PUBLIC EXPENDITURE AND ECONOMIC GROWTH IN NIGERIA

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Abstract
This study examined the impact of public expenditure on economic growth (EGr) in Nigeria from 1970 to 2013. Public expenditure in its aggregated and disaggregated form served as the major regressor with money supply as check variable meant to enhance the explanatory power of the model. The study adopted the econometric technique of Ordinary Least Squares (OLS) and Error Correct Mechanism (ECM) using annual time series data from secondary sources. The ADF result showed that all the variables were stationary at 1st difference and the cointegration test indicated a long run relationship among the variables. The findings reveal that aggregated government expenditure do not impact significantly on EGr, while disaggregated government expenditure exerts a significant impact on EGr. In conclusion, the study submits that public expenditure has serious implication on economic growth (EGr) in Nigeria within the period of study. There is, therefore, the need for government to ensure appropriate channeling of its expenditure to areas like infrastructural development in order to stimulate investment and production with the expectant result of price stabilization. There is also need to continue to strengthen the institutional framework that will check corruption and misappropriation of public funds in the fiscal system.

Introduction

The management of the economy has become a major pre-occupation of governments throughout the world. Following the jettisoning of laissez fair doctrine, governments feel compelled to ensure that their economies are managed to achieve major desirable objectives of full employment, price stability, economic growth and external balance (Ohale and Onyema 2002). It was the English Economist, John Maynard Keynes, who popularized public expenditure as a stabilization tool through his philosophy of active government intervention in an economy that pulled many economies out of the Great Depression of the 1930s.

Over the years, therefore, government intervention has become more popular in the management of the Nigerian economy. Therefore the government has consistently employed diverse macroeconomic policy options to put the economy on the path of stable growth and development.

However, the dismal performance of public sector in Nigeria since independence has brought

to the front burner, the debate on its effectiveness in macroeconomic management. Like many other developing countries, a large spectrum of public debate on public expenditure in Nigeria has not only focused on the output growth outcomes, but also on its effectiveness in business cycle stabilization as a fundamental aspect (Adegboye 2012).

Arising from the above, Ezeabasili (2013) has it that public sector management in Nigeria since independence has failed to deliver the much expected macroeconomic stability and growth. A critical look at the trend of economic variables in this regards reveals that Nigeria is still grappling with fluctuating economic imbalances evidenced by inconsistent growth rates, high level of inflation, unemployment, illiteracy and poverty amongst others. Available statistics show that government expenditure (capital and recurrent) and its components have been on the increase in the last three decades. For instance, government recurrent expenditure increased from N4, 805.20 in 1980 to N36, 219.60 in 1990 and further to N1,589,270.00 in 2007 and N3,689,080.21 in 2013. On the other hand, government capital expenditure rose from N10, 163.40 in 1980 to N24, 048.60 in 1990. Capital expenditure stood at N239, 450.90 and N759, 323.00 in 2000 and 2007 respectively, and N1,108,386.40 in 2013. However, the rising government expenditure is yet to translate to commensurate growth and development and improvement in the performance of key macroeconomic indicators. It is disturbing to note that government expenditure seems to have not replicated same level of economic growth in Nigeria, for instance between 1980 and 1990, while the GDP growth rate was decreasing (57.15 percent down to 2.87 percent), government expenditure growth rate was increasing (23.2 percent to 41.24 percent). Thus, there was an inverse relationship between the two periods. However, it is found that the growth rate of government expenditure in 2000 and 2010 was 15.53 percent and 2.15 percent respectively, while GDP growth rate witnessed 8.79 percent and 1.54 percent in the same period respectively. Thus, government expenditure growth rate was greater than GDP growth in the same period. The business day Newspaper of Tuesday 14 February, 2012, reported that the percentage of Nigerian living in abject poverty rose to 60.9 percent in 2012 as compared to 54.7 percent in 2004 as Nigeria ranks among the poorest countries in the world (Okoro, 2013).

Iyeli (2012) agreed with this statistics when he argued that the Nigeria economy is yet to come on the path of sound growth and development despite the lofty place of fiscal policy in its management over the past decades. Ewetan (2012) also observed that in the last three decades, Nigerians have not only been contending with vanishing real income but also unbearable levels of unemployment, inflation and decay in social amenities etc.

However, it has been specifically observed that the major challenge to Nigerian economy is the volatile macroeconomic environment driven largely by internal term of trade shocks and the country's large reliance on oil export earnings. Over time, various oil price developments in the world oil market has led to instability in fiscal stance and has been transmitted to the rest of the economy, with negative implications for in particular the real exchange rate and growth performance (Akanniwo, 2013). Furthermore, the nature of inter-governmental relations or rather lack of coordination and alignment among the different tiers of government has contributed to the growing misplacement of fiscal priorities as resources have increasingly filtered or diverted to trivial macroeconomic pursuits (Ezeabasili, 2013).

