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Development in the Global South at risk: Economic and social effects of the COVID-19 pandemic in developing countries

ÖFSE Working Paper, No. 65

Provided in Cooperation with:
Austrian Foundation for Development Research (ÖFSE), Vienna

Suggested Citation: Tondl, Gabriele (2021) : Development in the Global South at risk: Economic and social effects of the COVID-19 pandemic in developing countries, ÖFSE Working Paper, No. 65, Austrian Foundation for Development Research (ÖFSE), Vienna, https://www.oefse.at/publikationen/working-papers/detail-working-paper/publication/show/Publication/economic-and-social-effects-of-the-covid-19-pandemic-in-developing-countries/

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65 WORKING PAPER

Development in the Global South at risk: Economic and social effects of the COVID-19 pandemic in developing countries.

Vienna, September 2021

Gabriele Tondl (Vienna University of Economics and Business)

OFSE
Austrian Foundation
for Development Research

Acknowledgements

This paper has been elaborated in the context of a Master seminar at the Vienna University of Economics and Business in Spring 2021. The author wishes to honour discussions of Ashrita Achar, Clara Anzengruber, Maximilian Belschner, Marc-Oliver Gestefeld, Agnese Giampieri, Daniel Jost, Carina Kitzmüller, Mohamed Koura, Alina Levina, Alice Ruggiero, Inese Sadovska, Nicole Sattler, David Stadlmayr, Paul Steinmaßl and Johannes Wawra in this seminar.

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WITH FUNDING FROM
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List of Abbreviations

AC	advanced economy
COVAX	COVID-19 Vaccines Global Access
DC	developing country
EMDE	emerging markets and developing economies
FDI	foreign direct investment
GVC	global value chain
HIC	high income country
IATA	International Air Transport Organization
ICU	intensive care units
IMF	International Monetary Fund
LAC	Latin America and Caribbean
LIC	low income country
LMIC	lower middle income country
MIC	middle income country
OPEC	Organization of Petroleum Exporting Countries
SSA	Sub Saharan Africa
UMIC	upper middle income countries
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
WHO	World Health Organization
WTO	Word trade Organization

Abstract

Developing countries (DCs) encounter the COVID-19 pandemic under distinctly different preconditions than high income countries. With a young population and permanently challenged by major infectious diseases like malaria and TB, but insufficient health infrastructure and poor public administrative structures, DCs are meeting particular problems to contain the spread of the COVID-19 pandemic. This paper wishes to show how dependence on export markets, disruption of supply chains, decline in remittances and containment measures have resulted in a major output drop in DCs. With a large informal sector, unstable employment contracts and little public social support, the population in DCs is hard hit by income losses so that poverty in DCs has grown rapidly. Three issues arise: First, what are the prospects of DCs to stop further waves of the COVID-19 disease? Second, why has the COVID-19 pandemic hit the economy of DCs so hard? Which role play dependency and trade specialisation in this context and will the trade patterns of DCs change in consequence of the COVID-19 pandemic? Third, how has poverty and human tragedy re-emerged in DCs in the course of the COVID-19 crisis and will it ruin the basis of future development? These issues will be discussed using the most recent data and academic literature available. The major conclusion of this paper is that DCs are disproportionately suffering from the economic and human consequences of the COVID-19 pandemic. To mitigate this miserable situation, they will need suitable, well-designed assistance from the Global North and international institutions.

Keywords: COVID-19, Developing Countries, Supply Chains, Poverty, Inequality

1. Introduction

Since spring 2020, the COVID-19 pandemic has dominated our daily lives and has occupied a central place in news reporting. Many people in the Northern hemisphere had the privilege of working in home office, and children were home-schooled online. Governments provided generous income supports to balance income losses of individuals and firms, co-financed part time working schemes and offered free COVID-19 testing. Research on vaccines was pushed forward by rich countries´ firms supported by public subsidies. Since mid-2021, everyone who is willing has access to free COVID-19 vaccination.

In the self-centeredness of high income countries (HICs) in the crises, it is vastly out of our mind what is happening in the developing world under COVID-19. Reports in media on the COVID-19 situation in developing countries (DCs) are limited to short news on new hotspots of the pandemic and the fear that the further spreading of the disease there might endanger rich countries. This paper wishes to turn around the angle and open the view on the COVID-19 crisis with a focus on DCs, which is indeed a distinctly different one.

First, we need to know how serious was the spread of the virus in the developing world compared to HICs. What are the special conditions of the society in the Global South in the pandemic? What can we say about the risk for humans in DCs to die from a COVID-19 infection? What are the prospects of DCs to evade further waves of COVID-19 through vaccination programs? These issues will be addressed by presenting appropriate recent statistical indicators and by reporting findings and projections from the most recent literature. It will be shown that COVID-19 has not haunted DCs to a higher extent than HICs. However, the spread of the virus in the developing world was fairly unequal, with a more dramatic situation in Latin America than in Asia and Sub-Saharan Africa. For many reasons the virus is more difficult to contain in DCs, among them are densely populated districts, high poverty shares, poor heath infrastructure, informal work, prevalence of other infectious diseases and poor public containment policies. Moreover, and most critical, immunisation through vaccination programs have hardly started in DCs. The danger arises that COVID-19 will haunt DCs for several years ahead and reverse the developments achieved.

Second, the paper wishes to discuss the economic effects in DCs that have manifested during the COVID-19 crisis. To which extent are economic effects determined by the role of DCs in a globalized economy? How will DCs be affected in the debate of restructuring of international production networks? Which possibilities have governments in DCs to support their economies? I will discuss these issues in the light of the typical specialisation of a developing economy making use of the latest statistics on international interactions and providing examples of the experiences of particular sectors. It will be shown that the strong dependence of DCs on demand and supply from high income countries and their specialisation on a few sectors makes their economies highly vulnerable in the COVID-19 crisis. Existing positions in global value chains will most likely change and countries will have to redefine their contribution. Furthermore, we will see that the external dependency of DCs on FDI and remittances has also contributed to their economic crisis during COVID-19. The prospects of economic recovery in DCs will highly depend on their containment of the pandemic for which, however, the chances are meager in view of slow vaccinations.

Third, the paper intends to shed light on the catastrophic humanitarian consequences of the pandemic in DCs, which manifested in a sharp increase of the poverty rate in the developing world. What are the reasons why poverty has increased that much in DCs during COVID-19? In which aspects has poverty increased? What are the long-term consequences of that increase? What options do governments have to provide relief? It will become evident that the specific labor market structure of DCs, with its dominant informal sector, as well as the absence of state support measures due to financial constraints, or its problems to reach those in need, are major reasons for the rise in poverty during COVID-19.

The paper is structured as follows: Section 2 will analyse the spread of the COVID-19 pandemic in DC, section 3 will discuss its economic consequences, section 4 its humanitarian effects and section 5 will conclude, pledging for the responsibility of advanced economies to provide multiple support to the developing world to better manage the COVID-19 crisis.

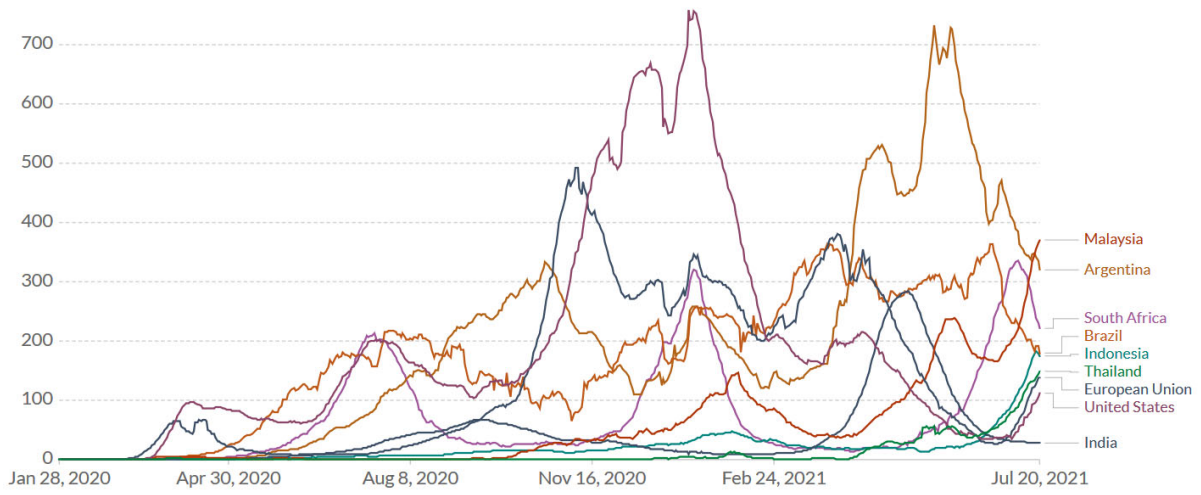
2. The different conditions in DCs for the spread of the COVID-19 virus and why the pandemic will be so hard to stop there

2.1. The spread of COVID-19 in DCs in comparison

In Spring 2021, after three waves of the COVID-19 pandemic, Europe and the USA finally could enjoy declining incidence rates of COVID-19 due to stringent lockdowns and increasing immunisation of its population, as vaccination programs fully set in in Spring 2021.

Developing regions in contrast have become the most affected since Spring 2021. In absolute terms, India and Brazil with its large population have dominated the daily news in the first half of 2021. The incidence rates of South America, notably those of Brazil, Argentina, Chile, Colombia, Uruguay and Paraguay have passed the 200 mark again in the first half of 2021, whereby the situation in Brazil has become notoriously critical and Argentina was hitting the incidence rate ceiling of 700. Although the incidence rates were distinctly lower in South Asia, the large total number of infected people put this region in focus. The dramatic situation in India, which experienced a relatively short new wave with incidence rates above 200 with the delta mutation in May 2021, was surprisingly short-lived, but other South Asian countries like Malaysia have reached critical levels. The situation in Africa, except for North Africa and the South African region, is hardly properly known, as COVID-19 cases are mostly not sufficiently recorded. Yet South Africa, Namibia and Botswana have seen different waves of COVID-19 explosions with the most recent manifesting in July 2021 (see Figure 1 and Our World in Data COVID-19 dataset). The data suggests that outbreaks of COVID-19 are a phenomenon of middle income countries (MICs), which, however, has to be taken with caution due to poor testing and recording in low income countries (LICs).[1]

Figure 1: Daily new confirmed COVID-19 cases by million people



Source: Our World in Data COVID-19 dataset with data from John Hopkins University

[1] This paper distinguishes countries according to the World Bank classification scheme that divides the world´s economies into 4 income groups: high income countries (HICs) with GNP per capita above 12,695 US $, upper-middle income countries (UMICs) with income 4,096-12,695 US $, lower middle income countries (LMICs) with income 1,046–4,095 US $ and low income countries (LICs). All countries other than HICs are addressed as developing countries (DCs). Country lists are available at https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups. Note that the distinction between HICs and DCs corresponds roughly with the IMF classification into advanced economies (AEs) and emerging markets and developing economies (EMDEs) which is used in this paper when reporting IMF documents. The geographic regions distinguished are: East Asia and Pacific, Europe and Central Asia, Latin America and Caribbean, Middle East and North Africa, North America, South Asia and Sub Saharan Africa.

