Government Expenditure and Economic Growth: Evidence from Nigeria

T. A. Odetayo & A. Z. Adeyemi

Department of Accountancy
Osun State Polytechnic, Iree, Nigeria
E-mail: deentao@yahoo.com
Corresponding Author: T. A. Odetayo

ABSTRACT
The study examined impact of government expenditure on economic growth with the aid of secondary data obtained from Central Bank of Nigeria for the period of 1978 to 2015. Augmented Dickey Fuller and Philips-Perron Statistic tests were used to check stationarity of the variables employed. Johansen co-integration technique was employed to test long run relationship of the variables. Error Correction Model (ECM) was used to examine the effect of government expenditure on economic growth. The study revealed that there is a long run relationship between government expenditure and economic growth. Furthermore, total recurrent expenditure, total expenditure on defence and total expenditure on agriculture have significant positive impact on economic growth. On contrary, total capital expenditure, total expenditure on health and total expenditure on education have negative impact on economic growth. Based on these findings, the study recommended that government should increase its revenue through diversification of nation's economy in order to have adequate funds to spend on social infrastructure, which would spur economic growth. In addition, government needs to raise expenditure on major core sectors like health and education to enhance the economic growth activities in Nigeria.
Keywords: Government Expenditure; Economic Growth; Recurrent Expenditure; Capital Expenditure; Nigeria.

INTRODUCTION
Government expenditure is the aggregate money spends by government in a specific period on government activities. The activities of government are split into various categorise, each categorise have two major headings: recurrent and capital expenditure. According to Kolawole (2008) government expenditure are used by the government to: redistribute income of citizens in the country, increase money in circulation, provide more jobs, allocate resources and control nation's economy. Economic growth on the other hand is defined as increase in real national income of a country. It is a

sustainable expansion of production possibilities, measured as increase in real gross domestic product over a given period, usually a year (Bhygwati, 2004).

There is an argument in the literature on the relationship between government expenditure and economic growth. Many scholars concluded that increase in government expenditure on social services and infrastructure such as health, defence, education, agriculture, power, roads and telecommunication contribute positively to economic growth of a nation (Abdullah, 2000; Al-Yousif, 2000; Cooray, 2009 and Taiwo & Agbatogun, 2011). They explained further that government performs two major functions: maintain law and orders, and provides of social amenities. They opined that provision of social amenities will spur economy. In contrary, many scholars argued that increase in government expenditure will not promote economic growth, but rather slowdown over-all performance of economy (Laudan, 1993; Nijkamp, 2004; and Loizides &Vamvoukas, 2005). They buttressed their argument by explained that increase in government expenditure may increase taxes and/or borrowing. This will reduce purchasing power of workers and affect aggregate demand. In addition, higher taxes will increase firm's production costs, reduce investment and reduce profitability. Furthermore, Increase in government expenditure may lead to borrowing, both internal and external, which may cause higher debt servicing and negative economic growth.

In Nigeria, government expenditure continued to increase in recent years due to many factors, among them are: increased revenue from crude oil, increased in revenue from taxes and high demand for public utilities, such as: schools, hospitals, electricity, telecommunication and roads. Despite the fact that both government revenue and government expenditure (on social amenities) increased tremendous, the standard of living of average Nigerian getting worst, as a results of living in abject poverty and decay of social infrastructure especially roads, power supply and education.

This study aims to examine the relationship between government expenditure and economic growth, as well as investigate the impact of government expenditure on economic growth. Following this introductory section, the rest of this study organized as follows: section two reviews conceptual, theoretical and empirical literature. Section three describes model specification and method of data analysis. Section four contains data

presentation, results and discussions. The last section concludes and proffers recommendations.

REVIEW OF CONCEPTS

Government expenditure in this context is perceived as the total amounts of money spend on government activities. For this study Central Bank of Nigeria concept of government expenditure is adopted. According to Central Bank of Nigeria (2015), government expenditure is divided into: recurrent expenditure and capital expenditure. The recurrent expenditures are expenses that occur frequently or expenses that happen again and again, while capital expenditures are expenses on capital projects which are permanent in nature that would provide benefit over a long period of time. The government expenditure is further broken down into four major items under the recurrent and capital expenditure. Both recurrent and capital expenditure are classified into four major functional classifications:

    (i)   Administration: This comprises expenses on General Administration, National Assembly, Defense and Internal Security.

    (ii)   Economic Service: This includes expenses on Agriculture, Road & Construction and Transport and Communications.

    (iii)   Social and Community Service: This is expenditure on Education, Health and Others.

    (iv)   Transfers: This comprises expenditure on Public Debt (foreign & domestic debts) Interests, Pensions & Gratuities, Extra Budgetary expenditure, External Obligation and Others.

Government expenditure that is progressive in nature will redistribute the income or wealth of the nation and reduce inequalities (Badejo, 2010). Increase in public expenditure will raise nation income and stabilize economic growth. Economic growth can be defined as the process by which the productive capacity of a nation's economy increases over a given period of time, leading to a rise in the level of the national income. It referred to as increase in specific measure, such as real national income, gross domestic product or per capital income. Several factors may contribute to economic growth among them are: trade openness, investment and research and development (Lawal, 2008). Economic growth is commonly expressed in term of measure of the aggregate value-added output of the domestic economy called Gross Domestic Product (GDP). GDP is a measure of the value of all of the goods and services produced in a country in particular

year. GDP can be calculated as the value of the output produced either in a country or equivalently as the total income, in form of wages, rents, interests and profit earned in a country.

