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The Impact of the Covid-19 pandemic on economic growth and poverty in West Africa

Elders built our countries, so we need to protect them now against Covid-19

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In memoriam of Gohou L. Sylvain (a.k.a. Sly B) | 1967-2020

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Summary

In 2020, the west Africa countries' economies will contract by 5% and the number of poor will increase by 17.7 million due to the pandemic Covid-19.

This note estimates the impact of the pandemic Covid-19 in West Africa (15 ECOWAS countries) in terms of economic growth and poverty. The impact of the Covid-19 has been compiled using the economic decomposition by industry to estimate the GDP lost 2020. Two scenarios have been assessed: one optimistic (short duration disease, quick availability of a cure, low fatality rate,…) and a pessimistic one (long duration disease, no rapid cure, economic lockdown, high fatality,…). In the optimistic scenario, the GDP growth for ECOWAS will range between -5.1% in 2020 and - 2.1% in 2021. In 2020, 17.7 million new people will fall under the poverty line. In the pessimistic scenario, the GDP growth rate will be -18.7% in 2020 and 54.6 million new people will be poorer.

What can ECOWAS countries do?

- **Listen to public health experts;**
- **Implement measures to reduce the spread of the Covid-19;**
- **Be proactive in testing for Covid-19**
- **Support businesses, especially SMEs;**
- **Support the informal sector;**
- **Implement an emergency program for all households;**
- **Improve country's health systems.**

Introduction

What is the impact of the Covid-19 in West Africa countries? Two key assumptions that need to be made including (i) the spread and impact of the Covid-19 from a medical perspective, and (ii) the choice of an economic model and the techniques to estimate the economic impacts. This note follows the available literature and uses a national account model to estimate the impact of the pandemic on the supply and the demand side of the economy.

The estimation of the impact of the Covid-19 pandemic is done at two levels: macroeconomic and poverty. As the pandemic will bring some losses due to illness and death, the macroeconomic impact is measured in term of the evolution of GDP growth. The poverty impact level will be assessed by the number of new persons falling under the poverty line due to the pandemic.

The model[1] is mainly based on the impact of the pandemic on the demand side of the economy. We analyze the possible effects on the demand side that result from the shutdown of most of the economy and the implementation of the social distancing. The demand-side effect is calculated by decomposing the GDP by industries (economic sectors) and assume different declines in demand for different industries, based on conclusions around the degree of social interaction required in these industries and past experiences. Given that there is little historical evidence available to form these estimates, they are admittedly imprecise. Industries that cannot operate without social distancing are assumed to have the largest decline in demand.

Two scenarios are used: The **optimistic** and the **pessimistic** scenarios. The optimistic scenario assumes a low impact of covid-19 on ECOWAS countries. This may be because Africa in general has already several current diseases (malaria, Ebola, pneumonia,…) that keep busy the current health system. In this scenario, the pandemic will last for the last quarter of 2020 and the recovery will begin toward the fourth quarter of the year. Therefore,

[1] It has to be noted that these estimations have been done with assumptions on the evolution of some economics variables, the government's actions to stop the spread of the pandemic and the length on the pandemic. Cautions need to be taken as any change in the assumptions will change the results of our model.

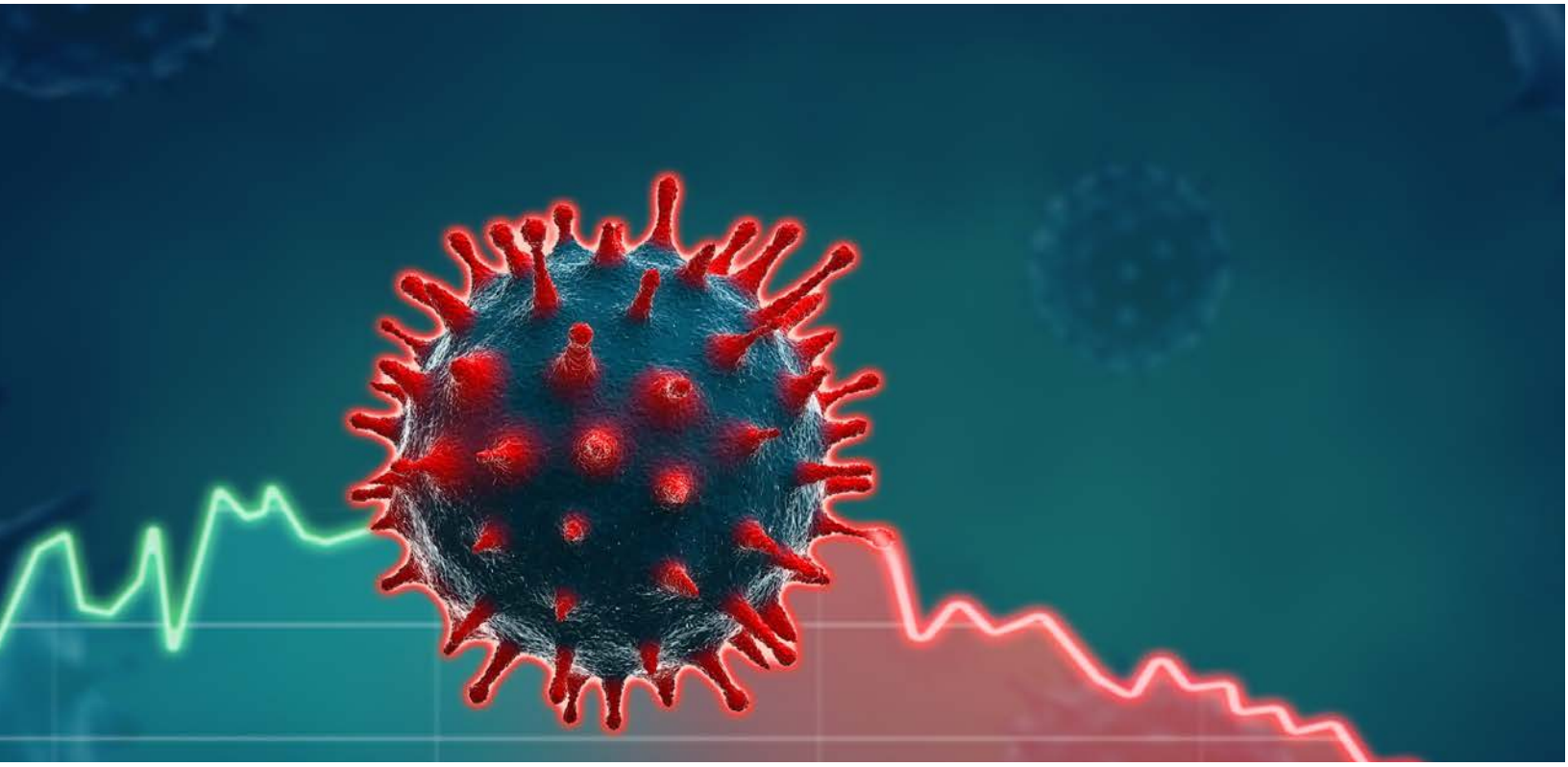
there is no significant negative impacts on the economies, but reduced working time and a revision of working protocols in most of the firms. Finally, a cure and vaccine is found in the fourth quarter of 2020 and first quarter 2021. Hence, all countries open up their borders, international trade and travels can then resume.

