

## **The potential impact of the COVID-19 pandemic on global poverty and income disparity: A literature review**

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### **Abstract**

The COVID-19 pandemic has severely affected people's livelihoods around the world and caused a profound impact on the global economy. With worldwide pandemic-related job losses and deprivation amid a deep global recession, there is a growing concern about vulnerable groups around the globe suffering from worsened poverty and income disparity. This literature review briefly summarises the methodologies and preliminary findings of major research articles on the anticipated impact of the COVID-19 pandemic on global poverty and income disparity from an economic perspective.

### **新冠肺炎疫情影响全球貧窮及收入差距的潛在影響：文獻回顧**

#### **摘要**

新冠肺炎疫情影响已嚴重影響各地人民生活，並對全球經濟造成重大打擊。隨着環球經濟陷入深度衰退，與疫情相關的失業及匱乏情況遍及全球，各地的弱勢群體貧窮和收入差距同時轉差的情況日益受到關注。本文以經濟角度檢視關於新冠肺炎疫情影响全球貧窮及收入差距的影響的主要研究文獻，並簡略總結這些研究的方法與初步結論。

The views and analysis expressed in this article are those of the author and do not necessarily represent the views of the Office of the Government Economist.

## I. INTRODUCTION

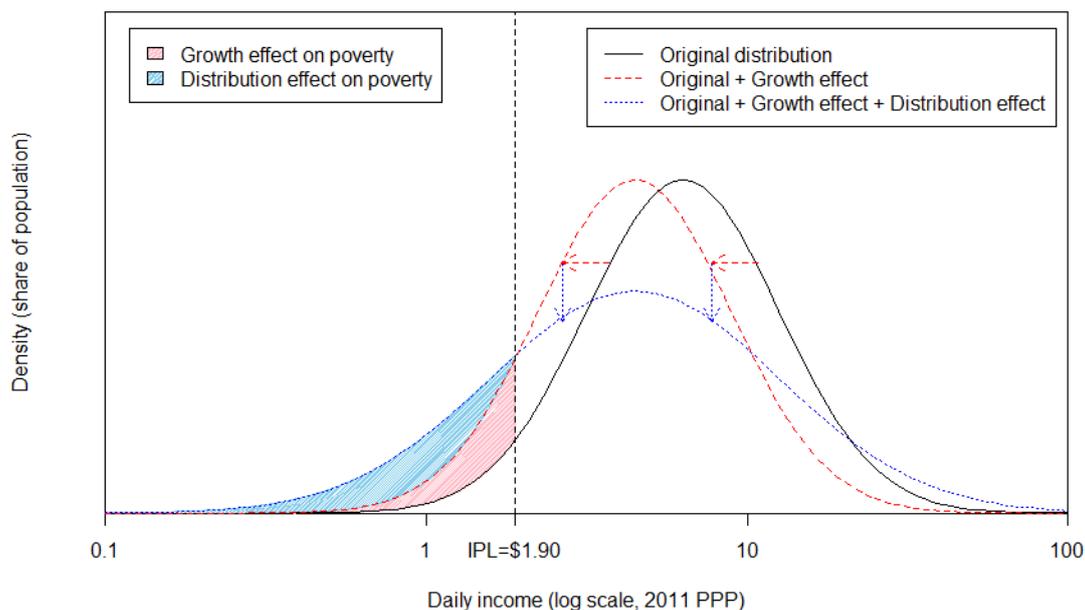
1. As at end-2020, the COVID-19 pandemic infected over 80 million people, causing 1.8 million deaths in almost all countries and territories around the world (World Health Organization [WHO], 2021). Alongside the cost in human lives, the pandemic and the resultant stringent restrictive measures dealt a heavy blow to global economic activities, and the world entered into a deep and profound recession in 2020. Border closures, lockdowns and severely disrupted consumption activities all had knock-on effects on incomes and employment around the globe, particularly for already-vulnerable groups working in informal sectors.

2. There has been a growing concern that global poverty and inequality would worsen drastically in 2020, and the effect could even be more long-lasting than initially expected depending on how the situation of the pandemic evolves. Against this backdrop, this economic letter aims at providing a literature review-style summary on recent analyses conducted by key international institutions, including but not limited to the World Bank, the International Monetary Fund (IMF) and the United Nations Department of Economic and Social Affairs (UNDESA), as well as by selected researchers, to shed some initial light on the possible impacts of the pandemic on global poverty and inequality under such difficult times.

