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Assessing The Socio-Economic Impact of Coronavrius in Africa

[1]Benedict AZU, Ph.D, [2]Esther DIBIE, Ph.D, [3]Shadrack IFEANYI, [4]Emeke OKORO.

Department of Economics, University of Delta Agbor

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ABSTRACT: The *looming health shock of coronavirus could have disastrous impacts on the continent's already strained health systems, and could quickly turn into a social and economic emergency. This paper, therefore, intends to assess the effects of coronavirus on Africa economies. (using its growth implication) Based on the endogenous growth theoretical approach, the link between life expectancy, poverty incidence, and economic growth was estimated using the GMM technique of analysis with 32 selected Africa countries. Findings showed that coronavirus exhibited negative and substantial impact on socio-economic situation and macroeconomic variables in Africa such as inflation, unemployment, poverty rate and economic growth, amongst others. The result ascertained that the government expenditure significantly increased during the period in a bid to curb the pandemic, but household welfare degenerated and was negatively affected with high poverty rate, this paper recommended that the government of the Africa countries should diversify the revenue base of their economies to cushion the effect of unprecedented shock due to the pandemic and provide adequate relief materials to pad the effect of loss of income to the poor and vulnerable, support in the implementation of structural reforms to enable them to build capacity and generate sufficient domestic resources or fiscal buffers to effectively manage pandemics.*

KEY WORDS: socio-economic, economic growth, and coronavirus.

INTRODUCTION

Africa recorded its first Coronavirus case in Egypt on 14 February 2020. Since then, numerous cases are now reported in a significant number of countries, and in multiple provinces. On 4 May 2020, the number of confirmed Coronavirus cases had risen to 44 873 and caused 1 807 deaths. In African the highest numbers of infections countries are South Africa, Egypt, Morocco, Algeria and Nigeria at the time. Though, the full scope of the virus remains doubtful, as cases are underreported and accuracy of data collection varies significantly. The World Health Organisation warned that Africa could be the next epicentre of the Coronavirus WHO (2020). In the WHO best-case scenario, where governments introduce intense social distancing, once a

threshold of 0.2 deaths per 100 000 people per week is reached, Africa would see 122 million infections, 2.3 million hospitalisations and 300 000 deaths.

World Bank (2020) reported that daily statistics from the European Center for Disease Control (ECDC) show that Africa remains the region with the least number of both Coronavirus infection cases and deaths. As of 15 May 2020, a total of 4,308,809 cases including 298,680 deaths have been reported worldwide. Systematically, the main channel for Coronavirus economic impacts have been the trade linkages with their key trading partners such as the EU, US and China, as most countries in the region still have a negligible number of infections with the exception of South Africa (12739), Egypt (10829), Morocco (6609), Algeria (6442), Ghana (5530) and Cameroon (2954).

The frontier closure and complete lockdown (stay-at-home) policies was adopted by the highly affected regions including EU, US, China, and Africa entailed low productivity and disruptions to key value chains. Eventually, these lockdowns recorded low demand for African exports with the greatest impact on countries with considerable participation in global value chains. Moreover, disease containment measures in these regions resulted in significant reductions in Africa's foreign direct investment (FDI) inflows, tourism and to some extent, overseas development assistance (ODA) inflows. Initially, with lower infection rates, the direct impact on health systems and related expenditure for most countries in the region has been modest, however as the health crisis continues, this is changing speedily.

Notably, government social welfare systems in most African countries are too weak to effectively support the Coronavirus associated lockdowns. Given the significant weight of the informal sector in most African economies, there are many daily wage earners for whom complete shutdown essentially means no income, and no basic household necessities including food. Comparable impacts will also be felt by small and informal businesses that sustain the livelihoods of most of the poor. Thus, this further complicates the possibility of a complete lockdown in the face of weak (or none-existent) public social welfare and assistance systems. So, this approach has an increased risk of further spreading the virus within countries.

Cross country transmissions are seen to be significantly reduced by frontier closure policies which have been adopted by most African countries. Nevertheless, this approach further dampens tourism, FDI and most importantly Africa's inter-regional trade which is largely driven by cross border trade and international mobility. Moreover, the approach further undermines the livelihoods of low-income earners who largely benefit from the cross-border trade within the respective economic communities in Africa. Largely, the net impact of coronavirus will largely depend on how effective the current containment measures in the region will remain effective in containing the spread both within and across countries. Remarkably, the increasing trend is widespread across the region, resulting more pressure on health systems and spending which depending on the fiscal policy space, has a potential to further increase the region's debt burden.