2.2. DCs suffer from a number of factors which favour the spread of COVID-19

Specific socio-economic characteristics of DCs facilitate the spread of COVID-19 in DC and make the fight against the pandemic much more difficult than in HIC. These factors are:

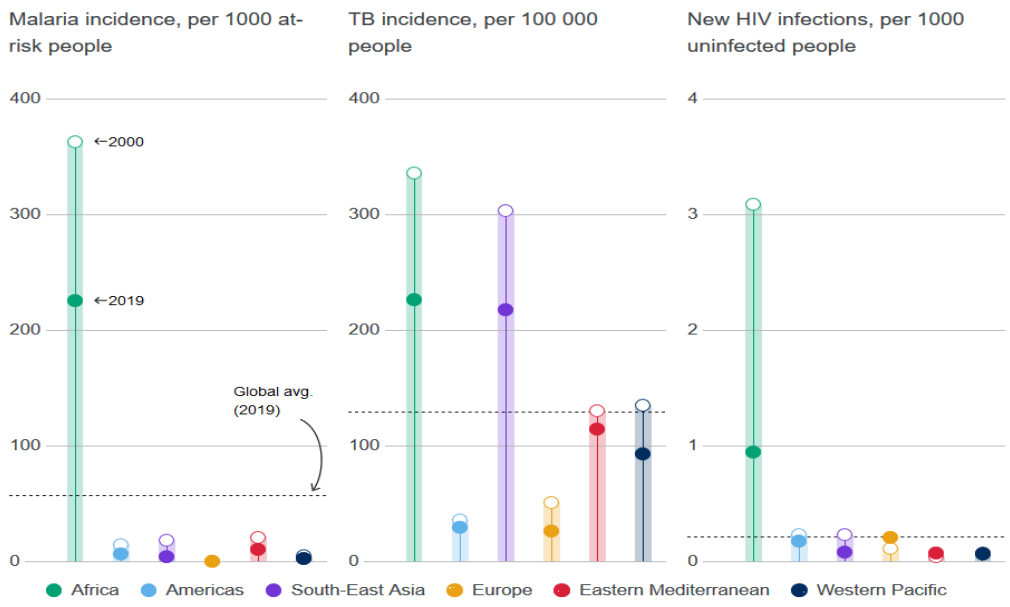
- Mega-agglomerations with densely populated poor districts
- Poor sanitary situation
- High rate of infectious diseases which weaken the immune system
- Large informal sector
- Political misconduct in designing and managing COVID-19 measures

Of the world´s 33 mega-cities in 2018, 27 are located in the Global South. Among them are Delhi (28 million in 2018), Mumbai (20 million), Dhaka (19.5 million), Shanghai (25.6 million), Beijing (19.6 million), Sao Paolo (21.6 million), Mexico City (1.6 million) and Cairo (20 million). Particularly in Asia, there are numerous cities above 5 million.[2] However, the share of the population living in cities is the highest in Latin America (UN 2018). Slum areas, like the Farfelas, the Dahravi slum in Mumbai, the slums in Lagos or Dhaka, are densely packed with poor people, lacking sanitary infrastructure. Complying with hygienic measures and social distancing is impossible there.

The lack of sanitary infrastructure is a critical health issue in DCs. Only 29 % of the population in LICs has access to safely managed water, in contrast to 58 % in LMICs and 77 % in UMICs (Ritchie/Roser 2021).

The high share of young people in DCs puts them in a better position to take less harm from a disease like COVID-19. In Africa, except for the North and South, the share of young people is particularly high with 60–80 %. In the rest of Africa, in South Asia and Andean countries it lies between 40–60 %. (Ritchie/Roser 2019). However, the high incidence rates of infectious diseases such as malaria, tuberculosis and HIV outweighs the age advantage. Tuberculosis is also a factor weakening the immunity of the young population in South East Asia (see Figure 2).

Figure 2: Infectious disease incidence rates 2019



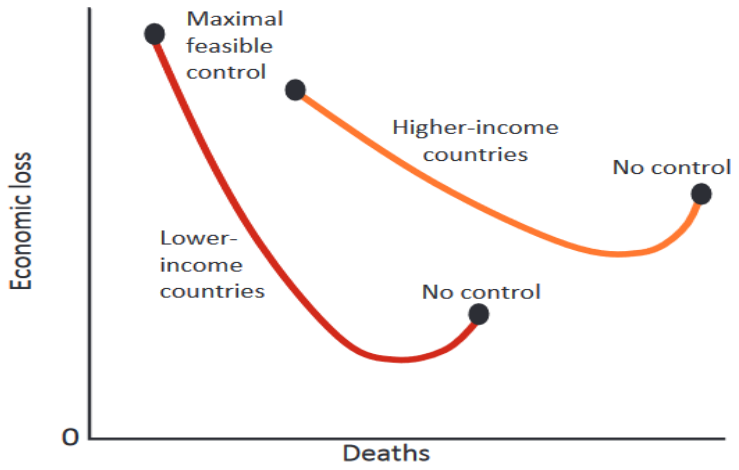
Source: WHO 2021a

[2] Besides those in China, are cities such as Hyderabad, Kolkata, Tehran, Baghdad, Jakarta, Manila and Bangkok.

Containment measures of COVID-19 are very problematic in DCs. They often fail to prevent the spread of the disease and produce almost unacceptable economic and social consequences. First, lockdowns fail to prevent the spread of the disease if people live in packed densely populated urban districts or if they force migrant workers to move from highly infected areas back to their home and transmit the disease. Second, due to the high share of people working as day labourers or in the informal sector, a lock down deprives those people of their income source. Those at the very lower end of the income level cannot afford to stop working and practice a lock down. In this respect, Egger et al. (2020) calculated that the share of lockdown ready households (disposing of sufficient income, sufficient sanitary condition, secure energy access and means of communication) amounted to only one third of all households in Sub Saharan Africa (SSA). Finally, containment measures produce highly undesired side effects when people no longer receive treatment or immunisation against the other infectious diseases.

Figure 3 summarizes the much narrower scope of DCs to fight the spread of COVID-19, given the trade-off between lives and livelihood. To lower the death toll of COVID-19 with strict containment measures produces a much higher economic loss in DCs than in HICs. The absence of containment measures does not lead to an equal increase in the death toll in DCs as in HIC because it prevents people from starving and of the negative effects of other infections.

Figure 3: The trade-offs of COVID-19 containment measures in different country groups



Source: Loayza 2020

The management of lockdowns and containment measures often goes beyond the capacities of DCs´ institutions. There are some good and bad practices, from which countries can learn. In some countries particularities happened that produced an undesired virus spread although the country was in a strict lockdown. For example, in India, the 2020 lockdown and the resulting return of migrant workers, or half of the countries work force, to their homes, favoured the spread of the virus to rural areas. Moreover, political and religious events are considered to have significantly contributed to the dramatic COVID-19 wave in India in May 2021. During the strict lock downs in Peru, government support measures, intending to provide grants to individuals, involuntarily promoted the virus spread, when long queues of people that did not have a bank account waited long hours in front of banks (Chowdhury et al. 2020).

However, there are also positive examples of partial lockdowns. Malaysia was successful in containing the virus spread in 2020 by prohibiting mass events and restricting business closures to specific sectors that would not endanger the country´s economic basis (Tang

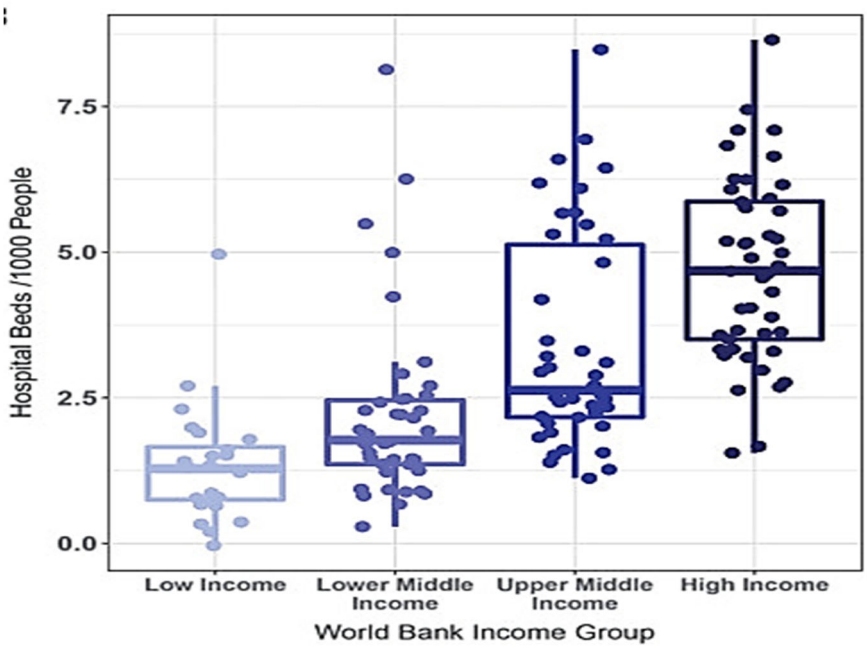
2020). Vietnam practiced a low cost, efficient testing strategy and avoided infections in gathering infected persons in quarantine centres rather than sending them in their crowed homes where other family members would be infected (Pollack 2020). Mauritius is an example where government took very quick action to prevent the pandemic from entering the country by screening airports and quarantining tourists. Many African countries, having learned from MERS and Ebola, proved to be alert and quick in reaction to prevent the virus spread (Mormina et al. 2020).

2.3. COVID-19 often has a higher mortality rate in DCs

The heavy burden of COVID-19 for DCs is that the disease has mostly a higher mortality rate than in HICs. It arises from the vastly underdeveloped and insufficient public health system.

DCs are dramatically less equipped in health infrastructure than HICs in every dimension: LICs possess 1.3 hospital beds per 1,000 people compared to 4.7 in HICs (see Figure 4). LIC have 1.7 intensive care units (ICU) per 100 hospital beds, in HIC it is double the figure. The USA has 33 ICU per 100,000 persons whereas the number is two in India or Pakistan and drops further in SSA to 0.6 in Zambia or 0.1 in Uganda (Malley et al. 2020). The number of respirators was 170,000 in the US in March 2020, while 41 African countries together possessed just 2,000 in April 2020 (MacLean et al. 2020). In HICs, there are three physicians per 1,000 people, LICs have 0.2. (Gage et al. 2020).

Figure 4: Number of hospital beds per 1,000 population by income group in a sample of 217 countries



Source: Walker et al. 2020

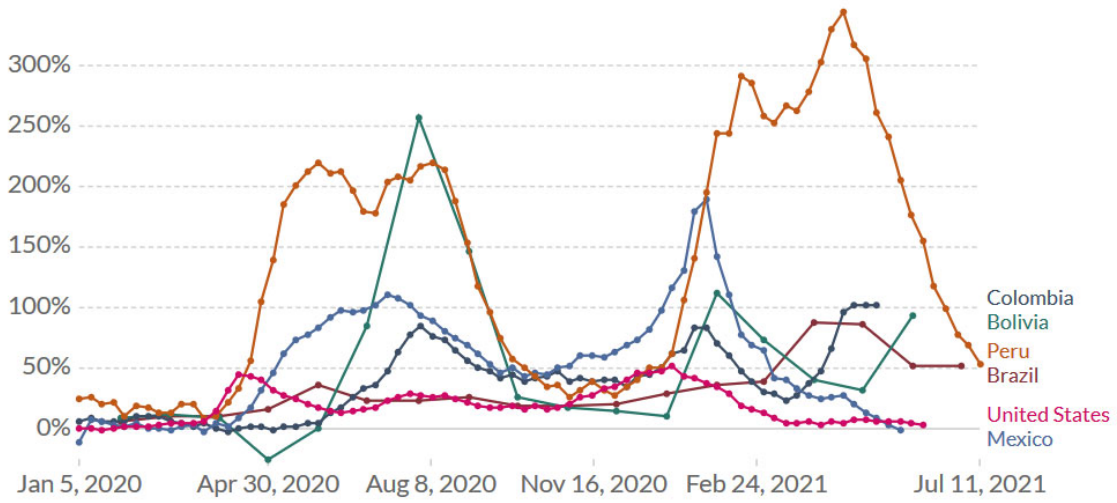
Walker et al. (2020) estimated the COVID-19 mortality rate in countries of different income level, accounting for the impact of different health care systems. Their results suggest that the deficiency in the health care infrastructure in DCs by far outweighs the advantage of a younger population. According to their estimates, based on data for 217 countries, the infection fatality rate would be 2.1 deaths per 1,000 in LICs and 4.7 in HICs if an equal health care system is assumed. However, with the present limited health care facilities the figure rises to 6.5 in LICs.

