
The Impact of Public Expenditure on Economic Growth in Nigeria: 1982-2012

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Abstract: This paper examined reasons why some people are still poor and why public expenditure could not lead to economic growth. The objective of this paper is to investigate the impact of public expenditure on the economic growth in the short-run and long-run. Koyck's model was adopted to test the long-run and the short-run effects of total public expenditures on Economic Growth in Nigeria. The variables were tested to determine their level of stationarity using Augmented Dickey Fuller (ADF). The result of the Jarque-Bera normality test shows that the variables used in the study were normally distributed around its zero mean and constant variance. Koyck's models were estimated and the results show that total expenditure was statistically significant in the long – run while in the short – run total expenditure was statistically insignificant. The result further reveals that Wagner's hypothesis does not hold in some of the variables in our estimated model this invalidates Keynesian Paradigm of increased government expenditure. Therefore, the study recommends, for government to ensure that total expenditure should be properly managed in a manner that will raise the nation's productive capacity and accelerate economic growth.. Unnecessary delays in the passage of annual budget was identified as a bottlenecks in the course of budget executions should be avoided for the budget to achieve its desired objectives within the short – run. The leakages in government spending and redefining its public expenditure and strengthening of the internal mechanism for economic growth and development become necessary.

Keywords: Koycks Model, Public Expenditure, Economic Growth, Capital Expenditure and Recurrent Expenditure.

1. Introduction

Public expenditure is concerned with the utilization by government of the nation's resources with regards to the rules, regulations and policies that shape the planning, budgeting, forecasting, coordinating, directing, influencing and governing the inflow and outflow of funds in order to maximize the economic objective for the benefit of the citizenry. In other words, public expenditure deals with government spending and the level of liquidity in the economy in order to achieve some stated objectives (Sharp and Slunger, 1970). There is a controversy regarding the economic system which would ensure that an economy is always on the path of growth. There is need to determine the size of government's involvement and its impact on the growth of the economy. While the classical theorists are of the view that government should have little or nothing to do with the economy, explaining that if government expenditure is too big, it will undermine economic growth by transferring additional resources from the productive sector of the economy to government which uses them less efficiently. The Keynesian school on the other hand argued that the economy can only be boosted by active participation of government via its fiscal policy operation especially deficit spending which could provide short term stimulus to help end a recession or depression. In other words, Keynesian economies emphasize active participation in the economic activities of a nation through public expenditure and taxation. So, which of the two viewpoints would ensure that economy is always on the path of growth? And what are the reasons (Lindauer 1988)?

The use of economic theory therefore is important in providing a framework for understanding how the economy works but evidence helps to determine which economic theory is most accurate. It is also important to ascertain whether government expenditure helps or hinders

economic performance. However, economic theory does not automatically generate strong conclusion about the impact of government expenditure on economic performance. Many economists would agree that there are circumstances when lower levels of government expenditure would enhance economic growth and other times when higher level of government expenditure would be desirable (Nwezeaku 2010).

The role of public expenditure cannot therefore be overemphasized. In developed countries, it is employed as an instrument in the stimulation of investment activities and economic stability. Significantly, these roles are much more important in the less developed countries (LDCs) such as Nigeria. This is in view of the active part they play in developing social overhands and in structure thereby, encouraging economic growth through investment in education, health services, transportation, power and communication facilities. So also capital goods, industries, basic and key industries, enforcing contract, protecting property, and so on. So, for a successful operation of rule of law, there must be a government spending. (Aschauer, 1989a).

Kwanashie (1981) argued that the public sector in Nigeria have great dominance in the economy, in particular, after independence in 1960 and increased immediately after the civil war in 1970 through to 1990s particularly with the increasing revenue from oil. Since then, the significance of public expenditure has become so vital that it can be said that a larger proportion of the country's Gross Domestic Product (GDP) is anchored on the spending decision of government. The decisions provide links between government's expenditure and economic growth of the country, in which case the dominance of the public sector requires the mobilization and expenditure of vast amount of resources. Thus, through its investment policy government could influence the pattern, volume and direction of aggregate demand and investment.

