Covid-19 and the Nigerian Economy: Evidences from the Foreign Exchange Rate

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Abstract: **The entire world including Nigeria is currently battling the coronavirus 2019 (COVID-19) global pandemic. The pandemic has affected all aspects of human lives and world economy without any form of exemption to the Nigeria economy. The foreign exchange rate has witnessed a dwindling effect since the rise of the pandemic in Nigeria. It is based on the aforementioned that this paper has examined the impact of the COVID-19 on the Nigeria economy with empirical evidences from the foreign exchange rates. Expo facto research design was used to collate secondary data from the Nigeria Centre for Disease Control (NCDC), Central Bank of Nigeria (CBN) and Nairametrics covering the period April 1 to June 30, 2020. The data were analysed with Microsoft Excel and IBM SPSS using descriptive statistics. The findings reveal that a negative relationship exist between the impact of the COVID-19 and the value of the naira against the dollar. The study concluded that there is no relationship between COVID-19 and the Nigeria foreign exchange rates. The study recommends that the government and its agencies should focus more on other economic factors like oil price and importation to manage the exchange rate instead of COVID-19.**

Keywords: **Covid-19, Foreign exchange rate (forex), Nigeria economy, Monetary Policy**.

I. INTRODUCTION

Coronavirus Disease 2019 (COVID -19) was first detected in Wuhan, China, in December 29, 2019. Since this date, the virus has spread rapidly and globally with Thailand being the first country to report a case of Coronavirus outside of China, in January 13, 2020 (World Health Organisation, 2020). As of June 11, 2020, 11:58 GMT, there were 7,484,084 confirmed cases and 419,518 deaths globally (Worldometer) and 13,873 confirmed cases with 382 deaths in Nigeria (NCDC), from the COVID-19 pandemic.

Some side effects of COVID-19 has been observed since the early stages of the virus in the deceleration of the Chinese economy, global supply chain disruption (McKibbin & Fernando, 2020), labour supply shocks (Karlsson, Nilsson & Picher, 2014), production curtailment, and demand decreases (Carlos & Hector, 2020) caused mainly by the restrictions in travel and mobility implemented by various governments to contain the virus.

In the aftermath of the 2016 recession in Nigeria, it was almost widely believed that unexpected and sustained decline in oil price was the most important cause of recessions in Nigeria. But in 2020, nobody thought that a public health crisis could trigger an economic crisis in the country (Ozili P. 2020). The same can be said for the exchange rate which before now is thought to only depend on oil price volatility rather than a pandemic.

The rapid spread of this 'invisible global enemy' COVID - 19 has affected and is still affecting the global economy in general and the Nigerian Naira exchange rate in particular. All the major variables including oil price, non oil export and diaspora remittances that drives the exchange rate seems to be on steady decline in the face of the pandemic. Oil price for example has steadily fallen with Nigeria's Bonny light selling for US$7.15 on April 21, 2020 (Central Bank of Nigeria). Non-oil export has nose-dived as a result of the global lockdown and the attendant drop in demand for goods and services, the outbreak has also affected the earning power of the diaspora community and thus their ability to remit foreign currency back to the home economy.

The purpose of this research is to assess the impact of the coronavirus disease 2019 on the strength of the Nigerian local currency against the United States dollar being Nigeria's major currency of internal transactions.

1.1 Statement of Problem

Nigeria is highly import dependent and requires huge earnings in foreign exchange to finance these imports and sustain the value of its currency. Unfortunately, majority of Nigeria's imports are for consumption with very little meant for production and almost next to nothing for foreign exchange earning productive activities.

The volatile and falling oil prices coupled with sustained corruption and compounded by little or no viable alternative to oils earnings are verifiable pointers that the national economic faces a very bleak future. The worst recession in the recent history of the country appears to be looming if no drastic workable intervention is in sight and the naira is allowed to totally collapse.

1.2 Objective of the Study

The major objective of this study is to examine the effect of the Corona Virus Disease of 2019 (COVID–19) global pandemic on the Nigerian Naira exchange rate against the United States Dollar, being the major international transaction currency of Nigeria.

The specific objectives are to;

i. examine the impact of confirmed COVID-19 cases on the exchange rate;
ii. measure the effect of COVID-19 deaths on the exchange rate;

1.3 Research Questions:

In order to achieve the objectives stated above, the following research questions were used as a guide in achieving the objectives of this research:

i. What is the impact of confirmed COVID-19 cases on the exchange rate?
ii. What is the relationship between COVID-19 deaths and the exchange rate?

II. LITERATURE REVIEW

The following concepts will be examined to lay a background for understanding this research work.

