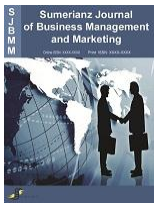
Sumerianz Journal of Business Management and Marketing, 2019, Vol. 2, No. 2, pp. 19-31
ISSN(e): 2617-0175, ISSN(p): 2617-1724
Website: https://www.sumerianz.com



Original Article Open Access

Responsiveness of Economic Growth to Public Expenditure in Nigeria (1980 -2016): An Empirical Analysis

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Abstract

This paper examined responsiveness of economic growth to public expenditure in Nigeria for the period 1980 – 2016. Data were sourced from Central Bank of Nigeria (CBN) Statistical Bulletin Data and the study employed Ordinary Least Square (OLS) multiple regression technique for its tests and analysis. The findings of the study revealed that government recurrent expenditure had an insignificant negative impact on economic growth in Nigeria while government capital expenditure exerted a positive significant impact on economic growth for the period covered by the study. However, domestic inflation rate had the greatest but negative influence on growth of the economy. The study recommended amongst others that the government sector should revert to a lower level of spending as well as plug all extravagant recurrent spending in order to reduce wastages and make recurrent spending of government contribute meaningfully to economic growth in Nigeria. Further, government capital expenditure should be directed majorly to the productive sectors of the economy such as agriculture, industry, education as well as to infrastructural development as this will go a long way in increasing the pace and level of economic activities in the country which would help to achieve an enhanced economic growth in Nigeria in the coming years. Effort should equally be directed on moderating domestic inflation rate towards achieving stable growth of the economy.

Keywords: Government expenditure; Economic growth; Multiple regression; Infrastructural development.
Jel Classification: H50; F43; H53; H5; H52; I15.

1. Introduction

1.1. Background to the Study

Governments all over the globe seek to cater for the welfare of their citizens and the society at large, through their proposed expenditure as captured in their annual budgets. The state spends on defence, education and other social services. It also spends on servicing national debts, capital investments such as airports and infrastructural development, etc. Government also spends on its own maintenance and on the society and the economy as a whole. The state is getting increasingly involved in economic activities and in transfer payments to other countries. As a result, public expenditure has maintained an upward trend over time in virtually all countries of the world (Maku, 2009). The major items of public expenditure in Nigeria include: administration, economic services, infrastructures and social amenities, national security and defence, grants and aids and interest on loans.

Public expenditure in Nigeria could be broadly classified into recurrent expenditure and capital expenditure. The expenditures of government which occur regularly throughout the year are referred to as recurrent expenditure. They must be made regularly if the functions of government must be maintained. They include regular payment of salaries of all employees, money spent on the running of essential services or regular maintenance of infrastructural facilities and money spent on administration. Capital expenditure, on the other hand, is the expenditure of government on the acquisition of things of permanent nature (Nwaeze *et al.*, 2014). They include all expenditure on capital projects such as buildings, construction of roads, bridges and all permanent structures and assets. These usually involve large sums of money and also form the basis of the physical development of a nation.

Suleiman (2009), observed that the size of public expenditure and its impact on economic growth has emerged as a basic fiscal policy issue facing economies today. Tanzi (1994) as cited in Nworji *et al.* (2014), posited that fiscal policy applied to the use of instruments (taxation and spending) to influence the workings of the economic system in order to maximize economic welfare with the overriding objective of promoting long term growth of the economy.

In Nigeria, fiscal policy has been used in various ways based on the prevailing economic situation and the objectives the government would want to achieve. The key instruments of fiscal policy in Nigeria include:

(i) Taxation: This is seen as a compulsory transfer or payment of money (or occasionally of goods and services) from private individual, institutions or groups to the government. It may be levied upon wealth or income, or in the form of surcharge on prices (Nwaeze, 2005).

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(ii) Public Borrowing: This simply means the raising of income through loans and advances by government through the central bank. The loans might be obtained internally or externally in order to meet government's expenditure.

(iii) Public Expenditure: This is the expenses of government for its own maintenance, for the benefits of the society, the economy, external bodies and for other countries. According to, Njoku (2003), public expenditure refers to government spending from revenues derived from taxes and other sources.

There has been an unending debate on whether or not increasing government expenditure could support economic growth in several countries of the world. Scholars have argued both in favour and against this. Studies carried out by scholars such as Cooray (2009), Abu and Abdulahi (2010), Olorunfemi (2008) revealed that government expenditure contributed to economic growth, while others such as Akpan (2005), Laudau (1983), Chude and Chude (2013), found a contrary view that public expenditure did not increase growth of the economy. In accordance to Keynesian view, government could reverse economic downturns by borrowing money from the private sector and then return such monies to the private sector through various spending programs. With this, high levels of government spending (consumption) are likely to increase employment, profitability and investment via the multiplier effects on aggregate demand. Thus, government expenditure (recurrent or capital) could positively contribute to economic growth. The endogenous growth model such as Barro (1990), on the other hand, predicted that only those productive government expenditures would positively affect long run growth rate. Other scholars (Laudau, 1983; VerBeck, 2000), had argued that increasing government expenditure might not have its intended salutary effects on developing countries, given their high and often unstable levels of public debts. According to VerBeck (2000), as government expenditure grew incessantly, the law of diminishing returns set in and beyond some points, further increases in government expenditure would contribute to decline and economic stagnation.

