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Public Expenditure and Economic Growth in Nigeria: Evidence from Auto-Regressive Distributed Lag Specification

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Abstract: This paper analyses the impact of public expenditure on economic growth in Nigeria during the period 1970 to 2010 making use of annual time series data. The study employs the bounds testing (ARDL) approach to examine the long run and short run relationships between public expenditure and economic growth in Nigeria. The bounds test suggested that the variables of interest put in the framework are bound together in the long-run. The associated equilibrium correction was also significant confirming the existence of long-run relationships. Our findings indicate the impact of total public spending on growth to be negative which is consistent with other past studies. Recurrent expenditure however was found to have little significant positive impact on growth. Therefore, government should increase its spending on infrastructure, social and economic activities.

Keywords: Public Spending, Economic Growth, ARDL Cointegration, Nigeria

JEL Classification: C51, H50

Introduction

The volume of public expenditure has been on arising in Nigeria if not almost all countries of the world, because of the continuous expansion in the activities of the state and other public bodies on several fronts. Since the twentieth century, the developments of the functions of the state in social matters such as education, public health, commercial and industrial undertakings and so on, has increased public expenditure to a large extent. Economic growth is fundamental although not a sufficient

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condition for sustainable development. Economic growth and development is mainly enhanced by the expansion of infrastructural facilities, the improvement of education and health service, the encouragement of foreign local investments, low cost housing, environmental restoration, and the strengthening of the agricultural sector. The approach consists of simulating the economy by addressing the nations forecast needs. Dealing with these issues will result in a great amount of money spending by the government and certainly lead to increased public expenditure. Public expenditure is claimed as "the most powerful economic agent in all modern societies"(Arrow and kurz, 1970).

The size and structure of public expenditure will determine the pattern and form of growth in output of the economy. The structure of Nigerian public expenditure can be broadly categorised into capital and recurrent expenditure. Recurrent expenditure is referred to as government expenses on administration such as wages, salaries, interest on loans maintenance etc. whereas expenses on capital project like roads, airports, education, telecommunication and electricity generation etc., are referred to as capital expenditures. Public expenditure in Nigeria can also be categorised into exhaustive expenditure and transfer expenditure. Exhaustive expenditure is incurred when government actually consumes and makes purchases of factor inputs while transfer expenditure does not involve purchases of factor inputs by the government. One of the main purposes of government spending is to provide infrastructural facilities and the provision and maintenance of these facilities require a substantial amount of spending. Expenditure on infrastructural investment and productive activities (in state owned enterprises) ought to contribute positively to growth, whereas government consumption spending is anticipated to be growth retarding). However, economies in transition do spend heavily on physical infrastructure to improve the economic welfare of the people and facilitate the production of goods and services across all sectors of the economy so as to stimulate rapid growth in aggregate output. If government spending is used to finance investment in roads, education, health, agriculture and other areas, these investments will have direct social and economic beneficial effects on the country. Furthermore, by providing new opportunities and expanding the capabilities of the masses, government spending plays an important role in ensuring sustainable economic growth(Josaphat and Oliver, 2000).

The relationship between public expenditure and economic growth is especially important for developing countries, like Nigeria, most of which have experienced increasing level of public expenditure over time (Lindauer and Valenchik, 1992). This tends to be associated with rising fiscal deficits, suggesting their limited ability to raise sufficient revenue to finance higher levels of government expenditure. These rising deficits tend to have had adverse effects on growth in OECD countries.

While numerous studies have been conducted, no consistent evidence exists for a significance relationship between public spending and economic growth, in a positive or a negative direction. Results and evidence differ by countries/region, analyti-

cal method employed, and categorisation of public expenditures. This study aims at examining the relationship between public expenditure and economic growth in Nigeria covering the period 1970-2010, this will assist the policy makers on the nature of relationship between public expenditure and economic growth in Nigeria.

The remainder of the paper is organized as follows. Following section one is section two which deals with the literature review. In Section three, the methodological framework of the study is pursued while the empirical results are discussed in section four. Section five concludes the paper.

