The effects of COVID-19 on global economic output and sustainability: evidence from around the world and lessons for redress

Anthony Kwame Morgana, Beatrice Aberinpoka Awafob and Theophilus Quarteyb

*Department of Geography and Rural Development, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana; bDepartment of Planning, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana

**ABSTRACT**

The coronavirus pandemic has ravaged the world, and its impact has permeated virtually all facets of society. The next wave of the COVID-19 shock will trigger another or more protracted recession in many countries, with annual growth projected to fall below recessionary thresholds. The resulting hit to global income as compared with forecasts for 2020 and 2021 will be enormous. The situation will be more precarious for developing countries across different income categories that are struggling with unsustainable debt burdens. Firms should implement business-continuity plans and ensure readiness for business constraints by prioritizing critical business activities and creating contingency plans for disruption. Governments should implement support programs to avert these difficulties. The shock to labor supply in each country should be managed in a manner that does not leave a post-COVID-19 world more disastrous. Close cooperation among all relevant actors is key to containing COVID-19 and mitigating its economic repercussions on countries around the globe. In addition, better waste management and commitment to climate change must take center stage to reduce the environmental impacts of COVID-19 on countries and the world.

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Diseases such as the Russian flu in 1889, the Spanish flu in 1918, Severe Acute Respiratory Syndrome (SARS) in 2002, and the Ebola epidemic in 2014 have altered the pattern of world affairs and changed the lifestyles of millions of people. The COVID-19 pandemic will have similar lasting effects (Saadat, Rawtani, and Hussain 2020). In terms of fatalities, the coronavirus is the most significant event since World War II (Arora and Mishra 2020; Klemeš et al. 2020). The environment, which supposedly influenced its outbreak and spread, has not been spared the many impacts COVID-19 is having on human society. As Salata et al. (2019) explain, there is little information about the original route of the transfer of the virus but it is thought to have emanated from a seafood-wholesale market in Wuhan, China. More specifically, several scientific assessments suggest that wild animals such as bats and pangolins were the source of the virus. This corroborates the 2020 Global Environmental Outlook Report of United Nations which observes that a new infectious disease emerges in humans every four months with 75% emanating from animals (Salata et al. 2019). These zoonotic diseases can spill over to humans when we destroy natural habitats and trade illegally in wildlife. These concerns raise a bigger question about the sustainability of the environment as we seek to curb the alarming trends associated with novel illnesses.

COVID-19 has since become an extremely challenging public health emergency for people, societies, and economies across the globe (Agyemang-Duah et al. 2020; Barro, Ursua, and Weng 2020; Morgan 2020). Identified to arise from the same family of viruses that cause some common colds, as well as SARS and Middle East Respiratory Syndrome (MERS), COVID-19 is similar to other respiratory infections such as influenzas. The worldwide outbreak of the deadly virus is imposing a heavy burden and putting healthcare systems under severe strain. The coronavirus outbreak is, first and foremost, a public health threat, but it is also, and increasingly, becoming an economic threat (Knotek et al. 2020; Morgan and Awafo 2020). In addition to its significant social impacts and human dimension, the outbreak is a major economic shock, calling for a decisive and coordinated political response (Wang and Su 2020). The spread of the virus is disrupting global supply chains, causing pronounced volatility in financial markets, creating consumer-demand...
shocks, and generating a wide array of adverse impacts in critical sectors such as transportation and tourism (Mishra 2020). In Europe, stock markets have fallen around 30% compared to mid-February 2020, their sharpest monthly decline since the start of the financial crisis in 2008, and uncertainty about the health and economic consequences of the pandemic remains high.

The current disaster will trigger a recession in many countries, with a deceleration of global annual growth expected to be 2.5% (Mishra 2020). The resulting hit to global income, compared with forecasts for 2020, will hover around the trillion-dollar mark. A major question is could it be worse? The duration and depth of the crisis will depend on three questions: 1) How much further and rapidly will the virus spread? 2) How long will it be before we develop and distribute a vaccine? and 3) How effective will policy makers be in mitigating the damage to our physical and economic health and well-being? The uncertainty surrounding each of these questions is adding to people’s sense of anxiety, which is a fourth variable that will shape the outcomes of the current predicament. As unequivocally asserted by Chinese president Xi Jinping on February 23, 2020 “It is unavoidable that the novel coronavirus epidemic will have a considerable impact on the economy and society” (Sen et al. 2020; UNCTAD 2020a). Besides its worrying effects on human life, the strain of the novel coronavirus had significantly slowed down the Chinese economy in the first and second quarters of 2020 and the global economy. Since China has become the central manufacturing hub of many global business operations, any disruption of China’s output will have repercussions elsewhere through regional and global value chains. That said, China has entered a phase of relatively rapid recovery that is dependent on the potential to prevent a second wave of the virus, but the rest of the world is still battling this pandemic and its multifaceted effects.