The second, the **pessimistic** scenario, assumes a high impact of the pandemic on the ECOWAS countries. In this scenario, the pandemic lasts for at least until the last quarter of 2021, and no cure is found until this time. Hence, ECOWAS countries will shut down their economies (as well as their informal sectors) like in Europe and America, and people will be confined at home. The scenario assumes that economic sectors, where, social distancing is not possible will be reduced by half in 2020 (entertainment, hospitality…). Finally, it is assumed that the impact of the pandemic in 2020 will be reduced by half in 2021.

Main assumptions

Scenario	**Optimistic**	**Pessimistic**
Length	Short : Last quarter of 2020	Long: last quarter of 2021
Cure	3rd quarter of 2020	3rd quarter on 2021
Vaccine	1st quarter of 2021	1st quarter of 2022
Public Health	• No social distancing • Medical masks for all compulsory	• Social distancing • Curfew
Economic	• No economy lockdown	• Lockdown of non-essential businesses and families

Note: refer to annex 2 for more detailed

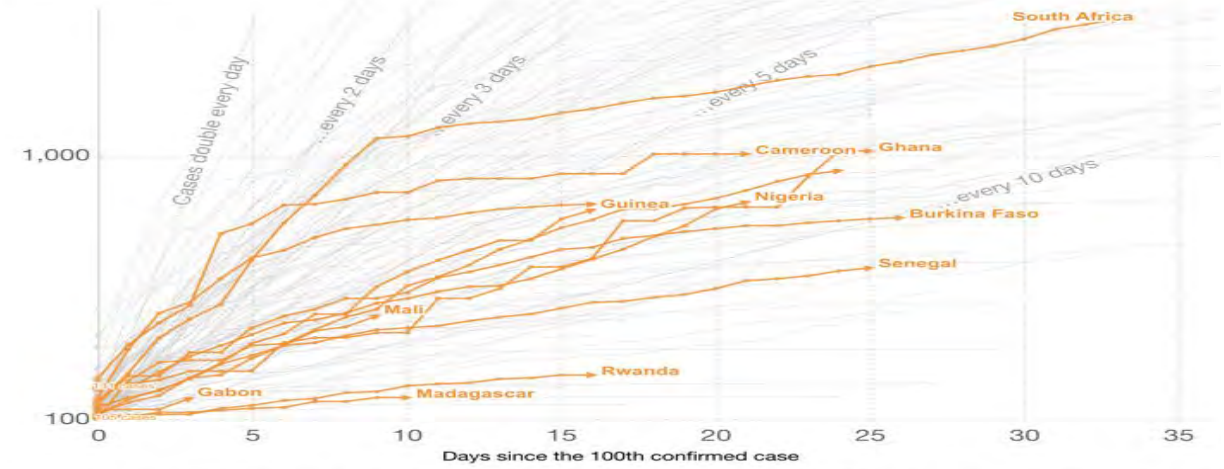


The Covid-19: new and old pandemic

The Coronavirus Disease 2019 (Covid-19) is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first case was identified in Wuhan, the capital of China's Hubei province in November 2019 and reported to the WHO on December 31st, 2019. The main symptoms are similar to the current flu (cough, fatigue, sore throat, loss of smell and taste, fever…). Since the first reported cases, Covid-19 cases have been reported in all continents[2], and have been steadily rising around the world. The transmission is mainly carried from person-to-person via respiratory droplets. Droplets typically do not travel more than two meters (about six feet) and do not linger in the air.

The Covid-19 became a pandemic in less than three months mainly because of the ease of its transmission and the interconnection among countries where today somebody with the disease can be in one country and tomorrow another. By the time governments started understanding the disease and took proper **measures** to reduce the spread, it was too late as it had already arrived in their countries. As of April 2020, the epicenter of the pandemic moved from China, Italy, Spain to New York city, USA.

Figure 1: Total Covid-19 confirmed cases, selected African countries



Source: Authors, European CDC, ourworlddata.org, April 2020

Somehow, Africa is the continent with the least cases of Covid-19 (less than 10,000 cases as a whole) with South Africa, Cameroon and Nigeria having most of the cases. However, as the health community is working to better understand this new virus, the many variables of its transmission, the incubation period, and more importantly, how to cure it, which is currently unknown. Hence, most of the African countries have

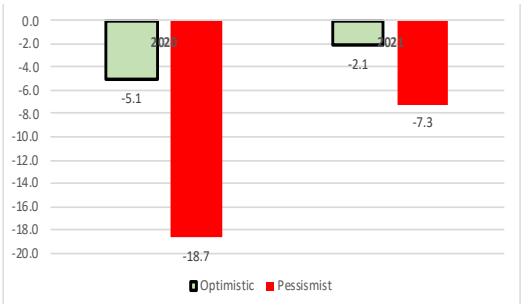
[2] except for Antarctica

implemented several measures to reduce the spread of the disease (the closing their borders, enforcing of social distancing measures, curfew, wearing of the facial mask…).

