

DOES GOVERNMENT EXPENDITURE HAS ANY IMPACT ON EXCHANGE RATE IN NIGERIA?

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ABSTRACT

The research examined the impact of government exchange rate expenditures in Nigeria for period 1986 to 2019. The study used secondary data from the Central Bank of Nigeria's Statistical Bulletin, and VAR Vector Auto regression Estimates to measure the impact of the independent variables (capital and recurring spending, deficit finance, money supply, and trade openness) on the dependent variable exchange rate. The study revealed that government spending has positive but insignificant effect on exchange rate. This goes to show that government spending is not a reliable policy instrument for exchange rate stability in Nigeria within the period of the study therefore the study makes the following recommendations. There is need for proper re-evaluation of government fiscal policies before adoption, credible supervision, monitoring and prudent spending in a bid to achieve the desired or stated results. Government should invest in capital expenditures on infrastructures and human capital development. The government should build an export-driven master plan to catalyze Nigeria's economic and industrial growth and free the country from import dependency.

Keywords: Exchnage rate, Money Supply, Trade Openness, VAR

INTRODUCTION

Exchange rate is a powerful economic measure for assessing an economy's overall output. Changes in exchange rate affect the broad allocation of resources in the economy. Well managed exchange rate is used in achieving certain economic objectives such as equilibrium balance of payments (Obadan, 1992). Thus, it is one macroeconomic variable that strongly reflects the strength and weakness of an economy. The real exchange rate of a country is often used as a metric for assessing its competitiveness. The actual effective exchange rate is the weighted average of a country's currency against an index or basket of other major currencies, adjusted for inflation. Weights are calculated by comparing the relative balance of a country's trade with that of the other indexed countries. The exchange rate is then used to calculate the value of the currency of one

country in comparison with the other main currency of the measure, such as the US dollar, the Japanese yen and the euro.

The liberalization of the exchange rate regime in Nigeria in 1986 resulted in the implementation of different strategies with the aim of determining the most suitable method for achieving a reasonable exchange rate for the Naira. Since 1986, a number of market-determined rates have been used to preserve exchange rate stability and ensure the Naira has a single exchange rate. The Second-tier Foreign Exchange Market (SFEM) was formed in 1986, and the First and Second-tier markets were merged in 1987 to form the enlarged Foreign Exchange Market (FEM), which was renamed the Inter-Bank Foreign Exchange Market (IBFM) in January 1989. Under this new arrangement, the IFEM was able to source foreign exchange for bureau de change, and in 1995, it was renamed the Autonomous Foreign Exchange Market (AFEM), which allows the Central Bank to buy foreign exchange from oil firms. Because of the rates' responsiveness to the foreign exchange market, floating exchange rates have been shown to be superior to fixed exchange rates (Okoro, 2013). Following the fall of the Bretton Woods system in the 1970s, both developed and developing countries began to transition from a fixed to a flexible exchange rate regime, and most economies now have to react to exchange rate changes (Isard, 1995).

The continuous search of a realistic exchange rate in Nigeria has not found a sustainable solution given the continual depreciation of the Nigerian naira. Various foreign exchange market reforms have failed to alleviate the naira's unidirectional decline against other currencies. Concerns about exchange rate movement have persisted among economists, monetary authorities, and foreign exchange end-users. While some economists attributed the naira depreciation to wrong policies implementation occasioned by lack of harmony between monetary and fiscal policies, others are of the views that, movement in the external sector and the macroeconomic performance constitute the driving force behind the persistent depreciation. Thus the need for an empirical examination of the government spending and exchange rate fluctuations, controlled by local (money supply) and external trade (trade openness) policies become imperative. However, the argument over government spending effect on exchange rate remains a controversial issue while some researchers believe it has a significant effect while others don't. Equally, most of the empirical studies on this subject in Nigeria has not incorporated deficit financing in understanding the role of government spending on exchange rate movement in Nigeria. Hence this work tends to bridge the existing geographical gap in previous works done on this subject.

LITERATURE REVIEW

Government spending can be called government expenditure, public expenditure or public spending. Public spending has an effect on aggregate resource use, as well as monetary and exchange rates, and relates to the amount of goods and services delivered by the government (Okoro, 2013). Government expenditure is described by Oriakhi (2004) as the costs incurred by the government for the welfare of the government and society in general. Anyafo (1996) opined that government expenditure is the amount of federal, state, and local government expenses plus payments to parastatals at all three levels of government in cash or cheque terms. Hence, public expenditure refers to the money spent on government activities for a given timespan. It includes both recurrent and capital expenditures (Anyafo, 1996).

Capital and recurrent expenditures are the two broad categories of government spending. Despite attempts by most government and public sector organizations to clearly distinguish between items of a recurrent nature and items of capital nature, there is no single definition of each that is acceptable in every circumstance. The general approach that is adopted to separate capital and

recurring expenditures as far as the profit duration is concerned (Anyanwu, 1997). As a result, the benefits of recurrent spending tend to be limited to the year in which the expenditure is incurred, while the benefits of capital expenditure tend to extend beyond the year of payment. According to Anyafo (1996), recurrent government expenditure could be expanded as government spending on its day to day recurring items such as personnel cost and overhead cost such as travel and transport utility services, telephone services, stationary, maintenance of office furniture and equipment, entertainment and hospitality. Thus, recurrent expenditure refers to government expenditures on administration such as wages, pensions, interest on loans, and repairs, while capital expenditure refers to expenses on capital projects such as highways, airports, health, education, telecommunications, and electricity generation (Obinna, 1985).

