

MACROECONOMIC DETERMINANTS OF DEFICIT FISCAL OPERATIONS IN NIGERIAN ECONOMY: AN EMPIRICAL ANALYSIS

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Abstract

This study evaluates the nature and direction of prevailing long run relationships between selected macroeconomic variables and deficit fiscal operations in Nigerian economy. Budget deficit finance is employed as proxy for deficit fiscal operations while real gross domestic product, broad money supply, capital expenditure, recurrent expenditure, inflation rate, and exchange rate constitute the study's selected macroeconomic variables. Johansen's multivariate cointegration and Error Correction Model techniques are employed for analyses of secondary data sourced from the Central Bank of Nigeria's Statistical Bulletin over the period of 1987 to 2014. The results provide evidence of the prevalence of a significant long run relationship between the set of selected macroeconomic variables and Budget deficit finance in Nigeria. The Error Correction Model results further provide compelling evidence to confirm the prevalence of significant positive long run relationship between Budget deficit finance and each of broad money supply, exchange rates and inflation rates while indicating a negative but significant relationship between Budget deficit finance and capital expenditure. Real gross domestic product and recurrent expenditure are found to have an insignificant long run relationship with Budget deficit finance. Consequently, the study recommends among others that efforts in ensuring effective and efficient budgeting discipline that will help to reduce wastage in government expenditure be encouraged. This will help to reduce to barest minimum, the need for and level of deficit finance sought by the government. Again, while admitting that utter discouragement and jettisoning of deficit financing in Nigeria may seem unrealistic in today's economic setting, efforts should be made to keep it progressively at very low level and greater part of government expenditure be channelled into boosting infrastructural facilities and also current moves aimed at diversifying the economy should be vigorously sustained by all concerned so as to increase the revenue source of government.

Keywords: Deficit Financing, Gross Domestic Product, Government Expenditure, Exchange Rate, Inflation

Introduction

A fiscal deficit occurs when a government's total expenditures exceed the revenue that it generates, excluding money from borrowings. It presents a more comprehensive view of budgetary imbalances and is widely used as a budgetary tool for explaining and understanding

of budgetary developments of an economy. With the quick recovery from the depression of the late 20's and early 30's, it became generally accepted that increased government expenditure through deficit finance leverages money supply many folds through the action of the deficit multiplier (Onoh, 2007). In other words, government deficit fiscal operations are intended to generate an increase in aggregate spending or the aggregate demand for goods and services by the public and the private sectors of the economy. Demand for capital and consumer goods, as well as services, are stimulated and the economy is meant to be brought back to the path of recovery.

However, government fiscal deficit operations generate considerable debate among economics and finance scholars. Literature is replete with scholarly articles which have previously empirically examined the nature of relationship that exists between economic growth and fiscal deficits. The debate on the usefulness of fiscal deficit as a tool for promoting growth and development remains inconclusive, given the conflicting results of current researches (Okelo et al. 2013). For instance, the works of Onwe (2014), Eze and Nwambecke (2014), Adam and Bevan (2004), Brauninger (2002), De Castro (2004), as well as Ojong et al. (2013) all lay credence to the subject matter. According to these studies, a positive and significant relationship exists between economic growth and fiscal deficits. On the contrary, the works of Imobighe (2012), Akinmulegun (2014), Ezeabasili et al. (2012), Vincent et al. (2012) as well as M'Amanja and Morrissey (2006) contradict most of the earlier evidence on the impact of fiscal deficits on economic growth. Their results reveal significantly negative effect of fiscal deficit on economic growth. As observed by Imobighe (2012) as well as Akinmulegun (2014), increased fiscal deficits operations are common phenomena observed usually with most developing countries, Nigeria inclusive. The fall out of these actions, they aptly noted, are inflation, devaluation, deteriorating economic growth rate, fiscal adjustment, which constitute important elements of the economic agenda.