Impact on the economy: West African countries will contract by 5% in 2020

Optimistic scenario. In this scenario, a cure is found during the last quarter of 2020 and the pandemic stops before the end of 2020. The impacts of the Covid-19 pandemic will be important in terms of Gross Domestic Product (GDP) contraction. GDP growth for ECOWAS' countries will range between -5.1% in 2020 and - 2.1% in 2021. ECOWAS countries with the highest economic contraction are Nigeria, Benin and Liberia with an average GDP growth rate of

Figure 2: Impact of Covid-19 in ECOWAS countries: 2020 - 2021 Economic Growth rate

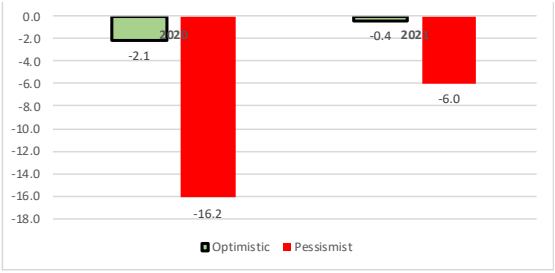


- 5.6% in 2020 and -2.6% in 2021. Nigeria significant decline in its GDP is due to a mixture of the impact of the Covid-19 (with the reduction of international trade, its transport, and manufacturing sectors,…) and the historical plunge in oil prices. It has to be noted that oil sector is Nigeria's largest and for the first time in history, the price of the barrel of oil was negative in April 2020. For Benin and Liberia, the large decline in GDP is due mainly to their tourism (hotel and restaurant) and manufacturing sectors.

Pessimistic scenario. In this case, the Covid-19 has a stronger negative impact on ECOWAS countries, one can expect an economic recession with a growth rate of -18.7% in 2020 and another recession in 2021 with a contraction of the economy of ECOWAS countries of about -7.3%. In this scenario, all the ECOWAS countries, except for Bissau-Guinea (-7.8%), will experience a huge contraction of their economies by at least -10% in 2020. Benin and Cabo-Verde will have a GDP contraction above 20%, mainly due to the impact on their hospitality and transport sectors. Liberia, Nigeria, Ghana and Togo will experience a GDP reduction of between 18 and 20%.

The impact of the Covid-19 on WAEMU is less than the one observed for ECOWAS. Indeed, the

Figure 3: Impact of Covid-19 in WAEMU countries: 2020 - 2021 GDP Growth rate



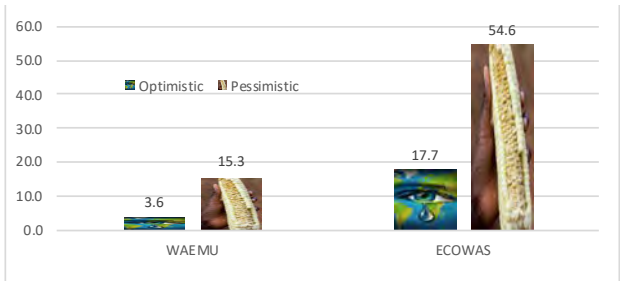
WAEMU economies contract by 2.1% in 2020 and 0.4% in 2021 in the optimistic scenario. In the pessimist scenario, the GDP growth will be -16.2% in 2020 and -6.0 in 2021.

Impact on Poverty: 17.7 million new poor in 2020 due to the Covid-19

The economic contraction in ECOWAS has huge implications in terms of people living in poverty. We estimate the number of new poor (US$1.90 a day at 2011 PPP) due to the covid-19 impact on GDP growth using the poverty growth elasticity for each country. In the optimistic scenario, about 17.7 million additional people will become poor. Hence, the number of poor people will go from about 176.0 million poor to 193.7 million. Guinea-Bissau is the country with the highest poverty incidence (69.8%) while 7 additional countries have a poverty incidence above 50%.

In the pessimistic scenario, the number of people falling below the poverty line is threefold, at 54.6 million people. The total number of poor will be in this case about 230.6 million. Due to its population size, more than 68% of the new poor will be in Nigeria. Besides Ghana (14%), Cabo Verde (19%), Cote d'Ivoire (34%) and Liberia (48%), all the other countries will have a poverty incidence above 50%.

Figure 4: Impact of Covid-19 on poverty, number of new poor



Regarding WAEMU countries, the impact is relatively higher in terms of new poor. In the optimistic scenario, 3.6 million are falling below the poverty line while this number is multiplied by 5 to state at about 15.3 million. The total number of poor will increase from 60 million people to 71.8 poor in WAEMU countries.

What's next: Policy implications

What developed countries do to sustain their economies?

With the pandemic and the lockdown that followed, most of the developed countries are (still) implementing measures to reduce the spread of the disease and avoid the collapse of their economies. The measures are taken at three levels: (i) business support; (ii) household support while staying at home; and (iii) public health.

Businesses support. To comply with the public health regulations, developed country governments ordered all schools and non-essential businesses to close for a period of 5 to 8 weeks. This is the first time that most of these countries closed businesses from one day to another. To support these businesses from collapsing, governments have put in place several measures. These measures, available for businesses that experience a decrease of revenue due to Covid-19, include: (i) a wage subsidy for businesses that keep the workers on the payroll even if they cannot work[3]; (ii) a loan program, without interest for SME[4]; (iii) a program to support the SMEs to pay rent for their premises; (iv) a delay in tax payments. These measures aim at maintaining the industrial structure of their economy while the search for a vaccine is ongoing.

Household support while staying at home. At the household/worker level, it is the stay-at-home and social distancing that are at play. However, households must be able to cover their minimum financial needs in order to follow such a policy. To do so, several measures have been implemented including: (i) access to unemployment benefits for workers that have lost their jobs and who qualify for this program[5]; (ii) an emergency support benefit for workers that do not qualify for unemployment benefit, and lost their job;[6] (iii) a program with the commercial banks to postpone for 3 to 6 months mortgage or credit card payments; (iv) a special child support component; and (v) student support to compensate unavailable summer jobs.

