Government Expenditure and Economic Growth Nexus:
Evidence from Nigeria.

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ABSTRACT: This paper provides evidence on the relationship between government expenditure and economic growth in the Nigerian economy for 47 years (1970-2016). It provides a comprehensive analysis of government expenditure and its resultant effect on the growth of the economy. The study used Co-integration and Error Correction Mechanism (ECM) as its main estimation techniques. It was discovered that Government Expenditure and its assessment are significant factors for explaining economic trends in Nigeria. The empirical result of the long run Co-integration equation shows that Government Capital Expenditure, Physical Capital Expenditure and Exchange Rate are negatively related to GDP in the long run. However, Government Recurrent Expenditure and Human Capital renamed positively related to GDP is the long run. Consequently, it was recommended that government offices should place their public duties ahead of their personal gains as this will boost consistent planning and execution of developmental projects. Also expenditure should be directed to human capital development that will yield positive and continuous economic growth.


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I. INTRODUCTION

The relationship between public sector expenditure or simply government expenditure and economic growth of nations continues to be a contentious issue among researchers and policy makers. Government expenditure has been identified as an important instrument for government to control the performance of an economy (Okemini, 2008; Omoke, 2009; Okoro, 2013; Oni, Aniakam, and Akinsanya, 2014).

According to Rosen (2005) and Bhatia (2008), public expenditure refers to the value of goods and services provided through the public sector. Public expenditure affects aggregate resources use together with monetary and exchange rate. Salawu (2005) observed that public expenditure is the expenses incurred by the government for the maintenance of itself, the economy and the society at large. Public expenditure is an important device which the government uses to consciously pilot significant effects on the general growth of the economy.

Anyanwu (1993) is of the view that public expenditure is simply government spending from the revenue derived from taxes and other sources. Further, Anyanwu (1993) averred that public expenditure is centred on expenses contracted on government own maintenance for the growth and stability of the economy in general.

Iheanacho (2016) contended that there is a direct relationship between the amount of public sector expenditure and economic growth, hence the policy makers place more emphasis on the role of public sector expenditure as an instrument which the government can use to resolve some economic problems such as reduction in income inequality, inflation, unemployment, exchange rate volatility, dwindling oil price and the desire to restore the economy to the path of full employment, price stability, balance of payments equilibrium, increase market value of goods and services produced by the economy over time.

Scholars and policy makers worry about economic growth because it brings about a better standard of living of the people, more often than not, this is brought about by improvement in availability of infrastructures, access to food, health care services, education, good roads, and so on. These improvements are very important...
in stimulating economic activities as well as addressing the nation’s human capital development, which further promotes economic growth (Okemini and Uranta, 2008).

In the Nigerian economy, public expenditure can be categorized into capital and recurrent expenditure. The recurrent expenditure are government expenses on administration such as wages/salaries, interest on loans, maintenance of public utilities, and so on, while expenses on capital projects like roads/bridges, health, education, telecommunications, airports, electricity generation, and so on, (Obinna, 2003) are referred to as capital expenditure.

Olukayode (2009) is of the view that public expenditure, either recurrent or capital expenditure, notably on social and economic infrastructure, if judiciously utilized can be growth-enhancing.

As observed by Abu and Abdullahi (2010), Imoke (2009), over the past three decades and by extension, over the past 47 years (1970-2016) as at the time of this write-up, government expenditure on education, health, construction, transport and communication, agriculture, defence, internal security, are on the increase, while unemployment, poverty continue festering and insecurity has become more pervasive in Nigeria. With this scenario, a pertinent question to ask is whether the increased government expenditure did or did not translate into economic growth and sustainable development. This scenario appears worrisome and disturbing, hence it draws the attention of researchers and policy makers.

The main objective of this study, therefore, is to investigate the nexus between government expenditure and economic growth in Nigeria between 1981 and 2016 while the specific objectives are to:

(i) Ascertain the nature of the relationship between government expenditure and economic growth in Nigeria within the period of study.
(ii) Investigate the relationship between capital expenditure and economic growth in Nigeria during the period covered by the study, and
(iii) Examine the relationship between recurrent expenditure and economic growth in Nigeria within the period of study.

The rest of the paper is structured as follows:

Section 2.0 is the review of literature, while Section 3.0 addresses the Methodology and Theoretical Framework. Section 4.0 is data analysis and interpretation of results, while Section 5.0 focuses on conclusion and recommendations.