## II. POSSIBLE IMPACTS OF COVID-19 ON GLOBAL POVERTY AND INEQUALITY: LITERATURE REVIEW

3. All of the studies generally conclude that the COVID-19 pandemic would notably aggravate global poverty and widen income disparity in many economies. Conceptually speaking, the impact could mainly be decomposed into two types of effects: (a) a *growth effect* and (b) a *distribution effect*. In essence, the growth effect captures how the COVID-19 pandemic may affect the output and household income level of an economy (as indicated by the pink area resulting from the horizontal shift in income distribution curve from black to red, see **Figure 1**), while the distribution effect captures how the COVID-19 pandemic may alter the distribution of household income in an economy (as indicated by the blue area in **Figure 1** resulting from the change in the shape of the income distribution curve from red to blue).

**Figure 1: Decomposition of change in income distribution and poverty size into growth and distribution effects**



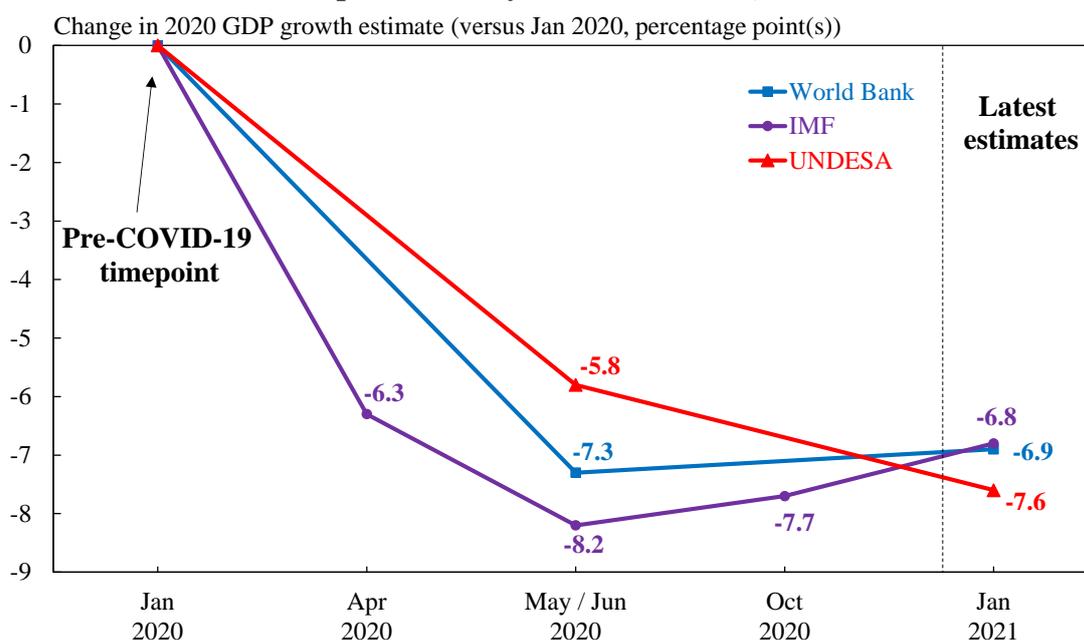
Notes: IPL=International Poverty Line adopted by the World Bank (i.e. with individual daily income of US\$1.90 per day. For further details of its definition please refer to paragraph 12); PPP=Purchasing Power Parity.  
Figure for illustration purpose only.

## II.A. Growth effect

4. In an attempt to curb the spread of the pandemic, lockdown measures of varying degrees were imposed (especially in the early stages) by concerned governments, which naturally brought economic activities to an almost complete standstill and in turn had a heavy impact on the labour market. **Figure 2** shows the changes in global economic growth forecasts / estimates for 2020 as a whole issued regularly by the IMF, the World Bank and UNDESA just before<sup>1</sup> and after the onset of the pandemic. The original figures as at January 2020 can generally be taken as a purely hypothetical scenario, i.e. what would have happened without suffering the blow from the COVID-19 pandemic, and the sizable downward revisions of the 2020 global GDP growth estimates afterwards reflected the institutions' more updated points of view on how global economic performance was adversely impacted by the pandemic in 2020.

<sup>1</sup> In 2020, the World Bank published the *Global Economic Prospects (GEP)* on January 8; UNDESA published the *World Economic Situation and Prospects (WESP)* on January 16, and the IMF published the *World Economic Outlook (WEO) – Update* on January 20. The World Health Organization declared the COVID-19 outbreak as a pandemic on March 11 (WHO, 2020).

