

The Impact of Covid-19 on the Capital and Money Markets in Nigeria

*ORITSEGBUBEMI KEHINDE NATUFE AND **ESTHER IKA VBO
EV BAYIRO-OSAGIE, *DOCTORAL SCHOLAR (FINANCE)

**ASSOCIATE PROFESSOR (PH.D, HCIB)

BOTH OF THE DEPARTMENT OF BANKING AND FINANCE, FACULTY OF MANAGEMENT SCIENCES,
UNIVERSITY OF BENIN, BENIN CITY, NIGERIA.

E-MAIL: OKNATUFE@YAHOO.CO.UK AND

ESTHER.EVBAYIRO-OSAGIE@UNIBEN.EDU

CORRESPONDING ADDRESS: OKNATUFE@YAHOO.CO.UK

ABSTRACT

This study empirically examined the impact of COVID-19 on Nigerian capital and money markets, data of total and new cases of COVID-19 and number of death from the virus for 193 working days after the first death from COVID-19 was recorded were used to proxy for COVID-19, data on volume of trade and value of trade on the Nigerian stock exchange are proxies for the capital market while open buy back rate (OBBR) is proxy for the money market. ADF-Fisher unit root test and Johansen Co-Integration test were conducted, and the data were found suitable for regression analysis. From the results of our multiple regression analysis, we find that the Nigerian capital market was both negatively and significantly impacted at a 5% statistical level by the announcements of total and new cases of persons infected by the virus but was positively affected by the announcement of death of persons infected by the virus also at a 5% statistical level. Contrarily, we find that the announcement of total cases of persons infected with COVID-19 and death arising from the infection did not affect the money market, rather the announcement of new cases of persons infected with COVID-19 both positively and significantly impacted on the money market. It is not clear if these are also the outcomes in other countries. We therefore recommend cross-country studies which will further provide more understanding of the behaviours of both the capital and money markets during global pandemic for policy direction and a new school of thought concerning this may emerge.

Keywords: COVID-19, Financial Market, Money Market, Capital Market

JEL Classification: G1, E5, I1

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I. INTRODUCTION

The overarching role of a country's financial sector in fund mobilizations from both the private and public sectors for productive projects cannot be overemphasized. In fact, a country's economic progress is largely dependent on how much investible funds are available to the country and how well its financial intermediaries can deploy these funds. There are three main types of financial markets in Nigeria: the money market, the capital market, and the foreign exchange market. Corona Virus (COVID-19), a pandemic disease that recently caused many deaths worldwide has emerged. The disease was first found in December 2019 in China. According to the Virology lab at Lagos University Teaching Hospital (LUTH), the virus was officially verified on Nigerian soil on February 27th, 2020. Because of confirmed instances, numerous states of Nigeria were shut down by the Federal Government's proclamation.

Banking services in Nigeria have been severely curtailed since the 20th of March 2020 due to restrictions on gatherings with more than fifty people. There has also been an impact on the economy's general trading system; transportation; education; and production. The pandemic outbreak in China had already been expected to have a detrimental impact on Nigeria's financial sector, particularly the foreign exchange, before the country's economy was shut down. This is because, the Nigerian economy relies heavily on imports from China which is the main source of the disease. For example, imports from Nigeria's top 10 trade partners (which China is number one on the list) for Q1, Q2, and Q3 of 2020 shows that imports from China alone were 35.29%, 44.87%, and 42.62% respectively (SEC, 2020).

The world has become a global village where knowledge can be exchanged in a matter of seconds because of availability of internet service providers globally. Even the most basic of human needs and labour,

have become incredibly mobile. As a result, any fear or obstacle from any region of the world is likely to be contagious on another independent economy's efficacy and efficiency. The COVID-19 pandemic is expected to have a significant influence on the world economy, for example, one percent of the global economy is predicted to shrink by the end of 2020 because of the pandemic (United Nations Department of Economics and Social Affairs, 2020). Also, the International Labour Organisation (ILO) in its March 18th, 2020 ILO Monitor, raised concerns that an estimated 25 million increases in the number of unemployed persons that would be affected, and global commerce is expected to fall between 13 and 32 percent (Kawamorita, Salamzadeh, Demiryurek & Ghajarzadeh, 2020).

