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COVID-19 and global poverty

Are LDCs being left behind?

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Abstract: This paper provides a preliminary assessment of COVID-19's impact on global poverty in the light of the IMF's April 2020 growth forecasts. The analysis shows that the pandemic will have dramatic consequences, eroding many of the gains recorded over the last decade in terms of poverty reduction. Our baseline case suggests that globally the number of people living below US$1.90 per day could increase by 68 million in 2020 alone, with much larger effects should the recession turn out to be more severe than expected. This represents a significant setback and, without effective international support and cooperation, will pose a critical threat to the achievement of the United Nations 2030 Agenda for Sustainable Development. The fallout from the pandemic will also exacerbate the geographic concentration of poverty, as exemplified by the case of the Least Developed Countries, which are set to represent the main locus of extreme poverty.

Key words: COVID-19, crisis impact, global poverty, Least Developed Countries, SDGs

JEL classification: I32, O15, N30

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Note: This is an amended version of the paper due to a very minor formatting error in Table A1 in the original paper.

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1 Introduction

As the number of COVID-19 cases continues its rise, the global economy braces itself for a shock of unprecedented severity and complexity that is expected to trigger 'the worst recession since the Great Depression' (IMF 2020: v). In a global context already weakened by prolonged sluggishness, heightened inequalities, and policy uncertainties, the health emergency has quickly spread worldwide, triggering a simultaneous supply and demand shock, with direct ramifications into the financial sphere (Baldwin and Weder di Mauro 2020a, 2020b; UNCTAD 2020d). On the one hand, sudden breaks in production, value chain disruptions, uncoordinated border closings, lower international trade flows, and travel bans have taken a toll on the level of activity. On the other, reduced working hours, layoffs, confinements, and heightened uncertainties have dampened aggregate demand. Meanwhile, the need to increase public spending to cushion the impact of the downturn is likely to put pressure on government budgets, and bankruptcies loom large on a highly leveraged financial sector. For developing countries, the situation is compounded by dropping commodity prices (fuels and to a lesser extent minerals), falling FDI flows, capital flow reversals, and—in many cases—looming debt vulnerabilities (IMF 2020; UNCTAD 2019, 2020a, 2020b, 2020c).

Against this background, if it is too early to predict the depth and duration of the crisis, it is nonetheless clear that its socio-economic costs cannot be overemphasized. The International Labour Organization (ILO) has recently warned that employment losses could be close to 300 million worldwide, and that 1.6 billion workers in the informal economy are at immediate risk of seeing their livelihoods reduced (ILO 2020a). Based on hybrid DSGE/CGE simulations, it has also estimated that in 2020 there could be between 9 and 35 million additional people in working poverty, most of them living in developing countries (ILO 2020b; McKibbin and Fernando 2020).[1] Similarly, in a series of research blog posts, Vos, Laborde, and Martin have analysed the potential impact of the pandemic on poverty using the IFPRI's MIRAGRODEP model (Laborde and Martin 2018; Laborde et al. 2020; Vos et al. 2020). In their latest analysis, the authors find that under a scenario corresponding to a 5 per cent contraction in world output, and in the absence of any intervention, over 140 million people could fall into extreme poverty in 2020 (Laborde et al. 2020).[2]

Unlike the above-mentioned studies, which are based on computable general equilibrium simulations, other contributions utilize aggregate data from household surveys to assess the impact of COVID-19. Sumner et al. (2020) simulate the impact of arbitrary consumption shocks of -5 per cent, -10 per cent, and -20 per cent, and find that the pandemic could increase the number of people living in poverty by 85–419 million (using the US$1.90/day poverty line) and up to 523 million (using the US$5.50/day line). Gerszon Mahler and co-authors assess the impact of COVID-19 using growth forecasts by the International Monetary Fund (IMF) and focusing only on the US$1.90/day poverty line; they find that the number of extreme poor people could expand by 40–60 million (Gerszon Mahler et al. 2020).

[1] ILO estimates rely on a hybrid Dynamic Stochastic General Equilibrium/Computable General Equilibrium (DSGE/CGE) model developed by McKibbin and Fernando (2020).

[2] In earlier simulations the authors had emphasized that the impact on poverty is 'quite sensitive' to the channel of transmission of the shock to domestic producers, whether it is through trade, total factor productivity, or disruption of production due to confinement (Vos et al. 2020).

Borrowing methodological elements from these last two studies, this paper provides two main original contributions. First, it provides a preliminary assessment of the impact of COVID-19 in the light of IMF growth forecasts, for all commonly used international poverty lines, thus providing a broader and more nuanced picture than previous analyses. Second, it examines the impact of the crisis on the Least Developed Countries (LDCs), a subset of 47 developing countries characterized by heightened structural vulnerabilities and deemed worthy of special international support.[3] The paper is structured as follows. Section 2 outlines the methodology and caveats; Section 3 discusses the global results, while Section 4 focuses on the special case of LDCs. Section 5 presents a sensitivity analysis and explores a more pessimistic scenario than the one forecasted by the IMF. Finally, Section 6 summarizes and concludes.

2 Data, methodology, and caveats

The methodological approach adopted here is composed of three steps and is essentially a simplified version of the technique developed to nowcast poverty (Castaneda Aguilar et al. 2019). Keeping in mind that the first COVID-19 cases were reported in December 2019, the first step entails a comparison of growth forecasts for GDP per capita (in constant 2011 international dollars) from two successive vintages of the IMF's World Economic Outlook, namely the October 2019 and April 2020 full datasets (IMF 2019, 2020).[4] The latest forecasts for the year 2020 portend a 3 per cent contraction in world output, and a substantial downward revision of the global GDP per capita growth estimates from +1.1 per cent to -2.2 per cent (Figure 1). Although the fallout from the pandemic is expected to affect all regions, its impact is somewhat differentiated. Despite a sharp slowdown, Asian economies appear able to avoid a decline in per capita income, whereas other regions, where growth was already much slower prior to the outbreak of COVID-19, are expected to face significant contractions of per capita income.

In the second step, the above growth rates, pre- and post-COVID-19, are utilized to 'line up' the corresponding poverty estimates using PovcalNet, the World Bank's computational tool, which draws on more than 1,500 household surveys from 164 countries and contains the official estimates of poverty at country, regional, and global levels.[5] The procedure adopted in this respect closely follows Sumner et al. (2020). Denoting by z_0 the poverty line in the reference year (typically 2018) and by x_t the forecasted growth rate of GDP per capita in year t—in our case 2020—the new poverty estimate is obtained by revising the poverty line as:

[3] The LDC category was established by the United Nations in 1971. LDCs are a group of 47 developing countries characterized by heightened structural vulnerabilities and hence deemed worthy of various forms of international support measures over and beyond what is typically provided to developing countries. For further discussion refer to CDP and UNDESA (2018) and UNCTAD (2019).