Review of Empirical Literature

The seminal work of (Barro, 1991) opened new ground for the investigation of the impact of fiscal policy (government expenditure) on economic growth. In line with this, (Barro and sala-i-martin, 1992), (Easterly and Rebelo 1993) and (Brons and Njikamp, 1999) emphasized that government activity influences the direction of economic growth. Dar Atul AmirKhalkhali (2002) also pointed out that in the endogenous growth models, fiscal policy is very crucial in predicting future economic growth. Many researchers have attempted to examine the effect of government expenditure on economic growth.

Ranjan and Sharma (2008) examined the effect of government development expenditure on economic growth during the period 1950-2007. The authors discovered a significant positive impact of government expenditure on economic growth. They also reported the existence of co-integration among the variables. In the literatures some studies disentangled government expenditures and used a multivariate co-integration analysis to examine the effect of each sector on economic growth. It was evidenced that in long run, government spending on education had a positive effect on economic growth, while government spending on defence and health had negative effects on economic growth. Thus, concluded that the allocation of government resources towards the education sector should be favoured in order to enhance growth.

According to Abdullah (2000) the relationship between government expenditure and economic growth and reported that size of government is very important in the performance of economy. He advised that government should increase its spending on infrastructure, social and economic activities. In addition, government should encourage and support the private sector to accelerate economic growth. Furthermore Devajaran, Swaroop, and Zou (1996) studied the relationship between the composition of government expenditure and economic growth for a group of developing countries. The regression results illustrated that capital expenditure has a significant negative association with growth of real GDP per capita. However, results showed that recurrent expenditure is positively related to real GDP per capita.

Tandon and Cashin (2010) in their research delineates a simple conceptual framework for assessing fiscal space for health and provides an illustrative roadmap for guiding such assessments. The roadmap draws on lessons learned from analyses of seven fiscal space case studies conducted over the past two years in Cambodia, India, Indonesia, Rwanda, Tonga, Uganda, and Ukraine. The document also includes a summary of the fiscal space assessments from these seven case studies. Any assessment of fiscal space typically entails an examination of whether and how a government could feasibly increase its expenditure in the short-to-medium term, and do so in a way that is consistent with a country's macroeconomic fundamentals. Although fiscal space generally refers to overall government expenditure, for a variety of reasons there has been growing demand for a framework for analysing fiscal space specifically for the health sector.

The casual link between public expenditure and national income was analysed in detail by Singh and Sahni (1984). Thereon many studies have been conducted in this direction. The findings of these studies produced contradictory results, ranging from 'bi-directional causality' to 'no causality' between both variables. For example Ahsan et al. (1989), Ram (1986), Holmes and Hutton (1990) and Singh and Sahni (1984) concluded that public expenditure expansion has significant effect on national income growth. On the contrary, Barth, et al (1990) and Laudau (1983, 1986) found that public expenditure expansion has negative effects on national income growth for both developed and less developed countries. Ram (1986) in his study of 63 countries found no consistent causality between these two variables, while in a recent study conducted between these two variables, while in a recent study conducted by Sakthivel and Yadav (2005) for India, it was found that bi-directional causality exists between national income and public expenditure.

Liu et al., (2008) examined the causal relationship between GDP and public expenditure for the US data during the period 1947-2002. The causality revealed that total government expenditure of government expenditure. Moreover, the estimation results indicated that public expenditure raises the US economic growth. The author concluded that, judging from the causality test Keynesian hypothesis exerts more influence than the Wagner's law in US. Laudau (1983) examined the effect of government (consumption) expenditure on economic growth for a sample 96 countries, and discovered a negative effect of government expenditure in growth of real output.

Muhlis and Hakan (2003) examined Wagner's law of relationship between public expenditure and GDP for the Turkish case over the period of 1965-2000. Using co-integration test and granger causality test, they empirically found causality in both directions. Rehman et al., (2010) examines the nature and direction of causality in Pakistan between public expenditure and national income along with various selected components of public expenditure by applying Toda-Yamamoto causality test to Pakistan for the period of 1971 to 2006. This study finds that there is a unidirectional causality running from GDP to government expenditure, which supports the Wagner's law[1].

