Impact of Public Debt and Exchange Rate on the Performance of Firms in Nigeria

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ABSTRACT: The purpose of this research is to find out the impact of public debt and exchange rate on the performance of firms in Nigeria. Proper understanding on how to investigate the importance of public debt in Nigeria and the degree of responsiveness of exchange rate to public debt in Nigeria. The study adopted a co-relational research design. The population of the study were Central Bank of Nigeria, Federal Ministry of Finance, among others that are listed on the floor of Nigerian Stock Exchange. The study adopted purposive sampling technique. This study covers the period interval from 2000-2022. The relationship between variables was determined using the Pearson Product Moment Correlation Coefficient (PPMCC) and Panel Data Analysis that involved the use of both the fixed and random effects analysis. Therefore the study recommends that debt management should be linked to a clear macroeconomic framework which ensures that Nigeria Government will seek to ensure that public debt level and growth rate are sustainable.

KEYWORDS: Public debt, Exchange rate, Performance, Debt management and Growth rate.

INTRODUCTION

Public debt could be conceptualized as the resources sourced outside the shores of a country for investment projects. This is usually borrowed from foreign lenders such commercial banks, government, or international financial institutions etc. Meanwhile, one of the critical challenges facing developing economies, Nigeria inclusive in the last few decades is debt crisis. The issues of debt crisis among developing economies have become a subject of concern to the multilateral borrowers and advanced economies (UNDP, 2021).

Exchange rates are impacted by both the domestic currency value and the foreign currency value. In July 2022, the exchange rate from U.S. Dollars to Naira was 414.72, meaning it takes ₦414.72 to buy $1. Exchange rate can be explained further as the rate at which one currency can be exchanged for another currency. When the exchange rate changes, prices of imported goods changes. It impacts the performance of investment, interest rates and inflation.

A higher exchange rate lifts the purchasing power of the country in the sense that imports become cheaper which leads to a decrease in price for consumers. Governments pay lower interest rates on foreign currency debt than domestic issuance. This gain may turn negative in future if foreign exchange loans are rolled over into new foreign exchange bond issues with higher yields. Public debt cuts both ways where foreign exchange rates are concerned. If a country's public debt is high, it can limit the value of its currency and also change in explanatory variables can cause fluctuation in exchange rate. For example, a percentage change in external debt, debt service payment and foreign reserves will fluctuate exchange rate by 0.5%, 0.44% and 0.40% respectively. (Bamidele & Joseph, 2021, Saheed, 2022)

The relationship between public debt and exchange rate have been investigated and analyzed by different studies as stated earlier and also with Sene, (2004), Ogege & Ekpudu, (2020), Ijeoma, (2022) & Patrawimolporn, (2007) but no consensus has been reached. Therefore, this study examines public debt and exchange rate performance in Nigeria with other related macroeconomic fundamentals around the world. The study also examine how exchange rate responds to public debt in Nigeria and in other countries as public expenditure recorded a continuous increase over time.

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STATEMENT OF THE PROBLEM

There have been fluctuations in the exchange rate over time and different literatures and series of sources show that the fluctuations in the exchange rate is due to series of macroeconomic fundamentals and variables which also results into changes in some other macroeconomic trends around the globe. With reference to public debt, Nigeria's public debt have been unstable over time (CBN 2022, Sene, 2004). According to Sani & Idakwoji, (2022) in 1981, the Nigerian total outstanding external debt was ₦2, 331.2 million, and by the end of 1982, it had risen to ₦8, 819.4million. Progressively increased to ₦17, 290.6 million and N42, 229.5million in 1985 and 1986 respectively. By the end of October 1987, it had hit the mark of ₦100, 787.6 million (USD 23,445.3 million).

Although under the Nigerian constitution, only the Federal Government could borrow abroad, many state governments, however, have successfully negotiated foreign loans and subsequently obtained Federal Government Guarantees. At the end of September 1988, according to the CBN, the total outstanding external debt stood at ₦133.956million and attained ₦212, 750.7 million in 1989, and rose to ₦3, 097,384 million in 2000. This figure however, dropped by about 13 percent to stand at ₦2, 695,072 million in 2005, when the Nigerian government reached an agreement with its Paris Club creditor for a debt relief which led to an overall reduction of Nigerian debt stock by US $30 billion (₦3, 966 billion). The deal was completed in 2006 when the government of Nigeria made its final payment and was cleared of its debt with the Paris Club.

In relation to the exchange rate, exchange rate volatility affects the external debt stock. Overtime, it has also been observed that debt service payment has a very strong effect on exchange rate performance in Nigeria. It is therefore necessary to investigate the importance of public debt in Nigeria and the degree of responsiveness of exchange rate to public debt.

