

Comparative Analysis of Sub-Saharan African States' National Economies: COVID-19 Epoch

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Abstract

The paper examined the economies of sub-Saharan African countries during the COVID-19 pandemic. The broad objective of the study is to comparatively analyze the sub-Saharan African states national economies during the COVID-19 pandemic. The specific objective is to evaluate aggregate impact of COVID-19 on national economy across sub-Saharan African states during the period. The hypothesis is that the COVID-19 pandemic did not have effect on the economy of the sub-Saharan African countries. Being ex post facto, data were sought from all manner of relevant written materials, together with some elements of survey in the form of interviews conducted by reputable international agencies. The study used both qualitative descriptive and quantitative inferential statistical analysis to test the research hypothesis. COVID-19 impacts in most sub-Saharan African countries were mainly through their linkages with the global economy, particularly trade. Thus, a drop in world demand and the resultant commodity price drops, affected production and export performance of African countries more than the effect of COVID-19 and its associated control measures. The study recommends among others, an urgent need to act on the lessons learned from the COVID-19 and re-examine their respective fiscal and economic-policy priorities, to enhance health and social support systems and also to address such specific structural weaknesses associated with African continent.

Keywords: *Comparative analysis, Sub-Saharan African states, National economies, COVID-19 Epoch*

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Background to the Study

Since the early 1990s, the region's economic-growth trajectory seemed to alter, from the previous two decades of economic stagnation and recession, to a substantial and sustained growth spurt that has now lasted for over two decades in a majority of states in the region (Orthofer, 2016). Whereas overall gross national product (GNP) growth in the region was a mediocre 1.7 per cent during the 1980s, it increased appreciably to 2.5 per cent annual growth in the 1990s, and over five per cent annually in the first decade of the new century (Mahabir, Crooks, Croitoru and Agouris, 2016; Holmes, Stephen and Ivan, 2019). The latest numbers suggest gross domestic product (GDP) growth at 5.3 per cent in 2019 and 5.6 per cent in 2020. The growth appears to be widespread, since over a third of the region's 49 states are growing by more than six per cent in the year. Abegunde and Stanciole (2021) suggested that the improvements in political conditions have facilitated the growth, but they are exceptions. Indeed, the consensus in the public policy literature has been that the region's political changes are likely to have either no effect or a negative effect on economic growth (Pew Research Centre, 2019).

The 2019 novel coronavirus disease (COVID-19) was first reported in China as an infectious upper respiratory disease (Madiba, 2020). The virus has since spread worldwide presenting one of the most serious global health crises in history, with high socio-economic costs (The Economist Intelligence Unit, 2019). While the health impacts are directly through contagion, the economic impacts are largely a consequence of the preventive measures adopted by the respective governments to curtail its spread (Pillay, 2021). Key measures adopted by most countries to curtail the spread include the closing of their frontiers and partial or complete lockdowns of economies which among other things, have seen the temporary closure of businesses, schools and social services (Roodman, 2021). However, these measures have generated significant setbacks for African economies mainly in terms of lost productivity and trade both within and among countries. Specifically, these measures have significantly strained almost all key growth enhancing sectors of many economies, and ultimately, on their overall income (Smitha, Machalabaa, Seifmanc, Feferholtza and Karesha, 2019). Consequently, different institutions have put forward estimates of the anticipated economic losses that could follow the introduction of these measures (Murphy, 2021). For example, the International Air Transport Association (IATA) projected revenue losses of up to US\$113 billion¹ and the United Nations Economic Commission for Africa (UNECA) estimated at least US\$65 billion in revenue losses among Africa's top 10 fuel exporting economies (Time, 2020). Moreover, due to COVID-19 disruptions in global value chains among other things, the World Trade Organization (WTO) projected a decline in world trade of between 13% and 32% in 2023 (UN, 2021). Overall, an unprecedented global recession is being envisaged with a world GDP slump ranging between 0.5% and 3.8 % (The Economist Intelligence Unit, 2019; Shimeles, and Nabassaga (2017).