Many Nigerian authors have attempted to examine government-economic growth relationship. Fajingbesin and Odusola (1999) empirical investigated the relationship between government expenditure and economic growth in Nigeria. Their econometric results indicated that real government capital expenditure has a significant positive influences on real output. However, the results showed that real government recurrent expenditure affects growth only by little. Odedokun (1997) and Shioji (2001) obtain a similar result as they find that infrastructural public investment promotes economic growth. Odedokun concentrated on a sample of 48 developing countries during period 1970-1990, while the latter study focused on 48 states in United States over the period 1963-1967 and on 46 Japan's prefectures during the 1955-1999 periods some researcher however believe the government spending has no or negative effects on economic growth

The work of Abu and Abdullahi (2010) in their short-run analysis of recurrent and capital expenditures, as well as government spending on agriculture, education, defence, health and transport communication sectors of the Nigerian economy obtained results that revealed that government total capital expenditure, total recurrent expenditure, and government expenditure have negative effects on economic growth. On the contrary, the rising government expenditure on transport, communication, and health results to an increase in economic growth. Also Maku (2009) examined the link between government spending and economic growth in Nigeria over the last three decades using time series data to analyse the Ram (1986) model and regression real GDP on private investment, human capital investment. He tested for the presence of stationary in the variables using the Augmented Dicker Fuller (ADF) unit root test, and used the co-integration test to establish the long-run relationship among variable, the Error Correction Model (ECM) was used. Empirical results showed that public and private had insignificant effects economic growth during the review period.

Abu and Abdullahi (2010) in their paper observes that rising government expenditure has not translated to meaningful development as Nigeria still ranks among world's poorest countries. In an attempt to investigate the effect of government expenditure on economic growth, we employed a disaggregated analysis. The results reveal that government total capital expenditure (TCAP), total recurrent expenditures (TREC), and government expenditure on education (EDU) have negative effect on economic growth. On the contrary, rising government expenditure on transport and communication (TRACO), and health (HEA) results to an increase in economic growth.

Olugbenga and Owoye (2007) investigated the relationship between government expenditure and economic growth for a group of 30 OECD countries during the period of 1970-2005. The regression results showed the existence of a long-run relationship between government expenditure and economic growth. In addition, the authors observed a unidirectional causality from government expenditure to growth for 16 out of the countries, government expenditure in out of 10 countries, confirming the Wagner's law. Finally, the authors found the existence of feedback relationship

between government expenditure and economic growth for a group of four countries. Komain and Brahmasrene (2007) examined the association between government expenditures and economic growth in Thailand, by employing the granger causality test. The result indicated a unidirectional relationship, as causality runs from government expenditures to growth. The results illustrated a significant positive effect of government spending on economic growth.

In short, the results of research on the empirical relation between public expenditure and growth vary depending upon the models, data and countries of analysis. Therefore, the debate over the impact of public expenditure on growth is on-going and left open to further study.

Methodology and Data

Model Specification

The theoretical framework discussed in this study is premised on the endogenous growth theory which analyses the nature of the relationship between fiscal policy variables and economic growth in the Nigerian economy. In line with this, the relationship between output in the economy and the other variables to be used for this study are specified in a general form by equation (1) below:

$$GDP = fGEXP, TCAP, TREC \tag{1}$$

From equation (1) above, output, proxied by the Gross Domestic Product (GDP) is stated to be dependent on total governmental expenditure (GEXP), capital expenditure (TCAP) and recurrent expenditure (TREC). All the variables in equation (1) above are assumed dynamic meaning they are determined within the model. This is consistent with the underlying theoretical framework i.e. the fiscal variables explain the interrelationships among the variables in equation (1).

Methodology

To empirically analyze the impact of public spending on economic growth, the ARDL model specification is used to show the long-run relationships and dynamic interactions between public spending and economic growth using Autoregressive Distributed Lag (ARDL) cointegration test popularly known as bound test. This method is adopted for this study for three reasons. Firstly, compare to other multivariate cointegration methods (i.e. Johansen and Juselius (1990), the bounds test is a simple technique because it allows the cointegration relationship to be estimated by OLS once the lag order of the model is identified. Secondly, adopting the

bound testing approach means that pretest such as unit root is not required. That is the regressors can either I(0), purely I(1) or mutually cointegrated. Thirdly, the long-run and short run parameters of the models can be simultaneously estimated. Therefore the newly Autoregressive Distributed Lag (ARDL) bound test proposed by Pesaran *et al*. (2001) is used to show the relationship between government spending and economic growth in Nigeria from 1970 to 2010. The ARDL method estimates $(p+1)k$ number of regressors in order to obtain the optimal lag length for each variable, where p is the maximum number of lags to be used and k is the number of variables in each equation. An appropriate lag selection based on the Schwarz Information Criteria (SBC) and Akaike Information Criteria (AIC) are employed.