OBJECTIVES OF THE STUDY

The objective of this study is to examine the impact of public debt and exchange rate on performance of firms in Nigeria with the view of enhancing exchange rate performance on debt service in Nigeria. The specific objectives are to:

    i.   analyse the direction of causality between public debt and exchange rate on the performance of firms in Nigeria.

    ii.   evaluate the impact of public debt and exchange rate on the performance of firms in Nigeria.

Research hypothesis

The research hypothesis is formulated.

H_o: Public debt and exchange rate has significant impact on the performance of firms in Nigeria.

H_1: Public debt and exchange rate has no significant impact on the performance of firms in Nigeria.

Concept of Public Debt

According to Bamidele & Joseph, (2022) debt has to do with the resource used in an organization that is not being contributed by the owner and doesn't belong to or owned by the organization. Public debt can be of two types which is internal or external debt. World Bank (2000) explains that external debt as the amount and liabilities at a particular time of a country to a nonresident to repay the capital or principal, which is with interest or without interest. There are some liabilities which fall in this category of liabilities as of this case and the liabilities include long term loans, short term bills, bonds, transferable deposits and currency, advances, and trade credit. The external debt is supposed to be meant to supplement for natural resources coupled with not an immediate decrease in the local resource use either for capital formation or consumption.

According to Sanusi, (2012) there is a distinction between different stocks and flows that has to do with debt. However, debt is classified into deadweight debt and productive debt. Whenever a loan is obtained to be used for enabling a nation or state to purchase some needed assets it is called productive debt e.g. electricity, refinery, money borrowed for acquiring factories etc. A deadweight debt has to do with the debt that is being undertaken to finance expenses on current expenditure and finance war. An obligation is owned to a foreign institution or government and the interest servicing is done in foreign exchange, and this tends to influence the exchange rate.

Debt service Payment refers to the total cash required by a company or individual to pay back all debt obligations. To service debt, the interest and principal on loans and bonds must be paid on time. Businesses may need to repay bonds, term loans, or working capital loans. External debt relief refers to the reduction or forgiveness of the debt owed by developing countries to external creditors such as governments, international organizations, and private lenders. The main types of external debt relief for developing countries are:

    i.   Debt rescheduling: This involves the extension of the repayment period or the postponement of debt payments to ease the debt burden of the developing country.

ii.   Debt forgiveness: This involves the complete cancellation of a portion, or all of the debt owed by a developing country to its creditors. This is often granted in exchange for certain conditions, such as policy reforms or improved governance.

iii.   Debt reduction: This involves reducing the amount of debt owed by a developing country, either through a one-time write-off or through a reduction of interest rates.

iv.   Debt buyback: This involves a developing country purchasing its own debt from creditors at a discounted price, thereby reducing its debt burden.

v.   Debt-for-development swap: This involves a developing country exchanging its debt for investments in social or economic development projects.

Debt-for-nature swap: This involves a developing country exchanging its debt for investments in environmental conservation projects.

Exchange Rate

According to Ajayi, (2002), foreign exchange is the price of a domestic currency in terms of the price of a foreign currency. Thus, it is a fact to know that foreign currency is the price of a local currency in terms of the foreign one. Exchange rate plays a role in every free market economy around the world and for this reason; exchange rate is one of the most analyzed macroeconomic variables which are being analyzed as one of the economic measures. The interplay between the forces of demand and supply of foreign currency has a role to play in the in the value of a currency.

According to Ijeoma, (2022) there are two types of exchange rate regimes which are fixed or pegged and floating or flexible exchange rates. For the fixed exchange rate, this is the case in which the exchange is being predetermined by the government, but the exchange rate value of the country is being allowed to fluctuate with that currency to which they are fixed. Also, Okoro, (2021) stated that, the fixed exchange rate regime was in use in Nigeria within the period of the pre-independence era till the year 1985. When the exchange rate is pegged, the Central Bank does not have monetary policy as the exchange rate cannot further be varied to reflect the country's changing macroeconomic fundamentals and the terms of trade.

Ricardo Theory of Public Debt

Robert, (2012) the primary burden of any community was derived from the waste of public expenditure by the community rather than from the methods that are adopted or employed to finance such an expenditure. Ricardo viewed that the funds will be gotten from the liquid resources present in the community and that in the point of the economy and it would make no difference if such funds were raised from loans or taxes. However, in the case where the funds were raised through loans, it then becomes or refers to as public debt. Also, external debt involves what is referred to as debt servicing and it must be paid in foreign currency. It is of the fact to know that continuous fluctuations in foreign currency demand will have an influence on exchange rate.

The Mint Parity Theory

The earliest theory of foreign exchange was the mint parity theory by Austav, (2000). This theory was applicable for those countries which had the same metallic standard (gold or silver). Under the gold standard, countries had their standard currency unit either of gold or it was freely convertible into gold of a given purity. The value of currency unit under gold standard was defined in terms of weight of gold of a specified purity contained in it. The central bank of the country was always willing to buy and sell gold up to an unlimited extent at the given price. The price at which the standard currency unit of the country was convertible into gold was called the mint price. This rate of exchange determined on weight-to-weight basis of the metallic contents of currencies of the two countries was called mint par of exchange or the mint parity. So, the mint par values of the two currencies determined the basic rate of exchange between them.