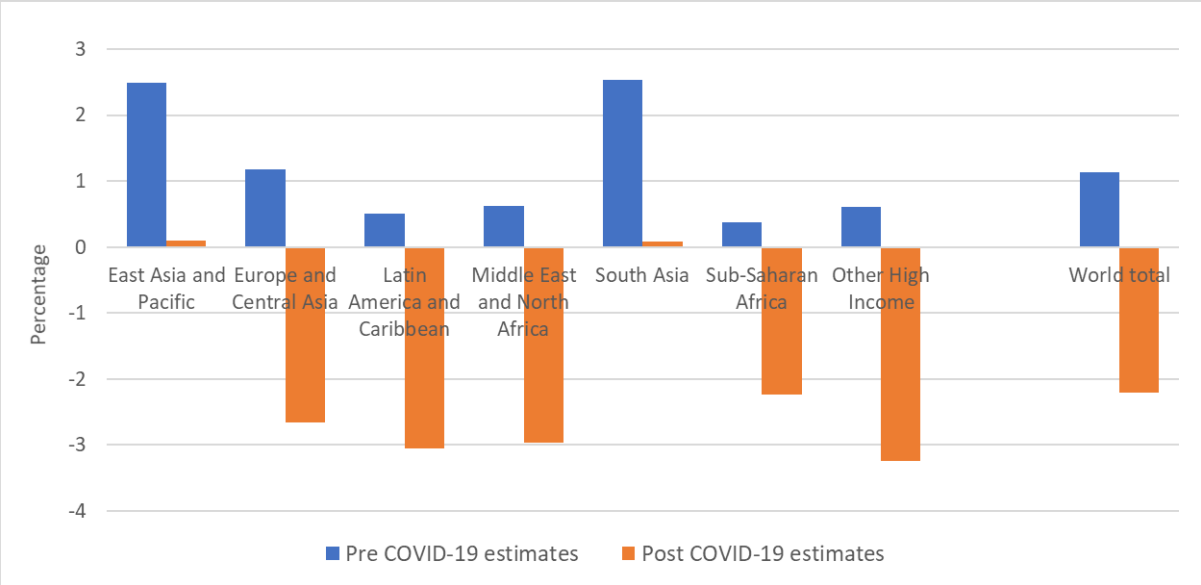
[4] Due to inconsistencies in the regional groupings across institutions, growth rates were retrieved at individual country level and aggregated at regional level, where appropriate, following the PovcalNet classification. The need to obtain data for individual countries explains why we could not utilize the January 2020 update of the World Economic Outlook. While ascribing the difference in growth forecasts between October 2019 and April 2020 only to COVID-19 represents a clear approximation, the pandemic is unquestionably the main shock involved. Indeed, the downward revisions between October 2019 and January 2020 were negligible (-0.1 per cent worldwide) compared with what occurred between January and April 2020.

[5] Data in PovcalNet are standardized to the extent possible, but differences remain in relation to the data collection method, and to whether the welfare aggregate is based on income or consumption. Roughly 51 per cent of PovcalNet surveys refer to household income and 49 per cent to consumption, the latter being far more common in developing countries.

$$z_t = \frac{z_0}{\prod_{i=1}^{t}(1+x_i)}. \quad (1)$$

Clearly, this corresponds to an increase in the poverty line (z_t)—hence, ceteris paribus, larger poverty measures—if the assumed growth rates (x_i) are negative, and a reduction in the value of the poverty line in the opposite case.

Figure 1: Annual growth rate of GDP per capita in constant PPP (2020)



Source: author's computation based on IMF (2019, 2020).

The third step obtains the impact of COVID-19 as the difference between the poverty measures obtained by applying the pre- and post-COVID-19 growth estimates.[6] In other words, this approach ascribes to the fallout from the epidemic the difference in poverty estimates consistent with the IMF's downward revision of growth forecasts for the year 2020, between the two vintages of the World Economic Outlook. Population data for 2020 (drawn from the latest World Population Prospects (UNDESA 2019)) are then utilized to translate changes in the headcount ratios into corresponding variations in the number of poor.

The above methodology warrants a few caveats. First, the approach adopted implicitly assumes that GDP per capita growth is mirrored in an equivalent rise in households' welfare, as measured by surveys; that is, the consumption of all households is assumed to expand at the same rate as GDP per capita. While this is in line with the method used by the World Bank to 'line up' poverty estimates from various years, empirical evidence shows that only a fraction of the growth in national accounting variables trickles down to households; hence the effect of growth on poverty reduction might be over-estimated (Deaton and Kozel 2005; Korinek et al. 2006; Newhouse and Vyas 2018).[7,8]

[6] In order to tease out the effect of the pandemic from that of routine revisions of growth rates during the year 2019, in the pre- and post-pandemic scenarios we modify the forecasted growth only for the year 2020.

[7] Whenever possible, instead of using growth in GDP per capita, the line-up method adopted by the World Bank utilizes the rate of growth of household final consumption expenditure. Since no forecast is available for the latter, we resorted to the former.

Second, the above methodology leaves unchanged the distribution of income. It is reasonable to expect, however, that some of the poorer segments of the population will be the hardest hit by the fallout from the epidemic, at least in urban areas. For example, strict social distancing is likely to exert a disproportionate effect on informal workers, daily labourers, own-account workers, and small businesses, which have meagre resources to weather the confinement without major disruptions. Similar distributional concerns are surely relevant in this phase, and critical in the longer term in shaping the path and speed of poverty reduction, as well as in addressing within-country inequality (Lakner et al. 2019). In line with similar studies (for instance Sumner et al. (2020)), the working assumption of a distribution-neutral shock is retained here mainly for practical reasons, since distributional aspects plausibly vary from country to country and do not easily lend themselves to generalizations.[9]

Third, the negative impact of the pandemic on households' welfare may be felt through other transmission channels than the pure short-term income dimension analysed here, and adversely affect the attainment not just of the first Sustainable Development Goal (SDG 1) but also of other SDGs, notably those related to health and gender equality. What is more, some of the non-monetary channels may even trigger adverse long-term effects, and create path-dependency from 'transient poverty' into 'chronic poverty' (Jalan and Ravallion 2000). For example, health-related problems may permanently lower productivity, or poor households being forced to take their kids out of school to cope with a temporary crisis might have lower income prospects over the long term, with knock-on effects that are not accounted for in the above simulations.

Finally, the above exercise is admittedly fraught with uncertainties, stemming from the forecasting of economic growth in a very volatile phase, compounded by the degree of noise introduced through the 'line-up' of the corresponding poverty measures. The heightened degree of uncertainty in forecasts is openly acknowledged by the IMF itself, as well as by many other commentators, in view of the unprecedented nature of the crisis and of the fact that future prospects are partly contingent on the policy responses adopted at national and international level (Baldwin and Weder di Mauro 2020a; IMF 2020). Moreover, some authors have questioned the IMF's relatively optimistic forecasts, arguing that there seems to be a discrepancy between the dire narrative and the less dire numbers, in particular for developing countries (Sandefur and Subramanian 2020: 11).

Some of the above methodological qualifications are further discussed in Section 5; here it suffices to say that in view of the above qualifications there are good reasons to believe that the figures presented below are—if anything—conservative estimates. Given the heightened uncertainty, simulations are run only until the end of 2020 and hence do not incorporate any speculation on the potential impact of COVID-19 beyond 2020. Yet, risk factors in this respect are all on the downside and there are growing concerns that the downturn could derail the world economy, possibly triggering balance of payment tensions and/or debt crises with long-lasting effects in the developing world (Baldwin and Weder di Mauro 2020a; Sandefur and Subramanian 2020;

[8] Discrepancies between the growth of household final consumption expenditure (as reported in national accounting systems) and that of mean consumption in household surveys are probably linked to the fact that wealthier households are less likely to participate in surveys and are more prone to under-reporting their income (Korinek et al. 2006; Newhouse and Vyas 2018).

[9] For example, in so far as it may trigger the layoff of employees in formal establishments but not a complete halt to the informal economy, the downturn may actually push formal employees into informality, with ambiguous distributional effects. Analogously, while the fallout from COVID-19 might have adverse distributional impacts in urban areas, this may not necessarily be the case at a national level, especially in countries where urbanization is limited. Rural areas, which tend to be characterized by more prevalent and deeper forms of poverty, have so far been largely spared from the direct fallout from the pandemic, and in several developing countries anecdotal evidence points to a large migration away from congested, locked-down cities (Le Nestour and Moscoviz 2020).

UNCTAD 2020a). With such risks looming, the analysis presented in the next section cannot but be regarded as a preliminary conservative assessment of the immediate poverty impact of COVID-19.

3 Results: the immediate impact of COVID-19 on global poverty

Broadly speaking, the impact of COVID-19 on poverty is explained by the interplay of three context-specific factors:

1. *the severity of the health crisis*, which largely determines the human and social costs, as well as the type and duration of policy responses (such as social distancing, confinement, and border closures);
2. *the nature and magnitude of the economic fallout*, in turn partly linked to structural issues, such as dependence on primary commodities or key markets/value chains hit by the downturn, availability of fiscal space, and outstanding debt; and
3. *the relative weight of people clustered in the vicinity of each poverty line*, who may be pushed into poverty by the decline in their per capita income.