Public health. Three steps undertaken include testing, the provision of health care, and the implementation of safety regulations. As the disease spread, governments began to test people with symptoms, but testing kit equipment was in short supply and the results were taking over a week to

[3] Canada offers a wage subsidy of 75% to all businesses that keep their workers on the payroll.
[4] Canada provides, through commercial banks, a 100% guaranty loans of up to $40000 or $150000 depending on size of the business to continue operations or get ready to relaunch their operations after the lockdown.
[5] Canada eased the access to unemployment benefits.
[6] The US provides a one payment $1200 benefit for all Americans above 16-years-old and a US$500 for each minor. Canada provides, for 4 months, a $2000 benefit payment for workers that lost their job and do not qualify for the unemployment benefit.

process. Wider testing is being carried out for most of the people who want it as a way to have a broader picture of the spread of the disease and in order to design means to reduce it. The second public health action was to provide health care to everyone with the Covid-19. This was done by postponing the provision of health care to non-urgent diseases and afflictions (dentists, optometrists…). The aim was to free more resources in the health system to accommodate people with Covid-19. Hence, many hospital beds were to be made available for the crisis and to take care of people that needed to be hospitalized or monitored closely in Intensive Care Units (ICU). The last action of the public health response is a new set of safety regulations, such as, social distancing (1 to 2 meters between individuals), washing hands for at least 20 seconds, and wearing protective masks. The most important measure, however, is the lockdown of the country with schools and non-essential businesses being ordered to close shops, and workers to stay at home. These public health measures come at a very high cost which government is providing.

What can ECOWAS countries do?

The actions above taken by developed countries cannot necessarily be applied in developing countries because of fundamental differences: especially **the size of the informal sector**. All the above measures are possible because of the large size of the formal sector in the developed countries. Anyone or those with businesses in the informal sector in developed countries cannot benefit strictly from these measures. Developing countries, including ECOWAS countries should adapt these measures to their own context and tailor them to suit their needs.

To reduce the effects of the Pandemic in ECOWAS, countries must implement at least the following measures:

- **Listen to public health experts;**
- **Implement measures to reduce the spread of the Covid-19;**
- **Be proactive in testing for Covd-19**
- **Support the businesses, especially SMEs;**
- **Implement an emergency program for all households;**
- **Support the informal sector;**
- **Improve their health systems.**

- **Governments must listen to public health experts and act quickly.** With the Covid-19, politics must be put to one side in order to effectively solve the pandemic problem. Government decisions should be guided first by public health and then bt international health organizations like the WHO. The public health[7] systems of the ECOWAS countries must design protocols and regulation to be followed to reduce the impact of the pandemic. The public health authorities must design a plan to manage the pandemic based on other countries experiences and their current situation. They should convince their governments to take the issue seriously and act very quickly. Experiences around the world show that most of the countries that downplayed the Covid-19 found themselves in a very difficult situation to manage the impact which overwhelmed health systems and could not provide enough health care for everyone with Covid-19.

- **Sound actions must be taken to reduce the spread of Covid-19.** Under the guidance of public health authorities, government must implement measures to reduce the spread of Covid-19, including **partial lockdowns, curfews, and the wearing of facial masks.** The total lockdown of businesses is not possible in Africa without dramatic consequences for the population because of the large size of the informal sector. However, the **partial lockdown of selective businesses** can be done. For instance, the closing of all businesses that by definition favor close human interaction (bars, night clubs, movie theaters,…) and a curfew should be enabled to force people to stay at home. The second step to reduce the spread is mandatory wearing of facial masks (not the social distancing). As commercial malls and supermarkets are not widespread, social distancing is a challenge, especially in the cities, it is almost impossible to respect. However, if the government enforces the already existing laws, partial social distancing can be easily implemented[8]. In addition to partial social distancing, the key element for African countries will be **wearing the facial mask**. Governments must make it

[7] It is assumed that the public health director/manager in the country has been nominated because of her/his competency and experiences and not only because of political allegiance.
[8] For instance, avoiding sur-booking in taxi or other transportation

mandatory as it prevents people with the disease in spreading it. Even if it is a traditional mask, it is better as the lockdown and social distancing will be difficult to enforce.

- **Large scale of testing for Covd-19.** Knowing who has the virus is critical for public health authorities to design protocols and measures to reduce the spread of the virus. As more and faster testing kits become available, government should devote a significant part of their budgets to finance testing kits and test as many people as possible. The government should also be proactive in the testing exercise and go to the population for the testing. It should not wait for people to show up at the health center or hospital to be tested. Vulnerable people and the ones at risk will only show up at the hospital at a very advanced stage of the disease. The government must hire social workers/volunteers to do widespread testing in cities, especially in the poor areas.

- **Government must support businesses through financial support and delays in tax payments, especially for SMEs**. The government must design a program to make funds accessible to businesses to support their operations during the partial lockdown. Indeed, with social distancing and reduced working hours, some businesses may experience difficulties to continue operating. Formal businesses

must receive financial support from the government in terms of tax payments – VAT- refund (and postponement). Businesses (restaurants, bars, …) that also need to be closed must be compensated based on their income declarations from previous years.

- **Implement an emergency program for all households.** Workers who lost their jobs should receive an enhanced unemployment benefit from the government's social security systems. If such a program does not exist, the government must design a benefit program to support these workers.

- **Financial support for the informal sector.** The success of government programs to fight Covid-19 will depend mainly on how the informal sector is

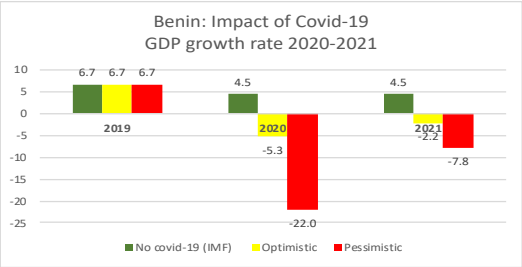
managed. As more than 70% of the population are working in the informal sector, there will be no incentive to follow government regulations if alternative solutions are not offered to these people. Government should offer universal financial support to all households with no or low income. Registration for such a program can be carried out on a dedicated website that will be developed by the government. Cell phone numbers can be also used to provide cash to people.

