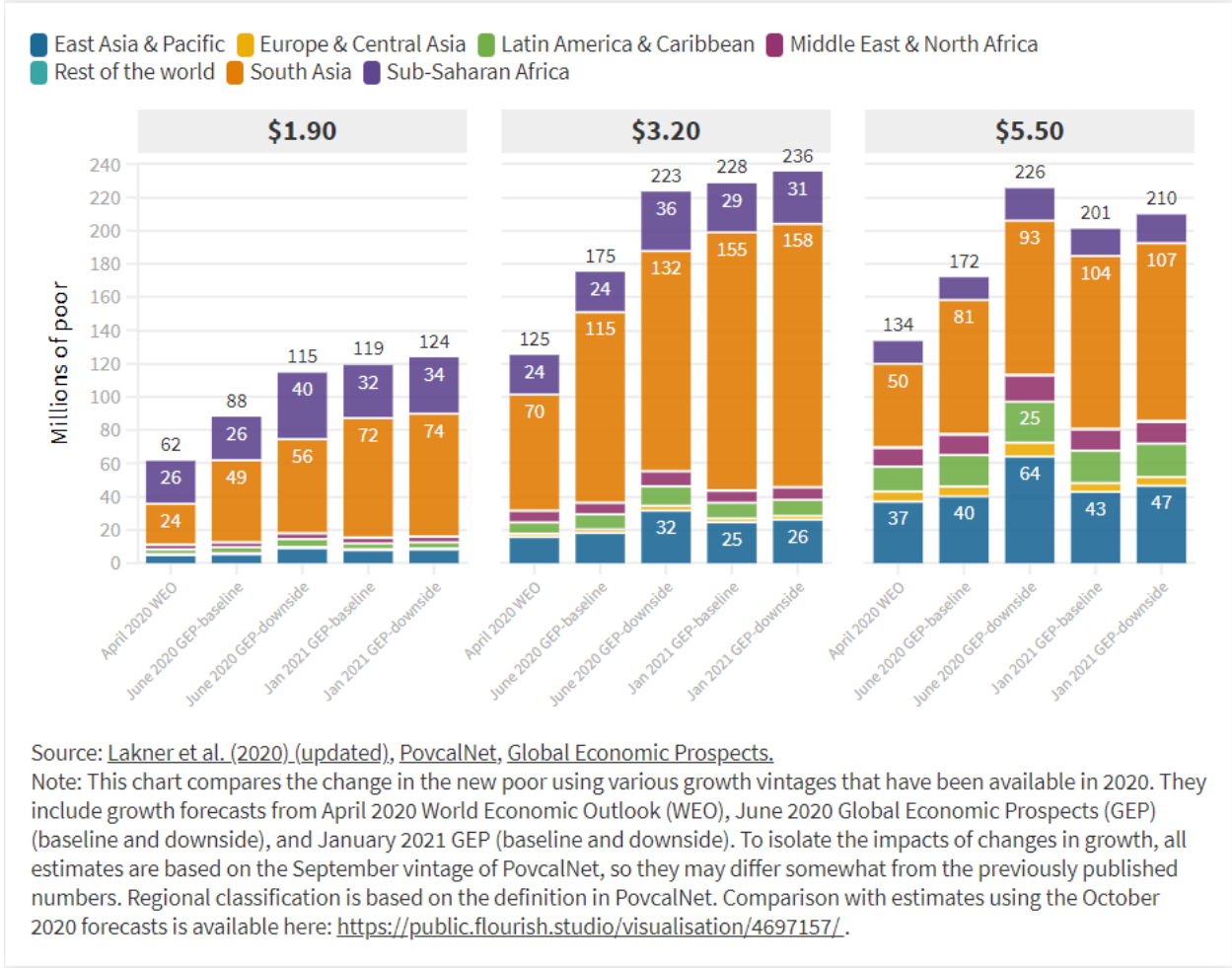


Source: [Lakner et al. \(2020\) \(updated\)](#), [PovcalNet](#), [Global Economic Prospects](#).  
 Note: Projections for years 2018-2021 are based on updated estimates of Lakner et al. (2020). For 2020, we show both (a) the number of people that were expected to move out of extreme poverty had the COVID-19 pandemic not happened (Pre-COVID-19 counterfactual scenario, gray bar) and (b) the number of people who are pushed into poverty under the COVID-19-baseline scenario (blue bar) or the COVID-19-downside scenario (blue + orange bar). The “new poor” induced by COVID-19 is the sum of (a) and (b). For instance, under the COVID-19-baseline scenario in 2020, the “new poor” is equal to 88 + 31 = 119 million. Similarly, under the COVID-19-downside scenario in 2020, the “new poor” is equal to 88 + 31 + 5 = 124 million. We thank colleagues at USAID for the inspiration behind this figure.