Trade has, in recent months, become cumbersome and more expensive. These higher costs are having the same effect as temporary non-tariff trade barriers. Countries with sizable exports are – and will continue to – experience a temporary decline in their export market shares due to trade problems. Indeed, the measures put in place to contain COVID-19 (restrictions to economic activities and movement of people), could hinder the supply of critical products, therefore affecting output (Eichengreen 2020). Also, trade and transport (via land, air, and sea) have been significantly affected by the outbreak. Vulnerable industries are experiencing, and will continue to experience, a drop in demand as consumer confidence waivers, and some may face liquidity issues sooner rather than later (Guan et al. 2020).

A moderate to a severe recession will have serious consequences but larger, more diversified economies with less dependence on international trade and/or foreign income are likely to prove better able to weather slowing growth. Significant central bank intervention and government-support programs (extended unemployment insurance, credit support for small- and medium-sized enterprises (SMEs)) must be implemented to avert these difficulties. The shock to labor supply in each country will be influenced by three factors connected to COVID-19 including mortality due to infection, morbidity due to infection, and morbidity arising from caregiving for affected family members.

What does this imply for developing countries? Over the past decade, this group of nations has experienced deepening financial and debt vulnerabilities against a backdrop of tepid economic growth, slowing trade, sluggish real investment, and growing income inequalities. Developing countries across different income categories, and with very different structural features, are struggling with unsustainable debt burdens. Almost half of poorer economies have been assessed by the International Monetary Fund (IMF) to be at high risk of sovereign external debt distress or were already in debt distress at the end of 2019. In 2018, the total debt of developing countries – private, public, domestic, and external – reached 191% of their combined gross domestic product (GDP), the highest level on record.

As a result, fast-growing developing countries’ indebtedness has come with specific features that do not bode well for their ability to withstand another external shock, such as the one being caused by COVID-19. A major concern is that developing countries, already facing deteriorating debt positions, will not have the same reserve cushion as wealthier counterparts to withstand a temporary, but possibly pronounced, impact of the COVID-19 shock on their economies. China has become an important source of financing for developing countries, with loans to emerging market and frontier economies increasing ten-fold (from US$40 billion in 2008 to US$400 billion in 2017) (UNCTAD, 2020c). Although, China seems to have avoided a second COVID-19 wave, which is speeding up its recovery rate, recipient countries of Chinese aid are likely to be affected in the future as the COVID-19 shock to the Chinese economy proved to have had great impacts on its economy, including its ability to maintain long-term lending into developing countries.

The economic cost of the pandemic can be proxy by forgone GDP, namely the variance between current forecasts and pre-COVID-19 projections. From
all indications, the impact will be huge. There are also possible long-term damages from a prolonged economic shutdown, which are even more difficult to quantify, but potentially significant. Bankrupt firms will make no output contribution after the economic situation returns to some form of normalcy, and could disrupt supply chains of surviving firms. In terms of workers, unemployed people could lose skills and long-term relationships with firms which are costly and will require an extended period of time to re-establish. Hardship and demoralization could, in turn, have an impact on labor productivity. Experiences from past recessions suggest that these scars on the economic fabric can be deep and persistent (Eichengreen 2020).

On the environmental sustainability front, it must be emphasized that COVID-19 significantly attenuated human mobility, which, in a positive way, led to certain reversals in prevailing patterns of environmental deterioration (Muhammad et al. 2020). Improvements in air quality, reduction in water pollution, limited emissions of toxic substance from industries and waste fires were recoded (Rupani et al. 2020; Kanniah et al. 2020). However, there are also other thorny issues that the pandemic raised in terms of the global effort to pursue environmental sustainability. These concerns include climate change and wildlife- and engendered-species protection. COVID-19 is likely to impact waste-management issues across the world that are on the ascendancy. Waste from healthcare facilities as well as household items from quarantine locations are increasingly generated each day. The rise of locally manufactured nose/face masks end up being discarded as a new source of environmental pollution (Arimiyaw, Abass, and Morgan 2021). Within households, the lockdowns instituted as part of COVID-19 containment measures are leading to expanded volumes of plastic waste (Klemes et al. 2020), increased littering, and open burning and illegal dumping of refuse.

Additionally, there are increased amounts of both non-recyclable waste and organic waste (UNCTAD 2020b). As Rajmohan et al. (2019) explain, even before the pandemic, plastic wastes were regarded as a critical environmental pollutant because of the challenges to terrestrial and aquatic ecosystems. Of more concern is the discontinued provisions of formal and informal waste services. Countries must compensate for the shortage of workers due to high infection rates from COVID-19 and the large numbers of people that have to self-isolate when they contract the virus. This situation is worse in developing countries where there is a deficit in waste-management practices due to financial and technical constraints, as well as attitudinal factors (Alpizar et al. 2020).

