The Effect of Government Expenditure on Economic Growth in Nigeria: A Disaggregated Analysis from 1977 to 2009

Akpokerere, O. E.
Ighoroje, E. J.
Department of Banking and Finance
School of Business Studies
Delta State Polytechnic Ozoro
E-mail: emmanuelakpokerere@yahoo.com, eseroji@yahoo.com

ABSTRACT

This paper investigates the effect of government expenditure on economic growth in Nigeria using a disaggregated approach. It observes that rising government expenditure has not translated to meaningful development as Nigeria is still being ranked among the world poorest countries. Several researches on the actual relationship between government expenditure and economic growth is mixed and inconclusive and most of the researches used aggregate approach. Data for the period (1977 - 2009) was used. Our estimation reviews that Government total capital expenditure (TCAP), total recurrent expenditures (TREC), Government expenditure on education (EDU) and power (POW) have negative effect on economic growth and are significant in explaining this relationship. On the contrary, rising Government expenditure on transport and communication (TRACO), and health (HEA) results to an increase in economic growth. The authors therefore advised that there should be public private participation in critical sectors of the Nigerian economy such as in power and transport in order to accelerate the rate of development in Nigeria. Also there should be a high degree of transparency and accountability in government spending.

Keywords: *Government expenditure, economic growth, power, health, transport, communication*

INTRODUCTION

The relationship between expenditure and economic growth has continued to generate series of debates among scholars. Government performs two functions, protection (security) and provisions of certain public goods Nurudeen and Abdullahi (2008). Protection function consisting of the creation of rule of law and enforcement of property rights. This helps to minimize risks of criminality, protect life and property, and the nation from external aggression. Under the provisions of public goods are defense, roads, education, health, and power, to mention a few. Some scholars argue that increase in government expenditure on socio–economic and physical infrastructures encourages economic growth. For example, government expenditure on health and education raises the productivity of labour and increase the growth of national output. Similarly, expenditure on infrastructure such as roads, communications, power, etc, reduces production costs, increase private sector investment and profitability of firms, thus fostering economic growth.

However, some scholars did not support the claim that increasing government expenditure promotes economic growth, instead they assert that higher government expenditure may slowdown overall performance of the economy. For instance, in an attempt to finance rising expenditure, government may increase taxes and/or borrowing. Higher income tax discourages individuals from working for long hours or even searching for jobs. This in turn reduces income and aggregate demand. In the same vein, higher profit tax tends to increase production costs and reduce investment expenditure as well as profitability of firms. In Nigeria, government expenditure has continued to rise due to the huge receipts from production and sales of crude oil, and the increased demand for public goods like roads, communication. Besides there is need to provide both internal and external security for the people and the nation.

Available statistics show that total government expenditure and its components have continued to rise in the last three decades. In the same manner, composition of government recurrent expenditure shows that expenditure on defense, internal security, education, health, agriculture, construction, transport and communication increased during the period under review. Furthermore, the various components of capital expenditure that is, defense, agriculture, transport and communication, education, power, and health also show a rising trend between 1977 and 2009.

Government Spending and Economic Growth: In every economy, public expenditure has an active role to play in reducing regional disparities, developing social overheads, creation of infrastructure of economic growth in the form of transport and communication facilities, education and training, growth of capital goods industries, basic and key industries, research and development and so on (Dependra, 2007). Public expenditure on infrastructure has a great role to play in the form of stimulating the economy. According to Dickey and Fuller (1979), the mechanism in which government spending on public infrastructure is expected to affect the pace of economic growth depends largely upon the precise form and size of total public expenditure allocated to economic and social development projects in the economy. When public expenditure is incurred, by itself it may be directed to particular investments or may be able to bring about re-allocation of the investible resources in the private sector of the economy.