One also gets an idea of the actual death toll of COVID-19 in DC from looking at excess death statistics. The number of excess deaths can be considered as a good indicator for the death toll of COVID-19 since it focuses on additional death figures during the crisis period and does

not depend on a medical declaration of a COVID-19 related death. Unfortunately, such statistics are only available for a limited number of countries. Figure 5 shows the excess death rate in selected Latin American and Caribbean (LAC) countries compared to the USA and suggests that those MICs have a higher death rate during COVID-19 than the USA. Interestingly, for India, based on the estimates of Anand et al. (2021),excess deaths in the COVID-19 period March 2020 to June 21 of 3.4–4.9 million additional death – a multiple of the official COVID-19 death figures – and the common death number of some 11.5 million during the same period in regular times, results in an excess death rate of 29.5–42.5 %. This is distinctly lower than during COVID-19 peaks in LAC (see Figure 5 which shows for example for Mexico an excess death rate of 100 % in the first wave and 200 % in the second wave), but higher than in Thailand (20 %) and Malaysia (10 %) and somewhat less than in Egypt (70 %). (see Ritchie et al. 2020, on the rate of these countries). For South Africa, an excess mortality of about 200 % was reported for the second and third wave in 2021, similarly to the level in LAC (SAMRC 2021). The situation in SSA is difficult to assess since deaths are not sufficiently registered and reported. IHME (2021) estimated that in SSA excess death would be 3–5 times higher than the reported COVID-19 death,[3] which would indicate that the situation is more dramatic in SSA than shown in official figures, but according to the IHME (2021) estimates still one of the lowest worldwide.

In summary, there is evidence that COVID-19 has produced in many DC, notably in LAC and South African countries, a higher death toll than in HIC. South East Asian and SSA countries seem to have had a lower excess mortality toll during COVID-19 than HIC.

Figure 5: Excess mortality during COVID-19 in selected LAC: deaths from all causes compared to previous years



Source: Ritchie et al. 2020

2.4. The slow progress of vaccinations in DCs

The first half of 2021 has seen a fast start of vaccination programs in HICs. By July 2021, between 50–60 % of people were fully vaccinated in HICs (see Figure 6). There is strong believe that vaccination will hinder the spread of new waves of COVID-19 and put an end to adverse economic and social effects in HICs. However, vaccination programs in DCs are far less progressed. In LAC, highly affected by COVID-19, the share went up to 20 % (Mexico 17 %, Brazil 16.5 % and Argentina 12 %). The share was much lower in South Asia with hardly

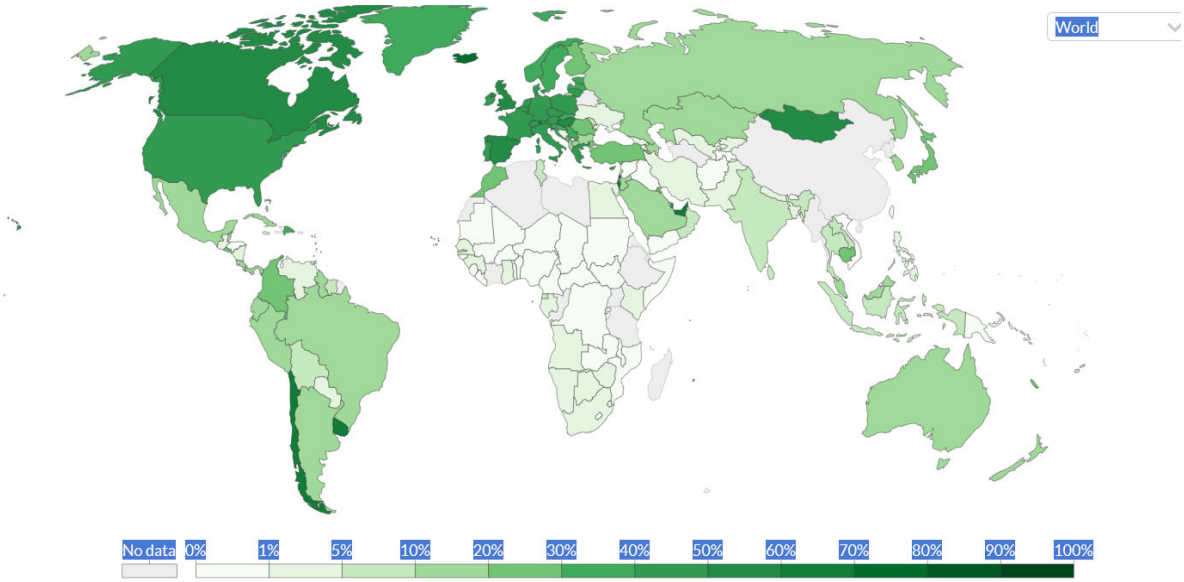
[3] In contrast, the estimates of IHME (2021) suggest that excess death statistics and reported COVID-19 death match fairly well in HICs.

10 % (India 6.3 %, Indonesia 6 %, Thailand 5 % and the Philippines 4 %) and it was still below 5 % in African countries (with the hotspots South Africa 3 % and Namibia 1.3 %).

HICs have been blamed for using their political and financial power to secure early access to COVID-19 vaccines. The UN and WHO repeatedly warned of an endless pandemic if DCs do not get equal access to vaccines. A special role in securing access of DC to vaccines has been assumed by COVAX (COVID-19 Vaccines Global Access), initiated by the WHO in April 2020. It aims to assure access to vaccines for all countries by securing the required quantities of vaccines from vaccine producers and distributing to countries in need. COVAX intends to obtain 2 billion of vaccine doses at the end of 2021. From the participating member countries, 100 HICs and 92 LICs and MICs, the poorer ones can obtain vaccines at a reduced price or at zero cost. These donations to DCs are provided by the important vaccine producers and by HICs (VFA 2021). Despite the slow start of the initiative, it has gained momentum in July 2021, following commitments of support of major advanced countries at the G7 summit in June 2021, as well as a G20 meeting of finance ministers and central bankers in June 2021 to support an IMF investment plan of 50 billion US $ (WHO 2021b). The original aim, to achieve vaccination of 20 % of the population by the end of 2021 was raised to 40 %. Nevertheless, by July 2021, of the 4 billion vaccines delivered worldwide, COVAX had just administered 136 million, and 79 million were donated. It has become clear that, above all, countries in Africa and South Asia depend on these deliveries, while the richer DCs secure their access to vaccines through bilateral contracts (UNICEF 2021).[4]

In view of the slow progress of COVID-19 vaccinations in DCs, fears arise that new waves of COVID-19 could predominantly hit DC and lead to prolonged humanitarian disasters and adverse economic effects there.

Figure 6: Share of population fully vaccinated against COVID-19 by end July 2021



Source: Mathieu et al. 2021

Fortunately, vaccinations are not the only weapon that would protect people in DCs against the virus. Particularly in the least developed societies, there seem to be other factors at work that can protect people against the COVID-19 disease as well.

[4] The failure of the international pharmaceutical system to contest the many other infectious diseases in the Global South was shown in Raza (2021). Thus it remains to be seen whether this time, in the case of COVID-19 vaccinations, the roll-out will be more successful in DCs.

As we have seen in the previous section, differently than the general gap in health infrastructure would suggest, excess mortality during the COVID-19 pandemic has been unequal in DCs in different world regions. Particularly, the low excess mortality in the case of SSA with its high share of other infectious diseases and the world´s poorest health infrastructure has been considered as a paradox. Starting from the observation that COVID-19 has spread less in tropical Africa than the tropical areas of Latin America and Asia, Gosh et al. (2020) discusses explanatory factors. They argue that the high young population share is a major factor for African countries to be little affected by the pandemic. Gosh et al. (2020) further point out that black people seem to have a genetic advantage. Black people would have a lower presence of ACE 2, the enzyme that allows the COVID-19 virus to enter into cells (see also Vinciguerra/Greco 2020).[5] In addition, the long exposure of Africans to fatal pathogens would have led to a protection against infectious disease, and widespread continuing tuberculosis vaccination would have resulted in a recently trained immunity response.

Yet, another study by Toyoshima et al. (2020) found that fatality of COVID-19 so far was linked to different mutations of the virus and genetic factors. They argued that different mutations of the virus explain the low mortality rate of COVID-19 in Asia in contrast to the high in LAC. Further, they found that mortality was lower in countries with mandatory tuberculosis vaccination and linked to different Human Leukocyte Antigene (HLA) allele frequencies, genetically different responses of the immune system that vary regionally. Consequently, there are human biological factors that may protect populations in some world region better than others.

In summary, it is very unclear, whether DCs have sufficient means and perspectives, be it through vaccinations or specific biological disposition, to end the COVID-19 pandemic at an equal path as HICs.

3. Economic consequences of COVID-19 in DCs. Why the Coronavirus pandemic hits their economies so hard.

In the previous section, we discussed that the COVID-19 pandemic has spread in DCs in some hotspots to a similar extent as in HIC, but meeting a distinctly different social system and health infrastructure. We have seen that it is not at all clear whether DCs can contain new waves of the disease and so far less haunted world regions might become future hotspots. It is time now to study in detail what have been the economic consequences of the pandemic so far in DCs and what this implies for future developments.

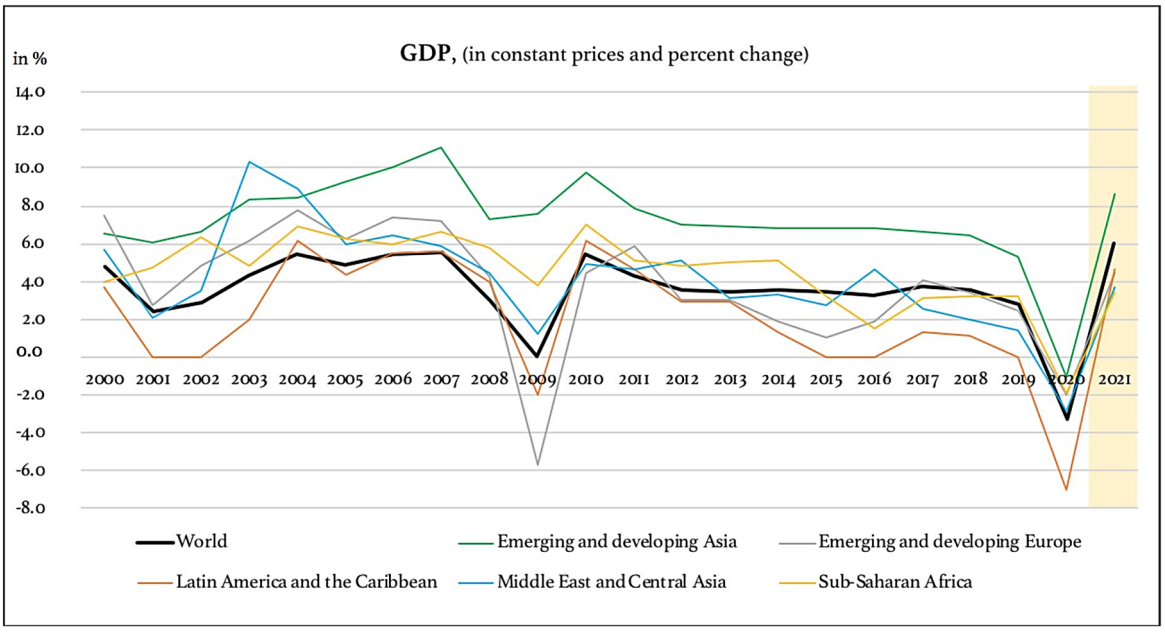
3.1. General economic effects of COVID-19 in DCs