Ozili and Arun, (2020) argued that while the threat of potential recession in Africa is glowing mainly through the international trade links, very few countries have the capacity to implement stimulus packages to cushion their economies form such an impending coronavirus global recession. Efforts in this regard are recorded in literature and the press mainly for Africa's big economies but most importantly, these do cover all the countries that have been badly hit by the infections.

Most of the adopted measures include cutting interest rates and the provision of liquidity assistance to cushion households and firms. For countries with better fiscal policy space, they have also increased their social protection expenditure to effectively cushion the poorest households during the lockdowns. For example, South Africa has set aside about US$ 160 million to cushion vulnerable businesses, about US$ 8.4 billion for the unemployment insurance fund, tax subsidies for at least 75,000 small and medium enterprises with a turnover of less than US$2.7 million, among other relevant fiscal and monetary policies, Senegal has established a Euro 2.1 million response and solidarity fund "Force coronavirus" as well as a Euro 97.6 million contingency plan to cushion herself from the impacts of coronavirus. Furthermore, Egypt, Tunisia and Morocco injected US$6.4 billion, US$ 0.9 billion and US$ 1 billion respectively into their economies as part of their economic stimulus packages for enhancing liquidity during coronavirus as well as Nigeria with US$ 1.9 billion

However, measures from the World Bank, EU, African Development Bank to ease the impact of COVID-19 was in placed, for instance, World Bank (2020) announced the availability of US$160 billion which will be available to countries until late 2021. The package is set to enhance the ability of the beneficiary economies in easing the effects of coronavirus on small businesses and the vulnerable populations. IMF approved US$2.7 billion for coronavirus related emergency responses in African countries. AfDB (2020) approved a US$10 billion coronavirus response package in the pipeline of which US$5.5 billion is set for its sovereign operations in the AfDB countries and US$3.1 billion is operations under the African Development Fund. The Bank also launched a US$3 billion fight coronavirus social bond which was allocated to central banks and official institutions (53%), Bank treasuries (27%) and asset managers (20%). Notably, 8% of this social bond is set aside for African countries. European Union announced Euro 3.25 billion coronavirus toolkit for African countries. Afreximbank announced a US$3 billion Pandemic Trade Impact Mitigation Facility (PATIMFA) to enhance the capacity of African countries in dealing with coronavirus related health and economic impacts. In addition, the bank set aside US$200 million to finance the production of coronavirus equipment and supplies within Africa.

Despite the hearty response to the virus by implementing frontier closure and complete lockdown (stay-at-home) screening exercises for alleged cases at the community, the level of testing has remained low in Africa countries. Unsurprisingly, so has the number of cases and deaths, relative to other continents (WHO, 2020). However, assessing the socio-economic impact

of coronavrius in Africa can be conducted at the individual level, at regional levels within a country, and at aggregate level for a country's aggregate data. Consequently, this study intends to assess the effects of coronavirus on Africa economies.

LITERATURE REVIEW

Health according to the United Nations (2007)) is a form of basic human capability. Therefore, improvement in health or life expectancy helps to reduce the level of human deprivation and contribute to economic growth. Poverty according to Sen, (1999) is capability deprivation. Coronavirus disease is an infection disease causes by severe acute respiratory syndrome coronavirus which was first discovered in Wuhan, China in late 2019 and became a global epidemic Yonar, Tekindal and Tekindal, (2020). Due to the high transmutation rate, coronavirus is zoonotic pathogens that are present in humans and various animals causing infections in respiratory, gastrointestinal, hepatic, and neurologic systems Gilbert, (2020). However, studies suggest that a pandemic -induced poverty and put pressure on the economy (Beck, 2020).

