



## **GOVERNMENT EXPENDITURE AND ECONOMIC GROWTH IN NIGERIA: AN EMPIRICAL INVESTIGATION**

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### **Abstract**

An all-encompassing and long-standing economic growth has become an apprehension for several policymakers for decades, and government spending has been deliberated whether it is able to speed up economic growth. The study employed panel data, which encompasses a combination of time series and horizontal section data. In the study, the impact of government expenditure on economic growth in Nigeria was examined for the period 1985-2015. The data set taken from World Bank and consists of economic growth and government expenditure between 1985-2015. The ordinary least square (OLS) method was used to test the influence of government expenditure on economic growth in Nigeria, and the findings of the study reveal that there is a positive relationship between recurrent expenditure and economic growth. The study also found a positive relationship between capital expenditure and economic growth. The study therefore concludes that based on the empirical evidence deposited by the current investigation this study concludes that government expenditures significantly and positively influence economic growth in Nigeria, and recommends amongst others that government should ensure that capital expenditures and recurrent expenditures are properly managed in a manner that it will raise the nation's production capacity to reflect positive economic growth in Nigeria.

**Key words:** Capital expenditure, Economic growth, Government expenditure, Recurrent expenditure.

**Paper type:** Research paper

## INTRODUCTION

An inclusive and long-term economic growth has become a concern for many policymakers for decades and government spending has been debated whether it is able to accelerate economic growth. Government spending has been used extensively as fiscal policy by the government in many countries, but its effect on economic growth is questionable. Two well-examined economic hypotheses have been used by the economic analyst as a base to debate the effect of government spending in economic growth, i.e. Wagner's law and Keynesian hypothesis.

In almost all economies today government intervenes in undertaking fundamental roles of allocation, stabilization, distribution and regulation especially where or when market proves inefficient or its outcome is socially unacceptable. And also governments particularly in developing economies intervene to achieve macroeconomic objectives such as economic growth and development, full employment, price stability and poverty reduction. Theoretically, both Keynesians and neoclassical economists provided varieties of policies and tools of government intervention, which are broadly grouped into fiscal and monetary. The choice of a policy or tool depends on how relatively effective it is, in achieving the set of macroeconomic objectives based on theory or evidence. Thus, it is important to carry out country specific study so as to identify the efficacies of different policy instruments there is plethora of studies on the relationship between government expenditure and economic growth. While Studies like Bose, et al (2007), Haque and Kim (2003), Sutherland et al (2009), Semmler et al (2007) and Delorme et al (1999) found significant positive growth effects of government expenditure, Others especially on the rich countries designated that large government size is detrimental to economic growth (Schaltegger & Torgler, 2006; Abu- Badaer & Abu Quarn, 2003).

Various empirical studies on the relationship between government expenditure and economic growth also arrived at different and even conflicting results. Some studies suggest that increase in government expenditure on socio-economic and physical infrastructures impact on long run growth rate. Similarly, expenditure on infrastructure such as road, power etc. reduces production costs, increase private sector investment and profitability of firms, thus ensuring economic growth (Roux, 1994; Okojie, 1995; Morrison & Schwartz, 1996). On the other hand, observations that growth in government

spending, mainly based on non-productive spending is accompany by a reduction in income growth has given impetus to the hypothesis that the greater the size of government intervention the more negative is its impact on (Glomm & Ravikumar, 1997; Abu & Abdullah, 2010).

Thus, the grounds for allocating government expenditure to areas that are most likely to contribute to growth need to be obviously established empirically. Regrettably, most of the available studies are cross- country studies. This present study is a country specific study that focuses on Nigeria, where there is growing contest over “Fiscal Space” by various sectors, regions and different arms of government.

The main objective of this study is to examine and analyze the impacts of the composition of government expenditure on economic growth in Nigeria. Specifically, the study explores the relative impacts of different components of government expenditure on economic growth. Resulting from this, the study provides a guide for allocation of public resources to stimulate higher growth. The study presents Nigeria’s case by examining the effects of government expenditure composition on economic growth.

