The Growth Stimulating Role of Capital Expenditure Components of the Federal Budget of Nigeria; Real or Imagined?

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DOI: https://doi.org/10.15520/jbme.v6i06.2175

Abstract: The paper examined the impact of the capital expenditure components on output growth in Nigeria. The objective of the study was to determine the impact of Administration, Economic Services, Social Community Services, and Transfer payments on Real Gross Domestic Product in Nigeria. To achieve this, the model was built following the multiple regression example. Furthermore, the ordinary least square technique was employed for the estimation. The results reported that every increase in administrative expenditure and transfer payments lead to increase in national output in Nigeria, while for economic services and social community services; the impact is nonlinear and insignificant. Consequently, the paper suggests efficient resource allocation and implementation of budgetary provisions coupled with real time monitoring and checks on social works by engaging the citizenry through various social media platforms.

Key words: Capital expenditure, real gross domestic product, administration, economic service, transfer payments.

INTRODUCTION

The crux of the influence of government revenue and expenditure on economic growth discourse over the years has spiraled as a result of the failure of the price mechanism or the “invisible hand model” propounded by Adam Smith. That is the inability of market forces to effectively or organically allocate and distribute scarce economic resources among contending needs of the society. This effectively sanctioned welfare economist to champion measured state intervention through government expenditure and how funds are raised for these expenditures. Thus, fiscal authorities makes use of a well measured action plan (budget) aimed at ensuring that resources are properly pooled, allocated and distributed among the gargantuan needs of the society at all times. This specifically means that fiscal policy measures can be used to influence the macroeconomic indices of a country like employment, inflation, and aggregate demand (Gbosi, 2008). Consequently, endogenous growth theorists strongly believe that output growth is a function of elevated spending by the government.

Due to this, several scholars have specifically investigated the impact of fiscal policy on economic growth both in advanced, underdeveloped and emerging economies of the world. Evidence from these studies showed lack of a clear cut consensus in findings. A common denominator in these studies however, is the methodologies and the use aggregated data for the analysis. The problem with this is that, data aggregation assumes homogeneity. It means that such studies could only give approximated meanings or scenarios in the analysis of the elements considered. Thus, the objective of this paper is to use disaggregate data to ascertain the impact of capital expenditure on economic growth in Nigeria.

CONCEPTUAL ISSUES

Fiscal policy is concerned with how to raise funds (through taxes and borrowing) and how to apply these funds effectively to various sectors of the economy to accentuate growth and stabilize the economy. It serves as the policy instrument of government used in counteracting the sacrifice of tax from the citizens and the benefits of service from the government. This is done through appropriations in the budget.

Generally, when there is a recession, like it was recently experienced in Nigeria, the Government through the Federal Ministry of Finance, according to economic theory will adopt an expansionary fiscal policy by reducing taxes, paying contractors and engage in extensive public works projects that will help put more money in the hands of economic agents; this invariably helps to stimulate aggregate demand and hence economic growth. This essentially means that every increase in government expenditure that does not require more money from tax payers in times of poor aggregate demand reflates and put the economy to recovery and then growth. However, contractionary measures are adopted to help sustain the welfare of the citizens in times of rapidly raising prices.

Among other things, these deliberate plans of the Federal Government are embodied in a document called the budget. This means that the budget sets the framework for “national economic management” (Gbosi, 2008).
There are generally three categories of budget. They are balanced, surplus, and deficit budget. A budget is balanced when expected revenue equals proposed expenditure for the fiscal year. However, if expected revenue exceeds proposed expenditure for the fiscal year, it is called a surplus budget. On the other hand, a budget is called deficit when expected income from all revenue sources falls short of the proposed spending for the fiscal year. This short fall is sourced from either through the issue of bonds or from loans from domestic or international financial intermediaries. Over the years, the National and State Government have been using deficit budget – or expansionary spending schemes to help spur economic activities of the nation to sustain growth. As earlier stated, this will only happen if the source of the extra funds does not in any way transfer the burden to the citizens plus if these funds are not misappropriated or embezzled by unscrupulous politicians. However, if the affirmative is the case, it will have a negative consequence on the welfare of the people and the economy (Barro, 1990).