On the other hand, Capital investments include new buildings, land additions and alterations to existing structures, as well as the purchase of all other fixed assets (such as plant and equipment, including vehicles) with a longer-than-one-year planned working life. Stock and grant expenditures, as well as capital lending, are also included (Anyafo 1996). This is similar to the government expenditure classified earlier as government investment expenditures, otherwise referred to as Gross Fixed Capital Formation (GFCF). It is the government's purchase of goods and services with the aim of generating potential benefits. Therefore, Government capital expenditures comprise spending on capital projects such as roads, airports, education, telecommunications, and energy, as well as the purchase of investment products such as plants and equipment, and other items with a longer than one-year planned life. Although sometimes in reality, we may find this current classification less obvious, especially when the benefits from a recurrent expenditure item flows beyond one year. For instance, expenditure on schoolchildren's education can have benefits for several years to come.

The fiscal deficit is essentially the variance between what the government spends and what it earns (World Bank, 2005). It refers to the variance between budget receipts and budget expenses funded by cash withdrawals and public borrowing. The term "deficit financing" refers to any government spending that exceeds current revenues (Jhigan, 2002). Deficit financing is a term used in advanced countries to define the financing of a purposefully generated disparity between public revenue and public expenditure, also known as a fiscal deficit. The word "deficit financing" refers to the direct increase in gross national expenditure caused by budget deficits, whether they be revenue or capital account deficits. The purpose of such a strategy is that the government spends more money than it collects in taxation, earnings from state corporations, loans from public deposits, and funds from other sources.

The term foreign exchange rate simply called exchange rate is used to measure the ratio of one nation's currency to another. In the view of Saheed & Ayodeji (2012), It refers to the rate at which one currency is exchanged for another, or the value of one country's currency in terms of another. Ojo & Alege (2014) defined exchange rate as the domestic price of foreign currency. They went on to say that it can actually be thought of as the value of one currency in terms of another. The above definitions connotes that exchange rate is a comparison of the value of one currency in terms of another. For instance, the value of Nigerian Naira can be compared to those of USA dollar or United Kingdom (U.K) pounds. Furthermore, foreign exchange is a financial transaction in which the value of one country's currency is exchanged for the currency of another country (Usman & Adejare, 2012). A network of financial institutions, including banks, investors, and the government, is involved in the process. Exchange rate of a country to another can be stated in a normal or real terms. The nominal exchange rate is a monetary concept that measures the relative price of two tradeable goods (exports and imports) in relation to non-tradeable goods (goods and services) produced; while the actual exchange rate is a real concept that measures the relative price

of two non-tradeable goods (goods and services) produced. The nominal exchange rate is a responsive policy predictor because it is so visible; however, for growth analysis, economic managers must rely on trends in the real exchange rate (McPherson & Rakovski, 2000). Changes in exchange rates, according to Farrell & Todani (2004), can have a significant impact on economic growth, employment, inflation, the balance of payments, and individual well-being. Exchange rate fluctuations have an effect on macroeconomic variables such as inflation, economic growth, employment creation, and income distribution. To make the best decision, monetary policymakers must keep a close eye on exchange rate changes (Van De Merwe, 2004).

Money Supply

The Money Supply is a stock of money at a given point in time that represents the amount of money in circulation. The amount of money in non-bank public hands at any given time, as well as some deposits in commercial banks, is referred to as the money supply (Okeowo, 2008). As regards the growth of the supply of funds, Nigerian Central Bank (CBN) and government and private analysts are worried about the effect it would have on real economic activities and the overall price levels. Inflation will occur if the demand for money remains unchanged and the increase in money supply is not equal to money demand increase (Umeora, 2010). The government's use of money creation to fund its spending raises the nominal stock of money, which increases demand for goods and services. If production does not increase in lockstep with demand, market pressure may increase. In synopsis, increased government deficits, which are funded by money creation, will lead to inflation. In most developing countries, including Nigeria, weak and ineffective tax policies leave the government unable to generate sufficient funds for expenditures, necessitating the adoption of a strategy of financing government expenditures through the production of revenue. Thus, in Nigeria, the money supply is a good control variable for government spending.

Trade Openness

This deals with the level of country's transaction with other countries of the world. It is a measure of how well a country is exposed to external trade interactions including exports and imports. A vibrant export industry has been associated with faster economic development. Webb, Grace & Skipper (2002) posit that exports can increase capacity utilization, allow a country to take advantage of scale economics and promote technical changes. Traditional Keynesian theory considers export as one of the factors that can aid economic development. Export has a strong and important impact on economic development, according to empirical studies (Webb, Grace & Skipper, 2002; Arena, 2006; Ege & Sarac, 2011). On the other hand, import encourages the consumption of foreign commodities. Excess of import can hamper economic growth and put pressure on the exchange rate of local currency causing depreciation.