The nature and scale of the economic fallout from COVID-19 deserves particular attention, and in many developing countries it might arguably have greater significance than the health emergency itself. The pandemic has simultaneously triggered a supply-side shock—propagated along value chains due to the disruption of business activities and rising frictions in international trade—as well as a demand shock, whereby growing unemployment and heightened uncertainty reduce consumption and investment expenditure (Baldwin and Weder di Mauro 2020a). While it is too early to rigorously disentangle the various channels through which this situation is impacting households' welfare, there is growing evidence that it is primarily taking its toll on employment, especially in sectors highly reliant on global value chains (such as garment manufacture, transport, and tourism), as well as on declining revenues from informal activities, notably in the trade and retail sectors (Aung et al. 2020; UNECA 2020).

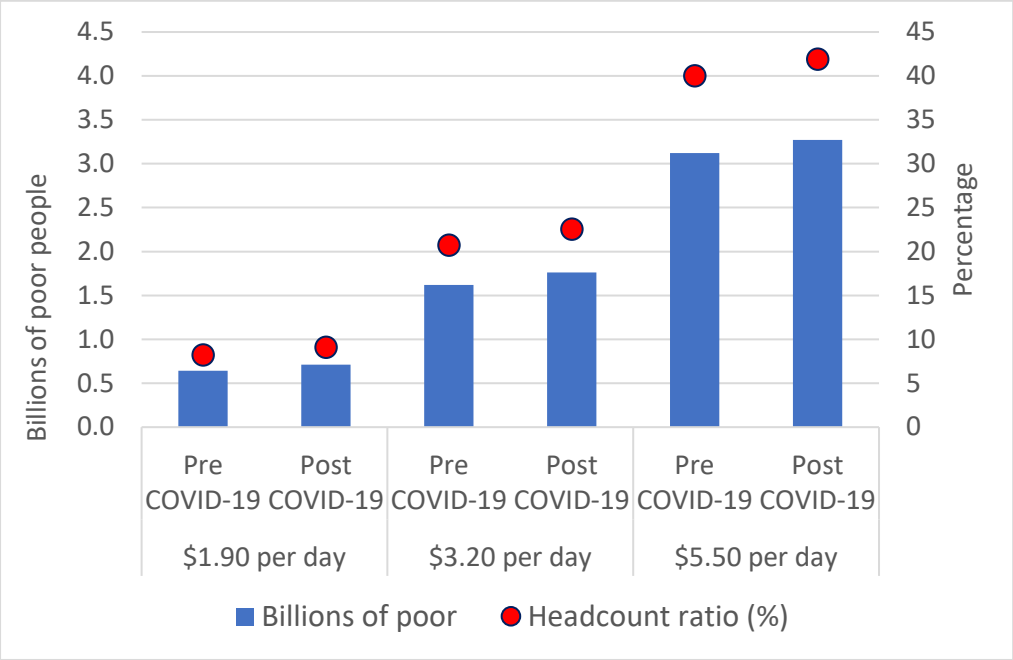
Moreover, international prices for primary commodities—especially oil and, to a lesser extent, other hard commodities—have suffered severe slumps in the first trimester of 2020, due partly to commodity-specific fundamentals and partly to the contraction in global demand. In many developing countries the emergence of COVID-19 has thus been compounded by adverse terms of trade shocks, reductions in remittances and FDI flows, heightened debt vulnerability, and capital flight (Baldwin and Weder di Mauro 2020a; UNCTAD 2020b, 2020c). The additional pressure on government budgets and balance of payments has thus further exacerbated the situation, constraining the space for an active policy response.

Given this premise, the short-term impact of coronavirus on poverty at the global level is depicted in Figure 2 and Figure 3, and reported in the Tables of the Appendix. In the case of the extreme poverty line, the global headcount ratio is estimated to increase by 0.9 percentage points (from 8.2 per cent to 9.1 per cent), thereby wiping out the poverty-reduction progress made in the last 2–3 years. This translates into 68 million additional people living below US$1.90 per day (in 2011 Purchasing Power Parity).[10] The impact is even more conspicuous in relation to the higher poverty

[10] The mismatch between our results and those of Gerszon Mahler et al. (2020) is explained by three factors: the use of different vintages of IMF growth forecasts for the baseline, the regional focus adopted here (as opposed to their country-by-country approach), and above all the use of 2020 population data (with some of the poorest regions recording the fastest demographic growth, hence inflating the total).

lines, namely US$3.20 and US$5.50 per day. The corresponding headcount ratios increase by nearly 2 percentage points (from 20.8 per cent to 22.6 per cent in the former case, and from 40 per cent to 41.9 per cent in the latter), reflecting in both cases an increase of over 140 million in the number of poor people worldwide.[11]

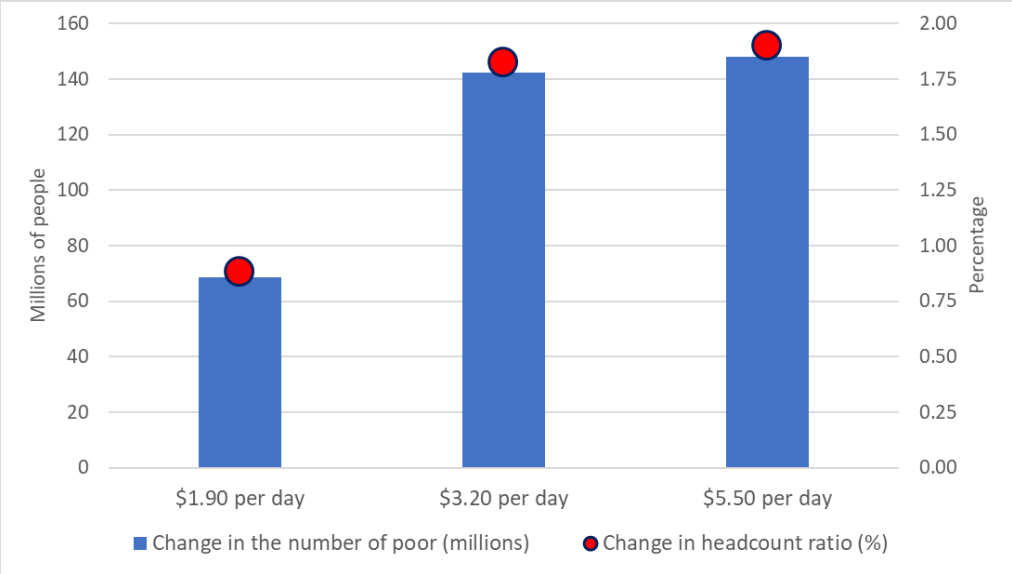
Figure 2: Global poverty estimates pre- and post-COVID-19 (2020)



Source: author's computation based on PovcalNet (April 2020) and IMF (2019, 2020).

[11] Notice that, while at each point in time a higher poverty line implies a larger (or equal) headcount ratio, this relationship does not necessarily apply to the *changes* in the headcount ratio between the pre- and post-COVID-19 scenarios. This explains why poverty estimates increase monotonically with the poverty line in Figure 2, but not in a discernible way in Figure 3.

Figure 3: Worldwide changes in poverty due to COVID-19 (2020)



Source: author's computation based on PovcalNet (April 2020) and IMF (2019, 2020).

Further clarity on the differential impact of COVID-19 can be gauged from Figure 4 and Figure 5, depicting respectively the regional breakdown in the changes for each poverty measure and the long-term trends in headcount ratios up to 2020 (per post-COVID-19 forecasts).[12] Critical to the understanding of these two graphs are the differentiated fallout from the pandemic (Figure 1) and the relative positioning in the income distribution vis-à-vis any given poverty line. Indeed, the more people are clustered just above a given poverty line, the greater the potential effect of a decline in per capita income on the corresponding poverty incidence.