**Figure 2: Change in GDP growth forecasts / estimates for 2020 as a whole (before and after the pandemic) by the World Bank, the IMF and UNDESA**



**GDP growth forecasts / estimates for 2020 as a whole (%)**

| Released in: | Pre-COVID-19 | Post-COVID-19 |                |          |                   |
|--------------|--------------|---------------|----------------|----------|-------------------|
|              | Jan 2020     | Apr 2020      | May / Jun 2020 | Oct 2020 | Jan 2021 (latest) |
| World Bank   | 3.2          | n.a.          | -4.1           | n.a.     | -3.7              |
| IMF          | 3.3          | -3.0          | -4.9           | -4.4     | -3.5              |
| UNDESA       | 3.2          | n.a.          | -2.6           | n.a.     | -4.4              |

Notes: World GDP growth estimates are weighted based on purchasing power parity (PPP) exchange rates, but the reference years for the weighting could differ.

Changes in GDP growth estimates are calculated using rounded figures.

n.a. Not available - as the World Bank and UNDESA only announce forecasts twice a year.

Sources: International Monetary Fund (IMF, 2020a, 2020b, 2020c, 2020d, 2021a); World Bank (2020a, 2020b, 2021); United Nations Department of Economic and Social Affairs (UNDESA, 2020a, 2020b, 2021) and authors' calculations.

5. Separately, the International Labour Organization (ILO, 2020b) further estimated that about 94% of the world's workers resided in countries where some level of workplace closure measures remained in place (as at end-August 2020), and the strain on incomes resulting from the decline in economic activities would devastate workers, even to the extent of large scale job losses worldwide: an estimated 255 million full-time equivalent (FTE)<sup>2</sup> jobs were lost in 2020 (ILO, 2021). The IMF (2020d) painted a similar picture, suggesting that the persistent output losses would be a severe setback to living standards across all country groups relative to what was expected before the pandemic. As such, poverty is likely to worsen significantly in tandem throughout the year.

<sup>2</sup> Assuming a 48-hour working week.

6. It is worth mentioning that the COVID-19 pandemic and the associated lockdowns have prompted unprecedented fiscal actions<sup>3</sup>. Governments around the world provided USD7.8 trillion worth of direct fiscal support in 2020, 89% of which (USD7.0 trillion) was offered in advanced economies (IMF, 2021b). This is one of the reasons why some of the 2020 global GDP forecasts (as shown in **Figure 2**), while still pointing to a notable recession, had been slightly adjusted upwards in more recent updates. But even on a relative scale, the group of 59 low-income countries collectively managed to increase fiscal support by only 1.6% of their GDP, far below the 12.7% on average for advanced economies (IMF, 2021b)<sup>4</sup>. As such, it is conceivable that the cushioning effect of the massive global fiscal stimulus and the associated welfare transfer would be highly uneven, i.e. it would largely fall on the non-extreme-poor and hence have only a limited effect on mitigating global extreme poverty.

7. On entering 2021, while the global economy is expected to recover under the assumption that that pandemic might be brought more under control over time, the path would be fraught with uncertainties, and the pandemic may have permanently worsened the global poverty situation beyond the near-term. UNDESA (2020b) warned “[t]he possibility of a slow recovery and prolonged economic slump looms large”. The World Bank (2020c) suggested that the shock in economic growth may also leave “lasting scars on investment levels, remittance flows, [and] the skills and health of the millions now unemployed”. If the pandemic does have notable chronic impacts on hampering factor productivity, this would certainly cast mounting headwinds on the global poverty situation down the road. The World Bank (2020c) and UNDESA (2020c) both warned that their respective poverty eradication targets for 2030<sup>5</sup> would likely fail to be achieved unless economic growth after the crisis became much higher than historical growth rates.

## II.B. Distribution effect

8. It was also theorised that the impact of the pandemic on different income groups would likely be disproportionate. While so far lacking supporting statistics at the time of their publication, many research articles painted a grimmer picture for the already-poor and vulnerable in the near term. The World Bank (2020c) pointed out that workers

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<sup>3</sup> For more information, see the IMF’s Fiscal Monitor Database of Country Fiscal Measures in Response to COVID-19 Pandemic, available at <https://www.imf.org/en/Topics/imf-and-covid19/Fiscal-Policies-Database-in-Response-to-COVID-19>

<sup>4</sup> While the stimulus effect from these fiscal packages on output has been taken into account in output projections, it should be borne in mind that direct welfare transfers to households are conceptually not included as part of GDP.

<sup>5</sup> See paragraph 12 and footnote 7 for further details.

in low-income deciles in general had less ability to work from home, and a larger share were engaged in jobs that were less compatible with social distancing measures, thereby increasing their risk of unemployment or reduced working hours. The IMF (2020d) also mentioned that people who relied on daily wage labour and were outside the formal safety net would face sudden income losses when mobility restrictions were imposed. In addition, UNDESA (2020b) suggested that high-skilled service workers in the formal sector were less hard-hit by the COVID-19 pandemic given that they were more likely to be able to work from home and retain employment. As such, the labour incomes of the poor in the near term are disproportionately affected by the adverse health and economic costs of the pandemic (World Bank, 2020c).

