

## **FISCAL DEFICITS AND FOREIGN RESERVES EVIDENCE FROM NIGERIA**

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### **Abstract**

*The main aim of this study is the evaluation of fiscal deficits and its effects on external reserves in Nigeria over the period 1981-2012. Employing modern time series econometric techniques such as unit root test, cointegration and error correction techniques the study reveals intriguing results. The Johansen cointegration test revealed a long run relationship among the variables. The statistical significance of the one period lagged ECM supports this long run relationship and a satisfactory speed of adjustment. Results suggest that foreign exchange reserve is determined in the long-run by recurrent and capital expenditures. It is thus recommended that there should be sustainability of a fiscal deficit profile in order to stimulate growth in the nation's economy*

*Keywords: Deficit, Balanced Budget, Tax, Inflation and Fiscal Policy*

## INTRODUCTION

One of the most important aspects of fiscal policy is the management of the public sectors fiscal deficits. Such fiscal deficit simply refers to the excess of the public sectors spending over its revenue. Fiscal deficit is generally defined in terms of loan financing and drawing down of cash balances. It therefore, connotes the difference between the budget receipts and budget expenditures financed by withdrawal of cash balances and borrowing from the public Nwaogwugwu (2005). The policy of fiscal deficits has however posed challenges to the Nigerian economy with regard to its effectiveness and the accumulation of debt, the justification for growth notwithstanding.

In recent times, rising fiscal deficit has been a common feature in the less developed countries. According to Ariyo (1993), this development is a consequence of the increased demand of the populace and the desire to enhance economic growth and development. The gap occurs due to the many problems that have bedeviled the revenue generation system in the country. A rundown on the revenue and expenditure profile of the Federal government shows a wide gap between revenue and expenditure since 1970 up to date. Though the magnitude of deficit has been fluctuating, on the average it has been increasing. The magnitude is highest between 1990 and 2009. Ariyo and Raheem (1990) showed that rising fiscal deficit has been a common characteristic of the Nigerian fiscal system and that there have been no identifiable and justifiable macroeconomic objectives for such. Moreover Ariyo (1993) reported that fiscal deficit in Nigeria has become unsustainable since 1980. According to CBN (2000), the deficits over the years were financed through external and internal borrowing plus draw-down on reserves. Prior to the 1970s, deficits were majorly financed through domestic sources. As from the 1970s, 87.1% of total deficits were financed by the banking sector and by the end of the 90s, the proportion rose to 94% of total deficits out of which the CBN provided 87.1%. The reliance on the banking sector over the years has impacted negatively on macroeconomic variables such as money supply, inflation, real growth rate, balance of payments and exchange rate.

Over the years, a careful study of the budget structure of Nigeria since her independence indicated that fiscal deficit has been a recurring feature of the public sector financing. This is not surprising in view of the growing desire on part of the governments to provide for the demand of economic and social overheads as well as to enhance the living conditions of the citizenry. There is the view that fiscal deficits could be a veritable tool for enhancing accelerated growth and development in a developing economy, Thornton (1990). This however would depend on the mode of financing the deficit and the sustainability of the fiscal deficit profile. There are four ways of financing the public sector deficit: by printing money,

running down foreign exchange reserves, borrowing abroad, and borrowing domestically Fisher (1991). The public sector in this case is defined to exclude the central bank, whose profits from the printing of money are treated as a financing source. Each of these financing options has its own 'good' and 'bad' effects. Proponents of fiscal deficits argue that it could in fact place more resources at the disposal of government for accelerated investment, thereby facilitating a faster growth. Similarly Obadan and Uga (1996) observed that deficits are not bad if they are sustainable and provides the required stimulus for the economy. Studies have also shown that there is a strong correlation between large fiscal deficits and external current account imbalances, thus demonstrating the sensitivity of real exchange rate to fiscal deficits. In an overly import-dependent country, such as Nigeria, an expansion of any fiscal policy has a way of depleting external reserves and weakening the exchange rate. Critiques of fiscal deficits express the view that it may plunge the country into unprecedented borrowing thereby precipitating a debt burden and macroeconomic instability on the economy. Anyanwu (1997) opined that the size of public sector fiscal deficit is the most reliable indicator of overall macroeconomic stability or macroeconomic balance. He argued further that a high and persistent deficit is an indication of at least one type of macroeconomic imbalance such as inflation, foreign debt burden, balance of payment disequilibrium and ultimately depletion of foreign reserves.

