

Responsiveness of Foreign Exchange Rate to Foreign Debt: Evidence from Nigeria

Gabriel A. Anidiobu¹
Paschal I.P. Okolie²

1. Department of Banking & Finance Enugu State University of Science & Technology, Enugu, Nigeria
2. Office of the Accountant General, Treasury House, State Secretariat, Enugu State, Nigeria

ABSTRACT : This paper examined responsiveness of foreign exchange rate to foreign debt in Nigeria. The specific objectives are: (i) to ascertain whether foreign exchange rate responded positively to foreign debt, and (ii) to explore whether foreign exchange rate responded significantly to foreign debt. Ex-post facto design was adopted for this study. Annual time series data for 28 years (1986-2013) were sourced from Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics and Debt Management Office. A preliminary test was performed using Augmented Dickey-Fuller to achieve data stationarity. Ordinary Least Squares method was used to estimate the variables. Foreign debt stock, Foreign debt service payment and Balance of trade made up the explanatory variables, while Foreign exchange rate served as dependent variable. Decisions were based on a 5% level of significance. Research results show that: (i) Foreign exchange rate had a positive response to foreign debt, and (ii) foreign exchange rate had a non-significant response to foreign debt. Based on findings, this paper recommends for a realistic exchange rate to be achieved, foreign debt should be geared towards increased production in the non-oil sectors, government should import less and export more.

Keywords: Balance of trade. Foreign debt service payment, Foreign debt stock, Foreign exchange rate and Nigeria

I. Introduction

One of the primary goals of most developed and developing economies such as Nigeria is to achieve a favourable foreign exchange rate regime, as well as other macroeconomic indices, which may be presumed as the precondition that must be met for investment to come about. Clearly, the economic breakthrough envisaged for Nigeria is sustainable economic growth and development driven by domestic capital formation, investment, as well as application of laudable fiscal policies (Ijeoma, 2013, [1]). Unfortunately, the mono product structure of Nigerian economy that is devoid of robust industrial base, driven by volatile price regime and its attendant changeable export revenue inevitably create “savings – investment” imbalance which makes foreign debt an irresistible funding option. Also, the unending yearns for foreign debt follow from the need to make up the foreign exchange shortfall that persistently results from imbalances in trade relations. Nigeria from time-to-time witnesses balance of payment deficits that restrict substantial inflow of foreign exchange to her economy. Although the country has since 1956 utilized foreign loan, the desirable transformations into improved infrastructures, stable exchange rate, robust industrial base, increased productive capacity, among others are far from being realized.

In light of the foregoing, the present state of health of most sub-Saharan Africa economies especially Nigeria has become worse than before on account of:

“... low demand owing to poor purchasing power, limited export opportunities, decline in the price of oil, unstable microeconomic environment, fluctuating foreign exchange regime and security upheavals have plunged many sub-Saharan economies into difficult economic situation. This condition is exacerbated by rising insurgency, corruption, weak leadership, faulty economic policies and changing dynamics in international politics.” (Nkemnebe, 2016, [2]).

Considering the quagmire aforementioned, the reasons governments borrow abroad are reduced to two justifiable points, which include, to bridge the “savings - investment” gap and the “foreign exchange” gap. The dual-gap theory supports the rationale for external borrowing as an attempt to narrow the saving - investment shortfall in a

1. Gabriel A. Anidiobu is a Lecturer in the Dept. of Banking & Finance, Enugu State University of Science & Technology, Enugu, Nigeria
2. Paschal I. P. Okolie is the Accountant General, Enugu State, Nigeria

Country where the domestic economy cannot add up. The second justification for borrowing from external sources

is to satisfy the foreign exchange requirement due to poor export profile of the countries concerned. Since the foreign exchange receipts needed to drive investment is inadequate, foreign debt may be the only financing option to attain swift economic transformation (Utomi, 2014, [3]). It is against this backdrop that this study attempted to investigate responsiveness (whether positively and significantly) of foreign exchange rate to foreign debt in Nigeria.