Broadly speaking, three sets of regions can be identified in relation to COVID-19's impact:

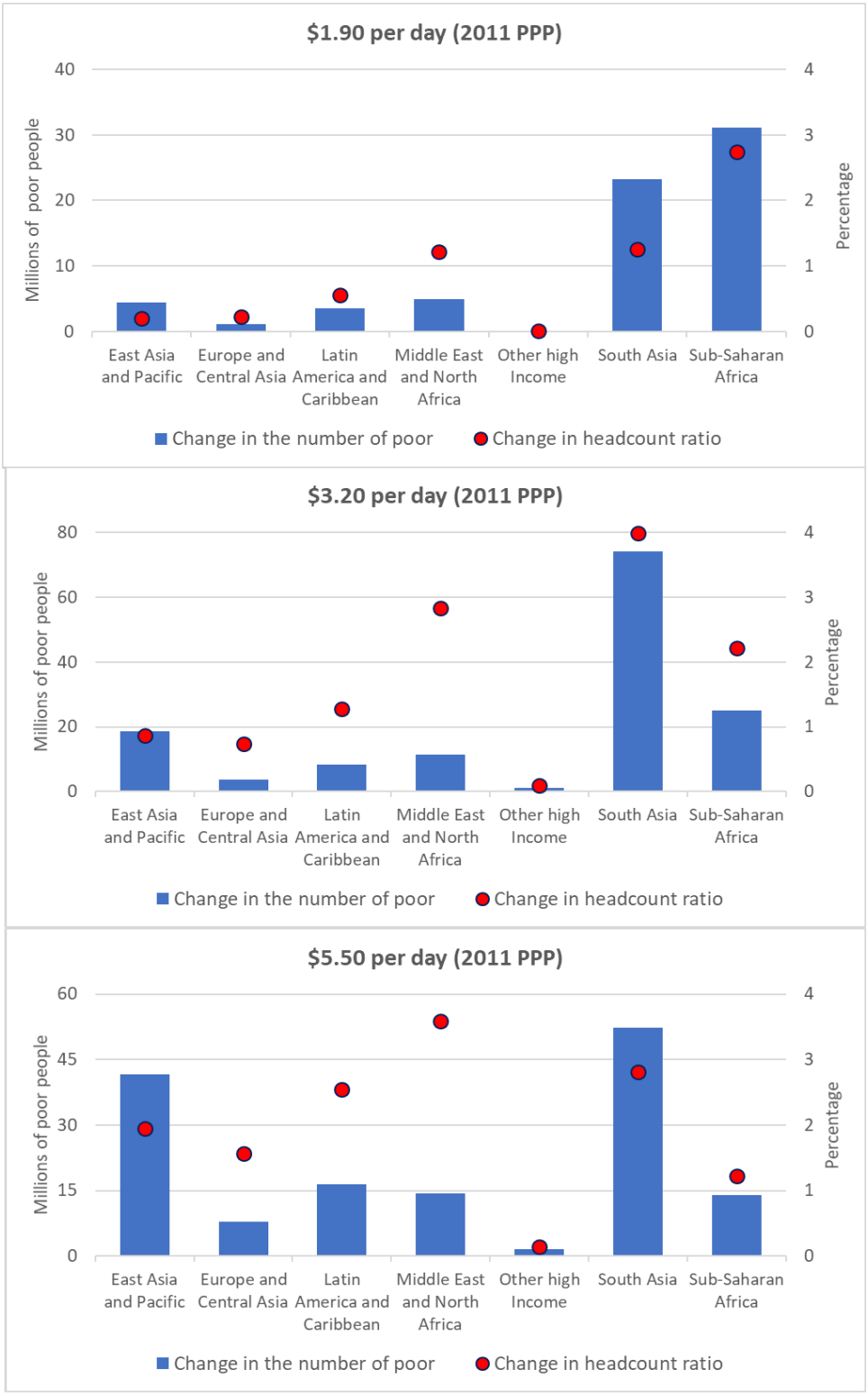
- In countries in Europe and Central Asia, as well as in other high-income countries, the pandemic leads to large socio-economic costs, but since the overwhelming majority of the population enjoys living standards that are far higher than those implied by the international poverty lines, this translates into relatively small increases in poverty headcounts.
- In South Asia and East Asia and Pacific—where poverty reduction was progressing at a fairly rapid pace prior to COVID-19, but growth is expected to remain positive—the shock is felt essentially through a sharp slowdown in poverty reduction.
- In the remaining regions, the crisis provokes an upsurge in poverty rates, thereby reversing earlier downward trends (in Latin America and Sub-Saharan Africa) or accentuating an already deteriorating situation (in the Middle East and North Africa).

With reference to extreme poverty, Sub-Saharan Africa stands out as the worst-hit region: the 2020 headcount ratio is estimated to increase by 2.7 percentage points in the wake of the pandemic, corresponding to an additional 31 million people living in extreme poverty (Figure 4). The impact is also large in South Asia, triggering a 1.3 per cent increase in the headcount ratio, compared with the ratio that would have prevailed in the absence of COVID-19. The Middle East and North

[12] Due to insufficient availability of more recent surveys, the reference year for South Asia and Sub-Saharan Africa is 2015 instead of 2018, as is the case for other regions, in line with the PovcalNet online platform. The adjustment specified in equation 1 nonetheless ensures the comparability of all estimates.

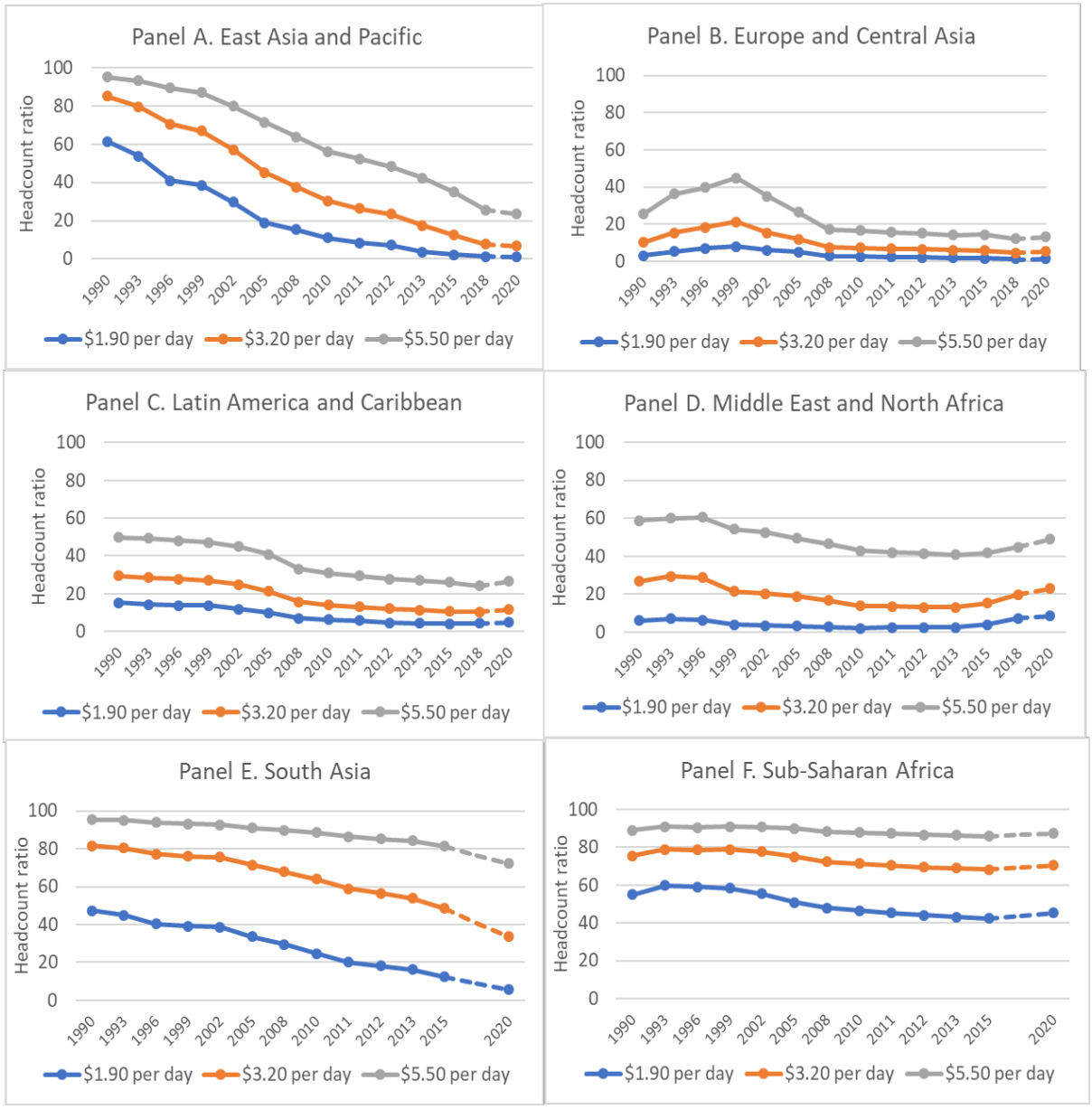
Africa is another area witnessing a particularly adverse fallout from the coronavirus, the incidence of extreme poverty augmenting by more than 1.2 percentage point. These figures entail significant reversals in the poverty-reduction progress, the COVID-19 outbreak bringing the headcount ratio back to the levels of 2012 in the case of Latin America and the Caribbean, of 2011 in the case of Sub-Saharan Africa, and of the mid 1980s in the case of the Middle East and North Africa.

