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DICKSON ORIAKHI
UNIVERSITY OF BENIN, BENIN CITY, EDO STATE, NIGERIA, NIGERIA

VINCENT AJAYI-OJO
UNIVERSITY OF BENIN, BENIN CITY, EDO STATE, NIGERIA, NIGERIA

DOES PUBLIC SPENDING GROWTH STIMULATE ECONOMIC DEVELOPMENT? EMPIRICAL EVIDENCE FROM NIGERIA

Abstract:

The main objective of this paper is to ascertain empirically the impact of government expenditure on economic development in Nigeria. The time series data for this study spans from 1981 through 2013. The study adopts the Cointegration analysis. The Error Correction model shows that the various functional government expenditures were statistically significant and have positive relationship with gross domestic product. However, government expenditures on education and health have no significant impact on economic development in the short term. The coefficient of the Error correction model showed that the deviation of gross domestic product from its long-run equilibrium value will be reconciled quickly. On the whole, our study reveals that public spending enhances economic development in the long term and that a long run relationship exists between government expenditure and economic development in Nigeria.

Keywords:

Public Spending, Gross Domestic Product, Cointegration, Error Correction Model and Nigeria.

JEL Classification: C22, E62, H52

1.0 Introduction

Public spending is a crucial instrument for government to control the economy. To this end, the importance of fiscal policy as an instrument to promote economic growth is commonly considered one of the key mechanisms to achieve macroeconomic goals in terms of sustainable economic growth. Consequently, government expenditure in the form of capital expenditure can contribute positively to economic growth. According to Barro (1990), in the endogenous growth model, productive government expenditure will affect the rate of long-term growth. Government expenditure in the form of capital expenditures includes the provision of infrastructure such as electricity, transportation, education and health. For instance, the government expenditure on health and education raises the productivity of labor and increase the growth of national output.

It should be noted that economies in transition do spend heavily on physical infrastructure to improve economic welfare of the people and facilitate production of goods and services across all sectors of the economy so as to stimulate rapid growth in aggregate output. Empirical studies (such as: Ram, 1986; Deverajan et al., 1993; and Nitoy et al., 2003) have found that there exists positive correlation between economic growth and public spending on infrastructural facilities. Manufacturing industries do consider infrastructure services or facilities before locating their production base in order to gain large economies of scale and reduce cost of production. Also, to increase total industrial output at a cheaper price in the economy.

However, some scholars did not support the statement that the increase of government expenditure will create economic growth. They stated that the increase on government expenditure will reduce the overall economic performance. This is because, for example, in bid to finance rising public expenditure, government may increase taxes. Higher income tax discourages individual from working for long hours or even searching for jobs since they would prefer leisure to working more hours. This in turn will reduce income and aggregate demand. Thus, government actions sometimes result in misallocation of resources and hinder the growth of national output. In fact, studies by Barro (1991), and Engen and Skinner (1992), suggested that government expenditures have negative impact on economic growth.

Thus, the relationship between government expenditure and economic growth continues to result in the series of controversy among economists. Some authors argue that the impact of government expenditure on economic growth is negative (See, Loto, 2011; Ndjokou, 2013; Taban, 2010; Vu Le & Suruga, 2005). Others believe that impact is positive and significant (Alexiou, 2009; Chude & Chude, 2013; Nasiru, 2012; Okoro, 2013; Olulu et al, 2014). Consequently, this study is aimed at examining the relationship between public spending growth and economic development in Nigeria covering the period 1981-2013. Specifically, the study examines the impact of government expenditures in education and health, agriculture and infrastructure, defence and internal security on gross domestic product. The remaining part of the study is organized as follows: Following the introductory section is section two which deals with the related literature review comprising the relevant theoretical and empirical literature. The third section presents the methodological framework of the study followed by the empirical

results discussed in section four. The last section gives the concluding remarks of the study.