1.2 Statement of the Problem

There appears to be general concern that the present economic quagmire currently faced by Nigerians stems from over reliance on oil products and consequent decline in oil price. Nkemnebe (2016) observes that this country earns more than 80% of her foreign exchange from the oil market, which exposes her to the inherent shocks in the market. Besides, the magnitude of foreign debt contracted by Third World countries like Nigeria over time culminated in huge debt profile to the extent that not even the Structural Adjustment Programme (SAP) initiative by General Babangida regime (1985 – 1992) in 1986 could handle the problem. Regrettably, the attendant high level foreign debt service obligation restrained Nigeria from making huge domestic investment that could have boosted economic growth and stabilize the foreign exchange rate (Ezeanyej and Okeke, 2016, [4] citing Imimole, Imoughele and Okhuese, 2014).

Although the naira exchange rate recorded some period of relative calm after the Paris and London Clubs debt exit deals in 2006 and 2007 respectively, its persistent drop in value after the implementation of SAP in 1986, however, decry the performance of the real sector, which was underfinanced owing to our commitment to foreign debt servicing. The naira that exchanged for 0.893 = US\$1.00 in 1985 depreciated to ₦2.02 = US\$1.00 in 1986, and further to ₦8.03 against the US dollar in 1990 (CBN, 2011, [5]). To contain the trend, the policy of guided deregulation fixed the naira at ₦21.886 against the dollar in 1994. Further deregulation of the foreign exchange market in 1999, however, hiked the exchange rate to ₦92.342 = US\$1.00. Sequel to enormous inflow of oil revenue orchestrated by rise in oil price, the end result rate became ₦117.97 in December 2007 (CBN, 2011). This rate remained stable until towards the end of 2008 when the financial crisis engulfed the global financial system and the naira exchange rate declined in value from ₦117.97 in November 2008 to ₦132.56 in December 2008. The naira further dropped in value by 1253% in February 2009 (CBN, 2011). The naira further nose-dived against one US dollar from ₦150.298, ₦153.86, ₦157.499, ₦157.31, and ₦158.55 to ₦193.28 in 2010, 2011, 2012, 2013, 2014 and 2015 respectively (Okaro and Onwuzuligbo, 2016, [6]).

There seems to be limited studies (besides Ezeanyej and Okeke, 2016 & Ezike and Mojekwu, 2011, [7]) on foreign debt-foreign exchange rate relationship with diverse empirical outcomes. In that regard, this paper therefore intended to add to the literature to provide new empirical evidence, corroborate or counter previous studies in this area.

1.3 Research Objectives

The general objective of the study is responsiveness of foreign exchange rate to foreign debt. The specific objectives addressed include, to: (i) examine whether foreign exchange rate responded positively to foreign debt, and (ii) investigate whether foreign exchange rate responded significantly to foreign debt.

1.4 Statement of Research Hypotheses

The following hypotheses are formulated in null forms in line with the study objectives:

- H₀₁: Foreign exchange rate did not respond positively to foreign debt.
H₀₂: Foreign exchange rate did not respond significantly to foreign debt.

II. Review of Relevant Literature

2.1 Meaning of Debt

Usually, when a person, firm or government borrows or enjoys the full benefit of a commodity or service which is not accompanied by immediate payment, a debt is contracted. When a government borrows, the debt is a national debt. National debts obtained either from the populace (internal or domestic debt) or from foreigners (external or foreign debt) add up to the total debt obligations of government acquired to fund its activities probably on public interest. Foreign debt, the topic of this paper is regarded as loan obtained from foreign creditors such as governments, financial institutions, corporate bodies that must be repaid in full (both principal and interest) in the currency of the foreign creditors (Adejuwon, James and Soneye, 2010, [8]).