Considering the foregoing, the objective of this study is to examine the impact of the COVID-19 pandemic outbreak on Nigeria's financial market (if any), one hundred and ninety-two (192) working days after the first death (March 23, 2020) from COVID-19 was recorded. The specific objectives are:

1. Examine the effect of COVID-19 on capital market in Nigeria.
2. Examine the effect of COVID-19 on money market in Nigeria.

II. LITERATURE REVIEW

COVID-19 was originally discovered in Wuhan, a city in China, during the first epidemic of the virus. When this occurred in December 2019, the virus had already spread to every corner of the globe (Mazzoleni, Turchetti & Ambrosino, 2020). On Monday, March 30th, 2020 at 23:00 local time, Nigeria's federal government declared a state of emergency and imposed travel bans in the federal capital territory - Abuja, Lagos state, and Ogun state. In this scenario, the federal government was able to stifle various activities across the whole federation since every state governor followed suit. However, the lockdown was eased beginning on May 2nd, 2020. Ebola and Lassa fever had already infected Nigerians, who may have developed immunity or preparedness for the pandemic due to their exposure to the tropical climatic conditions and the prevalence of the disease in the region (Domjan, 2020).

Some researchers believe that the financial market and changes in economic, social, and health aspects are connected. This pandemic, COVID-19, has had a significant impact on the global economy because of restrictions and constraints on economic activity. According to Solow's neoclassical growth theory, the financial market's performance is influenced by external variables such as labor mobility, technological change and economic stability (Edame, 2013). According to the theory, financial markets are affected by changes in any of these external factors. It is argued by Gokal and Hanif (2004) in their article that financial markets' performance may be influenced by policies aimed at improving the manufacturing process such as economies of scale and higher returns. Both the exogenous and endogenous theories served as theoretical foundations for our investigation.

COVID-19 epidemic was studied by Salamzadeh and Dana (2020) for the impact it had on Iranian new businesses. According to them, economically, the epidemic has created six major issues. Financial, market, and crisis management are just some of the issues that businesses face. The rapid spread of COVID-19 greatly affected financial markets by creating an unprecedented degree of risk, leading to huge losses for investors in a very short period (Zhang, Hu & Ji, 2020). They used daily data to examine the patterns of stock market reactions and concluded that the pandemic had a significant impact on stock markets. Policy interventions were evaluated for their possible consequences and the impact of those policies were assessed. They further argued that mass layoffs and corporate bankruptcies may be the pandemic's more long-term implications given the fact that the risk levels of all nations had risen dramatically. Long-term expectations had caused financial markets to react in an unprecedented way, even though the precise global economic implications are not obvious (Gormsen & Koijen, 2020). In most cases, emotional considerations play an important role. Social media may immediately amplify the market emotion in response to the epidemic, which in turn stimulates trading and causes price fluctuations to be extremely volatile. There has been a tremendous shift in the financial markets. Markets have become exceedingly volatile and unstable because to the unpredictability of the epidemic and its accompanying economic consequences.

The COVID-19 pandemic, according to Adrian and Natalucci (2020) has resulted in an unparalleled public health disaster. An economic slowdown was generated because of the necessary steps to stop the spread of the virus. Financial stability may be on the horizon due to the recent developments in the financial sector. Owing to the efforts to control the pandemic's consequences, investor confidence has stabilized in recent weeks. Once again emerging markets face a heavy burden, as is typical in times of financial hardship. Onali (2020) studied the COVID-19 cases and fatalities and determined in France and Italy recorded that it had a detrimental effect on stock market returns.

III. METHODOLOGY

This study’s focus is on the impact of COVID-19 on the Nigerian financial market by examining time-series data from the day (March 23, 2020) the first death was recorded in Nigeria to September 30, 2020 being one hundred and ninety-two (192) days. This chosen time covers up to the end of the third quarter of 2020 and it is expected that the market would have adjusted to the new information (COVID-19) in the fourth quarter of 2020 and the shock of death and new cases of COVID-19 may no longer be as impactful as they were in the early days of the pandemic. We employ the use of linear multiple regression analysis and exploratory analysis to investigate the impact of COVID-19 (proxied by the number of total cases – TC; new cases – NC; and death – DTH) on the dependent variables of Nigeria money market proxied by (OBBRR), Nigerian capital market proxied by (VOT, and VALOT). Data about the money market were gleaned from the Central Bank of Nigeria’s website: cbn.gov.ng/rates/interbankrates.asp, data on the Nigerian capital market where from the NGX’s weekly stock market report of March to September 2020, while data on COVID-19 were from the website of openAFRICA.