**Government Expenditure and Economic Growth in Nigeria**

Government expenditure has continued to increase in Nigeria in recent years, this has been traced to increase in government revenue as a result of sales of crude oil and increased demand for public utilities such as roads, education, health, electricity and so on (Abu & Abdullahi, 2010). Other reasons are: rise in expenditure on defence and internal security, inflation, attempts by government to alleviate poverty leads to increase in government expenditure, financing of democratic institutions such as electoral bodies, political parties and so on, repayment and servicing of accumulated debts, rise in salaries of civil servants and political office holders among others.

According to annual report and financial statements of Central Bank of Nigeria various issued, Nigeria government total recurrent and capital expenditure continued to increase in the last thirty-eight years. For instance the Real Total Recurrent Expenditure (RTRE) increased from ₦4.81 billion in 1980 to ₦36.22 billion in 1990, moved to ₦461.60 billion in year 2000, and ₦2, 873.14 billion in 2015. Real Total Capital Expenditure (RTCE) which stood at ₦10.16 billion in 1980 increased to ₦24.05 billion in 1990, ₦239.45 billion in year 2000 and ₦818.43 billion in 2015.
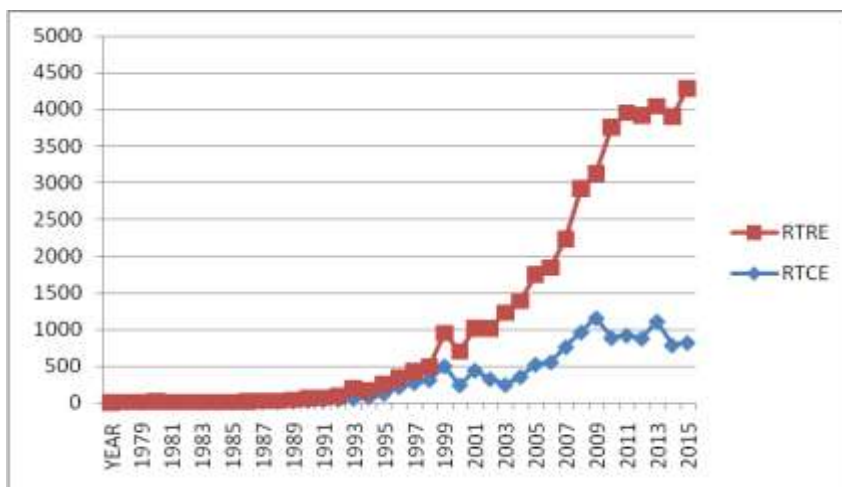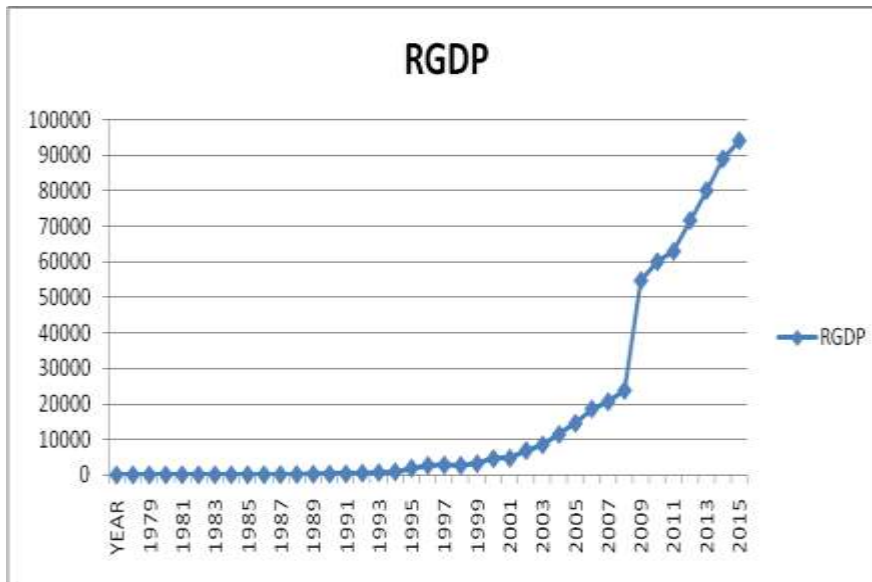

Source: Central Bank of Nigeria Annual Report and Financial Statements (various issued)