The data used in the study covered the period between 1985-2015. The sources of the data include; Central Bank of Nigeria Statistical Bulletin and National Bureau of Statistics. The remainder of the paper is organized into four sections. Following this introduction is section two which presents the review of empirical literature; section three presents the theoretical framework and methodology. Section four focuses on the results and analysis of the estimated models. Section five presents the conclusion

### **Statement of the Problem**

Despite the rise in government expenditure in Nigeria over these years, there are still public outcries over decaying infrastructural facilities. Also, merely few empirical studies have taken holistic examination of the effect of government expenditure on economic growth regardless of its importance for policy decisions. More so, for Nigeria to be ready in its quest to become one of the largest economies in the world by the year 2020, determining the effect of public expenditure on economic growth is a strategy to fast-track growth in the nation’s economy. A crucial question that requires an urgent answer is whether the government aggregated, disaggregated and sectoral expenditures impact positively on economic growth of Nigeria. This study attempts to provide an answer to

this question by empirically estimating the effects of government expenditure on economic growth in Nigeria.

## **LITERATURE REVIEW AND HYPOTHESIS**

### **Theoretical Framework**

The theoretical framework for this study is anchored on Ernest Engel's theory of public expenditure, Musgrave theory of Public expenditure, the Keynesian theory, and the Endogenous growth theory

### **Ernest Engel's Theory of Public Expenditure**

Ernest Engel was also a German economist and a contemporary of Adolph Wagner in the 19th century. Engel posited over a century ago that the composition of the consumer budget changes as family income increases. A smaller share comes to be spent on definite goods such as work clothing and a bigger share on others, such as for coats, expensive jewelries etc. As average income increase, smaller charges in the consumption pattern for the economy begin to take place. At initial stages of national development, there is the necessity for overhead capital such as roads, harbors, power installations, pipe-borne water etc. however as the economy developed, one would expect the public share in capital formation to decline over time. Individual expenditure pattern is thus compared to nation expenditure and Engel finding is referred to as the declining portion of outlays on foods

### **Musgrave Theory of Public Expenditure**

The Musgrave theory of public expenditure was propounded by Musgrave as he found changes in the income elasticity of demand for public services in three ranges of per capita income. Musgrave speculates that at low levels of per capita income, demand for public services tends to be very low, this is so because such income is dedicated to satisfying primary needs and that when per capita income starts to rise above these levels of low income, the demand for services supplied by the public sector such as health, education and transport starts to rise, thereby forcing government to increase expenditure on them. Musgrave observes that at the high levels of per capita income, typical of

developed economics, the rate of public sector growth tends to fall as the more basic wants are being satisfied.

### **The Keynesian Theory**

Of all economists who discussed the relation between public expenditures and economic growth, Keynes was among the most noted with his apparently contrasting viewpoint on this relation. Keynes regards public expenditures as an exogenous factor which can be utilized as a policy instruments promote economic growth. From the Keynesian reflection, government expenditure can contribute positively to economic growth. Hence, an increase in the government consumption is likely to lead to an increase in employment, profitability and investment through multiplier effects on aggregate demand. As a result, government expenditure augments the aggregate demand, which provokes an increased output depending on expenditure multipliers.

### **The Endogenous Growth Theory**

The basic improvement of endogenous growth theory over the previous models is that it explicitly tries to model technology (that is, looks into the determinants of technology) rather than assuming it to be exogenous. Mostly, economic growth comes from technological progress, which is essentially the ability of an economic organization to utilize its productive resources more successfully over time. Much of this ability comes from the process of learning to activate newly created production facilities in a more productive way or more generally from learning to cope with rapid changes in the structure of production which industrial progress must imply (Verbeck, 2000).

### **Government Expenditure**

Wagner's Law of public expenditure is one of the earliest theories which took economic growth as the central determinant of growth in public sector expenditure. Dutt and Ghosh (1997) quoted by Verma and Arora (2010) said that Wagner did not present his law in a mathematical form. Hence over the years different authors used different mathematical forms for testing this government expenditure and economic growth. According to Wagner, higher economic growth leads to more private sectors which lead to additional government expenditure for regulation a bigger private sector. On the other hand, a rise in real income of the people would increase the demand for basic social needs like education and health. The government can provide these facilities more efficiently than

the private sector. Lastly, to reduce the monopolistic tendency in a country and to increase the efficiency of the economy the government will increase investment in places like roads highways and railway services. There are at least six versions of the Wagner's law. Demibras (1999) in his paper showed the six versions of the Law.

### **Government Expenditure and Economic Growth**

Government expenditure is an area that can have direct importance for economic growth. Public expenditure in basic infrastructure is an essential precondition for capital accumulation in the private sector. Public investment in education and health facilities improves human capital formation. However, public investment is also an area where grossly unproductive white elephants can be found.