Economic growth is an essential ingredient for sustainable development. Economic growth brings about a better standard of living of the people and this is brought about by improvement in infrastructure, health, housing, education and improvement in agricultural productivity. Sustainable development is enhanced by economic growth. Economic growth as a concept is viewed differently by different scholars. This is attributed to the condition prevailing at the time of these scholars. Majority accepted it as an increase in the level of national income and output of a country. According to, Dewett (2005), it was implied as an increase in the net national product in a given period of time. Todara and Smith (2006), defined economic growth as a steady process by which the productive capacity of the economy is increased over time to bring about rising levels of national output and income. Jhingan (2009), viewed economic growth as an increase in output. He explained further that it is related to a quantitative sustained increase in a country's per capita income or output accompanied by expansion in its labour force, consumption, capital and volume of trade. The main characteristics of economic growth are high rate of structural transformation, international flows of labour, goods and capital (Ochejele, 2007).

Across the globe, especially in developing countries (Nigeria inclusive), government spending has been on the increase without a corresponding increase in economic growth of these nations. Till date in Nigeria, there still exists public outcries over decaying infrastructural facilities in the country as well as poor welfare of citizens (Okoro, 2013). To verify the authenticity of this assertion has necessitated the present study. Furthermore, other studies such as Modebe *et al.* (2012), Chude and Chude (2013), Ojonugwa *et al.* (2016), had worked on this area before, however, they have not taken into consideration effect of inflation rate on both recurrent and capital expenditures of government and on economic growth. All these above debated issues have created the basis for the present study.

1.2. Statement of the Problem

For decades now, public expenditure has been expanding in Nigeria as well as in other countries of the world. This is as a result of the huge receipts from the production and sales of crude oil, externalities, security challenges and the increased demand for public goods like roads, power, communication, education, industry and agricultural services (Abu and Abdulahi, 2010).

Unfortunately, despite the rise in government expenditure in Nigeria over the years, there still exist unending public outcries concerning the poor growth of the Nigerian economy. The rising government expenditure has not translated in real terms to growth and development, as Nigeria today ranks among the poorest countries in the world Nurudeen and Usman (2010). Again, many Nigerians have continued to wallow in abject poverty as more than fifty percent of them live on less than US $1 per day (Okoro, 2013).

Basic infrastructures such as good roads, health facilities, qualitative education and communication have been lacking. Power is epileptic and highly unreliable and therefore, no functional firms exist, thereby contributing to high level of unemployment in the country. The level of technology is very low as a result, primitive technology is still being used to date in agricultural practice. Low productivity therefore prevails in relation to the demand for them (Ujah *et al.*, 2012`).

Furthermore, macroeconomic indicators such as balance of payments, exchange rate and national savings revealed that Nigeria has not faired well in the last three decades. In all, over the years, increasing government expenditures seemed not to have replicated corresponding level of growth in the country. Some past studies carried out in this area had revealed that government expenditure contributed to economic growth (Abu and Abdulahi, 2010; Cooray, 2009; Olorunfemi, 2008), while some suggested that public expenditure did not increase growth in the economy (Akpan, 2005; Chude and Chude, 2013; Laudau, 1983). Most of these works in this area did not take into consideration effect of inflation rate on both recurrent and capital expenditure of government and on economic growth. All these above debated issues have created a major research lacuna or gap which the present work seeks to bridge. By the time it is completed, the researchers would be in a position to ascertain the true state of affairs.

1.3. Objectives of the Study

The general objective of this study is to examine impact of public expenditures on economic growth of Nigeria for the period 1980 – 2016.

The specific objectives of the study include:

1. To examine impact of recurrent expenditure on economic growth of Nigeria.
2. To assess impact of capital expenditure on economic growth of Nigeria.

1.4. Research Questions

The following research questions are raised to guide this study:

1. To what extent does recurrent expenditure impact on economic growth of Nigeria?
2. In what degree does capital expenditure impact on economic growth of Nigeria?

1.5. Hypotheses

The following research hypotheses have been raised in this study in line with the objectives of the study:

Ho_1: There is no significant impact of recurrent expenditures on economic growth of Nigeria.

Ho_2: There is no significant impact of capital expenditure on economic growth of Nigeria.

2. Review of Related Literature

2.1. Theoretical Framework

This was considered under two main theories as shall be discussed here under

2.1.1. Peacock and Wiseman Theory (Displacement Theory)

Allan Peacock and Jack Wiseman studied growth of public expenditure in Britain for the period 1890-1955. They came up with an alternative hypothesis of growth of public expenditure different from what Wagner proposed (Njoku, 2003). Peacock and Wiseman's hypothesis is popularly referred to as "displacement effect hypothesis". Public expenditure in Britain grew at geometric rate and this was due to the fact that government made effort to solve problems created by natural disaster. At this period, government was able to increase taxation, which the citizens were glad to pay. At the end of the period the government seized the opportunity to displace the citizens from low level of taxation to high level of taxation. The core argument here was that public expenditure did not increase in a smooth and continuous manner but on a stepwise fashion (Njoku, 2003).

Peacock and Wiseman further argued that countries experienced upheavals of various types and that during these upheavals, there was need for increased public expenditure over and above the existing revenue. This mounted a serious pressure on government and the people to accept a higher level of sacrifice by withdrawing more resources from the private sector to the public sector. In doing so, public expenditure displaced private expenditure during the period of disturbance or crisis. In Nigeria, it was difficult for displacement theory to hold because in times of natural disasters, government used grants and moral persuasion approach to address the problem and not asking people to pay more taxes.

2.1.2. The Keynesian Theory

Of all economists who discussed the relation between public expenditures and economic growth, Keynes was among the most noted with his apparently contrasting viewpoint on this relation. Keynes regarded public expenditures as an exogenous factor which could be utilized as a policy instrument to promote economic growth (Nworji *et al.*, 2014). From the Keynesian thought, public expenditure could contribute positively to economic growth. Hence, an increase in government consumption was likely to lead to an increase in employment, profitability and investment through multiplier effects on aggregate demand. As a result, government expenditure augmented the aggregate demand, which has provoked an increased output depending on expenditure multipliers.