3.1 Model specification:

$$VOT = \beta_0 + \beta_1 \log TC + \beta_2 \log NC + \beta_3 \log DTH + \varepsilon \dots \dots \dots 1$$

$$VALOT = \beta_0 + \beta_1 \log TC + \beta_2 \log NC + \beta_3 \log DTH + \varepsilon \dots \dots \dots 2$$

$$OBBR = \beta_0 + \beta_1 \log TC + \beta_2 \log NC + \beta_3 \log DTH + \varepsilon \dots \dots \dots 3$$

Where:

- VOT = Equity Volume of Trade on the NGX
- VALOT = Equity Value of Trade on the NGX
- OBBR = Weighted Average of Open Buy Back Rate
- TC = Total Number of Cases of COVID-19
- NC = Number of New Cases of COVID-19
- DTH = Number of Death

The apriori expectation is that the coefficients: β_1 , β_2 , and β_3 will all have a negative sign to cause a slowdown in economic activities in both the capital and money markets.

3.2 Technique of Estimation.

Unit root and co-integration tests would be performed on the time-series data to ascertain if they are stationary and would be suitable for ordinary least square (OLS) regression method to estimate the parameters of our models.

IV. EMPIRICAL RESULTS AND ANALYSIS

4.1 Unit Root Test

TABLE 1: (ADF) UNIT ROOT TEST RESULT

VARIABLES	METHOD	STATISTICS	p-VALUE	ORDER
LogVOT	ADF-Fisher	-12.98568	.00000*	I(1)
LogVALOT	ADF-Fisher	-9.81017	.00000*	I(1)
LogOBBR	ADF-Fisher	-9.16142	.00010*	I(1)
LogTC	ADF-Fisher	-2.192711	.03060**	I(1)
LogNC	ADF-Fisher	-11.39091	.00000*	I(1)
LogDTH	ADF-Fisher	-2.960698	.00710*	I(1)

Author’s computation from E-view8 (2022) *1% and 5%* levels of significance respectively

The above table (1) shows the ADF-Fisher unit root test for all the variables and they are stationary at first difference and are statistically significant at the 1-percentage level (P<0.01) except for LogTC that is at the 5-percentage level (P<0.05). The above results are obvious that our variables are suitable for regression model.

4.2 Johansen Co- Integration Test

The null hypothesis of the Johansen co-integration test is that, there is no co-integration equations. The below tables (1) and (2) show that there is at least one cointegrating equation among the variables with p-values that are statistically significant at 5% level for both the Trace and Max-Eigen tests. These mean the variables are suitable for regression model.

TABLE 2: RESULT OF THE JOHANSEN CO-INTEGRATION TEST (TRACE)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.464668	197.4870	95.75366	0.0000
At most 1 *	0.327724	119.3785	69.81889	0.0000
At most 2 *	0.226660	69.74266	47.85613	0.0001
At most 3 *	0.134407	37.61305	29.79707	0.0052
At most 4 *	0.101881	19.57046	15.49471	0.0115
At most 5 *	0.047924	6.138819	3.841466	0.0132

Source: Author’s computation from E-view 8 (2022)

TABLE 3: RESULTS OF THE JOHANSEN CO-INTEGRATION TEST (MAX-EIGEN)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.464668	78.10855	40.07757	0.0000
At most 1 *	0.327724	49.63583	33.87687	0.0003
At most 2 *	0.226660	32.12960	27.58434	0.0121
At most 3	0.134407	18.04260	21.13162	0.1283
At most 4	0.101881	13.43164	14.26460	0.0674
At most 5 *	0.047924	6.138819	3.841466	0.0132

Source: Author’s computation from E-view 8 (2022)