Coronavirus

The coronavirus family causes illnesses ranging from the common cold to more severe diseases such as severe acute respiratory syndrome (SARS) and Middle East respiratory syndrome (MERS), according to the WHO. They circulate in animals and some can be transmitted between animals and humans. Several coronaviruses are circulating in animals that have not yet infected humans. The first coronavirus was discovered in chickens in the 1930s. It was a few decades until the first human coronaviruses were identified in the 1960s. To date, seven coronaviruses have the ability to cause disease in humans. Four are endemic (regularly found among particular people or in a certain area) and usually cause mild disease, but three can cause much more serious and even fatal disease. The new coronavirus, the seventh known to affect humans, has been named COVID-19. As of June 26, the global death toll surpassed 512,000 amid more than 10.5 million cases. Over 5.3 million people have recovered from the disease worldwide, according to the data collected by the Johns Hopkins University in the United States.

Exchange Rate Determinants

There are many factors contributing to real *exchange rate* volatility. Among these factors are: the level of output, inflation, the openness of an economy, interest *rates*, domestic and foreign money supply, the *exchange rate* regime and central bank independence (Stancik, 2007).

Theoretical Framework

Some major theories relating to the topic of this study are below explained:

Theories of Exchange Rate Determination

The Portfolio Balance Model

The underlying idea of this model is that a portfolio choice exists for domestic and foreign assets, the constituent assets of the portfolio offer an arbitrage from expected returns and this is what determines the process of exchange rate (Dornbusch, 1988). MacDonald and Taylor (1994) explain that at least in the short run exchange rate is determined by the demand and supply of a wide range of financial assets and that it is not automatic.

The Monetary Approach

The major premise of this approach is that exchange rate movements between two currencies can be attributed to changes in the demand and supply of money in the two countries. The shortfalls of the portfolio balance theory led to the development of the monetary approach. Frankel (1979) posits that this model of exchange rate determination attains equilibrium when existing stocks of money in the two countries are willingly held. Obioma (2000) holds the view that asset market or monetary approach attributes variation in exchange rate essentially to income and expected rates of return as well as to other factors that influence the supplies of and demands for the various national monies. Thus, based on the fact that supply and demand for monies is determined by the level of income, the monetary model postulates three basic determinants of exchange rate as follows: relative money supplies, relative income and interest rate differentials.

Traditional Flow Model

The model postulates that exchange rate is primarily determined by market forces of demand and supply of foreign exchange, thus, equilibrium exists when demand just equals supply of foreign exchange, exchange rate is thus determined by trade and capital flows. The model is based on the assumption that relative income and interest rate differential interact to determine exchange rate , since foreign demand for goods and services is a function of income and demand for assets is a function of domestic and foreign interest rates this assumptions are justified.

Purchasing Power Parity

This theory originated with Cassel (1918) and continues to be a very influential way of thinking about exchange rate, it posits that exchange rates between two countries will be equal to the national price level of these, this theory is also known as the law of one price and states in its absolute form that exchange rate between the currencies of any pair of countries should equal the ratio of the general price levels in the two countries, and it implies that exchange rates adjust to compensate for pricing differentials amongst countries. Thus implying that if a bottle of coke is sold for one dollar in the United States and the same coke is sold for 100 naira in Nigeria then the exchange rate should be 100 naira to one dollar. Despite the criticisms that abound on the assumptions of this theory it remains a valid explanatory exchange rate determination approach

Empirical Review

The COVID-19 global pandemic has affected many economies including Nigeria in ways that cannot be

immediately measured conclusively. In this context, many researches shed light on the economic and social impact of the crisis caused by this pandemic and very fast growing literature explore how financial variables react to the appearance of this pandemic. Chukwuka and Ekeruche (2020) researched on understanding the impact of the COVID-19 outbreak on the Nigerian economy, the study shows Nigeria's GDP growth estimate of 2.5% for have been truncated by the pandemic. The increase in national debt leading to corresponding rise in debt services and revenue ratio at 60% amid the falling prices of oil has been a great source of concern to policy makers as this will make it difficult for the economy to grow. Goodell (2020) presents Agendas for future research about the impact of Covid-19 on financial markets and institutions. Albulescu (2020) explores the impact of Covid-19 numbers on crude oil prices, while controlling for the impact of financial volatility and the United States (US) economic policy uncertainty. He shows a marginal negative impact of Covid-19 on the crude oil prices in the long run. Zhang et al. (2020) examine the impacts of coronavirus on global financial markets and show substantial increases of volatility in global markets due to the outbreak. They find that global stock markets linkages display clear different patterns before and after the pandemic announcement and policy responses introduce further uncertainties in the global financial markets. Moreover, Al-Awadhi et al. (2020) investigate whether contagious infectious diseases affect Chinese stock market outcomes and find that Covid-19 has significant negative effects on stock returns. Lately, Onali (2020) finds that an increase in the reported deaths in the US has a positive impact on the conditional heteroscedasticity of the Dow Jones Index.