Arising from above, several studies using various measures to investigate the impact of public expenditure on economic growth in Nigeria have provided mixed results. For instance, Nnamdi (2013) in his study of government expenditure on the economy of Nigeria from 1980

to 2011 using (OLS) found a positive impact whereas Egbetunde and Fasanya (2013) in their study of public spending on economic growth (1970-2010), using bound test (ARDL) found a negative relationship. Therefore the persistence of these problems in spite of government efforts, coupled with the inconclusive debate, has made it necessary to further investigate the impact of public expenditure (using both aggregated and disaggregated government expenditure) on economic growth (one of major key indicators of macroeconomic performance) which earlier studies did not capture. This is what has motivated this study.

The aim of this study is to examine the impact of public expenditure on selected indicators of macroeconomic performance such as economic growth, inflation, unemployment and balance of payments in Nigeria.

Literature Review

This section contains a review of theories and empirical works that are related to the problem we are investigating. These are as discussed below.

Keynes' Theory of Government Expenditure

The English economist, John Maynard Keynes popularized the use of government expenditure as a stabilization tool. In his writing of the Great Depression of the 1930s, Keynes argued that output and employment were well below their potential level because there was insufficient total demand. If demand could be increased, output and employment could be expanded and the economy would return to its full employment potential. Moreover, Keynes believed this could be achieved with expansionary fiscal policy.

During a recession, Keynes argued that rather than balancing its budget, the government should increase its spending, reduce taxes, and shift its budget toward a deficit. According to Keynes, higher levels of government spending would directly increase total demand. Further, lower taxes would increase the after-tax incomes of households and they would spend most of that additional income, which would also stimulate total demand. Thus, the Keynesian prescription to cure a recession was a larger budget deficit.

In contrast, if the economy was experiencing a problem with inflation during an economic boom, Keynesian analysis called for restrictive fiscal policy to temper excessive demand. In this case, reductions in government spending, higher taxes, and a shift of the budget toward a surplus would reduce total demand and thereby help to fight inflation.

Thus, Keynes rejected the view that the government's budget should be balanced. He argued that appropriate budgetary policy was dependent on economic conditions. According to the Keynesian view, governments should run budget deficits during recessionary times and surpluses during periods when inflation was a problem because of excessive demand.

Can fiscal policy be used to reduce economic instability? The Keynesian view of fiscal policy swept the economics profession and, by the 1960s, it was also widely accepted by policy makers. During that era, most economists believed that fiscal policy exerted a powerful impact on the economy and that it could be instituted in a manner that would smooth the ups and downs of the business cycle. However, this is more difficult than was initially perceived. If changes in fiscal policy are going to exert a stabilizing impact on the economy, they must be timed correctly. Proper timing of fiscal changes is difficult.

Wagner's Law of Increasing State Activities

Adolph Wagner (1835-1917) was a German economist who based his Law of Increasing State Activities on historical facts, primarily of Germany. According to Wagner, 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. From the original version of this theory it is not clear whether Wagner was referring to an increase in: (a) Absolute level of public expenditure; (b) The ratio of government expenditure to GNP; or (c) Proportion of public sector in the economy.

Musgrave believes that Wagner was thinking of proportion of public sector in the economy. 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's (Nitti, 1903). All kinds of governments, irrespective of their levels, intentions and size, etc, had exhibited the same tendency of increasing public expenditure.

Wagner's statement underlines the following points:

1. In progressive societies, the activities of the central and local government increase on regular basis.
2. The increase in government activities is both extensive and intensive.
3. The government undertakes new functions in the interest of the society.
4. The old and the new functions are performed more efficiently and completed than before.
5. The purpose of the government activities is to meet the economic needs of the people.
6. The expansion and intensification of government function and activities lead to increase in public expenditure.
7. Though Wagner studied the economic growth of Germany, it applies to other countries too, both developed and developing.

The principal criticisms of Wagner's law have concerned his view of history and of the relationship between the state and its citizens.

Empirical Literature

Many scholarly works have been undertaken to find the impact of public expenditure on other key economic variables. Some of such studies found a meaningful positive impact, whereas as others found a negative impact. Below is a review of some of such works includes Liu-Chih, Hsu, and Younis (2008) who examined the causal relationship between GDP and public expenditure for the US data during the period 1947 –2002. The causality results revealed that total government expenditure causes growth of GDP. On the other hand, growth of GDP does not cause expansion of government expenditure. Moreover, the estimation results indicated that public expenditure raised the US economic growth. The authors concluded that judging from the causality test Keynesian hypothesis exerts more influence than the Wanger's law in US. Therefore, recommended more of government in the economy.