Nigeria is undoubtedly one of the most endowed nations on earth, given her human and abundant natural resources; she ought to be one of the richest countries in the world. For instance, the country is endowed with natural resources which are in abundance all over the country the deposits which have been explored in the last 45 years and have been a source of huge resources to the Federal government.

In spite of these resources, and after over five decades of sovereignty, Nigeria's economic contribution to global gross domestic product was put at 0.22 percent. The United Nations Development Index reports that Nigeria was ranked amongst countries with low development index at 153 out of 186 countries that were ranked. Life expectancy in Nigeria is placed at 52 years old while other health indicators reveal that only 1.9 percent of the nation's budget is expended on health. 68.0 percent of Nigerians are stated to be living below \$1.25 daily while adult illiteracy rate for adult (both sexes) is 61.3 percent (UNDP, 2013). Nigeria's economic growth is slow as output growth was consistently below her population growth rate for most part of 1980 through to 2000.

Thus Nigeria has not been able to harness her large population (about 168 million people) and its abundant natural resources which constitute the material conditions for development to propel rapid and sustainable development (NPC, 2012). According to Ahenba (2008), Nigeria has earned approximately \$1.8 trillion from oil exports in the last four decades, but has not been able to leverage on the current account surpluses to build the capacity for rapid transformation of the economy to achieve sustainable growth. Rather, sectors whose contribution would not translate to growth are top on the priorities of government such as government expenditure on recurrent expenditure as against capital expenditure which would create employment, stimulate demand, leading to increase in demand for industrial goods e.t.c. According to a world bank Poverty Assessment Report (2000), Nigeria presents a paradox of a rich nation with poor people.

Public expenditure is usually expressed in budgetary statements and has been a powerful tool for shaping the economy along growth path and to a considerable extent influence resource allocation in the private sector. The role of public expenditure is to accommodate economic development of an economy. According to Scully (1989), data based on public expenditure as a fraction of national income show that public sector has an inevitable trend of growth in the long run. Why then would the Nigerian economy be different and remain underdeveloped despite huge public expenditure in the 30-45 years? The Nigerian case could then be said to be a paradox. A country rich and endowed with both human and natural resources, a country with adequate rain and sunlight with fertile agricultural land and good climatic conditions when compared to some other countries that are located in the desert or mostly covered by ice and snow almost throughout the year, yet Nigeria is a country with many poor people. There is a problem somewhere, otherwise, why would about two thirds of the Nigerian people be said to be poor, despite the country having vast potential wealth. Revenue from crude oil has been increasing over the past decades (NBS 2010).

Nigeria was noted to be the world's seventh largest exporter of oil, sixth largest producer in OPEC, Africa's largest Oil exporter and fifth biggest source of United State's oil is a good potential for effective reduction and possibly eradication of poverty (National Planning Commission, 2004, Oil statistics, and Thomos and Canagarajah, 2002). Yet Nigeria is not only one of the poorest countries in the world but also in Africa despite efforts towards reducing her poverty level. The high incidence of poverty in Nigeria has become of concern to policy makers and indeed all stakeholders in Nigeria because as observed by the United Nation Development Programme (2001) it has not only increased from 27.2 percent in 1980 to 54.4 percent in 2004, is estimated to be rising by 10 percent every 3 years.

The huge growth could have had a major impact on the growth and development of the country. It could have taken the lead in demonstrating how growth and poverty reduction can be achieved in Africa because Nigeria has all it takes, that is human and material resources to become the strongest economy in Africa and one of the leading economies in the world.

This paper examined the country's huge resources and revenue over the years and why many citizens are still poor and why public expenditure did not lead to the desired economic growth in Nigeria as the case with other developed countries. As a result of these problems associated with government expenditure in Nigeria the paper intends to answer the following questions:

1. Does total government expenditure in the short-run have impact on economic growth in Nigeria?
2. What is the impact of total government expenditure in the long-run on economic growth in Nigeria?