9. In addition to the disproportionate effect on labour market outcomes, poor households (especially those in low-income and middle-income economies) would suffer most from the sudden labour income losses as they were more likely to rely on informal-sector workers, who had fewer coping mechanisms and faced inadequate social security systems and little support from the government (World Bank, 2020c). The poor also faced a greater health threat from COVID-19, as they were less likely to be able to work from home and faced inadequate healthcare provision during the pandemic (UNDESA, 2020b; World Bank, 2020c).

10. While the above effects on income distribution would conceivably be relatively short-term and may see relative improvement when the economy gradually recovers, the pandemic might also have certain long-term implications on inequality. The unexpected shift to online business and teleworking due to COVID-19 is likely to give a competitive edge to the upper- and middle-classes, while the poor who are less accustomed to technology might be comparatively disadvantaged in the longer run (UNDESA, 2020c). UNICEF (2020) and Hill and Narayan (2021) likewise stated that the pandemic might also affect longer-term income by restricting education opportunities of poor children. As schools were closed to maintain social distancing and some switched to distance / on-line learning, these researchers suggested that children from poorer families would inevitably be disadvantaged by their limited access to electronic devices. They further pointed out that in the worst case scenario, disruptions in poor children's schooling might negatively affect their future career paths and future income. If the above is not adequately and promptly addressed, the COVID-19 pandemic could have long-lasting effects on inequality.

### **III. QUANTIFYING COVID-19'S IMPACT ON GLOBAL POVERTY AND INCOME INEQUALITY: 2020 AS AN ILLUSTRATIVE EXAMPLE**

#### III.A. Measures of global poverty and income inequality

11. Apart from assessing the impact of the COVID-19 pandemic on global poverty and income inequality from a qualitative perspective, various institutions and researchers also attempted to make preliminary assessments of the magnitude of the impact.

12. While there are many different measures of poverty across the world, a common measure of global poverty is the international poverty line (IPL), which sets the poverty threshold at USD1.9 per person per day in 2011 PPP<sup>6</sup>. Based on the concept of absolute poverty, those living under this line are considered to be in extreme poverty, and the IPL is widely used to assess global progress in eliminating extreme poverty<sup>7</sup>. The latest figure from the World Bank (2020c) indicated that a total of 689 million people around the world were in extreme poverty in 2017 and the global extreme poverty rate was 9.2%. There are alternatives to the IPL, including poverty lines based on the concept of relative poverty, conventionally set at a percentage of the national median household income. However, these poverty measures are rarely used to assess global poverty, and are mainly used by advanced economies (such as in the Organisation for Economic Co-operation and Development) where extreme poverty is scant (Förster, 1994). Not to complicate our review in this letter article, we have chosen the assessments conducted based on the IPL as the poverty measurement yardstick. This also allows the results to be generally comparable.

13. As for income inequality, the Gini coefficient (or Gini index<sup>8</sup>) is a commonly used measure of income inequality within an economy, which takes a value between 0 (which corresponds to perfect equality where everyone has the same income) and 1 (where only one person has all the income and all others have none). As such, a smaller Gini coefficient indicates lower income disparity within an economy, and vice versa.

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<sup>6</sup> The World Bank originally set the IPL at USD1.25 per person per day in 2005 PPP. It was updated to USD1.90 in 2011 PPP since 2015 to reflect cost of living adjustment. In other words, the real value of USD1.90 in 2011 is the same as USD1.25 was in 2005 (World Bank, 2015).

<sup>7</sup> One of the two missions of the World Bank is to “end extreme poverty”, defined as reducing the percentage of people living below the IPL to no more than 3% by 2030 (World Bank, 2013). Similarly, Goal 1 of United Nations’ (UN) Sustainable Development Goals, “End poverty in all its forms everywhere”, also set a target to eradicate extreme poverty as measured by the IPL by 2030 (United Nations General Assembly, 2015).

<sup>8</sup> The Gini index is the Gini coefficient expressed as a percentage. A Gini index of 0% represents perfect equality, while an index of 100% implies perfect inequality (World Bank, n.d.).

The median Gini coefficient in the latest survey for 166 countries was around 0.40 (Lakner et al., 2020a).

### III.B. Estimation methodology adopted by selected literature

14. Many of the studies, including those by the World Bank, the IMF and UNDESA decomposed the change in income distribution from the COVID-19 pandemic into two channels, the *growth effect* and the *distribution effect*, as described by Bourguignon (2004). We have already briefly discussed the meaning of the two effects in the preceding Section.

