

# **Public Sector Spending and Economic Growth in Nigeria: In Search of a Stable Relationship**

**Miftahu Idris<sup>1\*</sup> and Rosni Bakar<sup>1</sup>**

<sup>1</sup>*School of Business Innovation and Technopreneurship, Universiti Malaysia Perlis, Malaysia.*

## **Authors' contributions**

*This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.*

## **Article Information**

DOI: 10.9734/ARJASS/2017/33363

### Editor(s):

- (1) Jan-Erik Lane, Institute of Public Policy, Serbia.  
(2) Imre Ersoy, Department of European Union Economics, European Union Institute, Marmara University, Turkey.

### Reviewers:

- (1) Cosimo Magazzino, Roma Tre University, Rome, Italy.  
(2) Ciurea Maria, University of Petrosani, Romania.

- (3) Anton Sorin Gabriel, Alexandru Ioan Cuza University, Romania.

Complete Peer review History: <http://www.sciencedomain.org/review-history/19247>

**Review Article**

**Received 11<sup>th</sup> April 2017**  
**Accepted 25<sup>th</sup> May 2017**  
**Published 30<sup>th</sup> May 2017**

## **ABSTRACT**

In this study, recent development in government expenditure and epistemological literatures on the relationship between public spending and economic growth in Nigeria are examined. The primary aim of this paper is to explore the relationship between government expenditure and economic growth with the view to establishing a stable relationship. In view of that, an ARDL model is employed to provide the framework for estimating the existence or otherwise of the equilibrium relationship among the examined variables. However, government as an institution that provide welfare to the populace has a major role to play in deciding where priority spending should be allocated in order to enhance the developmental process and provide sustainable growth in the growing economy. In all submissions that debated on the relationship between public sector spending and economic growth, Keynesian philosophy was among the most prominent and celebrated in contrast to Wagner's Law. Keynes regards government spending as an exogenous factor which can be utilised as a policy instrument to promote economic growth. Despite the diverse and conflicting empirical evidence on the relationship between public sector expenditure and economic growth that prevail in the literature, the empirical findings from this paper based on the estimated result from ARDL model reveals the existence of positive and significant relationship between public spending on economic growth in Nigeria. Undeniably, government expenditures are considered to be highly important in creating opportunities and widening the productive base at

\*Corresponding author: Email: [miftahu4real12@gmail.com](mailto:miftahu4real12@gmail.com);

which developing countries can grow, Nigeria is inclusive. To achieve accelerated economic growth, there is need for an in-depth and broad macroeconomic reform in the Nigerian public finance to include certain features of transparency and effectiveness in the implementation of budgetary process. An essential part of the reform policy should be the review of public sector's roles and responsibilities in the development process and concentrate on the priority areas rather than act as a substitute of the private sector. The inclusion of certain measures on the reform policy will appear satisfactory, for instance, expenditure on public goods that improves the allocative efficiency in the presence of positive externalities should be accorded high priority, including investment in infrastructure, more access to information and communication technology, expenditure on research and development, as well as diversification of the economy.

*Keywords: Public sector spending; economic growth; Keynesian philosophy; Wagner's law.*

## **1. INTRODUCTION**

The recent global crisis in the world oil-price and the current downturn and contraction of the Nigerian economy have brought renewed attention and debate to the question of whether the government should increase spending to combat the effects of the recession as currently being experienced or to decrease fiscal spending in order to reduce the existing fiscal deficit and debt, and therefore set the economy on a path of sustainable economic growth. Corporate individuals and policy makers who advocate for an increase in government spending are inclined by the doctrine of Keynesian position which states that output is determined by aggregate demand, as a result, the multiplier effect of fiscal expansion would increase both the aggregate demand and output. In other words, a simultaneous increase in government spending and a reduction in taxes will have an expansionary effect on economic growth [1,2,3]. While other category of the policy makers who opposed the expansionary effects of fiscal policy are the proponents of Classical doctrine who argued that, for a highly indebted country like Nigeria, increase in government spending may only increase the size of the existing debt, crowd out private investment, reduce economic competitiveness, and widen the large volume of fiscal deficit [4,5,6]. Moreover, [4] posits that fiscal stimulus measures are not likely to be well targeted especially in developing countries, but instead are to be directed toward wasteful and distortionary public resources. Once implemented, they are not likely to be withdrawn sufficiently to preserve fiscal sustainability. The relevance of these positions depends on the size of the fiscal multiplier, which is the change in output caused by one unit increase or decrease in public spending or taxes.

Generally, the Classical school and its followers believe that fiscal policy is ineffective in terms of

ensuring macroeconomic growth on the grounds of crowding-out effects. According to this assumption, as government expenditure increases, the provision of public goods are substituted for private goods, hence causing decrease in private spending on basic infrastructure and other related services. In addition, when government borrows domestically to finance certain expenditure programmes, increase demand in the borrowing institutions will produce higher interest rates in the long-run which discourage private investment due to shortfall in borrowed capital which should be distributed to the prospective investors. In other words, public sector spending may also discourage economic activities and private sector participation. Take for instance, competition between unproductive public sector and efficient private sector in the financial market to seek for loanable funds sometimes causes an increase in the rate of interest, which decreases private investment and ultimately discourage productivity and output growth. Likewise, a number of unproductive taxes imposed by the public authority can hinder the market efficiency and resource allocations. Apart from the Keynesian propositions, the debate on the effectiveness of fiscal policy to encourage sustainable growth has gained additional support in the literature with the emergence of Barro endogenous growth model and other related growth theories.

Government expenditure occur in an economy for two major reasons: (i) to provide the necessary and required facilities needed for the maintenance of law and order and further enhance allocative efficiency in the presence of externalities and also (ii) to provide all the necessary and required infrastructural facilities that will heighten productivity and encourage economic activities in the long-run. The public sector has to assume these responsibilities because of the failure of the market economy to ensure equity and fairness in the distribution of

income and wealth predominantly in developing countries of sub-Saharan Africa. The private sector development particularly in developing countries including Nigeria is still in the kindergarten stage that requires full government support and patronage for its survival. The prevalence of political instability, social and religious crises, abuse of public funds and mismanagement of available resources all combine to hinder and constrain the private sector development. This however, leads the study to raise a question: is the level of public sector expenditure in Nigeria contribute positively to the economic growth? It is of utmost belief that adequate provision of basic facilities by the government will motivate the private sector initiatives for increased investment since the initial cost of business establishment is reduced. This is undoubtedly consistent with the Keynesian propositions that increase in government expenditure by the public sector will encourage aggregate demand and output growth.

Historically, [7] emphasised that government spending is endogenous to economic development, meaning that, growth also causes government expenditures to expand in the economy. On the other hand, [8] believed that during a period of downturn, the use of fiscal policy to boost economic activities is more productive. Meaning that, the use of expansionary fiscal policies to increase national output has the potentials to enhance growth and productivity level in both developed and developing countries. While according to Wagner's approach, causality runs from growth in national output to government spending, the Keynesian approach believes that causality runs from government spending to growth in national output during the period of downturn. However, from the literature, Keynesian philosophy and Wagner's law produced two opposite perceptions in terms of the relationship between government expenditure and macroeconomic growth in national output. It is in view of that that this study intends to examine conceptually the relationship and effects of government expenditure on macroeconomic growth of Nigeria for the period of thirty-five years. The rest of this paper is sectionalized as follows: section 2 contains an empirical literature review including studies that express arguments based on Keynesian doctrine, Wagner's hypothesis, and inconclusive studies. Section 3 highlighted an overview of government expenditure in Nigeria from 1980 to 2015 using the annual data from Central Bank of Nigeria,

section 4 identifies the major challenges encountered and future implications of expenditure adjustment in Nigeria, section 5 provides the source and nature of the data collected for the analysis, section 6 identifies and discusses the method of analysis as well as the model specification, section 7 presents the empirical findings based on the estimated results, and finally, section 8 deals with the conclusion and feasible policy implications that should be considered in making future expenditure plans.

## **2. EMPIRICAL REVIEW OF THE LITERATURE**

The study on the relationship between government expenditure and economic growth has attracted attention in the literature right from the period of Adam Smith. In most of the developing countries in Sub-Saharan Africa, the need for government involvement and participation in economic activities became more pronounced and highly significant since the attainment of independence, with the sound belief that private investment alone will not provide the necessary and productive business environment required for long-term growth and sustainable development. While the perception of some developed countries as suggested by Classical economist is that, government involvement in economic activities is growth retarding. Where necessary, should only make business environment conducive for private investments to operate productively through the provisions of sufficient public goods. Consequently, Keynesian propositions and Wagner's Law appears in the literature as the most debatable paradigms in terms of the relationship between government expenditure and macroeconomic growth. Therefore, based on the careful review of the literature, the following contributions are provided to showcase the effects of the nexus and provide a meaningful relationship between the debatable paradigms.

