Effect of Public Recurrent Expenditure and Economic Growth in Nigeria (1986-2016)

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ABSTRACT

This study examined the effect of public recurrent expenditure on economic growth in Nigeria for the period of 1986-2016. *Ex-post facto* research design was adopted while ordinary least squares multiple regression analysis was employed. The data used for the study is annual time series data extracted from Central Bank of Nigeria (CBN) Statistical Bulletin. The findings revealed that public recurrent expenditure on administration has a significant positive effect on economic growth of Nigeria; recurrent expenditures on social and community services have positive and significant effect on economic growth in Nigeria; recurrent expenditures on economic services have positive and significant effect on economic growth in Nigeria; and public recurrent expenditures on transfers have positive and significant effect on economic growth in Nigeria. The implication is that public recurrent expenditure interacts positively with economic (GDP) growth in Nigeria and hence triggers economic growth. The study therefore recommended that federal government of Nigeria should put in place adequate control measures or techniques to ensure that funds allocated to the different sectors of the public recurrent expenditures are judiciously used for the purpose for which they are allocated. The government should also improve in her use of resources, addressing issues of corruption, inefficiency and wastages in the country.

Keywords: Public Recurrent Expenditure; Economic Growth

INTRODUCTION

Economic growth is a fundamental requisite to economic development. Essentially, economic growth is associated with policies aimed at transforming and restructuring the real economic sectors. Nevertheless, the lack of sufficient domestic resources, savings and investment to support and sustain the sectors is a major impediment to economic development in the country because of the gap between savings and investment [1]. Savings provide developing countries (including Nigeria) with the much needed capital for investment which improved economic growth. Increase in savings lead to increase in capital formation and production activities that will lead to employment creation and reduce external borrowing of government. Low domestic

saving rates may maintain low-growth levels because Harrod-Domar model suggested that savings is an important factor for economic growth.

Government expenditure can be described as the expenses incurred by the government in the provision of public goods and services. Generally, the expenditure can be broadly categorized into capital and recurrent expenditures. Capital expenditure refers to expenses on capital projects like roads, airports, health, education, electricity generation, etc., it is usually aimed at increasing the assets of a state and they give rise to recurrent expenditure. On the other hand, the recurrent expenditure refers to government expenses on administration, security, maintenance of public goods, interest payment on loans etc [2]. They are expenditures of government which occur regularly throughout the year. For instance, regular salaries of all employees, money spent on the running of essential services or regular maintenance of infrastructural facilities and money spent on administration.

The relationship between government spending and economic growth has continued to generate sense of controversies among scholars in economic literature [3]; [4]. According to [5], the nature of the impact of government expenditure on economic

growth is inconclusive. As a matter of fact, while some researchers believed that the impact of government expenditure on economic growth is negative or non-significant [6], others believed that the impact is positive and significant [7]. Theoretically, the convention is that spending is a source of economic instability but empirically, this does not give a conclusive support. A few studies report position and significant negative relationship between government spending and economic growth, others found significantly negative or no relation between increase in spending and growth in real output.

The debate over whether the increased size of public expenditure is desirable to promote economic growth was the subject of several theoretical and empirical analyses particularly throughout the 1980s and 1990s [8]. Meanwhile, since the early stages of the argument on public expenditures, there have been several rival perspectives with lack of consensus in the results [9]. For instance,[10] opined that Nigerian economy in the last decade has metamorphosed from the level of N'millions to N'billions, and growing to N'trillions on the expenditure size of the budget; yet there is no infrastructure to improve commerce within the system or social amenities to raise the welfare of average citizen of the economy, hence, we always have a high estimated

expenditure. [11], stated that government expenditure seems to have not replicated same level of economic growth in Nigeria stressing that government expenditure's growth rate has been greater than GDP growth in the same period.

Moreover, considering the previous studies reviewed, only a few has attempted to evaluate the effect of the recurrent expenditures components on the sustainable growth of the economy.

These are, no, doubt big gaps in the literature that needed to be filled. The question therefore, is, what is the effect of public recurrent expenditure on economic growth of Nigeria from 1986 to 2016? The remaining part of this paper is divided into review of empirical literature for part two, methodology for part three, Data presentation, analysis and interpretation of results for part four, and Conclusion and recommendations for part five.

REVIEW OF EMPIRICAL LITERATURE

[12] examined the impact of government expenditure (disaggregated into recurrent and capital expenditure) on economic growth of Nigeria from 1987 to 2010. Three variable multiple regression model was adopted findings revealed that while recurrent government expenditure had positive and non-significant impact on economic growth, capital expenditure had negative and non-significant impact on economic growth thus re-echoing the need for increase and encouragement of private sector investment while have proven over the years as a more efficient utilization of resources compared to public sector.

