

Empirical Examination of the Effects of Government Spending on the GDP Growth Rates of Nigeria

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ABSTRACT

This research work presents an empirical analysis of the impact of government spending on Nigerian economy. The research work made use of secondary data collected from Central Bank of Nigeria's Statistical Bulletin of various issues and National Bureau of Statistics. The empirical measurement covers the period between 2000 and 2016. An Ordinary Least Square (OLS), Augmented Dickey-Fuller unit root test and Co-integration test were adopted to carry out an extensive analysis of the adopted variables which include Gross Domestic Product growth rate, recurrent expenditure and Capital expenditure. The result revealed that the variables have significant effect in the positive direction. This implies that as recurrent expenditure increases, the growth rate of the economy decreases. An increase in the capital expenditure also causes a positive influence on the Nigeria economy within the period considered. The following recommendations were made: That sine recurrent expenditure can still thrive amidst corruptions and embezzlements, government spending should be properly managed so as to raise the nation's production capacity and employment, which in turn will increase economic growth in Nigeria. It was also recommended that in order that government can increase its capital expenditure especially on rural roads and electricity government should promote efficiency in the allocation of development resources through emphasis on private sector participation and privatization\commercialization. Besides, independence of Anti-graft or anti-corruption agencies should not be a negotiable phenomenon to enable the outfits curb the menaces of corruption and embezzlements in the system especially during budget preparation and implementations. They should be made to examine the lapses in embezzlement level of our past leaders in terms of budgetary inflation; correctness of proper imputation and computation of the monetary figures as well as checkmating the past wrong manipulation so as to correct it for future purposes.

Keywords: *Recurrent expenditure, capital expenditure, gross domestic product growth rate.*

Introduction:

Government spending plays an important role in the functioning of an economy whether developed or underdeveloped as it is an important instrument for government to control the economy. Spending means to pay out, disburse, or expend; dispose of money, wealth or resources. (Bishop, 2012) maintains that "Government spending includes all government consumption, investment, and transferred payments". In an attempt to understand the linkages between government spending and economic growth especially in developing country like Nigeria, the interest among

researchers in verifying ways has been re-awaken. Government spending on various activities and interactions of Ministries, Departments and Agencies (MDA's), is growing in geometric progression. The public acuity is that government spending whether recurrent or capital expenditure can be growth-enhancing as it provides social and economic infrastructure which are catalysts to economic growth and development (Maku, 2014). The arrangement of government spending in Nigeria can broadly be categorized into recurrent and capital expenditure. (Nworji, Okwu, Obiwuru, & Nworji, 2012) insist that

the recurrent expenditures are administrative expenditure of government such as wages, salaries, interest on loans, maintenance and many others. For instance, government total recurrent expenditure increased from N4, 805.20 million in 1980 to N36, 219.60 million in 1990 and further to N1, 589, 270.00 million in 2007. Capital expenditures on the hand are capital projects as roads, airports, education, telecommunication, electricity generation. It rose from N10, 163.40 million in 1980 to N24, 048.60 million in 1990. It also stood at N239, 450.90 million and N759, 323.00 million in 2000 and 2007 respectively.

Empirical examination of the effects of government spending on the GDP growth rates of Nigeria (2000-2016) is still an unresolved issue both theoretically and as well as empirically. This is because a few studies report positive and significant relation between government spending and economic growth while several others find significantly negative or no relation between an increase in government spending and growth in real output. Due to the mixed feeling on the above, the debate has been inconclusive on whether or not increasing government spending induces economic growth or not. Based on the above extant literature, this paper empirically examines the effects of government spending on the GDP growth rates of Nigeria (2000-2016).

The remaining part of this paper is structured into the following sections. Section two, which is a review of related literature. Section three describes the methodology employed in this study. Section four dwells on statistical analysis of data and discussion of results thereof, while section five concludes the study and proffers recommendations.