### **2.1 Keynesian Hypothesis**

In the literature that support Keynesian philosophy, [9] measure the impact of government spending on economic growth in Nigeria using regression equation on time series data from 1970 to 2008. An empirical finding shows that public expenditure has a positive and significant impact on economic growth. Public current expenditure was also found to exhibit a positive impact on growth at ten percent (10%)

significance level. While public capital expenditure even though insignificant, but showed a positive impact on growth. In an early attempts, [10] studied the linkage between government expenditure and economic growth for a group of 115 countries during the period 1960-1980 by adopting a two-sector production function and estimated growth model using both cross-section and time series data. The study reveals a positive influence of government expenditure on economic growth in most of the selected countries under the study.

In addition, [11] studies the impact of government spending on the Nigerian economic growth using Granger causality test, cointegration and VECM technique on time series data spanning 1980 - 2011. The result from the estimation shows that there exists a long-run equilibrium relationship between public expenditure and economic growth in Nigeria, supporting the Keynesian hypothesis. The short-run dynamics adjusts to long-run equilibrium at the rate of 60% per annum. The policy implication of this finding is that both the short-run and long-run expenditure has a significant effect on economic growth of Nigeria. Also, [12] examine Wagner's law and Keynesian hypothesis in Malaysia by making use of annual data spanning 1970 to 2006. The empirical findings show that within a bivariate and multivariate framework as well as ARDL technique, Wagner's law does not hold in the case of Malaysia in the long-run. Rather, the results support the Keynesian view which contradicts some existing results based on a bivariate analysis as shown by [13]. In general, the Keynesian principle that government spending encourages GDP growth, in divergence to Wagner, is evident in Malaysia. The study concludes that, in the case of Malaysia, government spending, particularly on education is an important determinant of GDP growth.

Furthermore, using annual time series data from 1980 to 2010, [14] examine the effects of government expenditure and economic growth in Nigeria. Cointegration and OLS estimation technique were used for the estimation and findings reveals that there exists a long-run relationship between aggregate government expenditures and economic growth in Nigeria. Likewise, [15] examine the association between government expenditures and economic growth in Thailand, by employing the Granger causality test and OLS estimation technique on quarterly data spanning 1993-2006. The results show that

aggregate government expenditures cause economic growth, but economic growth does not cause government expenditures to expand. In other words, there is a unidirectional causality between government expenditures and economic growth. Further investigation using the ordinary least square method shows that government spending and its one-period lag variable impose a highly significant impact on economic growth, which confirms the results from causality test.

In addition, [16] investigate the causal relationship between GDP and government spending for US government covering the time series data 1947-2002 by utilising linear regression model and Granger causality test. Findings from the study reveal that total spending causes the growth of GDP, which is compatible with the Keynesian's theory but the growth of GDP does not cause the increase in total public expenditures which is contrary to the Wagner's law. In other word, government expenditure raises the US economic growth, while there are diversified causal relationships among five sub-categories of government expenditure. The study concluded that judging from the causality test, Keynesian hypothesis exercise more influence than the Wagner's law in the US. On a contrary view, conceptual results provided by [17] argued that public expenditure has a negative multiplier effect on economic growth of the US within the study coverage 1987 to 2005.

In another development, [18] empirically determine the impact of government expenditure composition and control variables on economic growth in Tanzania for the period 1965 to 2010 using an OLS estimation technique. Capital expenditure and terms of trade were found to be positively encouraging economic growth and the coefficients were significant at the 5% level. While recurrent expenditure, spending on education, and population growth negatively influence growth at an insignificant level. Similarly, [19] employs a linear regression model to examine the impact of government expenditures on economic growth in Jordan during the period spanning 1990 to 2006. Using the related data of government expenditures and GDP of Jordan at the aggregate level, findings reveal that government spending causes the growth of GDP, which is compatible with the Keynesian theory. Furthermore, using an OLS estimation technique, a study conducted [20] from 1970 to 1990 on the influence of government expenditure on economic growth in Saudi Arabia shows that the effects of public

spending depend on the way government size is measured. Meaning that, if the size is measured as a percentage change in government expenditure then, the government size is significantly related to growth. But if it is measured as a ratio of the government expenditure to GDP, then the relationship is negative.

Equally, [21] analyses the relationship and the direction of causality between public spending and economic growth in Nigeria by adopting a Granger causality test using annual time series data from 1961 to 2009. Aggregate government expenditure is disaggregated into recurrent expenditure, capital expenditure, administration, social and community services, economic services and transfers. Finding reveals that there is a unidirectional causality running from aggregate public spending to economic growth, which supports the Keynesian hypothesis. Moreover, at the disaggregate level, results show that all the variables except recurrent expenditure cause economic growth, implying that government expenditure promotes growth in Nigeria. In general, this result does not empirically support the existence of Wagner's law both at the aggregate and disaggregate level.

Similarly, [22] adopted a general equilibrium Neoclassical growth model between 1970 to 1989 to investigate the impact of government expenditure on economic growth in Azerbaijan, based on the rapid increase of expenditure to be followed with a rapid decrease in the context of Azerbaijan's current temporary oil production boom, using the relevant experiences of Nigeria and Saudi Arabia as oil exporting countries. Finding reveals that Azerbaijan total expenditure increased by a cumulative of 160 percent in nominal value from 2005 to 2007 (from 41 percent of the non-oil crop to 74 percent), thereby leading to economic growth. But this aspect of the analysis indicates that the estimated fiscal result poses significant risks to growth sustainability. The growth performance largely depends on the efficiency of increased expenditure during the oil-boom period. It also clarifies on the risks connected with an unexpected decrease in expenditure, including the government challenges to embark on an orderly expenditure reduction strategy without destabilising economic growth and the crowding-out effects of large government domestic borrowing.

Likewise, [23] examine whether the relationship between public expenditure and economic growth follows Wagner's law in Nigeria. The study applied a granger causality test and OLS regression analysis on time series data from 1961 to 2007. Findings from the study reveal that Wagner's law was not confirmed even with the inclusion of other fiscal policy variables in the other models. In another development, [24] employs a bivariate and trivariate error correction model as well as a Granger causality test to examine the relationship between government expenditure and economic growth, using annual data from 1948 to 1995 for Greece, United Kingdom and Ireland. The study shows that government expenditure granger causes economic growth in two countries. The finding was true for Ireland and the United Kingdom, both in the short and long run, while Greece is supportive of the Wagner hypothesis that, increased output causes growth in public expenditure. The results also indicated that economic growth granger causes public expenditure in Greece and the United Kingdom, when inflation is included. The underlying growth impact of public sector has been positive, which means that government expenditure encourages overall economic development.

In a similar submission, using an OLS multiple regression analysis on time series data for nineteen years (1992- 2011) to examine the impact of government expenditure on Nigerian's economic growth, [25] found that aggregate government expenditure is positive but has an insignificant impact on the economic growth within the review period. In the same way, [26] examines the presence of Wagner's Law in China and Taiwan, covering 1979 to 2002 by employing granger causality test; results indicate that there exists no long-run relationship between government size and the economic growth either in China or in Taiwan. The causality test results also show that Wagner's Law does not hold for China and Taiwan over the review period. Further evidence on the relationship between economic growth and government spending was provided by [27] in the study of seven (7) transition economies in South Eastern Europe from 1995 to 2005. Two different panel data methodologies were applied; pooled regression analysis and Neo-classical aggregate production function, and the result shows a positive and significant effect of expenditure components on economic growth.

In addition, [28] using an OLS estimation technique and granger causality test, investigate the relationships between government spending and economic growth in a sample of 30 OECD countries during the period of 1970 to 2005. The results from the estimation show the existence of a long-run relationship between public spending and economic growth. However, the study reveals a unidirectional causality from government spending to growth for 16 out of the 30 countries, hence supporting the Keynesian hypothesis. Also, causality runs from economic growth to public expenditure in 10 out of the 30 sample countries, confirming the presence of Wagner's law in those affected economies. Finally, in four countries, the study remains neutral as to the existence of any relationship between government expenditure and economic growth.