[13], carried out an empirical investigation on the relationship between federal Government sectoral expenditure on Education, Transport, Agriculture and Health, and two macroeconomic variables,

Gross Domestic Product (GDP) and Consumer Price Index (CPI) respectively; drawing empirical evidence from Nigeria. The study spanned for the period of 1970-2010 and employed Ordinary Least Square (OLS) regression techniques, Cointegration, and Granger Causality test. The findings revealed that federal government spending on Education positively and insignificantly correlates with GDP; while its relationship with CPI is positive and significant. Government expenditure on Transport had a negative and significant relationship with GDP and CPI. Government expenditure on Agriculture had a negative and insignificant relationship with GDP while its relationship with CPI is negative and significant. Government sectoral expenditure on Health had positive and highly significant relationship with GDP and CPI.

[14], studied the impact of government expenditure on economic growth in Nigeria from 1977 to 2012 with particular focus on disaggregated and sectorial expenditures. They employed the Error Correction Model (ECM) technique and found out that in a long run, expenditure in education has a highly and statistically significant positive effect on economic growth in Nigeria.

Oni, [15] studied the joint effects of capital and recurrent expenditures of government on the economic growth of Nigeria from 1980-2011, using the ordinary least square method for estimating multiple regression models. The regression results showed that both capital and recurrent expenditures impacted positively on economic growth during the period of study. The recurrent expenditure has a stronger and more accelerating effect on growth than capital expenditure.

[16], carried out a sectorial analysis of public expenditure and economic growth in Nigeria using annual time series data for the period of 1982-2012. The authors employed ordinary least square approach as technique of analysis and provided evidence that government expenditure on agriculture, health, defense, transportation are positive and statistically significant determinants of economic growth in Nigeria. However,

expenditure on education is negative and not significant.

[17], analyzed the dynamic causal relationship between government expenditure and economic growth in South Africa. The study employed the auto-regressive distributed lag model (ARDL)-bounds techniques and found out that there is a short run bi-directional relationship between government expenditure and economic growth in South Africa, while in the long run, it is economic growth that Granger-causes government expenditure.

[18], analyzed the short-run and long-run impacts of government recurrent expenditure and capital expenditure on economic growth for the period of 1970-2014.Autoregressive Distributed Lag (ARDL) Model or "Bound Testing Approach" to cointegration was employed and the result showed that recurrent expenditure has a positive and long-run impact on GDP. Surprisingly, the short-run coefficient of capital expenditure was negative and this effect dies out in the long-run. Also, the Toda-Yamamoto causality test shows a unidirectional causality emanating from GDP to government expenditure (Wagner`s Theory).

[19], empirically analyzed the effect of recurrent public expenditure on economic

growth in Kenya from 1980-2014. It disaggregated the recurrent public expenditure into: government expenditure on social services, government expenditure on general public administration, and government expenditure on debt. The author employed Augmented Dickey Fuller test for unit root and autoregressive distributed lag approach to cointegration test. The findings revealed that; there was a long-term relationship between recurrent public expenditure and economic growth in Kenya. Particularly, the findings revealed that recurrent public expenditure on government social services and government expenditure on debt showed a positive relationship towards growth while government recurrent expenditure on administration showed a negative relationship. However, government expenditure on debt and administration were statistically insignificant while government recurrent expenditure on social services was statistically significant in driving economic growth.

[20], analyzed the crowding-in and crowding-out effects of recurrent and capital expenditure on human capital development in Nigeria using multiple regression analysis. The findings revealed that both capital and recurrent expenditure crowd-in and crowd-out human capital development. This

outcome therefore suggests a new expenditure framework that refocuses more on capital expenditure than recurrent expenditure.

[21] analyzed the relationship between public expenditures and GDP growth in localities of Vietnam. The research sample includes data on public expenditures and GDP of 63 provinces/cities of Vietnam during the period 2013 - 2015. The results of the research by backward regression method have confirmed the orthodromically directly proportional relationship between components of public expenditure, but not the total public expenditure, and GDP growth in provinces/cities of Vietnam. Specifically, public expenditure on development investment and the one on social and economic services contribute significantly and positively to the economic development of localities.

[22] examined the impact of government spending on economic growth in Nigeria using annual time series data for the period of 1970-2010. The author used ordinary least squares regression analysis on some selected macroeconomic variables such as government expenditure, educational expenditure, health expenditure, government investment expenditure and government consumption were captured in the model, after which the model was

estimated. The results shows that overall government expenditure on health and transport are positively and significantly related to economic growth.