While the contribution of government expenditure to economic growth has been invariably assumed theoretically, empirical studies based on aggregate government expenditure data have found only weak links between public investment and economic growth. Using cross-country data to test the relationship between government investment and economic growth, some recent research in this area has found only a statistically insignificant relationship (Barro (1991)). Other research has found that capital spending on education, health, and housing has a positive effect on economic growth (Diamond (1989)). Some others have used U.S. data to test the effects of public investment on the productivity of existing capital stock, private capital spending, and employment. While many studies have found positive effects, the effect of public investment on private capital spending appears to be strongly influenced by the extent of crowding out (for example, Aschauer (1989a) and (1989b), Munnell (1990), and Holtz-Eakin (1992)), while cross-country studies including the developing nations have failed to produce robust statistical results linking public investment and growth (Levine & Renelt (1992)).

Sustained and equitable economic growth is clearly a predominant objective of public expenditure policy. Many public programs are specifically aimed at promoting sustained and equitable economic growth. Government expenditures can--and have--played an important role in physical and human capital formation over time. Appropriate government expenditures can also be effective in boosting economic growth, even in the short run, when limits to

infrastructure or skilled manpower become an effective constraint to an increase in production.

### **Empirical Review**

A number of studies have focused on the relation between government expenditure and economic growth in developed and developing countries like Nigeria. The results varied from one study to another. For example:

Rana (2017) empirically analyzed the relationship between economic growth and government expenditure from the perspective of Bangladesh for the period 1973 to 2012. The results indicate a significant long run relationship between government expenditure and gross domestic product for Bangladesh and the analysis also supports the Wagner's hypothesis.

Chude and Chude (2013) investigate the effects of public expenditure in education on economic growth in Nigeria over a period from 1977 to 2012, with particular focus on disaggregated and sectoral expenditures analysis. Government expenditures are very crucial instruments for economic growth at the disposal of policy makers in developing countries like Nigeria. This study aimed at determining the effect of public expenditure on economic growth in Nigeria using Error Correction Model (ECM). The study used Ex-post facto research design and applied time series econometrics technique to examine the long and short run effects of public expenditure on economic growth in Nigeria. The results indicate that Total Expenditure Education is highly and statistically significant and have positive relationship on economic growth in Nigeria in the long run. The study concludes that economic growth is clearly impacted by factors both exogenous and endogenous to the public expenditure in Nigeria. It is therefore recommended that, there is need for government to decrease its budgetary allocation to recurrent expenditure on education and focus more on capital expenditures so as to accelerate economic growth of Nigeria and that Government should direct its expenditure towards the productive sectors like education as it would reduce the cost of doing business as well as raise the standard living of poor ones in the country.

Attari and Javed (2013) explored the relationship among the rate of inflation, economic growth and government expenditure in one of developing countries in Asia, i.e. Pakistan, by disaggregating government expenditure in to the government current expenditure and the government development expenditure. The study used the time series data during the

period 1980-2010 and employed a range of econometric techniques. The result indicates that the coefficient of government current expenditure is statistically insignificant; however the coefficient of government development expenditure is statistically significant. It illustrates that the government expenditures yield positive externalities and linkages. In the short run, the rate of inflation does not affect the economic growth but government expenditures do so. At the end, they argued that a lot of issues encountered by the government of the developing countries, like utilization and the miss-allocation of resources, and if the government expenditures are utilized in the excess amount, the excessive capital expenditures become unproductive at the margin.

Wahab (2011) studied the effects of aggregate and disaggregate government spending on economic growth by means of a worldwide sample. The study employed aggregate government spending, by utilizing data from 97 developing and developed countries for the period 1960 – 2004, whereas for the disaggregate government spending, the study used data from 1980 to 2000 for 32 countries only. By employing symmetric and asymmetric model specifications, the study found that aggregate government spending has positive output growth effects particularly in periods of its below-trend growth. Additionally, the study found that government consumption spending has no significant output growth effects, but government investment spending has positive output growth effects particularly when its growth falls below its trend-growth; this favorable effect turns negative when government investment spending growth exceeds its trend-growth.

Butkiewicz and Yanikkaya (2011), using a larger sample, found a disparity with the work of Wahab (2011). The study investigated the impact of government expenditures on economic growth that highlights how government effectiveness influences the efficiency of government spending. Over 100 developed and developing nations are incorporated in the data set. The Seemingly Unrelated Regression (SUR) method was used to estimate the model. The study found that total expenditures have a negative growth effects, however the result is contradictory across sample. Consumption expenditures are found to have a damaging growth effect in developing nations with ineffective governments and these countries benefited from the capital expenditures. The study contends that, this is due to the ineffective governments in developing nations that discourage private investment, thus public investment become the substitute for private investment. The study recommends that developing nations should limit their governments' consumption spending and invest in infrastructure to stimulate growth.