Under the gold standard, the balance of payments adjustments were made through the free international flows of gold. The export and import of gold involved costs of packing, freight, insurance, interest etc. Consequently, the actual rate of exchange between two currencies could vary above and below the mint parity by the extent of cost of gold export.

Empirical Review in Developed Countries

Robin, (2011) observed public debt and how exchange rate changes in relation to financial meltdown. The scope is the United States of America which covered between 1990 and 2010. An exchange rate model was developed to analyze the objective of the study and the study reveals that the country should try to avert further damage from exchange rate liquidity shock by ensuring that profit activities in financial industries are regulated.

Noer et al (2010) studied the effect of exchange rate on inflation in France. The year scope of the study is 1980 to 2009. The variables used in the study are external debt, domestic debt, inflation, exchange rate and gross domestic product. The methodology used in the study is the Vector Autoregressive (VAR) Model and GARCH model for the analysis of volatility in

exchange rate. The study finds that the regime of exchange rate policy of a country plays a key role in reducing the fluctuations risk in the real exchange rate, which has a significant effect on inflation level and the entire economy.

Empirical Review in Developing Countries

With continuous increase in public expenditures, and low capital formation in many developing countries, many governments have resorted into borrowing either or both within and outside the country. However, most borrowings come with interest attached, which results in debt servicing. Serving external debt may involve demand for foreign currency which tends to affect the exchange rate of the country. Hence, this study examines the impact of public external debt on exchange rate in Nigeria. Using the Ordinary Least Square, on the secondary data sourced from the CBN and DMO among other sources, findings reveals that all the dependent variables, that is, external debt, debt service payment and foreign reserve proved to be statistically significant in explaining exchange rate fluctuation in Nigeria within the period of observation, with debt service payment having the strongest effect (Coeff: 0.4443). Based on the finding, the study recommends that government should ensure that all public borrowing, where and when necessary, be directed towards productive economic activities which can generate returns to service and pay up the debt at maturity.

Bunescu, (2014) evaluates the impact of external debt on exchange rate variation. The scope of the study covered Romania from 1990 to 2014. The variables used in the study are exchange rate, nominal exchange rate and external debt. The methodology used in the study is the ordinary least square. The study reveals that all independent variables are deterministic factors of exchange rates.

Siregar & Pontes, (2005) assessed whether buildup of foreign debt led to overshooting of currencies of four East Asian Countries starting late 1997. These are Indonesian rupiah, Korean won, Philippine's peso and Thai Baht. To capture exchange rate overshooting as an effect of a rise in external debt, they adopted and modified Dornbusch, (1976) model. They first constructed the real effective exchange rates and used autoregressive distributed lag regression to examine how external borrowing affect the value of the domestic currency of the countries involved in the study. The result confirmed that the buildup of external debt in the four economies contributed to the overshooting of the domestic currency. However, the study employed panel data for the four economies and therefore the results of the study cannot be used to address specific issues in Kenya.

Empirical Review in Nigeria

The fluctuating exchange rate and massive debt burden of Nigeria necessitates a thorough investigation of trends in her foreign debt levels, its underlying causes, and implications for economic growth. This study, therefore, investigated the impact of rising external debt on the exchange rate in Nigeria with annual data from 1980 to 2021. The motivation for this study was premised on inculcating government spending and inflation rate into the traditional analysis of exchange rate volatility in Nigeria using data sourced from CBN statistical bulletin (2020), DMO (2020), and WDI (2021). The data obtained were analyzed using the Augmented Dickey-Fuller (ADF) unit root test, Autoregressive Distributed Lag (ARDL) technique, and the stability and diagnostic test in the analysis. Based on the outcomes of the preliminary test analysis, the results show that external debt has a negative but insignificant effect on the exchange rate in Nigeria. Also, external debt has a positive and significant effect on the inflation rate in Nigeria. In light of these findings, the study concluded and recommended that the Nigerian government and/ or Central Bank of Nigeria should ensure that all borrowed funds are effectively channelled into viable projects that will yield returns to service the debts as well as pay up the debt at maturity, which puts pressure on the foreign exchange market in the short term and consequently results in exchange rate fluctuations in terms of the depreciation of the naira in the country.

Adeyemi & Fagbola, (2022) observed the effect of external debt on exchange rate performance. The country scope of the study is Nigeria between 1980 and 2019. The variables used in the study are inflation rate, exchange rate, external debt and gross domestic product. Then the methodology used in the study is an autoregressive distributed lag model. The study finds that external debt has a positive and significant effect on the exchange rate.