Theoretical Framework

The study is anchored on the Mundell-Fleming model. This model allows us to distinguish between the effect of different types of fiscal expansion: analyse a debt-financed tax cut, a balanced-budget increase in government spending and debt finance increase in government spending (Ganelli, 2002). The theoretical framework hinges on the proposition that An increase in government spending leads to a rise in the real exchange rate. "A increase in government spending puts pressure on the domestic currency to appreciate, leading to current account depreciation (and

likely a “twin deficit”) and a reduction in demand through an international risk-sharing condition,” according to Miyamoto, Nguyen & Sheremirov (2016). According to the scientists, this mechanism applies to a wide range of models, including both New Keynesian and neoclassical models.

Frenkel (2004) argues that government spending has two main effects on the private sector and the real exchange rate in a two-period small free market model: capital withdrawal and consumption tilting. In the first channel, government spending has a similar effect on private consumption and real exchange rates as a negative supply shock; however, the effect on private consumption and real exchange rates would be dependent on the percentage of government consumption spending on non-tradables versus tradables. The effect of government spending on private consumption levels and the real exchange rate will be calculated by the "characteristics of the utility mechanism," according to Frenkel and Razin in the second channel. They emphasize the importance of complementarity versus substitutability of utility between private and public use, which decides how government expenditure affects the marginal rate of intertemporal utility substitution.

Simultaneous monetary and fiscal expansion in the presence of complete capital mobility and a controlled (nearly fixed) exchange rate, according to the Mundell-Fleming model, will boost economic activity while retaining exchange rate stability. This means that “fiscal stimulus would increase income (via a multiplier mechanism) and domestic currency appreciation pressures” (Bajo-Rubio & Berke, 2014). The central bank would be forced to respond with monetary expansion to meet excess demand for domestic currency because its mandate is to sustain the exchange rate at a specific level or within certain implied fluctuation frames. In that way, currency tensions will be relieved while economic growth is stimulated due to lower interest rates. According to the classic Mundell-Fleming model, increased government spending increases interest rates, which leads to increased capital inflows and a nominal and real exchange rate appreciation. From another point of view, since government spending is primarily focused on domestically manufactured commodities, a rise in demand for non-tradables compared to imported goods results in a real exchange rate appreciation.

This model explains the theoretical framework for this study because it was able to relate government fiscal policy (one of which is government spending) to exchange rate movements. It explains that external sector and monetary policy reacts at a point in which government spending influences exchange rate. Thus in expected model of this study factored into consideration the interaction effects of money supply (monetary policy) and external sector (trade openness) in the relationship between government spending and exchange rate.

Empirical Review

Cakrani, Resulaj & Koprencka (2013) investigated the effect of government spending on the real exchange rate in Albania using a log-linear model with quarterly results. The exchange rate was used as the dependent variable, with government spending, foreign direct investment, remittances, actual GDP per capita, and transparency as explanatory variables. The unit root and cointegration were used to analyze the data. The findings revealed that government spending in Albania is linked to an overestimate of the real exchange rate. This means that government spending will increase the value of the currency.

In both advanced and developing countries, Miyamoto, Nguyen & Sheremirov (2016) examined at how changes in government transactions influenced the real exchange rate, consumption, and current accounts. Between 1989 and 2013, the researchers used panel data on military expenditures from 125 nations. Military expenditure, overall government spending, private

consumption, real GDP, real effective exchange rates, inflation, current account, trade balance, unemployment rate, government debt, wars, taxation, interest rates, exchange rate regimes, and other control variables like political risk, commodity exports, military imports, financial crises, and international relations are among the variables used. Increased government purchases cause real exchange rates to appreciate, boosting consumption in developing countries, thus depreciating real exchange rates, lowering consumption in developed countries, according to pooled regression analyses used.

Using a disaggregated approach, Saheed (2012) examined the impact of government capital spending on the Nigerian exchange rate. Between 1981 and 2010, it constructed a model that regressed Total Capital Expenditure, Administration Expenditure, Economics Expenditure, Social Services Expenditure, and Transfers Expenditure on the Exchange Rate. The results of the OLS regression methodology revealed that government spending on social and community services has a statistically important effect on the exchange rate in Nigeria, while capital expenditures on administration, economic services, and transition do not. In a two-country general equilibrium model, The closed-form theoretical solutions were developed and used by Balvers & Bergstrand (2002) to investigate the relationships between the real exchange rate, relative per capita private consumption, relative per capita government consumption, and relative per capita tradable and non-tradable production. Using relative price level, private and government per capita consumption, and relative productivity data, regression techniques were used to analyze data from the analysis. The results show that through the resource-withdrawal and consumption-tilting networks, government spending has approximately equal effects on equilibrium real exchange rates.