**EMPIRICAL REVIEW**

Oseni (2013) examined the effect of fiscal policy on sectorial output in Nigeria. The study was aimed at identifying the impact of fiscal policy variables; production expenditure, discretionary tax, non-discretionary tax and fiscal deficit on agricultural, building and construction industry, service, wholesale and retail sectors of the economy. To achieve this, time series data of 30 years were used and Multivariate Co-integration models was adopted to analyze the data. The study found that compulsory tax is significant in all sectors but insignificant for the industrial sector. This means that growth in the industrial sector is not influenced by the fiscal policy proxy. Also, the coefficient of non-tax revenue like grant, benefits and pension are significantly related to the dependent variables and thus has contributed towards economic growth of Nigeria. The study further showed that the use of fiscal deficit has helped enhance growth in the agriculture sector only. Productive expenditure has impacted all sector. Thus, the study in sum showed that the relationship between fiscal policy and output growth could be positive or negative.

Chukuigwe & Abili (2008) examined the impact of monetary and fiscal policies on non-oil exports in Nigeria ranging from (1974-2003). The objective of the study was to ascertain the effect of interest rate and exchange rate (monetary policy tools) and budget deficit as fiscal policy proxy on non-oil exports. Thus, the study used ordinary least squares (OLS) technique to ascertain the effect. The findings from the analysis showed that the independent variable has insignificant effect on non-oil exports. That is, growth in non-oil exports is not explained by the monetary and fiscal policy actions.

Ogar, Nkamare & Emori (2014) investigated the impact of monetary & fiscal policy on growth in Nigeria. The specific objective is the linear effect of money supply, inflation, balance of payment, and government expenditure on economic growth in Nigeria. The study used time series data covering 30 years (i.e. 1986-2010). The ordinary least squares technique was used to analyze the study variable and the empirical results indicated that (1) government revenue and expenditure has a significant relationship with economic growth. That is, the explanatory variables influenced economic growth in the study period (2) money supply and exchange rate has a significant relationship with GDP and also has a positive impact on GDP growth (3) finally, the study showed that inflation has a positive effect on GDP. That is, every slight increase in inflation positively enhanced growth in the economy.

Agbonkhe & Asekome (2014) examined the impact of public expenditure on economic growth in Nigeria with the objective of determining the existence of relationship between GDP and public expenditure in Nigeria. The study covered 1981 to 2011. Ordinary least square (OLS) was applied and the findings shows that the explanatory variables (total public expenditure, credit to the economy, and lag value of GDP are statistically significant to the GDP except capital formation and exchange rate. This means that they have no meaningful impact on gross domestic product.

Similarly, Okoro (2013) analyzed the influence of government spending on economic growth in Nigeria from 1980 to 2011. The aim of the study was to determine the existence of a relationship between the independent and dependent variable and the long term relationship between the variables. To achieve this, the researcher used ordinary least squares (OLS) and Johansen Co-integration test and found that there is a significant correlation between government capital and recurrent expenditure on economic growth. The findings also support the existence of a long-run equilibrium relationship between the variables. This validates most theoretical assertions that increase in government expenditure enhance growth.

Kayode, Sunday & Thomas (2014) studied the impact of fiscal policy in promoting growth and reduction of poverty in Nigeria. The study seeks to examine the impact of budget in promoting growth and poverty reduction in Nigeria. Secondary data was adopted for the study. The results showed the existence of slow aggregate growth and even sectorial allocation. It also showed the existence of extra-budgetary allocations in the economy. This is an impediment to economic growth.