Furthermore, Ezeanyeji, Okeke, & Usifoh, (2022) adopted the Error Correction model (ECM) estimation to examine the effect of external debt management on the exchange rate in Nigeria from 2000 to 2024. The research findings showed that the external debt stock does not affect the exchange rate of Nigeria. However, Nigeria's external service payment negatively affected the average official exchange rate in Nigeria.

Gaps in the Study

A series of studies as found in the empirical literature, effect of public debt on exchange rate, but our major concern is the extent at which public debt influences exchange rate. Most studies in Nigeria, developing and developed economies such has Robin (2011), Aderemi & Fagbola, (2022), Benigno, (2019), Saheeed, (2024) only focused on the effect of public debt on exchange rate

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but failed to investigate the direction of causality between public debt and exchange rate, to be able to determine if public debt and exchange rate can cause each other or one of the two can cause the other.

This study shall however fill the gap in literature by empirically analyzing the direction of causality between public debt and exchange rate on the performance of firms in Nigeria.

METHODOLOGY

The study being a quantitative research based, adopted a co-relational research design. The population of the study were Central Bank of Nigeria, Federal Ministry of Finance, among others that are listed on the floor of Nigerian Stock Exchange. The sample technique adopted for the study was non-random sampling technique. Specifically, the study adopted purposive sampling technique. This study covers the period interval from 2000-2022. Data were collected from secondary source.

Descriptive statistics were employed to explain the impact of public debt and exchange rate on the performance of firms in Nigeria using tables, ratios, and percentages to measure each of the variables, while formulated hypotheses was tested using inferential statistics techniques. The relationship between variables was determined using the Pearson Product Moment Correlation Coefficient (PPMCC) and Panel Data Analysis that involved the use of both the fixed and random effects analysis.

RESULTS AND DISCUSSION

On table 1, the variables: exchange rate, domestic debt, debt service payment, external debt, foreign reserve, money supply are represented. Their averages within the period measured by the study are 94.14346, 28700, 28600, 28600, 17900 and 70500 respectively. The standard deviation shows the extent at which the observations are distributed around their respective mean. The maximum values for EXR, DOD, EXD, FR, MS, and DSP are 306.9210, 14300, 54800, 5300, 34900, and 17400 respectively while their minimum values are 0.617708, 1200, 11400, 65100, 15200 and 15200 respectively.

From the skewness statistics it can be observed that all the variables in the model are positively skewed. The kurtosis values reported in the table showed that exchange rate and foreign reserve are platykurtic, while domestic debt, debt service payment, external debt, and money supply are leptokurtic. The table also showed that testing for normality of the series using Jacque-Bera, only exchange rate is normally distributed, while domestic debt, debt service payment, external debt, foreign reserve, and money supply are not normally distributed.

Table 1: Descriptive Statistics of the variables

	Exchange Rate	Domestic Debt	Debt Service Payment	External Debt	Foreign Reserve	Money Supply
Mean	94.143	287000	286000	28600	17900	70500
Median	101.697	898000	115000	29100	73300	10400
Maximum	306.921	143000	174000	54800	53000	34900
Minimum	0.618	112000	152000	11400	65100	15200
Standard Deviation	92.822	412000	442000	10100	18300	16500
Skewness	0.810	1.524	2.139	0.405	0.601	1.381
Kurtosis	2.855	4.051	6.663	3.066	1.699	3.571
Jacque-Bera	4.301	16.889	51.534	1.071	5.096	12.921
Probability	0.116431	0.000215	0.0000	0.585410	0.078236	0.001564
Observations	39	39	39	39	39	39

Source: author's computation, (2024)

Graphical illustration of Exchange Rate

Figure 1, showed the trend of exchange rate for Nigeria, it can be seen from the graph that the exchange rate has been on the rise over the years.

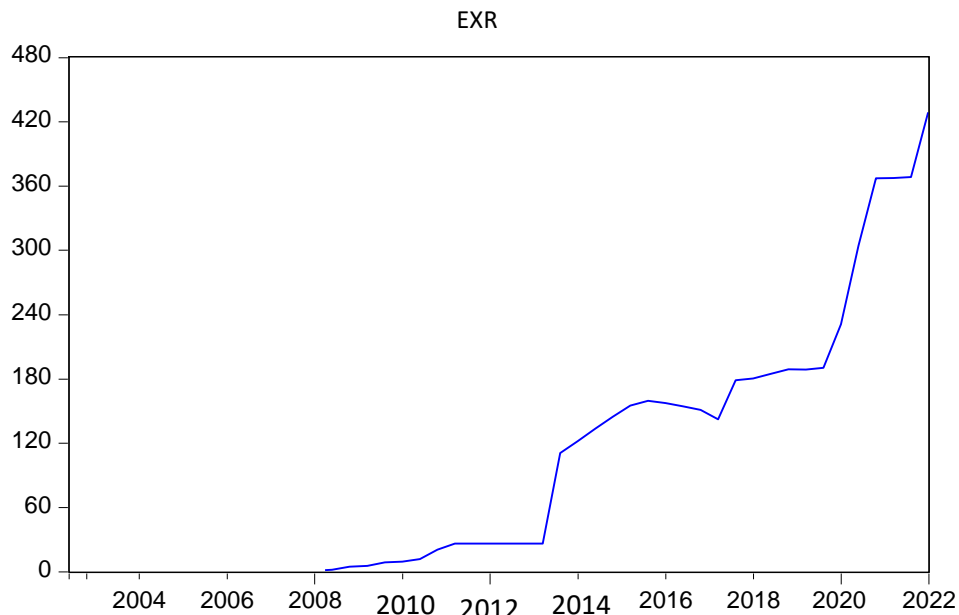**Impact of Public Debt and Exchange Rate on the Performance of Firms in Nigeria**