Moreover, [29] the relationship between government expenditure and aggregate income with the view to identify the presence of Wagner's hypothesis in five European advanced welfare states namely; United Kingdom, Denmark, Sweden, Finland, and Italy. To ease the analysis, each country is classified into three stages of development: lower income stage, upper middle income stage, and higher income stage. In addition to interpolated data from Eurostat, time series data covering 1850 to 2010 are utilised. To test the existence of long-run relationship between expenditure and aggregate income, the study employs a VAR-based Johansen cointegration technique and Vector Error Correction Model (VECM). Result shows the existence of cointegration relations between expenditure and output in United Kingdom, Sweden, Finland, and Italy independent of development stage. But, the result does not hold for Denmark as there is cointegration only in the second and third stage. Evidence from VECM shows that the coefficients are statistically significant in all countries except Denmark. In addition, all countries exhibit significant long-run causality running from public spending to economic growth at least in one functional form. As such, the paper concludes that Wagner's hypothesis which postulates economic growth as a driving force for government expenditure can be rejected, hence Wagner's notion may have reached its limit.

In a disaggregated analysis, [30] examine how government expenditure contributes to economic growth in East Africa Community comprising of five countries; Kenya, Tanzania, Burundi,

Uganda, and Rwanda. Using a disaggregated components of expenditure over the sample period of 1980 to 2010, the study utilises OLS estimation technique and findings reveal that expenditure on health and defence are found to be positive and statistically significant on economic growth, while education and agriculture expenditure were insignificant. In a contrary view to defence expenditure, [31] examine the effect of government spending on economic growth using disaggregated component of expenditure from 1995 to 2010 in East African Community. The study employed panel data analysis using fixed and random effects for the estimation. Findings reveal that, health and consumption expenditure had a positive impact on economic growth and this means that government of East African Community should invest more in these sectors and reduce wasteful spending on defence. In relation to education expenditure as revealed by [30], study by [32] on the growth effect of government expenditure for a panel of thirty developing countries over the period of 1970 to 1980 yielded a different results. The study employed a base regression analysis to disaggregate the components of public expenditure. Findings from the study indicates that, the share of government capital expenditure in GDP is positive and significantly correlated with economic growth, but recurrent expenditure is insignificant. Likewise, at the sectoral level, government investment and total expenditures on education are the only expenditures that are significantly associated with growth once the budget constraint and omitted variables are taken into consideration. Similar findings on the significance of education expenditure on output growth was found by [33] in Kenya for the period 1972 to 2008 using a regression analysis on the time series data. In another development, similar result on the positive effects of education spending was found by [34] in a study that investigates the effects of government expenditure and economic growth in Nigeria. The study covered 1977 to 2012 and utilises an error correction model for the estimation.

Additionally, in an attempt to investigate the effects of government expenditure on economic growth in Nigeria from 1970-2008, [35] utilises a cointegration and error correction model to estimate a disaggregated components of expenditure. Results show that capital expenditure, recurrent expenditures, and public spending on education have negative effect on economic growth. On the contrary, increased

government expenditure on health, transport and communication sector enhances the economic growth. While, [36] empirically examine the effects of government spending in social sectors on the economic growth of Pakistan during the period 1974 to 2008. The study employs a log-linear model of regression analysis to specify the cointegration and error correction model. Findings from the study reveal the existence of positive relationship between public spending on human capital, economic and community services and economic growth. While expenditure on law and order and subsidies appear to be negatively related to economic growth. Furthermore, [37] examine the impact of government sectoral spending on the economic growth of Malawi from 1980 to 2007. The study employs both cointegration analysis and error correction model for the estimation. In the short-run, finding reveals the existence of no significant relationship between public sector spending on sectoral components and economic growth. But, the long run result indicates the existence of positive and significant impacts of public spending on agriculture and defence in economic growth. While public spending on health, education, communication, and transportation are negatively related to economic growth.

## **2.2 Wagner's Hypothesis**

Literature that shows support in favour of Wagner's doctrine include the following contributions: [38] examine the impact of public spending on economic growth in Nigeria from 1970 to 2010 by applying ARDL and OLS estimation techniques. The ARDL estimates submitted that the government expenditure and economic growth are bound together in the long-run. While empirical results of the study show that public spending does not stimulate economic growth for Nigeria, which could be as a result of inappropriate planned-expenditure, where recurrent expenditure is three times the amount budgeted for capital expenditure. The high cost of governance may be another factor that could be responsible for this scenario.

In addition, [39] examines the pattern of public expenditure in Nigeria using error correction model and granger causality test from 1977 to 2008, the study supported that government spending and public consumption impact negatively on economic growth in Nigeria. Also, a unidirectional causality exists between economic growth and total expenditure, while there was no causal relationship between private investment and public investment.

Similarly, [40] examines the causal relationship between government expenditure and economic growth in Nigeria from 1979 to 2008 using a VAR- based error correction model. Result among other things shows that an increase in both real gross domestic product and public revenue causes growth in government expenditure, hence indicating the presence of Wagner's hypothesis in Nigeria during the review period. In the same vein, further evidence is revealed by [41] in a study that employs a multivariate cointegration and variance decomposition approach to examine the causal relationship between government expenditures and economic growth for Egypt, Israel, and Syria from 1967 to 1998. Using Granger causality test, VECM and impulse response function, findings reveal that a bi-directional and long run negative relationships exist between government spending and economic growth.

In an early attempt, [42] examine the link between cross-national economic growth and aggregate expenditure in 113 OECD countries between 1951 to 1980 using a pooled regression analysis, and the study found, among other things, that the growth of government consumption is negatively correlated with economic growth in three, out of four study countries, including the OECD, and that political dictatorship is negatively correlated with growth in Africa and Central and South America. Likewise, [43] adopts a displacement effect as a general and systematic approach in a study of government expenditure in the UK for the period 1890 to 1955. The paper argued that government spending does not increase in a smooth and uninterrupted routine, but in a gradual way. Sometimes, certain social disturbances and other externalities may arise, leading to a need for an increase in government spending, which the existing public revenue capacity cannot meet, thereby leading to accumulated deficits and macroeconomic instability. Also, increased flow of government spending over a long time may cause its marginal impact to be growth retarding as excessive public expenditure may lead to higher taxes that discourage private investment.

Furthermore, [44] examine the interaction between Wagner's law and fiscal sustainability in Germany by adopting expenditure, revenue and GDP using quarterly dataset from 1960 to 2008. In order to check for stability and structural break, the paper employed the CUSUM test, recursive coefficient and Chow test to ensure validity of the findings. Using the Johansen

cointegration technique and VAR approach, the findings reveals a strong evidence for the existence of a linear independent long-run relationship among the examined variables. The overall results support the Wagner's law by indicating that 1% increase in GDP will results to an increase in expenditure by 13%. This implies an increasing public expenditure to GDP in the long run.

Likewise, [45] examine the relationship between public expenditure and aggregate income in European Union countries except Croatia. Annual frequency are employed covering the period of 1980 to 2013, using panel data methodologies. The variables utilised in the article includes the GDP, aggregate government expenditure and investment expenditure which are transformed into log to allow for easy estimation. The results for the 27 EU countries indicate that, in the long-run, a 1% point increase in GDP tends to determine a raise in government expenditure/ GDP ratio share between 0.01 (Hungary) and 0.62 (Slovakia) percentage point. This effect is restrained when one considers the former member of association, with an estimated coefficient equals to 0.70. In the long-run, an increase in GDP is associated to a more than proportional increase in both the aggregate expenditure and investment expenditure. In fact, in both cases the long-run elasticity of government expenditure with respect to GDP is significantly larger than one. This finding therefore strictly support the Wagner's law.

In the same vein, [46] determines the relationship between components of public spending and GDP among seventeen countries in Euro area using annual data from Eurostat database spanning the period 1990 to 2010. The study adopted the international criteria for Classification of Functions of Government (COFOG) to disaggregate public expenditure into ten items. Panel cointegration technique and Granger causality test are utilised as the method of analysis. Finding shows that the cointegration relation is consistent with Wagner's hypothesis in three out of ten expenditure components implying the existence of long-run relationship between components of expenditure and GDP. In addition, the Granger causality test also shows evidence in support of Wagner's Law for five countries, feedback mechanism is confirmed in five countries while the remaining seven countries established a neutrality hypothesis. Notably, no evidence from the Granger casualty results in favour of the Keynesian hypothesis.