The outspread of the pandemic has significantly raised the uncertainty surround economic activities and this would upturn the financial institution hesitancy to make loans available. Bach, (2020) opined that markets and investors are facing a high degree of uncertainty due to both financial and physical effects of the pandemic. Of course, the world is undergoing a global crisis different from what we are used to in terms of currency, financial and debt crises (Salius, 2020). Shruthi and Ramani (2020) they found that the study evaluated the unpredictability transmission over the financial crisis in an attempt to analysis of impact of coronavirus on India's commodity markets, fiscal policies and contracting procedures that were executed 8during the period. It adopted the newly established connection in instinct response variance and functions test to every data from January 2020.

Salius (2020) research on coronavirus global fear index and the predictability of the commodity price returns. In the Study, the global fear index (GFI) for the coronavirus epidemic was subjected to empirical analysis by investigative its projective power in the likelihood of price returns of commodity during the pandemic. Entire regions of the countries in the global were considered in construction of the index. The result showed an indication of a positive relationship between the global fear index and commodity price returns. It affirms tha8t commodity returns upsurges as coronavirus related fear escalated.

Udmale (2020) examined the coronavirus epidemic in selected developing countries that are prone to changing food supply shocks in Africa, Asia, Latin America, and Oceania. The study recognized the foremost players in the globe and sustainable development Goals (SDGs). The result found that the present coronavirus pandemic may cause temporary food insecurity and widen the poverty gap across such susceptible countries.

In African continent Egypt was the first to confirmed coronavirus cases in February, 2020, the importation of the disease was fast spread since China is the leading commercial partner for African countries. Egypt, Algeria, and south Africa were the countries at highest importation risk from china, with the moderate to high SPAR capacity scores 87,76 and 62 respectively, IDVI 53,49 and respectively UNDP (2020). Yet, there is vaccine for the treatment of the viral diseases that hampered the economic activities of the world. (Girodano,2020).

Ajibo, Chukwu and Okoye (2020) studied coronavirus and lockdown experiences in Nigeria, the result discovered that coronavirus had disastrous impact impacts on the economy and household welfare, and poorly equipped health sector to curb the pandemic. Ngutsav and Ijrshar (2020) avowed that the coronavirus pandemic has had a disturber effect on the Nigerian various ways, particularly in the supply and demand sides of a small firm. Hence, on the supply -side , firms experience a decrease in the supply of labour, because employees may fall sick, yet they have to look after their dependents, as restriction of movement was enforced to curtail the spread of the disease which recorded adverse effect on capacity utilization. However, in the demand side, there is a probability of an abrupt and dramatic loss of demand and in consequence, revenue for SMEs. It recorded serious liquidity shortages as SMEs has the limited ability to function. Due to fear of being infected by the pandemic, as well as fear of uncertainty consumers were forced to reduce their spending and consumption. Thus, clearly effects on the economy were deepened as most firms witness pay cut and layoff their workers due to inability to pay salaries.

METHODOLOGY

Given the growth implication of the coronavirus pandemic on the Africa economics, the endogenous growth model propounded by Romer (1994) and lucas (1998) was adopted in this study. The model is called AK model which is expressed as Y = AK ---------- (1)
where Y is national output, K is the aggregate capital and A is the constant that measures the quantity of output produced for each unit of capital. Fiscal policy can influence health status and in turn the economic growth through the following variables, they are Revenue allocation, Capital Stock, Employment rate, Health status and Household welfare and contribution to national output. Therefore, from equation 1, we present a functional equation specified in equation

Model Specification

Following the availability of panel data in this study, modified, and adjusted endogenous growth model as developed by Romer (1994) was adopted. The variables of interest include Revenue allocation (REA), Capital Stock (CAS) Employment rate (EMR) Health status (HEA) Household welfare (HOW) and the independent variable of the model is Per capita GDP and is used as a proxy for economic growth. Hence, their functional relationship is presented below.