Adesoso, Mobiyi & Salawu (2010) experimented on the effect of fiscal policy measures on economics growth in Nigeria with the objective of determining the effect of non-productive government expenditure, productive government expenditure, discretionary and non-discretionary taxation on gross domestic product in Nigeria. The study used annual data ranging from 1970-2005. To achieve the stated objectives of the study, the Error Correction mechanism was used. The result showed that non-productive government expenditure and non-discretionary tax (like grant, benefits etc.) has no growth effect on economic growth. Also, further results indicated the existence of a direct linear relationship between productive government spending and GDP growth in Nigeria. This means that every increase in government spending influences the economy on the path of growth. Thirdly, the study also found no evidence of the effect of discretionary tax on economic growth in the period covered in the study.
Shaibu & Adedokun (2009) observed the effect of fiscal federalism on economic growth in Nigeria with the aim of establishing the relative effect of states and federal government allocation and spending on economic growth. Time series data from 1980 to 2004 was adopted and Solow’s model was modified to analyze the variables. Results indicated that the federal government’s share from the federation account has a direct relationship with economic performance. That is, increase in government activity leads to enhanced economic performance. However, the state share has been positive but insignificant (i.e. almost no effect). The study attributed this to the inferior allocation to the component of the federation.

Yinusa (2014) investigated the impact of fiscal policy on socio-economic development outcomes in Nigeria. The study experimented the workability of the Keynesian model in Nigeria from 1970-2012. The Autoregressive Distributed Lag (ARDL) Co-integration model was utilized to analyze the parameters of the study. Result indicated that government investment has a positive but insignificant relationship with socio-economic development both in the short-run and long-run. It further showed that domestic and external debts have a significant non-linear effect both in the long and short run on socio economic performance. Irrespective of this, the study further found that total debt has a linear impact on socio-economic development in Nigeria in the long run. This means that only a combination of domestic and external debt has socio-economic development potentials. Thirdly, capital expenditure is positive in the short run but negatively related in the long run on socio-economic development. Despite this the total public expenditure is positive but insignificant both in the long run and short run. Finally, the study found a long run negative correlation between recurrent expenditure and socio-economic development in Nigeria. This implies that recurrent expense does not enhance growth both in the short run and in the future.

Usman, Mobolaji, Kilishi, Yaru, & Yakubu (2011) examined the relationship between public expenditure on economic growth in Nigeria. The study seeks to determine the contribution of government expenditure on economic growth. To achieve this, the study used the Ordinary Least Squares and Co-integration technique to achieve its objectives. The OLS results showed that expenditure on the explanatory variables (human capital and infrastructure) has a positive effect on economic growth. Although, not statistically significant. On the other hand, the Co-integration results certified a long run equilibrium relationship between the predictor variables and the dependent variable. In the same vein, Osuala & Jones (2014) studied the impact of fiscal policy on economic growth in Nigeria. The objective of the study is to ascertain whether a long run or short run relationship exist between the fiscal policy variables measured by capital and recurrent expenditure, non-oil taxes and government total debt on economic growth. To achieve this, time series data for 24 years were adopted and analyzed using the General-to-specific approach to Autoregressive Distributed Lag (ARDL) model. The results showed the existence of a long run impactful equilibrium relationship between government capital and recurrent expenditure. Also, the study found that non-taxes and government total debts has no positive relationship with GDP. On the contrary, only capital expenditure has a short run equilibrium relationship with GDP.

Sikiru & Umaru (n.d) examined the relationship between fiscal policy and economic growth in Nigeria. The study used a disaggregated approach to determine specifically the effect of government revenue and expenditure, discretionary tax and capital expenditure on gross domestic product. To achieve this, the study adopted secondary time series data from 1977-2009. It used Co-integration technique (Engle-Granger Model) and Error-Correction model for the data analysis. The results indicated the existence of long run positive influence of productive government expenditure on GDP. However, unproductive expenditure was not significant. Further results also showed that direct tax and capital expenditure were positive and negative respectively to economic growth. This implies that capital expenditure fail to meet a priori expectation of a linear relationship between capital spending and economic growth.

Agu, Idike, Okwor, & Ugwunta (2014) delved into the effect of fiscal policy components on economic growth in Nigeria. The study used annual data from 1961-2010 using descriptive statistics and multiple OLS method of analysis. The econometric results showed the following (1) public expenditure tend to be on the increase with government revenue (2) OLS results show that there is a positive relationship between government expenditure on economic activities and growth. This means every increase in expenditures leads to enhanced performance of economic indices.