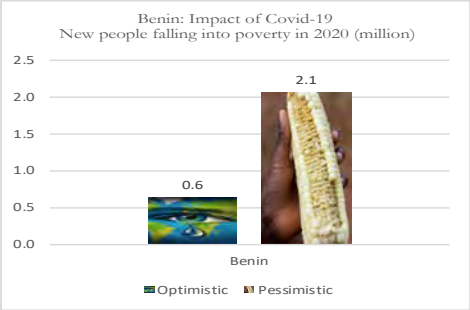
- **Covid-19 is an opportunity to improve the public health system.** The last and most important issue is to use this crisis to improve the health system. Improving the public health system includes establishing working protocols and providing financing for the system to be better equipped. Prevention campaigns are also key to improving the public hygiene. Prevention is not only generally more economical; it is also the only effective means of preventing this type of pandemic in the future. Finally when a vaccine is ready, a large-scale mandatory immunization[9] program must be launched to ensure a reduction of the impact of this disease.

[9] The fact that immunity can be conferred through exposure to small doses of the smallpox virus from an infected individual was known in China in the 11th Century, even though the mechanism was not understood. This knowledge spread westwards to Europe, and subsequently to Africa and the Americas.

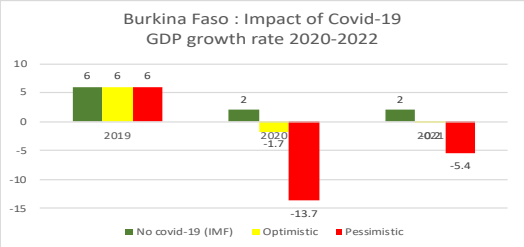
Countries results summary

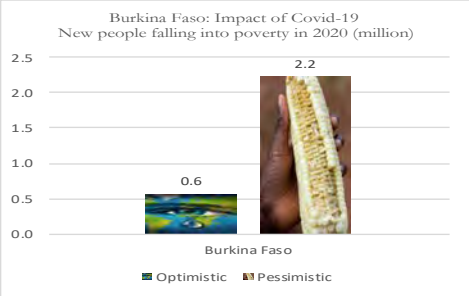
Benin



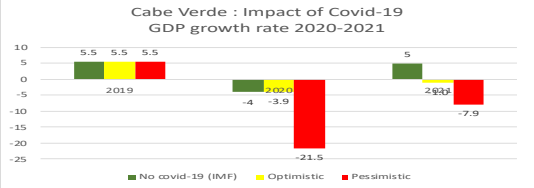


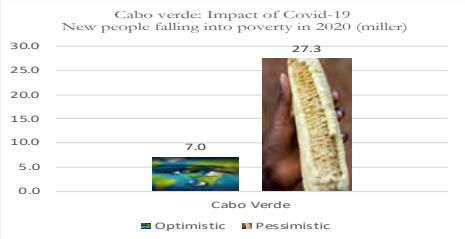
Burkina Faso



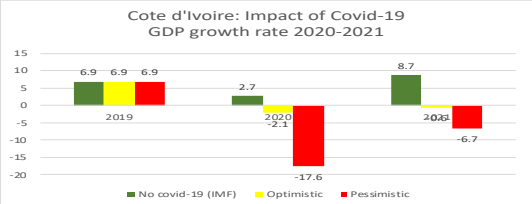


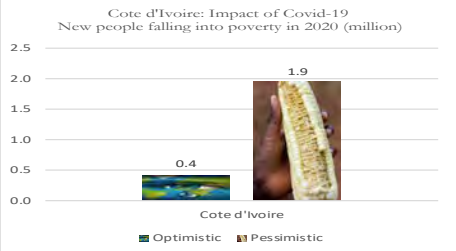
Cabo Verde



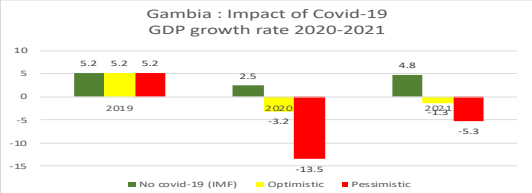


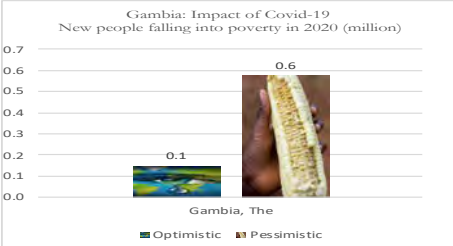
Cote d'Ivoire



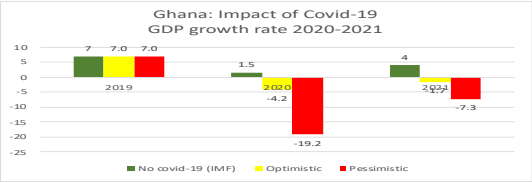


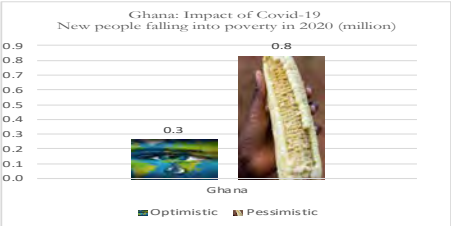
The Gambia