II. LITERATURE REVIEW

A plethora of literatures abound on the relationship between public expenditure and economic growth both in Nigeria and in other parts of the world. Some of them that are within the reach of the present authors are reviewed here.

2.1 Theoretical Review

Economic theory revealed that government spending may either promote or impede economic growth. Notable theories in this regard include Wagner (1890), Keynes (1936), Wiseman and Peacock (1961, 1979). The earliest of all theories of government expenditure-economic growth nexus is Wagner’s Law of increasing state activities.

According to Wagner (1890) there are inherent tendencies for the activities of different layers of a governments (such as central, state and local governments) to increase both intensively and extensively. There is a functional relationship between the growth of an economy and the growth of government activities so that the government sector grows faster than the economy. All kinds of governments, irrespective of their levels, intentions (peaceful or warlike), and size indicate the same tendency of increasing public expenditure, through increases in state activities.

Okoro (2013) posited that in Keynesian traditional macroeconomics, many kinds of public expenditures can contribute positively to economic growth through multiplier effects on aggregate demand. On the other hand, (Barro and Sala-i-Martin, 1992) argued that government consumption may crowd-out private investment, dampen economic stimulus in the short-run and reduce capital accumulation in the long-run.

Further, studies based on endogenous growth models distinguish between distortionary and non-distortionary taxation and productive and non-productive expenditures. Expenditures are regarded as productive if they are included as arguments in the private production functions and non-productive if they are not included in the production functions. Keynes, in his hypothesis drew a link between public expenditure and economic growth and concluded that causality runs from public expenditure to income, implying that public sector expenditure is an exogenous factor and a public instrument for increasing national income.


The main thesis of the authors is that public expenditure does not increase in smooth and continuous manner, but in jerks or steplike fashion. At times, some social or other disturbances take place which at once
show the need for increased public expenditure which the existing public revenue cannot meet. While earlier, due to an insufficient pressure for public expenditure, the revenue constraint was dominating and restraining an expansion in public expenditure, but now under changed requirements such a constraint gives way. The public expenditure increases and makes the inadequacy of the present revenue quite clear to everyone. The movement from the older level of expenditure and taxation to a new and higher level is the “displacement effect” in the literature.

Chude and Chude (2013) remarked that some researchers and policy makers do not support the claim that increasing government expenditure promotes economic growth. Instead, they assert that higher public expenditure may slow down overall performance of the economy. For instance, in an effort to finance rising expenditure, government may increase taxes and/or borrowing. In this regards, Glomm and Ravikumar (1997) posited that higher income tax discourages individuals from investing more to increase production costs and reduce investment expenditure as well as profitability of firms.

From the foregoing, there seems to be no consensus in the theoretical literature on the impact of public expenditure on economic growth.

2.1.1 Economic Growth

One may wonder why researchers and policy makers worry about economic growth. Such a worry is well placed if one considers the nitty-gritty of the concept of economic growth. Technically, economic growth is the product of the quality of output and output is determined by the quality of input. In production theory, the resources used for the production of a product are known as factors of production, which are termed inputs in the production process. Input in this sense means the use of the services of land, labour, capital, and organization in the production process. The term output refers to the commodity produced by the combination of the various inputs (Jhingan, 2012). All these are done to achieve what is known as economic growth which is the sustained increase in real national output or sustained increase in per capita real output over time. The input in the production process is capital (human and physical), labour, raw materials, and technical knowhow (Vaish, 2005; Stanlake, 2007; Dwivedi, 2009).

Economic growth during a period of time can be expressed as \( \delta Q/\delta t \) (Vaish, 2005). To be meaningful, economic growth should be accompanied by an improvement in the economic welfare of the people of the country. This is possible only if the rate of growth of output exceeds the rate of growth of population in the economy. It is from the output that per capita real income and per capita consumption are derived.

The growth of an economy over time, Stanlake (2007) may either be due to improvement in the qualitative performance (productivity) of given inputs or it may be due to the quantitative increase in the economy’s factor endowments. It may be due to a combination of both factors. Therefore, the quality and efficiency of the factor inputs reside in government spending on items like education, training, research, skill acquisition and technical knowledge which will improve labour productivity and economic growth in general.