Gregorious and Ghosh (2009) used the heterogeneous panel to investigate the impact of government expenditure on economic growth. The authors employed the GMM technique, and discovered that countries with large government expenditure tend to experience higher growth, but the effect varies from one country to another. And therefore effective and efficient expenditure framework is needed.

Ekpo (1995) studied the contributions of public expenditure to economic growth in Nigeria over the periods 1960 to 1992 using the Ordinary Least Squares (OLS) method of analysis. The findings from the study provided support for fiscal policy-led growth through crowd-in private investment resulting from government expenditure on infrastructure. He recommended the strengthening of fiscal policy framework for sustainable growth.

Nurudeen and Usman (2010) investigated the effect of government expenditure on economic growth in Nigeria by employing 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. The study therefore recommended among others that government should increase both capital expenditure and recurrent expenditure, including expenditures on education, as well as ensuring that funds meant for the development of these sectors are properly managed. Secondly, government should increase its investment in the development of transport and communication, in order to create an enabling environment for business to strive.

Onuorah and Akujuobi (2012) examined the trend and empirical analysis of public expenditure and its impact on the economic growth in Nigeria. The study employed Johansen Co-integration and VEC and found that recurrent government expenditure established long run relationship with RGDP. Finally, there is no statistical significance between public expenditure variables and the economic growth in Nigeria. The author recommended that a means of checking corruption and misappropriation of public funds be devised by fiscal authorities.

Nworji, Okwu, Obiwuru and Nworji (2012) examined the effect of public expenditure on economic growth in Nigeria for the period 1970 to 2009 using OLS multiple regression on domestic product (GDP), and various components of government expenditure. The study showed that capital and recurrent expenditure on economic services had insignificant negative effect on economic growth during the study period. Also, capital expenditure on transfers had insignificant positive effect on growth. But capital and recurrent expenditures on social and community services and recurrent expenditure on transfers had significant positive effect on economic growth. There is a critical need by the government to ensure adequate and proper channeling of its expenditures to sectors of high propensity for growth and minimize its recurrent expenditures.

Okoro (2013) examined the relationship between government spending and economic growth in Nigeria using time series data of 32 years period (1980-2011), this study investigated the impact of government spending on the Nigerian economic growth. Employing the ordinary least square multiple regression analysis to estimate the model specified. Real Gross Domestic Product (RGDP) was adopted as 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 Cointegration Test and Error Correction Mechanism, the result shows that there exists a long-run equilibrium relationship between government spending and economic growth in Nigeria. The short-run dynamics adjusts to the long-run equilibrium at the rate of 60% per annum.

Arewa and Nwakahma (2013) investigated the long-run relationship between government expenditures and a set of macroeconomic variables (GDP, consumer price index and

unemployment) using annual data collected from CBN statistical bulletin for a period of 1991 to 2011. The study adopted the Johansen multivariate cointegration for its estimation procedure and discovers that there is long-run relationship between government expenditure and the specified macroeconomic variables. It also discovers that an increase in capital expenditure improves economic bliss, while recurrent expenditure is detrimental to growth. Finally, the findings show that most of the variables do not Granger cause each other, but however, recurrent expenditure Granger cause prices, in the same vein capital expenditure does granger cause unemployment.

Egbetunde and Fasanya (2013) analyzed the impact of public expenditure on economic growth in Nigeria during the period 1970 to 2010 by employing the bounds testing (ARDL) approach. 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 findings indicated that the impact of total public spending on growth was 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 and also check corruption.

Method of Study

The research design for this study was quasi-experimental. In this type of design, like the experimental design method used in the natural sciences, researchers depend on data analysis techniques as a method of control. This is because the cross-sectional design is the most predominant design employed in the social sciences. According to Nachmias and Nachmias (2009), "in cross-sectional designs, multivariate methods of statistical analysis such as elaboration by cross-tabulation, multiple regression, and path analysis are the most common alternatives to experimental methods of control and the drawing of causal inferences". This type of design was adopted because it allows researchers to make statistical inferences to broader populations and permit them to generalize their findings to real-life situations, thereby increasing the external validity of the study.

We employed the econometric technique of Ordinary Least Square multiple Regression (OLS), unit root test, Co-integration and Error correction model. Our choice of OLS was informed by its quality of Best Linear Unbaised Efficiency (BLUE). Unit root test was used to test for stationarity, while Co-integration and ECM were employed to test for long run relationship among the variables.