This effect, therefore, is basically in the nature of relocation of resources from less to more desirable lines of investment. An important way in which public expenditure can accelerate the pace of economic growth is by narrowing down the difference between social and private marginal productivity of certain investment. Here, public expenditure on social and economic infrastructure like education, health, transport, communication, water disposal, electricity, water and sanitation can contribute to the performance of the economy. Landau (2003) finds that the share of government consumption to GDP reduced economic growth was consistent with the pro-market view that the growth in government constrains overall economic growth. These findings were robust to varying sample periods, weighing by population and mix of both developed and developing countries (104 countries). Ram (1986) marks a rigorous attempt to incorporate a theoretical basis for tracing the impact

of the impacts of government expenditure to growth through the use of production functions specified for both public and private sectors. The data spanned 115 countries to derive broad generalizations for the market economic investigated. He finds government expenditure to have significant positive externality effects on growth particular in the less developed countries (LDC) sample, but total government spending had a negative effect on growth. Lin (1994) uses a sample of 62 countries (1960 – 1985) and found that non-productive spending had no effect in growth in the advance countries but a positive impact in LDCs. In Nigeria, rising government expenditure has not translated to meaningful growth and development, as Nigeria ranks among the poorest countries in the world.

In addition, many Nigerians have continued to wallow in abject poverty, while more than 50 percent live on less than US$2 per day. Couple with these, is the dilapidated infrastructure (especially roads and power supply) that has led to the collapse of many industries, including high level of unemployment. Moreover, macroeconomic indicators like balance of payments, import obligations, inflation rate, exchange rate, and national savings reveal that Nigeria has not fared well in the couple of years. Therefore, the purpose of this paper is to investigate the effect of government expenditure on economic growth in Nigeria using a disaggregated approach. The issues above raise some fundamental questions. Firstly, does government expenditure have a significant influence on economic growth in Nigeria? Secondly what policy measures must be adopted to improve management of government expenditure? Hence, the following hypotheses were formulated to guide the study.

$H_0$1: Government total capital expenditure does not have significant influence on economic growth in Nigeria.

$H_0$2: Government total capital expenditure does not have significant influence on economic growth in Nigeria.

$H_0$3: Government expenditure on transport and communication does not have significant influence on economic growth.

METHOD

This study adopts descriptive research design. As a result, the analytical tool used was the single equation, involving the use of the ordinary least squares (OLS) multiple regression techniques. The level of government expenditure and composition of government expenditure are important determinants of growth. Thus, our model expresses economic growth (GRY) as a function of various levels and components of government expenditure which include Total Capital Expenditure (TCAP), Total Recurrent Expenditure (TREC), Expenditures on Defense (DEF), Agriculture (AGR), Transport and Communication (TRACO), Education (EDU), Power (POW) and Heath (HEA). Thus, the growth model is specified as follows and all the variables are equally well defined for clarity and analytical purposes:

$$GRY = \beta O + \beta 1 TREC + \beta 2 TCAP + \beta 3 DEF + \beta 4 AGR + \beta 5 EDU + \beta 6 HEA + \beta 7 TRACO + \beta 8 POW + \mu$$

The variables are measured as follows: Economic growth refers to the changes in real GDP. Real GDP in turn is obtained by dividing GDP at current market price by the consumer

price index (CPI). TREC is measured as total recurrent expenditure divided by the CPI. TCAP is captured by the total capital expenditure divided by CPI. AGR is captured by government expenditure on agriculture divided by CPI. HEA is measured as government expenditure on health divided by CPI. EDU is captured by government expenditure on education divided by CPI. TRACO is measured as government expenditure on transport and communication divided by CPI. POW is captured by government expenditure on power divided by CPI. Thus, we assumed the expenditure items to be actual expenditures. Prior estimation of the growth model above, standard econometric tests like stationary test and co-integration test was conducted in order to avoid the generation of spurious regression results. Data were derived from secondary sources. Pool of data were extracted from publications of the Nigerian Stock Exchange (NSE) fact book 2001, 2005, and 2010 editions, Securities and Exchange Commission's annual reports. The sample data contain all the six sectors in which government carried out expenditure. The sample data used cover the period 1977 to 2009; and the sectors covered are six in number namely: defense (DEF), agriculture (AGR), transport and communication (TRACO), education (EDU), power (POW) and health (HEA). The Regression Analysis was run by Econometric View package (E-View)