Although various institutions report slightly different figures, the available data outlines common negative GDP growth rates for all countries in 2020. UNCTAD (2020a) estimates that total world output had fallen by –4.3 % in 2020 and indicates that the recession was more severe in advanced economies (AEs) (almost –6 %) than in DC (–2.1 %). The IMF World Economic Outlook of April 2021 (2021b) confirms this pattern, that output in AEs was more affected by the COVID-19 crisis. Fewer and less stringent lockdowns are considered to explain the generally smaller fall in output in DCs. Nevertheless, DCs have been hit to a different extent by the economic recession as shown in Figure 7. In LAC, the recession was much deeper than in other Emerging and Developing Economies (EMDEs) given the already existing economic crisis in Venezuela and Argentina. In contrast, the group of emerging and developing Asia, which includes large and fast-growing economies such as China and India, experienced the weakest recession in 2020. China even reported a positive growth rate in 2020. Also in SSA, the recession was less severe in 2020 than the average world level. Growth prospects for 2021

[5] Vinciguerra and Greco (2020), however, warn that as in the case of African Americans, an unhealthy life style and poor living conditions, would counteract this genetic advantage, manifesting in higher infections in the American black population.

were repeatedly revised by international institutions. The last development in July 2021 suggests that growth and recovery has strongly started in AEs with a projected growth of 5.3 %, 2.1 percentage points higher than the January 2021 projections. In contrast, growth in DCs is still dampened due to renewed outbreaks of COVID-19 in a number of hotspots, with a projected GDP growth of 6.3 %, only 0.8 percentage points above the January projections (World Bank 2021a).

Figure 7: GDP growth in different developing regions



Source: IMF 2021b

The economic crisis caused by COVID-19 has affected DCs in a very distinct way. Vulnerabilities routed in the economic structure of DCs that existed before became evident and explain how DCs are affected by the crisis. These vulnerabilities comprise the dominance of a few sectors in their economy, be it raw materials, a specific manufacturing sector or tourism, which suffered during the COVID-19 crisis. Furthermore, DCs depend on external financial inflows through FDI and remittances, which have dropped significantly. Moreover, the COVID-19 crisis has started a rethinking of global supply chains (GSC) and a restructuring of suppliers that can endanger the position of DC. The COVID-19 crisis has shown the dependency of DCs on HICs, both on the demand and on the supply side. Finally, fiscal policy support in DCs has a more limited financial capacity than in AEs and can contribute to rapid recovery to a lower degree. This section will explain all these aspects in detail.

3.2. Structural specialisation and dependency as the main reasons for the economic crisis in DCs

A major reason for the decline in output in EMDE has been the breakdown of trade. While in aggregate, DCs experienced a smaller decline in trade in 2020 than AEs, –6 % versus –9.5 % decline in terms of export volumes (IMF 2021b), the picture is quite heterogeneous within the group. Asian countries watched the least decline of exports in 2020 with –2.1 % compared to about –9 % in LAC, SSA and Middle East and Central Asia (ibid.). Least developed countries from Africa and Asia reported already in the first half of 2020 a 16 % decline of exports (WTO 2020).

Many DCs depend on specific sectors and on external demand from HICs. During the first stage of the pandemic, due to stringent lockdowns in HICs, demand in those sectors dropped substantially and consequently the income of many DCs. Declining demand from HICs became

a major reason for GDP drop. Exporters of raw materials, textiles, motor vehicles and tourism suffered the most. Low sectoral diversification once more became a problem.

3.2.1. Effects in resource extracting countries

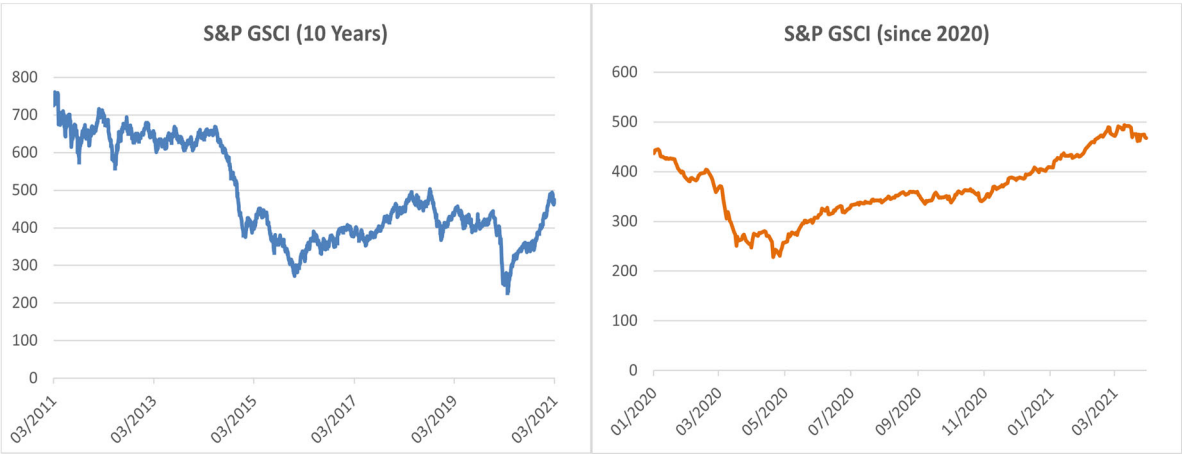
The global lockdowns to contain the spread of the virus led to a substantial reduction of transport and a disruption of production, which resulted in reduced demand for fuel and minerals. Prices of fuel, minerals and metals dropped. To act against falling oil prices and oversupply, the OPEC agreed on a reduction of output. Moreover, more than 200 mines worldwide, including some in South Africa, Peru and Chile temporary stopped production (Tröster/Küblböck 2020).

Two thirds of DCs are heavily dependent on commodity exports, meaning that commodities account for more than 60 % of their exports (World Bank 2021b). The problems associated with a high dependency on commodity exports are well known. Commodity producers are highly dependent on the global business cycle. Their output, inflow of currency reserves and government revenues highly depend on the world commodity demand and commodity prices. A fall in commodity prices and demand thus induces a shrinking of output, deteriorating government debt positions and exchange rate problems. Tröster (2020) argued that weak commodity prices in 2013–2018 had already initiated an economic slowdown in 60 commodity dependent countries before the COVID-19 pandemic. Calderón and Zeufak (2020) pointed out that the decline of oil prices in recent years has resulted in a deterioration of government debt positions of oil exporters so that their debt increased by almost 25 percentage points between 2013–2018 to reach 54 % of GDP on average. Huge jumps in the debt ratio were registered, for example, in Angola (from 33 to 111 %) or the Republic of Congo (from 34 to 84 %).

The problematic dependency of DCs on a small range of commodities became, once more, already apparent in the first half of 2020, when a number of commodities registered a sharp price reduction. Oil, minerals, textile fibres, but less agricultural standards products, like wheat or soy, are examples. In consequence of falling prices and lower demand, the income and foreign currency reserves of DC declined substantially.

Figure 8 shows the development of commodity prices as summarized by the S&P GSCI Index which shows the compound development of 24 commodities. The left hand graph shows that commodity prices declined already before the COVID-19 crisis. The right hand graph shows that commodity prices in general sharply declined in the beginning of the COVID-19 crisis until May 2020, and – despite the curbs in production – had not gained their pre-crisis level at the end of 2020.

Figure 8: Development of the S&P GSCI Commodity Price Index



Note: The S&P GSCI commodity index comprises 24 different commodities from the energy, industrial metals, precious metals and agricultural commodities sectors.

Source: S&P Global

Going into more detail, it is evident that oil producers suffered from declining prices throughout 2020. In contrast, with certain metals and agricultural commodities, the increasing demand in the electronics industry or disruptions in production produced sharp price increases already in the second half of 2020 (World Bank 2021b).

In conclusion, most commodity reliant DC heavily suffered from declining commodity prices in 2020 related to the COVID-19 crisis, leading to substantial output losses and increasing debt.

3.2.2. Effects with narrowly specialized manufacturers

The decline of worldwide trade in the COVID-19 crisis, with –8.3 % in 2020 (World Bank 2021a) being similar to the decline in the global financial crisis of 2008/09, mirrors the problematic situation of declining demand that the manufacturing sector of DCs had to face. The Container Throughput Index, which covers 90 international ports and 60 % of container traffic, and air cargo data, published by IATA, reported a dramatic decline of international trade that set in in the first half of 2020 (Nana/Starnes 2020). As already mentioned, regions in the world suffered to a different degree from that trade decline, with exports of Asian economies generally being less affected than those of LAC and SSA.

The manufacturing structure of the economy of a DC and its dependence on demand from AEs offers a major explanation why exports dropped to a different degree across countries. In the first half of 2020, it became apparent that the sectors most affected by the COVID-19 crisis were the automotive industry and machinery equipment, both located to a high extent in AEs but also in emerging markets, where exports decreased by 60 respectively 40 %. Also, the apparel and textiles exports of DCs, dropped by almost 40 and 35 % respectively (UNCTAD 2020a).

Pahl et al. (2020) analysed with input-output tables to what extent demand side shocks from Europe, the USA and China determined output contraction during the COVID-19 crisis in 12 EMDE.[6] The authors found that foreign demand can explain about 50 % of output contraction in Malaysia and Vietnam, 27 % in South Africa, 19.4 % in Kenya and 9.7 % in Brazil. They then broke down the demand originating from the three major markets (Europe, US, China) into 7 sectors to gain a more detailed insight. Among Asian economies, Bangladesh is outstanding for the important contribution of textiles demand mainly from Europe, accounting for 94 % of European export demand. Other Asian countries, such as China and Vietnam, have a more diversified sectoral demand structure. SSA countries heavily depend on the European agricultural and food market. Agriculture/food accounts for 41/19 % of European market demand, more specifically for 66/20 % in Kenya and 48/27 % in Ethiopia. In LAC, foreign demand is heavily concentrated in Brazil, namely on the food sector. 25.6 % of European demand goes to the food sector and 10 % of US demand. Next, the authors calculated the fall in demand in 2020 in the three major markets by sector, finding that it depends on the severity and length of the lockdowns in those markets. Finally, they analysed the total effect of foreign demand on GDP contraction in EMDE in 2020. Its impact was highest in Bangladesh and Vietnam, where foreign demand reduced GDP by 5.5 % and 4 % respectively. In no other countries was the dependency on foreign demand that high. For comparison, they found that foreign demand reduced GDP by about 0.85 % in China, Indonesia, Malaysia, and Mexico.

A good example on the immediate effects of the important shortfalls in demand on the garment industry in Asia are the cases of Bangladesh and Cambodia. According to a study by ILO (2020a), operations of 400 firms in Cambodia had to close in July 2020, affecting livelihoods of 150,000 workers. In Bangladesh, even 1 million workers were laid-off, without social safety net to cushion the income shortfalls of dismissed workers. Care (2020) reported that workers put on leave in Cambodia had to live on an income of 30 % of the normal level, which, given the already low wage level, would put them below the poverty line. ILO (2020a) underlined that during a prolonged COVID-19 period buyers may prefer to source in countries like China, India and Indonesia, which are relatively better equipped to guarantee reliable supply. Large-scale

[6] Bangladesh, China, India, Indonesia, Malaysia, Vietnam, Ethiopia, Kenya, Senegal, South Africa, Brazil and Mexico.

manufacturers with an advanced technology would be in a better position than small firms with low qualified workers. In the process of manufacturers struggling to maintain production, already low wage levels and poor working conditions of workers in the garment industry get even under more pressure.