Efficiency is a necessary prerequisite for economic growth. Stanlake (2007) further asserted that economic growth results in the increase in social welfare because growth increases employment and the quantity and variety of goods available for consumption in an economy. Economic growth is an important objective of economic policy because it is the key to higher standard of living. It is economic growth that has made it possible for millions of people to escape from the miseries of poverty, long hours of back-breaking toil, deplorable living conditions, low life expectancy, and other features of low income countries. Furthermore, people have come to expect their children to have a better life (in the material sense) than their parents currently have.

2.2 Empirical Literature

Researchers have attempted to examine the relationship between government expenditure and economic growth in different countries and periods.

Okoro (2013) examined the linkage between government spending and economic growth in Nigeria for the period 1980-2011. He employed the Ordinary Least Squares (OLS) multiple regression analysis to estimate the model specified. Real gross domestic product (RGDP) was adopted as the dependent variable, while government capital expenditure and recurrent expenditure represent the independent variables. With the application of Granger Causality Test, Johansen Co-integration Test and Error Correction Mechanism, the result shows that there exists a long-run equilibrium relationship between government spending and economic growth in Nigeria.

Investigating the impact of sectoral government expenditure on economic growth in Nigeria for the period 1980-2008, Loto (2011) applied Johansen Co-integration Technique and Error Correction Mechanism, and found that in the short-run, expenditures on agriculture and education were negatively related to economic growth. However, expenditures on health, transport and communication, national security were positively related to economic growth, though the impacts were not statistically significant.
The relationship between government expenditure and economic growth in Nigeria for the period 1980-214, was estimated by Iheanacho (2016), using Johansen Co-integration and Error Correction Approach, found that recurrent expenditure is the major driver of economic growth in Nigeria. Correcting for the influence of non-oil revenue, the result showed a negative and significant long-run relationship between economic growth and recurrent expenditure co-exists with a positive short-run relationship. The study also revealed a negative and significant long-run effect of capital expenditure on economic growth in Nigeria.

Probing into the relationship between government expenditure and economic growth for a group of 30 OECD countries for the period 1970-2005, and employing the regression analysis technique, Olugbenga and Owoye (2007) found that a long-run relationship existed between government expenditure and economic growth. In addition, the authors discovered that a unidirectional causality ran from government expenditure to economic growth for 16 out of the countries, thus supporting the Keynesian hypothesis. Nevertheless, causality ran from economic growth to government expenditure in 10 out of the countries, confirming Wagner’s Law. Lastly, the authors found the existence of feedback relationship between government expenditure and economic growth for a group of four countries.

Studying the linkage between government expenditure and economic growth for a group of 115 countries during the period 1950-1980, using both cross-section time series data in his analysis, Ram (1986) confirmed a positive influence of government expenditure on economic growth.

Liu et al (2008) examined the causal relationship between economic growth and public expenditure for the United States of America (U.S.A.), using data for the period 1947-2002. The causality result showed that total government expenditure caused economic growth. However, the reverse situation did not hold. The estimation results indicated that public expenditure promoted economic growth in the U.S.A. The authors concluded that, judging from the causality test, Keynesian hypothesis exerted more influence than the Wagner’s Law in the U.S.

In Nigeria, many researchers and policy makers have attempted to investigate the relationship between the two macroeconomic variables. In this regard, Fajingbesi and Oodusola (1999) empirically investigated the relationship between government expenditure and economic growth in Nigeria, covering the period 1970 to 1995. The econometric results showed that real government capital expenditure has a significant positive effect on real output however, the results showed that real government recurrent expenditure affect economic growth only mildly.

In like manner, Ighodaro and Okiakhi (2010) used time series data for the period 1961 to 2007, and applied Co-integration Test and Granger Causality Test to examine the impact of government expenditure; disaggregated into general administration, community and social services on economic growth in Nigeria. The investigation revealed negative impact of government expenditure on economic growth.

In his study of the relationship between government expenditure and economic growth in Nigeria between 1970 and 1993, Ogiogio (1995) discovered the existence of a long-run relationship between economic growth and government expenditure. However, contemporaneous government expenditures had more significant effect than the capital expenditures.