In spite of government efforts at devising policy measures aimed at overcoming fiscal deficit, fiscal deficit has persisted in the Nation's economy which its adverse effect is being perceived on key macro-economic variable such as foreign exchange reserve. It is pertinent to note that Nigeria has relied very much on inflation tax (about 70%), the non-banking holding about 15-20% in government bond and reserves, Wosowei (2013). Researchers believe that fiscal deficit has a positive relationship with output growth, and relates negatively with foreign reserves.

The broad objective of this study is the evaluation of fiscal deficit and its effects on external reserve in Nigeria. However, the specific objectives of the study are to examine the relationship between capital expenditures, recurrent expenditures and external reserves in Nigeria, and also to evaluate the nature of their influence on external reserve and possibly make policy recommendations on how to improve the Nigeria fiscal deficits policy.

The significance of the study lies in the fact that it attempts to empirically evaluate the effects of fiscal deficits on Nigeria external reserve. Secondly, the study is of tremendous importance for guiding policy makers with regard to formulating appropriate fiscal policy for the country. Thirdly, this study can be of interest to students of economics and scholars who may be interested in knowing the possible relationship that exist between capital expenditures, recurrent

expenditures and external reserves in Nigeria. This study is also an avenue to contribute to the debate on expanding the literature and body of knowledge on the subject matter. The study relied on numerical evaluation of (capital expenditures and recurrent expenditures) to establish the nature of the influence of these determinants on external reserve. The scope of the study covers the period from 1981 to 2012.

## LITERATURE REVIEW

Fisher (1991) identified that one of the means of financing the government budget deficit is to run down foreign exchange reserves. By running down reserves instead of printing money, the government can hope for a time to mitigate the inflationary effects of a deficit. This policy appreciates the exchange rate relative to the level it would otherwise have had. The policy of slowing the rate of exchange depreciation to slow down inflation (carried out not only through reserve use but also through increased foreign borrowing) is one that has been tried time and again, and one that cannot be maintained unless the essentials, namely fiscal policy, are made compatible with the lower inflation. Use of international reserves to finance the deficit has a clear limit. Private sector anticipation that the limit is about to be reached can provoke capital flight and a balance of payments crisis, since exhaustion of reserves will be associated with currency devaluation. The devaluation that takes place in response to a run on the currency may be blamed on speculators, but is most likely an entirely rational private sector response to unsustainable public policies, Krugman (1979). This is a plausible explanation for the event that precipitated the debt crisis -- the exhaustion of reserves in Mexico in August 1982. A loss of fiscal control resulted in deficits of 14% of GDP in 1981 and 18% in 1982. Capital flight was proceeding at the rate of \$7 billion a year over the 1979-82 periods. Finally, a speculative attack on the remaining reserves took place in August 1982, leading to the suspension of payments and the beginning of the rescheduling process.

Macroeconomic theory posits that financing budget deficit by increasing the supply of government securities *ceteris-paribus* reduces its prices and raises the real interest rates, thus crowds-out private investment. This phenomenon can lead to a debt problem, which in turn mounts heavy pressure on foreign reserve. Thus, if huge fiscal deficits are not controlled, it would correlate negatively with foreign reserves, and the loss of access to external borrowing for financing fiscal deficits often leads to higher taxes on domestic financial intermediation. This phenomenon can even lead to stagnant or declining economic growth. Overall, the literature on the relationship between fiscal deficit, and external reserve has always been concerned with more reliance on domestic financing of fiscal deficits as external finance declines sharply in highly indebted countries, Wijnbergen (1989).

lyoha (2004) opined that given the structural and systematic problems commonly associated with less developed countries, budget deficit invariably appears in the course of governance. Such are usually financed either by borrowing from the Central Bank, borrowing from the non-banking public or borrowing from external sources. Given the narrow revenue base of the Nigerian economy, fiscal deficits would continue to be a recurring phenomenon. Until the country is able to harmonise its revenue and expenditure profile, fiscal deficits will continue to remain with us.