2.0 Theoretical Review

In literature, there are a number of theories on how government spending may either be beneficial or detrimental to economic growth. In traditional Keynesian macroeconomics, public spending growth can contribute positively to economic growth through the multiplier effect on aggregate demand. However, government consumption spending may crowd out private investment, dampen economic activities in the short run and reduce capital accumulation in the long run. Studies based on endogenous growth models distinguish between distortionary or non-distortionary taxation and productive or unproductive expenditures. Expenditures are categorized as productive if they are included as arguments in private production functions and unproductive if they are not (Barro and Sala-I-Martin, 1992).

One of the earliest theories of public spending growth is the Wagner's Law of Increasing State Activity (Wagner, 1883). It states that there are inherent tendencies for the activities of different layers of a government (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 government activities with the result that the governmental sector grows faster than the economy. The theory posits a relationship linking industrialization, urbanization and education to the expansion of the public sector (Bird, 1971). Wagner posits that increases in public goods are a product of increased demands by organized industrial workers arising from the costs of growth in the private sector (Gandhi, 1971; Goffman and Mahar, 1971). However, Bureau Voting Theory rejected the role of industrialization and urbanization, suggesting that the main driver of public sector expansion is an artificial demand for government services created by self interested government employees (Niskanen, 1971). On the other hand, Nitti (1903) not only supported Wagner's thesis but also concluded with empirical evidence that it was equally applicable to several other governments which differed widely from each other. All kinds of governments, irrespective of their levels, intentions (peaceful or warlike) and size had exhibited the same tendency of increasing public expenditure (Nitti, 1903).

Another theory dealing with the growth of public expenditure was put forward by Wiseman and Peacock (1961) in their study titled "*The Growth of Public Expenditure in the United Kingdom*". They stated that public expenditure does not increase in a smooth and continuous manner, but in jerks or step-like fashion. According to the theory, public expenditures tend to show a gradual rise during the normal times, that is, in times of relative peace and during the period of political instability or upheaval the gradual trend in the rise of public spending is distorted. Thus, some social or other disturbance takes place creating a need for increased public expenditure which the existing public revenue cannot meet. In order to finance the increase in public expenditure, the government would be forced to increase taxes. The movement from the older level of expenditure and taxation to a new and higher level creates what is referred to in literature as *displacement effect*. This means that public spending growth has displaced the civilian private expenditure in the times of crises. Moreover, the inadequacy of the revenue as compared

with the required public expenditure creates an *inspection effect*. Hence, the government and the people will have to review the revenue position and the need to find a solution to the problems that have come up and agree to the required adjustments to finance the increased expenditure. They attain a new level of tax tolerance as a result of the increased general level of expenditure. In this way, the public expenditure and revenue get stabilized at a new level till another disturbance occurs to cause a displacement effect (Wiseman and Peacock, 1961).

2.1 Empirical Review

A number of studies have been 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. Barro (1991) in the cross section study of 98 countries for a period spanning from 1960 to 1985, used average annual growth rates in real per capita GDP and the ratio of real government consumption to real GDP. The study concluded that the relation between economic growth and government consumption was negative and significant. Additional evidence suggested that growth rates were positively related to measures of political stability and inversely related to a proxy for market distortions. Further estimates provided by Engen and Skinner (1992) for 107 countries over the period 1970-1985, suggested that the increasing balanced-budget in government expenditure and taxation is predicted to reduce output growth. In the same vein, Taban (2010) examined government expenditure and economic growth for the period 1987:Q1 to 2006:Q4 and applied bounds testing approach and Granger causality test. The author found that the share of government expenditure and share of investment to GDP negatively impacts on economic growth in the long term.