Apart from the need to finance increasing government expenditure occasioned by the shortfall in government revenue, a number of macroeconomic variables influence the fiscal deficit operations of government. Macroeconomic variables such as the prevailing exchange rate, inflation rate, Level of Money Supply, Government Capital and Recurrent Expenditure determine to a large extent the amount and choice of deficit finance source of the government and by extension the output level in the economy. In a liberalized economy where forces of demand and supply operate freely, these variables are highly volatile and dynamic in their very nature. The questions therefore are: What are the effects of the swings in exchange rate on the level of deficit finance sought by the government? Does the government borrow more or less as a result of volatility in exchange rate? What effect do changes in inflation rates have on the fiscal deficit operations of the government? What is the ultimate effect of the changes of these variables on the level of output in the economy?

The purpose of this study therefore is to empirically investigate the nature of interaction among level of deficit finance, exchange rate, inflation, interest rate and aggregate output in Nigerian economy. The rest of this paper is structured as follows: after the above introduction, the second part of the paper focuses on the theoretical background and existing empirical work on the subject matter. The third part describes the methodology employed for the study; the fourth part presents the empirical results and discussions while the fifth part of the paper raps it up with conclusions reached and policy recommendations.

Theoretical Framework and Review of Literature

Theoretical Framework and Background

In the pre-Keynesian era, a tradition of balanced budget which has prevailed for many years, helped in reining on the spending tendencies of government and invariably keeping expenditures within the revenue limits imposed by the size of collectible taxes. This norm ceased among many governments following the American depression of the 1930s in which John Maynard Keynes alluded, in his magnum opus, to the problems of under-spending or under-consumption as underlying the prevailing unemployment problem then. Subsequently, the under consumption notion dominated the thinking among many mainstream economists up to the 1970s.

The under spending or demand-side thinking argues that unemployment is a consequence of inadequate demand for goods and services; and if the spending level and consequently the demand level increases, employers of labour will hire more workers. Keynes, therefore, advocated for the running of budget deficits by increasing government spending and/or reducing taxes, and by so doing adduced that the market solution would be ineffective because the price mechanism and wages that have to respond to the existence of unemployment do not adjust with sufficient speed or effectively. So, in line with Keynes reasoning, contrary to the norm which prevailed before his under spending and deficit budgeting solution, economic depression will most likely continue for a very long time unless government spending, financed by a budget deficit, were increased sufficiently. The Keynesian doctrine of deficit spending was sufficient justification for politicians to spend beyond the means of their respective countries without the hitherto existing discipline of balanced budgets.

Again, the depression made is obvious that the private sector alone could no longer guarantee economic stability. The involvement of the public sector was inevitable. Thus, the depression gave more impetus for government to expand its activities. Today government financial transactions by way of expenditures and receipts have influenced many economies positively in terms of macro-economic goals, especially for the stabilization of employment and whatever affects employment also affects income (output) growth. Fiscal policy tools of deficit financing, of variations in expenditures or receipts (taxation) can be converted to a set of powerful instrument or for the promotion of economic stability, full employment and higher level of national income.

When government expenditure tends to exceed public income, the government therefore resorts to deficit financing to meet the deficit in the budget. Keynes theory recognizes the idea of deficit financing as a compensatory spending meant to solve the problem of unemployment and depression. Modern economists prescribe deficit financing for developmental purposes. Nwaotka (2004) defines deficit financing as a planned excess expenditure over income, dictated by government policy or creating fund to finance deficit by borrowing whether from internal or external sources, which must be repaid with interest within a specific period of time. Deficit financing is defined in finance as government spending in excess of revenues which is financed by borrowing. Keynesian economist's theory states that deficit is financed in order to increase economic activity and reduce unemployment in a nation.

Review of Related Literature

As stated earlier, the phenomenon of government deficit operations have continued to generate contention among development economists, public finance experts as well as policy makers regarding its effect on macroeconomic performance among developed, developing and underdeveloped economies. Ezeabasili, et al. (2012) in their paper, *Fiscal Deficits and Economic Growth*, adopted a modelling technique that utilises cointegration and structural analysis in examining the nature of relationship that exists between government fiscal deficits and economic growth. They found a negative relationship between fiscal deficits and economic growth in Nigeria.

Fasoranti and Amasoma (2013) examined the effects of and the causation between fiscal deficits and the external sector performance of Nigeria between 1961 and 2011. They employed a bi-variate granger causality technique and the error correlation modelling techniques. Results showed a long run relationship among the variables of study and also a bi-directional causality between budget deficit and external sector performance in the long run while a one-way causation existed from external sector performance to budget deficit in the short run with no feedback from fiscal deficit. Results also showed that fiscal deficit did not significantly affect external sector performance in the short run. The cross correlation coefficient indicated that fiscal deficits would lead to long run deterioration in external reserves accumulation and exchange rate.