2.2. Empirical Review of Literature

The relationship between government expenditure and economic growth has continued to generate series of controversies among scholars in economic literature.

Modebe *et al.* (2012), examined impact of recurrent and capital expenditure on Nigeria's economic growth for the period 1987 – 2010. Three variable multiple regression model was adopted while recurrent expenditure and capital expenditure were used as independent variable and gross domestic product growth rate as dependent variable. The result emanating from this study revealed that while recurrent 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 investments which have proved to be more efficient in utilization of resources compared to public sector over the years.

In the study by Chude and Chude (2013), they investigated the effects of public expenditure in education on economic growth in Nigeria over a period from 1977 to 2012, with particular focus on disaggregated and sectoral expenditures analysis. The study used *ex-post facto* research design and applied time series econometric technique to examine the long and short run effects of public expenditure on economic growth in Nigeria. The results indicated that total expenditure on education was highly and statistically significant and had positive relationship on economic growth in Nigeria in the long run.

Ojonugwa *et al.* (2016), examined relationship between government expenditure and economic growth in Nigeria for the period 1970 to 2010. Unit root test, cointegration test, Pair-wise cointegration test and Granger-causality test were empirical tools used for the study. The result of the study showed that both capital expenditure and recurrent expenditure had positive and significant relationship with economic growth in the short run. Recurrent expenditure exhibited a positive and significant relationship with economic growth in the short run while capital expenditure had a negative but significant relationship with economic growth in the short run. The Pair-wise Granger-causality test showed that there was a unidirectional causality running from economic growth to both capital and recurrent expenditures meaning that economic growth determined both capital and recurrent expenditures in Nigeria.

Mutiu and Olusijibomi (2013), examined relationship between public expenditure and economic growth in Nigeria during the period 1970-2009. A disaggregated public expenditure level was employed using the Gregory-Hansen structural breaks cointegration technique. The result confirmed Wagner's law in two models in the long run: there was a break in 1993 in which the political crisis that engulfed the nation was accountable. The result also showed that economic growth and development were the main objectives of government expenditure, especially investment in infrastructure and human resources all of which fell under social and community services. Based on the result, the study recommended that there should be efforts to maintain adequate levels of investment in social and economic infrastructure.

Abu and Abdulahi (2010), investigated relationship between government expenditure and economic growth in Nigeria from 1970 to 2008 studied. Their result revealed that government total capital expenditure, total recurrent expenditure and education had negative effects on economic growth. On the contrary, government expenditure on transport, communication and health resulted in an increase in economic growth. They recommended that government should increase both capital expenditure and recurrent expenditure including expenditure on education as well as ensured that funds meant for development on these sectors were properly utilized.

Ogbuagu and Ekpenyong (2015), investigated impact of the components of public expenditure on economic growth in Nigeria from 1970 to 2014. Recurrent expenditure, capital expenditure, net exports, inflation rate and gross national savings served as the independent variables while gross domestic product served as the dependent variable. Unit root test, Toda-Yamamoto causality test and autoregression distributive lag (ARDL) technique were used as analytical tools. Findings of the research showed that recurrent expenditure had a positive and significant impact on economic growth both in the short run and long run. However, the study revealed that capital expenditure had no short run effect on economic growth, but rather exhibited a negative significant effect on economic growth only in the long run. National savings had negative and significant impact on economic growth in the short run but a positive and significant effect in the long run. Finally, the study found that net exports had a negative impact on economic growth in Nigeria.

Other researchers both at home and abroad have examined effect of government expenditure on economic growth with mixed results that the present study would intend to reconcile. Laudau (1983), examined effect of government expenditure on economic growth for a sample of 96 countries. He found that government expenditure exerted a negative effect on real output.

In their study, Olugbenga and Owoye (2007), investigated relationships between government expenditure and economic growth in a group of 30 countries of Organization for Economic Co-operation and Development (OECD) for the period 1970-2005 using multiple regression analysis. Their analysis showed that a long-run relationship existed between government expenditure and economic growth. The study also indicated a unidirectional causality from government expenditure to growth for 16 of the countries, thus supporting the Keynesian hypothesis government intervention. But, causality ran from economic growth to government expenditure in 10 of the countries, thereby confirming the Wagner's law. For the remaining four countries, findings indicated existence of feedback relationship between government expenditure and economic growth.

In their empirical analysis of relationship between government expenditure and economic growth, Folster and Henrekson (2001), employed various econometric approaches to study a sample of wealthy countries for the period 1970 to 1995. Based on their findings, they submitted that the more meaningful and reliable results were generated, economic problems were addressed. A study by Ranjan and 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 were cointegrated.

Cooray (2009), employed an econometric model that incorporated government expenditure and quality of governance in a cross-sectional study of 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 their own study, Abu-Bader and Abu-Qarn (2003), used multivariate co-integration and variance decomposition approach to analyze causal relationship between government expenditures and economic growth in Egypt, Israel, and Syria. The variables used in their analysis included share of government civilian expenditures in GDP, military burden, and economic growth. They observed that, in the bivariate framework, a bi-directional and long run negative relationships existed between government spending and economic growth. But the Causality Test within the trivariate framework based on the above variables indicated that military burden had a negative impact on economic growth in all the countries, while civilian government expenditures had positive effect on economic growth for both Israel and Egypt.

In a study of government expenditure and economic growth in the United States, Liu *et al.* (2008), examined causal relationship between GDP and public expenditure for the period 1947-2002. The causality results revealed that while total government expenditure caused growth of GDP, the latter did not cause expansion of government

expenditure. The study concluded that since public expenditure grew the US economy, based on the causality test, Keynesian hypothesis exerted more influence than the Wagner's law in US.