2. Literature Review

There have been many empirical studies; although with contradicting results on the roles of government expenditure on the economic growth. That government spending can influence the level of economy activities is evident in studies such as those of Ratner (1983), Aschauer (1989) and Munnell (1990) which indicate that government investments are positively related to growth. Other studies such as Evans and Karas (1994), on the other hand, obtained a mixed result. The adoption of ordinary least square reveals a positive correlation between the two proxies of government spending (services and capital spending) and economic growth. However, when a two-stage least square techniques were used, a positive relationship could not be established in most cases, especially in public capita. Evidence from Raynold, Mcmillian and Beard (1991), using a VAR model, also reveals that the effects of government spending on economic growth are

small but generally significant. It explains about 8 - 10 percent of the forecast error variance in economic growth, using about 36 months, horizons. Most of these studies were from developed countries with little emphasis on developing countries like Nigeria. Resulting from dearth of empirical studies on this issue in Africa, Amin (1998) examines the effects of public investment expenditures on growth of the Cameroon's economic activities. Using an aggregate production function, he discovered a positive relationship between the two, even though the relationship could not be statistically established.

Ekpo (1995) and Ogiogio (1995); Ekpo (1995); Aschauer (1989b) and Aschauer (1990) regressed, the disaggregated components of government capital expenditures on private investment. The findings show that capital expenditures on transport and communication, agriculture, health and education positively influence private investments in Nigeria, which invariably enhances the growth of the overall economy. However, government capital expenditures on construction and manufacturing, crowd out private investments. By implication, the private sector is better placed to invest' in construction and manufacturing than the government.

Ogiogio (1995) examines the growth impact of recurrent, capital and sectoral expenditures over the period 1970 - 1993. The study observes the existence of long-run relationship between economic growth and government expenditures. Meanwhile, contemporaneous government recurrent expenditures have more significant effect than the capital expenditures while five-year lags of capital expenditures are more growth inductive. The study, thus, argues that for effective assessment of the effect of capital investment programmes on economic growth, one would require a five-year planning horizon. And lastly, the study also indicates that government investment programmes in socio-economic infrastructure provide a conducive environment for private-sector led growth.

However, the fact that both government expenditures and economic growth are basically related makes any deductions from a single equation model invalid. This is owing to the possibility of simultaneity bias. In order to avoid this problem, Ekpo (1995) adopted a simultaneous equations model to capture the interrelationship between military expenditures and economic growth in Nigeria. It is observed from the study that aggregate military expenditure is negatively related to growth at 10 percent significant level. And when decomposed into recurrent and capital military expenditures, the former was more growth retarding than the latter. Olson (1984) pointed out that economic theory did not provide a fully developed methodology that incorporated government in standard growth models. He however, identified two major avenues through which government activity may influence economic performance. In the first place, he posited government spending, particularly investment on goods that may enter directly into private sector production such as education and infrastructures. On the other hand, government outlays may also indirectly influence the efficiency of private sector allocation of inputs and activities in such a way that government spending may correct market failures, guarantee property rights and the enforcement of contracts and provide essential public goods, thereby leading to positive effects on the economy. Conversely, government regulation may impose excessive burdens on the private sector by way of high taxes or borrowing to finance government spending that may distort private incentives. Moreover, if the financing of government projects bids up interest rate, the effect will be the crowding out of private investment, hence slowing down growth. The second channel mentioned by Olson was the efficiency of government as a producer as distinct from a provider of goods and services.

Taylor (1988) highlighted the role of government expenditure, which was that if public spending and private spending (capital formation) are truly complementary, then government projects and

spending would stimulate entrepreneurs and enhance private investment, thus ensuring growth in the economy. Musgrave (1982) noted in his study that certain goods and services should be provided by the market while others should be provided publicly and made available free of charge to the users. However, other empirical works did not support Olson's theoretical analysis of the relationship between government spending and economic growth.