Onwe (2014), towing the same line of Ezeabasili, et al. (2012), observed that External Source of Deficit Financing, Non-banking Public Source of Deficit Financing and Exchange Rate has significant and positive implications on Economic Stability. However, the study revealed that Ways and Means Source of Deficit Financing, Banking System Source of Deficit Financing and Interest Rate has negative implications on the economy of Nigeria.

Wosowei (2013) studied the relationship between fiscal deficit and macroeconomic performance in Nigeria over the period, 1980 to 2010, with a three-fold aim of determining the impact of fiscal deficit on macroeconomic aggregate in Nigeria, examining whether fiscal deficit had led to economic growth in Nigeria, and to find out the nature of relationship between fiscal deficits and macroeconomic aggregates in Nigeria. The study employed the Ordinary Least Square in estimating the equation and the empirical findings showed that fiscal deficits, even though that it met the economic a priori in terms of its negative coefficients yet, did not significantly affect macroeconomic output. The results also show a bilateral causality relationship between government deficit and gross domestic product, government tax, and unemployment, while there is an independent relationship between government deficit and government expenditure and inflation.

Adopting a Chow Test approach, Edame and Okoi (2015) examined the relative impact of fiscal deficits on economic growth in Nigeria during the military and democratic regimes. The results showed that there is a difference between the growth-impact of fiscal deficits in the two regimes. In particular, the study found that fiscal deficits had a significant growth impact during the military regime, while it has not had a significant impact on economic growth during the democratic regime. On the other hand, the study's results indicated that the interest rate did not have a significant growth-impact during both regimes, while the gross fixed capital formation had a significant growth impact during both regimes.

Maji and Achegbulu (2012) investigated the impact of fiscal deficits on economic growth in Nigeria in 1970 – 2009 and the findings revealed that fiscal deficits positively affect economic growth in Nigeria and also money supply insignificant in explaining economic growth (GDP) variation in Nigeria.

Stiglitz (2005) sees deficit financing as a situation in which the federal government's excess fund of outlays over receipt of revenue for a given period is financed by borrowed funds from the public. Deficit financing can also be seen as the sale of debt securities in order to finance expenditures that are in excess of income. This method of financing can also be seen as nonbanking public source of financing. Generally, deficit financing is applied to government finance because income, represented by tax revenues and fees, is often unavailable to pay expenses. As with monetizing the debt, deficit financing puts upward pressure on interest rates because government debt securities compete with private securities for limited capital (Smriti, 2010).

Eze and Nwambeke (2014) studied the effect of Deficit Financing on Unemployment Rate in Nigeria, adopting the Error Correction Model technique. The study found a significant long run relationship among the variables of study and concluded that deficit financing through external source of deficit financing and ways and means source of deficit financing tend to reduce the level of unemployment in Nigeria.

Akinmulegun, (2014) employing the technique of Vector Autoregression (VAR) in examining the subject matter, observed that that deficit financing had not achieved the desired results in Nigeria judging by the revealed negative impact of deficit financing on economic growth. He attributed this to the prevailing socio-cultural mal-adaptation coupled with perennial corrupt practices in the economy.

Adam and Bevan (2001) investigated the relationship between fiscal deficit and growth for 45 developing countries using co-integration model and threshold. It was found that there is significant relationship between fiscal deficit and growth in developing countries and that there is evidence of interaction effect between debt stocks exacerbating the adverse consequence of high deficit.

Brauninger (2002) examined the interaction of budget deficit, public debt and endogenous growth in Spain using co-integration analysis. It was revealed that if the ratio of deficit fixed by government is below a critical level, then there are two steady states where capital and public debt grow at the same constant rate and an increase in the deficit ratio will reduce the growth rates of gross domestic product (GDP). This means that if the deficit ratio exceeds the critical level, then there is no steady state of economy.