Figure 1: Trend of Exchange Rate

It showed an upward trend from 2008 to 2022. It started an upward trend from 2010 up to 2018 till 2022.

Graphical illustration of Domestic Debt

Figure 2, showed the trend of domestic debt of Nigeria, from the chart it was observed that domestic debt increased over the years.
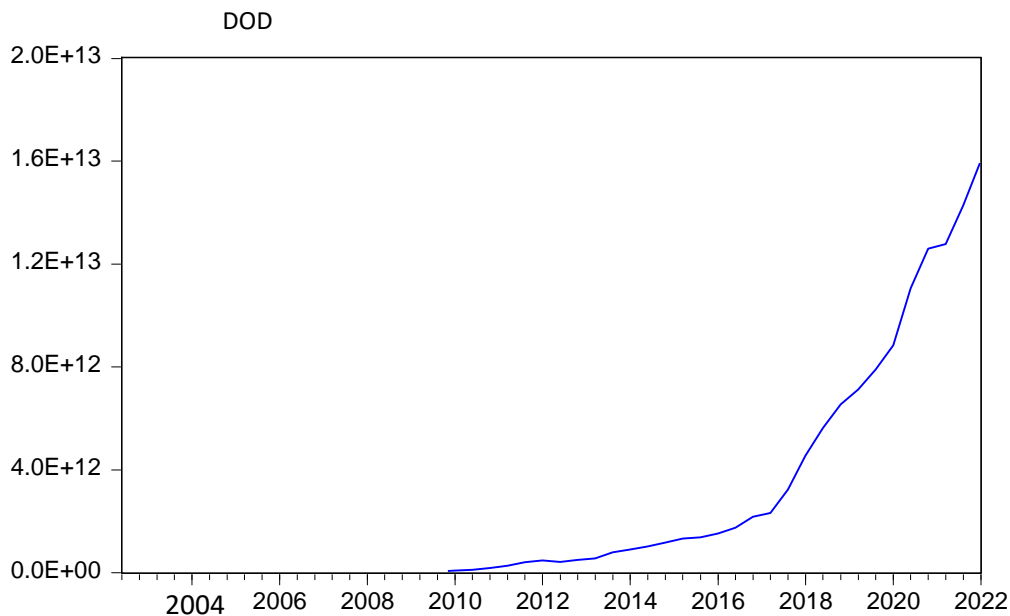

Figure 2: Trend of Domestic Debt

Graphical illustration of Debt Service Payment

Represents the trend of debt service payment of Nigeria and it can be observed that debt service payment has maintained an upward trend over the years.

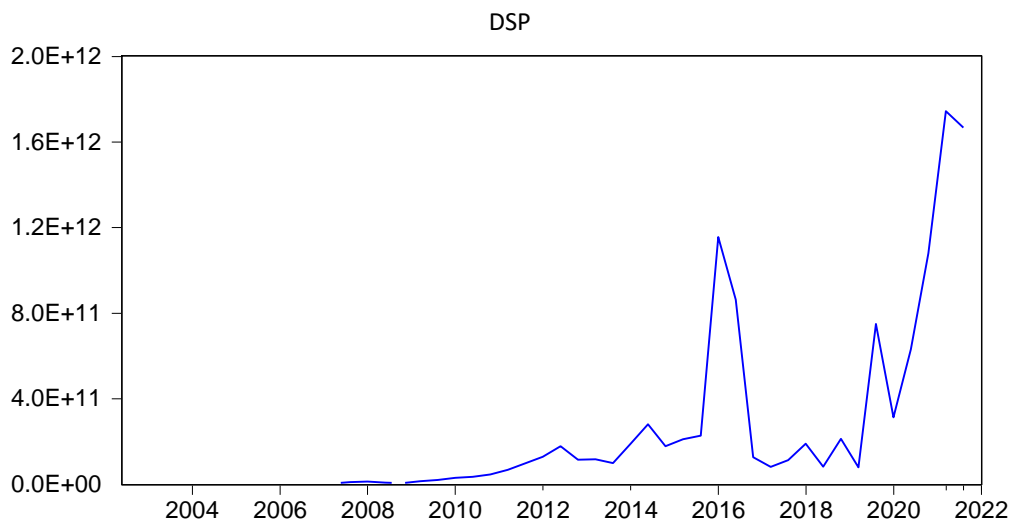**Impact of Public Debt and Exchange Rate on the Performance of Firms in Nigeria**