On the other hand, extensive research investigates the causes and determinants of exchange rate volatility. For instance, various factors impact exchange rate volatility in financial crises Coudert et al. (2011); Choudhry and Hassan (2015); BenOmrane and Savaşer (2017)).

However, not much work has been done on the direct effect of COVID-19 on the exchange rate. I am unaware of any published work on the effect of the coronavirus disease 2019 on the Nigerian currency exchange rate, thus my motivation to fill this research gap.

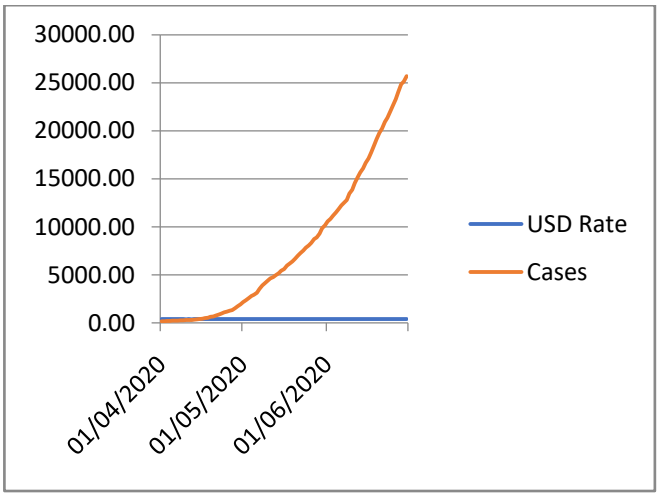
III. METHODOLOGY

The data for this study was analysed using descriptive statistics. Secondary source of data was used because all data proxy for all the variables was extracted from the Nigeria Centre for Disease Control (NCDC), Nairametrics and Exchange Rates UK. These sources were used because of the authority and reliability of their data. For the purpose of this study the specific range of data sample is from April 1 to June 30, 2020. Also, for the constraint of time I have concentrated on the direct effect of COVID-19 on the exchange rate which is the main objective rather than on the sub-objectives of oil prices, importation etc.

IV. DATA PRESENTATION AND ANALYSIS

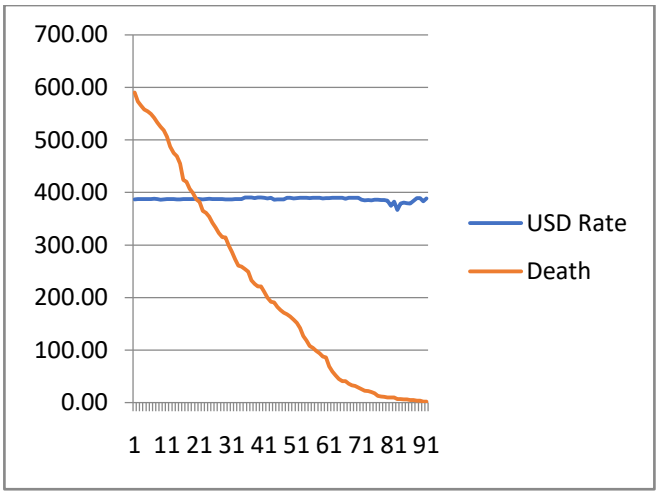
This section presents the result from the statistical test carried out and analysis of the result. The findings show what the study observed within the period under review, i.e. April May and June 2020 representing the most sensitive and dramatic times of the pandemic in Nigeria till the date of this study. The observed fluctuation in the foreign exchange rate of the US dollar to the Nigerian Naira is then compared with the daily confirmed cases of COVID-19 in Nigeria. See appendix 1 for the detailed daily data.

Figure 1. USD rate and COVID-19 confirmed cases



Prepared with: MS Excel

Figure 2. USD rate and COVID-19 deaths



Prepared with: MS Excel

Vital Statistics			
	USD Rate	Confirmed Cases	Total Deaths
N Valid	91	91	91
Missing	0	0	0
Mean	$387.2513	7933.77	213.18
Median	$387.5000	5621.00	176.00

Std. Deviation	$3.51009	7637.480	186.758
Variance	12.321	58331093.424	34878.480
Skewness	-3.073	.816	.535
Std. Error of Skewness	.253	.253	.253
Kurtosis	13.270	-.511	-1.012
Std. Error of Kurtosis	.500	.500	.500
Minimum	$367.00	174	2
Maximum	$390.57	25694	590

Prepared with: IBM SPSS

V. DISCUSSION OF RESULTS

The findings as seen in figure (1), (2) and the vital statistics table above reveal that the exchange rate did not move in the same direction with the COVID-19 confirmed cases or deaths. The average exchange rate stood at $387.25 when the average confirmed cases was 7933. This mean dollar rate is not significantly far from the minimum and maximum of $367.00 and $390 respectively, compare to the minimum and maximum confirmed cases of 174 and 25,694. In other words, there is no direct relationship between the pandemic and the fluctuation in the US Dollar rate. This is rather surprising because it is thought that the pandemic will have a serious impact on the exchange rate. This might be due to the fact that the pandemic has a global effect rather than local and therefore the other international economic factors that would have affected the exchange rate were themselves subject to the global pandemic. Also, during the pandemic, the demand for foreign exchange reduced significantly even as oil prices dwindled.