The ARDL model specification of the above functional form is;

$$\Delta InGDPt=\gamma+i=1p\alpha i\Delta InGDPt-i+i=0q1\beta i\Delta InGEXPt-i+i= \\ =0q2\delta i\Delta InTCAPt-i+i=0q3\omega i\Delta InTRECt-i+\vartheta 1InGDPt-1+ \\ +\vartheta 2InGEXPt-1+\vartheta 3InTCAPt-1+\vartheta 4InTRECt-1+\varepsilon t \quad (2)$$

Where:
GEXP = Total Government Expenditure
TCAP = Total Capital Expenditure
TREC = Total Recurrent Expenditure
p and qi = lag length for the Model
Δ = first differencing operator
ε = white noise disturbance error term

The bound test approach for the long-run relationship between the public expenditure and economic growth is based on the Wald test (F statistic) by imposing restrictions on the long-run estimated coefficients of one period lagged level of the government spending and GDP to be equal to zero, that is, the null hypothesis of no cointegration states that $H0{:}\vartheta 1=\vartheta 2=\vartheta 3=\vartheta 4=0$, is tested against the alternative hypothesis of $H0{:}\vartheta 1\neq\vartheta 2\neq\vartheta 3\neq\vartheta 4\neq 0$. Then the calculated F-statistic is compared to the tabulated critical value in (Pesaran (2001). The explanatory variables are assumed to be integrated of order zero, or I(0) for values of the lower bound while the upper bound values assumed that are integrated of order one, or I(1). Therefore, the decision rule is that if computed F-statistic falls below the lower bound value, I(0), the null hypothesis (no cointegration) cannot be rejected. Contrarily, if the computed F-statistic exceeds the upper bound value, I(1) then it can be concluded that government spending and GDP are cointegrated.

The long-run and short-run parameters of equation 3 and 4 would be estimated once a cointegration relationship has been established. The cointegrating long-run relationship can be estimated using the following specifications:

$$InGDPt=\emptyset+i=1P\vartheta 1InGDPt-i+i=0q1\vartheta 2InGEXPt-i+i= \\ =0q2\vartheta 3InTCAPt-i+i=0q3\vartheta 4InTRECt-i+\varepsilon t \quad (3)$$

However, to restore equilibrium immediately may not be possible because of the speed of adjustment. This could be caused by the lags and adjustment process used to capture changes in any of the factors affecting government expenditure or economic growth overtime. Hence, the error correction model can be used to capture the speed of adjustment of economic growth model. This model is expressed below:

$$\Delta InGDPt=\varphi+i=1p\alpha i\Delta InGDPt-i+i=0q1\beta i\Delta InGEXPt-i+i= \\ =0q2\delta i\Delta InTCAPt-i+i=0q3\omega i\Delta InTRECt-i+\lambda ecmt-1+\varepsilon t \quad (4)$$

Where:

εct_{t-1} = the error correction term lagged for one period
λ = the coefficients for measuring speed of adjustment in equation 3

Sources of Data

This study employed annual data that covers the period from 1970-2010 for Nigeria. The data is primarily gathered from various issues of Central bank of Nigeria statistical bulletin. The variables of interest are; total government expenditure and its various components and GDP.