Figure 3: Trend of Debt Service Payment

Graphical illustration of External Debt
Represents the trend of external debt of Nigeria and it can be observed that external debt has maintained an upward trend over the years.
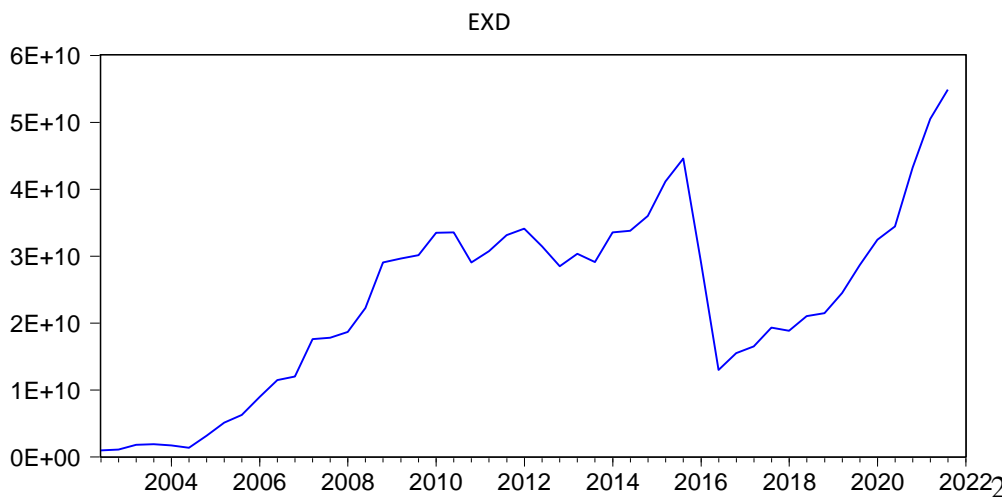

Figure 4: Trend of External Debt

Graphical illustration of Money Supply
Represents the trend of money supply in Nigeria and it can be observed that money supply has maintained an upward trend over the years.
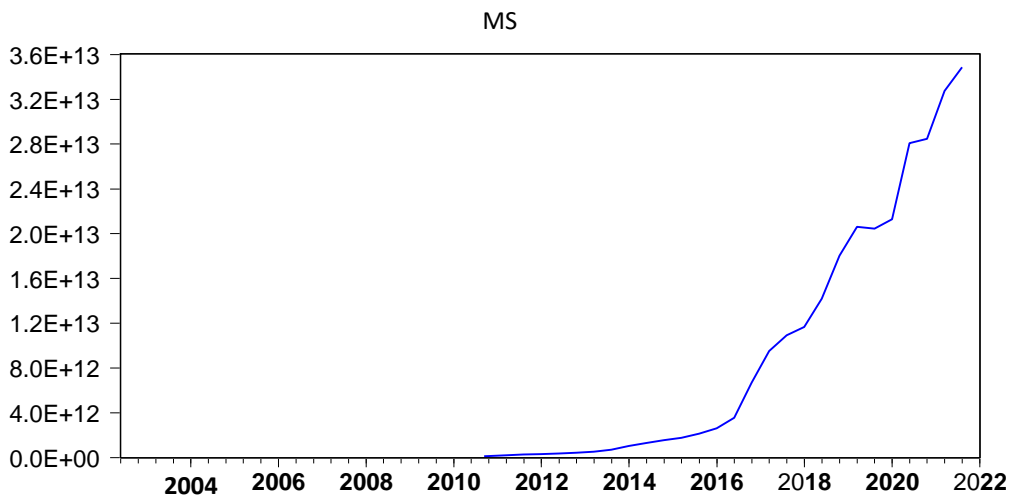

Figure 5: Trend of Money Supply

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Graphical illustration of Foreign Reserve

