



IMPACT OF GOVERNMENT EXPENDITURE ON ECONOMIC DEVELOPMENT IN NIGERIA

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ABSTRACT

This paper analyses the impact of government expenditure on economic development between 1986 and 2019 in which we categorize government expenditure into total government capital expenditure and total government recurrent expenditure while economic development is proxy by per capita income as foreign direct investment and gross fixed capital formation serve as control variables, using dickey fuller unit root test and autoregressive distributive lag model some of the result are, total government capital expenditure and total government recurrent expenditure are positive and statistically significant in both short and long run whereas the control variables are positive but statistically insignificant in both short run and long run leading to recommendation that government should increase total capital expenditure and encourage savings by increasing the interest on savings among others.

Keywords: *Impact, Government, Expenditure, Economic, Develoment.*

INTRODUCTION.

The existence of government of nations across the globe is majorly for the welfare of citizens. In sub Saharan African nations, governments deploy available resources to make this a reality. Commitment of resources in this direction in Africa is a must because African countries are underdeveloped and the socio economic facilities that are essential for economic development are not available or insufficient living about two third of the entire African population in abject poverty. Of course provision of economic facilities such

as education, health, good road network and security for example are regarded as government responsibilities which serve as catalyst to economic development for improvement of the welfare of the people. However economists believed that economic growth is a function of physical capital accumulation, labor and technological advancement (Romer, 1987). Access to good road network, qualitative health facilities and acquisition of skills through education enhances growth (Mankiw, Romer & Well, Ajide, 2014 and Boachi, 2015)

In Nigeria, respective governments before and after independence using revenue from agriculture and later from crude oil have engaged in huge capital expenditure to provide these economic catalysts that quicken and increase the quantum of economic activities to create job opportunities that bring in more income which in turns improves standard of living of the people. In the same vein the recurrent expenditure has also been on the rise with the increasing large army of government employees at all tiers of government. In welfare economics, qualitative education, regular trainings, access to good health facilities, adequate security, good road network and remuneration of employees among others would lead to economic development and improvement in the welfare of individuals.

Series of economic programmes and relief packages have been embarked on by various governments (Binuyo, 2014). The Nigerian Agricultural and Cooperative Bank of 1972, Operation Feed The Nation of 1976, Directorate of Food, Roads and Rural Infrastructure (DFFR) of 1986, Structural Adjustment Program (SAP) of 1986 National Economic Empowerment and Development Strategies (NEEDS) in 2004, N-Power program of 2016 ,School Feeding Program, rural electrification program, ERGP of 2016 to mention but a few to provide adequate infrastructural facilities and boost income that can attract foreign direct investment and boost gross fixed capital formation from individuals to create a robust economic environment for rapid economic growth and development for improvement on the welfare of the citizens.

Unfortunately there is not much to show for the huge amount of money that has been expended on capital expenditure and recurrent expenditure. Our education system is in shamble, the masses have no access to quality health delivery, our roads are in bad shape. Our electricity is epileptic and there is no adequate security of life and property in Nigeria. All these deficiencies affect negatively the entire economy in such a way that instead of more job creation

there is more job loss, the economy output is poor, per capita income is low and most of the human development indices are low leaving Nigeria as Poverty Capital of the World. Sanusi (2018),

Many authors have written on this topic, **Victor and Andrew (2018)** determine the relevance of government expenditure on poverty reduction in Nigeria which covers 1980 to 2016, Okorafor and Nwaeze (2013) studied poverty and economic growth in Nigeria between 1990 and 2011 and Awoyemi and Omonona (2011) evaluated economic growth and inequality elasticity in rural Nigeria which covered the period between 1996 and 2004. The gap we seek to fill in this study is that we have increased the year of study and extend it up to 2019 making it the most recent. This research work seeks to analyze the impact of government expenditure on economic development in Nigeria between 1986 and 2019. We categorized total government expenditure into total government capital expenditure and total government recurrent expenditure while we use per capita income as proxy for economic development and proceeded to capture the impact of total government capital expenditure and total government recurrent expenditure on per capita income while introducing foreign direct investment and gross fixed capital formation as control variables.

OBJECTIVE OF THE STUDY.