Exchange rate depreciation and government policies in Nigeria were investigated by Asinya & Takon (2014). The research used regression analysis with the Ordinary Least Squares (OLS) econometric technique and secondary data from 1980 to 2011. The long-run relationship between the variables was investigated using a co-integration regression. The speed of the equilibrium change was determined using the short-run Vector Error Correction (VEC) model. The findings revealed that government fiscal and monetary policies have a substantial impact on exchange rate depreciation. The coefficient of multiple determination (R²) also had a high explanatory capacity, and the overall model was important. As a result, the government will slow the depreciation of the naira by implementing a flexible exchange rate regime, reducing foreign trade imbalances, and monitoring the output of certain macroeconomic variables. Çebi & Çulha (2013) investigated the impact of government spending shocks on the real exchange rate and the foreign trade balance in Turkey from 2002 to 2012.IV in structural VAR framework. An increase in government spending leads to a rise in the real exchange rate and a worsening of the trade balance, according to the report. According to further research, the composition of government spending is significant. Government non-wage consumption shocks cause the real exchange rate to rise and the trade balance to worsen, but government spending shocks have negligible impact. Furthermore, the study shows that increases in taxes are linked to increases in government spending, implying that Turkey has a spending-driven tax adjustment mechanism.

Bajo-Rubio & Berke (2014) investigated the relationship between fiscal policy and the real exchange rate in Spain. The study looked at how shifts in government expenditure, which distinguishes between consumption and investment, would affect the long-term evolution of the real exchange rate in relation to the euro area. The exchange rate and government spending have a long-run relationship, according to cointegration reports. Lin (1994) used a two-country overlapping generations model of development to investigate the steady-state impact of government debt on the real exchange rate. Increases in government debt depreciate the real exchange rate of countries with higher capital elasticity of production, while they appreciate the real exchange rate of countries with

lower capital elasticity of output, according to the results. In a traditional structural VAR scheme, Castro & Garrote (2012) investigated the impact of government spending shocks on the real effective exchange rate and net exports in the Euro Area. Higher government spending, according to results focused on quarterly fiscal variables for the Euro Area as a whole, leads to real exchange rate appreciation, a decrease in net exports, and lower primary budgetary surpluses. Wage and nonwage consumption expenditure, overall public consumption expenditure, and public investment are all elements of government spending that result in real appreciation.

Benetrix & Lane (2013) used an annual frequency time period of 1970 to 2008 to estimate the real exchange rate effect of shocks to government spending for a panel of Euro area member countries. Using structural constraints in VAR models, the researchers discovered that the effect varies depending on the form of government spending, with public expenditure shocks producing larger and longer-lasting real appreciation than government consumption shocks. Further findings revealed that shocks to the wage portion of government consumption have a longer lasting effect than shocks to the non-wage component. Using a two-sector oriented open economy model with inter-sectoral adjustment costs, Chatterjee & Mursagulov (2012) investigated how public infrastructure spending affects the dynamics of the real exchange rate. According to the study, government spending causes the real exchange rate to shift in a non-monotonic U-shaped direction with sharp intertemporal tradeoffs. The effect of government spending on the real exchange rate is highly dependent on (i) government spending structure, (ii) the underlying financing policy, (iii) the strength of private capital in growth, and (iv) the relative efficiency of public infrastructure.

To investigate the impact of government spending on the exchange rate, Kollmann (2010) used a simple model with restricted international risk sharing that can account for the empirical real exchange rate response. Using the impulse response feature, the researchers evaluated various economic scenarios. Local households experience a negative wealth impact as a result of a country-specific increase in government purchases, according to the report. As a result, they work harder, and domestic production rises. The supply-side effect is so intense in balanced trade (financial autarky) that the terms of trade deteriorate and the real exchange rate depreciates. In a bond-only economy, an increase in government purchases contributes to a real exchange rate depreciation if the increase is long enough and/or the labour supply is highly elastic. With monthly data covering January 1999 to June 2010, Gaol, Kuncoro & Sebayang (2015) showed that government debt has a positive impact on exchange rate stability in Indonesia. These results were obtained using the cointegration test and regression analyses. The assumption is that in a free-floating capital market, exchange rate volatility is a cost that must be charged.

In a similar analysis, Bouakez & Eyquem (2012) found that an unexpected increase in government spending triggers a reduction in the risk-adjusted long-term real interest rate, causing the real exchange rate to depreciate. They proposed a small-open-economy model with three key components: incomplete and imperfect foreign capital markets, sticky prices, and a moderate monetary policy. Corsetti, Meier & Müller (2011) developed a two-country model with complete markets, sticky prices and wages, and spending reversals in a similar analysis. The study's main conclusion is that debt-financed increases in government spending would cause spending to fall below its steady-state level for a time. Long-term real interest rates decline as a result, and the currency gains real value.

Insah & Chiaraah (2013) used the Autoregressive Distributed Lag (ADL) Model to investigate the causes of Ghanaian exchange rate volatility from 1980 to 2012. The findings revealed that government spending is a significant factor influencing real exchange rate volatility. They had a good rapport. Furthermore, both domestic and foreign debts were linked to real exchange rate fluctuations in a negative way. Real exchange rate volatility was significantly

influenced by current external debt and a four-year lag in domestic debt. To show that exogenous rises in government spending trigger real exchange rate appreciations, Parsley & ShangJin (2014) used the two-step feasible GMM technique. In contrast to OLS, the findings indicate that a one standard deviation exogenous fiscal stimulus at home results in a real exchange rate appreciation of about 3.3 per cent in the United States.