Moreover, [47] examines the relationship between disaggregated public spending and aggregate income in Italy both in the short-run and long-run. The annual data are adopted to analyse the Italian case covering the time period of 1960 to 2008. The data are obtained through 3 different sources: Informative Public Base (BIP), Bank of Italy and the ISTAT website. Johansen cointegration technique is adopted the method of analysis, while a disaggregated components of expenditure and GDP are utilised as the study variables. The estimated results indicate a strong positive correlation between GDP and expenditure. These findings indicate that high increase in GDP is associated with higher increase in various components of government expenditure. In other word, public spending is growing more rapidly than the aggregate income, validating Wagner's Law for the Italian case. The observed increase in the share of public spending to GDP is the result of continued growth in the revenue expenditure on subsidies, interest payments, administrative and defense services, which are non-developmental in effect.

In another similar analysis, [48] analyses the relationship between government expenditure and GDP in Italy at a disaggregated level for the period of 1990 to 2010, using annual time series data. Cointegration test reveals the existence of long-run relationship between GDP and other expenditure components. Moreover, results from the Granger causality test shows evidence in favour of Wagner's Law in four cases, while a bi-directional flow is found in two expenditure components. Therefore, the Keynesian hypothesis is not supported by the empirical findings in this study during the sample period. Similarly, [49] investigate the impacts of public expenditure on economic growth using a sample of time series data on Tanzania for thirty-two years. The study builds on the work of [10] as the theoretical foundation. Findings of the study show that increase in productive (investment) expenditure was found to be negatively related with levels of growth. The negative relationship, proposes the inefficiency of government investments in Tanzania.

Furthermore, [50] evaluates the relationship between disaggregated public spending, real GDP and money supply in Italy for the period covering 1990 to 2010. Different items of public spending have been selected focusing on their functional nature and according to the Classification Of Function Of Government (COFOG), money supply is utilised as a control



variable. Data are collected from ISTAT covering the period of 20 years while GDP deflator and public consumption deflator are utilised as proxies for GDP and public expenditure, respectively. In order to examine the relationship among the variables in a multivariate context, the study employed the Johansen cointegration technique and Granger causality test. Estimated findings from cointegration test reveals the existence of long-run relationship except in two cases out of ten spending components. While the Granger causality test shows evidence in favour of Wagner's hypothesis in two cases, one case of bi-directional causality, five cases in favour of Keynesian hypothesis, and finally, two cases hold the neutrality hypothesis. Since a long-term relationship between the level of output and government spending has been found for several items, the study concludes in favour of Wagner's hypothesis. Because no item of public spending Granger causes GDP, as such, expenditure cuts could not impact negatively on economic growth.

In another development, [51] conducted a study in China using Granger-causality and Engle-Granger cointegration tests from 1960 to 2009 to examine the causal link between national income and aggregate expenditure, results empirically indicate that a long-run relationship between national income and government expenditure does exist in the pre-reform and post-reform period. Meaning that unidirectional Granger causality from national income to government expenditure is found, hence providing support for Wagner's law in China. Likewise, [52] examines whether government expenditure spurs economic growth in Nigeria spanning 1977 to 2006 using annual time series data. Regression equation was developed from the model of [10], and results show that private investment, public investment expenditure, and consumption expenditure have a positive but insignificant effect on economic growth in Nigeria during the study period. Also, human capital investment was found to have a negative and insignificant effect on real output. In contrast to the Keynesian hypothesis, this study implies that government spending has no significant effect on the real gross domestic product.

Furthermore, [53] examine the causal link between government expenditure and economic growth in Iran from 1970 to 2010 using Gregory-Hansen cointegration test, error correction model and Granger causality test. Finding reveals a strong unidirectional link from GDP to recurrent expenditure in Iran. But there is no evidence that

recurrent expenditure promotes long-term economic growth. Similarly, results from [54] in a study that investigates the relationship between government expenditure and economic growth in Saudi Arabia from 1964 to 1995 using VAR-based Granger causality and an adopted production function model shows that government spending exercise a positive and significant impact on economic growth and development of Saudi's economy. Though, economic growth is found to granger cause public spending within the sample period, hence providing more support for Wagner's hypothesis within the study period.

### **2.3 Neither Wagner nor Keynesian Hypothesis**

On this different perspective, [55] examines the views of Wagner and Keynesian in Malaysia using VAR and Granger causality test. The study found an empirical support for the presence of both Wagner's law and Keynesian hypothesis over the review period of 1960 to 2005. In addition, using time series data spanning 1960 to 2002, [56] examine the causal link between public expenditure and national income in five (5) South East Asian countries using Granger causality test and cointegration technique. The study found no empirical support for the presence of either Wagner's law or Keynesian hypothesis in Malaysia, Singapore, Indonesia, and Thailand. Although a unidirectional causality from government expenditures to national income exist only in the Philippines. Likewise, [57] evaluate the causal link between expenditure and growth in Turkish economy for the period of 1965 to 2000 by employing Granger causality test and cointegration technique. The study found no co-integration between GDP and public expenditure. Meaning that, long-run relationship between government expenditure and GDP for the Turkish economy does not exist. On the basis of Granger causality tests, the result shows that neither growth in income does have any effect on government size nor does public expenditure have any effect on economic growth. That is, there is no causality in both directions; neither Wagner's Law nor Keynes hypothesis are valid for the Turkish economy.

Furthermore, an early contribution was provided by [58] in a study that examine the causal link between government expenditure and national income in the Indian economy from 1950 to 1981. The study adopts granger causality test with the sole aim of determining the directions

and patterns of causality between national income and aggregate expenditure as well as various components of government spending. While at the disaggregate level the causal process is rather diverse, it is essentially feedback at the aggregate level. This submitted that the causality between national income and public expenditure is neither Wagnerian nor Keynesian view within the study period.

Conclusively, in all submissions that debated on the relationship between government spending and economic growth, Keynes was among the most prominent and celebrated, with a different perspective on this relative contributions. Keynes regards government spending as an exogenous factor which can be utilised as a policy instrument to promote economic growth. Despite the diverse and conflicting empirical evidence on the relationship between public sector expenditure and economic growth that prevail in the literature, an increasing number of studies have shown positive growth effect of government expenditure. This is particularly true for developing countries where evidence of the positive growth effect of government expenditure can be found in earlier empirical studies conducted by [10,59]. These findings have been strengthened and supported subsequently by many studies including, [60,61,62,63]; etc.

### **3. PUBLIC SECTOR SPENDING IN NIGERIA**

Public sector spending in Nigeria is a key determinant of output growth and a significant factor in the economic management. The efficiency and the structure of these expenditures emanate from the prevailing desires of the government to provide a favourable business environment through provision of pure public goods that can enhance productivity and output growth in the presence of externalities. In other words, the provision of quality public goods and other related services largely depend on the nature and quality of government expenditure. The condition of fiscal sustainability and macroeconomic framework of any country depends on the structure and level of government expenditure. For instance, over many years in Nigeria, macroeconomic instability was purely motivated through fiscal imprudence and poor financial management of oil revenue. Budgetary allocated funds became virtually meaningless, as extra allocations became part of the government, in spite of no any plan either medium or long term to which the extra budgeted

expenditures would be referenced to with a view to ensure long-run growth [2,64].

The structure of government expenditure in the Nigerian economy is categorised into capital and recurrent expenditure. The capital expenditure are expenses designed and allocated for capital-intensive projects like construction of airport, accessible roads and railways, telecommunication, education, power and electricity generation, etc. while recurrent expenditure are those spending budgeted for the payment of wages and salaries as well as other dividends, maintenance cost, etc. The combination of capital and recurrent expenditure gives the total expenditure of the government. The total government spending in Nigeria has always been on the increase despite the fluctuating rate of revenue in the recent years. This is, however, complemented by a high demand for public utilities as a result of population growth and creation of more states within the market-oriented economy [9,21]. Statistical data from Central Bank of Nigeria's bulletin [65] reveals that total spending has continued to fluctuate at increasing rate in the last three decades or so. For instance, total government expenditure decreased from ₦14.97 billion in 1980 to an estimated amount of ₦11.41 billion in 1981. This declining trend continues up to the end of 1985. The previous increase in expenditure was the multiplier effects and roll-over benefit of the 1970s oil boom era largely motivated by increased in crude oil price.