In their study, *The Effect of Budget Deficit Financing on the Development of the Nigerian Economy*, Ojong, et al. (2013) investigated the influence of government budget deficit financing on Nigeria's economic development. Results of the findings showed a significant relationship between budget deficit financing and economic growth in Nigeria. Also, an inverse relationship existed between GDP and unemployment in Nigeria, a direct relationship was observed between GDP and inflation in Nigeria. Further, the findings also show that there existed a significant relationship between GDP and government expenditure and an inverse relationship was observed between government revenue and GDP.

With the use of non-parametric methodology in an economy, Adeboye (2003) examined the long run relationship between budget deficit and economic growth incorporating savings

and investment. He grouped 64 developing countries, Nigeria inclusive into A, B, and C based on their level of interest rate. The study indicates that crowding out effect of budget deficit on private investment in Nigeria's economy has significance impact on the economic growth, output, the level of employment, the standard of living.

Okoye and Akenbor (2010) examined the impact of deficit financing on socio-economic activities in Nigeria from 1997 to 2007 using Pearson Product Moment correlation coefficient to test the significance of the relationship between deficit financing, economic and social community service. The study found that deficit financing has a positive and significant impact on economic activities in Nigeria.

Vincent, Loraver and Wilson (2012) investigated the relationship between fiscal deficit and economic growth in Nigeria using modelling technique that incorporates co-integration and structural analysis at 5% (0.05) level of significance from 1970 to 2006. The study with the help of co-integration techniques indicates that fiscal deficit affects economic growth negatively; that there is one percent increase in fiscal deficit which is capable of diminishing economic growth by about 0.023 percent and there is a strong negative relationship between government consumption expenditure and economic growth.

Umaru and Gatawa (2014) attempted a disaggregated approach to the subject matter. In their work, they noted that the effect of deficit finance is predicated upon how the deficit is financed and applied to capital and current expenditure of government. The study reveals that a percentage increase in fiscal deficit expands the national output by 10.05% while a 10% increase in government capital expenditure in Nigeria increases the growth rate of the economy by 62.21%. On the other hand, recurrent expenditure has no significant impact on economic growth. Further, a unidirectional causality is found running from capital expenditure to economic growth, while no causality between recurrent expenditure and economic growth and also between fiscal deficit and economic growth suggesting that deficit budget and capital expenditure in Nigeria are growth inducing.

Oyeleke and Ajilore (2014) investigated what they termed the sustainability of fiscal policy in Nigeria. The aim, according to the study, was to ascertain the compliance level of the government of the intertemporal budget constraint. Employing the error correction method of analysis, the study showed that fiscal policy was weakly sustainable in the economy of Nigeria. Towing the same thought line, Ogunsakin and Abiola (2015) utilized cointegration and error correction estimates to examine the impact of fiscal deficit on the growth of Nigerian economy. The results revealed that deficit budget is one of the indicators of macroeconomic instability and significantly discourage human capital accumulation in Nigeria.

A major fall out of the studies reviewed above is that there exist variations in the nature of empirical relationships between economic output in terms of Gross Domestic Product (GDP) and government fiscal deficit operations. Again, the studies fail to specifically point out the nature of interrelationships and interdependence between deficit finance and the selected macroeconomic variables as well as the resultant effect on the level of output in Nigeria's economy. Hence, the prevalence of variations in the empirical results given various prevailing economic settings therefore, implicates the need for such a vital study in Nigeria using current data, which constitute the key gap addressed by this study.

Methodology

To ensure clarity, this section has been further divided into subsections as presented below:

Data

The data presented in table 1 below show the annual values of Budget Deficit, the Annual Values of Nigeria's Real Gross Domestic Product, the Value of Money Supply, Inflation Rates, Exchange Rates, Annual Values of Recurrent Expenditure and Annual Values of Capital Expenditure over the period, 1987 to 2014.