VI. CONCLUSIONS AND RECOMMENDATION

Deducing form the statistics and results above, it is clear that the factors or variables that affect the exchange rate in Nigeria are more of economic factors than a pandemic or disease. Therefore, the government and its agencies should pay more attention to the other economic factors like oil price, importation etc to manage the exchange rate rather than the COVID-19 pandemic. Outside this term paper, this researcher and other scholars are encouraged to investigate other variables like oil price, importation and export earnings amongst others to be able for verify the major contributor to the exchange rate fluctuation in Nigeria.

Appendix 1

Daily Exhange Rates and COVID-19 Cases in Nigeria, April 1 to June 30, 2020.			
Date	USD Rate	Cases	Death
30/06/2020	387.21	25694	590
29/06/2020	387.50	25133	573
28/06/2020	387.36	24867	565
27/06/2020	387.48	24077	558
26/06/2020	387.48	23298	554
25/06/2020	387.44	22614	549
24/06/2020	388.13	22020	542
23/06/2020	387.36	21371	533
22/06/2020	386.04	20919	525
21/06/2020	386.71	20242	518
20/06/2020	387.50	19808	506
19/06/2020	387.50	19147	487
18/06/2020	387.44	18480	475
17/06/2020	386.98	17735	469
16/06/2020	386.72	17148	455
15/06/2020	387.41	16658	424
14/06/2020	387.51	16085	420
13/06/2020	387.48	15682	407
12/06/2020	387.48	15181	399
11/06/2020	388.05	14554	387
10/06/2020	387.48	13873	382
09/06/2020	387.11	13464	365
08/06/2020	387.36	12801	361
07/06/2020	387.90	12486	354
06/06/2020	387.48	12233	342
05/06/2020	387.48	11844	333
04/06/2020	387.51	11516	323
03/06/2020	387.79	11166	315
02/06/2020	387.21	10819	314
01/06/2020	387.10	10578	299
31/05/2020	387.04	10162	287
30/05/2020	387.52	9855	273
29/05/2020	387.52	9302	261
28/05/2020	387.56	8915	259
27/05/2020	390.41	8733	254
26/05/2020	390.46	8344	249
25/05/2020	390.57	8068	233
24/05/2020	389.39	7839	226
23/05/2020	390.50	7526	221
22/05/2020	390.51	7261	221
21/05/2020	390.09	7016	211
20/05/2020	388.50	6677	200
19/05/2020	389.99	6401	192
18/05/2020	386.37	6175	191
17/05/2020	386.93	5959	182
16/05/2020	387.00	5621	176

15/05/2020	387.00	5445	171
14/05/2020	390.08	5162	168
13/05/2020	389.92	4971	164
12/05/2020	388.55	4787	158
11/05/2020	389.48	4641	152
10/05/2020	389.77	4399	142
09/05/2020	390.00	4151	127
08/05/2020	390.00	3912	118
07/05/2020	389.56	3526	108
06/05/2020	390.23	3145	104
05/05/2020	389.91	2950	99
04/05/2020	389.89	2802	94
03/05/2020	388.61	2558	88
02/05/2020	389.51	2388	86
01/05/2020	389.51	2170	69
30/04/2020	390.03	1932	59
29/04/2020	389.78	1728	52
28/04/2020	389.80	1532	45
27/04/2020	390.05	1337	41
26/04/2020	388.05	1273	41
25/04/2020	390.00	1182	36
24/04/2020	390.00	1095	33
23/04/2020	389.96	981	32
22/04/2020	390.02	873	29
21/04/2020	386.35	782	26
20/04/2020	385.22	665	23
19/04/2020	385.51	627	22
18/04/2020	385.10	541	20
17/04/2020	386.48	493	18
16/04/2020	386.41	442	13
15/04/2020	386.01	407	12
14/04/2020	385.47	373	11
13/04/2020	384.34	343	10
12/04/2020	374.81	323	10
11/04/2020	382.75	318	10
10/04/2020	367.00	305	7
09/04/2020	378.95	288	7
08/04/2020	380.93	274	6
07/04/2020	379.76	254	6
06/04/2020	378.86	238	5
05/04/2020	383.95	232	5
04/04/2020	389.29	214	4
03/04/2020	389.29	209	4
02/04/2020	383.24	184	2
01/04/2020	388.88	174	2

Source: Exchange Rate UK, NCDC, Nairametrics.

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