Unfortunately, the economic recession of 1980s which led to the decrease in oil price compelled the Nigerian economy to reduce its expenditure in order to avoid instabilities of fiscal deficit in the long-run. The value begin to increase in 1986 to ₦16.22 billion nearly doubling the values of 1983 to 1984. In 1987 and 1988, it was ₦22.02 billion and ₦27.75 billion, respectively. This is certainly not surprising given the introduction and commencement of the Structural Adjustment Programme (SAP). As such, adequate funds are required to finance the development strategy. Part of the primary aim of the policy reform was to ensure diversification of the economy, reduce public sector dominance in domestic activities, reallocate resources to private sectors and encourage market development. The increasing trend of expenditure continues throughout the adjustment period up to ₦191.23 billion in 1993 which appeared to be the highest spending during the planning era. The value of expenditure stood at ₦248.77 billion in 1995 and further

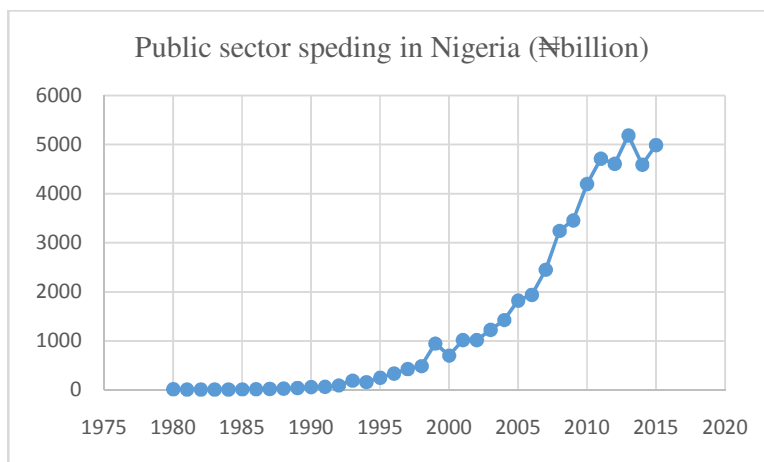
continue to increase at the speed of a horse to an average of ₦947.69 billion in 1999. With the change in leadership style and transition of the economy from military to a democratic system in 1999, the value of public spending is valued at ₦1,018.03 billion in 2001. From 2002 onwards, aggregate expenditure continue to increase rapidly by more than 30% annually representing over 20% of the GDP each year, respectively. Moreover, evidence from Fig. 1 shows the graphical representation and rising trend of government expenditure from 1980 to 2015.

These increases in expenditures are caused by the nature of political instabilities, social and religious vices, in relations to high demand for public goods and services by the growing population. However, despite the significant increase in the volume and share of public expenditure in the Nigerian budgetary allocations over the years, there is little to show in terms of output growth, adequate infrastructure and employment generation. This serves among the essential challenges to fiscal authorities from the inefficient use of public funds [9,64]. In view of the increasing trend of public sector expenditure given the narrow revenue base of the government, the possible occurrence of deficits in the budget balance becomes more apparent. An increase in government expenditure without a corresponding increase in revenue could widen the budget deficit [66]. Therefore, the government should explore other sources of non-oil revenue, particularly the solid mineral resources, agricultural sector, as well as information and communication sector, and also reduce the size of large recurrent expenditure and hence reallocate resources in favour of other productive investment spending. Furthermore,

expansion of government spending in conjunction with difficulties to raise additional revenue, often causes fiscal instabilities which are mostly finance through external borrowing. These fiscal instabilities, in addition to the accumulation of more external debt are inconsistent with the stable macroeconomic business environment needed to encourage a competitive and vibrant private sector development for sustainable economic growth [52,67].

#### **4. CHALLENGES OF PUBLIC SECTOR EXPENDITURE IN NIGERIA**

Productive government expenditure is regarded as an essential element of development process and a significant part of the public sector. As such, any meaningful spending will improve the public sector performance and produce a desirable outcome on the output growth and strengthen the capability of fiscal policy in terms of economic management. The higher level of government expenditure in recent years has produce many undesirable effects, hence the need for the overall spending to be constrained to enable a possible return to the surplus stage and ensure sound fiscal balance within the public finance. The condition of fiscal balance is another major obstacle that produce many undesirable macroeconomic effects. This is attributed to inability of the public sector to raise sufficient revenue and reduce unnecessary expenditures in favour of productive investment. Given the increasing trend of deficits and the ever-increasing public debt, the additional cost of debt servicing will continue to be a burden on the Nigerian economy due to the accumulated rates



**Fig. 1. Trend of public sector expenditure in Nigeria**

of interest, hence resulting in lower output growth within the domestic economy, decrease in savings and investment, and misallocation of resources which are meant to enhance social and sustainable economic development. This scenario became more pronounced when examined the fluctuating rate of GDP, economic growth rate, as well as poverty and unemployment rates. On several occasions, government was advised by policy makers not only to reduce the size of fiscal deficit, but also to widen the revenue generation capacity in order to augment the contribution from non-oil sectors like information and communication technology, agriculture, solid mineral development, entertainment industry, etc. which have the potentials of reducing poverty than the oil sector.

Another challenging factor is not even the accumulation of deficit, but the method of financing these deficits. In Nigeria, the Central Bank of Nigeria (CBN) accounted for the largest share of deficit financing through domestic borrowing. This has implications on the financial sector in terms of share of credit available to the private sectors. The loanable funds which are meant to be available for the private sector investment are loan out to the government, this implies rationing and higher interest rate on the remaining funds. This further discourage investment and suppressed private sector participation in the production process and other related economic activities, which in turn result to higher fiscal dominance within the market-oriented economy. This is regarded as one of the possible reasons for the failure of the Nigerian financial institutions in terms of international competitiveness, because the strength of a financial system is measured in terms of the share of domestic credit available to the private sectors for productive investment. Furthermore, the unanticipated liquidity problems that hit the financial sector and the economy at large, resulted to exchange rate difficulties, lower productivity growth and high inflationary pressure on both domestic and international activities. These occur due to the current economic recession, cumulative effects of previous inefficiency in fiscal operations, abuse of public funds and economic mismanagement, as well as irrational policy decision making. Another challenge of public sector spending in Nigeria is the capability of the government expenditure to address the issue of structural problems and ensure long-run fiscal stability through monitoring, evaluation, and accountability of public resources. Government expenditure

through provision of quality infrastructures and other supporting facilities will enhance the activities of private sector and encourage more investment opportunities on the condition that “check and balances” are maintained within the public finance system. This appeared very difficult in view of the current state of infrastructural deterioration in Nigeria. The poor nature and condition of roads and electricity distribution is sufficient to testify the state of infrastructural decay and hence re-examined the disbursement process of the said expenditures. Further challenges of government spending in Nigeria is the increasing rate of social and religious crises (increase military and defence expenditure) to which a significant portion of the budgetary allocation is designed for. If relative peace is maintained in the economy, expenditures designed for military and defence are now reduced and consequently, reallocated to the provision of critical social and economic facilities that will improve the societal welfare and increase the private sector competitiveness in the production of goods and services.

## **5. DATA COLLECTED**

The paper employed annual time series data from the official statistical bulletin of CBN [65] in order to conduct the empirical analysis. The data covers the period of thirty-five (35) years from 1980 to 2015 given a total number of 35 observations for each variable under the study. The period also cover major political and economic events in Nigeria including the transition from military to democratic system. Two variables are utilised in this paper namely; Gross Domestic product (GDP) and Public Sector Expenditure (PSE) with aim of evaluating the relationship between public expenditure and economic growth in Nigeria. The values are given in constant prices of local currency in Nigeria (billions of Naira) using 2010 base year. In order to ensure that the values are appropriately scaled, they are transformed into logarithm with the view to providing efficient and reliable estimation. The logarithm transformation and differencing is essential to stabilise the data which can be further used in the estimation.

## **6. METHOD OF ANALYSIS**

In order to examine the relationship between the public sector expenditure and economic growth in Nigeria, this paper did not focus on the traditional approaches mostly utilised in the

literature such as the Engle-Granger cointegration, OLS estimation analysis, Granger causality approach, and the Johansen cointegration test. Instead, the study adopted the Autoregressive Distributed Lag (ARDL) model as developed by [68, 69]. The ARDL model is more desirable among other cointegration techniques due to its relative superior performance when the sample observations is small and its applicability to a mixture of stationary and non-stationary time series, hence provides relatively more robust and better estimates [69]. Moreover, the endogeneity problem is less in ARDL framework because it is free of residual correlation. In other words, the ARDL bounds testing approach provides valid T-test and F-tests as well as unbiased long-run estimates even when some of the regressors in the model are endogenous especially in the case of essential macroeconomic variables [70].