As expected increase in government expenditure feature more on defence, health, education, agriculture and roads & construction. The Real Total Defence Expenditure (RTDE) which stood at ₦0.64 billion in 1978, increased to ₦1.61 billion in 1990, jumped to ₦40.07 billion in year 2000, ₦227.50 billion in 2010 and ₦411.23 billion in 2015. Real Total Health Expenditure (RTHE) moved from ₦0.30 billion in 1980 to ₦0.68 billion in 1990, ₦18.18 billion in year 2000, ₦134.12 billion in 2010 and ₦288.16 billion in 2015. Real Total Education Expenditure (RTEE) recorded upward movement from ₦1.55 billion in 1980 to ₦2.22 billion in 1990, ₦50.80 billion in year 2000, ₦258.76 billion in 2010 and ₦355.64 billion in 2015. The Real Total Agriculture Expenditure (RTAE) increased from ₦0.57 billion in 1978 to ₦1.97 billion in 1990, ₦10.59 billion in year 2000, ₦106.21 billion in 2010 and ₦115.25 billion in 2015.
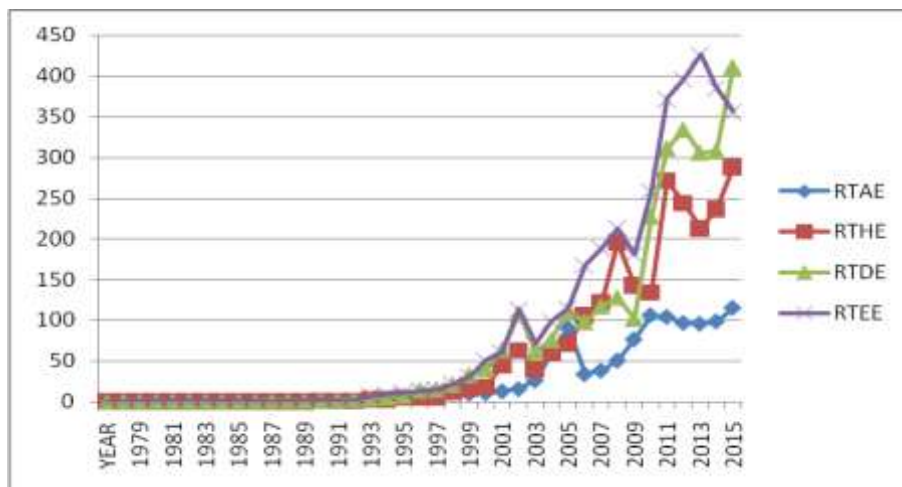
Source: Central Bank of Nigeria Annual Report and Financial Statements (various issued) Source: Central Bank of Nigeria Annual Report and Financial Statements (various issued)

Economic growth which is represented by Real Gross Domestic Product (RGDP) moved from ₦34.54 billion in 1978 to ₦267.55 billion in 1990. By year 2000 the RGDP jumped to ₦3, 194.02 billion, increased to ₦60,044.25 billion and moved to ₦94,144.96 billion in 2015.

Source: Central Bank of Nigeria Annual Report and Financial Statements (various issued)

Theoretical Literature

In the literature many theories were propounded by researchers to justify and explain government expenditure, among them is: Increase in State Activity Theory, Peacock & Wiseman Theory, Cycle Theory, Welfare Maximization Theory and Keynesian Theory. The Increase in State Theory known as Wagner's Theory explained that the extension of the functions of the states leads to increase in public spend and regulation of the economy. The theory also emphasised that rise in government expenditure will be more than proportional increase in the national income and will result to expansion of the public sector. The theory stated that as country move towards industrialized stage, public sector activity will replace private sector activity. Therefore, government functions like administration, protection of lives and properties, health, education, environmental protection and other social and welfare activities will increase government spending (expenditure).

Peacock and Wiseman Theory explained that increase in government expenditure does not occur as increase in State activity theory suggested. They choose political proposition instead of the organic state where it is deemed that government like to spend money but citizens do not like increase in taxes. There will be divergence of ideas about government spending and limits of taxation, which may cause disturbances. The Cycle Theory examined the relationship between public expenditure and national

income and concluded that money collected from the public, directly or indirectly should go back to the public in form of execution of projects and provision of social infrastructure to the public.

Welfare Maximization Theory stated that government needs to spend its revenue on provision of social amenities and infrastructure, such as roads, education, health, agriculture, and so on. While Keynesian Theory categorized public expenditure as an exogenous variable that can generate economic growth. The supporters of this theory believed that the role of government is crucial which can improve economic through the multiplier effect. They explained further that increase in government expenditure, will improve purchasing power of individual citizen, this will encourage producer to produce more products, which will lead to more sales, more profit and more tax. This study will be guided by Welfare Maximization Theory and Keynesian Theory.

Empirical Studies
Some of the past research studies on the government expenditure and economic growth using different methodologies are discussed as follows: Abdullah (2000) examined the relationship between government expenditure and economic growth in Saudi Arabia. The researcher discovered that the size of government expenditure is an important determinant of the performance of the economy. He therefore concluded that government should increase its spending on infrastructure, social and economic activities as well as encourage and support the private sector to accelerate economic growth. Abu-Bader & Abu –Qarn (2003) used multivariate co-integration and variance decomposition approach to examine the causal relationship between government expenditure and economic growth for Egypt, Israel and Syria. The authors found a bi-directional and long run negative relationship between government expenditure and economic growth. They also found that expenditure on military defence has a negative impact on economic growth in all the three countries sampled. While other expenditure on have position effect on economic growth in Israel and Egypt.