TABLE 1: Budget Deficit (BDEF), Real Gross Domestic Product (RGDP), Broad Money Supply (BMS), Capital Expenditure (CEXP), Recurrent Expenditure (REXP), Exchange Rates (EXCR) and Inflation Rates (INFR) over the period 1987 to 2014

YEAR	BDEF (#'B)	RGDP (#'B)	BMS (#'B)	CEXP (#'B)	REXP (#'B)	EXCR (#/\$)	INFR (%)
1987	5889.7	204,806.50	27.57	6.37	15.65	4.0179	10.2
1988	12160.9	219,875.60	38.36	8.34	19.41	4.5367	38.3
1989	15134.7	236,729.60	45.90	15.03	25.99	7.3916	40.9
1990	22116.1	267,550.00	52.86	24.05	36.22	8.0378	7.5
1991	35,755.20	265,379.10	75.40	28.34	38.24	9.9095	13
1992	39,532.50	271,365.50	111.11	39.76	53.03	17.2984	44.5
1993	65,157.70	274,833.30	165.34	54.5	136.73	22.0511	57.2
1994	70,270.60	275,450.60	230.29	70.92	89.97	21.8861	57
1995	-1,000.00	281,407.40	289.09	121.14	127.63	21.8861	72.8
1996	-32,049.40	293,745.40	345.85	212.93	124.49	21.8861	29.3
1997	5,000.00	302,022.50	413.28	269.65	158.56	21.8861	8.5
1998	133,389.30	310,890.10	488.15	309.02	178.1	21.8861	10
1999	285,104.70	312,183.50	628.95	498.03	449.66	92.6934	6.6
2000	103,777.30	329,178.70	878.46	239.45	461.6	102.1052	6.9
2001	221,048.90	356,994.30	1,269.32	438.7	579.3	111.9433	18.9
2002	301,401.60	433,203.50	1,505.96	321.38	696.8	120.9702	12.9
2003	202,724.70	477,533.00	1,952.92	241.69	984.3	129.3565	14
2004	172601.3	527,576.00	2,131.82	351.3	1,032.70	133.5004	15
2005	161406.3	561,931.40	2,637.91	519.5	1,223.70	132.147	17.9
2006	101397.5	595,821.61	3,797.91	552.39	1,290.20	128.6516	8.2
2007	104863.09	634,251.10	5,127.40	759.32	1,589.27	125.8331	5.4
2008	47381.76	672,202.50	8,008.20	960.89	2,117.36	118.5669	11.6
2009	809990.5	718,977.30	9,411.11	1,152.80	2,127.97	148.9017	12.5
2010	1105381.7	775,525.70	11,034.94	883.87	3,109.38	150.298	13.7
2011	1158518.5	834,000.83	12,172.49	918.55	3,314.51	153.8616	10.3
2012	975724	888,893.00	13,895.39	874.83	3,325.16	157.499	12
2013	1,153,000.49	950,000.11	15,160.29	1,108.39	3,689.06	157.311	8
2014	978,000.43	862,104.91	17,680.52	783.12	3,417.58	158.553	8

Source: Central Bank of Nigeria (CBN)'s Statistical Bulletin 2014

Based on the theoretical underpinnings and the empirical review made above, it is articulated that Gross Domestic Product, which serves a proxy for economic growth can be explained by the various components of government fiscal deficit operations. The model thus, is specified in its functional form as follows:

$$BDEF = f(RGDP, BMS, CEXP, REXP, EXCR, INFR) \text{-----}(1)$$

Where;

- BDEF – Budget Deficit
- RGDP – Nigeria’s Gross Domestic Product
- BMS – Broad Money Supply
- REXP – Recurrent Expenditure
- CEXP – Capital Expenditure
- EXCR – Exchange Rates
- INFR – Inflation Rates

For estimation purposes, equation (1) is restated as follows;

$$BDEF_t = \alpha_0 + \beta_1 RGDP_t + \beta_2 BMS_t + \beta_3 CEXP_t + \beta_4 REXP_t + \beta_5 EXCR_t + \beta_6 INFR_t + \varepsilon_t \text{----} \text{----} (2)$$

Where; $BDEF_t$ = Budget Deficit Finance at any time t, α_0 = slope, $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = parameters to be estimated, ε_t = white noise error term. Other notations assume their previous identities as identified in eqn. (1) at any time t.