Empirical Results and Discussion

The empirical results from the estimated ARDL model needed for discussion is presented in Tables 1 to 4. In the first step of the ARDL analysis, we tested for the presence of long-run relationships using equation (2). We used a general-to-specific modelling approach guided by the short data span and SIC respectively to select a maximum lag order for the conditional ARDL. Following the procedure in Peseran et al. (1997), we first estimated an OLS regression for the first differences part of equation (2) and then test for the joint significance of the parameters of the lagged level variables when added to the first regression. According to Peseran et al. (1997), "this OLS regression in first differences are of no direct interest" to the bounds cointegration test. The F-statistic tests the joint null hypothesis that the coefficients of the lagged level variables are zero (i.e. no long-run relationship exists between them). Table 1 reports the results of the calculated Wald test (F-statistics) when each variable is considered as a dependent variable (normalized) in the ARDL-OLS regressions. The results for the computed Wald test (F-statistics) reported in Table 1 reveals that

the calculated F-statistics of 7.186 is higher than the upper bound critical value 6.650 at 1% error level. Based on this result, we conclude that a level long run cointegration relationship exists for the estimated ARDL models. Thus, the null hypotheses of no cointegration are rejected, implying long-run cointegration relationships amongst the variables when the regressions are normalized on GDP (Table 1). Tables 2 to 4 respectively report the result of the long run coefficients, the short-run dynamic coefficients and the model diagnostic and stability tests.

Table 1: ARDL bound test result for equation (2)

Computed F-Statistic: 7.186	K=2 (lag length)
1% critical bound value	I(0): 4.428, I(1): 6.650

Notes: Critical values are extracted from Narayan (2005); Unrestricted Intercept and No Trend (Case III)

Once we established that a long-run cointegration relationship existed, equation (3) is estimated using the ARDL specification. The result obtained by normalizing on GDP in the long run is reported in Table 3.

Table 2: Estimated long run coefficients using the ARDL approach

	Coefficient	*Std. Error*	*t-ratio*	*p-value*	
const	2.0592	1.0463	1.9680	0.0577	*
lnTREC	1.1592	0.6620	1.7510	0.0895	*
lnTCAP	0.6621	0.3777	1.7531	0.0891	*
lnGEXP	-1.8103	1.0972	-1.6500	0.1087	

Note: Dependent variable lnGDP; ***(**)[*] indicates rejection of the null hypothesis at 1% (5%)[10%] significance level.

The estimated coefficients of the long-run relationship show that non-developmental expenditure (recurrent expenditure) has a very high significant impact on economic growth. A 1% increase in non-developmental expenditure leads to approximately 116% increase in GDP, all things being equal. The expenditure on developmental projects on the other hand is also positively related to economic growth thereby conforming to the aprori theoretical expectation of normal sign but the impact on economic growth is not the same and even fall below what is expended on non-developmental projects in the country i.e. 1% increase in developmental expenditure leads to approximately 66% increase in growth level in the country thereby falling short of 50% of what is expended on non- developmental projects. On an aggregate level, total governmental expenditure play no role in augmenting the growth level in Nigeria which could be as a result of expenditure fungibility i.e. spending more on recurrent than capital. The results of this paper authenticate the findings of Abu and Abdullah (2010) and Maku (2009) that government expenditure has no substantial effect on growth.

Table 3: Error correction representation for the selected ARDL model

	Coefficient	Std. Error	t-ratio	p-value	
Const	-0.0137	0.0232	-0.5899	0.5599	
ΔlnTREC	0.1981	0.1087	1.8215	0.0792	*
ΔlnTCAP	0.0326	0.0549	0.5950	0.5566	
ΔlnGEXP	-0.0110	0.0557	-0.1977	0.8447	
ECM(-1)	-0.2973	0.1253	-3.9690	0.0004	***

Statistical Analysis	Values	Statistical Analysis	Values
R-squared	0.7844	Adjusted R-squared	0.7152
F-stat	4.7720	Schwarz criterion	-33.8243