Using data set on Greece, United Kingdom and Ireland, Loizides and Vamvoukas (2005), employed the trivariate causality test to investigate relationship between government expenditure and economic growth. The result showed that size of government expenditure granger-caused economic growth in the three countries. Such growth was experienced both in the long and short runs in Ireland and the UK. When inflation was included in the analysis, the result showed that economic growth granger caused public expenditure expansion in Greece and the UK.

Donald and Shuanglin (1993), investigated differential effects of various categories of expenditures on economic growth for a sample of 58 countries. Their findings suggested that while government expenditures on education and defence had positive effect, expenditure on warfare had insignificant negative effect on economic growth. An obvious deficiency of economic theory was that it did not provide a well developed methodology to incorporate government expenditures in standard growth models. To assuage this, empirical studies have been carried out to establish a relationship between size of government and economic growth. While some studies have found a negative relationship between government expenditure and economic growth Laudau (1983), Grier and Tullock (1989); Barro (1990), others have found a positive relationship Ram (1986) and Aschauer (1989).

Oyinlola (1993), studied defence expenditure and economic growth in Nigeria, and found a positive relationship between defence expenditure and economic growth. Empirical analysis by Fajingbesi and Odusola (1999)'s study showed that government capital expenditure had a significant positive effect on real output, but that real government recurrent expenditure had insignificant effect on growth. The study by Ogiogio (1995), indicated a long-term relationship between government expenditure and economic growth. The result also showed that recurrent expenditure exerted more effect than capital expenditure on economic growth.

Akpan (2005), used a disaggregated approach to examine the relationship. Components of public expenditure considered in his analysis were capital, recurrent, administrative, economic service, social and community service, and transfers. The study found no significant relationship between economic growth and most components of government expenditure in Nigeria.

Nurudeen and Usman (2010), observed that rising government expenditure had not translated to meaningful development as Nigeria still ranked among the world's poorest countries. Using disaggregated analysis approach, they investigated effect of government expenditure on economic growth in Nigeria in the period 1970-2008 and found that government total capital expenditure, total recurrent expenditure and expenditure on education had negative effect on economic growth; but rising government expenditure on transportation and communication, and health exerted a positive effect on economic growth. However, the study has faulted the extent of disaggregation of the data that constituted variables of research interest in Nurudeen and Usman's study since expenditure on education, transportation and communication and health must have been part of total capital and total recurrent expenditure, respectively.

Nwaoha *et al.* (2017), examined effect of aggregated and disaggregated government expenditure on economic growth in Nigeria for the period 1980 to 2015. The study adopted aggregated government expenditure (proxied by total federal government expenditure). Disaggregated expenditure was proxied by recurrent expenditure and capital expenditure while real gross domestic product served as proxy for economic growth. All of total government expenditure, recurrent expenditure and capital expenditure served as the independent variables while real GDP served as the dependent variable. The study employed the error correction mechanism (ECM) as the empirical tool for its tests and analysis. Findings showed that total federal government expenditure and capital expenditure had positive and significant effect on economic growth in Nigeria. On the other hand, the study revealed that recurrent expenditure had a positive and insignificant effect on economic growth in Nigeria.

Suleiman (2009), observed that such understanding could help to assess impact on government expenditures and then on deficits arising from a structural deceleration in or from an improvement in the growth potential. He submitted that a good knowledge of the structural relation between the non-cyclical component of government expenditure and potential output was key to obtaining a benchmark against which to evaluate the stance of expenditure policy and then of overall fiscal policy. Consequently, he empirically examined relationship between government revenues and expenditures, expenditures and economic growth as a fundamental step in understanding the behaviour of Nigerian public expenditure and the economy. His study found support for Wagner's law of ever increasing public finance and Friedman's Hypothesis. The study also showed that growth in real GDP was significant before the mid-1990s but thereafter fell below average government revenue and expenditure. He concluded that, during the period 1978–2008, government expenditure was not used as a fiscal instrument and that revenue growth drove government expenditure. This study improved on some of the existing studies, especially those of Fajingbesi and Odusola (1999), and Akpan (2005), in that it had investigated the partial and joint effects of government expenditure on economic growth in Nigeria using certain disaggregated components of government expenditure. It also updated these studies in terms of currency and detailed analysis, and had contributed to the existing literature on the long run relationship between government expenditure and economic growth in Nigeria. However, the study excluded administrative expenditure in that it was embedded in recurrent expenditures. All these inadequacies discovered from the present study's extensive review of empirical literature would be addressed in this study. By the time it is completed the researchers would be in a position to ascertain the true state of affairs.

3. Research Methodology

3.1. Research Design

According, to Amaechi and Amara (2005), research design should be a blueprint which should guide the researcher in his scientific inquiry, investigation and analysis. It is a scheme of attack; a plan and a strategy designed for systematically solving research problems of interest to the researcher within his relevant circumstances. The study adopted *ex-post facto* research design. The *ex-post facto* research design is used to foist a link between the dependent and independent variables, relying on an already existing secondary data. The beauty of using *ex-post* facto research design is that the researcher relies on the already existing data devoid of manipulation of the research (Osuala, 2010). This research design is appropriate and preferred in a cause-effect relationship where there is already an existing data which could not be manipulated by the researcher at the point of research. In this study, data for all the variables involved already exist in Nigeria.

3.2. Nature and Source of Data

The study made use of secondary data, mostly time series. The data for this study is obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin (2016) various and National Bureau of Statistics. Data obtained were on variables such as recurrent and capital expenditure, inflation rate and real gross domestic product for the period covered in this study.

3.3. Method for Data Analysis

The study made use of pre-testing method, involving unit root test which focused on obtaining overall stationarity for the variables and the co-integration test which aimed to establish existence of long-run equilibrium relationship among the variables. Thereafter, the study then used the Ordinary Least Squares (OLS) multiple regression technique to determine impact of government expenditures on economic growth of Nigeria.