[23], explored the relationship between government expenditure and economic growth with the view to establishing a stable relationship from 1980 to 2015. The authors employed ARDL model to provide the framework for estimating the existence or otherwise of the equilibrium relationship among the examined variables. The findings revealed the existence of positive and significant relationship between public spending on economic growth in Nigeria.

[24], analyzed the long run relationship between government expenditure and economic growth in Nigeria from 1980 – 2015 using the Johansen co-integration technique, Error correction mechanism and Pairwise Granger causality econometric tool of analysis. The results of the study indicate negative relationship among government capital expenditure, unemployment and economic growth. Also, a positive correlation was found among government recurrent expenditure, inflation and economic growth. The results showed unidirectional causality running from government recurrent expenditure (GREX) to gross domestic product. The causality result also indicated a unidirectional causality running from unemployment to RLGDP and government capital expenditure to unemployment.

METHODOLOGY

The study is targeted at measuring the effect of public recurrent expenditure on economic growth of Nigeria for the periods of 1986 to 2016. Being a cause-effect study, *ex-post facto* research design was adopted; annual time series data extracted from the Central Bank of Nigeria (CBN) statistical bulletin, 2016 edition [25] was used while a modified model by [19] which only captured government expenditure on social services, government expenditure on general public administration, and government expenditure on debt was adopted. The fundamental model is the conventional multiple linear regression model specified thus:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_k + \ldots + \beta_k X_k + e_t \qquad - \qquad - \qquad - \qquad - \qquad (3.1)$$

Such that:

$$GDP_t = \beta_0 + \beta_1 ADME_t + \beta_2 SCSE_t + \beta_3 ESE_t + \beta_4 TE_t + \beta_5 INFR_t + e_t \qquad - \qquad - \qquad (3.2)$$

Where,

β_0	=	Constant term
β_1, β_2, β_3, and β_4	=	Regression coefficients
GDP	=	Gross Domestic Product, (dependent Variable)
ADME	=	Administration expenditure, (independent variable)
SCSE	=	Social and community Services expenditure, (independent variable)
ESE	=	Economic services expenditure, (independent variable)
TE	=	Transfers expenditure, (independent variable)
e_t	=	Stochastic error associated with the model.

ANALYSIS AND INTERPRETATION OF RESULTS

Table 1: Summary of ADF unit root test

Variable	ADF-Stat	Levels of Critical Values			p-value	Order of integration	Comment
		1%	5%	10%			
LNGDP	-5.41	-4.31*	-3.57**	-3.22***	0.0007	I(1)	Stationary
LNADME	-6.43	-4.32*	-3.58**	-3.23***	0.0001	I(1)	"
LNSCSE	-7.95	-4.31*	-3.57**	-3.22***	0.0000	I(1)	"
LNESE	-6.83	-4.31*	-3.57**	-3.22***	0.0000	I(1)	"
LNTE	-7.94	-4.31*	-3.57**	-3.22***	0.0000	I(1)	"
LNINFR	-4.75	-3.68*	-2.97**	-2.62***	0.0007	I(1)	"

*,**,*** Indicates stationary at 1%, 5%, and 10% level of significance
Source: Author's Extract from E-views 9.0 output

The ADF unit root test results above shows that the variables are integrated of order one ((1)) as their ADFs values were more negative than the critical values at 5% levels. This implies that the dataset are stationary at first differencing.

Table 2: Summary of Cointegration test (Maximum Eigenvalue Approach)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Stat.	0.05 Critical Value	Prob.**
r=0	0.845646	54.18669	40.07757	0.0007*
r≤ 1	0.672939	32.41067	33.87687	0.0740
r≤ 2	0.582482	25.32938	27.58434	0.0946

r≤ 3	0.369635	13.38223	21.13162	0.4177
r≤ 4	0.245764	8.179456	14.26460	0.3607
r≤ 5	0.065119	1.952758	3.841466	0.1623

Max-eigen value test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

The cointegration test result with Maximum eigenvalue statistic value of 54.18669 > 40.07757 indicates that there is one cointegrating equation at 5% level of significance. This therefore implies that there is a long-run equilibrium relationship between government recurrent expenditures component and economic growth in Nigeria.