Utilizing various growth forecasts that have been available in 2020, Figure 2 shows both the change in the estimated number of COVID-19-induced new poor in 2020 and the contributions of various regions. The worsening impact of the pandemic has drastically changed our projections over the course of this year, especially when comparing with growth rates launched in April 2020. This has been driven primarily by a worsening forecast for South Asia, which has also changed the regional profile of the COVID-19-induced new poor. It is important to note that the poverty estimate in South Asia in recent years, even before the pandemic, is subject to considerable uncertainty due to the absence of new household survey data for India since 2011/12.

Using the growth forecast from April 2020 under the \$1.90-a-day poverty line, we estimated that 62 million would fall into extreme poverty globally in 2020, with South Asia and Sub-Saharan Africa each contributing roughly two-fifths. We revised the global estimate to between 88 and 115 million using the June-2020 growth forecast, with about half of the new poor residing in South Asia. Using the January 2021 forecast, we now estimate between 119 and 124 additional poor globally with around 60% living in South Asia.

**Figure 2: COVID-19-induced new poor in 2020, using various growth vintages**

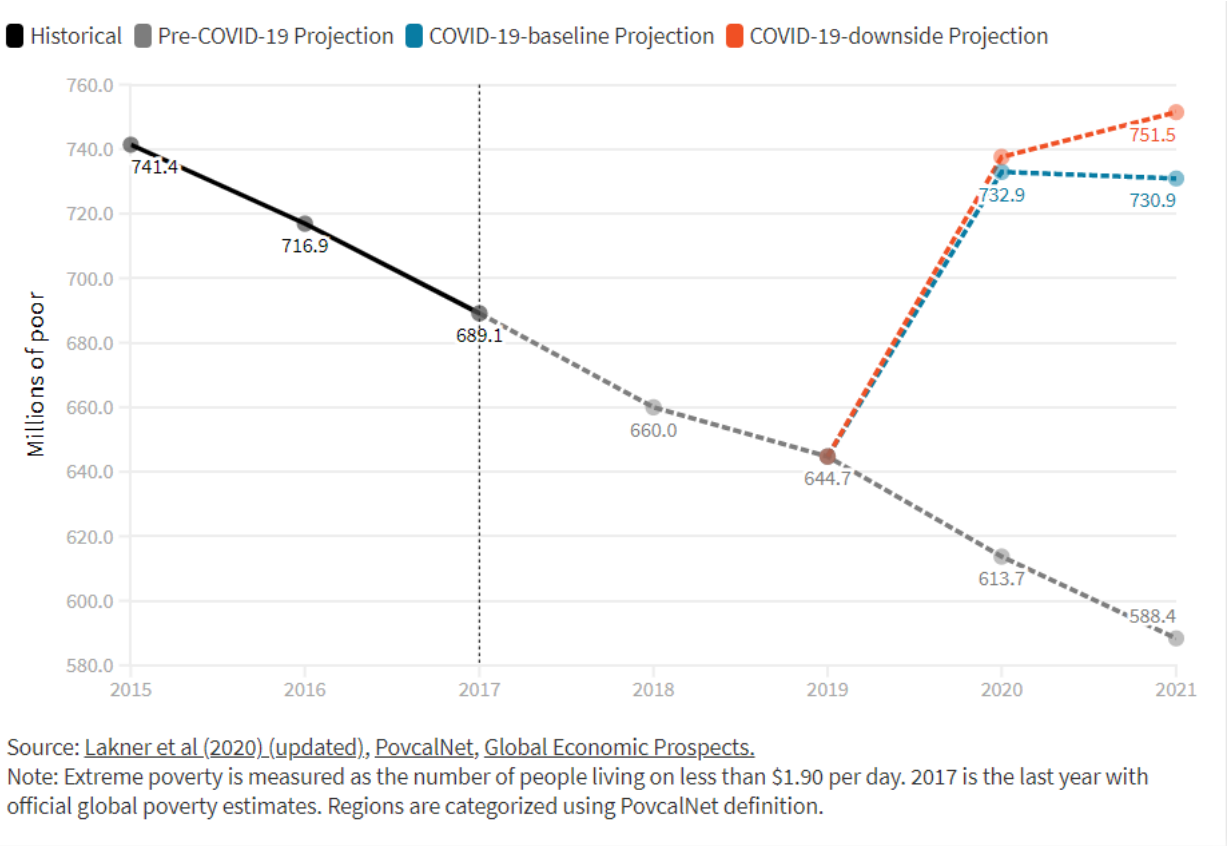