*Note: ***, ** and * Indicates significant at 1%, 5% and 10% respectively*

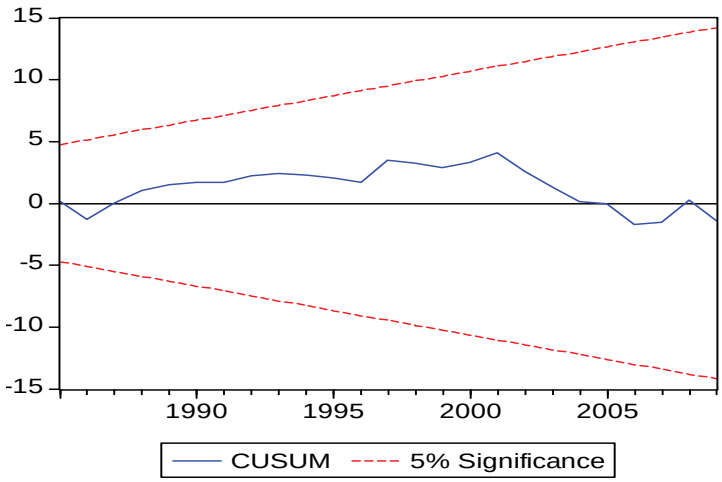
The result of the short-run dynamic coefficients associated with the long-run relationships obtained from the ECM equation (4) is given in Table 3. The signs of the short-run dynamic impacts are maintained to the long-run. However, this time the non- developmental expenditure variable is only significant at 10% p-value. The estimated coefficient for the error correction term reveals which of the variables adjust to correct imbalance in the growth situation whilst the variable coefficients show the short-run effects of the changes in the explanatory variables on the dependent variable. The results confirm that economic growth in Nigeria has an automatic mechanism which responds to deviations from equilibrium in a balancing manner. A value of (-0.297) for the ECM coefficients suggests that a fast speed of adjustment strategy of roughly 30%. This means that approximately 30% of discrepancy the previous year is adjusted for the current year i.e. approximately 30% of disequilibria from the previous year's shock converge back to the long-run equilibrium in the current year. The regression for the underlying ARDL equation (4) fits very well at R^2 of 79%. The reason for being a good fit is that it is statistically above the bench mark of 50 percent. As the adjusted (R^2) tends to purge the influence of the number of included explanatory variables, the (R^2) of 0.7152 shows that having removed the influence of the explanatory variables, the model is still of good fit and the dependent variable explained by the equation by 71.52 percent, hence, in terms of the goodness of fit we can say that the test is fair. The model also passes the diagnostic tests against serial correlation, functional form misspecification and non-normal errors (Table 4). It failed the heteroscedasticity test at 5 percent[2]. According to Pesaran and Shin (1999), the stability of the estimated coefficient of the error correction model should also be graphically investigated. A graphical representation of the Cumulative Sum (CUSUM) and the Cumulative Sum of Square (CUSUMSQ) of the Recursive Residual are also established. The cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) plots which is shown in Figure 1 from a recursive estimation of the model also indicate stability in the coefficients over the sample period.

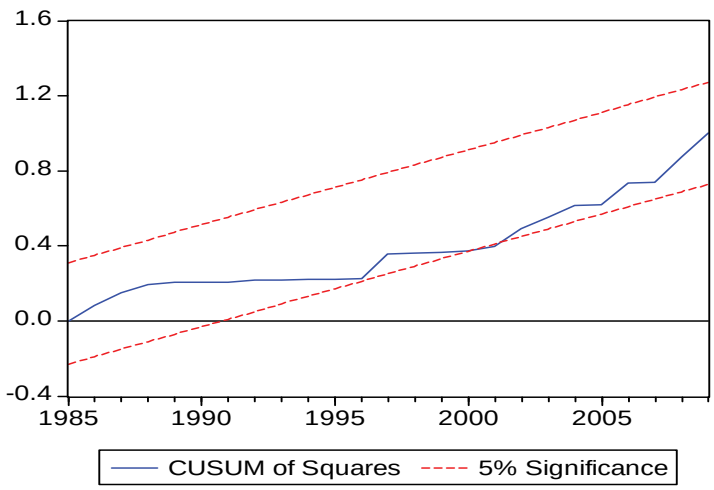
Table 4: Diagnostic Tests Results

TEST	RESULTS	PROB.
Ramsey RESET Test	12.88170	0.0007
Normality test	50.56697	0.0000
Heteroskedasticity Test:	22.52111	0.3129
Breusch-Godfrey LM Test:	2.663907	0.2639