Ogbole & Isaac (2011) also examined the impact of fiscal policy on economic growth in Nigeria the period of regulation and deregulation. The aim of the study is to ascertain fiscal policy effectiveness on economic growth in the two periods. Time series data for 37 years were used and Co-integration (Johansen test) and Ordinary Least Squares was adopted for the analysis to ascertain the study objective. The econometric results revealed the existence of a difference between the two periods. That is, there was a ₦140 million or 14% contribution to GDP during deregulation than in the regulated period. The implication of this is that fiscal policy was more influential in enhancing growth in the deregulated era.

Iyeli & Azubuike (2013) studied the effect of fiscal policy variables on economic growth in Nigeria. Time series data from 1970 to 2011 was adopted and analyzed using Co-integration and Error-Correction techniques. Empirical results established the existence of a long run equilibrium positive correlation between the explanatory variables of government expenditure, government revenue, inflation, and capital inflow and the explained variable (GDP). Ilegbinosa (2013) also examined the measures of fiscal policy and its influence on economic growth in Nigeria with specific reference to determine if taxation and government spending are positively correlated to GDP. The study adopted the Ordinary Least Squares method of data analysis. The analysis were done based on time series data from 1970-2009. The results indicate a positive correlation between
explanatory and the dependent variable. This means that every increase in government spending contributes towards growth. Similarly, Audu (2013) explored the impact of fiscal policy on economic growth in Nigeria. This was done with the aim of determining the casual relationship between fiscal policy variables of money supply, fiscal deficit and exports on economic growth (measured by GDP). The study applied time series data from 1970-2010. Co-integration Error Correction mechanism was used to analyze the study parameters. The results showed that there is a positive significant relationship between the parameters of the study. Thus, validating a priori expectations. The implication of this is that every increase in these variables tends to grow the economy.

Onwe (2014) also considered the effect of fiscal policy variables on economic growth in Nigeria. A disaggregated method of analysis was applied to determine the roles of specific fiscal policy components on economic growth. The results indicated a long run positive contribution of expenditures on administration, as well as social and community services on economic growth under the study period.

Oyinlola & Akinnibosun (2013) investigated the correlation between public spending and economic growth in Nigeria. The study aimed at finding specifically the contributions of public spending on economic from 1970-2009 with Wagner’s Law in perspective. To achieve this, they adopted Gregory-Hansen’s structural breaks Co-integration model to analyze the parameters. The findings established the existence of Wagner’s Law in two models in the long run. The law states that increase in government activity and the corresponding increase in government expenditure is as a result of economic growth. The results also found economic growth leads to growth in capital expenditure as well as in social and community services.

Finally, Olulu, Erhieyovwe, & Andrew (2014) examined the government expenditure-economic growth relationship in Nigeria. The study adopted a disaggregate approach to public expenditure and used time series data from 1980-2010. The parameters of the study were analyzed using OLS and ADF. The results revealed that there is an opposite relationship on health and economic growth, while expenditure on education is seen to be insufficient to cater for growth. However, the study showed a long run relationship between government expenditure and GDP growth in Nigeria.

In all, although, the empirical results concerning the impact of the fiscal policy proxies on economic performance in Nigeria are conflicting; the aggregate impact tends to be on the affirmative about the impact of fiscal policy on economic growth in Nigeria. Perhaps the reason for some of these discrepancies could be attributed to differences in methodology, data and even fiscal policy measures applied in the studies reviewed.

**METHODOLOGY**

This is an impact study that seeks to ascertain the impact of federal government capital expenditures on economic growth in Nigeria. Consequently, the ex post facto research design was adopted and econometric techniques were used to determine the magnitude and direction between the predictor variables (Administration, Economic Services, Social Community Services, and Transfer Payments) and Real Gross Domestic Product in retrospect.

The Ex post facto research design is a quasi-experimental design used to examine how the independent variables affect the dependent variable in retrospect.