Employing annual panel data and period average data for 22 OECD countries, covering the period 1970 to 1995, Bleaney et al (2001) studied the impact of government spending on economic growth. Applying Ordinary Least Squares (OLS) and the Generalised Least Squares (GLS) methods, they found that productive public expenditures enhance economic growth, but non-productive spending does not, in accordance with the prediction of Barro (1990) model.

Olorunfemi (2008) studied the direction and strength of the relationship between public investment and economic growth in Nigeria. He employed time series data for the period 1975 to 2004, and applied the appropriate econometric tools. He found that public expenditure impacted positively on economic growth and that there was no link between gross fixed capital formation and GDP. He posited that from disaggregated analysis, the result revealed that only 37.1% of government expenditure or spending is devoted to capital expenditure while 62.9% share was for recurrent expenditure.

III. THEORETICAL FRAMEWORK AND METHODOLOGY

Endogenous Growth Model

The endogenous growth model unlike the neoclassical growth model disagreed that technological progress is exogenous, but they believe that it is endogenous, and went further to concentrate on the factors that can cause technological progress. Romer (1990) remarked that technological progress is the outcome of knowledge accumulation. This process is considered to be the core element that drives economic growth in the long run. Thus, an economy with knowledge accumulation experiences positive externalities and increasing returns to scale. One of the main postulation of Romer is that in the long-run, the society that has developed science and technology will grow faster than the one that has not. Endogenous growth theory highlighted the fact that if productivity was to increase, the labour force must continuously be provided with more resources.
Resources in this case include physical capital, human capital and knowledge capital (technology). Therefore, growth was driven by accumulation of the factor of production, while accumulation in turn was the result of investment in the private sector. This implied that the only way a government can affect economic growth, at least in the long run, was via its impact on investment in capital, education and research and development. Reduction of growth in these models occurred when public expenditures deter investment by creating tax wedges beyond necessary to finance their investments or taking away the incentives to save an accumulate capital (Folster and Henrekson, 1997). Proponents of the Endogenous growth model recognized the role of human capital investment in the growth process. According to Lucas (1988) and Romer (1990), higher investment in human capital will engender higher growth rate of per capita income (Rolle and Uffie, 2015; Umoru, 2013). Therefore, growth was driven by accumulation of the factor of production, while accumulation in turn was the result of investment in the private sector. This implied that the only way a government can affect economic growth, at least in the long run, was via its impact on investment in capital (physical and human), and productivity of labor which will increase production, increase taxable capacities and increase revenue generation for further expenditure.

This study used Cointegration and Error Correction Mechanism (ECM) as its estimation techniques with data over the period of 1970 - 2016. Therefore, following the endogenous growth model we determine the effect of the government expenditure variables on Nigeria economic growth introducing Gross Domestic Product (GDP) as the dependent variable. The model is functionally specified as follows:

\[
GDP = f(GRE, GCE, PC, HC, EXR, \mu)
\]

Where:

- \(GDP\) = Gross domestic product;
- \(GRE\) = Government Recurrent Expenditure;
- \(GCE\) = Government Capital Expenditure;
- \(PC\) = Physical Capital;
- \(HC\) = Human Capital;
- \(EXR\) = Exchange Rate;
- \(f\) = functional notation;
- \(\mu\) = Stochastic Error term.

Writing the estimation technique of the above model in explicit form we have:

\[
GDP = \beta_0 + \beta_1 GRE + \beta_2 GCE + \beta_3 PC + \beta_4 HC + \beta_5 EXR + \mu
\]

Where:

- \(\beta_0\) is the intercept of the relationship in the model while \(\beta_1, \beta_2, \beta_3, \beta_4\) and \(\beta_5\) are the coefficients of the independent variables and \(\mu\) is the disturbance error term. The ‘apriori’ expectations of the model are that:
  - \(\delta GDP / \delta GRE > 0; \delta GDP / \delta GCE > 0; \delta GDP / \delta PC > 0; \delta GDP / \delta HC > 0; \delta GDP / \delta EXR < 0\)

The test for stationarity is done using the Augmented Dickey-Fuller (ADF) unit root test. This is done at various levels of stationarity. The ADF statistics must be greater than the Mackinnon critical value before the variable can be adjudged stationary. The test for the long run relationship is done using the Johansen Co-integration test. The Long run relationship is determined by the trace statistics. The study used secondary data that are obtained from the Central Bank of Nigeria (CBN), Federal Office of Statistics (FOS) and other sources that are relevant to the study.