3.4. Model Specification

Ojonugwa *et al.* (2016), specified a model which captured impact of government expenditure on economic growth of Nigeria thus:

RGDP = f (CAPEX, RECEXP)…….…… Eqn (1)

Where:

RGDP = Real Gross Domestic Product
f = Function
CAPEX = Capital Expenditure
RECEXP = Recurrent Expenditure

This model would then be adopted and modified to suit the objectives of the present study. Thus, the model is specified as:

RGDP = *f* (RECEP, CAPEX, INFR)……..……...……Eqn (2)

Where:

RGDP = Real gross domestic product (proxy for economic growth)
RECEP = Recurrent expenditure
CAPEX = Capital expenditure } Independent variables
INFR = Inflation rate — Control variable

Transforming equation (2) into its econometric form, it becomes

$RGDP = \beta_o + \beta_1 RECEP + \beta_2 CAPEX + \beta_3 INFR + \mu$……..……Eqn (3)

Where:

B_o = Constant (Intercept) term
$\beta_1, \beta_2, \beta_3$ = Coefficient parameters of the explanatory variable.
μ = Stochastic Term or error term.

Therefore, transforming equation (3) into its logarithm form in order to bring the variables to a common base, it becomes,

$\ln RGDP = \beta_o + \beta_1 \ln (RECEP) + \beta_2 \ln (CAPEX) + \beta_3 \ln (INFR) + \mu$….Eqn (4)

By a priori, $\beta_o > 0$, $\beta_1 > 0$, $\beta_2 > 0$ and $\beta_3 + > 0$.

3.5. Brief Description of Research Variables

3.5.1. Dependent Variable

In this study, the dependent variable – real gross domestic product has been proxied for economic growth. Real gross domestic product is seen here as the total money value of all goods and services produced within a country at any given period of time (usually one year).

3.5.2. Independent Variables

The explanatory variables in this study are recurrent and capital expenditure.

3.5.3. Recurrent Expenditure

Recurrent expenditure is expenditure of government which occurs regularly throughout the year and which does not result to the acquisition or creation of fixed assets. They must be made regularly if the functions of government must be maintained. Such expenditure includes regular payment of salaries of government employees, money spent on administration and maintenance of infrastructural facilities.

3.5.4. Capital Expenditure

Capital expenditure is expenditure on the acquisition of things of permanent nature (Akpan, 2005). In the case of government, it includes expenditures on buildings, construction of roads, bridges, purchase of computer equipment and all permanent structures and assets.

3.5.5. Inflation Rate

In this work, inflation rate has been included as a control variable as it affects both the dependent and independent variables. Inflation affects the public expenditure and by extension what these expenditures could afford in terms of value in an economy.

4. Data Presentation, Analysis and Discussion of Results

4.1. Data Presentation

Data for this study are presented and analysis made so as to determine how each of the explanatory variables – recurrent expenditure and capital expenditure including the control variable – inflation rate behaved when compared with the real gross domestic product (proxy for economic growth) in Nigeria for the period 1980 – 2016.

Table-4.1. Data on RGDP, RECEP, CAPEX (N'billion) and INFR (%) for Analysis

Year	Real Gross Domestic Product (Rgdp)	Recurrent Expenditure (Recep)	Capital Expenditure (Capex)	Inflation Rate (Infr)
1980	31,546.76	3.95	6.2	9.9
1981	15,258.00	4.85	6.57	20.9
1982	14,985.08	5.51	6.42	7.7
1983	13,849.73	4.75	4.89	23.2
1984	13,779.26	5.83	4.10	39.6
1985	14,953.91	7.58	5.46	1.0
1986	15,237.99	7.7	8.53	13.7
1987	15,263.93	15.65	6.37	9.7
1988	16,215.37	19.41	8.34	61.2
1989	17,294.68	25.99	15.03	44.7
1990	19,305.63	36.22	24.05	3.6
1991	19,199.06	38.24	28.34	23.0
1992	19,620.19	53.03	39.76	48.8
1993	19,927.99	136.73	54.50	61.3
1994	19,979.12	89.97	70.92	76.8
1995	20,353.20	127.63	121.14	51.6
1996	21,177.92	124.49	212.93	14.3
1997	21,789.10	158.56	269.65	10.2
1998	22,332.87	178.1	309.02	11.9
1999	22,449.41	449.66	498.03	0.2
2000	23,688.28	461.6	239.45	14.5
2001	25,267.54	579.3	438.70	16.5
2002	28,957.71	696.8	321.38	12.2
2003	31,709.45	984.3	241.69	23.8
2004	35,020.55	1,110.64	351.25	10.0
2005	37,474.95	1,321.23	519.47	11.6
2006	39,995.50	1,390.10	552.39	8.5
2007	42,922.41	1,589.27	759.28	6.6
2008	46,012.52	2,117.36	960.89	15.1
2009	49,856.10	2,127.97	1,152.80	13.9
2010	54,612.26	3,109.44	883.87	11.8
2011	57,511.04	3,314.51	918.55	10.3
2012	59,929.89	3,325.16	874.70	12.0
2013	63,218.72	3,214.95	1,108.39	7.96
2014	67,152.79	3,426.94	783.12	7.98
2015	69,023.93	3,831.98	818.35	9.55
2016	67,931.24	4,178.59	634.80	10.00

Source: CBN Statistical Bulletin (2016), Various.

4.2. Analysis of Data

Below, the study briefly analyzed data presented on Table 4.1.