Represents the trend of foreign reserves of Nigeria over the years.
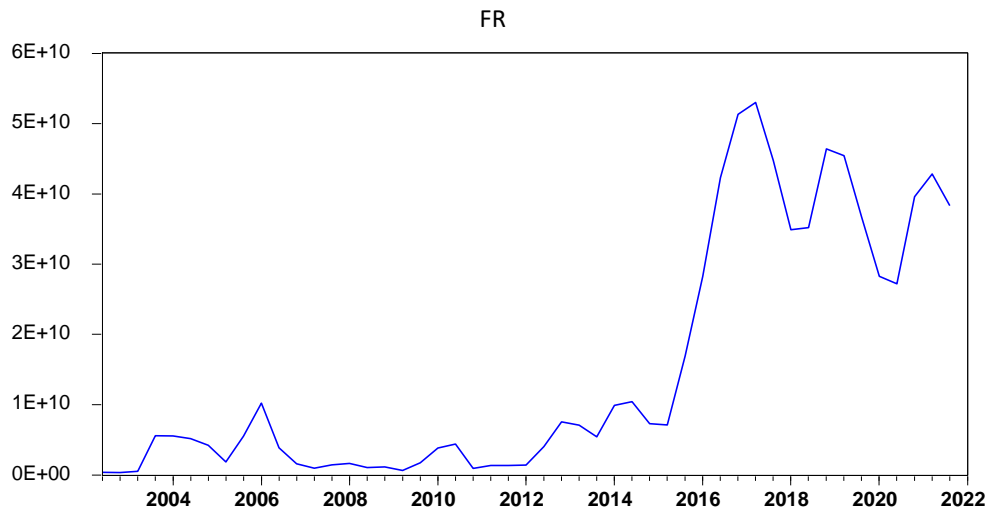

Figure 6: Trend of Foreign Reserve

Correlation Analysis

This analysis is carried out to ensure that the variables do not have a perfect or exact linear relationship or representation of one another, in essence no multicollinearity. The table (Table 2) below showed the result of the correlation analysis and from the table it can be deduced that there is no perfect correlation among the variables.

Table 2: Correlation Analysis of the study variables

	Exchange Rate	Domestic Debt	Debt Service Payment	External Debt	Foreign Reserve	Money Supply
Exchange Rate	1.00					
Domestic Debt	0.47	1.00				
Debt Service Payment	0.78	0.55	1.00			
External Debt	0.92	0.46	0.76	1.00		
Foreign Reserve	0.78	-0.03	0.51	0.69	1.00	
Money Supply	0.9	0.39	0.72	0.99	0.74	1.00

Source: Author's computation, (2024)

Table 3: Augmented Dickey Fuller

Variables	Level			First Difference			I(d)
	None	Intercept	Trend & Intercept	None	Intercept	Trend & Intercept	
EXR	4.3039	2.8951	0.2216	-3.8215***	-4.4418***	-5.2704***	I(1)
DOD	3.2787	-1.5605	-1.5489	-2.5766**	-4.6112***	-4.8491***	I(1)
EXD	2.3420	-2.8633*	-2.3747				I(0)
MS	3.1364	-1.361	-2.3229	-2.2405**	-4.3483***	-4.4975***	I(1)
FR	0.9486	-1.7741	-2.5428	-5.98125***	-6.0558***	-5.9812***	I(1)
DSP	1.8294	-1.2797	-2.1966	7.6691***	-8.4358***	-8.4236***	I(1)

Source: author's computation, (2024)

* Significant at 10% ** significant at 5% *** significant at 1%

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Table 4 below shows the result of unit root test at level form and first difference form of the variables using Phillip-Pheron (PP) test. The order of integration I(d) shows the number of times each variable was differentiated before it is stationary. The result shows that not all the series of the included variables are stationary at level, the result discloses that only EXD is stationary at level while EXR, FR, DOD, DSP, and MS are stationary at first difference.

Table 4: Phillips-Pheron

Variables	Level			First Difference			I(d)
	None	Intercept	Trend & Intercept	None	Intercept	Trend & Intercept	
EXR	4.8079	2.8951	0.2216	-3.8215***	-4.467***	-5.0605***	I(1)
DOD	5.9705	-1.9412	-1.3898	-2.3626**	-4.6118***	-4.8399***	I(1)
EXD	2.0298	-2.7935*	-2.1359				I(0)
MS	6.9535	-1.3004	-1.647	-1.948**	-4.3593***	-4.4998***	I(1)
FR	1.6415	-1.7647	-2.5444	-5.9546***	-6.4949***	-6.198***	I(1)
DSP	2.836	-1.5668	-2.139	-7.6451***	-8.898***	-9.9137***	I(1)

Source: author's computation, (2024)

* Significant at 10%   ** significant at 5% *** significant at 1%

Autoregressive Distributed Lag (ARDL)

Based on the result of the unit root test, the variables were found to be integrated of different orders (I(0) and I(1)), the study therefore employs the appropriate estimation technique, which in this case is Autoregressive Distributed Lag (ARDL).

Cointegration Test

The result in table 5 shows the result of the ARDL bounds test conducted on the possibility of a long run relationship existing between the dependent variable and the independent variables. The bounds test F-statistics value (2.091957) is lower than the lower critical bounds (I0), this implies that a long run relationship does not exist between the study variables.