Figure 4: Changes in poverty estimates as a result of COVID-19, by region and poverty line (2020)



Source: author's computation based on PovcalNet (April 2020) and IMF (2019, 2020).

Figure 5: Headcount ratios in the developing world, by region and poverty line (1990–2018 plus estimates for 2020)



Source: author's computation based on PovcalNet (April 2020) and IMF (2019, 2020).

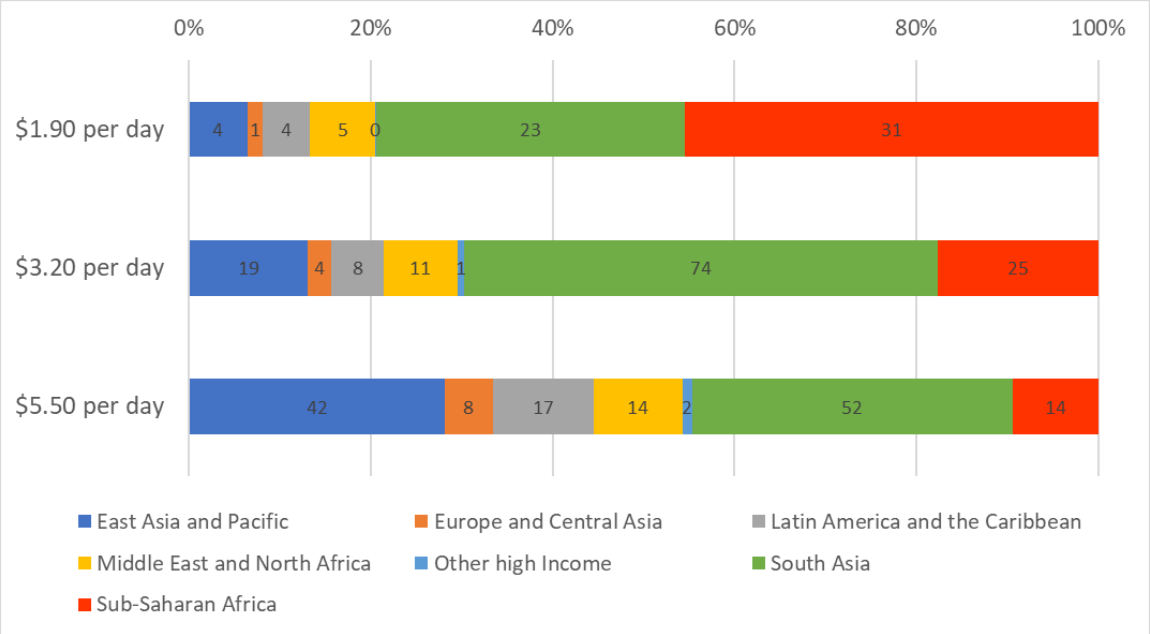
The fallout from the pandemic has even more visible effects across developing regions when higher poverty lines are considered (in particular US$5.50 per day), in line with the presumption that US$5.50 per day is arguably more representative of minimum living standards in middle-income countries. Focusing on the US$3.20 per day poverty line, South Asia is likely to suffer by far the largest slump, entailing a rise of nearly 4 percentage points in the headcount ratio, equivalent to 74 million additional poor, compared with what would have occurred if the pre-COVID-19 growth forecasts had materialized (Figure 4). The incidence of poverty is also expected to significantly worsen in other developing regions, such as Sub-Saharan Africa, Middle East and North Africa, and Latin America and the Caribbean, where headcount ratios increase respectively

by 2.8, 2.2, and 1.3 percentage points.[13] Deteriorations in the remaining regions are expected to remain fairly circumscribed, with headcount ratios increasing by less than 1 per cent.

Finally, our estimates suggest that the pandemic will exert a more visible and widespread impact on global poverty measures according to the US$5.50 per day poverty line. In this case, the sharp deceleration in the pace of poverty reduction in Southern and Eastern Asia is such that they will both suffer setbacks in their headcount ratios of 2–3 per cent compared with what they would have experienced had pre-COVID-19 forecasts materialized. Given their population size, this implies that they will account for the bulk of the impact in terms of changes in the absolute number of poor people (Figure 4). The deterioration of the poverty headcount, however, will be conspicuous also in the Middle East and North Africa, Latin America and the Caribbean, and—albeit to a lesser extent—Sub-Saharan Africa, which will witness a rise in the number of poor by roughly 15 million each. Economies in Europe and Central Asia will also suffer some setbacks, with the headcount ratio expected to climb from 11.3 to 12.8, while poverty levels in other high-income economies will increase only marginally, even against the US$5.50 per day poverty line.

Overall, there is no doubt that COVID-19 will cause a significant setback in efforts to eradicate extreme poverty (per SDG 1), triggering the erosion of the progress achieved in the last 2–3 years. Given the nature of the crisis and of related response policies, it will also clearly impact on other SDGs, notably in the health and education spheres, as well as on gender equality. Moreover, it seems clear that the fallout from the epidemic will reinforce the geographic polarization of poverty, with Sub-Saharan Africa and South Asia accounting for the lion's share of the changes in the number of poor people, at least in relation to the two lowest poverty lines (Figure 6).

Figure 6: Changes in the number of poor people as a result of COVID-19, by region and poverty line



Source: author's computation based on PovcalNet (April 2020) and IMF (2019, 2020).

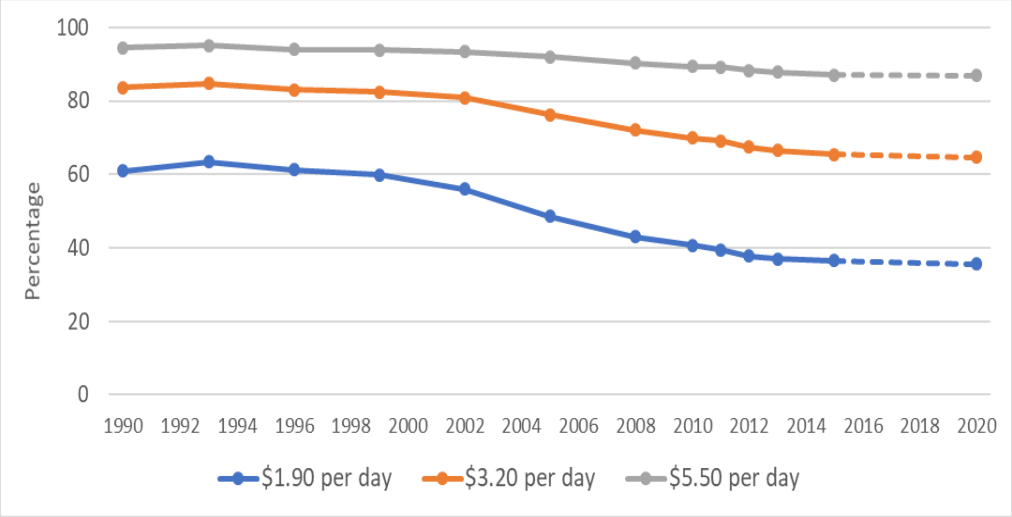
[13] Notice that at the US$1.90 per day poverty line, the impact of COVID-19 in Sub-Saharan Africa is larger than at the higher poverty lines, reflecting the relatively high number of people living barely above the former and likely to drop below it due to the fallout from the pandemic.