Kuncoro (2015) investigated the effect of fiscal policy legitimacy on exchange rate stabilization in Indonesia over a period of 2001 to 2013. The study discovered that the effect of reliable fiscal policy is usually influenced by the characteristics of fiscal rule engagement, based on quarterly data analysis. The credible debt rule policy, on the one hand, reduces exchange rate volatility. The deficit rule scheme, on the other hand, has little impact on the exchange rate and therefore does not contribute to the stabilization of the exchange rate. The study concluded that reputation is essential in maintaining the foreign exchange market's stability, based on the above findings. In another report, Galstyan & Lane (2009) used a two-sector model for a small open economy in some OECD countries. They discovered that the composition of government spending has an effect on the real exchange rate's long-term behavior: higher government consumption leads to higher real appreciation, whereas higher government expenditure leads to higher real depreciation. According to their findings, government consumption and government expenditure have different effects on the real exchange rate.

METHODOLOGY

The model was developed from the works of Cakrani, Resulaj & Koprencka (2013) in Albania, Saheed (2012) in Nigeria and Asinya and Takon (2014) in Nigeria. These studies employed a multiple regression model. Their models were:

Cakrani, Resulaj and Koprencka (2013): $RER = f(\text{OPEN}, \text{REM}, \text{GDP}/c, \text{FDI}, \text{GOV})$

Where: real effective exchange rate (RER), Trade openness (OPEN), Remittances (REM), Real income per capita (GDP/c), Foreign Direct Investment (FDI), and government expenditures (GOV).

Saheed (2012): $ER = f(\text{TCE}, \text{ADM}, \text{ECO}, \text{SOC}, \text{TRF})$

Where: Exchange Rate (ER), Total Capital Expenditure (TCE), Administration Expenditure (ADM), Economics Expenditure (ECO), Social Services Expenditure (SOC), Transfers Expenditure (TRF)

Asinya and Takon (2014): $\text{EXCHR} = f(\text{LFD}, \text{LFD}_{(-1)}, \text{INTR}, \text{LM}, \text{MS}_{(-1)})$

Where: Exchange rate (EXCHR), Log of fiscal deficit (LFD), Log of lagged fiscal deficit ($\text{LFD}_{(-1)}$), Interest rate (INTR), Money supply (LMs), and Log of lagged money supply ($\text{LMs}_{(-1)}$).

The idea to employ disintegration of government spending came from the work of Saheed (2012) which disintegrated along the line of functional government spending. The present study dividend government spending into capital and recurrent sub-heads. However, to control variables were borrowed from the works of Cakrani, Resulaj & Koprencka (2013); Asinya & Takon (2014). Thus, the present study is modified to disintegrate government spending into Capital (CAP) and Recurrent (REC) and also considers the traditional Deficit Spending (DEF) in Nigerian economy. However, it was controlled for money policy using money supply (M_2) and effect of external economy using trade openness (OPEN).

The present model is thus: $\text{EXR} = f(\text{GCE}, \text{GRE}, \text{DS}, \text{M}_2, \text{TO})$.

The equation form of the model is:

$$\text{EXR} = \alpha + \beta_1 \text{LnGCE} + \beta_2 \text{LnGRE} + \beta_3 \text{LnDS} + \beta_4 \text{LnM}_2 + \beta_5 \text{TO} + \varepsilon$$

Where:

GCE = Total Government Capital Expenditure

GRE = Total Government Recurrent Expenditure

DS = Government Deficit Spending

M₂ = Broad money supply as proxy for monetary policy

TO = Trade openness as proxy for trade liberalisation policy

α is the constant, β_{1-5} are the coefficients of regression and ε is the error term. Ln is the natural Log of the variables that smoothens possible scholastic effects.

DATA PRESENTATION AND ANALYSIS

Table 1 explains the descriptive features of the variables. The mean value, standard deviation, number of observation, minimum and maximum values of the data were highlighted in the study. With thirty four (34) number of observation, the mean of the data are 108.0126 for EXR, 542.8794 for GCE, 1651.461 for GRE, -721.0441 for DS, 7286.167 for M2 and 10293.46 for TO, whereas the standard deviation are 91.70817, 532.2020, 1899.933, 1216.347, 9833.147 and 11302.72 respectively for EXR, GCE,DS,M2 and TO. The minimum and maximum values are 2.020600 and 306.9206 for EXR, 6.370000 and 2289.000 for GCE, 7.700000 and 6997.390 for GRE, -4913.820 and 32.00000for DS, 23.81000 and 34251.70 for M2, 14.90000 and 40358.67for INFR.

	Mean	Std. Dev.	Min.	Max.	Obs.
EXR	108.0126	91.70817	2.020600	306.9206	34
GCE	542.8794	532.2020	6.370000	2289.000	34
GRE	1651.461	1899.933	7.700000	6997.390	34
DS	-721.0441	1216.347	-4913.820	32.00000	34
M2	7286.167	9833.147	23.81000	34251.70	34
TO	10293.46	11302.72	14.90000	40358.67	34

Source: Computer output data using E-views 9.0

	EXR	GCE	GRE	DS	M2	TO
EXR	1.000000					
GCE	0.881371	1.000000				
GRE	0.931504	0.931898	1.000000			
DS	-0.867890	-0.847368	-0.915058	1.000000		
M2	0.903222	0.895363	0.985852	-0.934058	1.000000	
TO	0.885294	0.938907	0.978085	-0.834338	0.945322	1.000000

Source:E-views 9.0 version data output; * and ** denote significance level at 1% and 5% respectively

The degree of association between variables is indicated by correlation. It determines the magnitude and strength of the relationship between two variables. In an attempt to ensure that the variables of government spending are highly correlated, the level of correlation between them was estimated and revealed in Table 2. The result as presented in the table 2 showed that most of the variables employed are highly correlated and that there is significant correlation between the variables used in the models as most of them are not considered insignificant as they are above 50% level of significant. The directions of the correlation for some are positive while some variables are negative. Hence, there is no suspicion of possible multicollinearity.