The major objective of the study is to evaluate the impact of government expenditure on economic development. The specific objectives are as follows;

1. To evaluate the impact of total government capital expenditure on per capita income
2. To examine the impact of total government recurrent expenditure on per capita income.
3. To evaluate the relationship between foreign direct investment and per capita income
4. To determine the effect of gross fixed capita formation on per capita income

Research Hypotheses

The following hypotheses are formulated in null form based on the above state objectives,

Ho1: total government capital expenditure has no impact on per capita income

Ho2: total government recurrent expenditure has no effect on per capita income

Ho3: foreign direct investment has no association with per capita income

Ho4: gross fixed capita formation has no relationship with per capita income

LITERATURE REVIEW:

Theoretical Review

Adam Smith (1776) recognized the role of government in an economy when he advocated his economic gospel, the *laissez faire*. He postulated that there should be a free market economy where government is restricted to provision of law and order as well as level playing ground for all. The world economic meltdown of the 1930s indicated that government has more responsibilities in the economy. John Maynard Keynes (1936) in the midst of the depression advocated for government increased spending to boost the economy for increased output. Public expenditure subsequently became a major focus in the administration of the economy by the government through which the economic output can be improved on.

Many theories have been developed to explain government expenditure to ensure economic growth among which are Peacock and Wiseman's Theory of Expenditure. Wiseman and Peacock in their study of public expenditure in UK for the period 1890-1955 revealed that public expenditure does not increase in a smooth and continuous manner, but in jerks or step like fashion.

At times, some social or other disturbance takes place creating a need for increased public expenditure which the existing public revenue cannot meet. Wagner's Law of Increasing State revealed that there are inherent tendencies for the activities of different layers of a government (such as central, state and local governments) to increase both intensively and extensively.

THEORETICAL FRAMEWORK

The sources of economic growth emanate from the neoclassical growth theory pioneered by Solow (1956). In the same vein, the endogenous growth theory propagated by Romer (1986) also point out and explain how economic growth is determined. The assumption of the neoclassical growth theory is that output is a function of the amount of capital, that is physical capital, labour and the existing level of technology in the economy. Hence, over time changes in total output are due to changes in inputs: capital and labour. The

Solow model assumed a constant or decreasing returns to scale on the aggregate production function so that doubling the inputs doubles the quantity produced. Also, apart from capital and labour, technical knowledge and all other inputs such as natural resources are assumed irrelevant in the neoclassical growth theory. The implication is that technology, savings rate, and population are exogenously determined in the Solow model (Mankiw et al., 1992; Romer, 1996). The main determinant of output growth within the neoclassical framework is capital accumulation.

The US economic growth after the First World War could not be attributable to physical capital and this prompted economists to recognize the importance of human capital in production process (Shultz, 1959). Mankiw et al. (1992), in their work on growth theory, extended the Solow growth model to capture the changing trends in human capital accumulation. The model, which is known as Augmented Solow model recognize human capital as an important factor input in a neoclassical production function. Along this line, human capital, e.g., health and education can be seen as separate input or labour augmenting in the production process (Mankiw et al., 1992; Knowles & Owen, 1997; Barro, 1997, and Bloom et al, 2004). Growth in output is due to improvement in capital accumulation (both physical and human) given the level of technology in the economy (Boachie, 2015). Hence, accumulation and improvement in physical and human capital is a function of government expenditure. Coordinated and efficient government expenditure would undoubtedly leads to provision of physical capital such as good roads, adequate electricity, better equipments, efficient health care delivery system among others and highly productive human factor that can possibly leads to economic growth and development.

Empirical Review.

Several authors have carried out research on the impact of government expenditure on economic growth and development. Stephanie (2017) investigated the relationship between economic growth and poverty reduction in Nigeria. The study used the descriptive statistic and found that over 70 percent of Nigerians lack money and material possessions to access basic facilities like health, education, etc. that provides happiness. Abimbola et al (2015) assessed sustainable economic growth and poverty reduction through entrepreneurship. The descriptive statistics was used and the result revealed that entrepreneurship program reduced poverty in the society