4 COVID-19 and 'leaving no one behind': the case of the Least Developed Countries

The pattern of changes in global poverty since the outbreak of COVID-19 begs the question of how the latter will affect prospects for delivering on the Agenda 2030 for Sustainable Development commitment to 'leave no one behind'. If admittedly it is too early to provide a definitive answer to the above question, some disturbing hints can already be derived from the above analysis. As COVID-19 is disrupting the preparation for the fifth United Nations Conference on the Least Developed Countries (UNLDC V), it is thus instructive to assess how LDCs have fared in relation to poverty over the last decade—under the so-called Istanbul Programme of Action—and how the ongoing pandemic is likely to impact them.[14]

Historically, as shown in Figure 7, the incidence of poverty in the LDCs was stubbornly high even before the emergence of COVID-19. After a decade of stagnation in the Nineties, poverty rates—at least according to the US$1.90 and US$3.20 per day lines—dropped at a moderate pace during the first decade of the new millennium, but poverty reduction slowed down markedly in the aftermath of the 2008–2009 global financial and economic crisis.[15]

Figure 7: Trends in poverty headcount in the LDCs



Source: author's computation based on PovcalNet (April 2020) and IMF (2019, 2020).

In this sobering context, the fallout from COVID-19 is set to completely stall even this sluggish progress, essentially wiping out any advances in terms of poverty reduction made since 2015 (the last reference year available). This might seem remarkable considering that a number of LDCs—Cambodia, Ethiopia, Myanmar, Rwanda, and Tanzania—have in recent years featured among the world's fastest-growing economies (Johnson 2019; UNCTAD 2019; World Bank 2017, 2018). Yet, it is precisely LDCs' intrinsic vulnerabilities that make them disproportionately susceptible to exogenous shocks, especially through balance of payment tensions. Moreover, it is the very fact

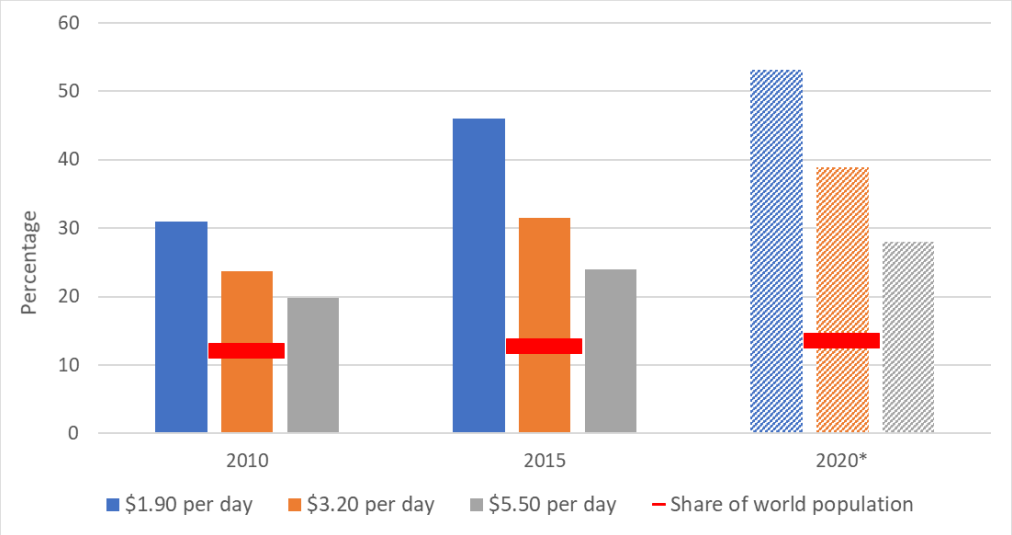
[14] Forty-three LDCs are covered by at least one survey in PovcalNet; the number of poor people is extrapolated using the average headcount ratio of the group to also account for the missing countries (Afghanistan, Cambodia, Eritrea, and Somalia).

[15] The headcount ratio at the US$5.50 per day poverty line barely moved throughout the period, going from 94 per cent to 88 per cent between 1990 and 2015 (the last reference year for the Sub-Saharan African and South Asian economies).

that a significant share of the LDC population was located just above the US$1.90 poverty line that determines the skewed geographical distribution of impacts depicted in Figure 6.

Against this background, the risk that LDCs will lag further behind in terms of poverty eradication (SDG 1) is great indeed; all the more so if the downturn triggers further debt distress and balance of payment crises. This reading of the evidence is vindicated by Figure 8, which shows the LDC share of world poor according to the three international poverty lines (as well as the LDC share of population for reference purposes). Even prior to the pandemic, LDCs were accounting for a rising proportion of the world's poor, due to the combined effect of persistently widespread poverty and rapid demographic growth. This trend has only been exacerbated by COVID-19, with LDCs accounting for nearly half of its impact in relation to the number of people living in extreme poverty globally.

Figure 8: LDC share of world population and of world poor, by international poverty line



Source: author's computation based on PovcalNet (April 2020) and IMF (2019, 2020).

This situation is so pronounced that, on the eve of the UNLDC V Conference, LDCs represent the main locus of extreme poverty worldwide. With barely 14 per cent of the world's population, they account for 53 per cent of the people living below US$1.90 per day and nearly 40 per cent of those living on less than US$3.20 per day at global level. With the sharp reduction of FDI and remittances flows and the intensification of debt vulnerabilities, it is clear that a quick rebound of LDC economies from the COVID-19 shock cannot but hinge upon much stronger international support, with aid playing a pivotal role in this phase; hence the importance of meeting long-standing aid targets (UNCTAD 2019). In the longer term, the evidence presented here underscores how LDCs will represent the litmus test for the 2030 Agenda for Sustainable Development, specifically for the promises to leave no one behind and reduce global inequality (UNCTAD 2015).

5 Sensitivity analysis and a more pessimistic scenario

The earlier discussion highlighted two crucial caveats to be applied to the methodology followed here: the extent to which growth in GDP per capita translates into an expansion of households' surveyed consumption, and the heightened degree of uncertainty surrounding the global economic outlook. In relation to the former caveat, the previous analysis implicitly assumed that the consumption of all households would expand at the same rate as GDP per capita (in constant international dollars). Empirical evidence, however, has questioned this assumption, and demonstrated that it would lead to an over-estimation of the pace of poverty reduction induced by economic growth. With reference to India, Newhouse and Vyas (2018) have recently estimated pass-through coefficients which, if applied to the growth of household final consumption expenditure, would replicate the poverty rates obtained from household surveys. Their estimated values are 55.9 per cent for urban areas and 73.3 per cent for rural ones.

In the light of this, to test the sensitivity of our findings, the adjustment to the poverty line is modified to explicitly add a pass-through coefficient α

$$z_t = \frac{z_0}{\prod_{i=1}^{t}(1+\alpha\, x_i)}. \qquad (2)$$

The impact of COVID-19 on poverty rates is then quantified, assuming a degree of pass-through equal to 65 per cent (i.e. the average of the above two values for rural and urban areas), and these results are compared with the previous ones, obtained for a unitary pass-through (α=1). Before commenting on the sensitivity analysis, it is worth noting that, in this formalization, the pass-through acts symmetrically with respect to positive and negative GDP per capita growth. While in reality this may not necessarily be the case, this specification was retained to ensure full correspondence with the case of α = 1.