It is also suggested by Wicken & Uctum, (1990) that the sustainability of a fiscal deficit profile is essential if it must stimulate growth. Studies indicate that in Nigeria even when revenue exceeds budgetary estimates, extra-budgetary expenditures have been rising, resulting in ever bigger fiscal deficits. Ariyo (1993) expressed the view that given the current trend, Nigeria may not be able to sustain the level of her fiscal deficit in the long-run.

According to Dalyop (2010) as cited by Umeora (2013), deficit spending of government has posed challenges to the Nigerian economy with regards to its effectiveness and debt accumulation. Paiko (2012) expressed a similar view that excessive and prolonged deficit spending may negate the attainment of macroeconomic stability and distort growth. Some economists argue that government deficit spending is detrimental to the economy. For example Anyanwu and Oaikhenan (1995) hold the view that government deficit spending will result in increase economic growth (GDP). However Dalyop (2010) in his study holds a contrary view by saying that government deficit spending has negative effect on GDP.

From the writings of Lord Keynes and other post classical economists, a certain level of fiscal deficit is essential in the development process given the low level of savings and consequently low investment. However, it has been observed that the level, magnitude and method of financing fiscal deficits in Nigeria have produced and perpetuated macroeconomic imbalance. Consequently, the nation has experienced monetary expansion, high inflationary pressures, exchange rate depreciation, and deterioration in the balance of payments, sluggish and negative growth rates, high interest rates, financial sector distress, unemployment and a host of other similar problems. The culminating effect of the above has been a decline in the growth of GDP, external reserves and accelerated inflation. The period between 1981 and 2000, a high percentage of fiscal deficits were financed by massive injections of funds by the banking sector especially the CBN into the economy. Between 1981 and 1990, the banking sector financed about 60.71% of total deficit. The situation became worse between 1991 and 2001 when 94.1% of total deficit was financed by the banking sector with CBN providing 87% of the finance. The percentage financed by the non-bank public has also been in the increase. It rose from 2.8% in 1991 to 33.1% in 1992 and by 1999 it was as high as 44.9%, Nnanna et al (2003).

Empirical studies in Nigeria failed to address the link between fiscal deficit and external reserves. Indeed, most of the works have focused on the causal relationship between fiscal deficit and macroeconomic variables such as inflation, private investment, money supply, interest rate and economic growth. For instance, Oladipo and Akinbobola (2011) confirmed that there is a significant causal relationship from budget deficit to inflation while Chimobi and Igwe (2010) revealed that money supply causes budget deficit. It is evident from the review of literature that there is dearth of studies on the nexus between fiscal deficit and foreign reserves as well as its components. The interest of this paper is, therefore, to address the neglect issue on the nexus between fiscal and external reserves as well as its components in Nigeria. The paper is of the view that relationship may exist between fiscal deficit and external reserves in Nigeria as well as its components. Therefore, the present study intends to fill this gap.

### THEORETICAL FRAMEWORK

Under the fiscal approach to the balance of payments; the current account balance is defined as the difference between monetary value of domestic output and the aggregate demand (absorption).

The budget balance is consequently defined as the gap between government revenues and expenditures. The above definition derives from the national income identity, as:

$$Y = C + I + G + (X - M) \quad (1)$$

Where; Y represents GDP, C is private consumption, I stand for private investment, G is government consumption, and X and M stand for exports and imports respectively.

Assuming the aggregate demand  $A = C + I + G$  then Equation (1) can be rewritten as follows:

$$Y - A = X - M \quad (2)$$

Equation (2) reflects the behaviour of the external sector of the economy. The direct interpretation is that, external imbalances always trigger a series of developments in the economy, which in this case is budget deficit. Therefore, any attempt to restore the balance must include effort to align revenue with expenditure. In order to isolate the disposable income, tax (T) and international reserve (R) (the latter is introduced basically on the assumption of the fixed exchange rate regime) are introduced into the national income identity. It follows that Equation (1) will become:

$$Y + R - T = C + I + (G - T) + (R + X - M) \quad (3)$$

In the following equation, S (savings) is the disposable income minus private consumption. That is:  $S = Y + R - T - C$ , the private absorption capacity is represented by  $(C + I)$ ,  $(G - T)$  is for budget deficit, while the current account balance CAB is represented by  $(R + X - M)$ , R represents international transfer receipts and T stands for taxes. Substituting S and CAB by their respective components, we get:

$$(S - I) + (T - G) = (R + X - M) \quad (4)$$

It is often argued that deficit in the current account occurs when aggregate investment outweighs aggregate savings. However, if investments equals' savings and government expenditure is greater than its revenue then, the current account deficit becomes inevitable. The literature on the current account is quite obvious when it indicates the degree at which the domestic economy interacts with its external assets. Thus,  $(X + R - M)$  would also be equivalent to the increase in net official assets plus the rate of capital outflow that is:  $\Delta NFA$ .

$$\text{Hence, } CA = \Delta NFA \quad (5)$$

The links between net savings of the private sector and the public sector deficit is easily appreciated through the following illustration.

$$(S - I) + (T - G) = \Delta NFA \quad (6)$$

The direct interpretation of the above equation assuming  $S = I$  is that:

- (i) a budget deficit will be financed through a reduction in external net claims, which can be done through increase in external public debt or reduction of international reserves in the case of a fixed exchange regime.
- (ii) Budget deficit could also be financed domestically, through increase in government debt held by the private economic sector.

The relationship in the banking system provides a clear understanding on how domestic borrowing is applied in financing a budget deficit and the balance sheet is given as follows:

$$\Delta NFA^b = \Delta M2 - (\Delta DC^g + \Delta DC^{nb}) \quad (7)$$

The liability of the banking system is represented by M2, which is the broad money;  $\Delta DC^g$  is domestic credit of the banking system to government and  $\Delta DC^{nb}$  is the credit of non-banking sector (private sector) to the government. Equation (7) expresses the difference between money expansion and credit expansion and, which works as follows. An increase in money relative to credit expansion will reflect as an increase in the net foreign asset.

In countries where the capital markets are not advanced (such as Nigeria), budget deficit is usually financed through domestic and external borrowing. This expression can be simplified as follows:

$$G - T = \Delta DC^g - \Delta NFA^g \quad (8)$$

By substituting (8) into (7), the relationship between the financing of the budget deficit and the banking system is brought to the fore.

$$\text{Thus: } G - T = \Delta M2 - \Delta DC^{nb} - (\Delta NFA^b + NFA^g) \quad (9)$$

Equation (9) illustrates the sources through which government deficit can be financed. First, by an increase in money ( $\Delta M2$ ). Second, borrowing from non-banking sector. Lastly, by a reduction in international reserve or external borrowing. In all, increased budget deficit will translate into increased current account deficit which precipitates new external borrowing or draw down of external reserves. However, all the three means of financing a deficit may lead to appreciation of real and nominal exchange rates under flexible exchange rate regime and capital mobility.

## METHOD OF STUDY

### Research Design and Sources of Data

The study is designed to cover 1981 – 2012. The annual data covering a sample of 32 years, was collected from secondary sources such as *CBN Annual Reports and statement of account*, *CBN statistical bulletin*, Central Bank Bullion, Economic and Financial Reviews, National Bureau of Statistics (NBS), Federal Ministry of Finance

### Method of Analysis

To enable us capture the dynamic relationship between the variables to be used in the model, the Vector Error Correction Method (VECM) of analysis is utilized in the work. The VECM framework allows us to determine the direction of causation between observed variables while providing estimate on both the long run and the short run.

More so, the logarithmic structural transformation of the model aims at achieving unique parameter estimates that enabled us to interpret the regression co-efficients in terms of elasticities and consequently give slightly a better fit.

Therefore, the model equation can be expressed in VAR model as follows:

$$X_t = A_0 + \beta_1 X_{t-1} + \beta_2 X_{t-2} + \beta_3 X_{t-3} + \dots + \beta_q X_{t-k} + \varepsilon_t \text{ -----1}$$



Equation 1 can be written more compactly as:

Where: 
$$\Delta X_t = \alpha_0 + \beta_1 \sum_{j=1}^k \Delta X_{t-j} + \varepsilon_t \text{-----} 2$$

Equation (2) can be written in a VECM form as:

$$\Delta X_t = A_0 + \Pi X_{t-1} + \sum_{j=1}^k \Gamma_j \Delta X_{t-j} + \varepsilon_t$$