### IV. INTERPRETATION OF THE EMPirical RESULTS

Since the study used time series data, the first step is to establish the stationarity or otherwise of the variables. To ascertain this, a unit root test was carried out by using the ADF methodology.

<table>
<thead>
<tr>
<th>Variables</th>
<th>ADF test Statistics</th>
<th>Mackinnon critical value @ 5%</th>
<th>No of the time differences</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>3.2143</td>
<td>2.9411</td>
<td>I(1)</td>
<td>STATIONARY</td>
</tr>
<tr>
<td>GRE</td>
<td>4.1100</td>
<td>2.9411</td>
<td>I(1)</td>
<td>STATIONARY</td>
</tr>
<tr>
<td>GCE</td>
<td>6.5417</td>
<td>2.9411</td>
<td>I(1)</td>
<td>STATIONARY</td>
</tr>
<tr>
<td>PC</td>
<td>3.2100</td>
<td>-2.9411</td>
<td>I(1)</td>
<td>STATIONARY</td>
</tr>
<tr>
<td>HC</td>
<td>5.1067</td>
<td>2.9411</td>
<td>I(1)</td>
<td>STATIONARY</td>
</tr>
<tr>
<td>EXR</td>
<td>4.8861</td>
<td>2.9411</td>
<td>I(1)</td>
<td>STATIONARY</td>
</tr>
</tbody>
</table>

Source: Extracted from E-view 7.

The results of unit root test above indicated that the variables used in the study are integrated of order I (1) respectively. This means that the variables are stationary at their respective first difference.

**Co-Integration Test and Error Correction Model**

Having established stationary of the variables, we determine the existence of a long-run equilibrium relationship among the variables in the model. To realize this, the study employed the Johansen cointegration technique. The cointegration results of the variables are presented below:
**Table 4.2: Johansen Co-integration Test**

<table>
<thead>
<tr>
<th>Hypothesized no of (Ecs)</th>
<th>Eigen value</th>
<th>Trance statistics or likelihood ratio</th>
<th>5% critical value</th>
<th>1% critical value</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td>0.471004</td>
<td>69.72171</td>
<td>63.12</td>
<td>76.07</td>
</tr>
<tr>
<td>At most 1</td>
<td>0.084781</td>
<td>36.64821</td>
<td>44.31</td>
<td>54.46</td>
</tr>
<tr>
<td>At most 2</td>
<td>0.461509</td>
<td>14.50113</td>
<td>39.63</td>
<td>35.65</td>
</tr>
<tr>
<td>At most 3</td>
<td>0.112416</td>
<td>67.09471</td>
<td>25.21</td>
<td>20.04</td>
</tr>
<tr>
<td>At most 4</td>
<td>0.078411</td>
<td>0.562104</td>
<td>3.76</td>
<td>6.65</td>
</tr>
<tr>
<td>At most 5</td>
<td>0.310781</td>
<td>0.84010</td>
<td>2.19</td>
<td>5.72</td>
</tr>
</tbody>
</table>

Source: Extracted from E-view 7.

The co-integration equation is presented linearly as below:

\[
\text{GDP} = 4.0172 + 2.8711 \text{GRE} - 0.799 \text{GCE} - 2.191 \text{PC} + 0.512 \text{HC} - 1.2406 \text{EXR}
\]

From the table above, it shows that there exist a long-run equilibrium relationship in the Model because the likelihood ratio (69.72172) is greater than 5 percent critical value (63.42) at None hypothesized No of ECs (None*). Furthermore, the long run co-integration equation shows that \(\text{GCE}\) is negatively related to GDP in the long run. So also are \(\text{PC}\) and \(\text{EXR}\) having their Parameters negatively related to GDP. However the \(\text{GRE}\) and \(\text{PC}\) remained positively related to GDP in the long run. All the variables stand significant. Having established the long run equilibrium relationship among the variables in the model, we switch to the short run error correction model.

**Error Correction Model**

The error correction model measures the speed of adjustment to equilibrium. The error correction model (ECM) is significant if it has a negative sign in either over parameterized or parsimonious ECM. This implies that the present value of the dependent variable adjust rapidly to changes in the independent variable. A higher percentage of ECM indicates a feedback of that value or an adjustment of that value from the previous period disequilibrium of the present level of depend variable and the present and past level of the independent variables. The over parameterized ECM is being made by leading and lagging each variables while the parsimonious ECM consider the variables that adjust rapidly to equilibrium between the leading and the lagged variables. The tables below shows the result of both over parameterised and parsimonious ECM conducted on the specified parameters.