Model Specification

Based on the Keynesian theory and Wagner's Law of public expenditure, the functional relationship between the dependents and the explanatory variables are specified as follows:

$$EGr = F(GEX, MSS) \quad (1)$$

$$EGr = F(GCE, GRE, MSS) \quad (2)$$

where:

EGr = Gross domestic product growth rate a proxy for economic growth
GEX = Total government expenditure
GCE = Government capital expenditure
GRE = Government recurrent expenditure
MSS = Money Supply

Accordingly, the econometric form of the models is specified as:

$$EGr = h_0 + h_1GEX + h_2MSS + U_1 \quad (3)$$

$$EGr = \alpha_0 + \alpha_1GCE + \alpha_2GRE + \alpha_3MSS + U_2 \quad (4)$$

Where U is the error term, and the other variables as explained above.

We also tried the non-linear specifications. Specifically, the Cobb-Douglas variety was specified, estimated and compared with the linear version. This was done in line with Cookey (2009), who suggested that, in practical economic research, the standard practice is to try both the linear and non-linear forms of the relationship and analyze the one that gives the best result. Hence, the Cobb-Douglas (aggregate production function) variety was specified as follows:

$$EGr = h_0\, GEX^{h1}\, MSS^{h2}\, e^{U3} \quad (5)$$

$$EGr = \alpha_0\, GCE^{\alpha1}\, GRE^{\alpha2}\, MSS^{\alpha3}\, e^{U4} \quad (6)$$

To make the model amenable to OLS and to place all the variables in the same level to avoid the problem of multi-colinearity, we linearized by taking the log of the variables in equations (5) and (6) thus**:**

$$EGr = h_0 + h_1LOG(GEX) + h_2LOG(MSS) + U_5 \quad (7)$$

$$EGr = \alpha_0 + \alpha_1LOG(GCE) + \alpha_2LOG(GRE) + \alpha_3LOG(MSS) + U_6 \quad (8)$$

The meanings of the variables remain as given above.

Result and Discussions

The trend of performance of the variables was analyzed. Specifically, Appendix 1 shows the trend of Nigeria's Gross Domestic Product Growth Rate (EGr), Government Capital Expenditure (GCE), Government Recurrent Expenditure (GRE), Total Government Expenditure (GEX), and Money Supply (MSS) from 1970 to 2013.

The values in Appendix I show that on the average between 1970 and 1974 the value of EGr was 11.83 percent, GCE was 52.4 million naira, GRE was 1,006.52 million naira, GEX was 1,526.9 million naira, while MSS was 1,167.40 million naira. For the period of between 1975 and 1979 on the average, the values of EGr decreased to 2.17 percent, GCE increased to 4,334.6 million naira, GRE increased to 3,271.34 million naira, GEX increased to 7,605.96 million naira, and MSS increased to 6,053.46 million naira. Also, between 1980 and 1984 on the average, the values of EGr further decreased to -3.41 percent, GCE further increased to 6,426.7 million naira, GRE also increased to 5,147.24 million naira, GEX increased to 1,1573.90 million naira, and MSS increased to 15,981.68 million naira. This fluctuating performance of the variables went on; and between 2010 and 2013 on the average, the values of EGr decreased further to 5.6 percent, GCE further increased to 946,409.8 million naira, GRE increased to N3,359,527.34, GEX increased to N4,674,319.17, MSS increased to N13,065,360.65.

Further analyses were based on the hypothesis that, there is no significant relationship between public expenditure and economic growth in Nigeria. The result of the descriptive statistics of the variables employed in the estimations in this study is presented in Table 1

Table 1: Descriptive Statistics Results

	EGr	GEX	GCE	GRE	MSS
Mean	4.402273	914451.5	251168.3	621199.4	2092199.
Median	4.650000	79690.90	34052.10	45638.80	93256.75
Maximum	33.74000	5185319.	1152797.	3689080.	15158622
Minimum	-13.13000	903.9000	173.6000	716.1000	789.5600
Std. Dev.	8.081320	1480800.	350070.6	1046785.	4076885.
Skewness	0.964300	1.700933	1.298497	1.769708	2.084199
Kurtosis	6.409756	4.632892	3.379921	4.919823	6.026015
Jarque-Bera	28.13421	26.10489	12.62931	29.72417	48.64258
Probability	0.000001	0.000002	0.001810	0.000000	0.000000
Sum	193.7000	40235865	11051406	27332776	92056741
Sum Sq. Dev.	2808.233	9.43E+13	5.27E+12	4.71E+13	7.15E+14
Observations	44	44	44	44	44