Landau (1983) found that the share of government consumption to GDP reduced economic growth was consistent with the pro-market view that the growth in government constrains overall economic growth. These findings were consistent with varying sample periods, weighting by population and mix of both 'developed and developing countries. The conclusions were germane to growth in per capita output and do not necessarily speak to increase in economic welfare. Economic growth was also found to be positively related to total investment in education. Landua (1986) extended the analysis to include human and physical capital, political, international conditions as well as a three year lag on government spending in GDP. Government spending was disaggregated to include investment, transfers, education, defense and other government consumption. The results in part mirrored the earlier study in that general government consumption was significant and had a negative influence on growth. Education spending was positive but not significant. It was unclear why lagged variables were included given that the channels through which government influence growth suggest a contemporaneous relationship.

Ram (1986) used cross-sectional data for 1960-1970 and 1970-1980 on separate time series estimates for some countries as well as taking real government consumption as his measure of government size. He found a positive correlation between growth in government expenditures and overall economic growth. Ram concluded that both the externality and differential productivity effects are positive, so productivity in the government sector appears to be higher than private sector. He marked a rigorous attempt to incorporate a theoretical basis for tracing the impacts of government expenditure to growth through the use of production functions specified for both public and private sectors. The data spanned 115 countries to derive broad generalizations for the market economics investigated. He found government expenditure to have significant positive externality effects on growth particularly in the developing countries (LDC) sample, but total government spending had a negative effect on growth. Lin (1994) used a sample of 62 countries (1960-85) and found that non-productive spending had no effect in growth in the advanced countries but a positive impact in LDCs.

Josaphat, et. al., (2000), investigated the impact of government spending on economic growth in Tanzania using time series data for 32years (1965-1996). They formulated a simple growth accounting model, adapting Ram (1986) in which total government expenditure is disaggregated into expenditure on (physical) investment, consumption spending and human capital investment. It was found that increased productive, expenditure (physical investment) have a negative impact on growth and consumption expenditure relates positively to growth, and in particular appears to be associated with increased private consumption. The results revealed that expenditure on human capital investment was insignificant in their regression and confirm the view that public investment in Tanzania has not been productive.

Rutkowski (2009) employed simple autoregressive model on quarterly variables over the period 1999-2007 to assess the relation between investment and growth in Poland. Impulse response functions point to positive relationship between public investment, private investment and GDP growth. In line with other papers, a demand stimulus was noticed after 1-2 quarters, with 1 percentage point of GDP higher public investment increasing GDP growth by more than percentage point (quarter on quarter). The supply-side effect, that is, an upsurge in private investment encouraged by the expected productivity gain materializes after 2-3 quarters and

reaches a maximum after 6 quarters, with 1 percentage point of GOP more public investment increasing private investment by more than % percentage point of GDP. Overall, his analysis points to a positive impact of public investment on growth in Poland and does not show apparent crowding-out effects.

Other researchers reported that the importance of government expenditure on Economic development has been overemphasized. For instance, Neuser (1993), using public capital data from Ford and Poret (1991) for the G7 countries over the period 1970- 87, applied Total factor productivity growth and co-integration techniques to the sample. They reported insignificant and unstable results. Taylor-Lewis (1993), using the same data set for the same countries under observation, but regressing a Cobb-Douglas function found that the contribution of public physical infrastructure to output were insignificant. Some studies have specifically examined the impact of public expenditure in infrastructure on economic growth in Nigeria. With a view to expenditure between 1953 and 1966, Philips (1971) observed that revenue is a vital factor of public expenditure. He found that rising revenue was accompanied by rising expenditure with a high degree of correlation put at 87 percent ($R^2 = 0.87$) between current revenue as percentage of GDP and total consumption coefficient being significant at 1percent. He concluded that the GDP elasticity of consumption expenditure was 3 with a high degree of correlation between consumption expenditure and per capita income.