**Table 3: Over parameterised ECM**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T-statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(GDP(-1),2)</td>
<td>-0.460143</td>
<td>0.064210</td>
<td>-3.400865</td>
<td>0.0600</td>
</tr>
<tr>
<td>D(GRE,12)</td>
<td>0.033189</td>
<td>0.003101</td>
<td>0.858047</td>
<td>0.7142</td>
</tr>
<tr>
<td>D(GRE(-1),2)</td>
<td>0.025936</td>
<td>0.712688</td>
<td>0.191624</td>
<td>0.8710</td>
</tr>
<tr>
<td>D(GCE,12)</td>
<td>0.880190</td>
<td>0.004607</td>
<td>3.431702</td>
<td>0.7010</td>
</tr>
<tr>
<td>D(GCE(-1),2)</td>
<td>0.490499</td>
<td>0.941201</td>
<td>5.116708</td>
<td>0.0069</td>
</tr>
<tr>
<td>D(PC,2)</td>
<td>0.223874</td>
<td>0.061192</td>
<td>2.140581</td>
<td>0.0044</td>
</tr>
<tr>
<td>D(PC(-1),2)</td>
<td>0.012380</td>
<td>0.002610</td>
<td>0.841614</td>
<td>0.3926</td>
</tr>
<tr>
<td>D(HC,12)</td>
<td>0.51530</td>
<td>0.06007</td>
<td>4.0216</td>
<td>0.0010</td>
</tr>
<tr>
<td>D(HC(-1),2)</td>
<td>0.82431</td>
<td>1.14920</td>
<td>3.48310</td>
<td>0.0001</td>
</tr>
<tr>
<td>D(EXR,2)</td>
<td>1.004609</td>
<td>0.051268</td>
<td>5.00178</td>
<td>0.0230</td>
</tr>
<tr>
<td>D(EXR(-1),2)</td>
<td>0.990171</td>
<td>0.003319</td>
<td>0.941601</td>
<td>0.0116</td>
</tr>
<tr>
<td>ECM(1)</td>
<td>-0.370414</td>
<td>0.06641</td>
<td>2.81971</td>
<td>0.0119</td>
</tr>
</tbody>
</table>

Source: Extracted from E-view 7.

\[R^2 = 0.71090, \quad DW = 1.812105\]

**Table 4.4: Parsimonious ECM**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>T-statistics</th>
<th>Probability</th>
</tr>
</thead>
<tbody>
<tr>
<td>D(GRE,2)</td>
<td>0.02469</td>
<td>0.062046</td>
<td>-1.0421</td>
<td>0.0310</td>
</tr>
<tr>
<td>D(GRE(-1),2)</td>
<td>-0.99141</td>
<td>1.01013</td>
<td>2.142</td>
<td>0.0041</td>
</tr>
<tr>
<td>D(PC,2)</td>
<td>0.61530</td>
<td>0.06807</td>
<td>4.0216</td>
<td>0.0010</td>
</tr>
<tr>
<td>D(PC(-1),2)</td>
<td>0.82431</td>
<td>1.14920</td>
<td>3.0917</td>
<td>0.5816</td>
</tr>
<tr>
<td>D(HC,2)</td>
<td>2.47101</td>
<td>0.08191</td>
<td>-1.0037</td>
<td>0.4418</td>
</tr>
<tr>
<td>ECM(1)</td>
<td>0.140266</td>
<td>0.04942</td>
<td>0.8716</td>
<td>0.8617</td>
</tr>
</tbody>
</table>

Source: Extracted from E-view.

\[R^2 = 0.510861, \quad DW = 2.0147\]