Moreover, Vu Le and Suruga (2005) examined the simultaneous impact of public expenditure and foreign direct investment (FDI) on economic growth from a panel of 105 developing and developed countries for the period 1970 to 2001 and applied fixed effects model and threshold regression techniques. Their main findings were categorized into three: FDI, public capital and private investment play roles in promoting economic growth. Secondly, public non-capital expenditure has a negative impact on economic growth and finally, excessive spending in public capital expenditure can hinder the beneficial effects of FDI. Similarly, Ndjokou (2013) evaluated the link between fiscal policy and growth. For this purpose, he evaluated the influence of the level of public expenditures and revenues as well as the composition of the budget on economic growth. He used data provided by African Development Indicators (ADI) for a sample of 9 countries in the CFA Franc Zone over the period 1990-2010. The finding was that public expenditures significantly reduced growth in the zone.

However, other works have been carried out which revealed that public expenditure enhances economic development. Alexiou (2009) investigated the relationship between economic growth and government expenditure in the South Eastern Europe. The work was carried out on seven transition economies in the South Eastern Europe (SEE). The results show that public expenditure has significant effects on the economic performance of the countries in the region. More specifically, the evidence generated indicate that four out of the five variables used in the estimation i.e. government

expenditure on capital formation, development assistance, private investment and trade-openness all have positive and significant effect on economic growth.

The study by Loto (2011), examined the growth effect of government expenditure on economic growth in Nigeria over the period of 1980 to 2008, with a particular focus on sectorial expenditure. Five key sectors chosen were (security, health, education, transportation, and communication and agriculture). The results showed that in the short-run, expenditure on agriculture found negatively related to economic growth. The impact of education though also negative was not significant. The impact of expenditure on health also found positively related to economic growth. Though expenditures on national security transportation and communication were positive related to economic growth, the impacts were not statistically significant.

Nasiru (2012) investigates the relationship between government expenditure (disaggregated into capital and recurrent) and economic growth in Nigeria over the period (1961-2010). It employs the Bounds Test approach to co-integration based on unrestricted Error Correction Model and Pair Wise Granger Causality tests. The results from the Bounds Test indicate that there exists no long-run relationship between government expenditure and economic growth in Nigeria only when real GDP as dependent variable. In addition, the causality results reveal that government capital expenditure granger causes economic growth. While, no causals relationship was be observed between government recurrent expenditure and economic growth.

Moreover, Chude and Chude (2013), investigates 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 sectorial expenditures analysis. Government expenditures are very crucial instruments for economic growth at the disposal of policy makers in developing countries like Nigeria. The objective of this study is to determine 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 econometric 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. In addition, Okoro (2013), using time series data of 32 years period (1980-2011), investigated the impact of government expenditure on the Nigerian economic growth. Employing the ordinary least square of multiple regression analysis to estimate the model specified. Real Gross Domestic Product (RGDP) was adopted the dependent variable while government capital expenditure (GCEXP) and government recurrent expenditure (GREXP) represents 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 expenditure and economic growth in Nigeria. The short-run dynamics adjust to the long-run equilibrium at the rate of 60% per annum.

More recently, a study by Olulu et al, (2014) investigates the empirical relationship between government expenditure and economic growth in Nigeria. The ordinary least square (OLS) was be applied to ascertain the short-run relationship between variables, however, the Augmented Dickey Fuller (ADF) test, was used to examine long-run relationship between variables in the equation. Government expenditures disaggregated unto total expenditures, public debt expenditure, expenditure on health and government

expenditure on education. Results of the test show that there is an inverse relationship between government expenditures on health and economic growth; while government expenditure on education sector, is seen to be insufficient to cater for the expending sector in Nigeria. It also discovered that government expenditure in Nigeria could increase foreign and local investments.

3.0 Methodology and Model Specification

The study adopts the co-integration analysis in estimating the long run and short run relationships between gross domestic product proxy for economic development and the fiscal policy variables of interest over the period 1981- 2013. The Error Correction Model (ECM) is used to establish the short-run dynamics between gross domestic product and the fiscal policy variables. The general model specification used in this study is:

$GDP = f(SCS, ECS, DEF)$…….3.1

Where:

GDP= Gross Domestic Product

SCS = Government expenditure on social and community services, such as health and education

ECS = Government expenditure on economic services, such as agriculture, construction, transport and communications

DEF = Government expenditure on defence and internal security

Accordingly, from a priori considerations, all the fiscal policy variables are expected to be positively related to gross domestic product.