Y = f(REA, CAS,EMR,HEA,HOW) ----------(2)

Therefore, to seek to verify the impact of health on economic growth in the midst of corona virus in Africa in line with the first objective of this study, Eq. (1) can be expanded as:

$$Yit = \alpha 1 + a2REAit + a3CASit + a4EMRit + a5HEAit + a6HOWit + \mu it \text{ ---------- (3)}$$

where Y is per capita GDP (constant of US$). It serves as a measure of economic performance in a countries, REAit is revenue allocation, CASit is capital stock, EMRit is employment rate, HEAit is proxy by per capita income ,the control variable is presented as (HOWit) household welfare which was captured by private consumption per capita, i, denote the cross section identifier for country and t, denotes the time identifier for each month. In the model, the maximum of N-cross sectional observations is 32, while a maximum of t time periods is 12. Note, each country has same number of time series (12 months) observation, then the recommendable technique to be adopt for the study is the balanced panel. α represents the constant, and μ is the disturbance term, thus, the main econometric analysis will involve the Generalized Method of Moments (GMM) technique with preliminary analyses which include: trend analysis, descriptive statistics, Augmented Dickey-Fuller and Phillip Peron(PP) unit roots test and Granger Causality test (Ohiomu and Ogbeide-Osaretin, 2020)

This study obtained data from the worldometer records and world development indicators as well as country's specific database for 32 countries in Africa for a period of 2020 fiscal year. The countries include Algeria , Angola, Benin, Botswana, Burundi, Central Africa, Cote d'Ivoire, Congo DR, Egypt, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Liberia, Mali, Malawi, Morocco, Mozambique, Namibia, Nigeria, Niger, Senegal, Sierra Leone, South Africa, Tanzania, Togo, Rwanda, Uganda, and Zambia. The choice of these countries was entrenched on the availability of data and different parts of Africa are considered in this work.

Table 1: Description statistics

	Mean	Median	Maximum	Minimum	Std. Dev	Skewness	Kurtosis	Jatque-Bera	Probaility	Sum	Sum sq. Dev
Y	27569.4	6102.4	127762.6	144.83	37734.9	1.279906	3.322978	10.54017	0.005143	1047636	5.27E+10
REA	5153.38	753.70	25079.7	14.4711	7536.49	1.33783	3.43129	11.6298	0.00298	195828	5.47E+10
CAS	18255.2	5696.39	94144.9	94.3300	26975.3	1.70275	4.63980	22.6201	0.00001	693698	5.10E+09
EMR	1131912.	526122.	4256414	6876.00	1245136.	0.81666	2.48915	4.63712	0.00841	4301265	5.69E+10
HEA	18.2126	12.1432	47,6350	0.11450	16.0132	1.46300	3.7356	20.4269	0.00002	672.783	5.74E+13
HOW	20.3129	14.2575	76.7588	0.22480	18.0342	1.65800	4.82738	22.6975	0.00001	771.893	12033.7

Source: Authors compilation from E-views

The table reveal that the Jarque – Bera value is highly Signiant at the 1 per contributed. The level indicating that the density function of the series is not normally distributed. The null hypothesis of the J-B test is that the variable is normally distributed; hence we reject the null hypothesis and accept the alternative hypothesis that the serie8s is non – normally distributed. The J-B values for all the series are significant at the 1 percent level and indicate that series are not normally distributed. This outcome clearly shows that the use of panel data analysis procedure for the estimation of the relationships in this study is appropriate considering the heterogeneity in all the data series. The skewness is positive at 1.28 and indicates that the output figures for most of the states lies to the left of the mean value. The kurtosis value is high at 3.32 and indicates the presence of extreme values which may generate heteroskedastic variations in the data. The data set is highly leptokurtic and shows that extreme outliers in the output values may generate heterogeneity issues in the analysis.

To check unit root (stationarity) properties of the individual variables, the summary of the major panel unity root tests methods of levin, Lin and Chu, Im, Pesaran and Shim, ADF Fisher Chi-Square and PP Fisher Chi-Square was adopted. the probability value is indicated in parenthesis and the summary of the tests is presented in the table 2 below.

Table 2: Summary of panel unit root tests

Variable	LLC Test Probability	IPS Test Probability	ADF / Fisher Probability	PP / Fisher Probability	Remarks
Y	-5.72276 (0.0002)	-5.21455 (0.0001)	81.1634 (0.0004)	122.158 (0.0003)	Stationary I(I)
REA	-5.42322 (0.0002)	-6.43654 (0.0001)	98.8134 (0.0002)	181.458 (0.0000)	Stationary I(I)
CAS	-3.16202 (0.0011)	-4.41235 (0.0001)	72.2874 (0.0002)	132.618 (0.0004)	Stationary I(I)
EMR	8-3.111855 (0.0013)	-4.78112 (0.0000)	76.2427 (0.0000)	161.1378 (0.0000)	Stationary I(I)
HEA	0.29314 (0.0002)	-5.21432 (0.0000)	81.1634 (0.0000)	129.158 (0.0000)	Stationary I(I)
HOW	0.32154 (0.4860)	-5.35281 (0.0000)	82.6177 (0.0002)	131.217 (0.0001)	Stationary I(I)

