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Coronavirus-lockdowns, secondary effects and sustainable exit-strategies for Sub-Saharan Africa

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Center for Research in Economics, Management and the Arts

Coronavirus-Lockdowns, Secondary Effects and Sustainable Exit-Strategies for Sub-Saharan Africa

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Coronavirus-Lockdowns, Secondary Effects and Sustainable Exit-Strategies for Sub-Saharan Africa

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ABSTRACT

Pandemics and the reactions to pandemics increase the general problem of scarcity. Scarcity induced trade-offs are particularly relevant for countries in Sub-Saharan Africa as (1) the region suffers from numerous other diseases whose death toll may increase substantially due to lockdowns, (2) economic effects of lockdowns affect the region more negatively because citizens in Sub-Saharan Africa have limited economic resources compared to more developed economies, and (3) weak institutions may increase the adverse societal impacts of the pandemic.

Key words: Pandemics; General health; Economic effects; Institutions; Sustainability

JEL Classifications: I10, O10

Word count: 1975

INTRODUCTION

The coronavirus has brought about states of panic affecting both citizens and decisions makers. While evaluations of COVID-19's overall severity are still ongoing, numerous countries have adopted stringent suppressing measures to curtail the spread. Among them, wide-reaching lockdowns have emerged as a standard approach. In Sub-Saharan Africa, the adoption of lockdowns requires critical evaluation, as they risk rolling back achievements on the Sustainable Development Goals (SDGs). Distinct structural *advantages* of the region may provide a less costly way out of the pandemic, thereby minimizing overall welfare losses.

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DIRECT HEALTH EFFECTS OF COVID-19 IN SUB-SAHARAN AFRICA

The current trend of COVID-19 related mortality rates suggests that for countries in Sub-Saharan Africa, nationwide lockdowns are not necessarily the optimal response in dealing with the pandemic. Evidence regarding the *direct* health effects shows that the high-risk group is comprised of mainly elderly people, and people with pre-existing medical conditions (CDC, 2020; Onder et al., 2020; NCPERET, 2020; Xie et al., 2020).¹ Co-morbidities have a higher prevalence in older people. In Sub-Saharan Africa, 53.05% of the citizens are younger than 20 years (see Figure A1 in the Appendix). Due to their youthful populations, countries in Sub-Saharan Africa could end up with lower case fatality rates than aging societies in the Global North. Early estimations from the influential Imperial College COVID-19 Response Team (see Walker et al., 2020) project that the infection fatality rate (IFR) in an unmitigated scenario – where essentially all people in Africa suffer infection – is about 0.24%, which is 3.85 times lower than the projected IFRs for North America or Europe.

The virus affects younger persons too, especially as pre-existing medical conditions matter. Serious morbidities such as malaria, HIV/AIDS, as well as diarrhoeal, and respiratory diseases are highly prevalent in Sub-Saharan Africa (IHME, 2018).² However, available data suggests that the most serious co-morbidities are obesity, hypertension, diabetes and ischemic heart disease, which are less common in Sub-Saharan Africa (Xie et al., 2020).

Regarding COVID-19, the number of confirmed cases depends heavily on testing, and as such, on testing capacity. Given the high population densities in cities³ and low testing capacity⁴, it can be expected that the number of *unreported* cases is high. Thus, the number of COVID-19 deaths is a somewhat more reliable indicator. Given Sub-Saharan's overall population of 1.078 billion, the total COVID-19 related death count of 1,724 is comparatively low (by May 28, 2020; for 78,319 reported/confirmed cases).⁵ While the *direct* health consequences of COVID-19 and the *absolute* number of fatalities may still turn out to be severe in Sub-Saharan Africa, they are likely to be less severe than in Western countries when

¹ Evidence from hotspots in the U.S. (see Ioannidis et al., 2020) also suggests that the probability of dying of COVID-19 for under 65-year-old persons is comparatively small.

² Besides respiratory ailments, there is no conclusive evidence that such diseases have an aggravating effect on the course of COVID-19 patients (<https://daignet.de/site-content/news/stellungnahmen/stellungnahme-der-daig-zur-gefaehrung-von-menschen-mit-hiv-durch-covid-19-21-03.2020>, accessed May 20, 2020).

³ E.g. Nairobi and Lagos have a population density of about 4800 and 6900 residents per square kilometer, respectively, which compares to densities of cities such as Brussels or London.

⁴ E.g. Nigeria has 197 Mio. inhabitants has tested fewer than 49,000 samples by May 27, 2020 (<https://ourworldindata.org/grapher/full-list-total-tests-for-covid-19>, accessed May 30, 2020)

⁵ See <https://covid19.who.int/> (accessed May 29, 2020).

accounting for the expected total number of (reported and unreported) infected people and other structural differences.