4.2.1. Real Gross Domestic Product (RGDP)

Table 4.1 above revealed that RGDP in Nigeria stood at N31,546.7bn in 1980. Thereafter, it declined to N28,957.71bn in 2002. In 2003, it commenced an upward movement from N31,709.45bn to N69,023.93bn in 2015 which could be attributed to the policy of government aimed at achieving its objective for the year. However, there was a slight decline in 2016 when it reduced to N67,931.24bn.

4.2.2. Recurrent Expenditure (RECEP)

Table 4.1 above showed that government recurrent expenditure recorded an upward movement in almost all the years under study except in 1994 when it declined a bit to N89.97bn from N136.73bn in 1993. The plausible reason for significant increases in 1983's recurrent expenditure was because government had to pump more money into its administrative expenses and other security issues to enable it quell down a major political crisis that led to the grounding down of the entire country through a nationwide strike action arising from cancellation of June 12 presidential election by the military under Gen. I.B. Babangida. This election was believed to have been won by chief MKO Abiola of Social Democratic Party (SDP). Overall, the table revealed a consistent increase in recurrent expenditure of government.

4.2.3. Capital Expenditure (CAPEX)

Table 4.1 above also revealed that government capital expenditure stood at N6.2bn in 1980. It reached N6.42bn in 1982 and thereafter declined between 1983 and 1985. This was at the beginning of Alh. Shehu Shagari's second term in office under National Party of Nigeria (NPN), when Nigeria's foreign debt profile rose astronomically caused by politicians' reckless spending leading to rise and the amount for debt servicing skyrocketed, in addition to, dwindling oil revenue due to oil glut in international market forced the country to cut down its public expenditure on capital projects between 1983-1985. In 1986, it resumed an upward movement to N8.35bn and then decreased in 1987 and increased again in 1988. In 1990, it recorded an upward movement from N24.05bn to N498.3bn in 1999. Again, it declined between the year 2000 and 2004 which probably could be attributable to the policy of government aimed at achieving its set objectives in trying to manage its lean resources arising from low income from crude oil consequent upon low price per barrel of oil in international market. In 2005, capital expenditure stood at N519.47bn and increased to an all time high level of N1,152.8bn in 2009. Thereafter, it recorded a downward movement to N634.80bn in 2016 due to reduced price of oil per barrel and low production output due to militant activities in the Niger Delta which occasional disrupted production.

4.2.4. Inflation Rate (INFR)

Within the period of the study, inflation rate recorded the lowest level of 0.2% in 1999 and the highest of 61.2% in 1988. This could possibly be as a result of productive activities and market forces in the economy which has faced several ups and down thereby leading to instability among key economic variables of exchange rate and domestic inflation rate.

5. Results and Discussion

Table-4.2. Unit Root Test Result ADF Unit Root test

Variables	ADF Level	ADF 1st Difference	0.05 Critical Value Level	0.05 Critical Value 1st Difference	Order of Integration
D(InRGDP)	1.042861	-17.40119	-2.948404	-2.948404	I(1)
D(InRECEP)	-1.353236	-7.991842	-2.948404	-2.948404	I(1)
D(InCAPEX)	-1.194845	-5.887285	-2.945842	-2.948404	I(1)
D(InINFR)	-5.199278	-9.449092	-2.945842	-2.948404	I(1)

Source: Author's Computation (2018) using E-views 9.0 software

The present study adopted the augmented Dickey-Fully (ADF) unit root test. From the result on Table 4.2, it has been evident that at levels, only inflation rate (INFR) was stationary as its ADF value was more than the critical value at five percent level of significance. The ADF value for inflation rate (5.199278) in absolute terms was more than the critical value (2.945842). However, the ADF values for GDP (1.042861), RECEP (1.353236) and CAPEX (1.194845) in absolute terms were less than their critical values of (2.948404), (2.948404) and (2.945842), respectively, which meant that they were stable. Based on this outcome, there was a need to difference the non-stationary time series one more time to see whether it would attain an overall stationarity. At first difference, all the variables became stationary as their ADF values became greater than their critical values in absolute terms. Because all the variables have become stationary, cointegration analysis would then be justified.

Table-4.3. Cointegration Test Result

Hypothesized No. of CE(s)	Trace Statistic	0.05 Critical Value	Max-Eigen Statistic	0.05 Critical Value
None	53.93286*	47.85613	28.59232**	27.58434
At Most 1	30.34054*	29.79707	25.26319**	21.13162
At Most 2	12.07735	15.49471	9.633248	14.26460
At Most 3	2.444104	3.841466	2.444104	3.841466

Trace Statistic indicated 2 cointegrating equation at 5% level of significance
Max-Eigen statistic indicated 2 cointegrating equation at 5% level of significance
*(**) indicated significance at 5% level of significance
Source: Author's Computation (2018) using E-views 9.0 software

The present study adopted Johansen cointegration test which relied on two test statistic in determining the existence or otherwise of long run equilibrium relationship namely, the Trace statistic and Max-Eigen statistic. Based on the Johansen cointegration test result on Table 4.3 above, the Trace statistic indicated that there existed two cointegrating equations at 5 percent levels of significance. From the results, the Trace statistic (53.93286) and (30.34054) exceeded the critical values (47.85613) and (29.79707), respectively. This was an indication that the variables of the model were related in the long run and as such they were suitable for carrying out the regression analysis. More so, when the researchers applied the cointegration test based on Max-Eigen statistic, the results also indicated the existence of two cointegrating equation at 5 percent level of significance. From the result, the Max-Eigen statistic (28.59232) and (25.26319) which also exceeded the critical values (27.58434) and (21.13162), respectively at 5 percent level of significance. This is also an indication that there was existence of long run relationship among the variables of the model.