The changes in headcount ratios resulting from the epidemic in the two cases are reported in Table 1, by region and poverty line. As expected, the presence of a partial pass-through does somewhat reduce the size of the effects of COVID-19 on global poverty rates, but it does not alter the two key messages of the previous analysis, namely the significance of the setback and its geographic polarization for the two lowest poverty lines. The incidence of extreme poverty, for instance, increases worldwide by 'only' 0.58 percentage points with the partial pass-through (instead of 0.88 as before), with Sub-Saharan Africa, South Asia, and to a lesser extent the Middle East and North Africa still bearing the brunt of the shock.

Table 1: Comparison of COVID-19 effects on headcount ratios with full and partial pass-through, by region and poverty line

	$1.90 per day		**$3.20 per day**		**$5.50 per day**	
	α = 1	**α = 0.65**	**α = 1**	**α = 0.65**	**α = 1**	**α = 0.65**
East Asia and Pacific	0.21	0.15	0.87	0.60	1.95	1.33
Europe and Central Asia	0.23	0.16	0.74	0.47	1.56	0.98
Latin America and Caribbean	0.55	0.31	1.27	0.68	2.54	1.36
Middle East and North Africa	1.22	0.77	2.84	1.76	3.59	2.30
Other high Income	0.01	0.00	0.10	0.09	0.14	0.10
South Asia	1.25	0.81	3.99	2.06	2.82	1.43
Sub-Saharan Africa	2.74	1.84	2.21	1.51	1.22	0.80
World total	**0.88**	**0.58**	**1.82**	**1.07**	**1.90**	**1.13**

Source: author's computation based on PovcalNet (April 2020) and IMF (2019, 2020).

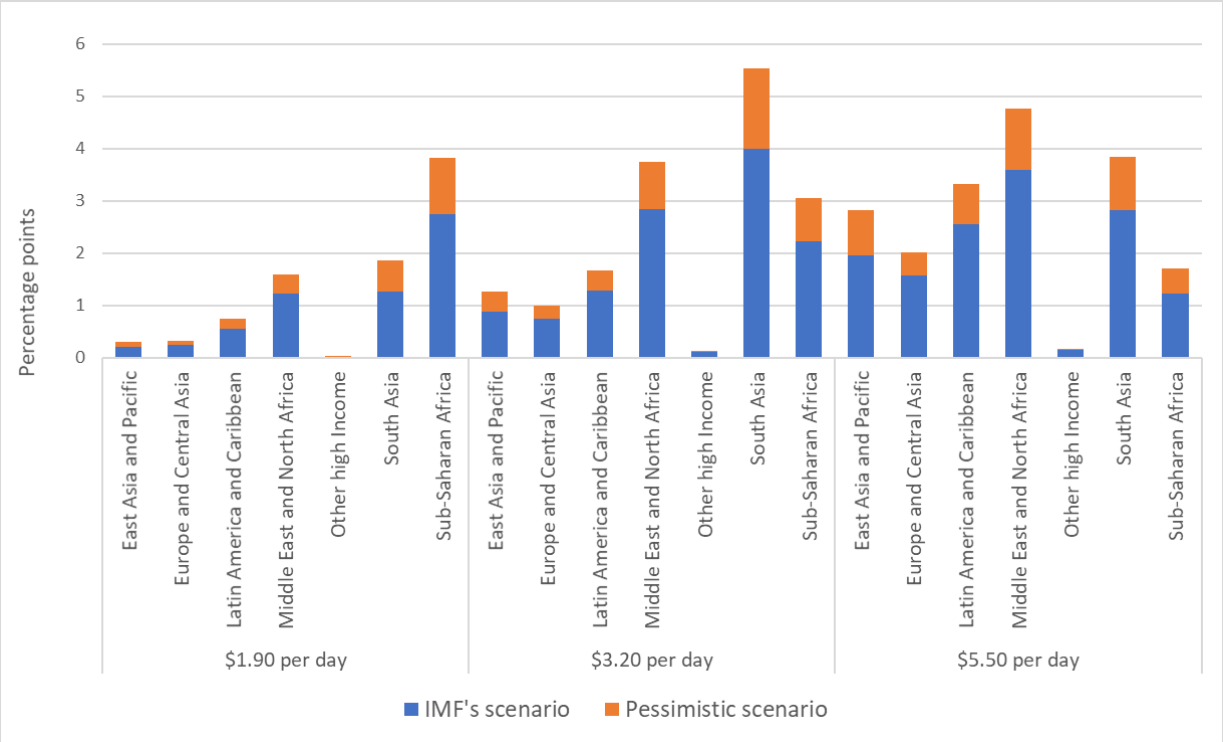
The second critical consideration in relation to the assessment carried out so far pertains to the degree of uncertainty surrounding the IMF's growth estimates. The latter have a track record of being over-optimistic in times of country-specific, regional, and global recessions; moreover, some authors have questioned the consistency of the relatively optimistic forecasts—in particular for developing countries—with the dire narrative around the COVID-19 outbreak (Genberg and Martinez 2014; Sandefur and Subramanian 2020). In the light of the above, it is instructive to examine the sensitivity of the poverty estimates to changes in growth performance in the context of a more pessimistic scenario. This hypothetical setting, designed to shed more light on the likely socio-economic consequences of a deeper-than-expected recession, assumes that GDP per capita growth in 2020 will ultimately be 2 percentage points lower than the IMF's forecasts.

The comparison of this pessimistic scenario with the one consistent with the IMF's April 2020 growth forecasts is depicted in Figure 9, which shows that a deeper-than-expected recession could have disastrous implications for much of the developing world. In Sub-Saharan Africa and South Asia, the extreme poverty outlook would considerably worsen, with headcount ratios increasing by a further 1.1 and 0.6 percentage points, respectively. The negative effects of a deeper recession appear more visibly in other regions (starting from the MENA) once the higher poverty lines are considered. In relation to the US$5.50 per day poverty line, virtually all developing and transition economies would suffer a further deterioration of headcount ratios.

Translating the above figures into corresponding numbers of additional people falling into poverty gives a clearer idea of the devastating scale of the possible consequences (Figure 10). Should the downturn prove to be deeper than expected, close to 100 million additional people would fall into extreme poverty worldwide, of which nearly half would be in Sub-Saharan Africa. This would be disastrous for the region, as the headcount ratio would then slide back to the levels of 2010 (entailing an even larger number of extreme poor than 10 years ago, in the light of demographic growth). When considering the higher poverty lines—namely US$3.20 and US$5.50 per day—the pessimistic scenario indicates that approximately 200 million additional people would fall into poverty, mainly in Asia. Again, the fact that even in the case of a pessimistic scenario, high-income countries do not appear to suffer visible setbacks in terms of poverty incidence speaks volumes in terms of the levels of global inequality. Such a negligible effect is indeed chiefly related to the limited relevance of standard international poverty lines in relation to developed countries' standards of living, while the sizeable worsening of poverty and deprivation stemming from the COVID-19 outbreak would emerge starkly from an analysis of national poverty lines.