2.1.2 Meaning of Foreign Exchange Rate

Besides factors like interest rate and inflation, foreign exchange rate is one of the key measurements of a country's relative tendency of economic performance. Foreign exchange rates are the means by which global monetary system are intertwined in the international market. Foreign exchange rate, therefore, may be defined as the rate at which a unit of the currency of one country can be exchanged for a unit of the currency of another country (Encarta Dictionaries, 2009, [9]). Also, foreign exchange rate can refer to the price of a domestic currency in terms of a foreign currency (Nnanna, Alade & Odoko, 2003 cited in Okoro, 2011, [10]). This implies that exchange rate is the value of a local currency in terms of a foreign one. Exchange rates play a vital role in a country's level of trade, which is critical to every free market economy in the world. For this reason, exchange rates are among the most watched analyzed and governmentally manipulated economic measures.

The value of a country's currency is subject to interplay of market factors and measured by trade relations, investment, tourism, etc. For example, any time a Nigerian travels abroad for health, academic, holidays or for whatever reasons, he or she is obliged to pay bills in the currency of country visited. This means that the Nigerian traveler must exchange the naira for U.S dollar assuming his or her country of destination is America. Note that this mode of currency exchange is one of the various demand factors for a particular currency.

There are two operational exchange rate regimes: fixed (or pegged) and floating (or flexible) rates. The fixed exchange rate is a phenomenon which comes about when the rate of a currency vis-a-vis other currencies is pegged or predetermined by the government concerned like euro or even to a basket of currencies, but the exchange rate value of the currency is allowed to fluctuate alongside the currency to which they are fixed. Under the fixed rate arrangement, all exchange transactions occur at an exchange rate that is decided by the monetary authorities (Ayodele, 2014, [11]). This implies that the exchange rate of the said currency to other currencies is stable. This facilitates accumulation of foreign reserves for the country if she maintains a favourable balance of trade. International trade is promoted because prices of goods are more predictable and long-term capital flows can be guaranteed. Fixed exchange rate policy became operational in Nigeria in the pre-independence period till 1985. If the exchange rate is irrevocably pegged, the Central Bank, in actual fact does not have monetary policy as the exchange rate can no longer be varied to reflect the country's changing macroeconomic fundamentals and terms of trade shock (Okoro, 2011). The European Monetary Union (EMU) is an example of a pegged exchange rate regime because in 1999, member governments of European Union permanently fixed their exchange rate to the new euro, which became the single currency for the EMU in 2001.

Floating exchange rate, on the other hand, exists when the currency of a country in relation to other currencies is not stable. In this regard, the Central Bank does not peg the exchange rate as the price at which the currency is traded is determined by the interplay of demand and supply among market participants. This implies that the market is unpredictable, and so can lead to economic instability, high risk, exposure to loss on investment in foreign exchange. Under the arrangement of freely floating exchange rates, if there is an excess supply of a currency, the value of that currency in the forex market will fall. This will result to depreciation of the exchange rate. In Nigeria, for example, ₦158 was exchanged for US\$1 as at December 2012, but deteriorated to ₦168 to US\$1 by December 2013 in the open market (Ayodele, 2014). This scenario is attributable to high demand for dollar and excess supply of naira. Conversely, shortage of a currency will result to the appreciation of exchange rate thereby leading to restoration of equilibrium in the exchange market. The market forces operate automatically without interference from the monetary authorities (Ayodele, 2014).

Foreign exchange is handled worldwide by banks and all financial transactions are consummated with the support of the Bank for International Settlements. Monitoring the value of your local currency in comparison to various foreign currencies assists investors to analyze investments denominated in foreign currencies. For example, for a Nigerian importer of Chinese goods, knowing the naira - yuan exchange rates is worthwhile when choosing Chinese investments. Furthermore, since the U.S dollar is a reserve currency (i.e. many countries hold reserve in US dollar), a depreciating U.S dollar could increase the value of foreign investments in the same way an appreciating U.S dollar value could negatively affect the value of your foreign investments.