In the research carried out by Lee and Alex (1989, and 1992) on the impact of infrastructural deficiencies on the Nigerian industrial sector. The results showed that manufacturing undertook significant expenditure to affect deficiencies in publicly provided infrastructural services. This was supported by Adenikinju (2003), in his study on electricity infrastructure failures in Nigeria. These studies failed to establish if there is a relationship between infrastructure services and manufacturing output and whether the relationship even subsists in the long-run. Sola (2008) examines the direction and the strength of the relationship between infrastructural services and manufacturing output in Nigeria using time series data from 1981 to 2005. To determine the shocks that are the primary causes of variability in the endogenous variables, the study used Vector Autoregressive (VAR) model. Also Granger causality test was carried out. Results showed that the present transport and electricity service in Nigeria did not cause growth to occur in the manufacturing sector. It was also revealed in the study that telecommunication and education had contributed to the growth in the manufacturing sector.

Nitoy, *et al*, (2003) employed the same disaggregated approach as followed by Josaphat, *et al*, (2000). They examined the growth effects of government expenditure for a panel of thirty developing countries (including Nigeria) over the decades of the 1970s and 1980s, with a particular focus on sectoral expenditures. The primary research results showed that the share of government capital expenditure in GDP is positively and significantly correlated with economic growth, but current expenditure is insignificant. The result at sectoral level revealed that government investment and total expenditures on education are the only outlays that remained significantly associated with growth throughout the analysis. Although public investments and expenditure in other sectors (transport and communication, defense) was found initially to have significant associations with growth but such relationship collapsed when government budget constraint and other sectoral expenditures were incorporated into the analysis. Also private investment share of GDP was found to be associated with economic growth in a significant and positive manner.

Hassan and Fatai (2009) employed co-integration and ordinary least square approach to examine the relationship between public spending and economic growth in Nigeria using time series data for the period 1970-2007. Two equations were specified. The result of the first equation showed

that the ratio of government revenue (oil and non oil) to nominal GDP were statistically significant though the non oil exerted negative influence on growth rate of real per capita GDP. Also, the ratio of government expenditure on economic services and community social services to nominal GDP were statistically significant exerting positive influence on growth rate of real per capita GDP per capita. In the second equation, the ratios of government revenue and capital expenditure to nominal GDP and lagged ratio of private investment to nominal GDP were not statistically significant though they exert positive relationship. All test were conducted at 5 percent level of significance.

Adesoye, *et al.*, (2010), examine the link between government spending and economic growth in Nigeria over the last three decades (1977- 2006) using time series data to analyze the Ram (1986) model. Three variants of Ram (1986) model were developed-regressing Real GDP on Private investment, Human capital investment, Government investment and Consumption spending at absolute levels, regressing it as a share of real output and regressing the growth rate real output to the explanatory variable as share of real GDP. The result showed that private and public investments have insignificant effect on economic growth during the reviewed period. An attempt to test for presence of stationary using Augmented Dickey Fuller (ADF) unit root test reveals 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 levels. With the Use of error correction model to detect short run behavior of the variables, the result shows that for any distortion in the short-run, the error term restores the relationship back to its original equilibrium by a unit. A number of suggestions were however made on how government spending should be channelled in order to influence economic growth significantly and positively in Nigeria.

Nurudeen and Usman (2009) examined the impact of government expenditure on economic growth in Nigeria using disaggregated analysis. They employed co- integration and error correction model for time series data spanning a period 1979 to 2007. The explanatory variables account for 58.96 percent changes in economic growth. The total capital expenditure, total recurrent expenditure, health, education, transport, communication, and overall fiscal balance are statistically significant in explaining changes in economic growth. However, expenditure on defence and agriculture are not significant in explaining growth. Furthermore, a 1 percent increase in total capital expenditure, total recurrent expenditure, health and education causes growth to change by 0.04, 0.005, 0.035, and 0.07 respectively. We can deduce that most of the findings in the literature agree that public expenditure spur growth, some of the findings are rather inconclusive. There is also no generally accepted methodology for the analysis.