15. For the *growth effect*, the World Bank, the IMF and UNDESA all derived the impact of the COVID-19 pandemic on the per capita income for each economy using the differences between expected GDP growth before the pandemic (i.e. based on forecasts released in January 2020, before the World Health Organization declared COVID-19 a pandemic) and the post-COVID-19 pandemic forecasts / estimates<sup>9,10,11</sup> (IMF, 2020d, 2020e; UNDESA, 2020b, 2021; World Bank, 2020c, 2021; Mahler et al., 2020; Lakner et al., 2020b, 2021; Yonzan et al., 2020). As such, the negative growth effect of the COVID-19 pandemic could be crudely estimated by this proxy<sup>12</sup>. The growth effect was assumed to affect each person's income equally, without considering whether the actual impact of the pandemic would affect lower-income individuals disproportionately, which was captured by the distribution effect.

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<sup>9</sup> Technically the estimate still captured the effects of other events between forecasts, but these other effects should be much less significant than the impact from the pandemic.

<sup>10</sup> The World Bank, the IMF, and UNDESA used GDP projections presented in their GEP, WEO and WESP reports respectively.

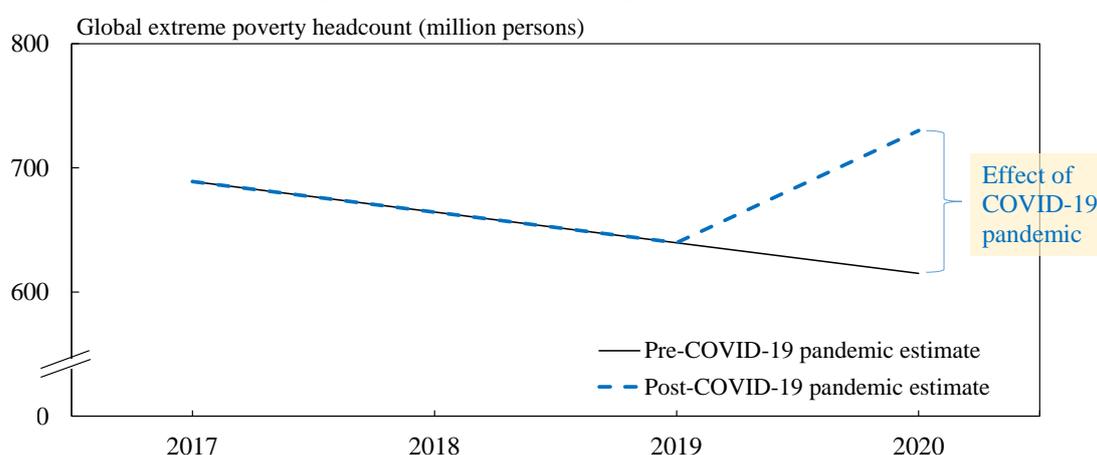
<sup>11</sup> There were considerable differences in how the three institutions channeled GDP growth into per capita income growth. The World Bank used the GEP-estimated growth difference in GDP per capita, with an assumed pass-through rate of 0.85, i.e. only 85% of the decline in GDP per capita would be reflected in the decline in personal income (World Bank, 2020c; Mahler et al., 2020; Lakner et al., 2020b, 2021; Yonzan et al., 2020). The World Bank's estimates were further adjusted for the revision in GDP estimates in 2019 which cannot be related to COVID-19 pandemic (Mahler et al., 2020). For the IMF, the WEO-estimated per capita GDP growth difference and the estimated pre- and post-COVID-19 Gini coefficients were inputted to a panel regression model (using historical GDP, Gini coefficients and poverty headcount figures of each country) to predict the poverty headcount of each country (IMF, 2020e). For UNDESA, it was assumed that income of each country followed an approximate lognormal distribution, with the effect of GDP growth reflected in the mean of log income (inputs provided via their in-house World Economic Forecasting Model outputs) and the effect of change in inequality captured by the percentage change of the standard deviation of log income (inputs provided via assumed values of Gini coefficients) (Pennings, 2018; Kim, 2019; UNDESA, 2020b, 2020c).

<sup>12</sup> Hence, the effect of direct government transfers to households (which itself is not counted towards GDP under national income accounting) could be subject to underestimation.

16. For the *distribution effect*, the World Bank utilised the global household survey dataset, PovcalNet, and assumed no change in income distribution due to COVID-19<sup>13,14</sup> (World Bank, 2020c, 2021; Mahler et al., 2020; Lakner et al., 2020b, 2021; Yonzan et al., 2020). UNDESA (2020b) took a scenario testing approach and provided several scenarios for income inequality (-25%, no change, +25%) in the longer term, with the baseline assuming no change in income distribution<sup>15</sup>. Only the IMF (2020d, 2020e) attempted to quantify the disproportionate nature of the shock, and estimated the rise in income inequality using the pre-COVID-19 income distribution within countries and the historical changes in household income distributions in past recessions.