2.2 Theoretical Framework

2.2.1 Dual-gap Theory

The theoretical foundation for this study is the 'dual-gap' hypothesis attributed to Chenery & Strout in 1966 (Ayadi and Ayadi, 2008, [12]). The theory advances reasons why a developing country should opt for foreign finance as a means for ensuring sustainable growth rather than relying solely on domestic resources. The two-gap theory contends that growth is limited by two constraints. First, the savings gap constraints the country's ability to save and invest. Second, the foreign exchange gap accruing from limited export revenues and the targeted growth rate of the economy causes imports to exceed the economy's ability to finance them. Two gaps: savings-investments were identified as constituting constraints to growth, and these gaps were needed to be filled by foreign capital to stimulate investment. The theory seems to be apt in explaining the

concept of foreign debt. Describing the theory, Sulaiman and Azeez (2012, [13]) corroborate the reason stated earlier by other researchers that the dual gap hypothesis provides the framework which indicates that the development of a nation is a function of investment, and that such investment which requires domestic savings is not sufficient to ensure that the envisaged development materializes. In view of this, the importance of foreign debt on the growth process of an economy cannot be overemphasized. The researchers argue further that external borrowing ought to hasten optimal macroeconomic performance especially when internal resources are inadequate and needs to be augmented with foreign resources such as loan. It may be inferred from the foregoing explanation that in less developed economies (such as Nigeria), the level of domestic savings is not enough to finance investment targets so as to achieve the set macroeconomic objectives. It, therefore, makes sense for the countries in question to raise external loans to supplement the resources available internally. In this sense, a strict compliance with the borrowing principle appears to be a wise decision.

Other pro-dual gap theory adherents (Ajayi and Oke, 2012, [14]) support the fact that countries need savings, investment, sufficient import to realize desired rate of macroeconomic advancement. The researchers contend that if the available domestic savings fall short of the target rate of growth, a savings-investment gap is said to exist. In the same vein, if the maximum import requirement needed to realize the growth target is greater than the maximum possible level of export (i.e. $M > E$) then there is an export-import exchange gap.

2.3 Empirical Review

There are various studies that relate to our research topic, and many of such works have been closely examined in line with the objectives of the study as presented discussed below:

Ezeanyej, C.I. and Okeke, M.N. (2016) explored the impact of external debt management on exchange rate of Nigeria covering the period 1999 – 2015. The scholars applied the Philips-Perron (PP) unit root test, Engle Granger co-integration test and error correction mechanism (ECM), which reduced the likelihood of estimating spurious relations while retaining vital long run information. The finding revealed that external debt had a negative and significant effect on exchange rate in Nigeria. The study recommended among other things that government should check its borrowing activity and ensure proper spending to drive economic growth.

The study of Nwosa and Amassoma (2014, [15]) examined the causal nexus between capital inflows (in form of foreign direct investment and foreign portfolio investment) and exchange rate in Nigeria for the period spanning 1986 to 2011. The study employed both Granger causality and Error Correction modeling techniques. The causality estimate showed no causal link between capital inflows and exchange rate in Nigeria within the studied period. The long-run regression estimate revealed that foreign direct investment had a negative effect on exchange rate, while portfolio investment had a positive impact on exchange rate. However, the degree (significance) of impact was very minute unlike the international oil price which had a strong negative effect on exchange rate. The result of the short-run effect was similar to the causality result, which showed that neither foreign direct investment nor foreign portfolio investment had significant impact on exchange rate. The study concluded that the relationship between capital inflows and exchange rate in Nigeria is a long phenomenon.

Insah and Chiaraah (2013, [16]) used annual time series data covering 1980 – 2012 to examine the determinants of real exchange rate volatility in Ghana. An Autoregressive Distributed Lag Model (ARDLM) was employed for the estimation. The findings from the study revealed that money supply; though exerting a negative influence on real exchange rate volatility was not statistically significant. Consistent with the empirical literature, government expenditure was a major determinant of real exchange rate volatility. There existed a positive relationship between them. What this means is that an increase/decrease in government expenditure could lead to an increase/decrease in real exchange rate volatility. Since government expenditure was always increasing following Wagner's Law, it is the increase in volatility that is important to the study. Furthermore, both domestic and foreign debts were negatively related to real exchange rate volatility. Current external debt and a four-year lag of domestic debt had significant impacts on real exchange rate volatility. The paper recommended that as a policy move, a reduction in the rate of growth of government spending would help manage real exchange rate volatility in Ghana. Also an increase in external debt is not problematic if real exchange rate volatility management is the macroeconomic policy objective of the government. The main contribution of the paper is empirical and methodological. Empirically, it added new dimensions to the literature on determinants of exchange rate volatility in developing economies.