The increase in the number of poor is also visible at the \$3.20 poverty line. At the \$3.20 line, the global new poor using the GEP-baseline scenarios has increased from 175 million to 228 million

(from June 2020 to January 2021) , again driven by South Asia. At the \$5.50 line, we do not find a worsening of the global estimate, as our new estimates actually lie within the range we estimated using the June GEP. This is largely explained by a better than expected outlook for East Asia and Pacific, counteracting the upward revision in South Asia.

There is little doubt that 2020 has been an exceptionally difficult year in recent history. While there has been progress in the development of vaccines, it doesn't appear that the increase in poverty of this past year will be reversed in 2021. Figure 3 presents the nowcast of poverty up to 2021 using the pre-COVID-19 and the COVID-19 baseline and downside scenarios using the GEP January 2021 forecast. As reported above, the pandemic-induced global new poor is estimated to be between 119 and 124 million in 2020. In 2021, the estimated COVID-19-induced poor is set to rise to between 143 and 163 million. While the estimates for 2021 are very preliminary, it goes to show that for millions of people around the globe this crisis will not be short-lived.

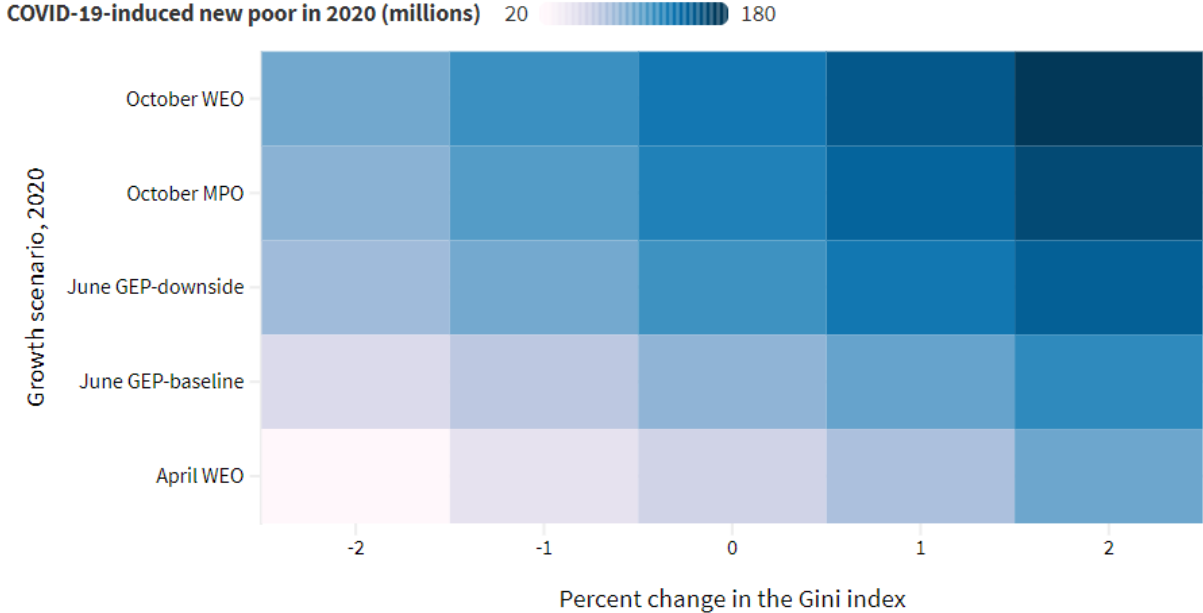
**Figure 3: Nowcast of extreme poverty, 2015-2021**