Where  $\Delta$  is the difference operator,  $X_t$  is a  $3 \times 1$  – dimensional vector of non stationary I(1) endogenous variables of the model,  $\alpha_0$  is a  $3 \times 1$  - dimensional vector of constant and is  $k$ -dimensional vector of the stochastic error term normally distributed with white noise properties  $N(0, \sigma^2)$ .  $\Pi$  is the long run matrix that determines the number of co-integrating vectors that consist of  $\alpha$  and  $\beta'$  representing speed of adjustment towards long run equilibrium and long run parameter respectively.  $\Gamma$  is the vector of parameters that represents the short term relationship.

**Model specification**

The relationship between foreign exchange reserves, capital expenditures and recurrent expenditures can be expressed as follows:

$$FR = f(CE_t, RE) \text{-----} 3$$

Specifying equation (1) in exponential regression model, we have;

$$FR = \alpha CE_t^{\beta_1} RE^{\beta_2} e^{\mu} \text{-----} 4$$

In this form, the coefficients  $\beta_1, \beta_2$ , can be directly estimated by applying log-linear regression techniques via logarithmic structural transformation; and those coefficients will be elasticities.

Taking natural logs of both sides of equation (4), we have:

$$\ln FR = \ln \alpha - \beta_1 \ln CE - \beta_2 \ln RE + \mu \text{-----} 5$$

$$\ln FR = \beta_0 - \beta_1 \ln CE - \beta_2 \ln RE + \mu \text{-----} 6$$

Where:

$\beta_0 = \ln \alpha$ ,  $\ln$  is the natural log (that is log to the base  $e$ , and where  $e = 2.718$ ), FR is the foreign reserve, CE is the capital expenditure. These multiple linear (in the coefficient) models enable us to fit to empirical observations of the variables. When estimated, the model becomes:

$$\ln FR = \beta_0 - \beta_1 \ln CE - \beta_2 \ln RE \text{-----} 7$$

We then differentiate partially with respect to the log of each variable to obtain elasticity of inflation and *a priori* sign expectation of equation (7);

$$\frac{\partial \ln FR}{\partial \ln CE} = \left( \frac{\partial \ln FR}{\partial CE} \right) \left( \frac{CE}{FR} \right) = \beta_1 < 0 \text{-----} 8$$

$$\frac{\partial \ln FR}{\partial \ln RE} = \left( \frac{\partial \ln FR}{\partial RE} \right) \left( \frac{RE}{FR} \right) = -\beta_1 < 0 \text{-----} 9$$

## RESULTS AND DISCUSSION

### Unit Root Test

Macroeconomic time series data are generally characterized by stochastic trend which can be removed by differencing. Unit root test therefore is a test of stationarity or non-stationarity of series data used in the model. This is to find out if the relationship between economic variables is spurious or nonsensical. This test is conducted by adding the lagged values of the dependent variable so that the error term is serially uncorrelated. Thus, this paper used or adopted Augmented Dickey-Fuller (ADF) Techniques to test and verify the unit root property of the series and stationarity of the model.

The ADF tests here consist of estimating the following regression:

$$\Delta Y_t = \beta_1 + \delta Y_{t-1} + \Delta Y_{t-1} + \varepsilon_t \text{-----} 1$$

Where:

$$\Delta Y_t = Y_t - Y_{t-1}$$

$\Delta$  = First difference operator

$$\Delta Y_{t-1} = Y_{t-1} - Y_{t-2}$$

$$\delta = \rho - 1$$

$\varepsilon_t$  = White noise error term

$$\rho = \text{Rho} \quad -1 \leq \rho \leq 1$$

The  $t$  value of the coefficient of  $Y_{t-1}$  (that is  $\delta$ ) in the equation 1 follows the  $r(\text{tau})$  statistic. The acceptance of the null hypothesis that shows the presence of unit root or non-stationarity follows that if  $r(\text{tau})$  calculated statistic is less than the critical  $r$  values of tabulated, then we conclude that the times series variable involved is not stationary.