The example of the garment industry shows how vulnerable countries are, that are narrowly specialized and depend on external demand. Moreover, it suggests that there is a restructuring of production patterns in DCs going on as buyers care for a reliable supply network. Certain manufacturers and countries will lose, others have a chance to gain.

In summary, it has become evident during the COVID-19 crisis that selected DC (for example Vietnam, Bangladesh, Malaysia, South Africa) depend heavily on foreign demand, others can rely on own important domestic demand (Brazil). Textile producers in Asia and agricultural producer in SSA depend heavily on developed countries.

3.2.3. Effects in tourism dependent DCs

Certain DCs are heavily dependent on tourism, which totally collapsed in 2020. The World Tourism Organization (UNWTO 2021) reports a drop in tourist arrivals of more than two thirds in 2020 in a number of countries, for example Thailand (–83 %), Tunisia (–79 %), Mauritius (–78 %), Cuba (–75 %), Kenya (–72 %), Egypt (–69 %) and United Arabian Emirates (–68 %). This drop of tourists became particularly hard in countries that depend heavily on the tourism industry, such as Caribbean islands like Aruba, where tourist receipts made up 82 % of exports in 2019, Fiji (59 %), Cabo Verde (56.5 %), Mauritius (39 %), Seychelles (38 %), Dominican Republic (37 %), Sri Lanka (37 %), etc. In consequence, the output of those countries dropped by up to 2/3. The decline in tourism receipts led to less revenues and an increase in government debt. Since those countries are indebted in foreign currencies, the shortfall of foreign currency through tourism receipts is critical to serve debt. Consequently, for several countries (for example Cabo Verde, Seychelles, Mauritius, Sri Lanka), the credit rating was downgraded from 2019 to 2020/21 (countryeconomy.com, 2021). UNWTO (2021) expects that effective vaccination in AEs and UMICs will eventually lead to a rapid increase in travel in the second half of 2021. Destinations like Mauritius, the Seychelles, or Bahrain quickly responded with containment measures and vaccination programs so that 50–60 % of their population has been immunized in July 2021 (Mathieu et al. 2021). They are likely to become safe tourist destinations again. However, in others, such as Tunisia, Egypt, Kenya and Cabo Verde the rate remained far below 10 % in July 2021. Nevertheless, it is estimated that it could take up to four years for tourism to reach pre-pandemic levels. The revival will crucially depend on the containment measures in these countries to stop outbreaks of the virus and overcoming vaccine procurement problems to progress vaccination.

3.3. Substantial drop in FDI

The sharp fall in investment in 2020 was mirrored by a drastic reduction in FDI flows. In the first half of the year, global FDI dropped by 50 % compared to 2019 due to the general weak demand, disruption in production and economic pessimism (OECD 2020). FDI reached a value as low as in the early 1990s and even fell to a level 30 % lower than after the great financial crisis in 2008/09. The decline of FDI flows to DCs was, however, lower than that to AEs. While FDI into the OECD countries dropped by 74 % in the first half of 2020, the decline was only –12 % in DC, with a much higher decline in LAC and Africa than in Asia. Only China (+4 %) and India (+13 %) recorded a positive growth of FDI (UNCTAD 2021a).

FDI is crucial for development of the productive capacities in DCs, as it is an important source of investment and creation of employment (World Bank 2020a). Reduced FDI activity into DCs together with the restructuring of global supply chains may endanger the manufacturing position of many DCs. The uncertainty generated by the COVID-19 pandemic in many DCs discourages FDI inflows, as the Global Investment Competitiveness Reports repeatedly pointed out that political and regulatory certainty is key to attracting FDI (World Bank 2020a).

To stabilize the role of a DCs as a location for manufacturing, it will be essential to mitigate new waves of COVID-19, to guarantee a smooth functioning of the economy and to safe a sound growth performance.

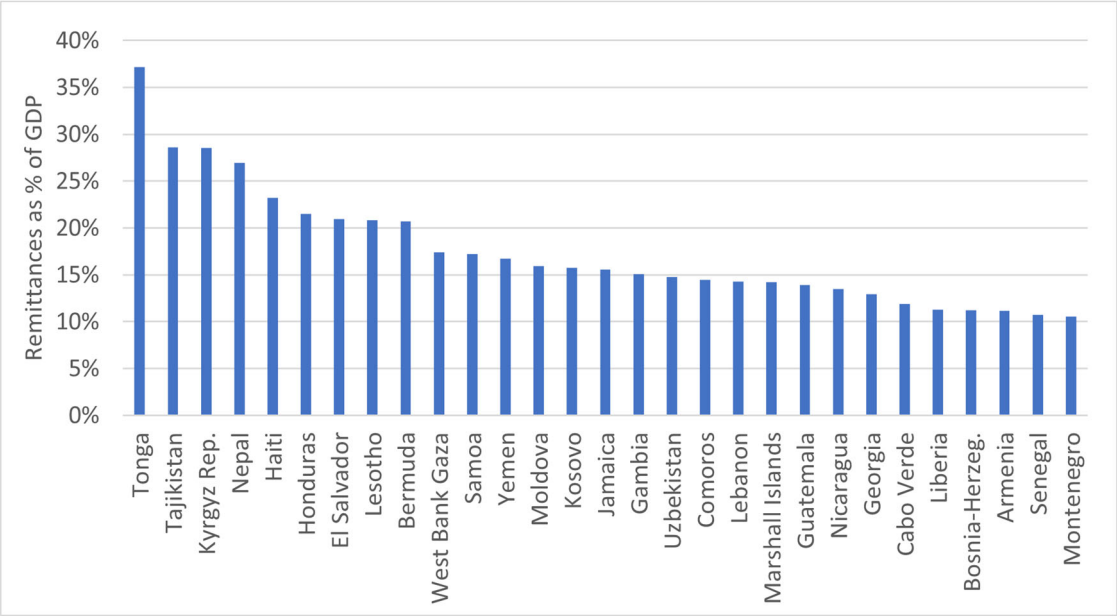
3.4. Income losses in DC with falling remittances during the COVID-19 crisis

COVID-19 produced a substantial curb in remittances of migrant workers in AEs to DCs. Those are often an important income source of DCs.

During the lock downs in AEs, immigrant workers, mostly in low-qualified jobs and insecure work contracts, proved to be the first to get unemployed (Fasani et al. 2020). Often they also had to return to their home places. An example is the case of agricultural migrant workers in Europe, which constitute the major work force of the intensive agricultural zones in Spain and Italy. Due to travel restrictions and border closures, agricultural migrant workers from Morocco, Tunisia and Eastern Europe could not enter their work place (IOM 2020). The World Bank (2021d) estimated that remittances, income transfer of migrant workers to home countries declined by about 20 % in 2020, compared to the pre-crisis situation, and will remain 14 % lower in 2021, depending on the recovery and stabilisation of the pandemic in host countries. World Bank data shows that countries like Tajikistan, Kyrgyzstan, Nepal, Honduras, El Salvador or Haiti have been highly dependent on remittances in 2019 (see Figure 9). The drop in remittances in 2020 is estimated to range between 20–40 % of GDP (Hevia and Neumeyer 2020). The study of Ratha et al. (2020), however, suggests a lower decline of remittances in 2020, with the highest decline appearing in SSA (–12.5 %), Central Asia (–9.7 %) and East Asia (–7.9 %), but surprisingly an increase in LAC.

The decline in remittances pushes depending families at home into poverty and reduces national income. Countries like South Sudan, Kyrgyzstan and Tajikistan are noticeable examples. Besides this devastating humanitarian effect, as pointed out by Davradakis et al. (2020), the drop of remittances produces macroeconomic instability in the home countries, as foreign currency inflows, that are essential to pay imports and serve debts, drop.

Figure 9: Dependence on remittances in 2019



Source: World Bank 2021c

Ratha et al. (2020) project a revival of remittances in 2021 and 2022. According to their estimates, remittances should grow again in all DCs except for the region Europe and Central Asia. The authors argue that the falling oil price and missing social support in Russia caused the drop in remittances of migrant workers in Russia from Europe and Central Asia. In contrast, they consider that the important fiscal stimulus provided by the USA helped migrant workers from Central America to even sustain their remittances and help their families.

In total, the drop in remittances should be a temporary problem for DCs that will be resolved once the progress of vaccinations will permit AE to run their economies at full speed.

3.5. Supply shocks during the COVID-19 crisis – The dependence of DCs on imported supplies

COVID-19 uncovered also the dependency of many DCs on inputs from developed countries. Countries like Mexico, South Africa, Malaysia or Indonesia are notable examples.

In principle, there are three distinct aspects, which lead to falling output in DC. (i) As shown above, the income decline, incurred in 2020 in many DCs, was largely driven by lock downs in HICs and hence constituted demand side shocks**.** (ii) Most DCs were hit by waves of COVID-19 outbreaks, a share of income losses also occurred due to production disruption caused by containment measures in the DCs themselves. (iii) Many DCs rely on imported intermediaries. A shortfall of such inputs due to disruptions in other countries – supply side shocks – were a third reason why output has dropped in DCs in the course of the COVID-19 crisis.

Supply side shocks have been important for DCs. The production of many DC relies on imported intermediate good supplies from AEs. The electronics industry in Asia and Mexico are examples. The severe lockdowns in the USA, Europe and China produced disruption in supplies for DC. Pahl et al. (2020) estimated GDP losses in DCs in 2020 related to supply side shocks during the COVID-19 crisis. Among the 12 EMDEs analysed in the study, the induced GDP contractions are outstanding in a few. The GDP decline of Mexico resulting from supply shocks from abroad was estimated at –10.9 % (originating mainly from the US). In South Africa the estimated GDP decline was –4.4 %, caused predominately by European supply shortfalls. Also in Kenya, the supply induced GDP shortfall of –2.9 % origins mainly from Europe. Among the Asian economies, Malaysia, (–7.4 %) Vietnam (–5 %) and Indonesia –4.8 %) are outstanding for supply side shocks related to foreign supplies originating almost equally from Europe and China. With –2.9 % and –1.8 % the supply side shocks from abroad on India and China were much smaller than in other Asian economies. The study highlighted an important finding for these EMDEs, namely that supply side effects have been more important for them during the COVID-19 crisis than demand side effects. The only exemption in the study´s country group is Bangladesh where demand side effects by far dominate.

In summary, we have to conclude that, during the COVID-19 crisis, demand side shocks have been a major problem for a large number of DC depending on commodities exports, textiles or tourism during the COVID-19 crisis in 2020. In another group, specializing in the manufacturing sector, supply side shocks have been more important. The first fact provokes the argument that the narrow specialisation of many DCs in the sense of the classical trade theories makes them excessively vulnerable and has to be reconsidered. The second fact, suggests that new industry management strategies are necessary to prevent supply side shocks.

As to the first two aspects enumerated above, demand side shocks and own disruption of production, with progressing immunisation in HICs, but not in DCs, the demand side shocks will phase out for DCs, but output losses caused by new waves of COVID-19 in DCs will continue to contract output. There will be continuing output losses in DC if the spread of COVID-19 does not come to a halt in DC. The spread of new virus mutations will force governments in DC into new containment measures. Agriculture or mining activities may watch further disruption in production, as well as manufacturing sectors like textiles or intermediary

products. For example, in Chile copper production has dropped for 10 months in March 2021, recently related to new COVID-19 outbreak and movement restrictions (Mining.com 2021).