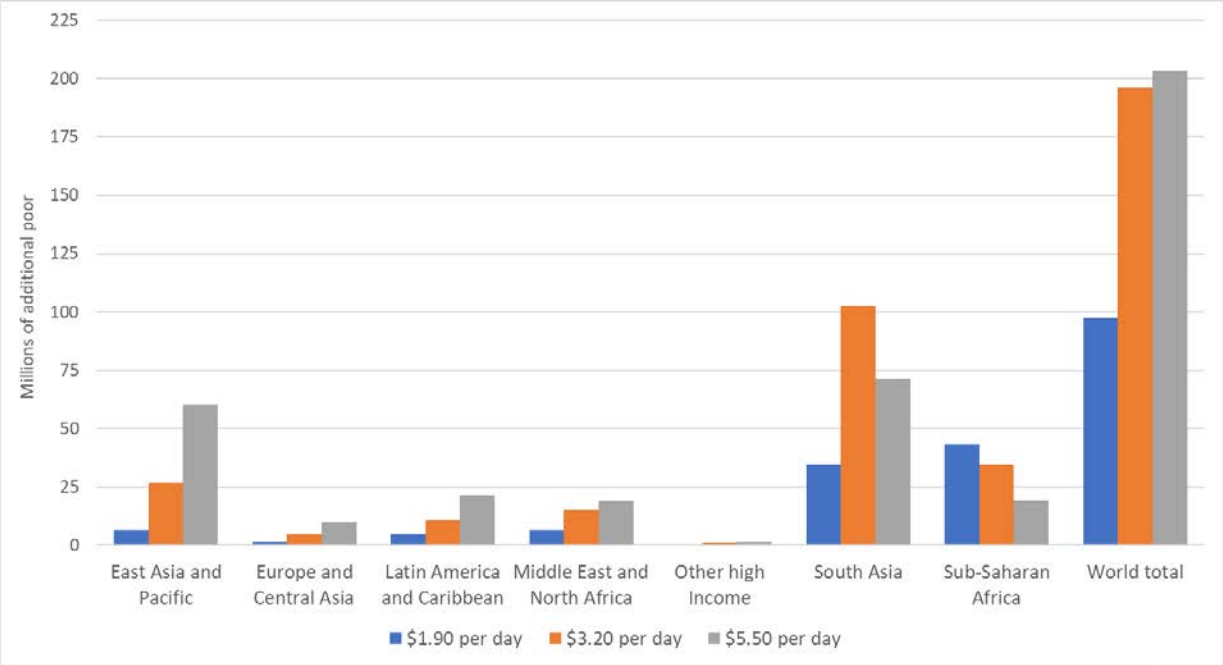
Overall, the magnitude of the potential socio-economic costs of a more pessimistic scenario than the one envisaged by the IMF underscores the fundamental importance of revitalizing international cooperation and doing 'whatever it takes' to effectively prevent a deeper and longer-lasting downturn, which would not only provoke wider socio-economic strains but also turn transient forms of poverty into chronic ones, especially if it inflicts protracted damage on productive sectors and micro, small, and medium enterprises.

Figure 9: Post-COVID-19 change in headcount ratios in different scenarios, by region and poverty line



Source: author's computation based on PovcalNet (April 2020) and IMF (2019, 2020).

Figure 10: Changes in the number of poor people in the pessimistic scenario, by region and poverty line (2020)



Source: author's computation based on PovcalNet (April 2020) and IMF (2019, 2020).

6 Conclusions

The analysis presented here provides a preliminary assessment of COVID-19's immediate impact on global poverty, under all the commonly used international poverty lines. Given the heightened uncertainties and the speed at which the fallout from the epidemic is unfolding, this results admittedly in estimates that provide conservative, 'ball park' figures, not least because many of the recently adopted policy responses are not necessarily accounted for in this framework. Even with these caveats, it is undisputable that the COVID-19 crisis will have dramatic consequences, eroding many of the gains recorded over the last decade in terms of poverty reduction. Our baseline case suggests that the number of people living in extreme poverty (below US$1.90 per day) could increase by 68 million in 2020 alone. However, this number could easily rise to 100 million, should the recession turn out to be deeper than the IMF forecasted in April 2020, as several commentators fear.

Even taking the IMF's forecasts at face value, the 'great lockdown' will result in the first rise in worldwide headcount ratios since the 1990s. This represents a significant setback, posing immediate challenges to the achievement of the UN 2030 Agenda for Sustainable Development, in particular SDG 1. Sub-Saharan Africa and South Asia will be the hardest hit regions, along with the Middle East and North Africa; nor will other regions be spared, even though adverse changes in poverty incidence there will be of a smaller magnitude, at least in relation to the two lowest poverty lines. This outcome will exacerbate the geographic concentration of poverty, particularly when compounded by the disparity in the financial and institutional means to roll out effective policy responses and social protection programmes. As further evidence that this polarization is jeopardizing the pledge to 'leave no one behind', we show that LDCs are among the worst hit by the COVID-19 fallout and today represent the main locus of poverty. With barely 14 per cent of the world's population, they account for 53 per cent of the people living below US$1.90 per day at global level, and nearly 40 per cent of those living on less than US$3.20 per day.

Mitigating the adverse effects of this dire global situation hinges on four policy priorities. First, the international community must support developing countries in mobilizing adequate resources to allow their health systems to cope with the emergency, while effectively assisting vulnerable segments of the population and small businesses. Second, containing the social costs of the pandemic requires averting further damage, be it as a result of balance of payment crises, of food price hikes in net-importing countries, or of debt vulnerabilities. This calls for concerted action to provide adequate international liquidity, adopt a comprehensive debts standstill arrangement, and, where appropriate, extend renewed debt relief. Third, it is crucial to avoid major disruptions to domestic and regional food and agricultural value chains, which would further strain vulnerable households. With the immediate socio-economic impact of the pandemic mainly affecting the urban population, the viability of agriculture is fundamental to preserve livelihoods in rural areas, contain price spikes for staple foods, and limit food import bills at a time when foreign exchange is scarce. Fourth, national and international efforts to revitalize the economy should be directed into viable investments to foster structural transformation and spur the transition towards a low-carbon economy, as a key avenue to build resilience, generate employment and establish/ strengthen social protection programmes.

Needless to say, domestic policies have an important role to play with respect to the roll-out of countercyclical macroeconomic policies and assistance programmes, in developed and developing countries alike. Yet, the vast global disparity in financial and institutional means, and the lack thereof precisely in countries whose governments are facing more pronounced socio-economic risks, such as LDCs, inevitably call for bolstered international support to avoid an outcome whose socio-economic costs could be disastrous.

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Appendix

Table A1: Global poverty estimates pre- and post-COVID-19

	$1.90 per day					
	Pre-COVID-19		Post-COVID-19		Change	
	Headcount	Million poor	Headcount	Million poor	Headcount	Million poor
East Asia and Pacific	0.9	18.5	1.1	22.9	0.2	4.4
Europe and Central Asia	1.1	5.3	1.3	6.5	0.2	1.2
Latin America and Caribbean	4.4	28.3	4.9	31.8	0.6	3.6
Middle East and North Africa	7.3	29.3	8.5	34.2	1.2	4.9
Other high Income	0.7	7.4	0.7	7.5	0.0	0.1
South Asia	4.0	74.0	5.2	97.2	1.3	23.3
Sub-Saharan Africa	42.2	479.5	45.0	510.7	2.7	31.2
World total	**8.2**	**642.3**	**9.1**	**710.8**	**0.9**	**68.6**

	$3.20 per day					
	Pre-COVID-19		Post-COVID-19		Change	
	Headcount	Million poor	Headcount	Million poor	Headcount	Million poor
East Asia and Pacific	5.7	122.0	6.6	140.7	0.9	18.6
Europe and Central Asia	4.1	20.3	4.8	24.0	0.7	3.7
Latin America and Caribbean	10.3	66.9	11.6	75.1	1.3	8.2
Middle East and North Africa	20.1	80.8	22.9	92.2	2.8	11.4
Other high Income	0.8	9.0	0.9	10.1	0.1	1.1
South Asia	29.4	545.6	33.4	619.6	4.0	74.0
Sub-Saharan Africa	68.1	773.3	70.3	798.4	2.2	25.1
World total	**20.8**	**1,617.9**	**22.6**	**1,760.1**	**1.8**	**142.2**

	$5.50 per day					
	Pre-COVID-19		Post-COVID-19		Change	
	Headcount	Million poor	Headcount	Million poor	Headcount	Million poor
East Asia and Pacific	21.3	456.6	23.3	498.3	1.9	41.7
Europe and Central Asia	11.3	56.1	12.8	63.9	1.6	7.8
Latin America and Caribbean	24.0	155.6	26.5	172.1	2.5	16.5
Middle East and North Africa	45.1	181.3	48.7	195.7	3.6	14.4
Other high Income	1.3	13.9	1.4	15.4	0.1	1.5
South Asia	69.0	1,281.4	71.8	1,333.7	2.8	52.3
Sub-Saharan Africa	85.9	976.3	87.2	990.1	1.2	13.9
World total	**40.0**	**3,121.1**	**41.9**	**3,269.2**	**1.9**	**148.1**

Source: Author's computation based on PovcalNet (April 2020) and IMF (2019, 2020).