Source: Author's Computation

Figure 1: Stability Test





Conclusion

This study examines the impact of governmental spending on economic growth in Nigeria on a disaggregated pattern. It employs the bounds testing (ARDL) approach to cointegration to examine the long run and short run relationships between public expenditure and economic growth in Nigeria. The bounds test suggested that the variables of interest put in the framework are bound together in the long-run. The associated equilibrium correction was also significant confirming the existence of long-run relationships. The equilibrium correction is fairly fast and is restored by the first quarter of the year. On the basis of empirical results, this study suggested that public spending does not stimulate economic growth for Nigeria which could be as a result of expenditure fungibility i.e. spending more on recurrent than capital which is evident in Nigeria where recurrent expenditure is three times the amount budgeted for capital expenditure. Another factor that could be responsible for this is high cost of governance in Nigeria. The result of this paper corroborates the findings of Laudau (1983), Liu et al. (2008), Abu and Abdullahi (2010) and Maku (2009) that government expenditure has no substantial effect on growth. This study therefore recommends that government should increase its spending on infrastructure, social and economic activities. Also, budget implementation should be monitored for effective performance. In addition, government should encourage and support the private sector initiative in accelerating economic growth.

NOTES

[1] Wagner, in 1883, opined that the growth in economy causes public expenditure to expand; on the contrary, Keynes (1936) raised a thought that during the recession times, expansionary fiscal policy leads to expanding public expenditure, which in turn leads to increased output.

[2] However according to Shrestha et al. (2005), "since the time series constituting the ARDL equation are potentially of mixed order of integration, i.e., I(0) and I(1), it is natural to detect heteroscedasticity".

REFRENCES

Abdullah, H. A., (2000), "The Relationship between Government Expenditure and Economic growth in Saudi Arabia" *Journal of Administrative science* vol. 12(2), pp.173-191.

Abu, N. and Abdullah, U. (2010), "Government Expenditure and Economic Growth in Nigeria, 1970–2008: A Disaggregated Analysis". *Business and Economic Journal*, Vol. 4. Retrieved on 11/6/2010 from http://astonjournals.com/bej

Ahsan, S., Kwan, A. and Sahni, B. (1989), "Causality between Government Consumption Expenditures and National Income: OECD Countries", *Public finance* 44(2), pp. 204-224.

Arrow, K. J., and Kurz, M., (1970) "Public Investment, the Rate of Return, and Optimal fiscal Policy", *John Hopkins University, Baltimore*, MD.

Barro, R. J., (1991), "Economic Growth in a Cross Section of Countries", *Quarterly Journal Economics*, CVI, pp.407-444.

Barro, R. J., and Sala-i-Martin, X, (1992), "Public Finance in Models of Economic Growth", *Review of Economic Studies*, vol. 59, pp. 645-661.

Barth, J. R., Kelleher, R. E. and Russek, F. S. (1990) , "The Scale of Government and Economic Activity", *Southern Economics Journal*, Vol 13, pp. 142- 183.

Brons, M. and Nijkamp, P. (1999), "Growth Effects of Fiscal Policies", Tinbergen Discussion paper, *Amsterdam, Vrije Universiteit.*

Central Bank of Nigeria (2010) Statistical Bulletin Vol. 6, No. 12. Published by Research Department, Central Bank of Nigeria, Abuja.

Dar Atul AmirKhalkhali (2002). "Government size, factor accumulation, and economic growth: Evidence from OECD countries". *Journal of Policy Modeling*, Elsevier.

Devarajan, S., Swaroop, V., Zou H., (1996) "The consumption of Public Expenditure and Economic Growth". *Journal of Monetary Economics*, Vol. 37, pp.313-344.

Easterly, W. and Rebelo S. (1993), "Fiscal Policy and Economic Growth: An Empirical Investigation", *Journal of Monetary Economics* 32, 417-458.

Fajingbesi, A. A., Odusola, A. F., (1999), "Public Expenditure and Growth", A Paper Presented at a Training Programme on Fiscal Policy Planning Management in Nigeria, Organized by NCEMA, Ibadan, Oyo state, pp.137-179.

Holmes, J.M. and Hutton, P.A. (1990). "On the causal relationship between government expenditures and national income". *The Review of Economics and Statistics*, JSTOR.

