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Muritala, Taiwo and Taiwo, Abayomi

Fountain University Osogbo, Nigeria. Department of Economics and Financial Studies,, Tai Solarin University of Education, Ijebu-Ode, Nigeria. Department of Economics,

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# GOVERNMENT EXPENDITURE AND ECONOMIC DEVELOPMENT: EMPIRICAL EVIDENCE FROM NIGERIA

Muritala Taiwo

*Department of Economics and Financial Studies, Fountain University Osogbo, Nigeria*

Corresponding Author's E-mail: [muritalaiwo@yahoo.com](mailto:muritalaiwo@yahoo.com)

Tel: +2348034730332; +2347054979206

and

Taiwo Abayomi

*Department of Economics, Tai Solarin University of Education, Ijebu-Ode, Nigeria*

E-mail: [yommy246@yahoo.com](mailto:yommy246@yahoo.com)

Tel: +2348055821802

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## Abstract

This study 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) technique. The paper test for presence of stationary between the variables using Durbin Watson unit root test. The result reveals absence of serial correlation and that all variables incorporated in the model were non-stationary at their levels. In an attempt to establish long-run relationship between public expenditure and economic growth, the result reveals that the variables are co integrated at 5% and 10% critical level. The findings show that there that there is a positive relationship between real GDP as against the recurrent and capital expenditure. It could therefore be recommended that government should promote efficiency in the allocation of development resources through emphasis on private sector participation and privatization\commercialization.

**Keywords:** Current expenditure; capital expenditure; macroeconomics; economic development

## 1. Introduction

### 1.1 Background of the Study

The recent revival of interest in growth theory has also revived interest among researchers in verifying and understanding the linkages between government spending and economic growth especially in developing country like Nigeria. Over the past decades, the public sector spending has been increasing in geometric term through government various activities and interactions with its Ministries, Departments and Agencies (MDA's), (Niloy et al. 2003). Although, the general view is that public expenditure either recurrent or capital expenditure, notably on social and economic infrastructure can be growth-enhancing although the financing of such expenditure to provide essential infrastructural facilities-including transport, electricity, telecommunications, water and sanitation, waste disposal, education and health-can be growth-retarding (for example, the negative effect associated with taxation and excessive debt). The size and structure of public expenditure will determine the pattern and form of growth in output of the economy. The structure of Nigerian public expenditure can broadly be categorised into capital and recurrent expenditure. The recurrent expenditure are government expenses on administration such as wages, salaries, interest on loans, maintenance etc., whereas expenses on capital projects like roads, airports, education, telecommunication, electricity generation etc., are referred to as capital expenditure. One of the main purposes of government spending is to provide infrastructural facilities.

The effect of government spending on economic growth is still an unresolved issue theoretically as well as empirically. Although the theoretical positions on the subject are quite diverse, the conventional wisdom is that a large government spending is a source of economic instability or stagnation. Empirical research, however, does not conclusively support the conventional wisdom. A few studies report positive and significant relation between government spending and economic growth while several others find significantly negative or no relation between an increase in government spending and growth in real output. An extensive review of literature, presented in the

next section, clearly indicates that empirical evidence on the effect of government spending on economic growth is at best mixed.

### 1.2 Statement of the Problem

In the last decade, Nigerian economy has metamorphosed from the level of million naira to billion naira and postulating to trillion naira on the expenditure side of the budget. This will not be surprising if the economy is experiencing surplus or equilibrium on the records of balance of payment. Better still, if there are infrastructures to improve commerce with the system or social amenities to raise the welfare of average citizen of the economy. All these are not there, yet we always have a very high estimated expenditure. This indicates that something is definitely wrong either with the way government expands budget or with the ways and manners it has always been computed.

### 1.3 Research Questions

Hence, in order to justify reasons for so much expansionary effects on the way and manner public expenditure either capital or recurrent expenditure have been geometrically computed in or order to finance the infrastructural facilities towards improving commerce with the system or social amenities so as to raise the welfare of average citizen of the economy, this study tends to provide solution to the following questions:

- a Is there any relationship between government expenditure either capital or recurrent expenditure and economic growth in Nigeria?
- b Is there anyway to justify the surplus, deficit or equilibrium position on Nigeria balance of payment due to the effects created by public spending?
- c Is it true that has the nation is expanding its public expenditure on provision of infrastructural facilities as well as administration financing, the economy has been growth-enhancing?
- d Does public expenditure on provision of infrastructural facilities as well as administration financing determines the pattern and form of growth in output of the economy?

## 2.0 Review of Literature, Theoretical and Empirical

In a developed country, through economic stabilization, stimulation of investment activity and so on, public expenditure maintains a rate of growth which is a smooth one. In an underdeveloped country, 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 (Bhatia, 2002). Public expenditure on infrastructural facilities has a great role to play in the form of stimulating the economy. The mechanism in which government spending on public infrastructure is expected to affect the pace of economic growth depend 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 re-allocation 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 investments. Here, public expenditure on social and economic infrastructural like education, health, transport, communication, water disposal, electricity, water and sanitation etc., has the potential of contributing to the performance of the economy based on Promotion of infant industries in the economy; Reduction in the unemployment rate; Stabilization of the general prices in the economy; Reduction in the poverty rate and increase the standard of living of the people; Promotes economic growth by attracting foreign investment; and Promotes higher productivity.