**Sources of Data:**

Data for the study was obtained via the survey of existing documents. This is also known as secondary method of data collection. The numeric values for all the variables of the study - Administration, Economic Services, Social Community Services, Transfer Payments, and Real Gross Domestic Product were collected from Journals and the Central Bank of Nigeria Statistical bulletin for 34 years (1981 - 2015).

**Model Specification:**

The model was specified using the multiple regression example, referencing the ordinary least square technique to determine the impact of capital expenditure on economic growth in Nigeria. More Specifically, Real GDP will be regressed using OLS estimators on Administration, Economic Services, Social Community Services, and Transfer Payments on Real Gross Domestic Product in Nigeria. That is, ceteris paribus, Real GDP is a function of Administration, Economic Services, Social Community Services, and Transfer Payments in Nigeria. This is mathematically expressed below;

$$\text{RGDP} = f(\text{Admin}, \text{EcoServ}, \text{SocComServ}, \text{TransPay})$$

This is further expressed econometrically as follows;

$$\text{RGDP} = X_0 + X_1\text{Admin} + X_2\text{EcoServ} + X_3\text{SocComServ} + X_4\text{TransPay} + U$$

Where;

- $X_1 - X_4$ are the coefficients of the explanatory variables. The coefficients tell the percentage changes in Admin, EcoServ, SocComServ, and TransPay on changes in the real productive output of the nation. The a priori expectation of these percentage changes is assumed to be linear.
- $X_0$ is the intercept (also known as the constant term)
- $t$ is the time series
- $U$ is the error term.

**EMPIRICAL RESULTS**

**Augmented Dickey-Fuller (ADF) unit root test results:**

The hypotheses;

$H_0$: The variables are not stationary

$H_1$: The variables are stationary

The results for the unit root test using the Augmented Dickey Fuller approach are presented in Table 5.1
Social community services (SocComServ) is found to contain unit roots at level test. The null hypothesis of non-stationarity could not be rejected for this variable. However, as expected, all the other variables became stationary after the first differencing I(1). This implies that the time series has been solidified and that the statistical properties (mean, variance, etc.) are all constant from period to period. This effectively eliminated the issue of spurious results associated with time series.

Johansen Co-integration test:
To test for the existence of a long run relationship between all variables, the Johansen Co-integration test is employed. The original data is used without differencing to test for the existence of any form of relationship in the long run.

The results for Unrestricted Co-integration Rank Test (Trace) and Unrestricted Co-integration Rank Test (Maximum Eigenvalue) are presented in table 5.2 & 5.3

Ordinary Least Square Results:
The OLS estimators are used to determine the magnitude and direction of the predictor variables (Administration, Economic Services, Social Community Services, and Transfer Payments) of the study on the real gross domestic product of Nigeria.
The choice of OLS techniques of regression is due to its unique quality of straightforwardness coupled with the
following features (unbiased estimator, consistency, minimum variance and efficiency). The Ordinary Least

Table 5.4 Least Square Outputs for the Impact of Federal Government Capital Expenditure Components on Real Gross Domestic Product in Nigeria

<table>
<thead>
<tr>
<th>Dependent Variable: RGDP(-1)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Method: Least Squares</td>
<td></td>
</tr>
<tr>
<td>Date: 05/09/18 Time: 11:48</td>
<td></td>
</tr>
<tr>
<td>Sample (adjusted): 1982 2015</td>
<td></td>
</tr>
<tr>
<td>Included observations: 34 after adjustments</td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Coefficient</td>
</tr>
<tr>
<td>C</td>
<td>16.97375</td>
</tr>
<tr>
<td>ADMIN (-1)</td>
<td>0.182070</td>
</tr>
<tr>
<td>ECO SERV (-1)</td>
<td>-0.018647</td>
</tr>
<tr>
<td>SOC OMSERV -0.042834</td>
<td>0.044894</td>
</tr>
<tr>
<td>TRANSPAY (-1)</td>
<td>0.047869</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.916254</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.904703</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>5.079857</td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>748.3435</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-100.7994</td>
</tr>
<tr>
<td>F-statistic</td>
<td>79.32135</td>
</tr>
<tr>
<td>Prob(F-statistic)</td>
<td>0.000000</td>
</tr>
</tbody>
</table>

Source: Author’s Computation using E-views

The table showed the magnitude and direction between the Capital Expenditure components (Administration, Economic Service, Social Community Service, and Transfers payments) of the Federal Budget and economic growth in Nigeria from 1985 to 2015.