4.3 Regression Models

At the beginning of this study, we set out some specific objectives which the empirical results generated from our data will aid us in their analysis. We begin our analysis with the first objective, which is to examine the effect of COVID-19 on capital market in Nigeria. The capital market is proxied by two (2) equations, viz:

$$VOT = \beta_0 + \beta_1 \log TC + \beta_2 \log NC + \beta_3 \log DTH + \varepsilon \dots \dots \dots 1$$

$$VALOT = \beta_0 + \beta_1 \log TC + \beta_2 \log NC + \beta_3 \log DTH + \varepsilon \dots \dots \dots 2$$

4.4 COVID-19 and Capital Market (a)

TABLE 4: MULTIPLE REGRESSION MODEL ESTIMATES FOR VOT, TC, NC, DTH

Dependent Variable: log VOT				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
logTC	-0.302317	0.164617	-1.836486	0.0686
logNC	-0.143592	0.048446	-2.963988	0.0036
logDTH	0.32747	0.178244	1.837194	0.0685
C	9.155262	0.291599	31.39677	0.0000
R-squared	0.135503	Durbin-Watson statistics		1.498313
F-statistic	6.583173	Prob. (F-statistics)		0.000361

Source: Author’s (2022) compilation using E-view 8

$$VOT = 9.155262 - 0.302317 \log TC - 0.143592 \log NC + 0.32747 \log DTH$$

Table (4) above shows the empirical results of equation 1. From the results, we can see that the volume of trade (VOT) on NGX during the first 192 days of COVID-19 was negatively impacted by the announcements of total cases (TC) and new cases (NC) of COVID-19 conforming to our apriori expectation of a negative signage and are statistically significant at the 10% and 5% levels. Once TC announcement is made, the market reaction is a 30.23% reduction in the volume of trade (VOT) as people are scared to trade and knowing the total figure of COVID-19 cases created more restraint to trade than the announcement of new cases (NC) because NC caused a lesser reduction in trade of 14.36% than the 30.23% of TC news. But the surprising outcome is that the announcement of death (DTH) of people from COVID-19 contrary to our apriori expectation has a positive impact on VOT and is statistically significant at the 10% level. And what is even more stunning is the fact that the announcement of DTH had stronger and positive impact on VOT than either TC or NC negative effect on VOT separately. It is not clear why the market reacted positively to the announcement of death of people from COVID-19 by a 32.75% increase on VOT, possibly because the deaths are not connected to market markers or top executives of major financial and non-financial companies. However, the combined effect of TC (-0.302317) and NC (-0.143592) on VOT is greater than that of DTH (0.32747) on VOT, producing a net negative impact of (-0.1184439) on VOT, implying that COVID-19 caused the market in totality to slow down by 11.84%. Notwithstanding the low R-squared of 0.135503 (13.55%) and Durbin-Watson statistics of 1.498313, the F-statistic of 6.583173 and p-value = 0.000361 which is statistically significant at a level of 5% shows that the independent variables jointly and significantly explain the model’s variation.

4.5 COVID-19 and Capital Market (b)

TABLE 5: MULTIPLE REGRESSION MODEL ESTIMATES FOR VALOT, TC, NC, DTH

Dependent Variable: logVALOT				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
logTC	-0.526794	0.187944	-2.802938	0.0059
logNC	-0.117786	0.055311	-2.129533	0.0352
logDTH	0.541582	0.203502	2.66131	0.0088
C	10.48725	0.332919	31.50091	0.0000
R-squared	0.116572	Durbin-Watson statistics		1.288458
F-statistic	5.54209	Prob. (F-statistics)		0.00132

Source: Author's (2022) compilation using E-view 8

$$VALOT = 10.498725 - 0.526794\log TC - 0.117786\log NC + 0.541582\log DTH - 0.102998$$

The above table (5) shows the empirical results of equation 2. From the results, TC and NC conform to our apriori expectation of a negative effect on value of trade (VALOT) on the capital market and are statistically significant at the 5% level while DTH is contrary to our apriori expectation as it has a positive impact on VALOT and it is also statistically significant at the 5% level. The outcomes here are not quite different from the results in table (4) earlier espoused as the market responded negatively to the announcement of TC and NC by contracting the value of trade (VALOT) by 52.68% and 11.78% respectively but caused a 51.16% positive change to VALOT on the announcement of DTH. The net impact to the market on the trio announcements of TC, NC, and DTH is a reduction of VALOT in the first 192 days of COVID-19 by -10.30% (-0.526794-0.117786+0.541582). Despite the low R-squared of 0.116572 (11.66%) and Durbin-Watson statistics of 1.288458, the F-statistic of 5.54209 and p-value = 0.000132 which is statistically significant at a level of 5% shows that the independent variables jointly and significantly explain the model's variation.