The first step in the co-integration analysis is to conduct a unit root test for each variable in equation (3.1). The study utilizes a more efficient univariate Dickey-Fuller Generalized Least Squares (DF-GLS) test to explore the order of integration (stationarity) of the variable. The test is a simple modification of the conventional Augmented Dickey-Fuller (ADF) t-test as it applies Generalized Least Squares (GLS) de-trending prior to running the ADF test regression. The DF-GLS test has the best overall performance in terms of sample size and power over the ADF tests. According to Elliot, Rothenberg and Stock (1996), it has substantially improved power when an unknown mean or trend is present.

Then, the multivariable Johansen co-integration test is carried out to ascertain whether long run relationship exists between the variables. And once co-integration is established, equation (3.1) can be expressed in empirical form as follows:

$GDP_t = \beta_1 SCS_t + \beta_2 ECS_t + \beta_3 DEF_t + \varepsilon_t$ ……3.2

Where, β_i, $(for\ i = 1, 2, \dots, 3)$ are the long run parameters to be estimated and ε_t is the stochastic term. Equation (3.2) is estimated using the Least Squares (LS) technique. The next step is to obtain the short run dynamic parameters by estimating an Error Correction Model (ECM) associated with the long run estimates. This is specified as:

$\Delta GDP_t = \omega \Delta SCS_t + \gamma \Delta ECS_t + \delta \Delta DEF_t + \varphi ecm(-1) + \varepsilon_t$……3.3

Here, $\omega, \gamma \; and \; \delta$ are the short run dynamic coefficients of the model's convergence to equilibrium; Δ denotes differencing and φ is the speed of adjustment expected to be negative.