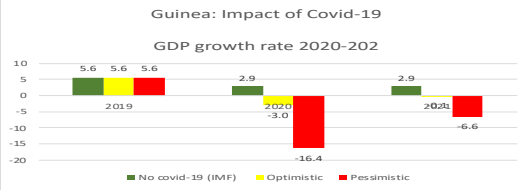


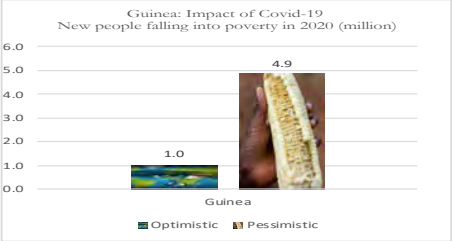
Ghana



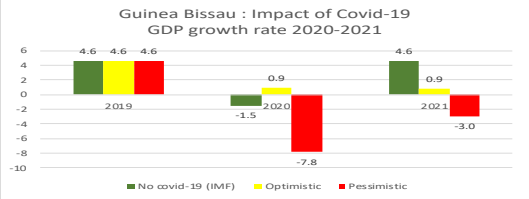


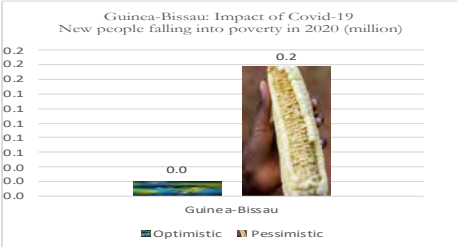
Guinea



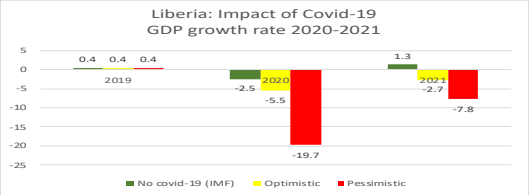


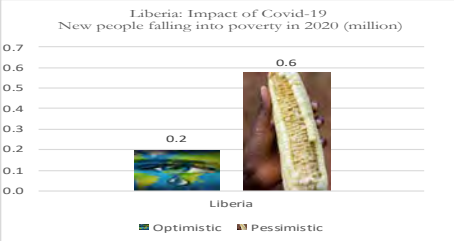
Guinea-Bissau





Liberia





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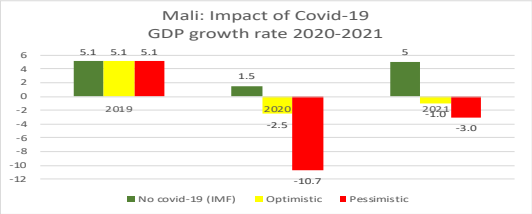

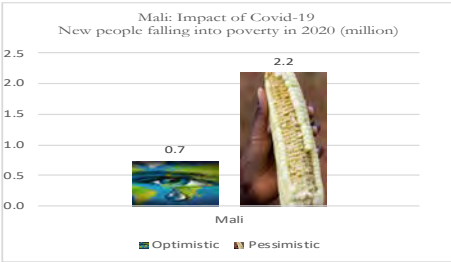

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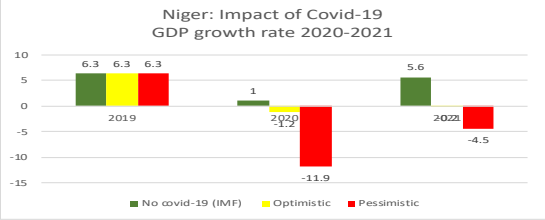

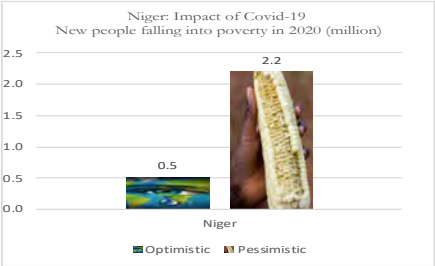

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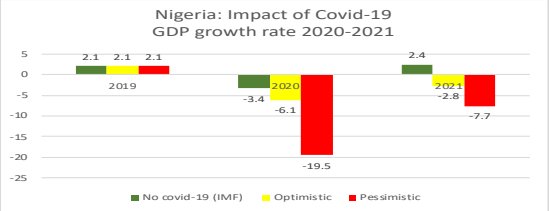

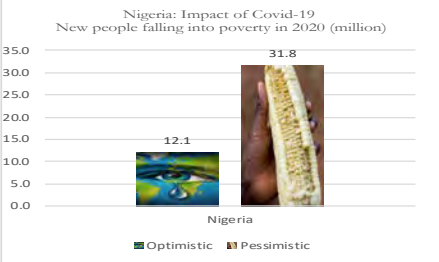

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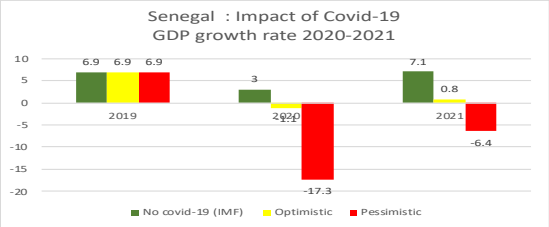

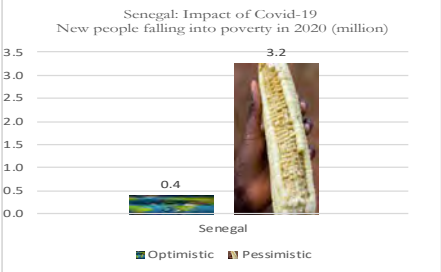

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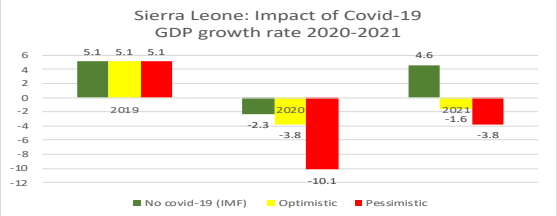

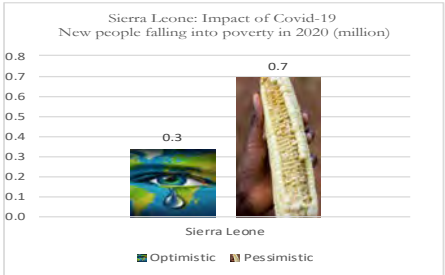

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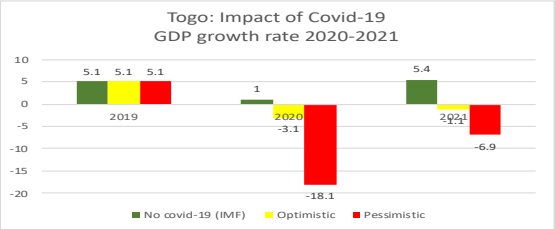

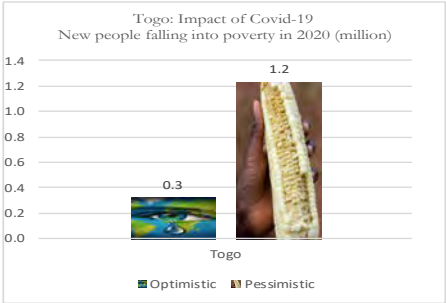


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Technical annexes

Annex 1: Pandemic: a quick review and lessons learned

The economic impacts of pandemics are comprehensive and difficult to assess. The relationship between the costs at the micro and macro levels varies significantly, as well as direct and indirect costs, and that between long- and short-term effects (Lewis 2001).