Ijeoma (2013) explored the impact of debt on selected macroeconomic indicators in Nigeria. The researcher used external debt stock, external debt service payments and exchange rate as independent variables to determine as function of gross domestic product (GDP) and gross fixed capital formation (GFCF) for the period 1980 - 2010. Data for the study obtained from the secondary sources – Debt Management Office, Central Bank of Nigeria Statistical Bulletin and internet materials were analyzed using linear regression. The study found out that Nigeria's foreign debt stock had a significant effect on economic growth. It also revealed that there was a significant relationship between Nigeria's debt service payments and gross fixed capital

formation. The scholar recommended that government should avoid borrowing as much as possible. She added that since developing countries need to borrow occasionally to supplement domestic saving, borrowing should become an option only when high priority projects were being considered, stressing that borrowed funds should be strictly monitored and evaluated to ensure they were invested on targeted viable projects. The study equally recommended that government should formulate critical policies capable of encouraging industrialization in order to attract more foreign direct investments into the country.

Fida, Khan and Sohail (2012, [17]) examined the relationship between exchange rate and external debt in Pakistan by utilizing quarterly data from the 1983:Q1 to 2008:Q4 period. Short-run and long-run nominal and real effective exchange rates and their respective equilibrium rates were assembled. The long-run equilibrium exchange rate was determined by employing the natural real exchange rate (NATREX) model. The authors utilized the Johansen co-integration test to examine the long-run relationships among exchange rates and the relevant exogenous variables in the NATREX model. After computing the deviation of exchange rate from its long-run, the Autoregressive Distributive Lag Model (ARDL) was employed to ascertain the role of external debt in exchange rate fluctuation. The results proved that there was a long-run co-integration relationship between the exchange rate and external debt variables. This was followed up with diagnostic test to verify the stability of the functions. Most of the tests indicated that the functions adopted for the analysis were appropriate and stable over time. Moreover, the findings were robust as laid down by the predictions of the model.

The study of Ezike and Mojekwu (2011) on the impact of external debt management on macroeconomic performance in Nigeria economy covered the period 1980 – 2004. Ordinary least square (OLS) was used to analyze the data on some macroeconomic indicators generated from the database of Central Bank of Nigeria. Also, Dickey-Fuller test was applied in checking the stationary properties of the data series. The results revealed that foreign debt reduction would enhance macroeconomic performance on the Nigerian economy.

Loganathan, Sukemi and Sanusi (2010, [18]) analyzed the long-run and short-run relationship between foreign debt and macroeconomic performance of Malaysia. They applied time-series econometric techniques with annual data series for the entire period of 1988-2008. The co-integration approach was employed to investigate the long-run relationship; Vector Error Correction Method (VECM) to investigate the short-term dynamics. They found that there was a significant long-run and short-run relationship between external debt and macroeconomic variables performance.

The empirical study of Nyoni (1997, [19]) examined the impact of foreign aid inflows on selected macroeconomic variables in Tanzania such as real exchange rate, export performance, growth and investment, etc. The main hypothesis of the study is that aid inflows caused real exchange rate appreciation. To test the hypothesis, the author adopted the Co-integration techniques and an Error Correction Model to estimate the long-run equilibrium and the short-run real exchange rate dynamics respectively. The estimated model results suggested that foreign aid inflows, openness of the economy and devaluation of the local currency led to the appreciation of the real exchange rate. The study recommended that the correct policy response to the influx of foreign aid is to direct the aid to domestic productive investment in order to induce a positive supply response. The government should also reduce its expenditure and enhance economic liberalization.