Source: *Author's Computation (2016)*

From the result of the summary statistics we observe that the mean for EGr, GEX, GCE, GRE, and MSS, variables is 4.402273, 914451.5, 251168.3, 621199.4, and 2092199.0, respectively. This indicates that the variables exhibit significant variation in terms of magnitude, suggesting estimation in levels may introduce some bias in the results. Based on these observations, it indicates that the series are non-stationary. However, this indication is not surprising since it involves time series data. Like Aminu (1999) noted, time series data are subject to fluctuations caused by many different events which may be positive or negative. Thus, the series may be positive at one point and negative in another. In sum, there is unit root (non-stationarity) in the series. In such a case, the presence of unit root in the models is further supported by the values of the Jarque-Bera statistic in Table 1. The Jarque-Bera values calculated of the variables are above 5.99 depicting the presence of unit root.
Based on the above observations it is therefore necessary to test for unit root. We also tested for co-integration among the variables and conducted the ECM. In conducting stationarity tests of the variables in equations 3 and 4, we used the Augmented Dickey-Fuller (ADF) unit root test which is derived from Dickey and Fuller (1979, 1981). The results are presented in Tables 2.

Table 2: ADF Test Results at Level

Variables	ADF test Statistic	ADF Critical Value	Level of Significance	Remark
EGr	-5.738962	-2.931404	5%	Stationary
GEX	-1.199398	-2.941145	5%	Not Stationary
GCE	-0.558105	-2.931404	5%	Not Stationary
GRE	-4.573928	-2.933158	5%	Stationary
MSS	-4.703315	-2.941145	5%	Stationary

Source: *Author's Computation (2016)*

The results of the ADF unit root test results in Table 2 reveal that the variables; GDP growth rate (EGr), government recurrent expenditure (GRE) and money supply (MSS) were stationary at levels while total government expenditure (GEX), and government capital expenditure (GCE) were not. We therefore accept the unit root null hypothesis indicating the

presence of a unit root at levels and then proceed to employ first differentiation approach to establish the order of integration of the variables. The result is presented in Table 3.

Variables	ADF test Statistic	ADF Critical Value	Level of Significance	Order of Integration	Remark
GEX	-7.537333	-2.954021	5%	I(1)	Stationary
GCE	-7.477950	-2.933158	5%	I(1)	Stationary

Table 3: ADF Test Results at 1st difference
Source: *Author's Computation (2016)*

The result of the unit root test in Table 3 reveals that the remaining variables are stationary in their first differences. We then concluded that the variables of the model are integrated of order one i.e. I(1). Having stabilized and stationarized the data, we then conducted the co-integration test.

Since all the variables were integrated of order 1, we turned to determine the existence of long run equilibrium relationship between the variables. The co-integration tests are based on the Johansen and Juselius (1989) test. Tables 4 and 5 present the co-integration test results.
It must be noted that the results of the linear models were better than those derived from the non-linear models; implying that the relationship between the variables can best be estimated by a linear model than non-linear. As such, only the results of the linear models are hereunder discussed.

Table 4: Co-integration Tests for Model 3 (with aggregated GEX)

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.942627	155.8196	29.79707	0.0001
At most 1 *	0.405477	35.77631	15.49471	0.0000
At most 2 *	0.282384	13.93649	3.841466	0.0002

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.942627	120.0433	21.13162	0.0001
At most 1 *	0.405477	21.83983	14.26460	0.0027
At most 2 *	0.282384	13.93649	3.841466	0.0002

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: *Author's Computation (2016)*

The co-integration results in Table 4 for EGr**,** GEX and MSS model (i.e. Model 3) reveal that, both the trace statistic and the max-eigen value indicate 3 cointegrating equations at 5 percent level of significance. This suggests that there is a long-run relationship between economic growth and public expenditure. We therefore reject the null hypothesis of no co-integration amongst the variables but do not reject the alternative hypothesis.

Table 5: Co-integration Tests for Model 4 (with disaggregated GEX)

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.950011	168.1553	47.85613	0.0000
At most 1 *	0.426560	42.32543	29.79707	0.0011
At most 2 *	0.325797	18.96914	15.49471	0.0144
At most 3	0.055805	2.411731	3.841466	0.1204

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.950011	125.8298	27.58434	0.0000
At most 1 *	0.426560	23.35628	21.13162	0.0239
At most 2 *	0.325797	16.55741	14.26460	0.0213
At most 3	0.055805	2.411731	3.841466	0.1204

Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: *Author's Computation (2016)*

The co-integration results in Table 5 for EGr**,** GCE, GRE and MSS model (i.e. Model 4) reveal that, both the trace statistic and the max-eigen value indicate 3 cointegrating equations at 5 percent level of significance. This suggests that there is a long-run relationship between economic growth and disaggregated public expenditure. We therefore reject the null hypothesis of no co-integration amongst the variables but do not reject the alternative hypothesis.

The confirmation of the existence of a cointegrating vector among the series in the models gave us the confidence in carrying out short run dynamic adjustment. Thus, adopting the general-to-specific framework, we proceed to estimate an over-parameterized error correction model from where a parsimonious error correction mechanism is obtained as shown in Tables 6 and 7.