RESULTS AND DISCUSSION

In this equation we regressed all the explanatory variables on growth. The regression results show that the explanatory variables jointly account for approximately 57.915 percentage change in economic growth. The results show that only health (HEA) and transport and communication (TRACO) are correctly signed in support of the prior expectation, the other explanatory variables are negatively signed against a priori expectation. The constant term which is the autonomous expenditure, that is government expenditure when all other explanatory variables are fixed is 15.9 percent. The estimation results also show that-total capital expenditure (TCAP), recurrent expenditure (TREC), expenditures on transport and communication (TRACO), education (EDU), and health (HEA), are statistically significant in explaining the changes in economic growth. However, expenditures on defense (DEF), power (POW) and agriculture (AGR) are not significant in explaining economic growth. The Durbin Watson Statistic (1.98) shows the absence of auto correlation. The results also show that 1 percentage increase in total capital expenditure in the previous two years causes economic growth to decline by 0.004 percentage.

Similarly, a 1 percentage increase in total recurrent expenditure in the previous one year leads to 0.005 percentage decrease in economic growth. These findings are consistent with the research reported by Laudau (2003), that government expenditure may slowdown economic growth. The misallocation, mismanagement and diversion of public funds may account for the negative impact of total capital and recurrent expenditures by government officials and political appointees. Also, 1% increase on government expenditure on transport and communication in the previous one year results to an increase in economic growth by approximately 0.035 percentage. Thus, higher government expenditure on transport and communication creates an enabling environment for businesses

to strive through reduced cost of production. Besides, the estimation shows that a one percentage increase in government expenditure on education in the previous one year causes economic growth to decline by approximately 0.07%. This is not surprising because funds meant for the development of the education sector have not been properly utilized and in most cases embezzled, thus precipitating the incessant strike by Academic Staff Union of Universities (ASUU) and National Union of Teacher (NUT). Moreover, the estimation results indicate that a 1% increase in expenditure on health in the previous one year leads to approximately 0.06% increase in economic growth.

Thus, increases in government expenditure on health raise the health status and productivity of people, thereby promoting economic growth. The regression results also illustrate that a 1% increase in expenditure on power in the previous year results to approximately 0.3 percentage decrease in economic growth. This is not surprising given the fact that in the last twenty decades before 1999, the power sector lacked gross neglect. Also the billions of dollars spent between 1999 and 2007 by the administration of president Obasanjo could not be accounted for. This has resulted in the poor performance of the power industry and the economy at large given the critical role of the power sector in economic development. Lastly, the error correction has been found to be significant and correctly signed implying that a long run equilibrium or relationship exists between variables. The analysis is based on the equation specified below:

Table 1: Regression results

Dependent variable : GRY
Method: Least Squares
Date: 10/20/11 Time: 18:21
Sample (adjusted): 1977 2009
Included observations: 29 after adjusting endpoints

Variable	Coefficient	std. Error	t. Statistic	prob.
C	58.96014	14.18445	4.156673	0.0006
TREC (-1)	-0.005800	0.003302	-2.901280	0.0512
DEF (-2)	-0,018437	0.019872	-1.015877	0.3217
AGR	-0.000862	0.017026	-0.050603	0.9602
TRACO (-1)	0.034998	0.013163	2.68855	0.0160
EDU (-1)	-0.066705	0.024736	-2.696711	0.0148
HEA (-1)	0.062409	0.036844	1.693857	0.1075
POW	-0.299800	0.196188	-1.528124	0.1439

R-SQUARED 0.674566 mean dependent var 4.615990
Adjusted R-squared 0.571547 S.D dependent var 18.71344
S.E. of regression 14.42073 Akaike info criterion 7.632708
Sum squared resid 2885.852 scchwarz criterion 9.051324
Long likelihood -122.5848 F-statistic 2.584200
Durbin-Watson stat 1.960614 prob (F-statistic) 0.033296
GRY= 15.9142 - 0.005800TREC - 0.005974TCAP - 0.018437DFF - 0.000862AGR - 0.066705EDU + 0.034998TRACO - 0.299800 POW.
R-squared 0.671547
F-statistic 2.584200
Durben –watson stat 1.980614