## Augmented Dickey-Fuller Unit Root Test Result

Table 1: Results of ADF Unit Root Test at Level

VARIABLES	ADF TEST STATISTICS VALUE	5% MACKINNON CRITICAL VALUE	DECISION RULE		REMARKS
			Ho	Hi	
FR	2.959415	-2.981038	Accept	Reject	Non-Stationary
CE	2.182524	-2.967767	Accept	Reject	Non-Stationary
RE	-2.161597	-2.991878	Accept	Reject	Non-Stationary

From the table revealing the results of the test for stationarity of data at level i.e. before differencing, it could be deduced that all of the variables have their ADF test statistics value lesser than the Mackinnon critical value (at absolute term) and at 5%. To ensure the stationarity of data for variables found to be non-stationary at level, there is need to proceed to test for stationarity at first difference. The first difference ADF unit root test is presented below:

Table 2: Results of ADF Unit Root Test at First Difference

VARIABLES	ADF TEST STATISTICS VALUE	5% MACKINNON CRITICAL VALUE	DECISION RULE		REMARKS
			Ho	Hi	
FR	-3.849063	-2.967767	Reject	Accept	Stationary
CE	10.60115	-2.967767	Reject	Accept	Stationary
RE	-18.11325	-2.963972	Reject	Accept	Stationary

From the table 2, it could be revealed that all the variables (FR, CE and RE) were stationary at first difference. This is because their respective ADF test statistics value is greater than Mackinnon critical value at 5% and at absolute term.

## Summary of Order of Integration

Table 3: Summary of Order of Integration

Variables	Order of Integration
FR	1(1)
CE	1(1)
RE	1(1)

## Co-integration Estimate

Table 4: Presentation of Johansen Co-integration Result

Date: 09/01/14 Time: 13:54				
Sample (adjusted): 1983 2012				
Included observations: 30 after adjustments				
Trend assumption: Linear deterministic trend				
Series: CE RE FR				
Lags interval (in first differences): 1 to 1				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized	Trace	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.815801	80.12829	29.79707	0.0000
At most 1 *	0.521601	29.37614	15.49471	0.0002
At most 2 *	0.214861	7.256835	3.841466	0.0071
Trace test indicates 3 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized	Max-Eigen	0.05		
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.815801	50.75216	21.13162	0.0000
At most 1 *	0.521601	22.11930	14.26460	0.0024
At most 2 *	0.214861	7.256835	3.841466	0.0071
Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Economically, variables are cointegrated if they have a long term, or equilibrium relationship between them. It is a pretest to avoid spurious regression situations. It is possible for a combination of some series to achieve long run equilibrium, although they may be individually non-stationary. Such a relationship shows that the series are cointegrated. For some series to cointegrate in the long run, they must be of the same order of integration. As long run relationship is established among the same order of integration series, a regression containing all the variables of cointegrating vector will have a stationary residual term. Asteriou and Hall (2006) argued that where there are more than two variables in a model, there is a possibility that the emerging cointegrating vectors governing the joint evolution of all the series will be more than one. This logic presents the superiority of Johansen Cointegration test over the Engle Granger approach. Thus Johansen Cointegration approach will be adopted in this study.

Table 4 represents the Trace and the Maximum Eigenvalue statistics for the model. The null hypothesis of the absence of a cointegrating relation among the variables is rejected at the 5 percent level for both statistics. The Trace statistics indicates that there are three cointegrating equations while the Maximum Eigenvalue statistics indicates also three cointegrating equation. The existence of Cointegration is indicative of a long run relationship between foreign exchange reserves, capital expenditures and recurrent expenditures in Nigeria.

### Result from Vector Error Correction Model (VECM)

The error correction mechanism is the speed or degree of adjustment i.e. the rate at which the dependent variable adjust to changes in the independent variables. Since a long run equilibrium relationship has been established, the next step is test for the speed of adjustment using VECM.