17. Under the framework of decomposing changes to the income distribution due to the COVID-19 pandemic into *growth* and *distribution* effects, the change in income disparity relates directly to the *distribution effect*. The projected increases in global poverty size by these three institutions were basically calculated by comparing the estimated values using the growth figures and income distribution projected before and after the COVID-19 pandemic outbreak for the same period (**Figure 3**). However, it is important to note that given the strong assumptions placed on their estimates, and in part conceivably due to the huge uncertainty of the pandemic’s development down the road, most of the studies only provided an estimate for 2020.

**Figure 3: Graphical illustration of how the studies would quantitatively assess the impact of COVID-19 on global poverty size**



Note: Figures in chart for illustration purpose only.

<sup>13</sup> The negative income shocks were transformed into equivalent increases in poverty line thresholds, the sole input for the PovcalNet database query tool. Thus, the output (poverty headcount) estimated was inherently distribution-free. This methodology was pioneered by Sumner et al. (2020).

<sup>14</sup> Lakner et al (2020a), the research team for World Bank’s estimation in June, relaxed this assumption and assumed different scenarios of changing income inequality in a separate technical note.

<sup>15</sup> UNDESA (2020b, 2020c) assumed a theoretical lognormal income distribution instead of using PovcalNet data, possibly for easier scenario testing under different Gini coefficient changes in the longer term.

18. A few other studies, including Larborde et al. (2020) and ILO (2020a), adopted micro-founded general equilibrium models. Specifically, Larborde et al. (2020) generated the estimated poverty headcount using a set of assumptions<sup>16</sup> on the duration of social distancing, bottlenecks and delays in trade and tourism-related activities, supply disruptions and reduced job efficiency to generate their own forecast of the global economic situation in 2020<sup>17</sup>. Similarly, ILO (2020a) estimated the additional increase of people in working poverty, based on hybrid DSGE/CGE simulations developed by McKibbin and Fernando (2020).

### III.C. Results and discussions

#### *On poverty*

19. In the light of the massive recession caused by COVID-19, one may argue that the *growth effect* dominated in the worsening of the poverty situation. As shown in **Figure 2**, estimates after the onset of the pandemic all showed that the global economy would undoubtedly enter a severe recession in 2020, in contrast to the modest growth estimated beforehand. While the poverty and global GDP estimates are not strictly comparable due to differences in methodologies, assumptions and time of estimation, it is observed in general that the larger the downward adjustments in GDP estimates (or with a more pessimistic scenario assumption) in 2020, the greater the increases in global poverty figures predicted by institutions and researchers (**Figure 4**)<sup>18</sup>. Based on the latest updates from the World Bank, UNDESA and the IMF in October 2020-January 2021, around 100-130 million persons were estimated to be pushed into extreme poverty in 2020 due to COVID-19 (World Bank, 2021; Lakner et al., 2021; IMF, 2020e; UNDESA, 2021). In contrast, the World Bank (Lakner et al., 2021) pointed out that during the Asian financial crisis, the only other crisis that induced an increase in the global poverty headcount in the past three decades, extreme poverty only increased by 18 million in 1997 and another 47 million in 1998.

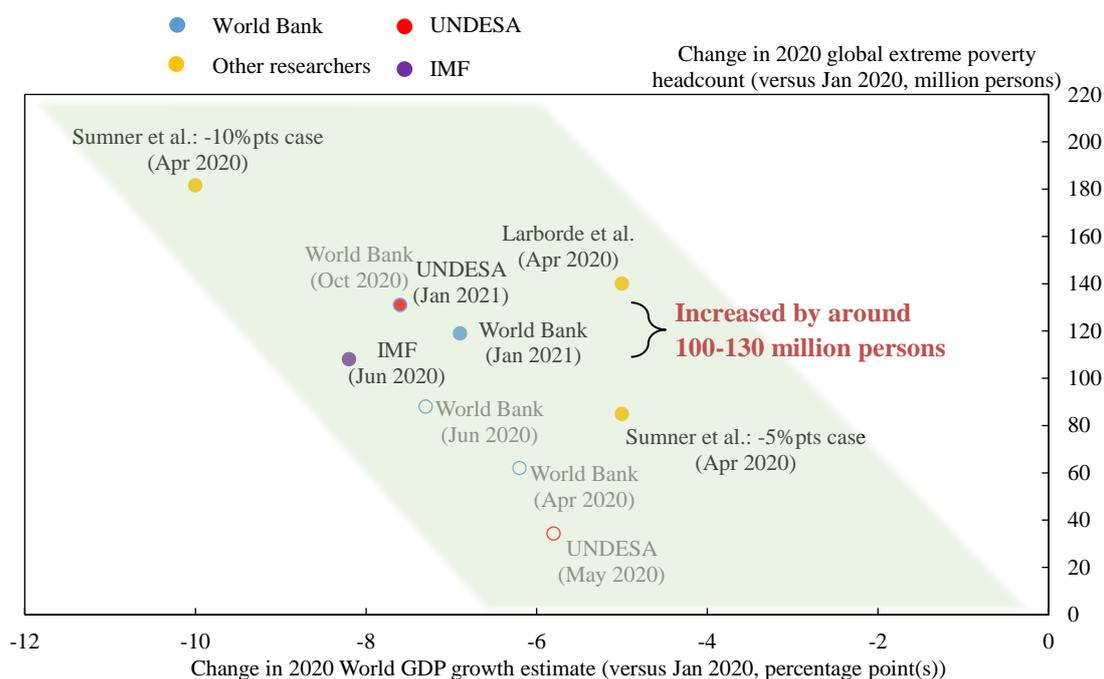
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<sup>16</sup> Based on simulations with MIRAGRODEP, a global computable general equilibrium (CGE) model developed by the International Food Policy Research Institute.