Unit Root Test

The unit root tests performed were the Augmented Dickey-Fuller (ADF) and Phillips Perron (PP). At level, first and second difference at intercept, the ADF and PP were checked. To validate the ADF result, a PP test was used.

Variables	ADF Test Statistic	Test Critical Value at	Test Critical	Remark
EXR	0.984055(0.9954)**	-3.646342	-2.954021	Not Stationary
GCE	1.481593 (0.9989)**	-3.646342	-2.954021	Not Stationary
GRE	4.790102 (1.0000)**	-3.646342	-2.954021	Stationary
DS	3.706317 (1.0000)**	-3.646342	-2.954021	Stationary
M2	6.513889 (1.0000) **	-3.646342	-2.954021	Stationary
TO	1.865803 (0.9997) **	-3.646342	-2.954021	Not Stationary

Source: Author's Computation

Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remark
EXR	-4.034116 (0.0038)**	-3.653730	-2.957110	Stationary
GCE	-4.182189 (0.0026)**	-3.653730	-2.957110	Stationary
GRE	-2.421129 (0.1442)**	-3.653730	-2.957110	Not Stationary
DS	-3.063709 (0.0397)**	-3.653730	-2.957110	Stationary
M2	-2.794629 (0.0703) **	-3.653730	-2.957110	Not Stationary
TO	-2.828422 (0.0656) **	-3.653730	-2.957110	Not Stationary

Source: Author's Computation

Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remark
EXR	-7.269511 (0.0000)**	-3.661661	-2.960411	Stationary

GCE	-11.57467 (0.0000)**	-3.661661	-2.960411	Stationary
GRE	-10.62173 (0.0000)**	-3.661661	-2.960411	Stationary
DS	-7.411325 (0.0000)**	-3.661661	-2.960411	Stationary
M2	-13.60807 (0.0000)**	-3.661661	-2.960411	Stationary
TO	-6.797974 (0.0000)**	-3.661661	-2.960411	Stationary

Source: Author’s Computation

The variables were stationary at level, 1st diff, and 2nd diff, according to the Augmented Dickey-Fuller (ADF) unit root test in tables 3 to 5, and the Phillips Perron (PP) unit root test was used to validate stationarity of the variables. The results of the Philip Perron unit root test are shown in tables 6 through 8.

Table 6				
THE PP UNIT ROOT TEST RESULT AT LEVEL				
Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remark
EXR	0.930638(0.9947)**	-3.646342	-2.954021	Not Stationary
GCE	1.242599 (0.9978)**	-3.646342	-2.954021	Not Stationary
GRE	4.508534 (1.0000)**	-3.646342	-2.954021	Stationary
DS	11.76540 (1.0000)**	-3.646342	-2.954021	Stationary
M2	7.290468 (1.0000)**	-3.646342	-2.954021	Stationary
TO	1.865803 (0.9997)**	-3.646342	-2.954021	Not Stationary

Source: Author’s Computation

Table 7				
THE PP UNIT ROOT TEST RESULT AT 1ST DIFF				
Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remark
EXR	-3.925169 (0.0051)**	-3.653730	-2.957110	Stationary
GCE	-4.284653 (0.0020)**	-3.653730	-2.957110	Stationary
GRE	-2.610169 (0.1014)**	-3.653730	-2.957110	Not Stationary
DS	-3.035538 (0.0422)**	-3.653730	-2.957110	Stationary

M2	-2.695745 (0.0858) **	-3.653730	-2.957110	Not Stationary
TO	-2.821505 (0.0665) **	-3.653730	-2.957110	Not Stationary

Source: Author's Computation

Table 8				
THE PP UNIT ROOT TEST RESULT AT 2ND DIFF				
Variables	ADF Test Statistic	Test Critical Value at 1%	Test Critical Value at 5%	Remark
EXR	-16.44133(0.0000)**	-3.661661	-2.960411	Stationary
GCE	-13.34268 (0.0000)**	-3.661661	-2.960411	Stationary
GRE	-10.41578 (0.0000)**	-3.661661	-2.960411	Stationary
DS	-12.19647 (0.0000)**	-3.661661	-2.960411	Stationary
M2	-13.80330 (0.0000) **	-3.661661	-2.960411	Stationary
TO	-7.065366 (0.0000) **	-3.661661	-2.960411	Stationary

Source: Author's Computation

Short-Run Relationship

The Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) unit root test shows that the variables were stationary at level, first difference and second difference and this necessitated the use of Vector Autoregression Estimates.