Table 3: Ordinary Least Squares (OLS) result

Dependent Variable: LNGDP; **Method**: Least Squares; **Sample**: 1986 2016

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.724134	0.581349	6.406025	0.0000
LNADME	0.433446	0.326326	1.328259	0.1961
LNSCSE	0.280012	0.171135	1.636209	0.1143
LNESE	-0.215629	0.174614	-1.234890	0.2284
LNTE	0.515222	0.201624	2.555356	0.0171
LNINFR	-0.042204	0.101441	-0.416046	0.6809
R-squared	0.973040	Mean dependent var		8.711325
Adjusted R-squared	0.967648	S.D. dependent var		2.000138
S.E. of regression	0.359759	Akaike info criterion		0.965218
Sum squared resid	3.235655	Schwarz criterion		1.242764
Log likelihood	-8.960878	Hannan-Quinn criter.		1.055691
F-statistic	180.4595	Durbin-Watson stat		0.915246
Prob(F-statistic)	0.000000			

The multiple regression result revealed that federal government recurrent expenditures on administration, social and community services, and transfers have positive effect on economic growth of Nigeria while government's recurrent expenditure on economic services negatively affect growth of Nigerian economy. The joint effect statistics estimated by Fisher index (F-statistic) with a coefficient value of 180.4595 and associated probability value of $0.0000 < 0.05$ shows that public recurrent expenditure has a significant positive effect on economic growth of Nigeria.

The R-square estimate which measures the percentage of total variation in the dataset that is accountable by the model indicates that about 97.3% of the total variation in the series is accounted for by the model. This shows that the model is a good one.

The Durbin-Watson test statistic value of 0.915246 creates a suspicion for the presence of first order autocorrelation in the model for which course, a higher order autocorrelation test (B-G serial correlation LM test) was performed. The B-G serial correlation LM test result is as presented in table 4.

Table 4: Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.619999	Prob. F(2,23)	0.1103
Obs*R-squared	10.17640	Prob. Chi-Square(2)	0.0362

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 10/07/17   Time: 14:33
Sample: 1986 2016
Included observations: 31
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.307033	0.511225	-0.600584	0.5540
LNADME	0.015747	0.282513	0.055739	0.9560
LNSCSE	-0.118321	0.155378	-0.761499	0.4541
LNESE	0.04571	0.149927	0.304912	0.7632

	4			
LNTE	0.090630	0.174469	0.519458	0.6084
LNINFR	0.030936	0.087808	0.352317	0.7278
RESID(-1)	0.479172	0.204928	2.338244	0.0284
RESID(-2)	0.207477	0.218600	0.949114	0.3524
R-squared	0.328271	Mean dependent var		5.19E-16
Adjusted R-squared	0.123832	S.D. dependent var		0.328413
S.E. of regression	0.307407	Akaike info criterion		0.696350
Sum squared resid	2.173483	Schwarz criterion		1.066411
Log likelihood	-2.793424	Hannan-Quinn criter.		0.816981
F-statistic	1.605714	Durbin-Watson stat		1.861871
Prob(F-statistic)	0.183851			

Source: *Researcher's Eviews 9.0 output*

From the B-G serial correlation LM test results above, the F-statistic value of 0.62 and associated probability value of 0.1103 > 0.05 overrides the suspicion created in the previous regression result. The D-W statistic result has also improved to 1.861871 indicating the presence of no autocorrelation in the model.

CONCLUSION AND RECOMMENDATIONS

Government controls the economy through the use of public expenditure. This instrument of government control promotes economic growth in the sense that public investment contributes to capital accumulation. Also, a country that is free from fraudulent and corrupt activities grows because when funds are mapped out to be spent on different parts of the economy, there will be no diversion, no misappropriation of funds, hence targets will be achieved and the economy grows. However, this study examined the impact of public recurrent expenditures on economic growth in Nigeria for thirty-one (31) years (1986-2016). The researcher used ordinary least squares regression analysis and found out that public recurrent expenditures have positive and significant impact on economic growth of Nigeria which implies that public recurrent expenditures

interacts positively with economic (GDP) growth in Nigeria. From these findings, it was recommended that:

1) The government should adopt a public expenditure rule that promotes the deficits from exceeding GDP. They should also address issues of corruption, inefficiency and wastages in the country.
2) Higher government expenditure on administration, social and community services, economic services, and transfers should be continually encouraged to create an enabling environment for private to strive through provision of basic infrastructures that will reduce cost of production.

3) Government should put in place adequate control measures or techniques to ensure that funds allocated to the public recurrent expenditures are judiciously used for the projects for which they are allocated.
4) Policies to maintain public recurrent expenditures in Nigeria should be monitored and regulated to ensure minimum spending. Then independent corrupt practice and other related crimes commission should be reformed, strengthened and modernized to promote transparency in the conduct of government affairs.

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151

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