Following the [69], the ARDL model for this article is formulated as shown below:

$$y_t = \beta_0 + \beta_1 + \sum_{i=1}^p \beta_i y_{t-i} - 1 + \varepsilon_t \quad (1)$$

Where,

- $y_t$  = level of economic growth at time t,
- $y_{t-1}$  = lagged value of economic growth at time t-1,
- $\beta_1$  = intercept,  $\beta_2^t$  and  $\beta_i$  are the trend parameters,
- $\varepsilon_t$  is the normally distributed white noise with zero mean and constant variance.

The model in equation (1) can be transformed into a functional form as follows:

$$Y = f(\text{PSE}) \quad (2)$$

While, equation (2) can be expressed in a simple linear form as:

$$\text{LGDP}_t = \beta_0 + \beta_1 \text{LPSE}_t + \mu_t \quad (3)$$

However, in accordance with the [69], equation (3) can be redefined and expressed into an ARDL framework as follow:

$$\Delta \text{LGDP}_t = \varphi_0 + \pi_1 \text{LGDP}_{t-1} + \pi_2 \text{LPSE}_{t-1} + \sum_{i=1}^p \lambda_{1i} \Delta \text{LGDP}_{t-i} + \sum_{i=0}^p \gamma_{1i} \Delta \text{LPSE}_{t-i} + \varepsilon_1 \quad (4)$$

Where,

- $\varphi_0$  = represent the constant term
- $\Delta$  = represent the first difference operator
- $\pi$  = are the long-run coefficient

- $\lambda, \gamma$  = are the short-run dynamics
- $\varepsilon_t$  = is the white noise

## 7. EMPIRICAL RESULT

In this section, the empirical result obtained from the data estimation shall be presented. This includes the unit root test based on Augmented Dickey-Fuller (ADF) and Phillips-Perrons (PP) tests. In addition, the ARDL Bound testing approach to cointegration is also evaluated in order to determine the existence of long run equilibrium relationship among the examined variables in the model.

### 7.1 Unit Root Testing

Spurious regression can occur in econometrics estimation when non-stationary data are used for estimation in an empirical analysis. This feature, is among the most common characteristic of financial or macroeconomic time series data. It is also observed that a nonstationary time series has a different mean at different point in time while its corresponding variance increases with the sample size [71,72]. If such situation occur, the  $R^2$  (coefficient of determination) will be higher while the Durbin Watson statistic (DW) value will be low. The corresponding t-values of the coefficient will also be highly significant, which may leads to Type 1 error. As a result, findings from the estimation particularly the coefficients became biased. Thus, the best and unbiased properties of Ordinary Least Square (OLS) can no longer hold. As such, it is essential to the stationarity or otherwise of the data in order to avoid the spurious regression. For this reason, unit root tests are conducted on the time series data using both the Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) tests, respectively. The two variables utilised in this paper are the Logarithm of Gross Domestic Product (LGDP) and the Logarithm of Public Sector Expenditure (LPSE) for the period 1980 to 2015. To show the estimated results, Table 1 present the summary findings of the unit root tests.

The empirical findings presented in Table 1 shows the unit root test conducted based on the ADF and PP approaches. In ADF, the LGDP is not stationary at level, but stationary at first difference. Meanwhile, the estimation reveals a different scenario in PP test as the LDGP is found to be stationary at level, and at first differences as indicated by the 1%, 5% and 10% significance level, respectively. In other words, all the respective t-statistics are greater than their

corresponding critical values at all level of significance in both ADF and PP test. Furthermore, in the case of the second variable that is LPSE, the estimation result from ADF is found to be nonstationary at level with an insignificant prob. value of 0.9067 but stationary at first differences with *prob. value of 0.0002*. In the case of PP test, the LPSE is also found not to be stationary at level but stationary at first difference with a significant *prob. value of 0.0001*. Therefore, from the aforementioned findings, this paper concludes that the time series properties for LGDP and LPSE within the sample period under consideration are integrated of order one (1). The result provides the required basis to further determine the existence of long-run relationship among the variables using cointegration analysis.

## **7.2 Result for ARDL Bound Test**

Among the fundamental objectives of estimating the ARDL model, is to serve as a platform for applying the Bound test. The model utilises both the F and t-statistics to test the significance of lagged levels of the variables in a univariate error correction system. Specifically, the ARDL Bound test joins together both the short run adjustments with long run equilibrium without losing the long run information [69]. The Error Correction Model (ECM) is designed to estimate a short-run dynamic relationship among a sample of variables, particularly for a set of variables that exhibited different stationary trend [69]. In other words, the ECM provides essential information on the short-run relationship between any two cointegrated variables. The aim of the technique is one period lagged error term from the previously estimated cointegrating equation; this lagged term provides an explanation of the short-run deviation from the long-run equilibrium relationship. Notably, the null hypothesis of an ARDL Bound test is that there is no long-run relationship between the examined variables. The estimated findings from this approach is presented in Table 2.

The result in Table 2 indicates that the F- statistic for this Bound test is 14.76, which is greater than the critical values of both the lower and the upper bounds at 1%, 5%, and 10% level of significance, respectively. As a result, the null hypothesis of no long-run relationship shall be rejected based on the empirical findings. Meaning that, a long-run relationship exist between economic growth and public sector expenditure in Nigeria within

the sample period covering 1980 to 2015. Furthermore, the coefficient of determination ( $R^2$ ) is 0.967860, which implies that about 96% of total variation in GDP is explained by the variation in public expenditures. In addition, the result for Durbin Watson statistic is 0.856477 which indicates the absence of serial correlation in the model; hence desirable.

The next step therefore is to examine the existence of long-run equilibrium relationship between the variables. As such, the error correction term is estimated and the results are presented in Table 3. The results indicate that there is an existence of long-run equilibrium relationship between the Gross Domestic Product (GDP) and Public Sector Expenditure (PSE) in Nigeria for the period under consideration. In addition, there is a relative adjustment in the level of GDP when the capacity of public expenditure increases at a given period. It further reveals that, a 9% increase in the level of public sector expenditure will results in a long-run positive increase on the GDP by 25%. This positive effect however, indicates that public sector spending shows a stable relationship in Nigeria and contributes significantly to the realisation of sustainable growth for the period under consideration.

It can be observed from Table 3 that the results of long-run coefficients are all desirable with a significant prob. values of 0.000, respectively. Furthermore, the error correction coefficient is negative and statistically significant at 10% level with a prob. value of less than 0.5, which established the existence of long-run equilibrium relationship between GDP and public sector expenditure in Nigeria. With an estimated coefficient value of -0.130098, it indicates a very low adjustment process with the previous accumulated disequilibrium of the preceding years adjusting back to the long-run equilibrium in the present year. The results from the model estimation shows that public expenditure has a significant and positive implication on the level of economic growth in Nigeria even though the relative adjustment is found to be low. This finding is consistent with the Keynesian approach which established that increase in public expenditure will encourage aggregate demand and output growth and further supported by enormous literature including the contribution of [9,14,25]. Hence, a stable relationship is established between government expenditure and economic growth in Nigeria.

**Table 1. Result of unit root test**

<b>Augmented dickey-Fuller test</b>					
<b>Variables</b>	<b>Level</b>		<b>First difference</b>	<b>Decision</b>	
LGDP	<i>t-stat</i>	-2.269	<i>t-stat</i>	-154.084*	Stationary at first difference
	<i>Pro.</i>	0.4381	<i>Pro.</i>	0.0000	
LPSE	<i>t-stat</i>	-1.143	<i>t-stat</i>	-5.859*	Stationary at first difference
	<i>Pro.</i>	0.9067	<i>Pro.</i>	0.0002	
<b>Phillip-Perron test</b>					
<b>Variables</b>	<b>Level</b>		<b>First difference</b>	<b>Decision</b>	
LGDP	<i>Adj. t-stat</i>	-24.944*	<i>Adj. t-stat</i>	-135.286*	Stationary both at level of differences
	<i>Prob.</i>	0.0000	<i>Prob.</i>	0.0000	
LPSE	<i>Adj. t-stat</i>	-1.195	<i>Adj. t-stat</i>	-5.874*	Stationary at first difference
	<i>Prob.</i>	0.8960	<i>Prob.</i>	0.0001	

*Source: Author's computation (2017)*

*\*indicates stationary at 1%, 5% and 10% level of significance*

**Table 2. ARDL bound testing for cointegration**

<b>Test statistic</b>	<b>Value</b>	<b>K</b>
F-statistic	14.76*	1
<b>Critical value bounds</b>		
<b>Significance</b>	<b>Lower bound</b>	<b>Upper bound</b>
10%	5.59	6.26
5%	6.56	7.30
1%	8.74	9.63