Review of Related Literature:

Conceptual Framework:

Government spending always serves as a fiscal instrument use to control balance of payment equilibrium, depression, foreign exchange rate stability, inflation and unemployment. This is because depression, government spending and unemployment cause aggregate demand to rise and production and supply of goods and services follow the same direction. Hence, the increases in the supply of goods and services couple with a rise in the total demand exalt a downward pressure on unemployment and depression (Nworji, Okwu, Obiwuru, & Nworji, 2012).

Empirical Studies:

(Miftahu & Rosni, 2017), (Loizides & Vamvoukas, 2005) attempted to examine the relationship between government expenditure and economic growth, the results suggested that that government size granger causes economic growth in all the countries they studied. The finding was true for Ireland and the United Kingdom both in the long run and short run. The result is confirmed by the study of (Chioma, Eze, &

Chukwuani, 2016) analyzed the relationship between public expenditure and national income from 1986 to 2005, applying correlation analysis, employing gross domestic product, capital expenditure; community and social expenditure in Nigeria. The result shows that, community and social services has a positive and significant effect on the Nigeria's national income. Similarly, (Udoffia and Godson 2016) examined the impact of federal government expenditure on economic growth from 1980 to 2014; employing regression analysis on capital expenditure; recurrent expenditure and real gross domestic product in Nigeria, capital and recurrent expenditure have positive effect on real gross domestic product.

(Bol & Willy, 2016) used public expenditure, infrastructure, production, social services and security as variables to know the relationship between public expenditure and economic growth in South Sudan from 2006 to 2014 with Random effect model. Government expenditure on social services sector was found to be negative with economic growth. In a similar note, (Ighodaro & Okiakhi 2010) used time series data for the period 1961 to 2007 and applied Co integration Test and Granger Causality test to examine government expenditure disaggregated into general administration and community and social services in Nigeria. The results revealed negative impact of government on economic growth.

A study by (Ranjan & Sharma, 2008) showed that government expenditure exerted significant positive impact on economic growth in India during the period 1950-2007, and that the two sets of variables co integrated. In a similar note, (Ogunmuyiwa & Adelowokan, 2015) measured the impact of public expenditure on economic growth in Nigeria with the use of time series data from 1970 to 2008, employing regression method on gross domestic product, capital expenditure and recurrent expenditure. Public expenditure has a positive impact on economic growth.

(Cooray, 2009) employed an econometric model that incorporates government expenditure and quality of governance in a cross-sectional study of the relationship between government expenditure and economic growth in 71 countries. The results showed that both the size and quality of governance correlated positively with economic growth. In a similar note, (Koffi, 2017) examined the relationship between public expenditure, private investment and economic growth in Togo from 1980 to 2013. Using the two stage least square method, the result shows a positive significant relationship between public expenditure and economic growth.

(Odo, Igberi, Udude, & Chukwu, 2016) used Granger causality test to examine public expenditure and economic growth in South Africa between 1980 and 2014, using government expenditure, real gross domestic product, total revenue and inflation rate. The results show a negative insignificant relationship

between total government expenditure and all economic indicators used in the study. In the same vein, (Akpan, 2005) used a disaggregated approach to examine the relationship. The study found negative and insignificant relationship between economic growth and most components of government expenditure in Nigeria.

(Usman, Mobolaji, Kilishi, A., & Yakubu, 2011) evidence from Nigeria, examined public expenditure and economic growth from 1970 to 2008 discovered that public spending has no impact on growth, on the short run but does on the long run. In the same vein, (Emmanuel, Pius, & Greenwell, 2013) examined the impact of government expenditure on economic growth in Malawi from 1980 to 2007 using agriculture, education, health, social protection, transport and economic growth. The results from error correction mechanism revealed no significant relation among the variables on the short run.

Theoretical Framework:

This study is hinged on Wagner theory. This theory was propounded by (Wagner, 1883), a noted German political economist (1835-1917). The theory was -pounded to analyse and explains the trend in the growth of public expenditure. Wagner postulation is that a functional, cause and effect relationship exists between the growth of an industrializing economy and the relative growth of its public sector.