The estimation of the costs of a pandemic using a macro-model for the EU-25 (Jonung and Roeger 2006), found a GDP loss of -1.6 percent in the first year of the pandemic. This loss reduced in the second and third year of the pandemic, but a long-run negative effect of - 0.6 per cent remained due to the reduction in the labor force caused by the pandemic.

After the last pandemic of the 2000s, the economic impact of the four key pandemics in the world (the Black Death, 'Spanish' flu, HIV/AIDS and SARS) have been assessed and compared (Bell and Lewis 2004). The model of transmission of the diseases are diverse: airborne (influenza, diphtheria, whooping cough, SARS), contact with blood and other bodily fluids (HIV/AIDS, typhoid), ingestion of pathogens (cholera), and insect bites (bubonic plague, malaria, yellow fever).

The Black Death 1347 – 1351. The plague swept through Europe between 1347 and 1351. The death toll ranged from a quarter to a third of the population. There were more significant developments on the biological front, as the pathogen mutated. From the bubonic plague, which is transmitted by flea bites there arose the pneumonic plague, a form of transmission by sneezing and coughing, a far more efficient and deadly means of transmission among humans. All population groups were equally affected (Cohn 2003). In addition, the pandemic had a huge impact on factor prices (land, labor and capital), and productivity. While real wages rose after 1350, the return on capital declined. Land rents fell and then fluctuated around this lower level. The direct longer term impact of the Black Death on the level of productivity in Europe was negligible (Clark 2003).

The Influenza Epidemic of 1918-19 (Spanish flu). The Spanish flu[10] hit the world in 3 waves, the second of which, in 1918, was the deadliest as it killed more than 40 million people (Potter 2001). This flu increased the mortality rate among the population of working age (adults ages 15-44). The impact of this pandemic on the US economy found that **the higher the death rate due to influenza in 1918-19, the greater the proportional increase in real per capita income between 1919-21 and 1930.** One explanation is that the heavy, but short-lived, concentration of deaths among the most productive age groups in 1918-19 caused an immediate reduction in real per capita income. This was a shock from which the level of the latter progressively recovered over the years that followed, and so resumed its earlier long-term path. The larger the shock, the stronger was the transient element representing the recovery (Brainerd and Siegler 2003).

HIV/AIDS. The HIV virus that appeared in the 1970s began to claim a large number of the working age population in early 1980s and the virus was officially discovered in 1984. In 2019, 74.9 million people were infected and 32 million have died since the beginning of the pandemic, and 1.7 million were newly infected (UNAIDS 2020). AIDS has killed more people than any other communicable disease over the last two decades. The course of the illness in an infected adult is insidious, long, and ultimately fatal, with a median time between infection and death, if untreated, of about a decade. At the macroeconomic level, various studies found a modest impact, especially in the short to medium term. Indeed, most attempts at macroeconomic modeling in the 1990s yielded virtually no economic effects at all (Bloom and and Godwin 1997), (Bloom and Mahal 1997), (Bonnel 2000).

SARS 2002-2003. The Severe Acute Respiratory Syndrome (SARS) was caused by a coronavirus that is believed to be transmitted via wild animals. If measured by its number (global mortality and morbidity), SARS must be judged unimportant. It is originated from China in 2002, and spread to Hong Kong, Vietnam and other East Asian countries. From 2002 to 2003, there was about 8422 probable cases, 916 of them fatal, reported from 29 countries.

[10] It has to be noted that this flu did not begin in Spanish. It is believed that it began somewhere in the USA (may be Kansas) but it was named "Spanish flu" after the King of Spain got sick. It was the first country leader to get the disease hence it was named Spanish flu since then.

Annex 2: Assumptions

Estimating the macroeconomic effects of Covid-19 right now, is difficult. The literature is short of studies for past pandemics. Two key assumptions that need to be made include (i) the spread and impact of the Covid-19 from a medical perspective, and (ii) the choice of an economic model and the techniques to estimate the economic impacts. This study follows the available literature and uses a simple model to estimate the impact of the pandemic on the supply and the demand side of the economy.

The supply side estimation is based on medical assumptions that uses three crucial variables for the estimation of its economic impacts: (i) the morbidity rate (the percentage of the population infected); (ii) the number weeks of work lost; and (iii) the mortality rate (the percentage of death among those infected). The uniqueness of prevention measures taken to reduce the spread of Covid-19 simplifies the design of the model. The assumptions are built based on two critical factors. First, most of the countries adopted a shutdown of non-essential businesses to reduce unnecessary human contact with the hope of slowing down the spread of the virus. This implies a loss of working weeks for all the workers involved. Secondly, most of the affected people are out of the working age range (above 65 years old). These factors allow for a simplification of the supply-side shock that is integrated in the demand side estimation.

As indicated above, the model is mainly based on the impact of the pandemic on the demand side of the economy. We analyze the possible effects on the demand side that result from the shutdown of most of the economy and the implementation of the social distancing (Congresional Budget Office 2006). The demand-side effect is calculated by decomposing the GDP by industries (economic sectors) and assume different declines in demand for different industries, based on conclusions around the degree of social interaction required in these industries and past experiences. Given that there is little historical evidence available to form these estimates, they are admittedly imprecise.