Table 5: Error Correction Model (VEC) Framework

Error Correction:	D(FR)	D(CE)	D(RE)
CointEq1	(0.06243) [-0.52358]	(2.85759) [ 1.80599]	(1.59336) [ 3.47084]
D(FR(-1))	0.474736 (0.23315) [ 2.03618]	5.629447 (10.6720) [ 0.52750]	1.110272 (5.95058) [ 0.18658]
D(FR(-2))	-0.148234 (0.35037) [-0.42308]	-19.63408 (16.0374) [-1.22427]	4.358511 (8.94228) [ 0.48741]
D(CE(-1))	0.009922 (0.01064) [ 0.93223]	-1.369227 (0.48720) [-2.81043]	-1.231937 (0.27165) [-4.53494]
D(CE(-2))	0.002503 (0.01204) [ 0.20795]	-2.158236 (0.55094) [-3.91735]	0.011379 (0.30720) [ 0.03704]
D(RE(-1))	0.003353 (0.00880) [ 0.38121]	-0.552012 (0.40265) [-1.37095]	-1.635194 (0.22451) [-7.28329]
D(RE(-2))	0.008056 (0.02213) [ 0.36409]	-0.780477 (1.01283) [-0.77059]	-0.816375 (0.56474) [-1.44557]
C	-705.8170 (3645.60) [-0.19361]	334959.7 (166870.) [ 2.00731]	363437.7 (93044.9) [ 3.90605]
R-squared	0.345737	0.744296	0.966490
Adj. R-squared	0.127650	0.659061	0.955321
F-statistic	1.585314	8.732306	86.52658

From the table above, it shows that the coefficient of ECM is -0.032687. The ECM is significant with the appropriate negative sign. The coefficient of ECM in the model indicates that the speed of adjustment of any past deviation to long run equilibrium is 3.3%. This captures the rate of adjustment of the dependent variable with respect to the independent variables. The table reveals that all the coefficients of FR, CE and RE are positive.

From the results, it could be deduced that CE has a direct relationship with FR because of the positively signed coefficient i.e. + 0.009922. This implies that a unit increase in CE will lead to increase in FR by 0.009922 units. Also, the coefficient of RE (+ 0.003353) suggests that a positive relationship subsists between RE and FR. The implication of a unit change in RE is that FR will consequently increase by 0.003353 units.

Our finding is not in agreement with the works of Wijnbergen (1989), who established that huge fiscal deficits affects negatively foreign reserves, and that the loss of access to external borrowing for financing fiscal deficits often leads to higher taxes on domestic financial intermediation. This phenomenon can even lead to stagnant or declining economic growth. Similarly Nnanna et al (2003) posited that the nation has experienced monetary expansion, high inflationary pressures, exchange rate depreciation, and deterioration in the balance of payments, sluggish and negative growth rates, high interest rates, financial sector distress, unemployment and a host of other similar problems. The culminating effect of the above has been a decline in the growth of GDP, external reserves and accelerated inflation.

The coefficient of multiple determination ( $R^2$ ) is 0.345737 which indicates that 34% of total variations or changes in the present value of FR is explained by changes of past value in the explanatory variables (CE and RE), while the remaining 66% is explained by other variation outside the model i.e. the error term.

## CONCLUSION AND RECOMMENDATIONS

The main aim of this study is the evaluation of fiscal deficit and its effects on external reserves in Nigeria. However, the specific objectives of the study are to examine the relationship between capital expenditures, recurrent expenditures and external reserves in Nigeria, and also to evaluate the nature of their influence on external reserve. The study employed the techniques of co-integration and error correction mechanism. This commenced with the ADF unit root test, followed by the Johansen cointegration test and the Vector Error Correction. The Johansen cointegration test revealed a long run relationship among the variables. The statistical significance of the one period lagged ECM supports this long run relationship and a satisfactory speed of adjustment. In all, the study provides evidence that capital expenditure and recurrent

expenditures significantly affect the level of foreign exchange reserves in Nigeria during the period under review. It is thus recommended that there should be sustainability of a fiscal deficit profile in order to stimulate the much desired growth in the nation's economy.

The study is limited to the impact of fiscal deficits on external reserves in Nigeria. It covered the period of thirty-two (32) years, spanning from 1981-2012 due to the availability of data. Also, the fact that there are other forms of macroeconomic policy apart from fiscal policy that can be employed to stimulate the much desired growth in the nation's economy is a limitation of this paper. This limitations do not in any form diminishes the relevance of the study.

This study specifically examined the relationship between capital expenditures, recurrent expenditures and external reserves in Nigeria. Further studies in this area could examine the direction of causality between fiscal deficits and foreign reserves and fiscal deficits and inflation dynamics in Nigeria.

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