Victor and Andrew (2018) investigate the relevance of government expenditure on poverty reduction in Nigeria covering the period between 1980 and 2016 using ECM model and co integration models of the OLS as well as the granger Causality techniques and the result of the Johansen co integration indicates the existence of a long run equilibrium relationship among the variables while the result of the parsimonious ECM indicates that though the one period lag government expenditure on health has a significant and positive impact on the per capita income with low elasticity and the result indicates further that government expenditure on education, building and construction has a significant and positive impact on the per capita income

Ernest (2014) examines the likely impact of government expenditure policy on education and poverty reduction in Nigeria adopting An integrated sequential dynamic computable general equilibrium (CGE) model. The result of experiment indicate that it will be extremely difficult for Nigeria to achieve the MDG target, in terms of education and poverty reduction by the year 2015, because this policy measure in the analysis was unable to meet this goal. The MDG target for Nigeria in terms of poverty reduction is to reduce the percentage of population living in relative poverty from 54.4% in 2004 to 21.4 % by 2015

Ogboru et al.(2018) assessed the government expenditure on agriculture and its impact on unemployment reduction in Nigeria from 1999 to 2015.The study provided a statistical evidence that government expenditure did not reduce unemployment rate within the period covered by the study

Muritala & Taiwo (2011) attempts to empirically examine the trends as well as effects of government spending on the growth rates of real GDP in Nigeria over the last decades (1970-2008) using econometrics model with Ordinary Least Square (OLS) techniqueThe findings show that there that there is a positive relationship between real GDP as against the recurrent and capital expenditure

Recently Omodero (2019) examines the role of government sector expenditure on poverty alleviation using a secondary form of data covering a millennium period from 2000 to 2017. The study employs ordinary least squares technique and the regression result indicates that government expenditure on agriculture, building and construction, education and health do not have any significant impact on poverty alleviation in Nigeria

Asimiyu and Saidi (2015) examined the impact of public budget indicators such as federally collected government revenue and aggregate expenditure on the poverty level in Nigeria using annual time series data covering a period from 1980 to 2013. The study discovered that federally collected government revenue and aggregate expenditure increased poverty rate in Nigeria. The negative outcome of the study was associated with undue dependence of the economy on oil revenue, high rate of corruption and poor budget processes and implementation. Oriavwote and Ukawe (2018) studied the effect of government expenditure on poverty reduction in Nigeria. The study covered a period from 1980 to 2016 and made use of ordinary least squares technique and other statistical tools for analysis. Based on the regression results, government expenditure on education and health had significant and positive impact on per capita income (PCI). Similarly, the result also showed that government expenditure on building and construction equally had a significant and positive effect on PCI. Despite the outcome of this study, the scourge of poverty and unemployment in Nigeria is such that government sectoral spending is not physically felt by the citizens. That means, there is a contradiction between this study and the physical evidences of the relationship between government expenditure and poverty reduction in the country

METHODOLOGY

Data and Variables

This research makes use of secondary data which is sourced from World development indicators (WDI) 2019. The data are annual time series on Nigeria which covers a period between 1986 and 2019. This time period is important to have enough degree of freedom in order to have a robust regression. We use per capita income as a measure of economic development. We categorized government expenditure into total government capital expenditure (TGCEX) and total government recurrent expenditure (TGREX). Economic development is proxy by per capita income (PCY). We brought in foreign direct investment (FDI) and gross fixed capital formation as control variables since government expenditure alone cannot bring the desired result. Our dependent variable is per capita income (PCY) while the independent variables are total government capital expenditure (TGCEX), total government recurrent expenditure (TGREX), Foreign Direct Investment (FDI)

and Gross Fixed Capital Formation (GFCF). The independent variables are the determinant of per capital income in an economy.

MODEL SPECIFICATION

From the literature on government expenditure-economic development above we specify our model within the framework of Augmented Solow model as used by (Ebeh et al, 2019). The assumption is that growth of output is a function of input combination and level of technology. The Solo model takes physical capital (K), labour (L) and technological progress (A) as determinant of economic growth. We use Cobb-Douglass production function to capture the above as follows:

$Y = A L^\beta K^\alpha \dots\dots 1$ where Y= total output of the economy, L= labour input, K= capital input A=technological progress.

A and β are the output elasticity of capital and labour.