In our review of related literature, due diligence was taken to examine on a global scale accessible previous empirical works relevant to the topic under investigation. In that regard, a great number of the existing studies did not explicitly address some of the macroeconomic indicators (such as inflation rate, unemployment rate and exchange rate) stated in the objectives of the, but rather concentrated on effect of foreign debt on gross domestic product (proxy for economic growth). While most of the studies on foreign debt-economic growth nexus showed negative and non-significant outcomes, few others revealed positive and significant relationships between the explanatory and dependent variables.

III. Methodology

This study used the *ex-post facto* design. The choice of the *ex-post facto* design is because the research depended on already recorded events, and researchers do not have control over the relevant dependent and independent variables they are studying with a view to manipulating them (Onwumere, 2009, [20]). In this regard, the researcher is expected to report what has happened to the independent and dependent variables obtained from secondary sources and used in the study. Therefore, *ex-post facto* design suits the objectives of the study.

The study made use of data that were secondary in nature. Nigerian annual time series data, which covered 1986 - 2013, was utilized for the study. The data were obtained from different sources, including CBN Statistical Bulletin, National Bureau of Statistics (NBS) and Debt Management Office (DMO).

3.1 Model Specification

In order to achieve the objectives of the study, a simple regression model is adopted to estimate the responsiveness of foreign exchange rate to foreign debt in Nigeria. The model is stated below:

$$FEXR = f(FDS, FDSP, BOT) \dots\dots\dots (1)$$

The functional relationships for the hypotheses one and two are therefore indicated thus:

$$FEXR_t = \beta_0 + \beta_1 \log FDS_t + \beta_2 \log FDSP_t + \beta_3 \log BOT_t + \mu_t \dots\dots\dots (2)$$

Where,

- FEXR* = Foreign Exchange Rate
- FDS* = Foreign Debt Stock
- FDSP* = Foreign Debt Service Payments
- BOT* = Balance of Trade
- B₀* = Intercept
- B₁, β₂, β₃* = Coefficient of independent variable
- μ* = Error term
- t* = Time series

3.2 Techniques of Analysis

The OLS method was adopted as technique of analyses. Precisely, ADF test as well as descriptive statistics was used to determine stationarity of the data and describe relationship of the variables respectively.

IV. Results and Discussions

4.1 Unit Root Test

Time series data are characteristically found to be spurious (unreliable) particularly if the data are not stationary. Thus, in order to get rid of this abnormality, the Unit Root test was conducted on each of the variables under study to determine their stationarity traits. Evidences suggest that if time series data are not stationary, all the usual regression results will, at best, provide spurious regression and, at worst, very misleading. Consequently, ADF Unit Root test was conducted to test the stationarity condition of the time series data.

Table 1 Augmented Dickey-Fuller Unit Root Test

Variable	ADF Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value	Test for Unit Root	Durbin-Watson stat.
FEXR	-4.303651	-3.711457	-2.981038	-2.629906	1(1)	1.970608
FDS	-3.208754	-3.711457	-2.981038	-2.629906	1(1)	1.771346
FDSP	-4.981706	-3.724070	-2.986225	-2.632604	1(1)	2.104026
BOT	-11.04537	-3.711457	-2.981038	-2.629906	1(1)	2.212294

Source: Author’s computation aided by Eviews, 2016

The result of the Unit Root test in Table1 reveals that the variables became stationary at both 5% and 10% critical values – for the dependent variable (*FEXR*) as well the explanatory variables (*FDS*, *FDSP* and *BOT*). It is obvious that the calculated value is less than critical values for each of the variables tested, which is a confirmation of their stationarity attainment. Moreover, to confirm the reliability of this result, the Durbin Watson statistic value at each point is significant at approximately 2.00. This also shows the absence of traits of autocorrelation in the time series data.