*Source: Author's computation (2017) using EViews 9*

*Note: \* indicates significance at 1%, 5% and 10% levels, respectively.*

*K is the lag length selected based on Akaike criterion*

**Table 3. Cointegrating and long-run coefficients**

<b>Cointegrating form</b>				
<b>Variable</b>	<b>Coefficient</b>	<b>Std error</b>	<b>t-statistics</b>	<b>Prob.</b>
CointEq(-1)	-0.130098	0.049473	-2629682	0.0198
Cointeq = LGDP – (0.2529*LPSE + 9.1197)				
<b>Long run coefficients</b>				
<b>Variable</b>	<b>Coefficient</b>	<b>Std error</b>	<b>t-statistics</b>	<b>Prob.</b>
LPSE	0.252946	0.054938	-4.604220	0.0004
C	9.119717	0.461444	19.763433	0.0000

*Source: Author's computation (2017) using Eviews 9*

**8. CONCLUSION AND POLICY IMPLICATIONS**

In an economic environment of high deficit and inflation rate, measuring the productivity of public sector spending becomes more challenging. Similar to this, is the unstable revenue base of the government and the difficulties in lowering the expansionary fiscal component of expenditure (in nominal terms) due to economic downturn. Implementing fiscal tools need to be re-examined in view of the high inflationary pressure, increase deficit and debt. The adoption of fiscal rule which appeared more prominent among the developing countries including Nigeria

provides more support in enforcing discipline in public spending in order to avoid instabilities in the economic management. The primary aim of this paper is to examine the relationship between government expenditure and economic growth in Nigeria. In order to determine the relationship, the study adopted an ARDL model to conduct the analysis. Government as an institution that provide welfare to the populace has a major role to play in deciding where priority spending should be allocated in order to enhance the developmental process and provide sustainable growth in the long run. Empirical evidence from the ARDL estimation indicates the existence of positive and long-run equilibrium relationship

between economic growth and government expenditure in Nigeria. This results is consistent with the Keynesian philosophy and several empirical literatures, hence establishing a stable relationship between the variables in Nigeria specifically. Furthermore, government expenditures are considered to be highly important in creating opportunities and widening the productive base at which developing countries can grow, Nigeria is inclusive. To achieve accelerated economic growth, there is need for an in-depth and broad macroeconomic reform in the Nigerian public finance to include certain features of transparency and effectiveness in the implementation process. An essential part of the reform policy should be the review of public sector's roles and responsibilities in the development process and concentrate on the priority areas rather than act as a substitute of the private sector. The inclusion of certain measures on the reform policy will appear satisfactory, for instance, expenditure on public goods that improves the allocative efficiency in the presence of positive externalities should be accorded high priority, including investment in infrastructure, more access to information and communication technology, expenditure on research and development, etc. To avoid unnecessary increase in government expenditure beyond the absorptive capacity of the government, substantial efforts must be made to ensure checks and balances. It is therefore of utmost significance that efficiency in the public finance management is restored through tracking the disbursement process and proper monitoring and evaluation of the entire budgetary allocations. Furthermore, abuse of public fund and mismanagement of the limited resources are discouraged and that resources are reallocated to areas of high social and economic relevance, and hence sanity is restored in the economy. Another policy measure that will be recommended to the public authorities include the need for expenditures on human resource development to be accorded more attention if achieving sustainable growth remains the prime macroeconomic objective of the Nigerian economy.

### **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

### **REFERENCES**

1. Abdurrauf IB. Fiscal policy and economic development in Nigeria. *Nigeria Journal of*

Economics and Sustainable Development. 2015;6(7):150-159.

2. Appah E. The relationship between fiscal policy and economic growth in Nigeria. *International Journal of Economic Development, Research and Investment*. 2010;1(2-3):37-47.

3. Adefeso HA, Mobolaji HI. The fiscal policy and economic growth in Nigeria: Further empirical evidence. *Pakistan Journal of Social Sciences*. 2010;7(2):37-142.

4. Blake T. Measuring the impact of the Jamaican government on the economy via fiscal multipliers. *Journal of Business, Finance & Economics in Emerging Economies*. 2013;8(1):26-53.

5. Olopade BC, Olopade DO. The impact of government expenditure on economic growth and development in developing countries: Nigeria as a case study. Department of Economics, Igbinedion University Okada, Edo State, Nigeria; 2010.

6. Omitogun O, Ayinla TA. Fiscal policy and Nigerian economic development. *Journal of Research in National Development*. 2007;5(2):19-29.

7. Wagner A. *Finanzwissenschaft*. Leipzig: Winter CF; 1890. Available:<https://catalog.hathitrust.org/Record/008521852>

8. Keynes JM. *General theory of employment, interest and money*. 1<sup>st</sup> ed. London, Macmillan; 1936.

9. Segun OM, Adelowokan OA. Measuring the impact of public expenditure on economic growth in Nigeria. *Journal of Social Science Studies*. Macrothink Institute. 2015;2(2):46-55.

10. Ram R. Government size and economic growth: A new framework and some evidence from cross-section and time-series data. *American Economic Review*. Published by American Economic Association. 1986;76:191-203.

11. Okoro AS. Government spending and economic growth in Nigeria. *Global Journal of Management and Business Research Economics and Commerce*. International Research Journal Publisher: Global Journals Inc. USA. 2013;13(5):21-30.

12. Govindaraju CVGR, Rao R, Anwar S. Economic growth and government spending in Malaysia: A re-examination of Wagner and Keynesian views. *Econ Change Restruct*. Springer Science+



- Business Media, LLC. 2010. 2011;44:203–219.
13. Samudram M, Nair M, Vaithilingam S. Keynes and Wagner on Government expenditures and economic development: The case of a developing economy. *Empir Econ*. 2009;36(3):697-712.
  14. Olulu RM, Erhieyovwe EK, Andrew U. Government expenditures and economic growth: The Nigerian experience. *Mediterranean Journal of Social Sciences*. MCSER Publishing, Rome-Italy. 2014; 5(10):89-94.
  15. Komain J, Brahmasrene T. The relationship between government expenditures and economic growth in Thailand. *Journal of Economics and Economic Education Research*. 2007;8(1): 93-104.
  16. Liu LC, Hsu C, Younis MZ. The association between government expenditures and economic growth: Granger causality test of US Data. *Journal of Public Budgeting, Accounting & Financial Management*. 2008;20(4):439-452.
  17. Mitchell DJ. The impact of government spending on economic growth. Executive Summary Backgrounder, Paper no 1831. Published by the Heritage Foundation 214, Massachusetts Avenue, NE Washington, DC, USA; 2005.
  18. Kapunda SM, Topera JS. Public expenditure composition and economic growth in Tanzania: Socio-economic policy implications. *Asian-African Journal of Economics and Econometrics*. 2013;13(1): 61-70.
  19. Mwafaq MD. Government expenditures and economic growth in Jordan. International Conference on Economics and Finance Research IPEDR. IACSIT Press, Singapore. 2011;4:467-471.
  20. Al-Yousif Y. Does government expenditure inhibit or promote economic growth: Some empirical evidence from Saudi Arabia. *Indian Economic Journal*, 2000;48(2):191-202.
  21. Sevitenyi LN. Government expenditure and economic growth in Nigeria: An empirical investigation. *The Journal of Economic Analysis*. 2012;111(1):38-45.
  22. Koeda J, Kramarenko V. Impact of government expenditure on growth: The case of Azerbaijan. *International Monetary Fund, IMF Working Paper Series, Paper no. WP/08/115*; 2008.
  23. Ighodaro CAU, Oriakhi DE. Does the relationship between government expenditure and economic growth follow Wagner's Law in Nigeria? *Annals of the University of Petroşani Economics*. 2010; 10(2):185-198.
  24. Loizides J, Vamvoukas G. Government expenditure and economic growth: Evidence from trivariate causality testing. *Journal of Applied Economics*. 2005;8(1): 125-152.
  25. Chinweoku N, Ray N, Paschal NO. Impact of government expenditure on Nigerian's economic growth. A Multidisciplinary *Journal of Global Macro Trends*. The Macrotheme Review. 2014;3(7):79-87.
  26. Huang C. Government expenditures in China and Taiwan: Do they follow Wagner's Law? *Journal of Economic Development*. 2006;31(2):139-148.
  27. Alexiou C. Government spending and economic growth: Econometric evidence from the South Eastern Europe (SEE). *Journal of Economic and Social Research*. 2009;11(1):1-16.
  28. Olugbenga AO, Owoye O. Public expenditure and economic growth: New evidence from OECD countries. *Business and Economic Journal*. 2007;4(17):1-9. Available:[https://iaes.confex.com/iaes/Rome\\_67/techprogram/P3164.HTM](https://iaes.confex.com/iaes/Rome_67/techprogram/P3164.HTM)
  29. Kuckuck J. Testing Wagner's law at different stages of economic development: A historical analysis of five Western European countries, Working Paper, 2012: 91. Institute of Empirical Economic Research, University of Osnabrück. Available:[http://hdl.handle.net/10419/6651\\_1](http://hdl.handle.net/10419/6651_1)
  30. Gisore N, Kiprop S, Kalio A, Ochieng J, Kibet L. Effect of government expenditure on economic growth in East Africa: A disaggregated model. *European Journal of Business and Social Sciences*. 2014;3(8): 289-304.
  31. Kwendo CM, Muturi W. The effect of Public expenditure on economic growth in the East African community. *Journal of Business Management and Economics*, 2015;3(10):09-13.
  32. Bose N, Haque M, Osbon D. Public expenditure and economic growth: Centre for growth and business cycle research.