We modified the above equation to suit our need in this paper. We assume that capital input and labour in put stems from government expenditure (TGCEX and TGREX) and that in an economy individual put in their labour to earn income and save the excess which is used to augment the stock of capital. We take this to be gross fixed capital formation (GFCF). Since L and K are derived from government expenditure, we take it that:

$KL = G \dots\dots\dots 2$

We substitute 2 in 1 to get 3

$Y = A G^{\beta\alpha} \dots\dots\dots 3$

We decompose G into total government capital expenditure, total government recurrent expenditure and gross fixed capital formation as follows:

$Y = A G^{\phi TGCEX + \delta TGREX + \lambda GFCF + \mu t} \dots\dots\dots 4$

Equation 4 shows the expenditure per worker production function. Taking logs of equation 4 yields:

$\ln Y = \ln A + \phi TGCEX + \delta TGREX + \lambda GFCF + \mu t \dots\dots\dots 5$

let GDP represent Y

$\ln GDP = \ln A + \phi TGCEX + \delta TGREX + \lambda GFCF + \mu t \dots\dots\dots 6$

A is a measure of technological progress in the economy which explain output not accounted for by changes in physical capital and labour and it is usually referred to as Solow's residual. It is assumed that technology evolves through the economy which means that the level and changes in technological advancement depends on such variables as foreign direct investment. Also to indicate how the independent variables determine economic development in terms of an individual we replace GDP with per capita income (PCY). Therefore our empirical model becomes

$$\ln PCY = \beta_0 + \alpha FDI_t + \phi TGCEX_t + \delta TGREX_t + \Lambda GFCF_t + \mu_t \dots \dots \dots 7$$

Where:

PCY is per capita income

TGCEX is total government capital expenditure

TGREX is total government recurrent expenditure

FDI is foreign direct investment

GFCF is gross fixed capital formation expressed as a percentage of GDP

β_0 is the intercept, α , ϕ , δ and Λ are the coefficient of explanatory variables, μ is the error term while t indicates time.

It is expected that $TGCEX > 0$, positive, that means as TGCEX increases PCY increases too. $TGREX > 0$, positive, as TGREX rises PCY rises. In the same vein $FDI > 0$, positive, FDI has direct relationship with PCY and $GFCF > 0$, positive, as GFCF increases so also PCY.

We use the Augmented Dickey-Fuller (ADF) to test for unit root to determine whether the variables are stationary at levels. The variables are mixtures of I(0) and I(1) and we went ahead to use Autoregressive distributed lag model (ARDL) Pesaran & Shin (2001).

Another reason for using ARDL is that since ARDL is regressand and regressors, it can be used to solve the challenge that could arise as of bi-directional relationship between government expenditure and economic development, that is government expenditure and per capita income which can creates an endogeneity or simultaneity problem in empirical estimations. It is for this reason that we use the ARDL procedure, which is. Thus, in determining the long-run relationship between economic growth and other variables we use the ARDL bounds test approach to co- integration. The next step in the ARDL bounds test procedure is to test for a long-run relationship

among the variables using an $F(W)$ -statistic after which an error correction model is estimated to determine the short run dynamics or multipliers in the model and the speed of adjustment towards equilibrium

ANALYSIS OF RESULT

Unit Root Test

Table 1: Augumented Dickey Fuller (ADF)

Variable	Test Statistics		Level of Integration
	Level	First Difference	
<i>PCI</i>	0.61232	-5.745937***	I(1)
<i>TGCEX</i>	-2.325398	-5.852222***	I(1)
<i>TGREX</i>	-2.944876	-7.456596***	I(1)
<i>FDI</i>	-3.66963**	-2.34762	I(0)
<i>GFCF</i>	-2.23074**	-2.51922	I(0)

Notes: ***,**and * denote 1%, 5% and 10% significance level. The critical values for rejection of hypothesis of unit root were from MacKinnon (1991) as reported in e-views 10.

Source: Author's Computation using E-Views 10

The aim of conducting the unit root test is to find out the time series property of the variables and to ensure the absence of variables that are integrated of orders two, $I(2)$ so as to avoid spurious ARDL regression

Table 1 above shows that the variables are mixtures of stationarity. That is some are stationary at level while others are stationary at first difference. PCI, TGCEX and TGREX are stationary at first difference, $I(1)$, while FDI and GFCF are stationary at level, $I(0)$. From here we proceed to ARDL.