Table 6: PARSIMONIOUS ECM Result for EGr Model (with aggregated GEX)

Dependent Variable: D(EGr)
Method: Least Squares
Sample (adjusted): 1973 2013
Included observations: 41 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-25873.63	299980.9	-0.086251	0.9318
D(EGR(-1))	-0.482383	0.117857	-4.092946	0.0003
D(EGR(-2))	-0.686514	0.151949	-4.518051	0.0001
D(GEX)	-4.185313	2.696399	-1.552186	0.1302
D(GEX(-1))	-2.152323	2.181434	-0.986655	0.3310
D(MSS)	-2.788767	1.099065	-2.537400	0.0161
D(MSS(-2))	19.73873	2.106861	9.368786	0.0000
ECM(-1)	-0.963829	0.203719	-4.731181	0.0000

R-squared	0.926031	Mean dependent var	1956462.
Adjusted R-squared	0.910340	S.D. dependent var	4995292.
S.E. of regression	1495752.	Akaike info criterion	31.44734
Sum squared resid	7.38E+13	Schwarz criterion	31.78169
Log likelihood	-636.6704	Hannan-Quinn criter.	31.56909
F-statistic	59.01876	Durbin-Watson stat	2.077595
Prob(F-statistic)	0.000000		

Source: *Author's Computation (2016)*

Table 6 above presents the parsimonious ECM for model 3. It shows that the explanatory variables included in the model explained 91 percent of the variation in economic growth in Nigeria. The F-statistic of 59.019 (F-table = 3.23) shows that the model is statistically significant and that the independent variables are significant explanatory factors of the dependent variable. The above implies that the model has a goodness of fit and the Durbin Watson Statistic of 2.078 reveals that there is minimal or absence of serial autocorrelation among the variables used in the model. Also, the error correction coefficient (ECM) is significant and appropriately signed. This reveals that output growth (EGr) in Nigeria adjust to changes in the explanatory variables. Furthermore, the coefficient of the current value of GEX is negative while that of past (lag 1) value of GEX is positively related to economic growth. The coefficient of current and past (lag 1) of GEX are not statistically significant with economic growth at 5 percent level. This is so because their t-values calculated are less than the t-table of 2.021. Furthermore, the coefficient of the current value of MSS is negative while that of past (lag 1) value of MSS is positively related with economic growth. The coefficient of current and past (lag 1) of MSS are not statistically significant with economic growth at 5 percent level. This is so because their t-values calculated are less than the t-table of 2.021.

Table 7: PARSIMONIOUS ECM Result for EGr Model (with diaggregated GEX)

Dependent Variable: D(EGr)
Method: Least Squares
Sample (adjusted): 1973 2013
Included observations: 41 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-136832.6	253448.1	-0.539884	0.5931
D(EGR(-1))	0.548055	0.115300	4.753285	0.0000
D(EGR(-2))	0.416106	0.080500	5.168992	0.0000
D(GCE(-1))	14.34272	3.496813	4.101654	0.0003
D(GCE(-2))	8.379418	2.961078	2.829854	0.0081
D(GRE)	21.17291	1.912853	11.06876	0.0000
D(GRE(-1))	-6.416861	2.821032	-2.274650	0.0300
D(MSS)	-3.215029	0.887472	-3.622682	0.0010
ECM(-1)	-0.470435	0.083556	-5.630143	0.0000

R-squared	0.950845	Mean dependent var	1956462.
Adjusted R-squared	0.936574	S.D. dependent var	4995292.
S.E. of regression	1258042.	Akaike info criterion	31.13623
Sum squared resid	4.91E+13	Schwarz criterion	31.55418
Log likelihood	-628.2927	Hannan-Quinn criter.	31.28842
F-statistic	66.62827	Durbin-Watson stat	2.101918
Prob(F-statistic)	0.000000		

Source:*Author's Computation (2016)*

Table 7 presents the parsimonious ECM for model 4. It shows that the explanatory variables included in the model explained 93.7 percent of the variations in economic growth in Nigeria. The F-statistic of 66.628 (F-table = 2.84) shows that the model is statistically significant and that the independent variables are significant explanatory factors of the dependent variable. The above implies that the model has a goodness of fit and the Durbin Watson Statistic of 2.102 reveals that there is minimal or absence of serial autocorrelation among the variables used in the model. Also, the error correction coefficient (ECM) is significant and appropriately signed. This reveals that output growth (EGr) in Nigeria adjust to changes in the explanatory variables.

Furthermore, the values of the coefficient of past (lag 1 and 2) of GCE and current value of GRE has a positive sign while those of past (lag 1) of GRE and current value of MSS are negatively related with economic growth. The study also reveals that all the explanatory variables are statistically significant economic growth. This is so because their t-values calculated are greater than the t-table of 2.021.