Table 9			
VECTOR AUTOREGRESSIVE ESTIMATES NORMALISED RESULTS ON EXR			
Parameters	Coefficient	Standard Error	t-statistic
EXR(-1)	0.942640	0.12945	7.28198
GCE(-1)	0.006805	0.01970	0.34539
GRE(-1)	0.030965	0.02851	1.08623
DS(-1)	0.030220	0.01032	2.92719
M2(-1)	0.004162	0.00264	1.57573
TO(-1)	-0.005592	0.00251	2.22602
C	9.125329	5.10543	1.78738

Adjusted R-squared = 0.96

F-Statistic = 168.4717

Table 9 reveals that EXR, GCE, GRE, DS, and M2 all have a positive effect on EXR, while TO has a negative effect. EXR would increase by 0.94 %, 0.006 %, 0.030 %, 0.030 %, and 0.004 %

with 1% change in a year lag of EXR, GCE, GRE, DS, and M2. A percent change in TO over a year lag, on the other hand, would result in a 0.0055 % decrease in EXR. Based on the high values of their t-statistics, the findings show that only a year lag of EXR, DS, and TO are statistically significant.

The modified R-squared value of 0.969 % shows that the cumulative impact of the independent variables accounts for approximately 96.9% of the variations in EXR. It also means that the model is well-suited to elucidating the relationship. Also, the F-statistic, which tests the model's overall significance, showed a high value of 168.4717, indicating that the effects of government expenditure on the exchange rate in Nigeria are statistically significant.

Long-Run Relationship

The long-run relationship must be estimated after the short-run relationship has been estimated using Vector Autoregressive Estimates (VAR). Testing the co-integration relationship between government spending and the exchange rate in Nigeria was done using the Johansen co-integration method. Tables 10 showed the existence of four co-integrating equations at a 5% level of significance by using the trace test and maximum eigenvalue. According to the co-integration review, the exchange rate and government spending (capital and recurrent expenditure, deficit financing, money supply, and trade openness) in Nigeria have a long-run equilibrium relationship. This means that government spending would affect Naira's exchange rate against other currencies around the world. This means that a given unit increase in government spending would increase the Naira exchange rate, causing the Naira to depreciate (that is, increase in exchange rate) against other currencies.

The presence of four (4) co-integrating equations in the nexus between government spending and exchange rate. This implies that government expenditures would bring about changes in exchange rate of Naira to other currencies of the world in the long run. With the existence of long run relationship, there is need to analyze normalized long run coefficients based on Johansen test. The result of the normalized coefficients shown in Table 10 shows a long-run effect between government expenditure and exchange rate in Nigeria.

Note: The standard errors in () and the t-statistic in [].** denote significance at the 1% mark. Capital and recurrent spending have a positive long-run impact on the exchange rate, while deficit funding, money supply, and trade openness have a negative impact. The coefficients of **GCE** and **GRE** are statistically relevant at the 5% stage, while **DS**, **M2**, and **TO** are not.

Conclusion: In the model, the null hypothesis of no cointegration is rejected in favour of the alternative of a cointegrating relationship.

Table 10 JOHANSEN CO-INTEGRATION FOR EXR, GCE, GRE, DS, M2 & TO				
Unrestricted Cointegration Rank Test (Trace) EXR,GCE,GRE,DS,M2 & TO				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.841522	183.6639	95.75366	0.0000
At most 1 *	0.798210	124.7155	69.81889	0.0000
At most 2 *	0.666964	73.49864	47.85613	0.0000
At most 3 *	0.555556	38.31446	29.79707	0.0041

At most 4	0.319419	12.36470	15.49471	0.1403
At most 5	0.001587	0.050837	3.841466	0.8216
Unrestricted Cointegration Rank Test (Maximum Eigenvalue) EXR,GCE,GRE,DS,M2 & TO				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.841522	58.94841	40.07757	0.0001
At most 1 *	0.798210	51.21683	33.87687	0.0002
At most 2 *	0.666964	35.18418	27.58434	0.0044
At most 3 *	0.555556	25.94976	21.13162	0.0097
At most 4	0.319419	12.31386	14.26460	0.0994
At most 5	0.001587	0.050837	3.841466	0.8216

Trace test and Max-eigenvalue test each indicates (2) co-integrating eqn(s) at the 0.05 level;
 * denotes rejection of the hypothesis at the 0.05 level; **MacKinnon-Haug-Michelis (1999) p-values.

EXR	GCE	GRE	DS	M2	TO
1.000000	-0.140461	-0.277536	0.000846	0.025051	0.021115
	(0.01238)	(0.01121)	(0.00782)	(0.00161)	(0.00140)
	[11.346]	[24.758]	[-0.1081]	[-15.5596]	[-15.0821]

Source: Output Data from E-views 9.0

Causal Relationship: Government Spending and Exchange Rate in Nigeria

The Granger Causality study was used to determine the causal relationship between government expenditure and the exchange rate in Nigeria, with the results shown in Table 12. The exchange rate, capital expenditure, money supply, and trade openness have a unidirectional causal relationship, as shown in Table 12. The direction of causality is from exchange rate to capital expenditure, money supply and trade openness.