The a priori expectations are as follows;
 $\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 > 0, \beta_5 > 0$ and $\beta_6 > 0$

Analytical Tools and Test Specifications

Given, the main objective of this study it becomes fundamental to examine the properties of the time series data to ascertain their stationarity properties or otherwise, the nature of long run relationship as well as correct any form of distortions that may arise in the short run. Thus, the following tests will be carried out to ensure that the key objectives are achieved – Stationarity test, Cointegration test and Error Correction Estimates. Therefore, this subsection is further subdivided as follows:

Stationarity Tests

Stationarity or Unit root tests seek to evaluate the stationarity properties of the time series variables employed as both a necessary and pre-condition for estimating the co-integration equations. In this study, the Augmented Dicker-Fuller (ADF) tests are employed to confirm; (a) stationarity of the time series data employed, (b) avoid spurious estimates as a consequence of (a) above and (c) confirm the order of integration of the time series variables. The decision rule is that the absolute values of the ADF-statistics should be higher than those of the Test Critical Values at 1%, 5% and 10% levels of significance for all the study variables employed.

Cointegration Tests

Co-integration tests are carried out in order to ascertain the nature of long-run relationship between the variables of study. This is done through the Johansen’s Co-integration

test to confirm the existence of a long-run relationship between the variables. The decision rule is that the 'Trace Statistic' is greater than the 'Critical Value'.

Error Correction Estimates

It is theoretically expected that some deviations from long run relationship could occur due to distortions in any of the variables in the short run. In this direction, Obamuyi (2009) suggests that these adjustments are necessary for policy implications. Consequently, the Error Correction Model (ECM) is employed.

PRESENTATION OF RESULTS

Presentation of Unit Root Test Results:

The results of the stationarity tests for all the variables of study are presented in table 2 below;

Table 2: ADF Unit Root Test Results

Differenced Variables	ADF-statistic	Test Critical Values			Order of Integration	Prob.
		1%	5%	10%		
D(BDEF)	-12.10487	-3.711457	-2.981038	-2.629906	1(1)	0.0000
D(RGDP)	-6.049764	-3.711457	-2.981038	-2.629906	1(1)	0.0006
D(BMS)	-6.403593	-3.724070	-2.986225	-2.632604	1(1)	0.0000
D(CEXP)	-7.102246	-3.653730	-2.957110	-2.617434	1(1)	0.0000
D(REXP)	-6.967696	-3.679322	-2.967767	-2.622989	1(1)	0.0006
D(EXCR)	-4.927443	-3.711457	-2.981038	-2.629906	1(1)	0.0005
D(INFR)	-4.896344	-3.711457	-2.981038	-2.629906	1(1)	0.0006

Source: Author's Computation using E-VIEWS

The results of the stationarity (unit root) tests presented in table 2 above show that the computed Augmented Dickey-Fuller test statistics for all the series are higher in absolute terms than their corresponding McKinnon's Critical values at 1%, 5% and 10% levels of significance. The implication is that the variables are stationary at first difference, and thus are said to be integrated of order 1(1).

Presentation of Cointegration Test Results:

The Johansen's Co-integration test results are presented in table 3 below:

Table 3: Johansen's Cointegration Test Results:

Date: 07/14/16 Time: 16:52				
Sample (adjusted): 1989 2014				
Included observations: 26 after adjustments				
Trend assumption: Linear deterministic trend				
Series: BDEF RGDP BMS CEXP REXP EXCR INFR				
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 *	0.968524	250.1418	125.6154	0.0000
At most 1 *	0.880673	160.2202	95.75366	0.0000
At most 2 *	0.785370	104.9471	69.81889	0.0000
At most 3 *	0.640623	64.93726	47.85613	0.0006
At most 4 *	0.560151	38.32929	29.79707	0.0041
At most 5 *	0.431506	16.97485	15.49471	0.0297
At most 6	0.084344	2.290981	3.841466	0.1301
Trace test indicates 6 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Authors' computation

The Johansen co-integration test results reported in Table 3 above show that there are six cointegrating equations and also that the null hypothesis of no co-integration is rejected. Further, the Johansen's maximum likelihood cointegration tests do not show any full-rank trend, thereby indicating good evidence of absence of multicollinearity among the study variables. Consequently, the test statistics reveal that there is a significant co-integrating relationship between the dependent variable and the explanatory variables. Thus, it is concluded that there is a significant long-run relationship between government budget deficit finance and the selected macroeconomic determinants during the study period.