Table 2: Government Recurrent Expenditure and its components (N'million)

Years	Total Rec exp	Defence	Education	Health	Agriculture	Transport & comm.	power
1977	3819.20	817.70	238.60	109.50	19.50	41.30	95.32
1978	2800.00	596.10	268.20	72.90	19.70	29.10	97.10
1979	3187.20	724.20	368.90	87.50	34.30	43.70	100.00
1980	4805.20	652.50	597.20	155.30	32.50	58.50	100.24
1981	4846.70	725.10	543.70	119.80	33.90	59.10	95.25
1982	5506.00	660.80	646.70	155.80	34.10	53.80	99.65
1983	4750.80	535.40	620.80	143.60	29.30	49.70	101.65
1984	5827.50	569.20	716.30	139.10	32.80	42.30	108.21
1985	7576.40	656.60	669.50	167.70	32.70	125.80	54.21
1986	7696.90	742.40	652.80	279.20	32.90	125.80	56.35
1987	15646.20	717.70	514.40	166.90	29.20	114.20	58.14
1988	19409.40	830.00	802.30	260.00	54.30	142.80	59.21
1989	25994.20	957.30	1719.90	326.60	81.10	170.40	64.15
1990	36219.60	1410.50	1962.60	401.10	208.10	232.40	35.14
1991	38243.50	1834.20	1265.10	619.40	121.10	245.40	59.32
1992	5304.10	2023.40	1676.30	837.40	161.50	356.30	60.51
1993	136727.10	3085.40	6436.10	2331.60	1015.50	350.10	6536
1994	89974.90	4205.10	7878.10	2066.80	919.00	381.40	65.24
1995	127629.80	5344.40	9421.30	3335.70	2236.00	890.00	66.58
1996	124491.30	11425.70	12136.00	3192.00	1681.20	2183.60	68.25
1997	158563.50	11607.20	12136.00	3179.20	1682.20	1290.20	70.21
1998	178097.80	15130.80	13928.30	4860.50	2963.80	1969.40	75.02
1999	449662.40	28091.40	23047.20	8793.20	31347.20	5877.60	10091.40
2000	461600.00	3319.40	44225.50	11612.60	4834.70	2315.70	63117.50
2001	579300.00	47071.60	39884.60	24523.50	70.64.90	33935.10	88071.60
2002	696800.00	86053.80	100240.20	50563.20	12439.40	36579.40	102053.80
2003	983400.00	51043.60	64755.90	33254.50	7535.30	22669.80	110143.6-0
2004	1032700.00	65400.20	72217.90	33377.40	11725.60	4592.30	150200.20
2005	1223700.00	90333.80	92594.70	50032.80	10858.80	7780.80	900333.80
2006	1290201.90	83674.00	129421.90	67550.20	18739.80	9468.90	921874.00
2007	1589270.0	102597.27	137478.26	71228.99	15781.42	10080.69	991597.27
2008	1598110.10	112653.21	155236.10	75115.20	17224.10	11220.30	992468.20
2009	1606984.20	116251.21	157361.20	76365.10	17525.30	11521.10	993254.10

Source: Central Bank of Nigeria (2007, 2008, 2009)

Table 3: Government capital Expenditure and its components (N'million)