While the regional and country specific impacts could be similar in Europe and Asia depending on which sectors were severely hit, but due to the continent's lack of economic resilience and diversification, Africa faces greater risks of seriously negative impacts from COVID-19 for several reasons. First, being the last region to register COVID-19 cases, Africa was already experiencing the consequences mainly through its trade links with the European

Union (EU), United States of America (USA) and China, resulting in dwindling markets for African exports. Second, while the infection rates in these regions have started to flatten out with economic stimulus and investment recovery plans underway, the opposite holds for Africa (Pillay, 2021). The number of new cases in Africa have yet to reach the inflection point while elsewhere including China and Europe, the reported cases are tapering off (World Bank, 2020a). Although the rest of the world is slowly reopening businesses to emerge from the global slowdown, the trend in African economies entails the possibility of a deeper recession as they are likely to face further production and trade related constraints if the rate of infection continues to rise (Samal, 2021). This paper employs macro-econometric model in assessing the possible effects of COVID-19 on African economies. In the light of the aforementioned, the following research questions were put forward:

- i. Does the aggregate impact of COVID-19 affect national economy across sub-Saharan African states during the extant corona virus pandemic?

Objectives of the Study

The broad objective of the study is to comparatively analyze sub-Saharan African states national economies. The specific objective is to evaluate aggregate impact of COVID-19 on national economies across sub-Saharan African states during the extant corona virus pandemic

Methodology

The study used both qualitative descriptive and quantitative inferential statistical analysis to test the research hypothesis.

National Economic Modelling

Behavioral Equations

$$\text{Consumption: } C_{it} = \beta_0 + \beta_1 Y_{it} + \beta_2 CPI_{it} + \beta_3 EXR_{it} + \beta_4 Rem_{it} + \beta_5 C_{i,t-1} + \varepsilon_t$$

$$\text{Prices: } CPI_{it} = B_0 + B_1 EXR_{it} + B_2 M2_{it} + B_3 Y_{it} + B_4 G_{it} + B_5 CPI_{i,t-1} + \sigma_t$$

$$\text{Expenditure: } G_{it} = Y_0 + Y_1 T_{it} + Y_2 ODA_{it} + Y_3 ODA_{it} + Y_4 ppIn_{it} + Y_5 EXR_{it} + Y_6 G_{i,t-1} + \epsilon_{it}$$

$$\text{Total Revenue: } T_{it} = b_0 + b_1 I_{it} + b_2 TT_{it} + b_3 C_{it} + b_4 Y_{it} + b_5 T_{i,t-1} + \mu_t$$

$$\text{Investment: } I_{it} = a_0 + a_1 S_{it} + a_2 Y_{it} + a_3 EXR_{it} + a_4 FDI_{it} + a_5 I_{i,t-1} + v_t$$

$$\text{Export: } X_{it} = \alpha_0 + \alpha_1 pw_t + \alpha_2 GDP_wt_t + \alpha_3 GDP_wc_t + \alpha_4 EXR_{it} + \alpha_5 X_{i,t-1} + \theta_t$$

$$\text{Import: } M_{it} = \rho_0 + \beta_1 \left(\frac{pd_{it}}{pw_t} \right) + \rho_2 Y_{it} + \rho_3 EXR_{it} + \rho_4 M_{i,t-1} + v_t$$

$$\text{World prices } Pw_t = \phi_0 + \phi_1 Xw_t + \phi_2 Mw_t + \phi_3 wGDP_t + \phi_4 Pw_{t-1} + x_t$$