Methodology:

The research design for this work is ex-post factor research design. It is a time series study. It covered various aspects of Nigeria's recurrent and capital expenditure from 2000-2016. Secondary data were collected from Central Bank of Nigeria Statistical Bulletins 2016 and World Bank. Data were collected on Nigeria's Gross Domestic Product, for a period 2000 to 2016. Data are purely secondary in nature. The data used are presented in the appendix and sourced from Statistics Bulletin of the Central Bank of Nigeria (CBN) and Annual Abstract of Statistic of the National Bureau of Statistic (NBS).

Method of Data Analysis:

Data were analyzed using an ordinary Least Square (OLS), Augmented Dickey-Fuller unit root test and Co-integration test were adopted to carry out an extensive analysis of the adopted variables which include Gross Domestic Product Growth rate, Recurrent expenditure and Capital expenditure.

Apriori Expectation:

Government spending on economic growth –like recurrent and capital expenditure (electricity, telecommunication, health, education, transport,

water, sanitation and irrigation are expected to contribute positively to economic growth).

Model Specification:

Model was formulated using GDP as the independent variable while the explanatory variables were recurrent expenditure and capital expenditure. Model was formulated as follows:

Mathematically;

$$GDP = f(\text{RECEXP}, \text{CAPEXP}) \dots \dots \dots (1)$$

To make the Mathematical expression estimable, it is transformed as equation (2) below:

$$GDP = b_0 + b_1 \text{RECEXP} + b_2 \text{CAPEXP} + e_t \dots \dots \dots (2)$$

Where;

b_0 = a constant

b_1, b_2 = coefficient of the independent variables

GDP = Gross Domestic Product Growth Rate

RECEXP = Recurrent Expenditure

CAPEXP = Capital Expenditure

e_t = the disturbance term or error term

Presentation of Regression Results:

In this section, the results of the ordinary least square (OLS) regression are presented. The analysis of the results involves subjecting the parameter estimates of the model to various theoretical (a priori) expectations, statistical first order test and econometric second order tests to determine their reliability or robustness.

Table shows that the Speed of adjustment (ECM) revealed that 14.9% of disequilibrium is corrected annually. The findings revealed that the DW statistic value of 2.032736 which is approximately equals to two (2). This signifies the absence of autocorrelation. Adjusted R-squared statistic value of 0.6860 revealed that the model is a good fit as the model explains over 68% of systematic variation in inflation. The significant high value of R² which is approximately 67% explains the true behaviour of the independent variables (recurrent expenditure and capital expenditure) while 12.4% explains the disturbance error term in the model.

Based on the t-statistic test, it is revealed that the calculated value of recurrent expenditure and capital expenditure (2.136227 & 4.767908) as variable against its p-value (0.0002 & 0.0000) is less than the test of significance at 5%. This revealed the significant effect of both variables on the economic growth of Nigeria within the period considered.

F-Statistic also shows that the whole model is statistically significant given the F- statistic value of 4.20 and the accompanying probability value of 0.0000. We therefore reject the null hypothesis and conclude that there is significant impact of government spending on the Nigeria economy based on both macroeconomic variables considered within the period.

Table 2 shows the Augmented Dickey-Fuller unit root test for the variables so as to verify if the variables are stationary or not. The findings of the results revealed that the considered variables are stationary and do not have a unit root problem at 5%, first differencing and at lag 1 within the period.

Analysis of Co-Integration Test Results:

The Table 3 shows the Johansen's Multivariate Co-integration test of the variables used in this research study. Details of the result are shown in the appendices section. Based on the hypothesized number of co-integrated equation(s), it is revealed that both the Trace and Max-Eigen statistic test has two co-integrating equations because their p-value is lesser than the test of significance at 5%; we therefore reject the null hypothesis and conclude that there is two co-integrating equations between the variables.

Discussion of Findings:

The findings revealed that the variables used in the research study are not spurious and have a Durbin-Watson statistic value more than one. The Augmented Dickey-Fuller unit root test was employed to correct the low value of the Durbin-Watson statistic and correct for stationarity. At first differences and lag 1, it is revealed that the variables are stationary and do not have a unit root problem. The co-integration test revealed two co-integrating equations among the variables. The dynamic effect of this is that the variables have a long and short run relationship. The coefficient of the variables, which is recurrent expenditure and capital expenditure, is positively signed. The variables have a significant effect in the positive direction. This implies that as recurrent expenditure increases into the economy, it in turn decreases the capital expenditure causing a positive influence on the Nigeria economy within the period considered.