The various estimates we reported above reveal the truly uncertain environment we currently live in. Additional variation in the estimated new poor can arise if we relax an assumption implicit in all estimates above; that everyone within a country is losing income or consumption at the same rate from COVID-19, implying no change in inequality. In Figure 4, we present estimates of the new poor with different growth rates and with different assumptions about how COVID impacts inequality. The growth forecasts we use are derived from the various growth vintages

that have been available from the GEP, MPO, and WEO (safe for the latest vintage of GEP). For inequality changes, we increase/decrease the Gini index by either 1% or 2% in 2020 for each country. Each cell of the figure presents an estimate that combines a growth vintage with a scenario that changes inequality. We expect the number of poor to increase as we increase inequality holding growth fixed (i.e. moving from left-to-right in the same row). Likewise, as the growth outlook has worsened, moving up from the bottom of the chart progressively increases the number of new poor in most cases.

**Figure 4: Estimates of the COVID-19-induced new poor in 2020, different scenarios for growth and inequality**



Source: [Lakner et. al \(updated\)](#), [PovcalNet](#). • Note: This chart presents various estimates of COVID-19-induced new poor under the \$1.90-a-day poverty line in 2020. The estimates vary by (a) the growth vintage used and (b) the choice of inequality (% change in the Gini index). The growth vintages include forecasts from April-2020 [World Economic Outlook \(WEO\)](#), June-2020 [Global Economic Prospects \(baseline and downside\)](#), October-2020 [Macro Poverty Outlook \(MPO\)](#), and October-2020 WEO. To isolate the impacts of changes in growth and inequality, all estimates are based on the September vintage of [PovcalNet](#), so they may differ somewhat from the previously published numbers.

Chart reading: The 125 million new poor reported in Figure 1 is calculated using a combination of October MPO growth forecast and a distribution-neutral scenario (i.e. 0% change in the Gini index). This estimate is reported in 2nd row, 3rd column. We should expect the number of poor to increase as inequality increases (left-to-right). The growth forecasts that have been released at various points during this year have progressively become worse, hence we also see that the number of poor increases as we use the most recent forecasts (top) compared to older versions (bottom).

Using the October growth forecasts with no change in inequality results in between 125 and 131 million new poor (these estimates are reported in rows 1 and 2 of the 3rd column). But the distribution-neutral assumption might be too strong. A 1% increase in the Gini index in each country in 2020 would increase the additional poor by around 15% in 2020 (144 million using MPOs and 152 million for WEO). A 2% increase in the Gini would result in an almost 30% increase (161 million for MPO and 170 million for WEO). In Sub-Saharan Africa, a 2% increase in the Gini index would increase the additional poor in Sub-Saharan Africa by a third, from 32 million with constant inequality to 42 million, using the October MPO in 2020.

This unprecedented global shock could very well have a larger negative impact on inequality. If that were the case, we should expect an even larger increase in the number of new poor. At the same time, it is important to stress that appropriate government policy can dampen this impact. However, even our most optimistic scenario with a 2% reduction in the Gini index in each country would still imply an increase in extreme poverty by between 90 and 99 million using the most recent growth forecasts.

The changes in inequality that we simulate are not atypical of year-to-year changes observed over the medium and long-term. The worst historic increases in the Gini index would be larger for most regions, ranging from just under 2% per year in Latin America and the Caribbean to around 4% in South Asia. At the same time, it is obviously a strong assumption that all countries' inequality changes at the same rate, and it is not clear what these historic changes can tell us about such an unprecedented shock that is COVID-19. The emerging evidence on the impact of COVID-19 on inequality suggests that our inequality increasing scenario might be conservative, though little is known about the impact on the poorest countries. Exploiting variation in telework ability with income, the October 2020 World Economic Outlook estimates that COVID-19 increases the average Gini index for emerging market and developing economies by more than 6%, with an even larger impact for low-income countries. The average increase in the Gini index for EU countries has been estimated at 3.5% with a 2-month lockdown, rising to 13.5% with an additional 6-month partial lockdown. For four Latin American countries, a recent paper suggests that COVID-19 would increase the Gini index between 3.5% and 7.4%, which could be considerably lower with social assistance (increases between 0.6% and 4%). These estimates are all considerably larger than the increase in inequality during past pandemics (estimated to be around 1.25% five years after the pandemic), which underscores the fact that a pandemic of such a global scale as COVID-19 is truly unprecedented in modern times.

We hope that when we take stock of 2021, the year will have fared much better for poverty reduction than what we expected at the start of the year. However, the continued worsening of growth outlooks that we observed in the past year could suggest otherwise.