Mitchell (2005) investigated the relationship between the composition of government expenditure and economic growth for United States of America. The study showed that government expenditure increased tremendous in last couple of years in America. The researcher suggested that America

government needs to cut its expenditure, particularly on defence and wars, and projects that generate least benefit or impose higher costs. The study regression results showed that recurrent expenditure is positively related with economic growth, while capital expenditure is negatively related with economic growth. Loizides & Vamvoukas (2005) applied trivariate causality test to examine the relationship between government expenditure and economic growth, using data set from United Kingdom, Ireland and Greece. The study found that government size granger causes economic growth in the three countries and there is a strong long run relationship between government expenditure and economic growth.

Gregarious & Ghosh (2007) used heterogeneous panel data to assess the impact of the government expenditure on economic growth. The authors employed GMM technique and found that countries with large government expenditure tend to experience higher economic growth than countries with small government expenditure, but the effect varies from one country to another. Komain & Brahmasrene (2007) used the Granger causality technique to investigate the relationship between government expenditure and economic growth in Thailand. The study results showed that there is no long run relationship between government expenditure and economic growth. The causality test indicated unidirectional causality from government expenditure to economic growth with government spending has positive impact on economic growth.

Olugbenga & Owoeye (2007) examined the relationship between government expenditure and economic growth for 30 countries for the period 1970 to 2005. The results of the study found that there is long run relationship between government expenditure and economic growth. Also, 16 out of 30 countries have a unidirectional causality from government expenditure to economic growth. While 10 out of 30 countries have a unidirectional causality from economic growth to government expenditure and 4 out of 30 countries have bi-directional causality, with feedback relationship between government expenditure and economic growth. Liu-Chih, Hsu & Younis (2008) investigated the causality relationship between gross domestic product and government expenditure for the period of 1947 to 2002 in United States. The result of the study revealed that total government expenditure caused increase in gross domestic product, (unidirectional causality).

Ranjan & Shama (2008) explored the effect of government expenditure on economic growth in India for the period of 1950 to 2007. They used vector autoregressive technique. The results of their study showed that there is evidence of long run co-integration among the variables. Also the study discovered a significant positive impact of government expenditure on economic growth. Cooray (2009) examined the relationship between the size of government expenditure and economic growth of 71 countries. The author used an econometric model and takes government expenditure and quality of governance into consideration, in a cross-sectional study that includes many countries. The results of the study revealed that both the size of government expenditure and quality of governance have positive relationship with economic growth in most of sampled countries.

In Nigeria, many studies also investigated the relationship between government expenditure and economic growths, among them are: Ogiogio (1995) investigated long run relationship between government expenditure and economic growth using cointergration technique. The study also examined the effect of government expenditure on economic growth. The results of the study revealed that there is a long run relationship between the two variables. Furthermore, the study found that recurrent expenditure has more effect on economic growth than capital expenditure. Fajingbesi & Odusola (1999) used ordinary least square to examine the relationship between public expenditure and economic growth. The study results showed that real government capital expenditure has more significant positive influence on economic growth than real government recurrent expenditure.

Oyinlola (1999) examined the relationship between the Nigeria's defence sector and economic development. The study found evidence of the positive relationship between Nigeria expenditure on defence and economic growth. Also, reported that expenditure on defence has significant impact on economic growth in Nigeria. Abu & Abdullahi (2010) applied cointergration and error correction methods to analyses the relationship between government expenditure and economic growth. The study results found a co-integrating relationship among the variables under consideration. Also, some of variables of government expenditure have positive impact on economic growth, such as: total recurrent expenditure, total capital expenditure, expenditure on education, health, transport and

communication. While expenditure on defence and agriculture have negative impact on economic growth.

Taiwo & Agbatogun (2011) analysed the implications of government spending on the growth of Nigeria economy over the period of 1980 to 2009. The study used Johansen co-integration and error correction technique. The study results showed that there is a long run relationship between government expenditure and economic growth. The study also found that total recurrent expenditure has positive impact on economic growth, while total capital expenditure has negative impact on economic growth. Chude & Chude (2013) investigated the effects of public expenditure on education on economic growth in Nigeria over a period of 1977 to 2012. The study used time series econometric technique to examine the long run effects of public expenditure on education on economic growth. The results indicated that there is a long run relationship between total expenditure on education and economic growth. In addition, expenditure on education has positive impact on economic growth.

METHODOLOGY

This study examined the relationship between government expenditure and economic growth and also investigated the impact of government expenditure on economic growth. This study employed annual time series data obtained from Central Bank of Nigeria annual report and financial statements (various issued), for the period of 1978 to 2015. This study based on Keynesian theory that categorized government expenditure as an exogenous variable which can accelerate economic growth. Therefore, the model of this study expresses economic growth as a function of government expenditure and set of control variable.

In line with the studies of Mitchell (2005), Gregoriou & Ghosh (2007), Abu & Abdullahi (2010) and Taiwo & Agbatogun (2011), this study used Real Gross Domestic Product (RGDP) to capture economic growth. While Real Total Recurrent Expenditure (RTRE) and Real Total Capital Expenditure (RTCE) used to capture government expenditure. Furthermore, this study simplified the composition of government expenditure by disaggregating it into functional classification which comprises of: Real Total Defence Expenditure (RTE), Real Total Agriculture Expenditure (RTAE), Real Total Health Expenditure (RTHE) and Real Total Education Expenditure. We also

included one macroeconomic variable which is Real Inflation Rate as control variable.