4.2 Normality Test

Table 2 Description Statistics

	FEXR	FDS	FDSP	BOT
Mean	77.65643	1297278	144174.0	1813331
Median	101.0350	633080.7	46784.89	452860.0
Maximum	158.2700	4890270.	1165895	6361380.
Minimum	3.320000	41452.40	3181.190	2937.000
Std. Dev.	61.84364	1416050	259519.7	2292056
Skewness	-0.024635	1.344844	3.052871	0.928005
Kurtosis	1.193059	3.435397	11.51549	2.260077
Jarque-Bera	1.812039	4.661330	1.770925	4.657636
Probability	0.548671	0.413159	0.846460	0.397411
Sum	2174.380	36323774	4036873.	50773263
Sum Sq. Dev.	103265.2	5.41E+13	1.82E+12	1.42E+14
Observations	28	28	28	28

Source: Author’s computation aided by Eviews, 2016

Table 2 shows residuals from all the variables, and proves that they are symmetrically distributed. At each Jarque-Bera statistic value, the probability (p-value) value is substantially high among all the variables, and is greater than 5% critical value. The probability values of the JB statistics are 54%, 41%, 84% and 39%. Since they are greater than 0.05, the null hypothesis that the residuals in the above estimation are normally distributed cannot be rejected. Put in other words, our data is normally distributed.

4.3 Test of Hypotheses

This section tests the hypotheses stated in section 1 and modeled in section 3 and interprets the OLS regression results using the decision criteria to accept or reject the null/ alternate hypotheses.

4.3.1 Test of Hypothesis One

Ho₁: Foreign exchange rate does not respond positively to foreign debt.

Ha₁: Foreign exchange rate responds positively to foreign debt.

Table 4.3 Regression Results

Dependent Variable: FEXR

Method: Least Squares

Sample: 1986 2013

Included observations: 28

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-307.6198	66.09405	-4.654274	0.0001
LOG(FDS)	8.878937	7.875884	1.127357	0.2707
LOG(FDSP)	-1.149903	7.490738	-0.153510	0.8793
LOG(BOT)	21.65596	3.367363	6.431133	0.0000
R-squared	0.803827	Mean dependent var.		77.65643
Adjusted R-squared	0.779305	S.D. dependent var.		61.84364
S.E. of regression	29.05300	Akaike info criterion		9.707684
Sum squared resid	20257.84	Schwarz criterion		9.897999

Log likelihood	-131.9076	Hannan-Quinn criter.	9.765865
F-statistic	32.78032	Durbin-Watson stat	1.980675
Prob(F-statistic)	0.000000		

Source: Author's computation from Eviews' results, 2016
 $FEXR = -307.6198 + 8.878937LogFDS - 1.149903LogFDSP + 21.65596LogBOT$

Table 3 presents the regression result of Hypothesis One. It reveals that foreign exchange rate responds positively to foreign debt stock (*FDS*) in Nigeria within the period studied. This was explained by the positive coefficient value (8.878937) of our explanatory variable (*FDS*).

The R^2 is the summary measure that tells us how well the sample regression line fits the data. From the model above, R^2 of 0.80 means that 80% variation in foreign exchange rate was explained by a change in foreign debt stock, and the remaining 20% was explained by variables not included in the model. The adjusted R^2 takes account of more number of regressors if included and it still explains 78% variation in the dependent variable.

Following from the OLS results, alternative hypothesis is accepted while the null hypothesis is rejected. This implies that foreign exchange rate responds positively to foreign debt within the study period. Foreign debt is a valuable enhancement to the capital requirement of Nigerian economy. It is expected to stimulate the volume of economic activity and consequently increase aggregate demand. This suggests that the acquisition of foreign loan within the period of study led to variation in foreign exchange rate.

4.3.2 Test of Hypothesis Two

Ho₁: Foreign exchange rate does not respond significantly to foreign debt.

Ha₁: Foreign exchange rate responds significantly to foreign debt.

Table 3 also presents the regression results of hypothesis two, which reveals that foreign exchange rate responds non-significantly to foreign debt in Nigeria within the period studied. This was indicated by the corresponding probability value of the t-statistic (0.2707), which is more than 0.05 critical values. This implies that inflation rate could not be closely linked to the injection of foreign capital in the economy.