<sup>17</sup> Larborde et al. (2020) forecast that the world's GDP growth would slow by 5.0 percentage points compared with baseline values in 2020, and cited the IMF's April WEO forecast (a downward revision from +3.3% to -3.0%) as a comparison.

<sup>18</sup> While the World Bank's estimates in January 2021 reflected a smaller downward adjustment in GDP (see **Figure 2**) but a greater increase in global poverty as compared to its estimates in June 2020, readers are reminded that the upward revision in 2020 GDP estimate mainly came from better-than-expected performance in advanced economies in the second half of 2020, and the growth rates of emerging and low-income countries (where the majority of the extreme poor resided) were revised downward compared to the prediction in June 2020.

**Figure 4: Change in global poverty headcount as measured by the International Poverty Line in 2020 by selected institution / researcher**



Notes: The period in parenthesis denotes the publication month of the underlying GDP assumption used in the particular poverty headcount estimate. The solid dots denote the latest estimates issued by the specific institution.

For Larborde et al. (2020), GDP growth and poverty headcount were generated together as model output. For the World Bank, besides using its own in-house GDP assumptions (GEP in June 2020 and January 2021), estimates on changes in extreme poverty headcounts were also updated by borrowing GDP assumptions from the IMF (WEO in April and October 2020). For Sumner et al. (2020), two cases were shown: 5 percentage points and 10 percentage points reduction in world GDP growth.

Sources: IMF (2020a, 2020b, 2020c, 2020d, 2020e, 2020e, 2021a), World Bank (2020a, 2020b, 2020c, 2021), Mahler et al. (2020), Lakner et al. (2020b, 2021), Yonzan et al. (2020), UNDESA (2020a, 2020b, 2021), Larborde et al. (2020), Sumner et al. (2020), and authors' calculations.

20. As mentioned in footnote 12 of paragraph 15, using GDP growth as the sole indicator to capture income growth would underestimate the effect of direct government transfers. To compensate for the effect of additional social spending, the IMF (2020e) cited the findings of Evans and Matsumoto (2020) and estimated that the additional 0.8% of global GDP spent on social assistance during COVID-19 (as of September 2020)<sup>19</sup> would reduce the global poverty headcount by 20 million on average, or about one-fifth of the increase in the poverty headcount (108 million in the baseline scenario) due to COVID-19 in 2020.

21. As described in paragraph 16, it should be noted that only the IMF had included the *distribution effect* (i.e. how possible changes in income disparity amid the COVID-

<sup>19</sup> The IMF (2020e) stated at the time that, as of September 2020, the additional direct fiscal support amounted to US\$6.0 trillion, or close to 6% of global GDP. 87% of it (or US\$5.2 trillion) was offered in advanced economies.

19 pandemic could affect the poverty headcount in 2020) in their estimate (IMF, 2020e)<sup>20</sup>. Through a scenario testing approach, Lakner et al. (2020a) estimated that a 2% increase in the 2020 Gini index in all countries<sup>21,22</sup> would raise the number of persons pushed into extreme poverty due to COVID-19 to 94 million, in contrast to their baseline estimate of 60 million persons where Gini indices in all countries were assumed to remain unchanged<sup>23</sup>. On the other hand, if there were a 2% reduction in the Gini index in all countries in 2020, which Lakner et al. (2020a) theorised could happen if all countries successfully implemented and expanded social protection programmes, then the number of persons driven into extreme poverty would be reduced to 30 million.