SECONDARY EFFECTS OF LOCKDOWN MEASURES

While many hope for a vaccine or an effective treatment, societies in Sub-Saharan Africa must already now select appropriate measures to minimize both the *direct* burden of the disease and the *secondary effects* of the combating measures. Nationwide lockdowns are not a one-size-fits-all approach. COVID-19 is not the sole problem affecting Sub-Saharan Africa. Understanding pandemics from a broad health, economic, and societal perspective is essential (Snowden, 2019).

Secondary health effects

The effectiveness of lockdowns has been questioned from a broad health perspective (Giesecke, 2020). For low- to medium-income countries which have adopted vast lockdowns, negative secondary consequences were felt early and the WHO has warned of a breakdown in the supply of essential health services with severe human costs due to other diseases.⁶ Table 1 provides an overview of the annual death toll of prevalent communicable diseases in Sub-Saharan Africa and the predicted excess deaths *caused* by wide-reaching lockdown measures.

Disease	Annual Deaths	Excess Deaths ⁷ (due to Lockdown)	Expected Total Deaths
HIV/AIDS	711,943 (IHME, 2018)	+ 520,000 (Jewell et al., 2020)	1,231,943
Malaria	543,289 (IHME, 2018)	+ 225,711 (WHO, 2020)	769,000
Tuberculosis	401,164 (IHME, 2018)	+ 104,303 (Glaziou, 2020)	505,467
Total	1,656,396	+ 850,014	2,506,410

Table 1: Annual Death Toll from Prevalent Communicable Diseases in Sub-Saharan Africa. (Sources in parenthesis below respective figures)

⁶ See <https://www.who.int/news-room/detail/11-05-2020-the-cost-of-inaction-covid-19-related-service-disruptions-could-cause-hundreds-of-thousands-of-extra-deaths-from-hiv> (accessed May 13, 2020).

⁷ The figures taken from the respective sources are the upper bounds of those predictions.

Jewell et al. (2020) estimate that a three- to six-month disruption of antiretroviral therapy could cause an excess of about 300,000 to 520,000 HIV/AIDS-related deaths in the next year alone. Similar developments can be expected for other illnesses. Currently, HIV/AIDS, malaria and tuberculosis cost close to 1.7 million lives annually and over 800,000 additional deaths are expected if health service provisions are disrupted. An early study in March by Walker et al. (2020) predict an upper bound of 2,483,000 COVID-19 related deaths in an unmitigated scenario where 1.045 billion people in Sub-Saharan Africa are assumed infected (97% of the population), while a stringent lockdown (a 75% decrease in interpersonal contact rates), could reduce the death toll down to between 298,000 and 1,204,000, depending on how early such measures are taken. The expected annual excess deaths of three other diseases due lockdowns (see Table 1) is within the range of predicted total death reductions due to the very same measures, i.e. the predicted COVID-19 related deaths avoided due to mitigating measures could be offset by the rise in mortality from only three major other diseases.⁸ There is always uncertainty in predictions, especially as the situation regarding COVID-19 still evolves. However, knowledge of the relevance of other diseases is well established. Moreover, it is unclear if countries in Sub-Saharan Africa could even sustain a lockdown leading to a 75% reduction in contact rates, especially given the often dense and informal working and living arrangements. Therefore, from a broad health perspective, the implementation of sustained lockdowns should be a matter of carefully weighing its costs and benefits.

Secondary economic effects

Lockdowns in the developed world are estimated to have caused a global economic downturn comparable to the Great Depression (IMF, 2020a). Worse adverse economic effects can be expected for fragile economies in Sub-Saharan Africa (IMF, 2020b). Lockdowns push the already poor into extreme poverty and threaten the livelihood of the most vulnerable. Such effects are worsened by the lack of reliable unemployment benefit schemes. For people who have little or no savings and who depend on their daily earnings, the inability to work, together with increasing food prices, can ultimately mean the difference between poverty and starvation.

Threats regarding food supply lead to warnings of malnutrition and hunger.⁹ African farmers have troubles in supplying regional markets due to financial and logistical

⁸ There are other illnesses in Sub-Saharan Africa, like diarrhoeal diseases from which over 500,000 people die annually. Sustained and wide-reaching lockdowns may affect the prevention and treatment of such illnesses too.

⁹ See <https://www.afro.who.int/news/covid-19-could-deepen-food-insecurity-malnutrition-africa> (accessed May 20, 2020).

constraints.¹⁰ Such developments have compounding adverse effects for the poorest and may lead to adverse intergenerational consequences (Frempong & Stadelmann, 2019; Fung & Ha, 2009). These precarious issues are especially relevant for Sub-Saharan Africa, where about 23% of the population is undernourished (FAO, 2020).