3.6. Restructuring of GVCs triggered by the COVID-19 crisis as a danger and opportunity for DC

There has been a trend of de-globalisation observed already before COVID-19. Since the global financial crisis in 2008/09, when trade watched a temporary sharp decline, trade volumes have been declining due to trade disputes (e.g. US-China), rise in tariffs, decrease of prices of certain commodities, the demise of the WTO and the drop in FDI (Nana and Starnes 2020; UNCTAD 2021b) However, the share of DCs in world trade has been increasing during the past decade (UNCTAD 2021b). Also has the share of FDI to DCs been increasing constantly to reach 72 % in 2020 (UNCTAD 2021a).

In this context, new strategies for production networks have been debated, resulting in a tendency of restructuring global value chains (GVCs). The disruption happening in GVCs during the COVID-19 crisis has further geared such discussions.

GVCs show specific characteristics. The steps involved in a GVC indicate the number of production stages situated in different countries. The length of a GVC indicates the distance covered in international production from initial to final stage. The geographical distribution of value added is the number of countries that account for a certain share of the export value of an industry. The internationalisation of value chains is measured by the share of FDI in the industry to total country FDI relative to the share of trade of the industry to total trade (UNCTAD 2021a).

The disruption of value chains and transport routes during the COVID-19 crisis revealed the vulnerability of firms with long and geographically concentrated value chains. Firms realized that geopolitical vulnerabilities like political conflicts and epidemics put the stability of their production processes at risk. The desire for more flexibility and responsiveness appeared.

A few facts on the actual situation of GVCs in specific manufacturing industries will be highlighted and likely developments considered here. As a starting point, Table 1 below from UNCTAD (2020a) providing the key characteristics of manufacturing industries, is taken.

i. The *automotive and electronics* industry both show a value chain with the highest number of production stages, the highest length of the GVC, and a high concentration in the number of countries contributing. Hence, in both sectors there *is scope for reshoring and diversification.* The highest geographic concentration is given in the GVC of the automotive, machinery and electronics sector.

ii. *Food and beverages, textiles, pharmaceuticals and the chemical industry* show a lower geographic concentration although the number of stages in the value chain is equal (except for the pharmaceutical sector where it is lower) to that of the other sectors. This indicates that these sectors are *less vulnerable to geographic risks*.

iii. The *food and beverages sector*, as agricultural products have the shortest value chain. The food and beverages sector also has one of the highest FDI intensity. This seems to suggest that there is less potential for reshoring. Nevertheless, there are still 2.4 countries involved in the food and beverages industry and 1.9 countries in agricultural products, which nevertheless suggests some *reshoring potential* to reduce risks.

iv. The *pharmaceutical industry* has the least complex value chain with 1.8 different countries involved, the highest share of FDI intensity and a high intensity of multinationals. Companies evidently have a strong control over their production but the length of the value chain suggests that there is *scope for reshoring*.

v. The textiles and apparel industry has a complex value chain involving distant partners, a medium geographic concentration, little FDI intensity, but a strong role of multinationals.

Table 1: Characteristics of GVCs

	Length/fragmentation of value chains		Geographical distribution of value added			Governance of value chains	
	Steps	Distance	Concentration		Contribution	FDI intensity	NEM intensity
Sector/Industry	Number	Km	Number of countries accounting for 80% of value added in gross exports	Number of countries accounting for >0.5% of value added in gross exports	Share of countries in which contribution is >5% of GDP (%)	Share in FDI to share in trade	Prevalence of NEMs on 1-5 scale
Primary							
Agro-based	1.9	1 484	29	34	30	0.2	3
Extractive	1.5	1 402	22	37	12	2.0	2
Manufacturing							
Food and beverage	2.4	1 971	23	35	24	1.4	3
Textiles and apparel	2.6	2 278	20	31	6	0.1	5
Pharmaceuticals	1.8	2 433	21	30	4	2.2	4
Chemicals	2.4	2 911	21	37	36	0.9	2
Automotive	2.8	2 789	12	22	6	0.5	2
Machinery and equipment	2.5	2 457	16	32	37	0.4	4
Electronics	2.6	2 990	14	30	37	0.2	4
Services							
Wholesale and retail trade	1.7	1 083	16	27	55	1.1	2
Transportation and logistics	1.9	1 935	28	41	18	0.8	4
Financial services	1.7	858	18	36	84		1
Business services	1.5	1 203	16	35	82	1.3	1
Median	***1.9***	***1 971***	***18***	***34***	***30***	***0.8***	***3***

Source: UNCTAD 2020a

New phenomena appearing with GVCs are, firstly, *reshoring* which leads to less offshoring and shorter supply chains. Besides the desire to reduce supply chain risk, reshoring is linked to protectionism and re-industrialisation. Secondly, firms show a tendency to *diversify their supply chains*, shifting from single suppliers/locations to new/several locations.

An idea to which extent COVID-19 may lead to reshoring and diversification of GVCs, is given by the study of Shingal and Agarwal (2020) who empirically analysed the response of GVCs to the previous epidemics SARS and MERS. They found that during those endemics, sourcing shifted permanently away from China, with the USA re-centring its supply chains on Mexico, and Europe on Poland. Once more, during the outbreak of the COVID-19 crisis, one observed that US firms shifted their suppliers away from the “world factory” China to other ASEAN countries like Vietnam, Thailand or Malaysia. Also Asian companies like Honda and Samsung diversified their suppliers away from China. (Zhu et al. 2020; Kilpatrick 2020)

Primary activities, and food and beverages, are expected to regionalize, meaning a higher dispersion of locations of value added processing but with a shortened and physically close supply chain (UNCTAD 2020b; Zhan et al. 2020). As an example, soy beans may be grown in many more places in the future, including Europe, breaking the unique position of Brazil and the USA.

UNCTAD (2020b) expects a reshoring with shorter supply chains in technologically intensive industries like the automotive, machinery and electronics industry. In the pharmaceutical industry a replications of activities in different locations is expected. New technologies, like 3D-printing are likely to enforce reshoring, shortening GVCs and replicating activities. Its

application comprises all sectors.[7] A potential for diversification of GVC is observed in all industries.

What does this mean for DCs? Evidently, DCs are at risk to be taken off the supply chain. This risk increases with the likeliness of health risks and inadequate government strategies as well as poor health infrastructure. This has become evident during the COVID-19 crisis and its recent outbreaks in the Global South. Moreover, the trajectories indicated by UNCTAD (2020b) indicate that DCs might lose part of their agricultural exports if those can be re-located to the place of market demand (Europe, USA, etc.) Further, DCs that presently are important suppliers in the textile/apparel industry, automotive, electronics and machinery sector will fall in their rank, when buyers diversify suppliers. Countries like Bangladesh would lose part of their garment industry.

As companies seek to diversify their suppliers, new locations and other suppliers, both in AEs and DCs, may benefit in stepping into value chains. This is a new chance for DCs, which then ultimately may have an opportunity to diversify their manufacturing.

Compliance with product standards and new technologies could help DCs to get a better chance to become a supplier and improve their sustainability performance:

(i) Voluntary sustainability standards have been set up by international organisations in an attempt to secure quality standards and at the same time achieving sustainability in production and social standards. Consumers in HICs are increasingly pushing companies to adopt such standards in product groups like cocoa, aquaculture, textiles, gold mining etc. Companies in DCs that adopt such standards should have a better chance to position as a supplier.

(ii) The 3D-printing technology could also be considered as a chance for DCs rather than a mere threat. Its application for example in the pharmaceutical industry or in medical devices could enable DCs to join distant know-how with local production in DCs.

(iii) Another innovation, which could support DCs to redefine their role in the GVC, is the block chain technology. In a block chain, a decentralized database, every firm gets full access to all data of other actors and is fully visible to the whole network. An example how the block chain technology can be used is the case of a coffee supply chain with Rwanda. In this supply chain, data of coffee farmers in Rwanda is stored at every point in time, along with data of all manufacturing and transport firms of the supply chain (GIZ 2021). The farmer as well as the consumer gains full transparency on the price development and provenance of the product. Such an application can be useful for DCs to diversify their markets and to achieve a more just remuneration for their contribution.

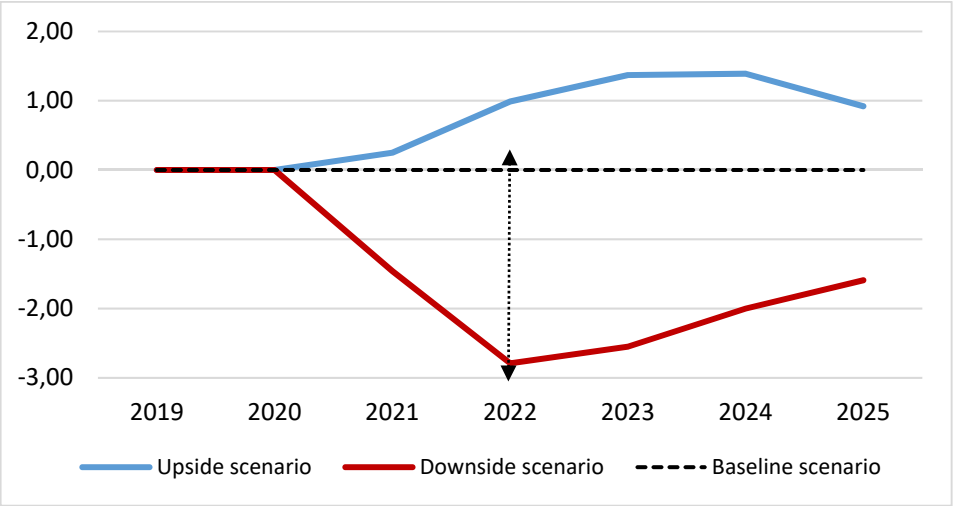
In summary, with the manifesting restructuring of supply chains on the horizon, DCs run the risk of premature de-industrialisation as pointed out by Hartwich (2020). They could lose industries due to the redefinition of GVCs before reaching their optimal level of industrialisation. However, there is also a chance that DCs can join new supply chains, diversifying their product destination and product variety. Governments in DCs need to address the required changes with a supportive industrialisation and FDI policy. They should help their industries to improve digitalisation and participate in the advanced technologies of block chain and 3D-printing and use voluntary sustainability standards that could be a supportive tool for this change.

[7] 3D-printing can be employed in the food industry to individualize ingredients, in pharmaceuticals to bring exogenous human capital to the production site, in the apparel industry to reduce production steps and individualize, in the electronics industry and machinery to shorten production processes, etc.

3.7. Overall economic prospects for DCs

This section discussed the manifold economic consequences of the COVID-19 crisis in DCs. It is highly unclear, when presently observed negative effects will elapse, since this depends largely on the containment of the disease in DCs. It is also unclear to what extent the sketched developments in restructuring GVCs will take place. Accordingly, whether following a pessimistic or optimistic view, from IMF projections, one can get two extreme growth scenarios for EMDCs as shown in Figure 10.

Figure 10: Real GDP in EMDE in percent from baseline in different growth scenarios until 2025



Data: IMF 2021b

Starting from a baseline scenario where the present structure is maintained, the upside scenario shows additional GDP growth in EMDEs assuming that vaccinations roll out 10 % faster. In this scenario, it is assumed that infections can be prevented, avoiding lock down and disruption of production, and stimulating demand and business confidence. Growth would be 0.25 percentage point above the baseline in 2021 and 0.75 above in 2022 (IMF 2021b). The downside scenario assumes supply bottlenecks in the delivery of vaccines. The spread of COVID-19 can hardly be contained, GDP contraction would continue and would be particularly high in DC due to little room for fiscal policy support.