Identities

$$Y = fcon + I + G + (X - M)$$

$$fcon = C + G$$

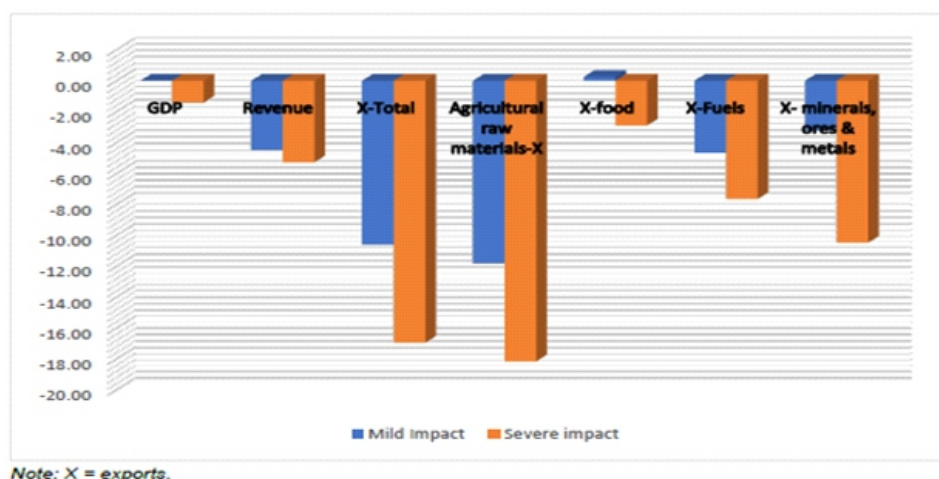
$$S = Y - fcon + T$$

Where C is household consumption, Y is Domestic income (GDP), EXR is exchange rate, Rem are the remittances, T is Tax revenue, TT is total trade, ODAc (t) is official development assistance trend and cyclical, I is investment, CPI is the consumer price index, X is the total export value, GDP_wt is the world GDP trend, GDP_wc is the world GDP cyclical, Xw are world exports, Mw are world imports, Pw is the world price, M is the total import value, Pd is the GDP deflator as a proxy of domestic prices, fcon is the final consumption expenditure and G is the government expenditure. The equation (vi) for total exports has been replicated for fuel, minerals, ores and metals (ores, metals, precious stones and non-monetary gold), food and agricultural raw materials. A similar disaggregation has been undertaken for i world import prices. While the nature of Africa's exports which are largely unprocessed motivated the disaggregation of the equations into these groups, availability of the annual world price data which is disaggregated into these groups, was the main reason for the choice of commodity specific groups for analysis of both exports and imports. Due to lack of tax data, the following 10 countries have been dropped from the sample of 54 African countries: Central African Republic, Chad, Djibouti, Eritrea, Equatorial Guinea, Guinea Bissau, Libya, Sao Tome and Principe, Somalia and South Sudan. As discussed above, the paper maintains that the direct impact of COVID-19 through the health system, health expenditure and complete lockdowns is negligible in most countries, ceteris paribus. This assumption is mainly based on the number of infections which have remained largely concentrated in six of the continent's 54 countries (Williams, 2015).

Results and Discussion

Impact of COVID-19 on National economy across sub-Saharan African states

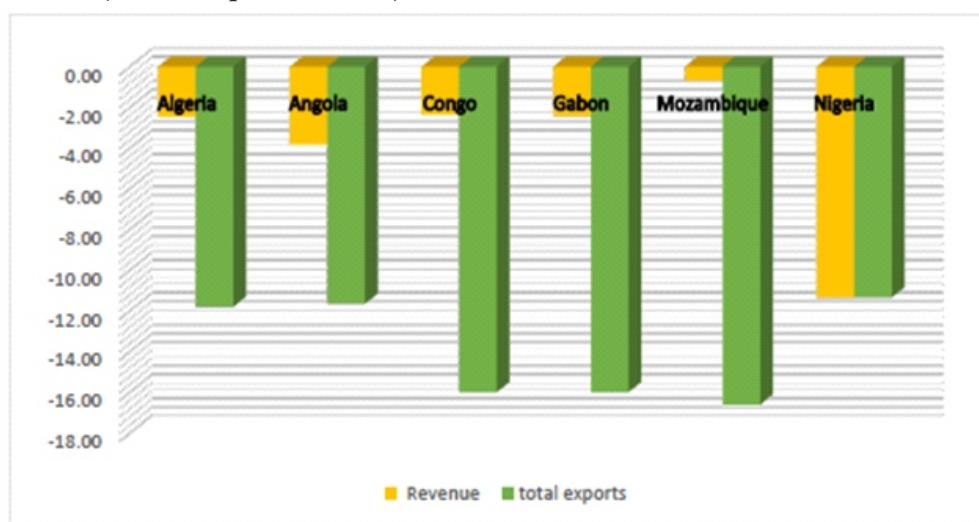
Figure 1: Aggregate COVID-19 impact on GDP, revenue and Exports: Per cent deviations from the baseline