A healthy population has a high value. A strong economy has been closely linked to the health of its citizens and their life expectancy (Jetter et al., 2019; Pritchett & Summers, 1996) and maintaining health systems requires substantial economic resources. Transferring the estimates of Jetter et al. (2019) to Sub-Saharan Africa suggests that only a 5% reduction in income per capita decreases life expectancy in the region by 0.39% (or 0.24 years) on average, and particularly poor countries such as Mali would experience reductions in life expectancy by 0.44% (or 0.26 years).¹¹

Secondary societal effects

General societal effects of lockdowns and recessions could be vast: There are reports regarding a significant rise in domestic violence (Chandan et al., 2020), which disproportionately affects the vulnerable – women and children. The enforcement of lockdown measures has led to fatal clashes between law enforcement officers and citizens in several countries in the sub-region.¹² This could escalate the security problem in some West African countries where the activities of militants have been a security concern over the years (Onuoha, 2010).

Risks to political stability, institutions and democracy have emanated in younger democracies.¹³ In some Sub-Saharan African states, leaders have already instrumented the pandemic in restricting freedom of speech and even in prolonging their term.¹⁴ This threatens further achievements of the SDGs asking for the provision accountable and inclusive institutions. Functioning inclusive institutions have been strongly linked to economic and human development. Extractive institutions, once established, have been shown to persist in the long-run (Acemoglu et al., 2005; Acemoglu et al., 2019).

¹⁰ See <https://www.weforum.org/agenda/2020/04/africa-coronavirus-covid19-imports-exports-food-supply-chains> (accessed May 13, 2020).

¹¹ A 5% reduction of Sub-Saharan Africa's combined GDP per capita (PPP) of 3,794 USD corresponds to 190 USD which is used to predict reductions of life expectancy.

¹² By April 16, 2020 the number of fatalities as a result of police violence was higher than that of COVID-19 deaths in Nigeria (<https://www.bbc.com/news/world-africa-52317196>, accessed May 17, 2020).

¹³ See <https://www.opendemocracy.net/en/democracywatch-global-pandemic-power-grabs/> (accessed May 25, 2020).

¹⁴ See <https://www.bbc.com/news/world-africa-52214740> (accessed May 13, 2020).

POLICY RECOMMENDATIONS AND A SUSTAINABLE EXIT STRATEGY

Pandemics and the reactions to them increase the general problem of scarcity that always exists in society. It is therefore essential to take all trade-offs into account.

Sub-Saharan Africa suffers more than other regions from diseases such as malaria and HIV/AIDS and reactions to the pandemic risk could increase the death toll associated to them. While citizens in rich economies tend to have some savings or social safety nets, citizens in Sub-Saharan Africa are less endowed. Weak institutions are threatened more by societal impacts of the pandemic than institutions of established democracies with many checks and balances. Thus, secondary effects of the pandemic are likely to be relatively more important in Sub-Saharan Africa than in other countries and the side effects will delay the achievements of many SDGs if trade-offs are not realized.

Sustainability, testing and certification

While general scarcity is particularly a problem in developing countries, there is one resource which is growing: People who have recovered from COVID-19 and have developed antibodies. Current medical evidence suggests that antibodies are likely to confer immunity against reinfection, at least temporarily (Kirkcaldy et al., 2020; Wajnberg et al., 2020).¹⁵ Such people should be searched for, identified and also certified of their status (see Eichenberger et al., 2020).¹⁶

A certificate stating the expected duration of immunity in the light of current medical science could be issued to people who have undergone the disease and acquired antibodies against it. Such people can then benefit from their usual freedoms and go back to their regular professions without undue restrictions. Antibodies and the associated immunity represent a potential sustainable exit strategy until a vaccine is available and distributed globally. Immune people are a valuable resource in maintaining functioning health systems, food supply and constrained infrastructures. Some developed and emerging countries (Germany, the UK, Chile) have proposed implementing immunity certificates. In Sub-Saharan Africa, this need not be an individual country effort, but regional bodies (e.g. the African Union) or structures established

¹⁵ On April 24, the WHO has suggested that there is not *yet* enough evidence about the effectiveness of antibody-mediated immunity (see <https://www.who.int/news-room/commentaries/detail/immunity-passports-in-the-context-of-covid-19>, accessed April 25, 2020). However, there is growing evidence accumulating that antibodies offer some protection (Kirkcaldy et al. 2020; Wajnberg et al. 2020). Moreover, vaccine development depends the assumption that there is some immunity to the virus.