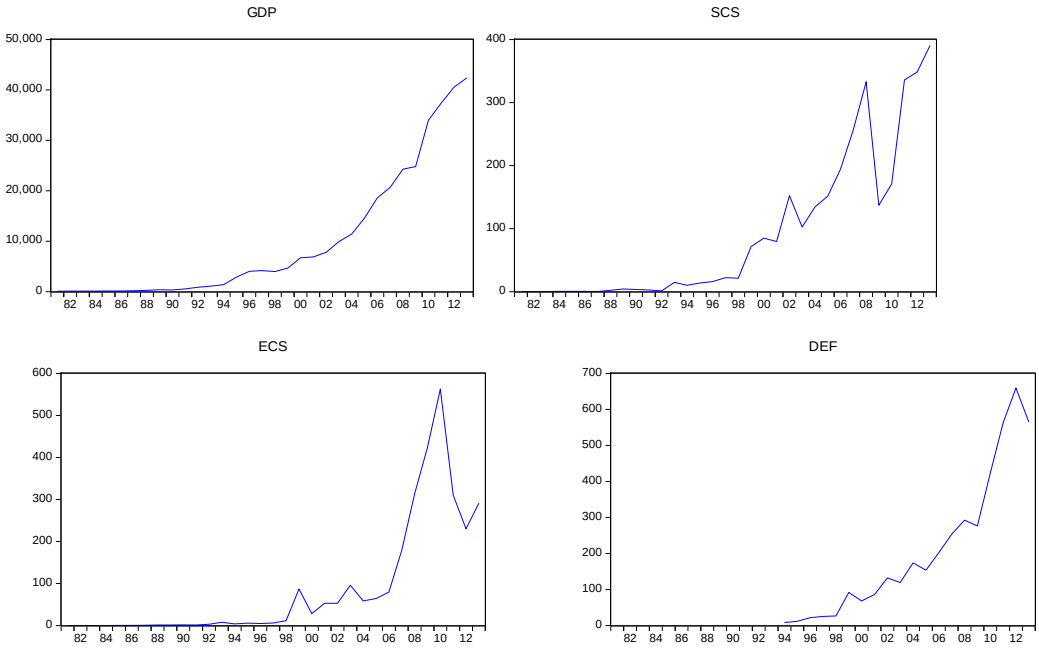
4.0 Empirical Analysis of Results

This section presents the empirical results and its analysis. The analysis of results starts with the presentation of unit root test using the Dickey Fuller Generalized Least Squares (DF-GLS) technique to ascertain the order of integration of the time series. Next, we undertake tests of co-integration to determine if long run relationships exist among the variables using the Johansen multivariate co-integration test proposed. All these are followed by the analysis of the estimated long run coefficients of equation (3.2) and the analysis of the estimated coefficients of the short run dynamic Error Correction Model (ECM) of equation (3.3).

4.1 Unit Root Tests

The analysis of the results begins with investigating the time series properties of the variables. Unit root tests provide information on the stationarity properties of variables. Before conducting a unit root rest, it is important to investigate first whether the series exhibit a trend or not. Accordingly, we present the time graphs of the variables in figure (4.1) below. The graphs show that all the series are trendy.

Figure 4.1: Time Graphs of the Variables



Source: Plotted graphs using EViews 8.0 software

Thus, in the conduct of the unit root test, it is necessary to include the trend variables. The results of the unit root test using the Dickey Fuller Generalized Least Squares (DF-GLS) test are reported in tables (4.1) and (4.2) below.

Table 4.1: Dickey-Fuller GLS Unit Root Test at Levels
(Dickey-Fuller GLS Regressions include an intercept and a linear trend)

Variable	*Lag Length*	*DF-GLS Statistic*	*1% Critical Value*	*Remarks*
GDP	2	-1.2193	-3.7700	Non-stationary
SCS	0	-2.4080	-3.7700	Non-stationary
ECS	0	-2.1531	-3.7700	Non-stationary
DEF	0	-1.7856	-3.7700	Non-stationary

Source: Results Extract from EViews 8.0
Note: The null hypothesis is that there is a unit root.

Based on the unit root test results of the variables at level in Table 4.1, the DF-GLS test statistic (-2.2193) for gross domestic product (GDP) is less than the critical value (-3.7700) in absolute terms. Hence, we fail to reject the null hypothesis of a unit root at 1 percent level of significance. Accordingly, gross domestic product is non-stationary at level. In a similar vein, the other variables are non-stationary at levels. This is because their DF-GLS test statistics are less than the critical value at the 1 percent level. Hence, the variables were tested for stationarity at their first differences. The results are presented in Table (4.2) below.

Table 4.2: Dickey-Fuller GLS Unit Root Test at First Difference
(Dickey-Fuller GLS Regressions include an intercept and a linear trend)

Variable	*Lag Length*	*DF-GLS Statistic*	*1% Critical Value*	*Remarks*
∆GDP	0	-6.2253	-3.7700	Stationary
∆SCS	1	-6.9670	-3.7700	Stationary
∆ECS	2	-4.6505	-3.7700	Stationary
∆DEF	0	-3.6534	-3.7700	Stationary

Source: Results Extract from EViews 8.0
Note: ∆ denotes first difference of the variable. The null hypothesis is that there is a unit root.

The unit root test results of the variables at their differences, as shown in Table 4.2, revealed that all the variables are stationary after first differencing at 1 percent significance level. This is because the DF-GLS test statistics are all greater than the critical value (-3.7700) in absolute terms. Thus, we fail to accept the null hypothesis of a unit root at the 1 percent level.

4.2 Cointegration Tests

Having established the time series properties of the data, the study proceeded to conduct the Johansen multivariate co-integration test. The results of the test are reported in tables (4.3) and (4.4).