Discussions

Based on the ECM results of model 4 the coefficients of both the current and past (lag 1) values of total Government Expenditure (GEX) is negative, implying that an increase in GEX reduces economic growth in Nigeria within the period under review. The negative sign of total government expenditure do not conform to the *apriori* expectation of a positive

relationship between government expenditure and economic growth. The findings of this study agrees with the work of Nurudeen and Usman (2010) who found government expenditure to be negatively related to economic growth but disagrees with the works of Egbetunde and Fasanya (2013), Onakoya, Somoye and Russell (2013), Aladejare (2013), Nnamdi (2013), Arewa and Nwakahma (2013), Agbonkhese and Asekome (2014), Momodu and Ogbole (2014), Agundu and Ogbole (2014), Ahmad and Masan (2015) and Udoka and Anyingang (2015). These scholars have found a positive effect between government expenditure and economic growth which is not in tandem with the findings of this study.
Also, the coefficients of both the current and past (lag 1) of GEX do not impact significantly on EGr at 5 percent level. This is so because their t-values calculated of 1.552186 and 0.986655 are less than the table value of 2.021.

Arising from the above, the study therefore accepts the null hypothesis which says that there is no significant relationship between total government expenditure and economic growth in Nigeria within the period under review. The negative sign and the insignificant effect of total government expenditure on economic growth in Nigeria within the period under review could be blamed on lack of prudent fiscal management and institutional weaknesses that tend to deride policy effort. For instance, in the 1960s and early 1970s, Nigeria, Malaysia, Indonesia, Taiwan, Singapore and South Korea had similar incomes per capita, GDP growth rates, and under-developed political structures. Today, the "Asian Tigers" (as the south-east Asian countries are popularly known) have escaped under-development and poverty partly because of the way in which their economies have been managed.

The ECM results of model 5 shows that the coefficient of past (lag 1 and 2) values of Government Capital Expenditure (GCE) has a positive relationship with economic growth, meaning that an increase in government capital expenditure will increase economic growth. The positive sign of GCE conform to the a priori expectation in line with economic theory. The findings of this study agree with the works of Arewa and Nwakahma (2013), Okoro (2013), Al-Shatti (2014), Jakupi and Prodani (2015), Peter (2015), Udoka and Anyingang (2015) and Ahmad and Masan (2015). These scholars have found a positive effect between government capital expenditure and economic growth in tandem with the findings of this study.

Furthermore, the coefficient of current value of GRE is positively signed with economic growth. This means that an increase in current value of GRE increase will increase EGr. This finding does not conform to a priori expectation. This result is in line with the works of Al-Shatti (2014), Peter (2015), Udoka and Anyingang (2015) and Ahmad and Masan (2015) who found government recurrent expenditure to be positively related to economic growth. Also, the study reveals that the value of past (lag 1) of GRE is negatively related to economic growth which is in line with our a priori expectation. This finding supports the works of Okoro (2013) and Arewa and Nwakahma (2013) who found GRE to be negatively related to EGR. The coefficients of all the explanatory variables impact significantly on EGR at 5 percent level. This is so because their t-values calculated are greater than the table value of 2.021.

Arising from the above, the study therefore rejects the null hypothesis which says that there is no significant relationship between disaggregated government expenditure and economic growth in Nigeria but do not reject the alternative hypothesis.

Conclusion and Recommendations

The study examines empirically the impact of public expenditure on economic growth in Nigeria from 1970 and 2013 using data from secondary sources. The result has shown that aggregated government expenditure did not impact significantly on economic growth while disaggregated government expenditure impacted significantly on it. The insignificant effect of total government expenditure on economic growth within the period of study may have been as a result of poor utilization of government expenditure, wide spread corruption and wrong channeling of expenditure to unproductive sectors.

Based on the findings of this work, we proffer the following recommendations:

The finding shows that aggregated (Total) government expenditure did not impact significantly on economic growth which could be blamed on lack of prudent fiscal management and institutional weaknesses that tend to hinder policy effort.

There is, therefore, the need for government to ensure appropriate channeling of its expenditure to area like infrastructural development in order to stimulate investment and production with the expectant result of price stabilization.

Therefore, there is need for stronger institutional framework that checks corruption and misappropriation of public fund in the fiscal system.