¹⁶ Recently approved antibody tests appear to be reliable with a specificity higher than 99.8% and sensitivity of 100% (<https://www.roche.com/media/releases/med-cor-2020-05-03.htm>, accessed May 25, 2020).

amidst similar challenges (e.g. the African Centre for Disease Prevention and Control) could coordinate efforts. Governance principles of such bodies are comparatively well developed.

Clustered, dense and informal living arrangements in Sub-Saharan Africa may imply that virus could have already infected a significant amount of people in the region, giving them individual immunity. The individual immunity would confer to these people and the region a comparative *advantage*, possibly allowing them to move freely across the globe.

Taking a comparative perspective regarding certification

Some advocates argue that immunity to COVID-19 is not *yet* certain. This is correct, but immunity need not be certain for it to make a substantial difference.¹⁷ In general, certificates can never fully guarantee certainty.¹⁸ *Uncertainty always exists*, and certificates are not a way to eliminate uncertainty but to reduce it substantially.

There have been ethical concerns against certificates for antibodies. Such ethical concerns have also been refuted (Persad & Emanuel, 2020). The holder of a certificate has an advantage over those without immunity. The advantage may be as undeserved as a unique talent. However, unlike a talent, immunity is not a lasting advantage. As soon as there is a vaccine, the initial advantage is gone. Importantly, the non-immune population benefits from the increased employment of people with antibodies: through their work performance, their contribution to a working economy, and their tax payments. Finally, we should not underestimate that convalescents from COVID-19 were ill, suffered, and may face future health consequences. To deny these people a certificate that they have recovered from the illness and have some immunity to it is questionable from a comparative point of view. For once, particularly the poor, suffering and the vulnerable in Sub-Saharan Africa could benefit.

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¹⁷ Immunity conferred by a future vaccine is highly unlikely to be 100% certain. The German Robert-Koch-Institut highlights that the common flu vaccine protects 40 to 75% of people vaccinated (https://www.rki.de/DE/Content/Infekt/Impfen/Bedeutung/Schutzimpfungen_20_Einwaende.html, accessed May 05, 2020)

¹⁸ E.g., it is not guaranteed that all people holding driver license are capable of driving. However, most of them will be better drivers than those who do not have a driver license.

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APPENDIX

Sub-Saharan Africa

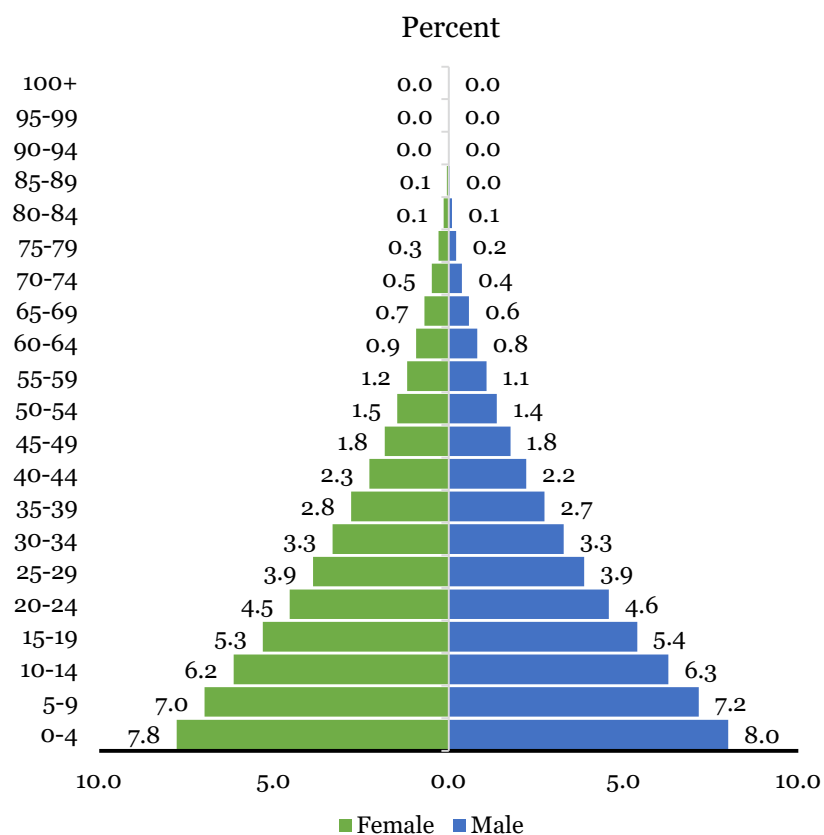


Figure A1: Population Structure of Sub-Saharan Africa.

(Source: Own illustration using data from www.populationpyramid.net.)