Model Specification
Our model therefore specified as:
RGDP = f(RTRE, RTCE, RTDE, RTAE, RTHE, RTEE, RINR)…………………………………………………………………......(i)
Expressed the equation (i) above in structural form, it becomes:

$RGDP = \beta_0 + \beta_1 (RTRE) + \beta_2 (RTCE) + \beta_3 (RTDE) + \beta_4 (RTAE) + \beta_5 (RTHE) + \beta_6 (RTEE) + \beta_7 (RINR) + \varepsilon$…………………………………………………………… (ii)

Where:
RGDP = Real Gross Domestic Product (obtained by dividing GDP at current market price by consumer price index (CPI)).
RTRE = Real Total Recurrent Expenditure (measured as total recurrent expenditure divided by CPI).
RTCE = Real Total Capital Expenditure (measured as total capital expenditure divided by CPI).
RTDE = Real Total Defence Expenditure (recurrent and capital defence expenditure, measured as total defence expenditure divided by CPI).
RTAE = Real Total Agriculture Expenditure (recurrent and capital agriculture expenditure, measured as total agriculture expenditure divided by CPI).
RTHE = Real Total Health Expenditure (recurrent and capital health expenditure, measured as total health expenditure divided by CPI).
RTEE = Real Total Education Expenditure (recurrent and capital education expenditure, measured as total education expenditure divided by CPI).
RINR = Real Inflation Rate (measured by consumer price index reflections the annual percentage change or cost of goods and services that may be fixed or changed at specified periods, usually a year.
β_0 = Regression constant.
$\beta_1 – \beta_7$ = Regression Parameters.
ε = Stochastic Error Term.

Methods of Data Analysis
The study used correlation analysis to show whether the variables are positively or negatively correlated. Both Augmented Dick-Fuller (ADF) and Phillip-Perror (PP) statistic tests were used to test the stationarity or

otherwise of the variables employed and to examine their order of integration. Johansen co-integration technique was used to determine whether or not there is long run relationship among the variables. Furthermore, Error Correction Model (ECM) was used to investigate the impact of government expenditure on economic growth.

RESULTS AND DISCUSSIONS

This section begins with correlation analysis of explained variable and explanatory variables.

Table 1: Correlation Analysis of the Variables

	RGDP	RTRE	RTCE	RTDE	RTAE	RTHE	RTEE	RINR
RGDP	1.0000	_	_	_	_	_	_	_
RTRE	0.9638	1.0000	_	_	_	_	_	_
RTCE	0.8437	0.9125	1.0000	_	_	_	_	_
RTDE	0.9616	0.9720	0.8324	1.0000	_	_	_	_
RTAE	0.9241	0.9634	0.8797	0.9297	1.0000	_	_	_
RTHE	0.9408	0.9752	0.8930	0.9650	0.9173	1.0000	_	_
RTEE	0.9564	0.9808	0.8933	0.9742	0.9273	0.9758	1.0000	_
RINR	0.3006	0.4217	0.5193	0.3660	0.4539	0.3628	0.3678	1.000

Source: Authors' Computation.

Table 1 above showed that all the explanatory variables are positively correlated with the explained variable (real gross domestic product). Also all the explanatory variables are positively correlated to one another.

Stationary Test

In order to test whether there is a long run relationship between the dependent variable and the independent variables, the first step is to test for the presence of unit root. The stationary test is necessary in order to determine the order of integration of the variables used in the study. The study employed two stationary tests: The Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) stationary tests.

Table 2: Stationary Test (Augmented Dickey fuller (ADF) and Phillip Perror (PP) Tests)

Variable	Model Specification	Augment Dickey-Fuller (ADF) Test		Order of Integration	Phillip Perron (PP) Test		Order of Integration
		Level	First Difference		Level	First Difference	
RGDP	Intercept	-5.8335 ***	- 8.0186 ***	I (0)	- 6.1793 ***	-7.3607 ***	I (0)
	Trend and Intercept	-6.1347***	-8.9248 ***	I (0)	-7.6966***	-7.7352***	I (0)
RTRE	Intercept	-2.4077	-5.2386***	I (1)	-2.8077	-5.3047***	I (1)
	Trend and Intercept	-0.4895	-6.7900 ***	I (1)	-0.5989	-7.2547 ***	I (1)
RTCE	Intercept	-0.7714	-7.9665***	I (1)	-0.6117	-7.9775***	I (1)
	Trend and Intercept	-2.638	-4.9559***	I (1)	-2.6678	-0.8864***	I (1)
RTDE	Intercept	-2.5437	-2.6491**	I (1)	-4.0086	-.4.6249***	I (1)
	Trend and Intercept	-3.0083	-5.7113***	I (1)	-3.1421	-7.8317***	I (1)
RTAE	Intercept	-0.0581	-5.5572***	I (1)	-1.8579	-6.9614***	I (1)
	Trend and Intercept	-1.9894	-6.1930***	I (1)	-2.6754	-9.5254***	I (1)
RTHE	Intercept	-2.5889	-3.4410**	I (1)	-2.6002	-7.0362***	I (1)
	Trend and Intercept	-2.0293	-3.0109**	I (1)	-2.4427	-9.4421***	I (1)
RTEE	Intercept	-1.0601	-5.7678***	I (1)	-1.7221	-6.5889***	I (1)
	Trend and Intercept	-2.132	-6.3874***	I (1)	-2.2889	-6.7720***	I (1)
RINR	Intercept	-3.0755**	-5.8130***	I (0)	-3.2836**	-6.7845***	I(0)
	Trend and Intercept	-3.8720**	-5.9476***	I (0)	-3.8917**	-7.054***	I (0)