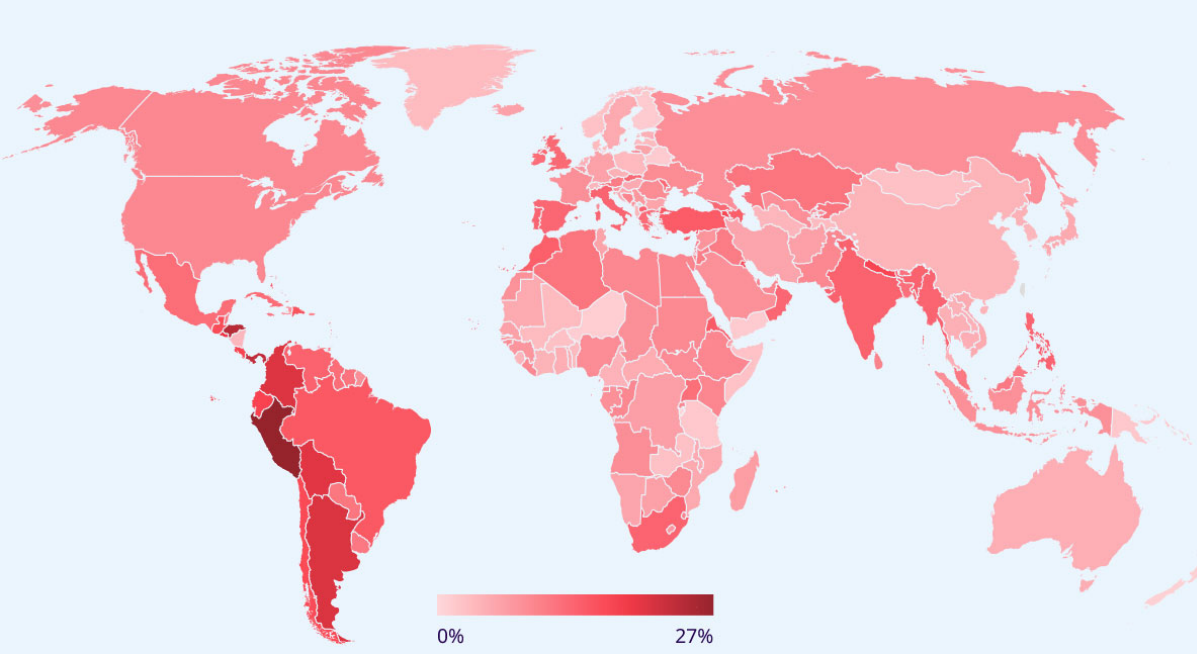
4. The humanitarian aspect of COVID-19 in DCs

4.1. The precarious drop of employment in DCs and resurgence of poverty

Containment measures and output decline resulted in a loss of employment across the globe. ILO (2021b) estimated that 8 % of working hours were lost in 2020 worldwide. South America was hit by far the most, followed by South Asia and a couple of other middle income countries (MICs) (see Figure 11). Employment is more affected in DCs due to labor market characteristics already pointed out in section 2. Employment drops faster, as the share of manual and services labour, where no home office is possible. Furthermore, a large share of workers are day labourers without fix work contracts. One has to consider that the informal sector is important in DCs. For example, it is estimated that informal employment applies for 85 % of workers in SSA (Lapeyre 2020). Actual workhour losses thus are not registered correctly in official statistics. Consequently, the population's loss of employment was much higher in DCs and resulted into huge income reductions. In addition, as indicated above, the

employment loss in AEs and DCs of migrant workers led to a loss in remittances, which additionally reduced family incomes in DCs (see e.g. Tajikistan and Kyrgyzstan with a more than 25 % drop in remittances) (World Bank 2021c). As government social income support is very limited in DCs due to poor financial capacity or difficulties in administration, the loss in labour income of individuals is hardly compensated. Even in countries that maintain a support scheme for unemployed, the large share of people in the informal sector losing income cannot be reached.

Figure 11: Working hours lost in 2020 relative to the fourth quarter 2019 in %



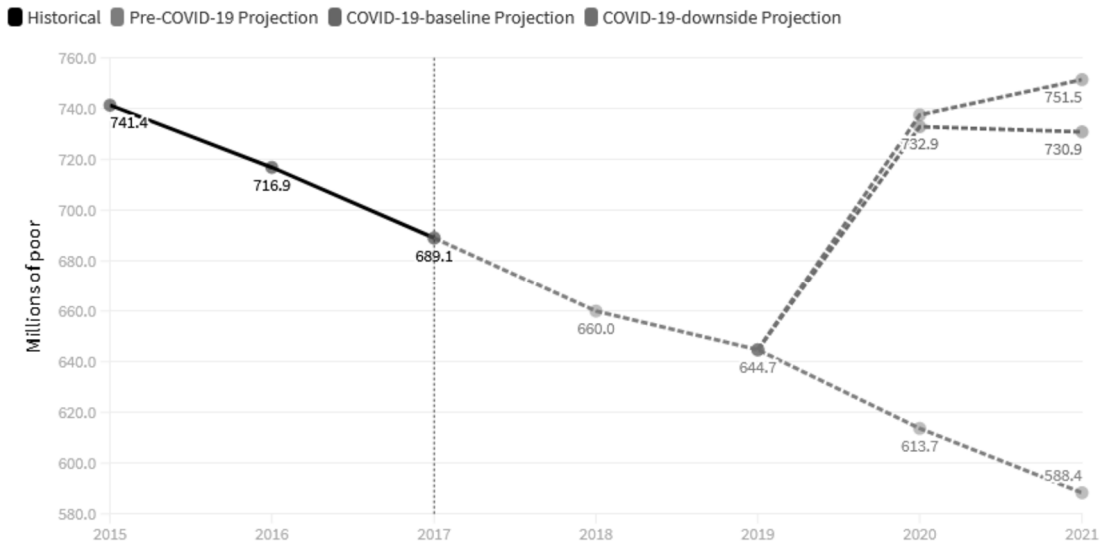
Source: International Labour Organization 2021b

Sumner and Ortiz-Juarez (2020) calculated the increase of worldwide poverty in response to a contraction in country income resulting from the COVID-19 pandemic. A 5/10/20 % income reduction would increase the extreme poverty rate by 1.1//2.4/5.6 percentage points. Actually, the IMF (2021a) projected a 3.2 % output loss for 2020.

In consequence, world poverty increased again for the first time after 30 years of decline. In mid-2020, the World Bank estimated that COVID-19 would increase the number of poor in the world population to 9.1–9.4 % compared to 7.9 % without COVID-19 (World Bank 2020b; Mahler et al. 2020). In 2021, the World Bank revised its estimates on the impact of COVID-19 on extreme poverty considering in detail the anti-monde of no COVID-19 (Lakner et al. 2021). The downside projections accounted for the fact that economic recovery was delayed by new outbreaks of COVID-19 in DC in 2021 (see Figure 12). Belschner and Kitzmüller (2021) used data from World Data Lab which provides headcount data of people in poverty by country, to calculate the increase in poverty in countries of different world regions in 2020, assuming the IMF (2021a) economic outlook projection of –3.2 % output loss in 2020. According to them, the poverty increase was 2.2 % in 2020 in Melanesia, 1.8 % in South Asia, 1.4 % in SSA and 1.3 % in LAC. Poverty increase was highest in island regions strongly dependent on tourism in the Caribbean, Indian Ocean, Melanesia and Polynesia. In general, according to Belschner and Kitzmüller (2021), the largest increase in poverty happened in South Asia and Sub Saharan Africa (see also World Bank 2020c, 2020d).[8]

[8] The highest increase of poverty, projected in Venezuela, Libya, Yemen and Afghanistan, is attributable to conflicts and not Covid.

Figure 12: Global Poverty Trends and Projections



Source: Lakner et al. 2021

4.2. Increase of Malnutrition as a result of rising poverty

Due to COVID-19 another 100 million people have suffered from malnutrition and 20 million people have been in in acute need of food assistance (FAO et al. 2020). Already in 2019, 690 million people were undernourished and suffered from hunger. The FAO estimated that the number could have risen to 155 million in 2020, mainly affecting countries in SSA, South Asia and the Middle East (FSIN/GNAFC 2020).

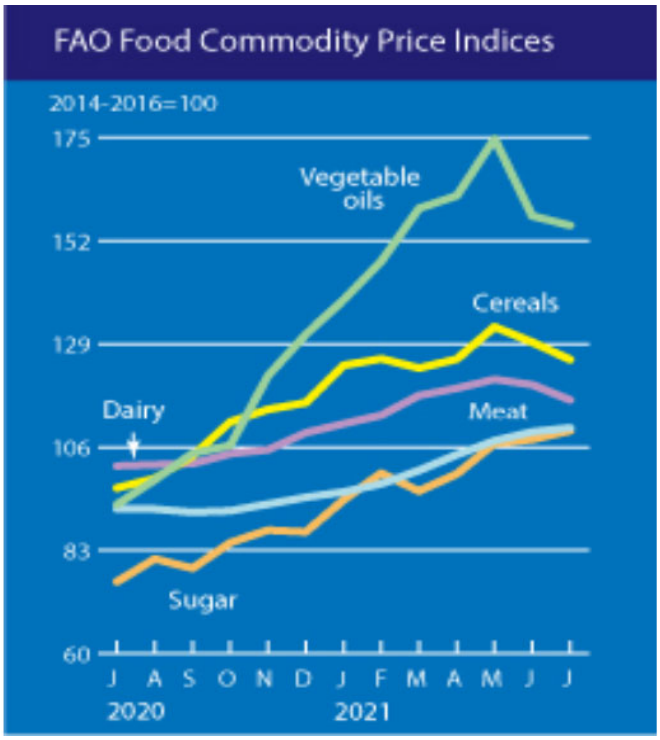
Due to problems to maintain production and disruption of imports with consequent food price increases and impoverishment, COVID-19 has resulted into increasing malnutrition in SSA and South Asia.

First, agricultural production is highly labour intensive in DC and it employs a large share of migrant workers. Social distancing, lock downs, illnesses and travel restrictions have led to disruptions in production so that it was not possible to plant or harvest. In this way, COVID-19 has produced food insecurity. Such shortages and higher transport costs resulted into higher food prices (FAO 2021b; Workie et al. 2020). Second, a number of countries that are highly import dependent in food supply, were confronted with food supply difficulties in supplier countries, higher transport costs and consequent higher import prices. (FAO 2021b)

The FAO food price index indicates the change in the international price of the basket of food commodities per month as shown in Figure 13. In total, in April 2021, the aggregated global Food Price Index had a value of 120.9, which was 28.4 points (30.8 %) above the value of April 2020 (FAO 2021a).

Since food accounts for the major part of consumption spending, particularly in LICs, a rise in food prices reduces the affordable amount of food of households. People cannot buy the necessary daily food intake. Consequently, malnutrition of the poorest households in DCs and in the poorest countries has been increasing under the COVID-19 crisis (FAO 2021a; GAIN 2021).