- School of Economic Studies, University of Manchester, Manchester, M13 9PL, UK; 2003.
33. Mudaki J, Masaviru W. Does the composition of public expenditure matter to economic growth for Kenya? *Journal of Economics and Sustainable Development*. 2012;3(3):60-70.
  34. Patricia CN, Izuchukwu CD. Impact of government expenditure on economic growth in Nigeria. *International Journal of Business and Management Review*. Published by European Centre for Research Training and Development UK. 2013;1(4):64-71.
  35. Nurudeen A, Usman A. Government expenditure and economic growth in Nigeria: A disaggregated analysis. *Business and Economics Journal*. 2010; BEJ-4:01-11.
  36. Asghar N, Azim P, Rehman H. Impact of government spending in social sectors on economic growth: A case study of Pakistan. *Journal of Business and Economics*. 2011;3(2):214-234.
  37. Musaba EC, Chilonda P, Matchaya G. Impact of government sectoral expenditure on economic growth in Malawi. *Journal of Economics and Sustainable Development*. 2013;4(2):71-78.
  38. Egbetunde T, Fasanya IO. Public expenditure and economic growth in Nigeria: Evidence from auto-regressive distributed lag specification. *Zagreb International Review of Economics & Business*. Economics Faculty Zagreb, Printed in Croatia. 2013;16(1):79-92.
  39. Egunjobi TA. Re-engineering public expenditure patterns for economic development in Nigeria. *Management science and engineering*. Published by Canadian Research & Development Centre of Sciences and Cultures, CScanada. 2013;7(2):28-40.
  40. Aruwa ASA. Public finances and economic growth in Nigeria. *Public and Municipal Finance*. 2012;1(2):29-36.
  41. Abu-Bader S, Abu-Qarn A. Government expenditures, military spending and economic growth: Causality evidence from Egypt, Israel and Syria. 2003;MPRA Paper no. 1115:1-25.
  42. Grier KB, Tullock G. An empirical analysis of cross-national economic growth. *Journal of Monetary Economics*. 1989;24:259-276.
  43. Wiseman J, Peakcock AT. The growth of public expenditure in the United Kingdom. A Study by the National Bureau of Economic Research. 1961;61(1):1890-1955; Princeton University Press.
  44. Priesmeier C, Koester GB. Does Wagner's Law ruin the sustainability of German public finances? Discussion paper Deutsche Bundesbank. 2013;no. 08/13:01-40.
  45. Magazzino C, Giolli L, Mele M. Wagner's Law and peacock and Wiseman's displacement effect in European Union countries: A panel data study. *International Journal of Economics and Financial Issues*. 2015;5(3):812-819.
  46. Magazzino C. The nexus between disaggregated public spending and GDP in the Euro area. *Economics Bulletin*. 2012; 32(3):2560-2579.
  47. Magazzino C. Wagner versus Keynes: Public spending and national income in Italy. *Journal of Policy Modeling*. 2012; 34(6):890-905.
  48. Magazzino C. Disaggregated public spending and GDP: Evidence for Italy. School of Political Sciences, Roma Tre University; Italian Society of Economists (I.S.E.). Royal Economic Society (R.E.S.). 2011;01-16.
  49. Kweka JP, Morrissey O. Government spending and economic growth in Tanzania. *CREDIT 2000; Research Paper no. 00/6*. Centre for Research in Economic Development and International Trade, University of Nottingham, United Kingdom.
  50. Magazzino C. Disaggregated public spending, GDP and money supply: Evidence for Italy. *European Journal of Economics*. Finance and Administrative Sciences. 2011;41:118-131.
  51. Liang C, Mao C. Public spending and national income before and after economic reform in China: An application of asymmetric threshold cointegration. *International Journal of Economics and Finance*. Published by Canadian Centre of Science and Education. 2013;5(11):1-12.
  52. Maku OE. Does government spending spur economic growth in Nigeria? MPRA Paper No. 17941, Munich Personal RePEc Archive; 2009.
  53. Mehrara M, Abrishami H, Boroujli M, Amin M. Government expenditure and economic growth in Iran. *International Letters of Social and Humanistic Sciences*. SciPress Ltd., Switzerland. 2013;11:76-83.
  54. Abdullah HA. The relationship between government expenditure and economic

- growth in Saudi Arabia. Journal of King Saud University. Administrative Science: 2000;12(2):173-191.
55. Tang TC. Wagner's Law versus Keynesian hypothesis in Malaysia: An impressionistic view. Discussion paper 21/09:01-10. Business and Economics, Monash University; Malaysia; 2009.
56. Dogan E, Tang TC. Government expenditure and national income: Causality tests for five South East Asian countries. International Business and Economics Research Journal. 2006;5(10):49-58.
57. Bağdigen M, Çetintaş H. Causality between public expenditure and economic growth: The Turkish case. Journal of Economics and Social Research. 2003; 6(1):53-72.
58. Singh B, Sahni BS. Causality between public expenditure and national income. The Review of Economics and Statistics. Published by The MIT Press. 1984; 66(4):630-644.
59. Aschauer DA. Is public expenditure productive? Journal of Monetary Economics. 1989;23:177-200.
60. Oni AA, Ozemhoka AM. Impact of public expenditure on the growth of Nigerian economy. European Scientific Journal. 2014;10(28):219-229.
61. Uma KE, Eboh FE, Nwaka ID. Government expenditure in Nigeria: Effect on economic development. American Journal of Social Issues and Humanities (AJSIH). 2013;3(3):119-131.
62. Oyinlola MA, Akinnibos O. Public expenditure and economic growth nexus: Further evidence from Nigeria. Journal of Economics and International Finance. Printed by Academic Journals. 2013; 5(4):146-154.
63. Samuel TA, Kabir AK. Government expenditure in Nigeria: A sine qua non for economic growth and development. JORIND. 2011;9(2):155-162.
64. Baunsgaard T. Fiscal policy in Nigeria: Any role for rules? International Monetary Fund Working Paper Series. 2003;IMF paper no. WP/ 03/155.
65. Central Bank of Nigeria. Statistical Bulletins. 2015;26.
66. Damian NC, Harrison OO. Government revenue and expenditure in Nigeria: A disaggregated analysis. Asian Economic and Financial Review. 2014;4(7):877-892.
67. Medee PN, Nenbee SG. The impact of fiscal deficit on inflation in Nigeria. International Journal of Economic Development. Research and Investment, 2012;3(1):12-21.
68. Pesaran MH, Shin Y. An autoregressive distributed lag modelling approach to cointegration analysis. Department of applied economics, University of Cambridge, England. A revised version of the paper presented at the 1999 symposium in Centennial of Ragnar Frisch. The Norwegian Academy of Science and Letters, Oslo.
69. Pesaran MH, Shin Y, Smith RJ. Bounds testing approaches to the analysis of level relationships. Journal of Applied Econometrics. 2001;16:289-326.
70. Harris R, Sallis R. Applied time series modelling and forecasting. 1<sup>st</sup> ed. Wiley, West Sussex; 2003.
71. Brooks C. Introductory econometrics for finance; 2<sup>nd</sup> edition. ICMA centre University of Reading; Cambridge university press; New York; 2008.
72. Gujarati DN, Porter DC. Basic Econometrics; International 5<sup>th</sup> ed. McGraw Hill Publication; 2009.

© 2017 Idris and Bakar; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*  
*The peer review history for this paper can be accessed here:*  
<http://sciencedomain.org/review-history/19247>