Results from ARDL co-integration test

Table 2:

K	95% Level		90%		F(W) - Statistic
	Lower bound	Upper Bound	Lower bound	Upper	
4	2.56	3.49	2.2	3.09	4.661870
F(W) PCI, TGCEX, TGREX, FDI, GFCF					

Note: K is the number of regressors while W-statistic and its critical values are in parenthesis. If the statistic lies between the bounds, the test is inconclusive. If it is above the upper bound, the null hypothesis of no level effect is rejected. If it is below the lower bound, the null hypothesis of no level effect can't be rejected.

Source: Author's Computation using E-Views 10

The results from the bounds test approach to co-integration are presented in Table 2 above. It shows that there is long run relationship between per capita income and the variables presented in equation 7 above.

As shown in Table 2, the null hypothesis of no co-integration among the variables is rejected at 5% and 10% levels. This is because the computed test statistics are above the upper bounds. Thus, there is a long run relationship following the normalization of per capital income on the independent variables. Once the establishment of co-integrating relationship between per capita income and the independent variables are established, we went ahead to estimate the long-run coefficients in the ARDL model with a lag length based on SBIC. The long-run estimates from the ARDL (1, 0, 0, 0, 1,) specification is presented in Table 3

Table 3: Long-run estimation base on ARDL (1, 0, 0, 0, 1,) approach

<i>Variable</i>	<i>Coefficient</i>	<i>Standard Error</i>	<i>T- Statistics</i>	<i>Probability</i>
<i>LOG(TGCEX)</i>	0.301089	0.130987	2.298617	0.0302
<i>LOG(TGREX)</i>	0.43704	0.110943	3.9393	0.0006
<i>LOG(FDI)</i>	0.017203	0.062902	0.273484	0.7867
<i>LOG(GFCF)</i>	0.172817	0.286035	0.604181	0.5512
<i>C</i>	6.087469	0.794742	7.659676	0

Source: Author's Computation using E-Views 10

Two of the independent variables presented in the model were statistically significant in influencing long-term per capita growth in Nigeria within the period of the study. The coefficient of total government capital expenditure (TGCEX) is 0.301089 and statistically significant at 5% level that of total government recurrent expenditure is 0.43704 and statistically significant at 1% level. Foreign direct investment and the stock of physical capital are statistically insignificant with coefficients elasticity of 0.017203 and 0.172817

respectively meaning that they do not account for long run growth in per capita income. The next step in our econometric analysis is to model the short-run dynamics to capture the speed of adjustment towards equilibrium following a shock in the system. The results of the parsimonious error correction model (ECM) are presented in Table 4.

Table 4: Error Correction Model (ECM) based on ARDL (1, 0, 0, 0, 1,) approach

Variable	Coefficient	Standard Error	T- Statistics	Probability
<i>C</i>	1.178276	0.378596	3.112223	0.0046
<i>LOG(PCI(-1))</i>	-0.193558	0.073048	2.64974	0.0138
<i>LOG(TGCEX)</i>	0.058278	0.021904	2.660641	0.0134
<i>LOG(TGREX)</i>	0.084592	0.024285	3.483345	0.0018
<i>LOG(FDI)</i>	0.00333	0.012009	0.27726	0.7839
<i>LOG(GFCF(-1))</i>	0.03345	0.048304	0.692487	0.495
<i>ΔLOG(GFCF)</i>	0.073094	0.049671	1.47156	0.1536
<i>ECM(-1)</i>	-0.193558	0.033409	-5.793571	0.0000

$$EC = LOG(PCI) + (0.3011 * LOG(TGCEX) + 0.4370 * LOG(TGREX) + 0.0172 * LOG(FDI) + 0.1728 * LOG(GFCF) + 6.0875)$$

REGRESSION SUMMARY STATISTICS

<i>R-squared</i>	0.983835	Mean dependent var	6.622942
<i>Adjusted R-squared</i>	0.979956	S.D. dependent var	0.337201
<i>S.E. of regression</i>	0.047740	Akaike info criterion	-3.055450
<i>Sum squared resid</i>	0.056978	Schwarz criterion	-2.734820
<i>Log likelihood</i>	55.88720	Hannan-Quinn criter.	-2.949170
<i>F-statistic</i>	253.5973	Durbin-Watson stat	1.742030
<i>Prob(F-statistic)</i>	0.000000		