Interpretation/Discussion of Results:
The coefficient of R-squared of 0.916254 (approx. 92%) is indicative that the model is well fitted. This also means that 92% of the variation in the dependent variable (Real Gross Domestic Product) is explained by the joint impact of the explanatory variables (Administration, Economic Service, Social Community Service, and Transfers) in Nigeria. This further implies that the remaining 8% change in Real GDP is caused by factors not captured in this study. It also emerged that the overall model is statistically significant (F-statistic (79.32135) > F-Stat(0.000000).

The results for the test of significance and direction of the explanatory variables are startling. According to fiscal economic theory, in a federal structure, one of the key catalysts of national output growth is capital expenditure; however, the specific impact of the components lack a definite proof to this a priori assertion. Strictly from a priori perspective, this catalytic role of capital expenditure has over the years led the federal and component units of the country to increase the proportion of capital expenditure to recurrent expenditure in the country. Irrespective of this, among the four independent variables that make up the capital expenditure component of the federal budget considered in this study, two apiece showed a positive and significant impact and negative and insignificant impact respectively for the period considered in Nigeria.

More specifically, the coefficient of administration reported a positive and significant impact on national output in Nigeria. This implies that every ₦100 increase in administrative expenditure leads to output increase by approximately 18.2% unit increase in real gross domestic product of Nigeria.

The coefficients for economic service and social community service showed a nonlinear and insignificant impact on real gross domestic product in Nigeria. This implies that every national budgetary increase for economic services and social community services led to a decline in national output by 0.018647 and 0.042834respectively in Nigeria. This is contrary to a priori expectation and further signals that funds may have been possibly misappropriated by unscrupulous public servants or the perennial problem of poor budget implementation. This opines that annual incremental spending does not organically translate to maximum output returns if due processes and checks and balances are not instituted to help monitor and correct fraud and other criminal tendencies.

Furthermore, the last explanatory variable, transfer payments reported a linear and significant impact on the production frontiers of the nation. This means that every naira increase in budgetary allocation for transfers in the form of subsidies to businesses or social security to the less privileged invariably added to output growth in Nigeria.
Specifically, the results showed that every 100 increase allocated to this component of capital expenditure led to approximately 4.8% unit increase in national output in Nigeria. This is in line with the a priori expectation and could be a vital tool to reflate the economy in times of recession. It could also be a useful measure for income and wealth redistribution in countries especially Nigeria where there is a huge gap between the haves and the have not’s.

Generally, the results of this study captured the aggregate role capital expenditure has on economic growth and the specific catalysts of output increment. Among others, the findings of the study are similar to the findings of Shaibu & Adedokun (2009), Adefeso, Moblayi, & Salawu (2010), Okoro (2013), and Ogar, Nkamare & Emori (2014). However, this similarity is only in relation to the augmented impact of the explanatory variables on economic growth in Nigeria.

CONCLUSION

The paper examined the impact of the capital expenditure components on output growth in Nigeria. The findings report that every upsurge in administrative expenditure and transfer payments leads to national output growth while for economic service and social community service; this relationship is nonlinear and insignificant. This is contrary to expectation and further advance the notion of funds misappropriation and the perennial problem of poor budget implementation by unscrupulous public servants. Irrespective of this, the place of budgetary spending in stimulating economic growth cannot be overemphasized. More especially, a well measured interventionary spending on social works and transfer payments can be used to elevate the standard of living of the people. Transfer payments could be vital instrument to reflate the economy in times of recession and redistribute income and wealth in countries were the gap between the haves and the have not’s is huge and still rising. The paper suggests efficient resource allocation and implementation of budgetary provisions coupled with real time monitoring and checks on social works by engaging the citizenry through various social media platforms. This will help instill the much needed accountability that is lacking in the appropriation process in Nigeria.

REFERENCES