Note: *** and ** indicate rejection of the null hypothesis of non-stationary at 1% and 5% significant level respectively based on the Mackinnon Critical Values.
Source: Authors' Computation

The results from the table 2 showed that all the variables are not integrated in the same order. Both Real Gross Domestic Product (RGPP) and Real Inflation Rate (RINR) are stationary at level in both ADF and PP statistics tests. Other Variables are stationary at the first difference in both ADF and PP statistics tests. According to Error Correction Model (ECM) all the variables must be of the same order of co-integration and at most first difference, therefore, first difference of all variables then applied. From the table 2 above all the variables are integrated of order of 1 at 1% significance level.

Co-integration Test

Since stationary test confirmed that all variables used are integrated at most in order of 1, the study moved further to test the long run relationship between the dependent variable and independent variables. Johansen co integration technique was employed, which offers two tests results: trace test statistic and maximum-Eigen value test results. The two tests showed the number of co-integration relationship among the variables used. Table 3 and 4 below reported the results of Johansen co-integration trace test and Johansen co-integration maximum Eigen value test respectively.

Table 3: Results of Johansen Co-integration Trace Test

Eigenvalue	Trace Statistic	0.05 Critical Value	Prob. ***	Hypothesized No. of CE(s)
0.999578	675.1200	159.5297	0.0000	None *
0.969179	395.3712	125.6154	0.0000	At most 1 *
0.934020	270.1069	95.75366	0.0000	At most 2 *
0.868314	172.2444	69.81889	0.0000	At most 3*
0729066	99.26038	47.85613	0.0000	At most 4*
0544155	52.24872	29.79707	0.0000	At most 5*
0.464264	23.96701	15.49471	0.0021	At most 6*
0.040781	1.498892	3.841466	0.2208	At most 7

Note: *** included rejection of the null hypothesis of no co integration at 1% significant level based on the Mackinnon critical value.

Source: Authors' Computation

From table 3 above figures in trace statistic are higher than figures in critical value in row 1 to row 7 and also significant at 1 %. This showed that there are seven co integrating relationship among the variables and null hypothesis of no co integration rejected.

Table 4: Result of Johansen Co-integration Maximum Eigen Value Test

Eigenvalue	Maximum-Eigen Statistic	0.05 Critical Value	Prob. ***	Hypothesized No. of CE(s)
0.999578	279.7488	52.36261	0.0001	None *
0.969179	125.2643	46.23142	0.0000	At most 1 *
0.934020	97.86248	40.07757	0.0000	At most 2 *
0.868314	72.98399	33.87687	0.0000	At most 3*
0729066	47.01166	27. 58434	0.0001	At most 4*
0544155	28.28171	21. 13162	0.0042	At most 5*
0.464264	22.46811	14. 26460	0.0021	At most 6*
0.040781	1.498892	3.841466	0.2208	At most 7

Note: *** indicate rejected of the null hypothesis of no co-integration at 1% significant level based on the Mackinnon.
Source: Authors' Computation

Table 4 indicated that figures in Maximum Eigen statistic exceed the figures in the critical value in row 1 to row 7 and also significant at 1 %, like our results in trace statistic. This showed that there are seven co-integrating relationship among the variables and null hypothesis of no co-integration rejected. The results of both trace and maximum-Eigen value tests confirmed the presence of long run relationship between the government expenditure variables and economic growth variable.

Error Correction Model
Error Correction Model (ECM) was used to investigate the impact of government expenditure on economic growth. The model selected due to the fact that it is capable of estimating both short and long run effects of the explanatory variables on the explained variable. The model also capable of determine the speed at which the explained variable back to equilibrium after deviation occurred.