The F-statistic (32.78032), which follows the F distribution with a degree of freedom numerator of 1 and a degree of freedom denominator of 24 is non-significant (p-value = 0.000000) at a critical value of 0.05. This implies that the overall regression is non-significant. The Durbin Watson statistic (DW) is 1.980675, which is approximately 2.0. This reveals that there is no trace of serial autocorrelation in our estimated model equation.

In view of the foregoing, the study shows that foreign exchange rate responds positively and non-significantly to foreign debt within the period studied. This suggest that foreign borrowing has acted as an effective tool for remedying export-import imbalances in Nigeria with period under consideration though not particularly attributed to it.

V. Findings, Conclusion and Recommendations

5.1 Summary of Findings

Findings arising from the study can be summarized as follows:

- (a) Foreign exchange rate responded positively to foreign debt in Nigeria within the study period
- (b) Foreign exchange rate responded non-significantly to foreign debt in Nigeria during the period of study.

5.2 Conclusion

This study set out to determine whether foreign debt can influence foreign exchange rate in Nigerian economy for the period 1986 – 2013. The study adopted the OLS method to gauge the degree of responsiveness of the dependent variable on the independent variable. The preliminary test for presence of unit root was done using Augmented Dickey-Fuller (ADF). The respective test showed that both the dependent variable (*FEXR*) and the independent variables (*FDS*, *FDSP* and *BOT*) were stationary at first differencing. Specifically, the study concludes that foreign debt on account of its positive coefficient positively affected foreign exchange rate, but the contribution made by the former to the latter was statistically non-significant for the period 1986 – 2013. It is therefore concluded that foreign debt does not contribute significantly to overall foreign exchange volatility in Nigerian economy.

Foreign debt is a phenomenon of global interest therefore; the significance of this paper may not be in doubt. First, the findings of this work will serve as useful reference materials to scholars for further research activity on the subject matter or related areas in future, thereby adding to the very limited literature on Nigeria's debt issues. This could be in the area of providing new empirical evidence to the body of knowledge, or by either validating or invalidating the findings of previous studies. It is therefore expected that the entire

academic class: researchers, lecturers and students would benefit from the empirical and methodological postulations of the paper. Second, it is hoped that the findings of the study could help shape the policy framework of the Federal Government of Nigeria (FGN) as far as formulating and implementing robust economic policies and programmes are concerned. It could further provide direction required to tackle persistent naughty debt challenges in order to witness desired economic turnaround in Nigeria. It is worthy of mention that the dwindling revenue profile of the FGN may remain a nightmare to our political leaders thereby making foreign loan the only saving grace in funding myriad of government projects.

However, this study cannot claim to have taken into account holistically the equilibrium analysis in the area of foreign debt. It was rather restricted to partial equilibrium analysis of the topic investigated. Among other limitations, this includes inability to improve on the currency of relevant data generated for analysis. This study can be extended to examine the implications of Paris and London Clubs debt exit deals on Nigeria's economy.

V. Recommendations

The following recommendations are made based on findings of this study.

- (i) In order to achieve the goal of a realistic exchange rate in Nigeria, foreign borrowing should be geared towards increased production in the non-oil sectors, e.g. agriculture and solid minerals, less imports and increased exports. This is intended to strengthen the value of the naira in relation to other major international currencies like US dollar, euro, etc.
- (ii) Government must adopt fiscal adjustment programme that can improve its revenue base by intensifying productive export activities in the non-oil sector. This will engender favourable trade balance, strengthen and stabilize the exchange rate in favour of the naira.
- (iii) Policy makers should ensure that borrowed funds are deployed to cardinal sectors of the economy such as agriculture and manufacturing. Stepping up these activities could lead to optimal harnessing of productive resources to boost economic development of the country.
- (iv) In order to use foreign debt to maximize the productive potential of our country, and indeed other highly indebted jurisdictions, fiscal prudence and great sense of responsibility in managing public funds should be the ethical standard of these countries leadership.

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