Despite the reported improvement in air and water quality (Andree 2020; Travaglio et al. 2020), there is a huge climate concern as factories push to make up for the period lost. This is likely to increase environmental pollution and even surpass pre-COVID-19 discharge levels. Industries that deal in fossil fuels, plastics, and even automobiles are likely to take advantage of economic implosion and embark on a production spree without recourse to environmental compliance; especially in the wake of the concentrated attention of alleviating the economic impacts of the pandemic. Governments will have to enforce strict rules on the environmental impact of the activities of these companies while ensuring that people retain employment to limit the burden on families and livelihoods. In the United States, for example, there have been in certain instances, a suspension of enforcement of air and water pollution regulations and the state’s ability to block energy projects have been curtailed (Gardiner 2020). There is also in effect provisions to eliminate environmental reviews and opportunities for public input on new mines, pipelines, and highways. In effect, governments are striving to shore up economies by bolstering old polluting industries.

Another matter that COVID-19 raises is the likelihood of diverting leaders’ attention from climate issues and instead focusing on the health dimensions and economic impacts of the pandemic (Hepburn et al. 2020). Climate change has been a challenging issue to put – and keep – on the political agenda, but it seems to have gained currency in recent years. However, with the enormous disruptions caused by the pandemic, global leaders are most likely going to channel all their resources and effort toward dealing with the health crisis. This reorientation of attention weakens capacity for reducing greenhouse-gas emissions and addressing other environmental concerns of global importance. Ultimately, this could result in a zero-sum game where the end of the COVID-19 crisis triggers more severe climate-change challenges due to the time required to recover from the current period of minimal attention.

What should be the way forward? First, individual firms should implement business-continuity plans to reassure employees and demonstrate readiness for supply-chain constraints, demand shocks, and impacts to business partners by prioritizing critical business activities. Companies should be evaluating their financial outlook, modeling supply and demand across several scenarios, and identifying potential interventions and contingencies for subsequent impacts and/or sustained challenges.
Above all, following the recommendations of the Team on COVID-19 Outbreak, only solidarity and worldwide coordinated solutions will be able to effectively manage this public health emergency. In other words, a collectively shared sense of purpose between countries, regions, cities, and peoples is needed to contain the spread of the virus, to help patients, and to counter the economic fallout. This calls for a set of core measures and a consistent and clear common approach. Close cooperation among all relevant actors is key to containing COVID-19 and mitigating its economic repercussions on countries around the globe.

The COVID-19 pandemic brings to bear the grave issue of environmental sustainability. Once again, it is teaching us to take proper care of the biosphere of which we are just constituents. Owing to the symbiotic relationship between humans and the environment, efforts must be made at the micro, meso, and macro levels to achieve a sustainable environment, as envisaged in the sustainable development goals (SDGs). First, solid waste (particularly wastes from medical equipment, used face/nose masks and general household waste) must be appropriately discarded to avert the deleterious effects that indiscriminate waste disposal has on the environment. State and local governments, particularly in the developing world, should partner with agencies and private individuals to collect and appropriately manage the collected wastes. For instance, formal and informal waste collectors should work together to achieve the common purpose of maintaining a clean environment. Due to deficiencies in waste management in the developing world, much effort is required in these nations to bring them up to par as far as managing waste during and after this pandemic is concerned. These efforts must be complemented with public education and sensitization on waste management and adherence to good hygiene practices so as to strengthen the efforts of the state and the ancillary agencies. The public education and sensitization should include waste segregation so as to provide for recycling of plastic waste.

In spite of the successes pertaining to improvement in air and water quality as a result of the lockdowns, huge climate concerns are emanating as factories push to make up for the period lost following a gradual opening of the affected countries. This situation, if not checked, is likely to increase environmental pollution to a level that will surpass pre-COVID-19 rates. Governments, through their respective ministries and agencies, must work with supporting institutions such that they are able to effectively regulate the volume of production-related emissions released into the environment. Although policy makers want to support businesses to reverse the hardship of the pandemic, this should not result in a reduction of environmental compliance. The efforts of some governments to shore up economies by bolstering obsolete polluting industries must be discouraged. There is a public obligation to protect and safeguard the environment, and that must not be compromised for economic reasons. More than ever, environmental laws, principles, and standards must be stringently upheld to avert serious environmental consequences during the post-pandemic period. All hands must be on deck since it is a collective responsibility. The pandemic has shown us that if we want our ecosystems to take care of us, we need to take care of the ecosystems (Paital 2020). As global citizens, we must support the efforts of our leaders as the world navigates through the deleterious impacts of the current pandemic.

**Disclosure statement**

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**ORCID**

Anthony Kwame Morgan &lsquo; http://orcid.org/0000-0001-7904-9955

**References**

Agyemang-Duah, W., A. Morgan, J. Oduro, A. Peprah, and A. Fordjour. 2020. "Re-Integrating Older Adults Who Have Recovered from the Novel Coronavirus into Society in the Context of Stigmatization: Lessons for