Δ is the lag operator. Lag length selected based on SBIC. Results obtained from E-view10 econometric package

Source: Author's Computation using E-Views 10

Table 5: Post Estimation Tests

Test Statistics	LM Statistics	F-Version
<i>A.Serial Correlation</i>	Chi-Square (2) = 0.691773 (.7076)	F (2, 23) = 0.254099 (.7778)

<i>B.Heteroscedasticity</i>	Chi-Square (6) = 17.87909 (.2365)	F (6, 25) = 5.275596 (.3412)
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A: Lagrange multiplier test of residual serial correlation; B: Based on the regression of squared residuals on squared fitted value.

Source: Author's Computation using E-Views 10

In the short-run, the coefficient of total government capital expenditure (TGCEX) is 0.058278 and statistically significant at 1% level. The coefficient of total government recurrent expenditure (TGREX) is 0.084592 and statistically significant at both 1% and 5% level. The coefficient of foreign direct investment is positive (0.00333) but statistically insignificant in the short run as it is in the long run. The elasticity coefficient of gross fixed capital formation at first lag is 0.03345 and it is statistically insignificant as is the case in the long run. The difference value of the immediate past value of gross fixed capita formation is 0.073094 and is statistically insignificant. The coefficient of ECM was -0.193558 and statistically significant at all the levels. The summary statistics of the error correction model shows that 98.38% of the variations in per capita income in the short-run are explained by the variables presented in the model. This suggests that the error correction model is a good fit. The Durbin-Watsin (D-W) statistics of 1.742030 approximately 2 indicates the absent of autocorrelation. The ARDL regression diagnostic test showed that model estimates are normally distributed heteroscedasticity free and have no serial correlation.

Discussion of Results

The result of this study has shown that there exist a short run and long run positive relationship between economic development proxy by per capita income (PCI) and government expenditure in Nigeria. The results were statistically significant and in consistence with the work of Muritala & Taiwo (2011). The positive relationship between per capita income and government expenditure is because provision of productive resources such as security, electricity, good roads, portable water, quality health facilities and education among others through government expenditure would improve welfare through improved and increase in production of goods and services, creation of job opportunities which increases income, demand, savings and investment. Economic development brings about improvement in general

welfare and ability to afford basic needs. Gross fixed capita formation (GFCF) and foreign direct investment (FDI) as control variables are statistically insignificant both in short-run and long-run respectively which contradicts the finding of Ebeh et al (2019). This means that the variables are not significant enough to explain the quantum part of economic development in Nigeria. Further, the robustness of R-square and adjusted R-square with other statistics shows that the model is a good fit and the results are good for policy making and forecasting in Nigeria.

CONCLUSION AND RECOMMENDATION

CONCLUSION

The econometric analyses in the study indicated that there is a statistically significant positive relationship between government expenditure and economic development in Nigeria. This is validated by the coefficients of the total government capital expenditure (TGCEX) and total government recurrent expenditure (TGREX) in both the short run and long run in this study. This means that an improvement in government expenditure brings about economic growth which leads to economic development thereby instigating improvement in welfare through access to infrastructural facilities. Therefore it is necessary for government to increase expenditure to provide adequate facilities that enhance economic growth and development. This is without doubt that it will translate into better and improved welfare for the people. The insignificance of foreign direct investment is because most FDI are usually invested in service sector not in real sector. Also, GFCF is insignificant because income to individual is poor leading to little or no savings thereby resulting in private investment that is insignificant.

RECOMMENDATION

1. Government should increase total capital expenditure and monitor the distribution of funds to various capital projects as well as its implementation to the letter.
2. Government should increase total recurrent expenditure through creation of more jobs and creates a sustainable welfare packages for the old, weak and destitute in the society alongside N-power.
3. Foreign investors should be persuaded to go into real investment as government continues to create a robust and favourable macroeconomic environment to convince a prospective foreign investors.

4. Government should encourage savings through increase in interest rates on savings and reduce interest on loans.

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