This is in agreement with the research done by (Loizides and Vamvoukas 2005), (Chioma, Eze, & Chukwuani, 2016), (Miftahu and Rosni 2017), (Komain & Brahmastre, 2007), (Udoffia & Godson, 2016) and (Ogunmuyiwa & Adelowokan, 2015) that despite the estimated model reported a negative effect of the recurrent expenditure and capital expenditure to the Nigeria economy; their results showed significant impact on economic growth. However, the result is in contrary to the findings of (Bol and Willy 2016), (Ighodaro & Okiakhi, 2010) that the results revealed negative impact of government spending on economic growth.

Conclusion and Recommendations:

Based on the empirical and theoretical review of this work, it has pointed out the main reason for increase in government expenditure. The result has shown clearly that recurrent expenditure and capital

expenditure has positive and significant relationship with GDP in Nigeria. The result was in tandem with previous studies. Based on findings from the empirical analysis, the study proffers the following recommendations, among others:

- i. Sine recurrent expenditure can still thrive amidst corruptions and embezzlements, government spending should be properly managed so as to raise the nation's production capacity and employment, which in turn will increase economic growth in Nigeria. One cannot therefore say because of the level of corruption in the system that something might be wrong with the computation of the figure. No, Nigerian should as matter of urgency begin to think positively.
- ii. In order that government can increase its capital expenditure especially on rural roads and electricity as this will accelerate the productive sectors as well as raise the standard of living of poor citizens in Nigeria, It could therefore be recommended that government should promote efficiency in the allocation of development resources through emphasis on private sector participation and privatization\commercialization.
- iii. Independence of Anti-graft or anti-corruption agencies should not be negotiable to enable them curb the menaces of corruption and embezzlements in the system especially during budget preparation and implementations. They should be made to examine the lapses in embezzlement level of our past leaders in terms of budgetary inflation; correctness of proper imputation and computation of the monetary figures as well as checkmating the past wrong manipulation so as to correct it for future purposes.

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Table 1: Parsimonious Error Correction Model

Dependent Variable: GDPGR				
Method: Least Squares				
Date: 03/3/18 Time: 22:25				
Sample(adjusted): 2000 2016				
Included observations: 17 after adjusting endpoints				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	11.76432	37.71290	0.311944	0.7600
GDPGR(1)	0.623392	0.291820	2.136227	0.0002
RECEXP(2)	3.284744	0.688927	4.767908	0.0000
CAPEXP(2)	7.956829	2.329602	3.426721	0.0000
ECM(-1)	-0.149384	0.036292	-4.116167	0.0000
R-squared	0.719007	Mean dependent var		4.065043
Adjusted R-squared	0.685060	S.D. dependent var		6.724656
S.E. of regression	7.623105	Akaike info criterion		7.152334
Sum squared resid	755.4524	Schwarz criterion		7.450578
Log likelihood	-61.94717	F-statistic		4.201424
Durbin-Watson stat	2.032736	Prob(F-statistic)		0.000000

Source: Author’s Computation

Table 2: Augmented Dickey – Fuller unit root test for the variables

Variables	ADF	5%	Differencing	LAGS
	3.9033	0.0052	1st	1
RECEXP	8.0143	0.0000	1st	1
CAPEXP	5.4436	0.0001	1st	1

Source: Author computation from Eviews 7

Table 3: Johansen’s Multivariate Co-integration test

Hypothesized No. of CE(s)	Eigen-value	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None*	0.9998	269.5068	29.7971	0.0001	249.7977	21.1316	0.0001
At Most 1*	0.4931	19.7091	15.4947	0.0109	19.7016	14.2646	0.0063
At Most 2*	0.0003	0.0075	3.8415	0.9307	0.0075	3.8415	0.9307

Source: Author computation from Eviews 7