Figure 13: FAO Food Commodity Price Indices for five baskets of commodities



Source: FAO 2021a

Erokhin and Gao (2020) investigated the factors behind insufficient food consumption in 2020 in a group of 45 countries with a high share of undernourishment. The number of COVID-19 cases, food price inflation, the exchange rate and the food trade balance were analysed as potential explanatory factors. The authors found that the number of COVID-19 cases registered in the country had a significant impact on the increase in malnutrition in the year 2020. In UMICs, the impact was particularly high. They also found that food price inflation was a major contributor to increasing malnourishment, above all in LICs, evidently because of the high share of food items in consumption spending. As expected, also currency devaluations and trade balance played a role in the sense that currency depreciations and reduced food imports increase malnutrition. Another study, Egger et al. (2020), used telephone interview data from 30,000 households in LICs and found that on average 45 % of interviewed had to miss meals in April 2020. In countries like Sierra Leone, even 87 % of rural households reported that they had to reduce or miss meals. A survey conducted by the World Bank in Malawi revealed that in the course of the COVID-19 crisis in 2020, a quarter of households had to reduce meals in such a way that they have not eaten anything in one of 7 days (Malawi NSO and World Bank 2020a; 2020b). These findings are devastating knowing that food shortage in childhood leads to lower height and hinders mental development (FSIN/GNAFC 2021; as well as FAO et al. 2020).

Unfortunately, for a number of countries that suffered already food insecurity due to conflicts or weather extremes, such as South Sudan, Madagascar, or Somalia, COVID-19 has become an additional reason of food insecurity. The increase in malnutrition and poverty has already raised much concern since it is clear that both are linked by a causal circle. Poverty leads to undernourishment. Malnutrition in turn leads to poor health and thus reduces the chances for decent education and labour to get out of poverty. Those effects will hinder the attainment of zero hunger and no poverty of the Sustainable Development Goals in 2030.

This situation calls for policy actions to alleviate. Assistance programs, be it from national governments or international aid, could provide food and cash support targeted to the poorest. To reach all people in need, it should not be linked to prior employment.

4.3. Sharp increase of inequality of wealth and employment prospects within DCs following COVID-19

Since the poorest are the most affected in economic and human terms during the pandemic, inequality in the society can be expected to raise significantly in DCs. Inequality can refer to income, but also to the chance of being employed and receive education or health status. As an indication how COVID-19 might increase inequality, evidence from previous epidemics can be used. Furceri et al. (2020) investigated the effects of SARS in 2003, H1N1 in 2009, MERS in 2012, Ebola in 2014, and Zika in 2016 on income inequality in 175 countries. Those epidemics lead to a persistent increase in the Gini coefficient. Moreover, those epidemics reduced the employment rate of people with basic education, pushing them in unreliable employment schemes and the informal sector, while those with high education almost experienced no reduction in employment rate.

An important factor, which will lead to long-term negative effects of COVID-19 on poverty and inequality, is education. According to UNESCO (2021), by July 2021, countries in LAC, as well as in the Middle East and South Asia, experienced the highest number of weeks of school closures of 50–60 weeks since the beginning of the pandemic. School closures were generally lower in SSA with 10–30 weeks, with some countries like South Africa (42 weeks), Angola (46 weeks), Mozambique (45 weeks), our South Sudan (54 weeks) showing longer breaks. Evidently, for children in DCs, being away from school results into a proportionate education loss that exceeds the deficits caused in HICs, because children hardly have any chance to continue learning at home. The consequences are particularly detrimental, as children in DCs could be sent to work instead, often illegally. They will miss meals provided regularly by schools and often children drop completely out of school after such closures (Selbervik 2020).

Finally, the surge in poverty in DC can be expected to lead to new waves of emigration. The registered fall in migration to HICs in 2020 should be considered as a temporary phenomenon. Migration pressure is expected to set in again when the economic recovery fully starts and travel restrictions fall. Bah et al. (2021) investigated the intention of migration in a survey of Gambian households, a country that is one of the top countries of illegal migration to Europe. Despite a temporary fall in the intention to migrate due to the COVID-19 crisis, 65 % of households responded that they are considering to migrate when the crisis is over.

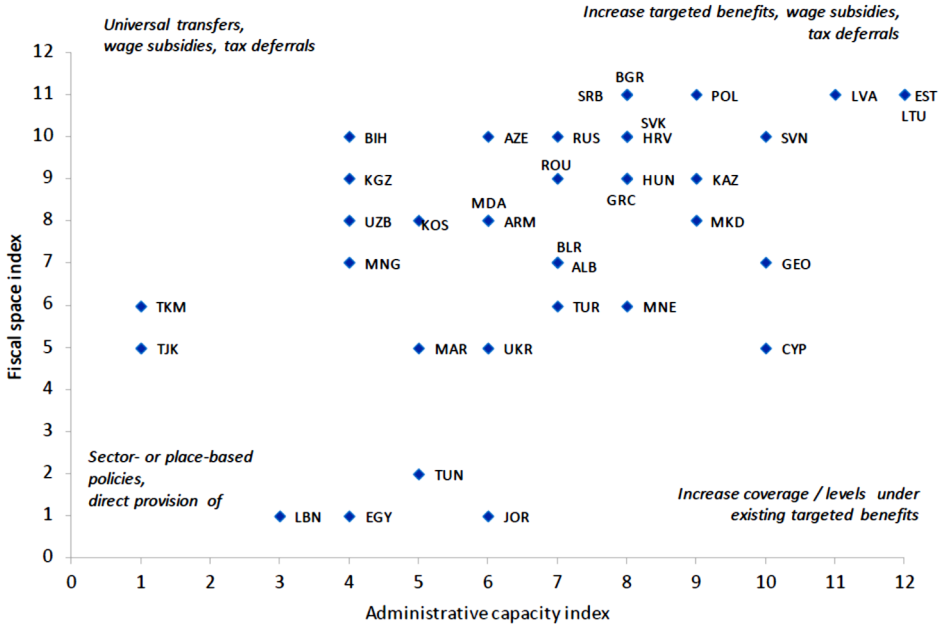
4.4. How to fight poverty and inequality?

What can policy makers in DCs do to mitigate the dramatic effects of the pandemic on the poorest? Bircan et al. (2020) provide an overview of the policy actions of MICs in Europe, the Mediterranean and Central Asia . The observed policy measures comprise support to individuals, increase in social benefits, firm support, price controls, payment holidays for rents and loans and monetary policy. The authors show how demanding these policies are with respect to fiscal space and administrative capacity (see Figure 14). Evidently, poorer countries cannot administer well-targeted support schemes or finance splendid wage subsidies and tax referrals.

A major problem with targeting the most vulnerable people in DCs is that they are not easy to reach. For example, in India, most urban workers are not covered by social security systems and thus not registered (Djankov/Panizza 2020). A good example of overcoming these difficulties in supporting people is the Indian National Rural Employment Guarantee Act, which guarantees a minimum of 100 days support for rural households willing to work. Such a system is important for people with precarious employment.

In addition, individuals, in particular women, do not have bank accounts (Dhinga/Machin 2020). Therefore, direct cash support is an important way to reach people in need. In this respect, another problem of DCs became apparent in Peru, namely that local municipality records often do not truly file all residents (Chowshury et al. 2020).

Figure 14: Fiscal space and administrative capacity to deliver policy options



Source: Bircan et al. 2020

When prices of daily goods rise, as it was the case due to disruption in production during COVID-19, in kind assistance proved as an important way to reach people most in need. In spring 2020, India assisted some 800 million people with free cereals and cooking gas. Indonesia secured free electricity for 24 million people (The Economic Times 2020).

5. Conclusions and Policy advice

The intention of this paper was to shed light on the important social and economic consequences of the COVID-19 pandemic in DCs. The perspective of DC in the COVID-19 situation is hardly present in the news and the awareness of these issues among people of the Northern hemisphere is low. Therefore, the paper scrutinizes the deep humanitarian and economic consequences that have emerged in DCs since early 2020.

First, the paper looked at the spread of the COVID-19 pandemic and its hotspots in DCs. It has become apparent that many conditions in DCs favour the spread of the virus, such as poor living conditions and densely populated areas, as well as existing infectious disease. But DCs have also the advantage of a young population for which the virus is less dangerous. We have seen that a poor health infrastructure increases the fatality of the virus in DCs. However, these factors cannot fully explain why the pandemic raged particularly in some regional hotspots. There seem to be biological conditions at work that are not yet fully understood. Geographically, it appears that LAC countries have been by far the most affected countries in terms of virus spread, death toll and severances of the economic crisis. Asian countries seem to have been more successful in stopping outbreaks of the virus and economic consequences were less drastic. In Africa, the North and South watched the most serious outbreak of the virus. Despite insufficient statistical data, the virus seems to have spared SSA to a large extent with low excess death rates. However, as unpredictable as the virus is, it is not clear how the situation in SSA will develop in the near future and whether new hotspots may arise. From the point of view of immunisation through vaccinations, LAC will be in a better position to escape the virus than other DCs. However, we have seen that vaccinations in all DCs lag seriously behind AEs and one has to expect that the crisis will go on much longer in the Global South than in the North.

Second, the paper discussed in detail the economic effects of the pandemic in DCs. Once more the strong dependency of DCs on HICs, either on the demand in high income markets for their exports or on the supply of intermediaries from there, has become apparent. Consequently, DCs exporting commodities, specializing in tourism and producing low wage consumer goods have deeply suffered from contracted demand from HICs during COVID-19. Other DCs with a strong position in GVCs have suffered from disrupted supplies. A tendency towards restructuring of international trade specialisations can be observed. It will be important for DCs to reply to such changes, demonstrate flexibility and apply new procedures with digital technologies to find a new position in trade relations. Narrowly specialized countries will be at risk. On the other hand, this restructuring is a chance for DCs to diversify their productive structure. Finally, we highlight in this section the heavy burden on growth prospects if DCs will not be able to avoid renewed waves of the pandemic.

Third, this paper emphasizes the dramatic humanitarian consequences of the pandemic in DC. Unlike in HICs, where the state initiated generous income support measures, reduced economic activity and thus income losses has resulted in a bitter increase in poverty among people in DCs, a reversal of poverty reduction that has been painstakingly achieved in the last decades. As an immediate consequence, malnutrition has increased in many DCs. However, the hike in poverty is not a temporary phenomenon. The education loss resulting from lockdowns in DCs and the worsening job perspectives will keep more people in poverty also in the longer term.

The paper repeatedly showed that the pandemic and its humanitarian and economic effects will be long-lasting in DCs if vaccinations are not adequately available to them. At present, COVID-19 vaccinations seem to be the only means to immunize at large scale and at affordable price most people on the planet. There are important inequalities in access to vaccinations. The North finds itself in a privileged position. DCs show a substantial backlog in COVID-19 immunisation. Such inequalities in access to vaccinations must quickly be surmounted. Donations of vaccines from the North in a bilateral form or through COVAX, and fast set-up of local vaccine production by pharmaceutical firms as well as re-thinking of intellectual property rights on vaccines are imperative.

The North has so far come out of the economic crisis resulting from COVID-19 at a faster path due to its financial capacity to support incomes and business. As pointed out, COVID-19 has placed societies in DCs in a precarious situation, inacceptable from a humanitarian point of view. As the Global North has benefitted from globalisation in many respects through decades, it highly should assume responsibility to assist its economic partner countries in the South during the crisis. Such assistance can be (i) humanitarian aid in cash and in kind administered through public and private development agencies and organisations, (ii) support with medical equipment and medical support as provided by experience NGOs such as Doctors without Borders, (iii) vaccines donations, (iv) debt relief programs and special credit facilities administered through the international financial institutions such as the IMF and World Bank. However, as we have seen in this paper, sharing good practices and providing support in management of containment and assistance programs can be crucial beyond pure financial aid. International organisations started to focus on such support measures which is an important contribution.

Since individuals in the Global North, such as students to the seminar on “Covid in DC” at the Vienna University of Economics and Business in summer 2021, – which gave rise to this paper –, have improved their awareness of the critical situation in DCs and expressed their intention to not only communicate these problems through social media and peer groups, but also personally donate, it should also be possible at political level to implement effective assistance for DCs to fight the COVID-19 crisis.

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