Taiwo and Abayome (2011) investigated the effects of government spending on the growth rates of real GDP in Nigeria over the last decades (1970-2008), using



econometrics model with Ordinary Least Square (OLS) technique. The paper test for presence of stationary between the variables using Durbin Watson unit root test. The result reveals absence of serial correlation and that all variables incorporated in the model were non-stationary at their levels. In an attempt to establish long-run relationship between public expenditure and economic growth, the result reveals that the variables are co integrated at 5% and 10% critical level. The findings show that there that there is a positive relationship between real GDP as against the recurrent and capital expenditure. It could therefore be recommended that government should promote efficiency in the allocation of development resources through emphasis on private sector participation and privatization\commercialization.

Wu et al. (2010), which is a published study with the largest sample and longest period of time, re-examine the causal relationship between government expenditure and economic growth by conducting the panel Granger causality test and employing a panel data set which embraced 182 countries over the period of 1950 to 2004. The study discovered that, the result strongly supported both Wagner's law and the hypothesis that government spending is helpful to economic growth regardless of how the government size/spending and economic growth is measured.

Nurudeen and Usman (2010) studied government expenditure and economic growth in Nigeria. by means of the co-integration and error correction methods and employed time-series data for the period 1979 – 2007. The study developed their model based on Keynesian and endogenous growth model and found that total capital expenditure, total recurrent expenditures, and government expenditure on education have negative effect on economic growth. Conversely, rising government expenditure on transport and communication results to an increase in economic growth.

Abu and Abdullah (2010) investigates the relationship between government expenditure and economic growth in Nigeria from the period ranging from 1970 to 2008, by means of disaggregated analysis in an attempt to unknot the impact of government expenditure on economic growth. Their results reveal that government total capital expenditure, total recurrent expenditure and Education have negative effect on economic growth. On the contrary, government expenditure on transport, communication and health result in an increase in economic growth. The study recommends that government should increase both capital expenditure and recurrent expenditure including expenditure on education as well as ensure that funds meant for development on these sectors are properly utilized. The study also recommends that government should encourage and increase the funding

of anti-corruption agencies in order to tackle the high level of corruption found in public offices in Nigeria.

Olopade and Olepade (2010) assess how fiscal and monetary policies influence economic growth and development. The essence of their study was to determine the components of government expenditure that enhance growth and development, identify those that do not and recommend those that should be cut or reduce to the barest minimum. The study employs an analytic framework based on economic models, statistical methods encompassing trends analysis and simple regression. They found no significant relationship between most of the components of expenditure and economic growth

Hsieh and Lai (1994) examined the relationship between government expenditure and economic growth in G-7 countries, namely Canada, France, Germany, Italy, Japan, UK, and USA. The outcome suggested that the relationship between government spending and growth can vary significantly across time. The found no vigorous evidence of positive effect of government spending on growth, neither have they found the vigorous negative effect. The study concludes that public spending is found to be contributing at best a small proportion to the growth of an economy.

Alexander (1990) applied OLS method for sample of 13 Organization for Economic Cooperation and Development (OECD) countries panel during the period ranging from 1959 to 1984, and found among others, that growth of government spending has significant negative impact on economic growth.

From the review of literature, the following hypotheses were raised:

H01: Capital expenditure does not significantly influence economic growth

H02: Recurrent expenditure does not significantly influence economic growth

## **METHODOLOGY**

The study employed panel data, which consists of a combination of time series and horizontal section data. In the study, the influence of government expenditure on economic growth and in Nigeria was examined for the period 1985-2015. The logarithms of the data were taken and government expenditures throughout the study was expressed

as REC (recurrent expenditure and CAP (capital expenditure), whereas economic growth is expressed as GDP. The data set taken from Nigerian Statistical Bureau consists of GDP, recurrent expenditure and capital expenditure rates of the country between 1985-2015 years. The ordinary least square (OLS) method was used to test the influence of government expenditure on economic growth in Nigeria

### Model Specification

$GDP = \alpha_0 + \beta_1 REC + \beta_2 CAP + \mu$  Where  $\alpha_0$  = Autonomous income  $\beta_1$  and  $\beta_2$  are parameters GDP = Gross Domestic Product REC = Recurrent Expenditure CAP = Capital Expenditure  $\mu$  = Error Term.