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APPENDIX I

Table 1: Nigeria's EGr, INF, UNE, BOP, GEX,GCE (1970-2013)

YEAR	EGr(%)	GCE (N,m)	GRE (N,m)	GEX (N,m)	MSS (N,m)
1970	25.01	187.8	716.10	903.9	789.56
1971	14.24	173.6	823.60	997.2	971.93
1972	3.36	451.3	1,012.30	1463.6	1,055.82
1973	5.39	565.7	963.50	1529.2	1,265.99
1974	11.16	1,223.5	1,517.10	2740.6	1,753.72
Average	**11.83**	**520.4**	**1,006.52**	**1526.9**	**1,167.40**
1975	-5.23	3,207.7	2,734.90	5942.6	3,031.33
1976	9.04	4,041.3	3,815.40	7856.7	4,510.55
1977	6.02	5,004.6	3,819.20	8823.8	6,147.00
1978	-5.76	5,200.0	2,800.00	8000	7,392.76
1979	6.76	4,219.5	3,187.20	7406.7	9,185.80
Average	**2.17**	**4,334.6**	**3,271.34**	**7605.96**	**6,053.49**
1980	4.2	10,163.4	4,805.20	14,968.50	11,856.60
1981	-13.13	6,567.0	4,846.70	11,413.70	14,471.17
1982	-1.05	6,417.2	5,506.00	11,923.20	15,786.74
1983	-5.05	4,885.7	4,750.8	9,636.50	17,687.93
1984	-2.02	4,100.1	5,827.5	9,927.60	20,105.94
Average	**-3.41**	**6,426.7**	**5147.24**	**11,573.90**	**15,981.68**
1985	8.32	5,464.7	7,576.4	13,041.10	22,299.24
1986	-8.75	8,526.8	7,696.9	16,223.70	23,806.40
1987	-10.75	6,372.5	15,646.20	22,018.70	27,573.80
1988	7.54	8,340.1	19,409.40	27,749.50	38,356.80
1989	6.47	15,034.1	25,994.20	41,028.30	45,902.88
Average	**0.57**	**8,747.6**	**15,264.60**	**24,012.26**	**31,587.83**
1990	12.77	24,048.6	36,219.60	60,268.20	52,857.03
1991	-0.62	28,340.9	38,243.50	66,584.40	75,401.18
1992	0.43	39,763.3	53,034.10	92,797.40	111,112.31
1993	2.09	54,501.8	136,727.10	191,228.90	165,338.75
1994	0.91	70,918.3	89,974.90	160,893.20	230,292.60
Average	**3.12**	**43,514.6**	**70,839.84**	**114,354.42**	**127,000.37**
1995	-0.31	121,138.3	127,629.80	248,768.10	289,091.07
1996	4.99	212,926.3	124,491.30	337,217.60	345,853.96
1997	2.8	269,651.7	158,563.5	428,215.20	413,280.13
1998	2.72	309,015.6	178,097.8	487,113.40	488,145.79
1999	0.47	498,027.6	449,662.4	947,690.00	628,952.16
Average	**2.13**	**282,151.9**	**207,689.0**	**489,800.86**	**433,064.62**
2000	5.32	239,450.9	461,600.0	701,059.40	878,457.27
2001	4.41	438,696.5	579,300.00	1,018,025.60	1,269,321.61
2002	3.78	321,378.1	696,800.0	1,018,155.80	1,505,963.50
2003	10.35	241,688.3	984,300.0	1,225,965.90	1,952,921.19
2004	33.74	351,250.0	1,110,643.60	1,426,200.00	2,131,818.98
Average	**11.52**	**318,492.8**	**766,528.7**	**1,077,881.34**	**1,547,696.51**
2005	3.44	519,470.0	1,321,229.99	1,822,100.00	2,637,912.73

2006	8.21	552,385.8	1,390,101.90	1,938,002.50	3,797,908.98
2007	6.83	759,281.2	1,589,269.80	2,450,896.70	5,127,400.70
2008	6.27	960,890.1	2,117,362.00	3,240,819.60	8,008,203.95
2009	6.93	1,152,796.5	2,127,966.37	3,452,990.80	9,411,112.25
Average	**6.34**	**788,964.7**	**1,709,186.01**	**2,580,961.92**	**5,796,507.72**
2010	7.84	883,870.0	3,109,437.11	4,194,576.51	11,034,940.93
2011	4.89	918,548.9	3,314,435.55	4,712,061.98	12,172,490.28
2012	4.28	874,834.00	3,325,156.50	4,605,319.72	13,895,389.13
2013	5.39	1,108,386.40	3,689,080.21	5,185,318.5	15,158,622.26
Average	**5.6**	**946409.8**	**3,359,527.34**	**4674319.17**	**13,065,360.65**

NOTE: *(i) EGR = Gross Domestic Product Growth Rate; (ii) GCE = Government Capital Expenditure; (iii) GRE = Government Recurrent Expenditure; (iv) GEX = Total Government Expenditure; and; (v) MSS = Money Supply.*
Source: *Author's Computation (2016)*