Source: Authors compilation from E-views

The stationarity tests reveal that all the variables are integrated at order o2ne (that is, after first differencing)

Table 3: Co-integration Test

Hypothesized		**Trace**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None*	0.762131	101.1876	67.83210	0.0000
At most 1*	0.57685	58.07234	44.67541	0.0031
At most 2	0.389764	28.93302	28.77631	0.0517
At most 3	0.18635	12.43280	13.98601	0.1978
At most 4	0.096430	3.765311	4.53871	0.0537
At most 5	0.089760	3.688451	4.43127	0.0557
Trace test indicates 2 cointegrating equations at the 0.05 level				
'*denotes rejection of the hypothesis at the 0.05 level'				
'**Mackinnon – Haug-Michelis (1999) p-values'				
Co-integration Rank Test (Maximum Eigenvalue)				
Hypothesized		**Trace**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None*	0.762131	50.10761	32.97853	0.0003
At most 1*	0.57685	30.07203	28.675342	0.0215
At most 2	0.389764	19.00302	21.97763	0.1254
At most 3	0.18635	7.792801	13.66560	0.4089
At most 4	0.096430	3.565310	3.641871	0.0537
At most 5	0.089760	3.688451	4.43127	0.0557
Trace test indicates 2 cointegrating equations at the 0.05 level				
'*denotes rejection of the hypothesis at the 0.05 level'				
'**Mackinnon – Haug-Michelis (1999) p-values'				

Source: authors compilation from E-views

Both trace test and Max-Eigen value test indicated that there are at least two co-integrating vectors in the model as shown in table 3, it means that there is co-integration and long run relationship between the variables in the model.However, it is assumed that the biases in the pooled data that the panel data estimated employed in this section could be traced to cross-sectional heterogeneity or time series variations. The GMM estimation of model was adopted in this paper and the summary of the estimated result is presented in the table 4 below:

Table 4

GMM		Diagnostics and summary measures	
Explanatory variable	Coefficient / (P-value)	Hansen Test (P-value)	4.63671 (0.051021)
REA	4.760036 (0.0000)	R-squared	0.651376
CAS	3.670836 (0.0002)	Adjusted R-squared	0.552435
EMR	2.43472 (0.0002)	F-statistic	0.136
HEA	-2.16713 (0.0002)	Prob. (F-statistic)	0.273
HOW	-6.52147 (0.0004)	Durbin-Watson stat	1.461343
C	-95.2788 (0.0645)		

Source: authors compilation from E-views 9

From the result, the Durbin – watson statistics of 1,461343 outcomes does not threaten the model since the use of GMM technique of estimation might correct the existence of heteroscedasticity and serial correlation that may occur in the model. The model shows the validity instrument of Hansen test and accepts the null hypothesis as all instruments are valid given a Hansen / J statistic of 4.63671 and a probability (0.0581021). The R^2 of 0.651376 representing that 65% of the discrepancy in the dependent variable is accounted by the explanatory variables.

However, on the relationship between the GDP and the Health variable, the R-squared (R^2) and adjusted R-squared (R^{-2}) of the GDP growth rate on economic performance in SSA countries are 0.65 and 0.55 respectively. The adjusted R-squared shows that 55 percent of the systematic variations in GDP growth rate are accounted for the explanatory variables in the model. The J-statistic is 4.6 with a probability of 0.05. This indicates the null hypothesis that over identifying restrictions of the model are valid cannot be rejected. Hence, the model is adequate.

Though the result revealed that REA, CAS, showed a positive significant impact on Y and HEA, HOW recorded a negative significant impact on Y. As a result of the epidemic, economic deteriorated to the extent that household welfare and health status in Africa is adversely affected and penurious. However, the positive relationship on REA, CAS, EMR, fall below expectation during this coronavirus plague. The coefficient of REA indicates the need to enhance the revenue generation of governments in the Africa economies. They should be policy measures towards reducing the impact of the pandemic on the variables examined.