Table 5: ARDL Bounds test result

Test Statistic	Value	K
F-statistic	2.091957	5
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.26	3.35
5%	2.62	3.79
2.50%	2.96	4.18
1%	3.41	4.68

Source: author's computation, (2024)

SHORT RUN RESULT DISCUSSION

The result in table 6 below shows the short run results. It can be observed that LNDSP has a significant effect on EXR. This implies that debt service payment has a significant effect on exchange rate in the short run i.e. the impact of the variables are evident in the short run, it also shows that an increase in the debt service payment will result in a reduction in exchange rate, specifically, a 1% increase in debt service payment will decrease exchange rate by 0.19%, this effect was statistically significant at 10%. This finding is expected as debt servicing as well as repayment put a lot of pressure on the foreign exchange market in the short run resulting in exchange rate fluctuations. Is in agreement with Ajayi (1992) and Ezirim and Muoghalu (2006) both also found external debt to have no significant effect on exchange rate, but contrary to the findings of Aderemi and Fagbola (2020). It also showed that a 1% increase in the previous value of the domestic debt will reduce exchange rate by 0.996%, while a 1% increase in the

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previous value of foreign reserve will reduce exchange rate by 0.381%. This implies that both the current domestic debt and foreign reserve do not impact the exchange rate but their previous value does.

Furthermore, the Adjusted R2 as shown in the table was 0.981 which revealed that the independent variables (DOD, DSP, EXD, FR, and MS) can conveniently explain or account for the variations in EXR with about 98.8% while the remaining 1.2% would be explained by other factors affecting exchange rate which were not included in the model estimated.

The F-statistic result indicated that regression model used in the study was good and fit for predictive purposes. F-statistics was 148.3532, significant at 1 percent indicating that the overall model applied can statistically predict the dependent variable.

The short run error correction term (ECT) is negative, less than one and significant. The ECT result shows the speed of adjustment of exchange rate to its long run equilibrium after a short run disequilibrium. The coefficient for adjustment of exchange rate is -0.2467, this implies that more than 24 percent of the total short run disequilibrium converges back to equilibrium in the long run. In other words more than 24% of the disequilibrium is adjusted annually.

Table 6: Short run results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNDOD)	0.65464	0.39331	1.66443	0.1096
D(LNDOD(-1))	-0.9958**	0.36539	-2.7253	0.0121
D(LNDSP)	-0.1907*	0.0976	-1.9536	0.063
D(LNEXD)	-0.151	0.28582	-0.5285	0.6022
D(LNFR)	0.08523	0.12839	0.6638	0.5134
D(LNFR(-1))	-0.3811***	0.12867	-2.9622	0.007
D(LNMS)	-0.1079	0.55366	-0.1949	0.8472
D(LNMS(-1))	0.56405	0.42494	1.32736	0.1974
CointEq(-1)	-0.2467*	0.12284	-2.0085	0.0565
R-Squared	**Adjusted R-Squared**	**F-statistics**	**Durbin Watson**	**Prob (F-statistics)**
0.988215	0.981554	148.3532	1.874416	0.000

Source: author's computation, 2024

* Significant at 10%   ** significant at 5% *** significant at 1%

Post estimation test are conducted to ensure that all assumptions of the classical linear regression mode; were not violated. The result of the post estimation test is presented in table 8. The result indicated that the error series of the model estimated has time invariant variance, as the null hypothesis of homoscedasticity cannot be rejected at 5% significance level. Jarque-Bera Test showed that the null hypothesis of the series being normally distributed was rejected at 5% significant level. Breusch- Godfrey LM test was adopted to determine if the error term exhibits auto correlation. The test's null hypothesis was that no auto correlation existed and the null hypothesis was accepted at 5% level of significance. Ramsey RESET Test was adopted to conduct linearity test on the model to test how well fitted the model is, with null hypothesis that the model was linear. The null hypothesis was accepted at 5% level of significance. Thus, the linearity of the model was confirmed.

Table 7: Post Estimation Diagnostics

Test	Result	
	F-Statistics	Probability
Jarque-Bera	12.52448	0.001907
Breush-Godfrey LM	0.597535	0.5593
Breush-Godfrey Pagan	1.929001	0.815
Ramsey RESET	2.327909	0.1413

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CONCLUSION AND RECOMMENDATIONS

Exchange rate is one of the most important macroeconomic variables particularly for an emerging economy like Nigeria, it affects import, exports and economic activity, thus the ability of the monetary authority to manage it can be of great benefits to the nation's economy. Based on the findings of this study, this study concludes that the external debt has an insignificant effect on the exchange rate while domestic debt only affects the exchange rate through its previous values and is partly responsible along with debt service payment and foreign reserve for the state of the exchange rate.

RECOMMENDATIONS

Based on the findings of this study, Debt management should be linked to a clear macroeconomic framework which ensures that Nigeria Government will seek to ensure that public debt level and growth rate is sustainable. It is also crucial to ensure that the borrowed funds are invested in projects with high rate of returns.

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