Industries[11] that cannot operate without social distancing are assumed to have the largest decline in demand. For example, demand would fall off by almost 50 percent (for the remaining of 2020) in the education, entertainment, arts, recreation, lodging, and restaurant (see Table below). Other sectors were assumed to suffer a smaller decline in demand, such as agriculture, mining, electricity and manufacturing industries. The third group of industries that can experience an increase due to the pandemic panic includes the health sector (medical care), retail and wholesale trade.

Main assumptions

Scenario	Optimistic	Pessimistic
Length	Short : Last quarter of 2020	Long: last quarter of 2021
Cure	3rd quarter of 2020	3rd quarter on 2021
Vaccine	1st quarter of 2021	1st quarter of 2022
Public Health	• No social distancing • Medical masks for all compulsory	• Social distancing • Curfew
Economic	• No economy lockdown	• Lockdown of non-essential businesses and families

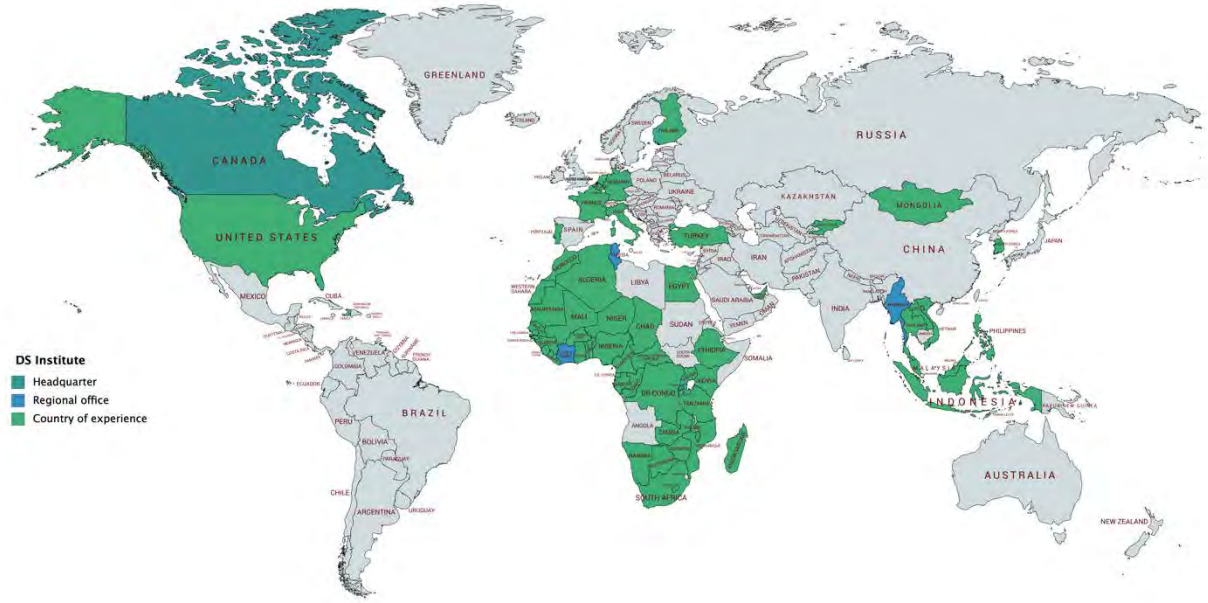
Two scenarios are used: The optimistic and the pessimistic scenarios. The optimistic scenario assumes a low impact of covid-19 on ECOWAS countries. This may be because Africa in general has already has several current diseases (malaria, Ebola, pneumonia,…) that already keep busy the current health system. In this scenario, the pandemic will last for the last quarter of 2020 and the recovery will begin toward the fourth quarter of the year. Therefore, there is no significant negative impacts on the economies, but reduced working time and a revision of working protocols in most of the firms. Finally, a cure and vaccine is found in the fourth quarter of 2020 and first quarter 2021. Hence, all countries open up their borders, international trade and travels can then resume.

[11] The data used in the note are from the United Nations Statistical Division. We use the National Accounts Official Country Data available between 1947 and 2017. Using these panel data, we used the average share of industries for each country for the recent years.

The second, the pessimistic scenario, assumes a high impact of the pandemic on the ECOWAS countries. In this scenario, the pandemic lasts for at least until the last quarter of 2021, and no cure is found until this time. Hence, ECOWAS countries will shut down their economies (as well as their informal sectors) like in Europe and America, and people will be confined at home. The scenario assumes that economic sectors, where, social distancing is not possible will be reduced by half in 2020 (entertainment, hospitality…). Finally, it is assumed that the impact of the pandemic in 2020 will be reduced by half in 2021.

Growth in demand, by industry, due to the covid-19 pandemic

	Assumptions Growth rate			
	Optimist scenario		Pessimist scenario	
	2020	**2021**	**2020**	**2021**
Agriculture, hunting, forestry; fishing				
Agriculture, hunting, forestry				
Agriculture,	0.0	0.6	-5.0	-2.5
Forestry,	0.0	0.0	-5.0	-2.5
Fishing	0.0	0.0	-5.0	-2.5
Mining and quarrying	0.0	0.0	-5.0	-2.5
Manufacturing	-10.0	-5.0	-30.0	-15.0
Electricity, gas and water supply	0.0	0.0	-5.0	-2.5
Construction	-10.0	-5.0	-20.0	-10.0
Wholesale, and hotels and restaurants				
Wholesale, retail trade,	20.0	10.0	5.0	2.5
Hotels and restaurants	-20.0	-10.0	-50.0	-25.0
Transport, storage and communications				
Land transport;	-15.0	-7.5	-50.0	-25.0
Post and telecommunications	5.0	10.0	-10.0	-5.0
Financial intermediation, real estate,				
Financial intermediation	10.0	0.0	10.0	5.0
Real estate, renting	-10.0	-5.0	-50.0	-25.0
Public administration	-5.0	-2.5	10.0	5.0
Education; health and social work				
Education	-10.0	-5.0	-50.0	-25.0
Health and social work	10.0	5.0	20.0	10.0
Other community, social services	-10.0	-5.0	-20.0	-10.0
Private households	-10.0	-5.0	-20.0	-10.0
Financial intermediation services (FISIM)	5.0	10.0	0.0	0.0



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