Overall, the impacts of COVID-19 vary across African countries both within and across sectors. The fall in global demand for exports and a slump in prices of major commodities including fuels are the main concerns for Africa. There has also been a fall in Foreign Direct Investment (FDI), which is closely linked to the extractive sector and hence the commodity

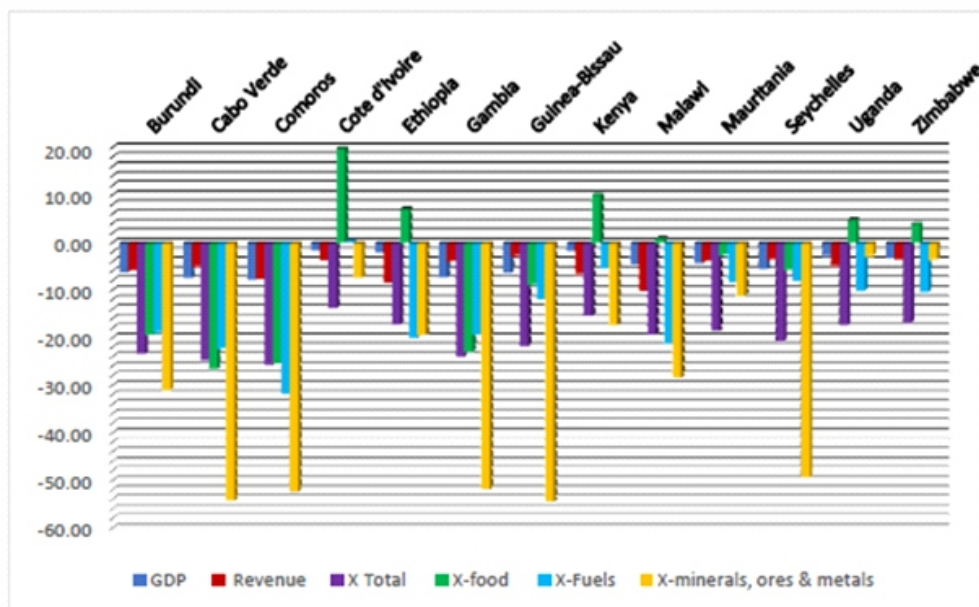
price cycle (World Investment Report, 2020). The decline in crude oil prices by up to 60% will put significant strains on the revenue of the net oil exporters, particularly those whose revenues are highly determined by crude oil sales (World Bank, 2020b). Accordingly, the results in Figure 1 suggest a -11.4% decline in Nigeria's revenue in 2020 with relatively lower revenue falls for the other key exporters of fuels in the region such as Algeria (-2.5%), Angola (-3.8%), Gabon (-2.4%) and Congo (-2.3%). However, the final impact will depend on how the respective countries will take advantage of their respective key markets as frontier closures are lifted with productivity resumed in world (Acemoglu, Daron, Simon, James and Pierre, 2021). Overall, fuel exports are estimated to fall by -7.7%, with a significant drop in GDP of about -3.3% in Congo and Mozambique (Abegunde and Stanciole, 2021; Akadiri and Akadiri, 2018; African Development Bank, 2020; Africanews, 2020).