Table 5: Results of Error Correction Model Dependent variable: D(RGDR)

Variable	Coefficient	Std. Error	t.Statistic	Prob.
C	61.931641	18.93132	4.83210	0.0008
D(RTRE)	0.130324	4.573063	2.471700	0.0188
D(RTCE)	0.062538	3.373983	-0.079119	0.1374
D(RTDE)	0.889341	8.995461	2.015616	0.0426
D(RTAE)	0.136045	3.786203	1.797141	0.0621
D(RTHE)	-0.672862	6.136474	-1.770710	0.0464
D(RTEE)	-0.118871	2.383743	-0.273423	0.7863
D(RINR)	-0.158363	3.730064	-0.541579	0.5920
ECM(-1)	-0.576945	5.188580	-3.059428	0.0004

R-squared	0.894621	Mean dependent var	2543.525
Adjusted R-squared	0.753029	S.D.dependent var	5438.901
Log likelihood	-366.3571	Hannan-Quinn criter.	20.21951
Durbin-Watson	1.962991		

Source: Authors' computation

Table 5 showed that Real Total Recurrent Expenditure, (RTRE) has positive impact on Real Gross Domestic Product (RGDP) (0.1303) and it is statistically significant at 5% (0,0188), while the Real Total Capital Expenditure (RTCE) has negative impact on Real Gross Domestic Product (RGDP) (-0.0625), with

probability of (0.1374) which is insignificant. The coefficient of RTRE which is 0.1303 implied that 1 unit increased in real total recurrent expenditure had 0.13 units increased in real gross domestic product. While co-efficient of -0.0625 for RTCE implied that 1 unit increased in real total capital expenditure had 0.06 units decreased in real gross domestic product. The Real Total Defence Expenditure (RTDE) and Real Total Agriculture Expenditure (RTAE) have positive impact on Real Gross Domestic Product (RGDP) with co-efficient figures of 0.8893 and 0.1360 respectively. The RTDE significant at 5% while RTAE significant at 10%.

However, real total expenditure on health and education have negative impact on real gross domestic product with co-efficient of (-0.6728) and (-0.1188) respectively. The real total expenditure on health is significant at 5%, while real total expenditure on education is insignificant. The Real Inflation Rate (RINR) co-efficient is (-0.1583) with probability of (0.5920). This implied that RINR has negative impact on Real Gross Domestic product (RGDP) and negative impact is insignificant. Increase in RINR by 1 unit caused 0.15 units decrease in RGDP.

The computed co-efficient of the Error Correction Terms (ECTs) showed the conventional negative figure and also statistically significant at 1%. This result further confirmed the long run co-integration relationship between economic growth variable (real gross domestic product) and government expenditure variables. The ECTs coefficient of (-0.5769) with probability of (0.004) indicated that real gross domestic product would adjust to its long run equilibrium path in relation to changes in the government expenditure variables at rate of 58%. Durbin-Waston statistic value is (1.9629), this figure proved that auto-correlation problem does not exist. The co-efficient of determination (R-Square) which is (0.8946) indicated that all the explanatory variables explained more than 89% of explained variation occurred in explained variable. This implied that 11% changed in explained variable are factors not included in the model of this study.

Empirically, this study results consistent with studies of Usman (2011) and Cornelius, Nkamare & Ogar (2016) that found recurrent expenditure has positive impact on economic growth. Agreed with study of Taiwo & Agbatogun (2011) that capital expenditure has negative impact on economic growth. This study results attested to Abu & Abdullahi (2010) and Taiwo & Agbatogun (2011) results that expenditure on health and inflation rate have

negative impact on economic growth. But the results is at variance with the studies of Abu & Abdullahi (2010) and Chude & Chude (2013) conclusion that expenditure on defence and agriculture have negative impact on economic growth, and expenditure on education has positive impact on economic growth.

CONCLUSION

The study examined the relationship between government expenditure and economic growth. It also assessed the impact of government expenditure on economic growth in Nigeria. Data set for the period of 1978 to 2015 collected from Central Bank of Nigeria (CBN) showed that government expenditure continued to increase as a result of increased in revenue (especially revenue from crude oil), increased in demand for public utilities and need to provide security for the citizens and nation at large. The study results indicated that all the independent variables are positively related with dependent variable. Stationary tests showed that all the variables are at most stationary at first difference. Co-integration tests results revealed a long run relationship between government expenditure and economic growth.

Error Correction Model results showed that real total recurrent expenditure has positive impact on real GDP (economic growth), while real total capital expenditure has negative impact on real GDP (economic growth). The negative impact of real total capital expenditure may be traced to diversion of funds meant for capital projects, mismanagement, and corruption and abandoned of capital projects. The real total expenditure on defence and real total expenditure on agriculture have positive impact on real GDP. The real total expenditure on health and education has negative impact on real GDP. In addition, the real inflation rate has negative impact on real GDP.

Furthermore, the Error Correction Terms further confirmed the existence of long run relationship between the government expenditure and economic growth. It also showed the speed of adjustment of real GDP to equilibrium when there is change in government expenditure variables.

RECOMMENDATION

Based on the findings of this study, the following suggestions are proffered:
► Government needs to increase its revenue by diversifying the nation's economy and focusing on agriculture which will drive export and generate more revenue, instead of over relying on revenue from crude oil. When

revenue increases, government can also increase their expenditure on social infrastructure which would promote economic growth.

► Government needs to increase its spending on capital expenditure, monitor all the capital projects in order to avoid diversion of finds, mismanagement, corruption and abandonment of capital projects.

► Government should direct its expenditure towards the productive sectors, such as: education, agriculture and health sectors, these sectors world raise production capacity of the country and accelerate economic growth.

REFERENCES

Abdullahi, H.A. (2000). The Relationship between Government Expenditure and Economic Growth in Saudi Arabia, *Journal Administrative Science*, 12(2): 173-191.