## EMPIRICAL RESULTS AND DISCUSSION

### Check Computation

a.  $\text{LogGDP} = \text{Log } \beta_0 + \text{Log } \beta_1 \text{REC} + \text{Log } \beta_2 \text{CAP} + \mu$   
 $\text{LogGDP} = 1.906842 + \text{Log } 573402 \text{REC} + \text{Log } 0.465034 \text{CAP} + \mu$  (0.446915) (0.85944) (0.080428) a.  
Coefficients The slopes of the coefficient are in line with a priori (predictions). The Coefficients are positive and significant at 1% level. That is a percentage change in capital expenditure will induce a 0.465% unit change in GDP while a percentage change in recurrent expenditure will induced a 0.573% unit change in GDP.

### b. Goodness of Fit Test (R<sup>2</sup>)

The R<sup>2</sup> test is used to show the total variation of the dependent variable that can be explained by the independent variable. The R<sup>2</sup> is equal to 0.945787 that is 94.5787% of the dependent variable (Gross Domestic Product can be explained by the change in recurrent and capital expenditure in the economy within the period under review.

### c. The Durbin Watson Test

The Durbin Watson statistic is used to test the existence serial correlation between the variables. Durbin Watson is equal to 2.088658, implies the absence of serial correlation.

This is because the closer the DW value is to two, the better the evidence of the absence of serial correlation. There is no evidence of positive first order serial correlation.

#### d. Test of Significance

##### (i) Recurrent expenditure

T-cal = 6.7

T-tab = 2.03

Since T-cal is greater than T-tab, the null hypothesis is rejected suggesting that there is a positive relationship between recurrent expenditure and economic growth.

(ii) Capital expenditure T-cal = 5.8 T-tab = 2.03 Since T-cal is greater than T-tab the null hypothesis is rejected and alternative hypothesis accepted, declaring that there is a positive relationship between capital expenditure and economic growth.

#### Discussions

The outcome of the analysis indicates that something is definitely right either with the way government expands budget or with the ways and manners it has always been computed. In the last decade, Nigerian economy has metamorphosed from the level of million naira to billion naira and postulating to trillion naira on the expenditure side of the budget. This will not be surprising if the economy is experiencing surplus or equilibrium on the records of balance of payment. Better still, if there are infrastructures to improve commerce with the system or social amenities to raise the welfare of average citizen of the economy. All these are there, because Nigeria always have a very high estimated expenditure..

Hence, in order to justify reasons for so much expansionary effects on the way and manner government expenditures either capital or recurrent expenditure have been geometrically computed in order to finance the infrastructural facilities towards improving commerce with the system or social amenities so as to raise the welfare of average citizen and boost the economy. This present study empirically established that there is relationship a linkage between government expenditure either capital or recurrent expenditure and economic growth in Nigeria, the surplus, deficit or equilibrium position on Nigeria balance of payment are due to the effects created by government spending, as the country is expanding its public expenditure on provision of infrastructural facilities as well as administration financing, the economy has been growth-enhancing, and

government expenditure on provision of infrastructural facilities as well as administration financing determines the pattern and form of growth in output of the economy. These assertions corroborates Nurudeen and Usman (2010) who found that total capital expenditure, total recurrent expenditures, and government expenditure on education have negative effect on economic growth, Wu et al (2010) who discovered that government spending is helpful to economic growth regardless of how the government size/spending and economic growth is measured. The findings of this study also, supports the findings of Taiwo and Abayomi (2011) which show that there is a positive relationship between real GDP as against the recurrent and capital expenditure

### **Conclusion and Recommendation**

This work has so far explained the theories of government expenditure by relevant scholars such as Wagner, Keynes, Engel and Musgrave, and established that there is a great impact of government expenditure on economic growth. It can therefore be said that, the higher the government spends, the higher the level of economic growth (*ceteris paribus*) and the lower the government spends, the lower the level of economic growth of the nation. By and large, based on the empirical evidence deposited by the current investigation this study concludes that government expenditures significantly and positively influence economic growth in Nigeria.

In the light of the researcher's findings, the following recommendations are presented;

1. Government should ensure that capital expenditures and recurrent expenditures are properly managed in a manner that it will raise the nation's production capacity to reflect positive economic growth in Nigeria.
2. Government should direct its expenditure towards the productive sectors like education as it would reduce the cost of doing business as well as raise the standard living of poor ones in the country.

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