However, in our effort to explain the impact of total public spending on GDP, we hinged our study on Koyck's transformation model (1964) and Wagner theory (1970). However, in our study, we lagged our explanatory variables on GDP to indentify the short-run and long-run impact of government expenditure. The explanation of the growth-pattern or the growth of public expenditure has been discussed predominately by Wagner (1970). Wagner's work is based on empirical observation in a number of Western industrializing countries. Hence, his suggestion is not prescriptive, but rather explanatory in character (Peacock & Wiseman, 1917: 16), it does not contain any prior property. He put his model forward with regard to posterior results. That is, he made his suggestions depending on empirical result observed in a number of industrializing countries. The policy implication of his analysis was that as nation's output increased in the past, public expenditure grew as well.

The basic Wagnerian assumption is that public expenditure growth is continuously associated with the continuing growth in nation's output in developing countries. Moreover public

expenditure increases at a faster rate than the growth of nations output. From this point of view, Wagner termed this as “the law of increasing expansion of public”, and particular state activities becomes for the fiscal economy the law of the increasing expansion of fiscal requirements....."since then, this is well-known as the Wagner's Law.

3. Methodology, Analytical Framework and Model Specification

The study employed the use of annual data (time series) of real gross domestic product (RGDP) for a period; 1986-2012, to assess the impact of total government expenditure on economic growth. The use of koycks model becomes relevant in our study to enable us specify model that estimated the impact of total government expenditure on Economic growth from 1982-2012. Koyck's propounded an ingenious method of estimating distributed lag models. The use of this model enables us to examine the short-run and the long-run total expenditure on growth over time. The Koyck's distrusted lag model is of this form:

$$Y_t = \alpha + \beta_0 X_t + \beta_0 \lambda X_{t-1} + \beta_0 \lambda^2 X_{t-2} + \dots + U_t \dots\dots\dots 3.1$$

Equation (3.1) still not amenable to easy estimation since a large number of parameter remain to be estimated are the parameter () enters in a highly non-linear. Going by Koyck model and we lag equation (3.1) by one period we obtain

$$Y_{t-1} = \alpha + \beta_0 X_{t-1} + \beta_0 \lambda X_{t-2} + \beta_0 \lambda^2 X_{t-3} + \dots + U_{t-1} \dots\dots\dots 3.2$$

Hence, the multiply equation (3.4) by (λ) to obtain

$$\lambda Y_{t-1} = \lambda \alpha + \lambda \beta_0 X_{t-1} + \beta_0 \lambda^2 X_{t-2} + \beta_0 \lambda^3 X_{t-3} + \dots + \lambda U_{t-1} \dots\dots\dots 3.3$$

Subtracting equation (3.5) from equation (3.3) it becomes

$$Y_t - \lambda Y_{t-1} = \alpha (1 - \lambda) + \beta X_t + (u_t - \lambda u_{t-1}) \dots\dots\dots 3.4$$

Or rearranging

$$Y_t = \alpha (1 - \lambda) + \beta_0 X_t + \lambda Y_{t-1} + V_t \dots\dots\dots 3.5$$

Where, $V_t = [U_t - \lambda U_{t-1}]$, a moving average of U_t and U_{t-1}

For the purpose of our analysis however, our model will be inform of

$$GDP = F [TE + \varepsilon] \dots\dots\dots 3.6$$

Where:

GDP = Gross Domestic Product

TE = Total Expenditure

ε = Stochastic error term

Specifying the model in a log form equation (3.6) will transform into

$$GDP_t = \beta [1 - \beta] + \beta_0 X_t + \beta TE_{t-1} + V_t \dots\dots\dots 3.7$$

4.3 Results and Discussions

The paper examined the relative impact of the total expenditure on economic growth in Nigeria via estimation of distributed lagged model and to identify the possible impact of government expenditure on economic growth in the short – run and long – run period.