Years	Total capital Expenses	Defence	Agriculture	Transport & comm.	Education	Health	CPI	GDP	power
1977	5004.60	97.70	105.50	2300.40	500.00	114.10	0.66	31520.30	817.70
1978	5200.00	39.80	128.40	1331.10	301.40	49.60	0.70	34540.10	596.10
1979	4219.50	44.40	321.90	1865.70	533.20	96.20	0.75	41974.70	724.20
1980	10163.40	127.50	435.60	2349.30	952.60	147.20	0.88	49632.30	68.12
1981	6567.00	96.20	775.10	1625.70	440.90	128.40	1.03	47619.70	71.10
1982	6417.20	82.20	1035.10	1283.90	488.00	130.20	1.10	49069.30	71.89
1983	4885.70	200.80	1185.20	1094.40	346.60	136.00	1.53	53107	73.21
1984	4100.10	38.40	252.50	261.90	144.90	51.10	1.87	59622.50	75.21
1985	5464.70	30.60	985.40	241.00	180.70	56.20	1.89	67908.60	52.24
1986	8526.80	209.00	892.50	516.10	442.00	81.20	2.15	69147.00	25.32
1987	6372.50	18.50	365.10	375.10	139.10	69.50	2.36	10522.80	58.20
1988	8340.10	271.30	595.70	704.00	281.80	183.20	3.80	139085.30	85.20
1989	15034.10	124.10	981.50	683.80	221.90	126.00	5.50	216797.50	89.20
1990	24048.60	196.40	1758.50	877.00	331.70	257.00	5.70	267550.00	91.30
1991	28340.90	411.10	551.20	353.40	289.10	137.60	7.00	312139.70	94.30
1992	39763.30	683.20	763.00	625.00	384.10	188.00	10.42	532613.80	65.20
1993	54501.80	1085.60	1820.00	1436.70	1563.00	352.90	16.80	683869.80	67.20
1994	70918.30	1286.80	2800.10	1294.00	2405.70	961.00	29.70	899863.20	77.30
1995	121138.30	2031.20	4691.70	3800.30	3307.40	1725.20	45.03	1933211.60	79.30
1996	212926.30	2670.10	3892.80	8820.00	3215.80	1659.50	51.47	2702719.10	84.40
1997	269651.70	3820.80	6247.40	7147.70	3808.00	2623.80	56.73	2801972.60	85.30
1998	309015.60	6147.70	8876.60	6228.00	12793.00	7123.80	63.49	2708430.90	86.20
1999	498027.60	4856.30	6912.60	3313.70	8516.60	7386.80	63.63	3194015.00	10091.40
2000	239450.90	6954.90	5761.70	3021.00	23342.60	6569.20	72.87	458127.30	63117.50
2001	438696.50	16400.00	57879.00	192441.00	19860.00	20128.00	84.90	4725086.00	88071.60
2002	321378.10	22093.60	32364.40	17083.00	9215.00	12608.00	95.20	6912381.30	102053.80
2003	241688.30	10679.70	8510.90	6639.60	14680.20	6431.00	117.90	8487031.60	110143.6-0
2004	351300.00	10657.10	48047.80	9751.00	21550.00	26410.00	129.70	11411066.90	150200.20
2005	519500.00	21535.20	79939.40	19982.50	27440.80	21652.60	144.70	14572239.10	900333.80
2006	552385.80	14686.00	15176.80	6531.00	35791.80	38039.80	157.10	18564594	921874.00
2007	759323.00	14717.24	22518.58	35529.35	48293.51	51171.01	167.40	20657317.70	991597.27
2008	762511.20	1483.60	22625.10	35765.50	48385.50	51632.80	167.90	20756841.60	992468.20
2009	778564.10	14952.80	23584.90	36584.20	49658.70	51756.40	168.10	20763251.10	993254.10

Source: Central Bank of Nigeria (2007, 2008, 2009)

CONCLUSION AND RECOMMENDATIONS

This study aims at investigating the effect of government expenditure on economic growth in Nigeria using a disaggregated approach. The empirical results reveal that the negative total current expenditure significantly influence the economic growth in Nigeria. Although, the negative total capital expenditure significantly influence the economic growth in Nigeria, yet the impact of government expenditure on transport and communication on economic growth is positive and significant. On these premise, the following recommendations are proffered:

(1) Government should not play politics with expenditure on public goods just to win cheap popularity.

(2) The capital expenditure of government which spurs economic growth is presently at about 35 percent of total government expenditure, against recurrent expenditure of 65 percent. This trend, if reversed quickly would guarantee economic growth.

(3) Government should monitor the contract awarding process of capital projects closely, to prevent against over estimation of execution cost. This will bring about significant impact of public investment spending on economic growth.

(4) There should be effective channeling of public fund to productive activities, which will have a significant impact on economic growth.

(5) The government consumption spending should be well coordinated by all arms of government to prevent "Crowd out" effect on government investment.

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