Abu, N. & Abdullahi, U. (2010). Government Expenditure and Economic Growth in Nigeria, 1970-2008: A Disaggregated Analysis, *Business and Economics Journal*, 2, (1): 1-11.

Abu-Bader, S. & Abu-Qam, A. (2003). Government Expenditure, Military Spending and Economic Growth: Causality Evidence from Egypt, Israel and Syria, *Journal of Policy Modelling*, 25 (6): 567-583.

Al – Yousif, Y. (2000). Does Government Expenditure Inhibit or Promote Economic Growth: Some Empirical Evidence from Saudi Arabia, *Indian Economic Journal*, 48 (2): 26-39.

Badejo, A.K. (2010). Government Spending and Economic Growth: An Empirical Study, *Journal of Management Science*, 3, (2): 65-82.

Bhagwat, A. (2004). Exogenous Economic Growth: A New Approach, *Cambridge Journal of Economics*, 30 (4): 62-85.

Central Bank of Nigeria (1999). Annual Report and Financial Statements for the Year Ended 31 December 1998, Central Bank of Nigeria Publication.

Central Bank of Nigeria (2004). Annual Report and Financial Statements for the Year Ended 31 December 2003, Central Bank of Nigeria Publication.

Central Bank of Nigeria (2010). Annual Report and Financial Statements for the Year Ended 31 December 2009, Online: http://www.cenbank.org. publication/report/annual report.html.

Central Bank of Nigeria (2015). Annual Report and Financial Statements for the Year Ended 31 December 2014, Online: http://www.cenbank.org. publication/report/annual report.html.

Central Bank of Nigeria (2016). Annual Report and Financial Statements for The Year Ended 31 December 2015, Online: http://www.cenbank.org. publication/report/annual report.html.

Chude, N.P. & Chude, D.I. (2013). Impact of Government Expenditure on Economic Growth in Nigeria, *International Journal of Business and Management Review*, 1(4): 64-71.

Cooray, A. (2009). Government Expenditure, Governance and Economic Growth; *Comparative Economic Studies*, 51(3): 401-418. 0nline http: //www.ingentaconnect.com/content/pal/ces.

Cornelius, M.O., Nkamare, S.E. & Ogar, A.A. (2016). Government Expenditure and Its Implications on Nigerian Economy, *Journal of Humanities and Social Sciences*, 21(1):50-58.

Fajinbgesi, A.A.& Odusola, A.F. (1999). Public Expenditure and Growth; Paper Presented at a Training Programme on Fiscal Policy Planning Management in Nigeria, Organised by NCEMA, Ibadan, Oyo State.

Gregoriou, A. & Ghosh, S. (2007). Impact of Government Expenditure on Growth: Empirical Evidence From Heterogeneous Panel, *Journal of Economic Development*, 12(3):156-181.

Kolawole, T.O. (2008). Public Expenditure and Economic Growth in Nigeria: An Autoregressive Model, *Journal of International Finance and Economics*, 4(2):156-184.

Komain, R.B. (2007). Effect of Growth on Government Expenditure and Revenue in Developed Countries *Journal of Public Economic,* 74(2):170-189.

Lawal, K.O. (2008). Nature of Government Expenditure and Its Impact on Sustainable Economic Growth, *Journal of Economics and Finance,* 4(3):25-49.

Laudan, D. (1993). Government Expenditure and Economic Growth in Less Developed Countries: *Journal of Business Management,* 10(3):407-434.

Liu-Chih, H., Hsu, C. &Younis, M. (2008). The Association Between Government Expenditure and Economic Growth: The Granger Causality Test, *Journal of Financial Management,* 20(4):439-452.

Loizides, J,& Vamvoukas, G. (2005). Government Expenditure and Economic Growth: Evidence from Trivariate Casulity Test, *Journal of Applied Economic,* 8(1):125-152.

Mitchell, J.D. (2005). The Impact of Government Spending on Economic Growth. Online http.//www.heritage.org/research/budject/by 1831/cfml.

Nijkamp, P. J. (2004). Effect of Fiscal Policy on Long Run Growth, *European Journal of Political Economy,* 20(1):91-109.

Ogiogio, G.O. (1995). Government Expenditure and Economic Growth in Nigeria, *Journal of Economic Management,* 2(1):65-81.

Olugbenga, A. O. & Owoye, O. O. (2007). Public Expenditure and Economic Growth, New Evidence from OECD Countries. Online http://www.laes. confex.com/laes/rome67/techprogram.

Oyinlola,O.P.(1999). Nigerian's National Defence and Economic Development: An Impact Analysis, *Scandinavian Journal of Development,* 12(3):57-73.

Ranjan, K. & Sharma, C. (2008). Government Expenditure and Economic Growth: Evidence from Indian, *ICFAI University Journal of Public Finance,* 6(3):60-69.

Taiwo, A.S.& Agbatogun, K.K. (2011). Government Expenditure in Nigerian: A Sine Qua Non For Economic Growth and Development, http://www.jol.info/journals/jorind.

Usman, O. A. (2011). Econometric Evaluation of Government Spending, System of Government and Economic Growth in Nigerian, 1970-2007, *Journal of Economic and Sustainable Development,* 2(4)252-263.