Table 4.3: Unrestricted Co-integration Rank Test (Trace)

Hypothesized No. of CE(s)	*Eigen value*	*T race Statistic*	*0.05 Critical Value*	*Probability***
None *	0.930304	94.70690	47.85613	0.0000
At most 1 *	0.848586	46.76186	29.79707	0.0002
At most 2	0.506047	12.78258	15.49471	0.1230
At most 3	0.004816	0.086906	3.841466	0.7681

Trace test indicates 2 co-integrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Results Extract from Eviews 7.0

Table 4.4: Unrestricted Co-integration Rank Test (Maximum Eigen value)

Hypothesized No. of CE(s)	*Eigen value*	*Max-Eigen Statistic*	*0.05 Critical Value*	*Probability***
None *	0.930304	47.94504	27.58434	0.0000
At most 1*	0.848586	33.97929	21.13162	0.0005
At most 2	0.506047	12.69567	14.26460	0.0872
At most 3	0.004816	0.086906	3.841466	0.7681

Max-Eigen value test indicates 2 co-integrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values
Source: Results Extract from Eviews 8.0

The cointegration test based on the trace test indicates that there are two co-integrating equations at the 5 percent level. Similarly, the maximum Eigen value test indicates two co-integrating equation at the 5 percent level. This implies that a long run relationship exists between the gross domestic product and the fiscal policy variables in the model.

4.3 Analysis of Estimated Long Run Coefficients

Since a long run co-integration relationship has been established, equation (3.2) was estimated using the Least Squares regression method. The results obtained are reported in Table (4.5).

Table 4.5: Estimated Long Run Coefficients using the Least Squares Method

Dependent Variable: GDP				
Regressor	Coefficient	Standard Error	T-Ratio	Probability
SCS	15.85479	8.934319	1.774595	0.0950
ECS	17.21678	4.401486	3.911584	0.0012
DEF	47.29392	6.467074	7.313031	0.0000
C	1367.555	737.1034	1.855310	0.0821
R-Squared 0.9818				*R-Bar-Squared 0.9784*
DW-Statistic 1.7383				*F-Stat. = 288.214[0.000]*

(Source: Author's computation using Eview 8.0)

The overall fit is very good with an R^2 of approximately 0.98 and an R-bar-squared of 0.98. This means that about 98 percent of the systematic variations in gross domestic product in Nigeria are explained by the fiscal policy variables we have used as regressors in the equation. The F-statistic of 288.21 is highly significant, passing the significance test at the 1 percent significance level. This indicates that the overall model is significant. Consequently, the hypothesis of a linear relationship between gross domestic product and the regresssors in the equation cannot be rejected at the 1 percent level of significance.

The signs of the estimated long run coefficients of the explanatory variables reported show that all the variables conformed to theoretical expectations. Thus, coefficient of government expenditure on social and community service (SCS) came out positive and significant in the determination of output growth in Nigeria. Its coefficient is 15.85 and it has a t-value of 1.77 and a p-value of 0.095. This magnitude of t-statistic easily passes the significance test at the 10 percent level of significance. Hence, on average, a 1unit increase in government's expenditure on social and community services will directly raise gross domestic product by approximately 16 units in Nigeria. The coefficient of government expenditure on economic services (ECS) is 17.22 with a t-statistic of 3.91. Thus, the effect of economic services expenditure on gross domestic product is positive and highly significant at the 1 percent level. Hence, a unit increase in economic services expenditure will on the average result in about 17.22 units increase in gross domestic product in Nigeria in the long run. The coefficient of defence and internal security expenditure (DEF) was found to be positive and highly significant in the determination of gross domestic product in Nigeria. Its coefficient is 42.29 and it has a t-value of 7.31with a p-value of 0.000. This magnitude of t-statistic easily passes the significance test at the 1 percent level of significance. Thus, on average, a unit rise in defence and internal security expenditure will directly lead to about 42 units increase in

the gross domestic product in Nigeria. This implies that any economy that can curtail the problem of insecurity will help in boosting its economic growth.