Figure 2: COVID-19 impacts on some main African fuel exporters: Per cent deviations from the baseline (Severe Impact Scenario)



Different trends from the oil exporters are expected for the small agrarian economies who do not only face low export volumes due to depressed world demand, but also through their own productivity slump which may potentially take time to return to equilibrium beyond 2021 (Arellano and Bond, 2021). As such, the impact of COVID-19 on these countries is disproportionately higher than in the net fuel exporting countries. In the worst case scenario of a deep global recession, this paper estimates that food exports of African economies will decline by about -3% (Figure 2) which will be accompanied by contractions in GDP of -7.8% in Comoros, 6% in Guinea Bissau, -5.6% in Seychelles and -4.5% in Malawi, among others (Figure 2) (Anderson and Hsiao, 2020). Although food exports are important, for Small Island Development states (SIDS) like Comoros and Seychelles the key COVID-19 related shock to their economies is due to the collapse in demand for tourism services. Furthermore, the heavy reliance of African LDCs on trade taxes and duties, could lead to severe COVID-19 related revenue losses in countries such as Burundi (-5.8 %), Comoros (-7.6 %), Gambia (-10 %), Malawi (-10.2 %) and Sierra Leone (-7 %) (Diamond and Mark, 2016; Eatwell and Matthew, 2018; Fukuyama, 2011) as shown in Figure 2 (Baum, Schaffer and Stillman, 2021).

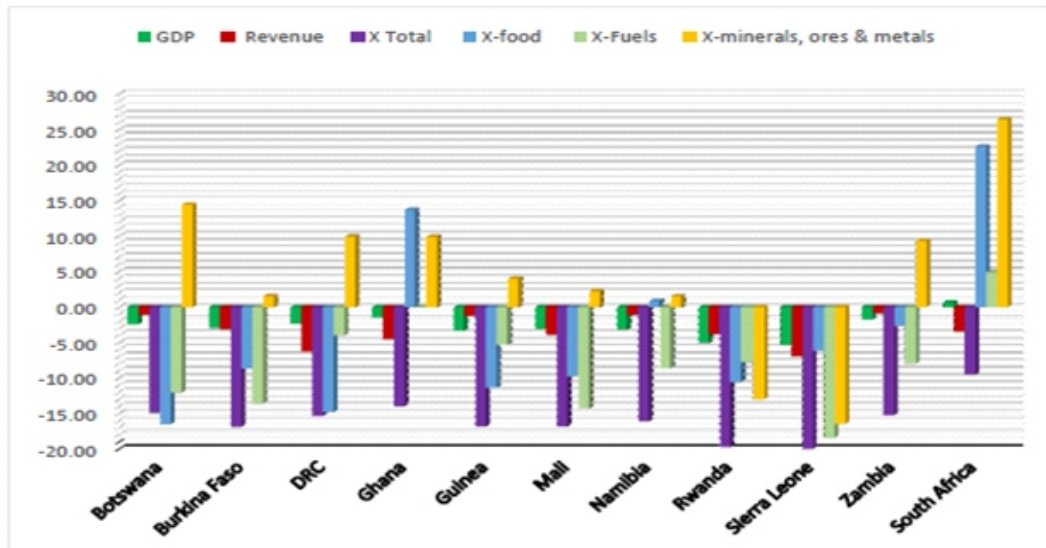
Figure 3: COVID-19 impacts on key food exporters: Per cent deviations from the baseline (Severe Impact Scenario)



Note: X = exports; X-Fuels is an aggregation of all fuels including crude oil, gas, coal and ethanol as classified under SITC 3.