Null Hypothesis:	Obs	F-Statistic	Prob.
GCE does not Granger Cause EXR	32	2.26797	0.1229
EXR does not Granger Cause GCE		6.86432	0.0039
GRE does not Granger Cause EXR	32	1.31865	0.2842
EXR does not Granger Cause GRE		3.28582	0.0528
M2 does not Granger Cause EXR	32	2.06293	0.1466
EXR does not Granger Cause M2		4.26092	0.0246
DS does not Granger Cause EXR	32	0.68046	0.5149
EXR does not Granger Cause DS		0.24647	0.7833
TO does not Granger Cause EXR	32	2.99096	0.0671
EXR does not Granger Cause TO		8.75897	0.0012

Source: Output Data from E-views 9.0

Variance Decomposition

With the discovery of the causal relationship between government spending and exchange rate, it is necessary to identify the government spending variables that have the greatest effect on

exchange rate. According to the results of the EXR variance decomposition estimates in Table 13, deficit financing shocks account for about 13% of the variation in EXR in the 6th century. Then there's capital spending, which accounts for about 10% of EXR adjustments in the tenth century. However, shifts in GRE, M2, and TO are responsible for about 8.7%, 6.9%, and 2.0% of future EXR changes, respectively, while present EXR is responsible for about 97 percent of future EXR changes.. This shows that deficit financing can be targeted at exchange rate appreciation whereas excessive use of trade liberalisation is capable of depreciating the Nigeria Naira and making the economy less competitive.

Period	S.E.	EXR	GCE	GRE	DS	M2	TO
1	17.91055	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	26.82216	97.06662	1.148463	0.067015	0.119691	1.291478	0.306729
3	34.73213	90.99632	0.969693	1.886934	3.469828	1.972054	0.705175
4	41.04351	84.10303	1.000887	3.718979	8.663392	1.491255	1.022456
5	45.06415	79.72099	0.945039	3.422390	12.50034	1.906443	1.504806
6	47.75989	75.95850	1.930254	3.138375	13.41080	3.678753	1.883316
7	49.36006	73.18376	2.161524	3.924573	13.04712	5.776243	1.906781
8	50.50921	70.60977	2.214731	5.886188	12.52382	6.939237	1.826250
9	52.38174	66.13184	4.399143	8.282229	12.75420	6.538904	1.893686
10	55.84575	59.40945	10.24891	8.777944	12.95514	6.534914	2.073641

Source: Output Data from E-views 9.0

SUMMARY, CONCLUSION AND POLICY IMPLICATION

The study examined the effect of government spending on exchange rate fluctuations in Nigeria from the Structural Adjustment Programme era till 2019 covering a period of 34 years. The debate on whether government spending affects exchange rate in Nigeria remains a controversial issue as such the study tends to find an answer to this question. The study, therefore, regressed capital expenditure, recurrent expenditure, deficit financing, money supply (as financial deepening) and trade openness as a function of exchange rate fluctuations. The VAR technique and cointegration tests were used after the unit root evaluation. Nigeria's government spending and exchange rate have a long-term relationship, according to the Co-integration report. The short run relationship was tested using Vector Autoregressive Estimates (VAR), and it was discovered that government expenditure has a positive but negligible impact on Nigeria's exchange rate. According to the findings, government expenditure in Nigeria has no short-term effect on the exchange rate. This means that in Nigeria, government spending is a risky policy tool for maintaining exchange rate stability. This implies that government spending is not enough to control exchange rate movements in the Nigerian naira. Further to this, the VAR showed that government capital and recurrent expenditures have no significant effect on exchange rate in Nigeria. This suffices that government expenditure cannot be used for exchange rate stabilisation policy. The findings are in line with the previous studies of Albania, Cakrani, Resulaj & Koprencka (2013); Miyamoto, Nguyen & Sheremirov (2016); Saheed (2012); Asinya & Takon (2014); Lin (1994); Castro & Garrote (2012) but are inconsistent with the study of Çebi & Çulha (2013); Kollmann (2010); Gaol, Kuncoro & Sebayang (2015); Galstyan & Lane (2009).

Policy Implication

Government spending is expected to appreciate exchange rate, increases consumption and demand for the currency in developing countries. But this is not so in Nigeria as such the study makes the following recommendations government should invest in capital expenditures on infrastructures, human capital development (Example YouWin program by Goodluck Jonathan led administration). The government should build an export-driven master plan to catalyze Nigeria's economic and industrial growth and free the country from import dependency. To boost Nigerian exchange rate, there is a basic need for proper re-evaluation of government fiscal policies before adoption, credible supervision, monitoring and prudent spending in a bid to achieve the desired or stated results. Another solution would be for adoption of policies capable of reducing the broad money supply in Nigerian economy and redirecting these funds to productive activities. A clue from the Development bank of Nigeria SME loans, geared towards providing funding for MSMEs and risk-sharing guarantees, accessible through the participating financial institutions. Government can make concerted efforts towards import substitution so that trade openness can be used to stabilise the economy and enhance economic competitiveness of Nigeria. The government has devised an import substitution strategy that, on the one hand, restricts access to forex (making imports more difficult) while also bolstering the manufacturing sector. The goal is noble; import substitution has many advantages, including increased job opportunities and currency preservation. However, several factors must be considered by relevant authorities for import substitution to be successful. For example, to stimulate local production, growth, and development of Nigeria's productive sectors, sustainable power supply, corporate taxation, and guaranteed financial supports, among other export-oriented, economic visionary policies are needed.

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