Table-4.4. Ordinary Least Square (OLS) Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.016226	0.008674	1.870533	0.0709**
D(lnRECEP)	0.032074	0.061286	0.523352	0.6045
D(lnCAPEX)	0.095335	0.042254	2.256236	0.0377**
D(lnINFR)	-0.030072	0.011940	-2.518536	0.0172**
ECM(-1)	-0.478914	0.067730	-7.070903	0.0000*
R-squared	0.625538	≈ 62.6%		
Adjusted R-squared	0.577220	≈ 57.7%		
F-statistic	12.94636	Durbin-Watson stat		≈1.789233

Source: Author's Computations using E-views 9.0 Package
Key: *Significant at 1% Level **Significant at 5% Level

From the result in table 4.4 above, 1 percent increase in government total recurrent expenditure led to 3 percent increase in gross domestic product (proxy for economic growth) in Nigeria. The probability value of government total recurrent expenditure (0.6045) was greater than the test's level of significance (i.e. $P > 0.05$). Thus, the paper concluded that government total recurrent expenditures did not have a significant impact on economic growth in Nigeria. This finding has corroborated with the works of Modebe *et al.* (2012), and Nwaoha *et al.* (2017), which revealed that government recurrent expenditures had an insignificant effect on economic growth of Nigeria. Perhaps, this outcome could be attributed to the bogus and often wasteful nature of government recurrent spending. Although, it could lead to rise in aggregate demand thereby increase the growth of Nigeria's economy but such increases in aggregate demand was not strong enough to drive the nation's economy.

Secondly, the study discovered that there was a positive and significant relationship between government total capital expenditure and economic growth in Nigeria. A 1 percent increase in government total capital expenditure led to 10 percent increase in gross domestic product (proxy for economic growth) in Nigeria. The probability value of government total capital expenditure (0.0377) was less than the test's level of significance (i.e. $P < 0.05$). Thus, the paper concluded that government total capital expenditure had a significant impact on economic growth in Nigeria. This result was in line with the works of Ojonugwa *et al.* (2016) and Ogbuagu and Ekpenyong (2015), which found that capital expenditure had significant impact on economic growth in Nigeria. This finding was not surprising because marginal expenditures made by government in providing infrastructures often spurred economic activities in Nigeria thereby drastically increasing aggregate demand. As aggregate demand increased, productivity increased and economic growth in Nigeria had been hugely increased commensurately.

Thirdly, the study revealed that there was a negative and significant relationship between inflation rate (used in the study as a control variable) and economic growth in Nigeria. Thus a 1 percent rise in inflation rate led to 3 percent fall in economic growth in Nigeria. The probability value of inflation rate (0.0172) was less than the test's level of significance (i.e. $P < 0.05$). Thus, the paper concluded that inflation rate had a significant impact on economic growth in Nigeria. This finding also corroborated with Osuala *et al.* (2013), which in their study found a negative and significant effect of inflation rate on economic growth in Nigeria. This outcome was not surprising going by the obviously high inflation rate in Nigeria which had largely remained in a double-digit threshold. A high inflation rate meant a high loss of purchasing power, reduction in aggregate demand, reduction in consumption and reduction in productivity. The multiplier effect of all these distortions on the economy would be that economic growth would decline in the final analysis.

The coefficient of determination (adjusted R-squared) of 0.58 showed that 58 percent of the variations in economic growth in Nigeria were due to changes in government total recurrent expenditure, government total capital expenditure and inflation rate. The probability F-statistic (0.000003) was less than the test's level of significance (0.05) and this discovery has indicated that the model used in the study was appropriate, reliable and significant and it could be used for a sound policymaking. The Durbin-Watson statistic (1.78) lied within the acceptance region and it has suggested that there was no presence of autocorrelation.

Finally, an important feature to notice was the coefficient of the parameter of error correction term. The coefficient of the error correction term carried the correct sign and it was statistically significant at 5 percent level of significance with the speed of convergence to equilibrium of 48 percent. This implied that in the short run, any deviations in economic growth from equilibrium would be quickly corrected at the speed of 48 percent by government total recurrent expenditure, government total capital expenditure and inflation rate. This attainment was essential for maintaining long run equilibrium in order to reduce the existing disequilibrium over time. This result therefore justified the use of an ECM specification of the model in the present study.

6. Summary of Findings, Conclusion and Recommendations

6.1. Summary of Findings

The following findings have been made in this study and they include:

(i) There was a positive and insignificant impact of government recurrent expenditure on economic growth in Nigeria. This finding corroborated with the works of Modebe *et al.* (2012) and Nwaoha *et al.* (2017), which revealed that government recurrent expenditure had an insignificant effect on economic growth in Nigeria. Perhaps, this outcome could be attributed to the bogus and often wasteful nature of government recurrent spending. Although, this could lead to rise in aggregate demand thereby increasing growth of Nigeria's economy but such increases in aggregate demand were not strong enough to drive Nigeria's economy.

(ii) Secondly, the study revealed that there was a positive and significant relationship between government total capital expenditure and economic growth in Nigeria. Thus, government total capital expenditure had a significant impact on economic growth in Nigeria. This result was in line with the works of Ogbuagu and Ekpenyong (2016) and Ogbuagu and Ekpenyong (2015), which found that capital expenditures had significant impact on economic growth in Nigeria. This finding was not surprising because the little expenditures made by government in providing infrastructures often spurred economic activities in Nigeria thereby drastically increasing aggregate demand. As aggregate demand increased, productivity increased and economic growth in Nigeria has been hugely increased.

(iii) Finally, the study revealed that there was a negative and significant relationship between inflation rate (used in the study as a control variable) and economic growth in Nigeria. Thus, it was revealed that inflation rate had a significant impact on economic growth in Nigeria. This finding corroborated (Osuala *et al.*, 2013), which in their study found a negative and significant effect of inflation rate on economic growth in Nigeria. This outcome was not surprising going by the obviously high domestic inflation rate which had largely remained in the double-digit threshold. A high inflation rate meant a high loss of purchasing power, reduction in aggregate demand, reduction in consumption and reduction in productivity. The multiplier effect of all these on the economy was that the economic growth declined.