Revenue losses could also affect the ability of the countries to import critical inputs for their domestic production and food exports. Overall, a protracted global recession causing low demand for their exports with resultant revenue losses may have significant consequences not just for agriculture but also other sectors of their economies with poverty and food insecurity expected to rise in 2021 (Akiwumi and Valensisi, 2020). Recent food security estimates suggest that 73 million people in Africa are acutely food insecure. This alarming situation is being exacerbated by current COVID-19 crisis through its direct impacts on trade and trade logistics as well as on production and value chains (Arellano, and Bover, 2020). Administrative restrictions imposed by governments such as lockdowns, travel restrictions and physical distancing measures have also been added to the existing problems. The burden of movement restrictions and lockdowns is being felt strongly by low-income households and those working in the informal economy due to their loss of livelihoods and inability to access markets (Fukuyama, 2021; Fuller, 2019; Garton and Timothy, 2016). Further, despite fuel prices being favorable to net importers of fuels, the recession in LDCs and SIDS economies may also lead to reduced fuel imports as production in other sectors remain depressed. For example, countries like Burundi (-26.6%), Cabo Verde (-8.5%), Comoros (-30%) and Malawi (-15%) are all expected to import less fuels by the highlighted amounts over the year (Biello, 2021).

Figure 4: COVID-19 impacts on key exporters of minerals, ores and metals: Per cent deviations from the baseline (Severe impact scenario)



Note: X = exports; X-Fuels is an aggregation of all fuels including crude oil, gas, coal and ethanol as classified under SITC 3.

While there are few food exporters who will have a net increase in food exports over the year, a different story is observed for the key exporters of minerals, ores and metals IMF (2020). With the exception of Rwanda and Sierra Leone whose exports for minerals will face a significant shock, large increases are observed for South Africa, Botswana, the DRC, Ghana and Zambia (Figure 4) (Jones and Müller, 2021). These trends mostly imply that while COVID-19 related lockdowns halted economic activity in the sector, the impact was mainly on delayed demand and not harsh on prices (Bilal, Griffith-Jones, Kapoor, Karingi, Songwe and Veldel, 2020). Secondly, it also suggests that COVID-19 is unlikely to lead to a major structural shift in production and output. As such, once the complete lockdowns are lifted, most economies will be able to resume production at similar pre-COVID-19 levels albeit with a significant delay in reaching their optimal levels due to revenue losses among other things during the lockdowns (Keogh-Brown, Wren-Lewis, Edmunds, Beutels and Smith, 2020). In this regard, Figure 4 shows significant revenue declines in the mineral sector for Sierra Leone (-7%), DRC (-6.2%), Ghana (-4.6%) and Mali (-4%). Overall, the impact of a potentially deep global recession in the sector is relatively better compared to the food sector (Cartledge, 2016; Clarke, 2021; Crouch, 2020; Garton and Timothy, 2016; Lipton, 2021). Figure 4 further indicates that Rwanda has the biggest impact with a -5 % drop in GDP followed by Guinea (-3.3%) Namibia and Mali (-3.1%) and Burkina Faso (-2.9%) (Anderson & Hsiao, 2020; The Guardian Weekly, 2020).

In sum, a potentially deep recession in the global economy will result in significant losses in Africa with a fall in GDP of -1.4%. Most countries are expected to suffer a recession as a result of the decline in world GDP and fuel prices, but the impact is expected to be disproportionately higher amongst net food exporters. While marginal negative impacts are observed in other sectors, most food exporters may be the worst hit both in terms of revenue losses of up to -10.2

% and GDP declines of -7.8%. Similar trends are observed under the mild impact scenario where the worst hit countries are also net food exporters with large falls in GDP observed for Comoros (-6. %), Carbo Verde (-6%), Burundi (-5.1%), Gambia (-5.7%) and Liberia (-5%) (Hoey, 2015; Holmes and Ivan, 2019; ILO, 2021; Krastev, 2021; Levy, 2021).