The degree of capita stock (CAS) variable passes the significance test at 1 percent level with a positive coefficient of 3.67 signifying that a unit increase in CAS will cause a far more than proportional increase in Y. The EMR variable is likewise significant at the 1 percent level and positively signed. This conforms to a priori expectation of a significant positive relationship between employment rate and economic growth. The importations of coronavirus in Africa reduce economic growth as well as employment rate as most workers were forced out of job.

FINDINGS AND POLICY IMPLICATIONS

The outcome of the study showed that coronavirus exhibited negative and substantial impact on socio-economic situation and macroeconomic variables in Africa such as inflation, unemployment, poverty rate and economic growth, amongst others. The virus has impacted negatively as government revenue generation reduced drastically as a result of restrictions of movement and lockdowns of business activities. This invariably affected the revenue base and allocation to the tiers of government in Africa with negative impact on output. The government of Africa countries should embark on massive productive investments to reinvigorate and re-engineer their economics. They should diversify the revenue base of their economies to pad the affect of unprecedented shock due to the virus. Creative investments in all sectors of the economy such as agriculture funding, rail construction, aviation, mining, hospitality, amongst others should be encouraged in African.

The finding revealed that government expenditure significantly increased during the period in a bid to curb the epidemic. This has led to unexpected borrowing thereby increasing the debt shock with excruciating debt burden in Africa countries. Household welfare degenerated and was negatively affected with high poverty rate in Africa. The level of development in Africa counties deteriorated as a result of the pandemic. Consumption per capita of the citizen was eroded by the virus especially the vulnerable in the society. Government should create means of assisting the vulnerable in the society, such as transfer payment, free heath scheme and palliatives amongst others.

SUMMARY AND CONCLUSION

The aimed at assessing the socio-economic impact of coronavirus pandemic in African using the GMM technique of analysis. The findings revealed that coronavirus pandemic exerts negative impact on socio – economic conditions and macroeconomic variables like poverty rate, inflation, unemployment, economic growth amongst others. The socio-economic impact of pandemic in Africa is colossal and recurrent. Predicament, hardship, massive job losses and foregone income for self-employed workers are common features recorded by the researchers. The result ascertained that the government expenditure significantly increased during the period in a bid to curb the pandemic. Household welfare degenerated and was negatively affected with high poverty rate, insecurity, gender based violence, unemployment, despondency and business loses

were recurrent phenomena during the study. The pandemic erased the progress made over the last decade in terms of health, education, agriculture and income in Africa and the entire globe.

Recommendations

Based on the empirical findings of this study, the following recommendations have been proffered:

- It is therefore important for the government of Africa countries to immediately increase expenditure on health interventions to ensure that they bring the coronavirus infection curves down.
- African countries should re-examine their respective fiscal and economic-policy priorities, to enhance health and social support systems, particularly in countries that have failed to implement critical health related lockdowns due to a lack of social policy safeguards for both rural and urban populations. In the longer-term, Africa will need to build productive capacities to address underlying economic vulnerabilities and enhance continental capabilities to manage crises.
- Government of the Africa countries should diversify the revenue base of their economies to cushion the effect of unprecedented shock due to the pandemic, provide adequate relief support to cushion the effect of loss of income of the poor and vulnerable and implement sustainable health policies that will help curb infections and pandemic diseases which negatively impact on economic growth in African
- There is an urgent need for international support for African countries to effectively respond to the crisis as only a few countries have the capacity to put in place economic stimulus packages to ease the burden on people and businesses
- Finally, in the long term, Africa countries should be supported in the implementation of structural reforms to enable them to build capacity and generate sufficient domestic resources or fiscal buffers to effectively manage pandemics.