Table 4.1: Presentation of Estimated Results

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------|-------------|-----------------------|-------------|-----------|
| C | 9.999763 | 0.207161 | 48.27043 | 0.0000 |
| LOGTE | -0.008310 | 0.145716 | -0.057027 | 0.9549 |
| LOGTE(-1) | 0.232182 | 0.144071 | 1.611578 | 0.0011 |
| R-squared | 0.882494 | Mean dependent var | | 12.78565 |
| Adjusted R-squared | 0.873790 | S.D. dependent var | | 0.484134 |
| S.E. of regression | 0.171993 | Akaike info criterion | | -0.588083 |
| Sum squared resid | 0.798706 | Schwarz criterion | | -0.447963 |
| Log likelihood | 11.82125 | Hannan-Quinn criter. | | -0.543258 |
| F-statistic | 101.3882 | Durbin-Watson stat | | 0.179799 |
| Prob(F-statistic) | 0.000000 | | | |

Table 4.1 presented the estimated result which shows that the adjusted R² and F-Statistics are 0.873 and 101.39 respectively. This suggests that the variables in the model explain the change on the explained variable (logGDP) otherwise growth. The result further shows that, given their respective probability values, total expenditure (logTE=0.008310) was not statistically significant in the short – run, while it was found significant in the long – run. For this reason, both the regressors and the regressed in the model are in log form, therefore, an increase in the value of total expenditure would lead to a significant increase in growth. The above means that total expenditure; even though may have been affecting growth significantly in the long - run, it rather negated the 'a priori' economic expectation by rather affecting growth negatively. In summary, it shows that total expenditure was statistically significant in the long run on growth, while to expenditure was statistically insignificant in the short - run.

Table 4.2: Results of the stationary (unit root) test

| Variable | ADF test | Critical values | I(d) | Remark |
|----------|----------|---|------|--------------------------------|
| LOG GDP | -4.1056 | 1% = -3.6793 5% = -2.9678 10% = -2.6229 | I(1) | Stationary at first difference |
| LOG TE | -7.8552 | 1% = -3.6793 5% = -2.9678 10% = -2.6229 | I(1) | Stationary at first difference |

Source: Author's computation 2014

Furthermore, the result of the *Jarque-Bera* normality test shows that the variables used in the study were normally distributed around their zero means and constant variances. This is because the reported J-B probability value exceeds (in absolute value) the observed value under the null hypothesis meaning that a small probability value leads to the rejection of the null hypothesis of a normal distribution. Engle and Granger (1987) pointed out that a linear combination of two or more non-stationary series become stationary. As such where a stationary linear combination exists, the non-stationary time series are said to be *co-integrated* or otherwise called the *co-integrating equation*. Given the above, the model was *co-integrated at level* which implies that a long-run equilibrium relationship among the estimated variables is highly plausibly sustainable. However, the result of our analysis revealed that total expenditure in Nigeria affect growth, in the long – run, while in the short – run it was found to be insignificant on growth. This is because the study considered their respective lag in line with Kyock model.

Finally, the total expenditure shows that it plays a very important role in economic growth. This is because public sector spending has been on the increase due to government commitment to finance, infrastructure, civil service, defense and other economic reform programme that cut across Ministries, Department and Agencies (MDA's).

4. Conclusion

There is a substantial evidence to indicate that only total government expenditure in Nigeria shows significant relationship on growth in the long – run, while in the short -run total government expenditure has not significant effect because of delays in passage of federal government budget and bureaucratic process. The relationship between government's spending on public infrastructure on economic growth tends to be an important analysis in developing countries, most of which have experienced increasing levels of public expenditure overtime, expenditure on infrastructure investment and productive activities which ought to contribute positively to growth.

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