Coherent and consistent policy responses to the COVID-19 impacts are important for cushioning African countries, especially under the worst-case scenarios. Some countries have already put in place measures to keep economies afloat. For example, apart from marginally reducing the supply of oil, Nigeria has also put in place several stimulus packages to minimize the impact of COVID-19 on the most vulnerable segments of their economy. Similar actions were taken by other countries including Egypt, Ghana, Kenya and Senegal and South Africa (Department of Foreign Affairs, Republic of South Africa, 2020). The net fall in GDP, without considering these measures, is marginal but being among the continent's largest economies, a small contraction in their GDP has a higher domestic impact overall than a larger loss in GDP in smaller economies. Of the six countries with the greatest number of registered COVID-19 cases, a significant drop in revenue is observed only for Egypt (-10.6%) which is potentially an effect due to the fall in oil prices (Butter, 2011; Clarke, 2021). However, an increase in public health expenditure due to the increased number of COVID-19 cases is expected, although the COVID-19 related increase in government expenditure was not considered (Iiffe, 2021). In other words, the analysis has only focused on global shocks holding all other direct impacts of COVID-19 on Africa's productivity and expenditure constant. Moreover, the analysis did not include the measures put in place to ease the impact of COVID-19 on the respective African countries (Bild Newspaper, 2020).

Conclusion and Recommendations

Overall, COVID-19 impacts in most sub-Saharan African countries are mainly through their linkages with the global economy, particularly trade. Thus, a drop in world demand and the resultant commodity price drops, affected production and export performance of African countries more than the effect of COVID-19 and its associated control measures. This has affected mainly commodity exporters, especially those that are involved in key global value-chains such as fuel and horticulture exporters. Using estimates of COVID-19 related falls in global GDP and fuel prices, the research finds a decline of -1.4% in sub-Saharan African states income with the worst declines observed in the smaller LDC and SIDS economies. Under the extreme scenario of a severe global recession, the research uncovers a significant decline in total exports (-16.7%) on average with significant differences across the sectors and among the countries in the region. However, several countries will suffer worst losses in revenue including Nigeria (-11.4%), Egypt (-10.6%), Malawi (-10.2%), Eswatini (-9.3%) and Ethiopia (-8.5%) (Economic impact of epidemics and pandemics (2021).

The lag in vaccine means that Africa will be dealing with COVID-19 long after the rest of the world has controlled it and that could be disastrous for travel and trade within and outside of Africa. The impact of not acting in a coordinated manner to curtail the virus is likely to be higher in terms of costs related to morbidity, lost lives and the opportunity costs of implementing economic lockdowns in the near future. While some countries have in place economic stimulus plans to ease the financial burdens caused by the virus, most countries in

sub-Saharan Africa do not have the capacity to do so. This implies that if the COVID-19 infection rates in sub-Saharan Africa were as high (on a per capita basis) as in some countries in Europe, managing and containing the virus could have required a more coherent and regionally coordinated response than has been observed to date. The trade-related impacts of COVID-19 highlight the longstanding underutilization of the regional market by African countries (Erkoreka, 2021). Commodity price volatilities continue to dictate the direction of economic progress, yet the diversification of exports and increased value addition could help build resilience to shocks in sub-Saharan African countries (European Commission, 2020a). In terms of the wider impact of COVID-19, on the economy and beyond, according to UNECA the pandemic hit economic growth of sub-Saharan African states from an expected 3.2% down to 1.8%. Based on data and indices from a number of sources and organizations this research has identified some immediate challenges calling for action:

- i. There is an urgent need to act on the lessons learned from the Ebola outbreak in 2015 and address the specific weaknesses of Africa's health structures: improve health systems, and citizens' access to them, and more generally strengthen data and statistical capacity.
- ii. In terms of the wider impact of COVID-19, on the economy and beyond, according to UNECA the pandemic hit economic growth of sub-Saharan African states from an expected 3.2% down to 1.8%. If not addressed in a collective and organized way, this could reverse the positive growth of the past decade and impact areas where sub-Saharan Africa has steadily progressed, thus, could put to test the institutional fragility of some countries, fueling further conflicts and instability a situation African states cannot afford to witness.

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