Reference

AFDB (2020) African economic outlook, real GDP in Africa projected to contract by 1.7 percent in 2020, dropping by 5.6 percent points from the January 20202 pre-COVID -19. https:// www.afdb.org,documents. African economic outlook issue. Ajibo H., Chukwu, N. and Okoye, U (2020). Covid-19, lockdown experiences and the role of Social workers in cushioning the effect in Nigeria. Journal of social work in developing societies: Special Issue on COVID -19 pndemic, 2(2), 6-13

Back, S., Mohanty, S. and Glambosky, M. (2020). COVID-19 and stock market volatility: An industry level analysis. Finance Research Letters, 1-10. Available at: www.elsevier. com/locate/frl. Accessed on 05/10/2020

Beck, T. (2020). Finance in the times of coronavirus. In Baldwin, R. and di Mauro, B.W. (eds). Economics in the Time of COVID-19. A VoxEU.org Book, Centre for Economic Policy Research, London. Accessed 26 March 2020 at: https://voxeu.org/system/files/epublication/COVID-19.pdf

ECA (2020) estimates billions worth of losses in Africa due to COVID-19 impact. 2020 [cited 28020 Apr 20]. Available from: https://www.un.org/africarenewal/news/coronavirus/eca-estimates-billions-worth-losses-africa-due-COVID-19-impact.

Gilbert M, Pullano G, Pinotti G. (2020) Preparedness and vulnerability of African countries against importations of COVID-19: a modelling study. *Lancet.* 2020 doi: 10.1016/S0140-6736(20)30411-6. published online Feb 19. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

Giordano, G., Blanchini, F., Bruno, R., Colaner, P., Filippo, A., Matteo,A. and population – wide interventions in Italy. Nat Med, vol. 26, ppp. 855-860..

Lucas (1998). On the mechanics of Economic Development. Journal of monetary Economics 22,3-42

Ngutsav, A and Ijirshar, V., (2020) SMEs as drivers of economic recovery and sustainability during COVID-19 and beyond in Nigeria. Journal of economics and allied research 4(4), 234-247.

Ohiomu, S and Ogeide-Osaretin, E (2020) Financial Inclusion and Gender Inequality reduction: Evidence from Sub-Saharan Africa. Indian Economic Journal, SAGE journals https://doi.org/10.11177/0019466220946411

Ozili, P.. & Arun, T., 2020, 'Spillover of Covid-19: Impact on the global economy', 27 March, viewed 01 June 20208

Romer, P. (1994). Origins of endogenous growth journal of Economic perspectives, vol. 8, p. 3-22.

Sen, A. (1999). Development as freedom. Oxford: Oxford University Press.

Salius, A. Akanni, L. and Raheem, I. (2020) The COVID-19 global fear index and the predictability of commodity price returns. Journal of behavioral and experimental finance, 1-19. Available at: www.science direct.com. doi: htttps://doi.org/10.1016/j.jbef.2020. 100383. (Awaiting publication). Accessed on 05/09/2020

Shruthi and Ramani (2020) Statistical analysis of impact of COVID -19 on India Commodity markets. materiaals today. Available at www.science direct. Com. https:// doi.org /10.1016/j.matpr. 2020. 07.729 (in press). Accessed on 02/09/2020.

Udmale, P., Pal, I.,8 Szabo, S., Pramanik, M., and Large, A. (2020). Global food security in the context of COVID-19: A scenario-based exploratory analysis. progress in disaster science, 1-18. availa ble at: www.science direct. Com. Doi: https://doi.org/10.1016/j.pdisas. 2020.100120. accessed on 02/09/2020

UNDP, (2020). COVID-19 pandemic: Humanity needs leadership and solidarity to defeat the coronavirus. United Nations Development Programme. Retrieved 13 March 2022.

United Nations (2007) United nations conference on trade and development (UNCTAD) world development report www. Unctad.org/WIR-UNCTAD/WIR/2007.

World Bank (2020), How the World Bank Group is helping countries with COVID-19 (coronavirus), https://www.worldbank.org/en/news/factsheet/2020/02/11/how-the-world-bank-group-is-helping-countries-with-covid-19-coronavirus (accessed on 12 June 2020)

World Bank (2020) "The Potential Impact of COVID-19 on GDP and Trade: A Preliminary Assessment." Policy Research Working Paper 9211.

World Health Organization (WHO), 2020, 'Disease outbreak news 234 update – 12 January', *Novel coronavirus – China*, viewed 12 April 2020

Yonar, H., Tekindal M,A., and Tekindal, M (2020) :Modelling and Forecasting for the number of cases of the COVID -19 pandemic with the curve estimation models, the box-jenkins and exponential smoothing methods" EJMO vol. 4,pp. 160-5.

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