4.4 Analysis of Estimated Coefficients of the Error Correction Model

The results of the short run Error Correction model associated with the long run relationships are presented in Table (4.6).

Table 4.6: Estimated Coefficients of the Short Run Dynamic Error Correction Model

Dependent Variable: ⊿GDP

Regressor	Coefficient	Standard Error	T-Ratio	Probability
⊿SCS	10.24778	7.295076	1.404753	0.1819
⊿ECS	12.58357	5.299040	2.374688	0.0324
⊿DEF	25.87292	8.132655	3.181362	0.0067
ECM(-1)	-0.513314	0.278197	-1.845143	0.0863
C	920.7952	495.0791	1.859895	0.0840
R-Squared 0.5315				*R-Bar-Squared 0.3976*
DW-Statistic 1.599				*F-Stat. = 3.970[0.023]*

(Source: Author's computation using Eview 8.0)

The coefficient of determination of the Error Correction Model, R-squared (R^2) is approximately 0.53 and the adjusted R-squared ($\bar{R}^2$) is 0.40. This shows that about 53 percent of the systematic variations in gross domestic product are accounted for by the explanatory variables we have used in the error correction model. The adjusted R-squared indicates just about 40 percent of these systematic variations are attributable to the fiscal policy variables. The F-statistic of 3.97 is significant. It passes the significance test at the 5 percent level. Hence, the overall fit of the model is significant.

The economic criteria are satisfied by all the explanatory variables in the short run model. Hence, the short run impact of the fiscal policy variables are maintained into the long run. The results revealed that Nigerian government expenditures have positive and significant effect on gross domestic product in the short run. These findings support the results of the study conducted by Vu Le and Suruga (2005), Alexiou (2009), Chude and Chude (2013) who found that the increase in government expenditure will boost economic growth. However, total government expenditures on education and health do not have significant impact on economic development in the short run. The coefficient of adjustment of the Error Correction Model (ECM) is negative and significant at the 10 percent level. Thus, it will rightly act to correct any deviation of the gross domestic product from its long-run equilibrium value. Its coefficient of -0.51 shows a rather quick adjustment process to the long run equilibrium.

5.0 Concluding Remarks

Due to the importance of fiscal policy as an instrument to promote economic growth, it is commonly considered one of the key mechanisms to achieve macroeconomic goals in terms of sustainable economic growth and reducing unemployment. In this article, we investigated empirically the relationship between public spending growth and economic development. To this end we estimated the short run and long run models using the co-integration analysis.

Our empirical findings reveal that there is a long run relationship between public spending growth and economic development in Nigeria. Government expenditures on social and community services on the whole can significantly contribute to Nigerian economic development. The policy implication is that public expenditures on education, health and other social and community services would enhance the productivity of labour, skills and well being. This would boost output growth as well as investment thereby creating employment opportunities in the country. The results also show that government expenditures on economic services enhance economic development in the long run. That is, agricultural and infrastructural expenditures by government have significant positive effects on economic growth in Nigeria. However, these expenditures have no significant impact in the short run. Finally, the empirical results also indicate that defence and internal security expenditure has significant impact on economic development both in the short term and long term. This implies that economic activities cannot effectively strive in an economy caught in the web of political instability, insecurity of life and property. Besides, investment would be discouraged owing to political instability. Consequently, insurgence in the Northern Nigeria has grievous economic costs for the nation and efforts should be geared towards tackling it because it is inimical to economic development. Furthermore, public spending growth is necessary for sustainable economic development when effectively managed so as to minimize its negative effects on the economy as revealed in the findings of Barro (1991), Engen and Skinner (1992), Taban (2010) and Ndjokou (2013) which stated that the government expenditure has a negative impact on economic growth. Thus, our findings support the Keynesian view that public expenditure can contribute positively to economic growth. Increased 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.

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