4.6 COVID-19 and Money Market

Having examined the effects of COVID-19 on the Nigerian capital market, let us now turn our lens to the money market which is represented by the following equation:

$$OBBR = \beta_0 + \beta_1\log TC + \beta_2\log NC + \beta_3\log DTH + \varepsilon \dots \dots \dots 3$$

TABLE 6: MULTIPLE REGRESSION MODEL ESTIMATES FOR OBBR, TC, NC, DTH

Dependent Variable: logOBBR				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
logTC	0.387283	0.380326	1.018295	0.3105
logNC	0.399021	0.111927	3.565006	0.0005
logDTH	-0.617022	0.411810	-1.498319	0.1366
C	-0.273542	0.673700	-0.406030	0.6854
R-squared	0.092934	Durbin-Watson statistics		0.949293
F-statistic	4.303144	Prob. (F-statistics)		0.00631

Source: Author's (2022) compilation using E-view 8

$$OBBR = -0.27 + 0.39\log TC + 0.40\log NC - 0.62\log DTH$$

Open buy back (OBB) is a money market instrument in use in Nigeria for the raising of short-term capital to aid the liquidity of the borrower, predominantly transacted amongst banks. This instrument is usually backed up by the Nigerian government securities such as the treasury bills as collateral, the rate for this instrument is the open buy back rate (OBBR). The results from table (6) above are quite revealing. Primarily, TC and NC do not conform to the apriori expectation of a negative impact on the Nigerian money market rather they positively affected the money market. In fact, the impact of NC is statistically significant at the 5% level and DTH that conforms to the apriori expectation of a negative impact has no statistical significance.

The results seem to be playing out the cost reduction mantra thrust by COVID-19 of reduced business that should also be accompanied by reduced cost. The results are so frontal such that it is only NC that has significant positive impact on the money market which may be due to isolation of personnel that contracted the virus, and the personnel cost supposedly went down as some institutions resorted to reduced pay during the lockdown. This is manifested in the cumulative up surge of profit after tax by 10.16% from that of 2019 of the eight (8) Nigerian banks (Zenith Bank, Guaranty Trust Bank Limited, United Bank for Africa, First Bank of Nigeria, Union Bank of Nigeria, First City Monumental Bank, Access Bank, Fidelity Bank) with international banking license as evidenced by their 2020 financial statements. It is even more astonishing that there was more financial activity in the money market than the two (2) prior to 2020, as the Central Bank of Nigeria (2021) statistical bulletin shows that credit to the private sector as a percentage of gross domestic product (CPS/GDP) is 17.58% for 2018, 17.63% for 2019, and 18.82% for 2020 respectively, conspicuously confirming that COVID-19

benefited the Nigerian money market and not otherwise. Regardless of the low R-squared of 0.092934 (9.30%) and Durbin-Watson statistics of 0.949293, the F-statistic of 4.303144 and p-value = 0.00631 are both statistically significant at a level of 5%, shows that the independent variables jointly and significantly explain the model's variation.

V. CONCLUSION

Responses of countries to pandemic are heterogeneous and the impact on both the capital and money markets are indeed varied. This study has shown that the outbreak of COVID-19 in Nigeria and the news of the total number of persons infected, the new cases of persons infected, and the persons that died from the virus have discrete impacts on Nigeria's capital and money markets. Pointedly, we find that the announcement of total and new cases of COVID-19 caused significant contractions in the volume and value of trade in the Nigerian capital market but the announcement of death surprisingly, increased both the volume and value of trade as activities in the market seem insulated from such bad news. But in the money market, we find that the announcement of new cases of COVID-19 significantly benefited the money market and the announcement of total cases of the virus and death cause no significant positive or negative effect on the money market. It is not clear if these are also the outcomes in other countries, we therefore suggest cross-country studies which will further provide more understanding of the behaviours of both the capital and money markets during global pandemic for policy direction.

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