### *On income disparity*

22. As discussed in Part II.B, while most reports discussed a collection of channels by which the COVID-19 pandemic could affect income disparity, few provided quantitative estimates. In general, while global economic prospects fluctuated along with the pandemic situation, established forecasts on income growth rates remained widely available throughout 2020. However, making quantitative estimates about anticipated or resulting changes in Gini coefficients requires strong or novel assumptions (e.g. assuming that the distributional impact of COVID-19 is similar to those of past pandemics so historical data can be applied, or using the ability to telework as a proxy for employment situations) given the lack of data. As such, only a few studies provided a near-term estimate regarding the pandemic's impact on inequality.

23. Past data showed that epidemics widen income disparity, and the COVID-19 pandemic is unlikely to be an exception. The World Bank (2020c) cited historical data from past major epidemic periods, showing that on average the Gini coefficient increased by about 1.5 percentage points in countries after epidemics, reflecting the long-term effects caused by job losses, income shocks, and diminished job opportunities. Similarly, using the historical elasticities of household incomes by decile

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<sup>20</sup> While the IMF estimate mentioned in **Figure 4** has taken into account the *distribution effect*, the impact of the *distribution effect* on poverty headcount was not separately estimated.

<sup>21</sup> That is, if a country starts with a Gini index of 40.0% in 2019, it would end up with a Gini index of 40.8% in 2020.

<sup>22</sup> There exist infinitely many possible changes in income distribution that result in the same change in the Gini index. To provide a plausible estimate of the distribution effect on poverty, Lakner et al., (2020a) simulated the change in Gini index using a linear growth incidence curve (i.e. the growth rate of income varied linearly to its rank in income distribution).

<sup>23</sup> While Lakner et al. (2020a) and World Bank (2020c) both used GDP assumptions from World Bank's GEP in June 2020 and assumed zero distribution effect in their baseline scenario, Lakner et al. (2020a) used a vintage PovcalNet dataset before its update in September 2020. As such, only the latter's result is presented in **Figure 4**.

to output in past recessions, the IMF (2020e) estimated the median Gini index within countries would rise by 3 percentage points due to COVID-19, from 38% to 41%.

24. But it should be noted that the above can only serve as a crude reference to infer the impact of COVID-19 pandemic, as never before had most global economic activities grinded to a halt during pandemic, together with various lockdown measures imposed in many parts of the world, which were “disproportionately affecting the most vulnerable” (IMF, 2020d). Notwithstanding data constraints, in a separate research article, the IMF used the ability to telework during COVID-19 as a proxy for sectoral employment loss, which was mapped to income quintile characteristics to simulate changes in income distribution. As such, the IMF estimated that countries in emerging markets and developing economies would see an average increase in the Gini index by 2.6 percentage points to 42.7% in 2020 due to COVID-19, which was comparable with their separate estimates for all economies using historical data (see paragraph 23).

#### *Situations beyond 2020*

25. Although recent vaccine approvals have raised hopes of a turnaround in the pandemic later in 2021, renewed waves and new variants of the virus would pose concerns for the outlook (IMF, 2021a). While the IMF, the World Bank and UNDESA forecast that the global economy would expand by 4.9% to 5.5% in 2021<sup>24</sup> amid growing optimism about effective vaccinations that would strengthen the pace of recovery (World Bank, 2021; IMF, 2021a; UNDESA, 2021), the recovery path was envisioned to moderate as output remains dampened by the effects of diminished physical and human capital accumulation on labour productivity (World Bank, 2021), as well as by elevated levels of unemployment and underemployment (UNDESA, 2021). Hence, while it is conceivable that the global poverty situation in 2021 might improve compared with 2020, the recovery path back on pre-COVID-19 trend would unavoidably be a long and winding one.

#### **IV. CONCLUDING REMARKS**

26. The COVID-19 pandemic and the anti-epidemic measures gravely battered the global economy into a serious recession. Major studies as summarised above generally pointed out that the notable disruptions to work and skyrocketing job losses caused significant declines in household incomes of vulnerable households, which would visibly aggravate global poverty and even income inequality. Around 100-130 million persons were estimated to be pushed into extreme poverty in 2020 due to COVID-19, and the IMF also estimated that the median Gini index within countries would rise by

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<sup>24</sup> Forecast made in January 2021, based on PPP weights.

3 percentage points. Looking ahead, the recovery pace of the global economy is still subject to vast uncertainties, with much hinging on the effect of the policy measures and more importantly the progress of mass vaccination campaigns. If the vaccination campaigns can successfully keep the pandemic under control, allowing a strong revival in economic activities (particularly in the emerging and least-developed countries), this should possibly provide some support to the income conditions of grassroots people, which would help contain global poverty and mitigate income disparity.

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