Johansen, S. and Juselius, K. (1990), "Maximum Likelihood Estimation and Inference on Cointegration –With Application to the Demand for Money", *Oxford Bulletin of Economics and Statistics*, 52(2), 169-211

Josaphat, P. K and Oliver M (2000): Government Spending and Economic Growth in Tanzania, 1965-1996: *CREDIT Research Paper*

Keynes JM (1936). The General Theory of Employment, Interest and Money, Vol. 7, *Cambridge: MacMillan.*

Komain, J. and Brahmasrene, T. (2007). "The relationship between government expenditures and economic growth in Thailand". *Journal of Economics and Economic Education Research*, Vol. 8(1), pg 93-104.

Landau, D. L. (1986): "Government and Economic Growth in the Less Developed Countries: An Empirical Study for 1960-88", *Economic Development and Cultural Change*, 35, 35-75.

Landau, D. L., (1983): "Government Expenditure and Economic Growth: A Cross Country Study", *Southern Economic Journal*, 49 (January 1983), pp. 783 – 792.

Lindauer, D.L. and A.D. Velenchik, "Government Spending in Developing Countries: Trends, Causes, and Consequences," World *Bank Observer 7,* January 1992,pp. 59-78.

Liu Chin, H.L., Hsu, C. and Younis, M. (2008). "The association between government expenditure and economic growth: The granger causality test of the US Data, 1974-2002". *Journal of Public Budgeting, Accounting and Financial Management.*

Maku, O.E. (2009). "Does Government Spending Spur Economic Growth in Nigeria? *Munich Personal RePEc Archive*. Retrieved on 13/8/2010 from http://mpra.ub.uni-muenchen.de/17941/ MPRA Paper no. 17941.

Muhlis, B. and Hakan, C. (2003). "Causality between public expenditure and economic growth: The Turkish case". Available at http://mpra.ub.uni-muenchen.de/8576/.

Odedokun, M.O. (1997). "Relative effects of public versus private investment spending on economic efficiency in developing countries". *Journal of Applied Economics.*

Olugbenga, A.O., Owoye, O. (2007). "Public expenditure and economic growth: New evidence from OECD countries". *Business and Economic Journal*, Vol. 4(17).

Pesaran H. M, Shin Y. and Smith R.J (2001): "Bounds Testing Approaches To The Analysis Of Level Relationships". *Journal of Applied Econometrics*. Econ. 16: 289–326 (2001). DOI: 10.1002/jae.616

Pesaran H.M and Pesaran B. (1997): Working with Microfit 4.0: Interactive Econometric Analysis, Oxford University Press.

Pesaran, M. H. and Shin, Y. (1999) An autoregressive distributed lag modelling approach to cointegration analysis, in Econometrics and Economic Theory in the 20th Century: The Ragnar Frisch Centennial Symposium, (Ed.) S. Storm, Cambridge University Press, Cambridge, pp. 1–33.

Ram, R. (1986) "Government Size and Economic Growth: A New Framework and Some Evidence from Cross-section and Time Series Data", *American Economic Review*, 76, 191-203.

Ranjan, K.D. and Sharma, C. (2008). "Government expenditure and economic growth: Evidence from India". *The ICFA/University Journal of Public Finance*, Vol. 6(3): 60-69.

Rehman, J., Iqbal, A. and Siddiqi, M.W. (2010). "Cointegration-causality analysis between public expenditure and economic growth in Pakistan". *European Journal of Social Sciences.*

Sahni, B. S. and Singh, B. (1984) "On the causal directions between national income and government expenditure of Canada".

Sakthivel, P.and Yadav, I.S. (2005). "Causality between public expenditure and national income in India: A re-examination". *The IUP Journal of Public Finance*.

Shioji, E. (2001). "Public capital and economic growth: a convergence approach". *Journal of Economic Growth*, 6, 205±227, ©2001 Kluwer Academic.

Shrestha, M.B. and K. Chowdhury, (2005). "ARDL modelling approach to testing the financial liberalisation hypothesis". *Economics Working Paper Series*, University of Wollongong.

Tandon, A. and Cashin, C. (2010). "Assessing public expenditure on health from fiscal space perspective". *Health, Nutrition and Population (HNP), Discussion paper.*