The table above shows the over parameterized ECM (ECM1) and parsimonious ECM (ECM2) for the model. The negative sign of ECM value in both model (ECM 1 and 2) shows that the ECM is significant. This implies that the present value of GDP adjusts rapidly to changes in \(\text{GRE}, \text{GCE}, \text{PC}, \text{HC}\) and \(\text{EXR}\). The ECM
value of 0.370141 shows a feedbacks of about 37.01% from the previous period disequilibrium of the present level of GDP in the determination of causality between the past level of GDP and the present and past level of GRE, GCE, PC, HC and EXR. The coefficient of multiple determinations denoted as $R^2$ shows that 71.09% variation in GDP can be explained by GRE, GCE, PC, HC and EXR while the remaining 28.91% is being included by the stochastic error term. The Durbin Watson statistics of 1.81 shows that the presence of autocorrelation in the model is inconclusive as the Durbin Watson statistics falls under the positive side of the inconclusive region. The results of the short run ECM is in contrast to the long run co integrating equation. This is because all the variables and their lagged values are positively related to GDP. This study does not pretend to consider exhaustively all the potential factors determining economic growth and development as regards to government expenditure. However, the models developed and the estimation techniques employed in this study are intended to reveal how government expenditure has been able to affect the gross domestic product (GDP) since government expenditure is instrumental to the development of any economy as also revealed by the empirical results of this study, this is consistent with the findings of Takur and Sabiu (2013).

V. DISCUSSION AND FINDINGS

The motive behind government expenditure is to provide basic infrastructural facilities that boost economic growth and development of a nation. Nigeria is not an exception. Proper execution and total commitment of public fund into growth induced capital and recurrent expenditure can also lead to influx of foreign investors, increase in major infrastructural facilities (such as good road, pipe borne water, electricity, etc) and boost economic growth and development. Unfortunately, this is not so in Nigeria as revealed by the empirical findings of this study. Government capital expenditure reduces gross domestic product. Findings also show that expenditure on physical capital also reduces gross domestic product.

Furthermore, the long run co-integration equation shows that GCE is negatively related to GDP in the long run. So also are PC and EXR having their Parameters negatively related to GDP. However the GRE and PC remained positively related to GDP in the long run. The negative relationship between Government capital expenditure and economic development in the long run implies that increase in expenditure by the Nigerian government fails to transform into increase in the level of economic development. This is an indication that Government capital expenditure were diverted to other uses that do not translate to economic development. Previous studies revealed that most of these funds were diverted by corrupt government functionaries to their private use in other countries. (Chude et al 2013).

VI. CONCLUSION AND RECOMMENDATIONS

This research analyzed the impact of public expenditure on the Nigerian economy using the Johansen Co-integration technique. The empirical result of the long run co integration equation shows that GCE is negatively related to GDP in the long run. So also are PC and EXR having their Parameters negatively related to GDP. However the GRE and HC remained positively related to GDP in the long run. All the variables stand significant. The equation in the model demonstrated a good fit from the coefficient of determination ($R^2$). The policy implication(s) of the empirical result revealed that public expenditures over the years have not adequately translated to the desired economic growth and enhancement of the standard of living. Having taken a hard look at the theoretical nexus and empirical evidence of the impact of public expenditure on the growth of the Nigerian economy, the following policy recommendations could be made to guide government policy decisions. The study recommended that government officials should place their public duties ahead of their personal gains, by so doing the economy will experience a boost as enough funds will be available to execute developmental project such as power generation and opening of new vibrant sectors.

Of paramount importance is the provision of enabling environment for business to thrive. It is more important to make the domestic economy more attractive for the investors by creating a wider menu of domestic financial assets on which domestic capital can be assessed and invested at lower rate comparable to foreign financial instruments. Expenditure should be concentrated more on human capital development that will yield positive and continuous economic growth.

Also capital expenditure should be mainly on productive economic activities and the population should exceptionally be well educated, with a large number of highly qualified scientists and engineers through extensive research with apprenticeship system that provide on-the-job training to young workers so that productivity and efficiency can be assured in all sectors like the agricultural and industrial sector, the manufacturing sector, even the administrator needs continuous training as they are crucial to policy execution, all these will stimulate economic growth and help to achieve other macroeconomic objectives.

Capital expenditure should be channeled the provision of towards infrastructure like good road network, electricity and health facilities that will enhance labor productivity which will engineer the increase of tax base, thereby increasing revenue generation that will finance further government development projects.

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REFERENCES

[35]. Wagner, A. (1890); Finanzwissenschaft, and also Grundlagen einer Politischen Oekonomie, 1893, In Bhatia, N.L. (2008), Public Finance, p.213.