Presentation of Error Correction Model Estimates

Table 4 below shows estimates of Error Correction Model

Table 4: Estimates of the Error Correction Model (ECM)

Dependent Variable: D(BDEF)				
Method: Least Squares				
Date: 06/13/16 Time: 12:18				
Sample (adjusted): 1982 2014				
Included observations: 33 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RGDP)	0.248979	0.896018	-0.277873	0.7897
D(BMS)	42.90976	28.83581	-1.488072	0.0045
D(REXP)	276033.0	191547.8	1.441066	0.1607
D(CEXP)	-2.446164	0.524660	4.662382	0.0001
D(EXCR)	4610.205	1606.710	2.869344	0.0095
D(INFR)	26.83582	1603.308	-0.016738	0.0068
ECM(-1)	-0.837721	0.159055	-1.494582	0.0006
R-squared	0.744410	Mean dependent var	2831142.	
Adjusted R-squared	0.698769	S.D. dependent var	6695437.	
S.E. of regression	3674757.	Akaike info criterion	33.23066	

Sum squared resid	3.78E+14	Schwarz criterion	33.50001
Log likelihood	-558.9212	Hannan-Quinn criter.	33.32252
F-statistic	16.31011	Durbin-Watson stat	2.168830
Prob(F-statistic)	0.000000		

Source: Authors' computation

The ECM estimation results shown in Table 4 reveal that the variations in predictor variables jointly account for approximately 69.88 percentage changes in Budget deficit finance after adjusting for short run distortions. The Durbin-Watson statistics (2.17) is within acceptable range and shows insignificant auto correlation. The error correction model (ECM) is of the expected negative sign and also statistically significant at 5% level of significance. The absolute value of the coefficient of the error correction term indicates that about 83.77% of the disequilibrium in the level of budget deficit finance offset by short run adjustment in each year. The implication of this is that the distortion or disequilibrium will be corrected by a little above twelve months.

The goodness-of-fit (as indicated by the significant F-statistics) of the estimated model indicates that the model is reasonably accurate in prediction. However, it is important to note that there are other factors at micro level and some other factors which may have impact on commercial banks financial intermediation process especially in less developed countries. On specific basis, they show that in the long run, Capital Expenditure is significant and has a negative relationship with budget deficit, while Real Gross Domestic Product and Recurrent Expenditure have an insignificant relationship with budget deficit finance. On the other hand, inflation, broad money supply and exchange rates have significant positive long run relationships with stock prices in Nigeria.

Conclusions and Recommendations

A budget deficit, as earlier stated, arises when government estimated expenditures exceed the estimated revenue. The shortfall are usually met and augmented through the process of deficit financing which basically entails government borrowing and/or drawing on the accumulated cash balances. Various researchers have argued on the benefits or otherwise of borrowing to finance budgets. Consequently, this study attempts to empirically ascertain the macroeconomic variables that determine the level of deficit finance in Nigerian economy. From theory and the review of previous studies, it is articulated that Gross Domestic Product, Broad money supply, government expenditure, exchange rate and inflation rates serve as variables that influence the choice and level of government deficit fiscal operations.

Given the results of this study, it is concluded that in the long run;

- Broad money supply, Exchange Rate and Inflation rates are significantly related to government budget deficit finance;
- Also, Capital Expenditure is significantly but negatively related to budget deficit while recurrent expenditure and gross domestic product, though positively related to deficit finance, is not significant in explaining variations in budget deficit finance.

In view of the above conclusions, the following recommendations are made;

From the results, capital expenditure though significant in explaining variations in budget deficit finance, it shows a negative relationship. This indicates that the problem of moral

hazards, which is bane of economic development of most developing countries, still persists in Nigerian economy. Government should ensure that borrowed funds are judiciously utilized for the purpose for which they are meant by putting in place effective and efficient monitoring mechanism so that their impact will positively translate into higher output in the economy. Efforts in ensuring effective and efficient budgeting discipline that will help to reduce wastage in government expenditure be encouraged. Again, though recommending the discouragement and jettisoning of deficit financing in Nigeria may seem unrealistic, efforts should be made to keep it progressively at very low level and greater part of government expenditure should be channelled into boosting of infrastructural facilities while current moves aimed at diversifying the economy should be vigorously sustained by all concerned so as to increase the revenue source of the federal government.

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