7. Conclusion

The study investigated the responsiveness of economic growth to government expenditures in Nigeria. Specifically, the study investigated how economic growth in Nigeria responded to government expenditure. Thus, recurrent expenditure and capital expenditure of government served as independent variables while real gross domestic product served as the dependent variable. Inflation rate was adopted as a control variable in the study. From the empirical evidence, the study revealed that government recurrent expenditure had an insignificant impact on economic growth in Nigeria while government capital expenditure had a significant impact on economic growth for the period studied.

Recommendations

The following recommendations have been made in line with the findings of the study:

(i) The government sector should revert to a lower level of spending and also plug all extravagant recurrent spending in order to reduce wastages and make recurrent spending of government contribute meaningfully to economic growth in Nigeria.

(ii) Government capital expenditure should be directed majorly to the productive sectors of the economy such as agriculture, industry, education as well as to infrastructural development. This policy would go a long way in increasing the pace and level of economic activities in the country which would help achieve enhanced economic growth in the country in the years ahead.

(iii) The government should ensure that the annual budget was passed in due time for the effective implementation of its contents for growth of the economy.

(iv) Government should ensure that both capital and recurrent expenditure were properly managed in a manner that it would raise the nation's productive capacity.

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Appendix I

Table-4.2. Data On Real Gross Domestic Product (Rgdp), Recurrent Expenditure (Recep), Capital Expenditure (Capex) (In N'billion) And Inflation Rate (Infr) (In Percentage)

YEAR	RGDP	RECEP	CAPEX	INFR	lnGDP	lnRECEP	lnCAPEX	lnINFR
1980	31,546.76	3.95	6.2	9.9	4.498955	0.596597	0.792392	0.995635
1981	15,258.00	4.85	6.57	20.9	4.183498	0.685742	0.817367	1.320146
1982	14,985.08	5.51	6.42	7.7	4.175659	0.741152	0.807346	0.886491
1983	13,849.73	4.75	4.89	23.2	4.141441	0.676694	0.688927	1.365488
1984	13,779.26	5.83	4.10	39.6	4.139226	0.765669	0.612794	1.597695
1985	14,953.91	7.58	5.46	1.0	4.174755	0.879669	0.737566	0.013228
1986	15,237.99	7.7	8.53	13.7	4.182928	0.886491	0.930786	1.135879
1987	15,263.93	15.65	6.37	9.7	4.183666	1.194514	0.80431	0.986539
1988	16,215.37	19.41	8.34	61.2	4.209927	1.288026	0.921171	1.78683
1989	17,294.68	25.99	15.03	44.7	4.237912	1.414806	1.177077	1.650016
1990	19,305.63	36.22	24.05	3.6	4.285684	1.558948	1.38109	0.557992
1991	19,199.06	38.24	28.34	23.0	4.28328	1.582518	1.452414	1.360966
1992	19,620.19	53.03	39.76	48.8	4.292703	1.724522	1.599482	1.688437
1993	19,927.99	136.73	54.50	61.3	4.299464	2.135864	1.736411	1.787193
1994	19,979.12	89.97	70.92	76.8	4.300576	1.954098	1.850758	1.885129
1995	20,353.20	127.63	121.14	51.6	4.308633	2.105953	2.083281	1.712577
1996	21,177.92	124.49	212.93	14.3	4.325883	2.095134	2.328229	1.15577
1997	21,789.10	158.56	269.65	10.2	4.338239	2.200194	2.430803	1.009168
1998	22,332.87	178.1	309.02	11.9	4.348944	2.250664	2.48998	1.076018
1999	22,449.41	449.66	498.03	0.2	4.351205	2.652884	2.697253	-0.65052
2000	23,688.28	461.6	239.45	14.5	4.374534	2.664266	2.379216	1.162175
2001	25,267.54	579.3	438.70	16.5	4.402563	2.762904	2.642164	1.217348
2002	28,957.71	696.8	321.38	12.2	4.461764	2.843108	2.507016	1.085238
2003	31,709.45	984.3	241.69	23.8	4.501189	2.993127	2.383256	1.376784
2004	35,020.55	1,110.64	351.25	10.0	4.544323	3.045573	2.545616	1.000368
2005	37,474.95	1,321.23	519.47	11.6	4.573741	3.120978	2.71556	1.063151
2006	39,995.50	1,390.10	552.39	8.5	4.602011	3.143046	2.742243	0.931901
2007	42,922.41	1,589.27	759.28	6.6	4.632684	3.201198	2.880403	0.817165
2008	46,012.52	2,117.36	960.89	15.1	4.662876	3.325795	2.982674	1.177697
2009	49,856.10	2,127.97	1,152.80	13.9	4.697718	3.327966	3.061753	1.143937
2010	54,612.26	3,109.44	883.87	11.8	4.73729	3.492682	2.946391	1.071882
2011	57,511.04	3,314.51	918.55	10.3	4.759751	3.520419	2.963102	1.012121
2012	59,929.89	3,325.16	874.70	12.0	4.777644	3.521813	2.941859	1.078496
2013	63,218.72	3,214.95	1,108.39	7.96	4.800846	3.507174	3.044691	0.900743
2014	67,152.79	3,426.94	783.12	7.98	4.827064	3.534907	2.893828	0.90191
2015	69,023.93	3,831.98	818.35	9.55	4.839	3.583423	2.91294	0.980003
2016	67,931.24	4,178.59	634.80	10.00	4.83207	3.62103	2.802637	1

Source: 1. CBN Statistical Bulletin Data, 2016 (Various).