In tracing the work of Rostow and Musgrave, where they put forward development model under the causes for growth in public expenditure. Under this model, public expenditure is a prerequisite of economic development. The public sector initially provides economic infrastructure such as roads, railways, water supply and sanitation. As economic growth take place, the balance of public investment shift towards human capital development through increase spending on education, health and welfare services. In this model, the state is assumed to grow like an organism making decision on behalf of the citizens. Society demand for infrastructural facilities such as education, health, electricity, transport etc., grow faster than per capita income.

## 2.1 Theoretical Review

Public expenditure theory, traditionally, received only a scanty attention till recently. Partly, this lop-sided interest in the theory of public finance is explained by a general acceptance of the philosophy of laissez-faire and belief in the efficacy of free market mechanism. However, with the advent of welfare economics the role of the state has expanded especially in the area of infrastructural provision and theory of public expenditure is attracting increasing attention. This tendency has been reinforced by the widening interest of economists in the problems of economic growth, planning, regional disparities, distributive justice and the like (Bhatia, 2002).

The theory of public expenditure may be discussed in the context of increasing public expenditure, the range of public expenditure and/or in terms of the division of a given amount of public expenditure into different items like recurrent and capital expenditure. The later of the two parts may also be conceived in terms of allocation of the economy's resources between providing public goods on the one hand and private goods on the other.

### 2.1.1 Theory of Increasing Public Expenditure

There are two important and well-known theories of increasing public expenditure. The first one is connected with Wagner and the other with Wiseman and Peacock. On the one hand, Wagner 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. He maintained that there was a functional relationship between the growth of an economy and government activities with the result that the governmental sector grows faster than the economy. However 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-others (Nitti, 1903). All kinds of governments, irrespective of their levels (say, the central or state government), intentions (peaceful or warlike), and size, etc., had exhibited the same tendency of increasing public expenditure. But on the other hand, 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.

## 2.2 Empirical Review

Numerous studies have been conducted to investigate the relationship between government spending and economic growth. Landau (1983) found that the share of government consumption to GDP reduced economic growth which was consistent with the pro-market view that the growth in government constrains overall economic growth. The conclusions were germane to growth in per capita output and do not necessarily speak to increase in economic welfare. Economic growth was also found to be positively related to total investment in education. In a later study, Landua (1986) extends the analysis to include human and physical capital, political, international conditions as well as a three year lag on government spending in GDP. Government spending was disaggregated to include investment, transfers, education, defense and other government consumption. The results in part mirrored the earlier studies in that general government consumption was significant and had a negative influence on growth. Education spending was positive but not significant. It was unclear why lagged variables were included given that the channels through which government influence growth suggest a contemporaneous relationship. Ram (1986) study marked a rigorous attempt to incorporate a theoretical basis for tracing 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 economics investigated. He found government expenditure to have significant positive externality effects on growth particular in the developing countries (LDC) sample, but total government spending had a negative effect on growth. Lin (1994) used a sample of 62 countries (1960-85) and found that non-productive spending had no effect in growth in the advanced countries but a positive impact in LDCs. Other studies have investigated the impact of particular (functional) categories of public expenditure. For example, Deverajan et al (1993), using a sample of 14 OECD countries, found that spending on health, transport and communication have positive impacts whereas spending on education and defense did not have a positive impact.

Seymour *et al.* (1997) used a disaggregated approach to examine the impact of government expenditure on economic growth in the OECD. Josaphat *et al.* (2000) investigated the impact of government spending on economic growth in Tanzania (1965-1996) using time series data for 32years. They formulated a simple growth accounting model, adapting Ram (1986) model in which total government expenditure is disaggregated into expenditure on

(physical) investment, consumption spending and human capital investment. It was found that increased productive expenditure (physical investment) have a negative impact on growth and consumption expenditure relates positively to growth, and which in particular appears to be associated with increased private consumption. The results revealed that expenditure on human capital investment was insignificant in their regression and confirm the view that public investment in Tanzania has not been productive, as at when the research was conducted. Nitoy *et al.* (2003) employed the same disaggregated approach as followed by Josaphat *et al.* (2000). They examined the growth effects of government expenditure for a panel of thirty developing countries (including Nigeria) over the decades of the 1970s and 1980s, with a particular focus on sectoral expenditures. The primary research results showed that the share of government capital expenditure in GDP is positively and significantly correlated with economic growth, but current expenditure is insignificant. The result at sectoral level revealed that government investment and total expenditures on education are the only outlays that remain significantly associated with growth throughout the analysis. Although public investments and expenditures in other sectors (transport and communication, defense) was found initially to have significant associations with growth, but do not survive when government budget constraint and other sectoral expenditures were incorporated into the analysis. Also private investment share of GDP was found to be associated with economic growth in a significant and positive manner. Junko and Vitali (IMF, 2008) investigate the impact of government expenditure on economic growth in Azerbaijan because of the temporarily oil production boom (2005-07), which caused expectationally large expenditure increase aimed at improving infrastructure and raising incomes.

Azerbaijan's total expenditure increased by a cumulative 160 percent in nominal value from 2005 to 2007 (i.e. from 41 percent of non-oil GDP to 74 percent) in their research reference which were made to Nigeria and Saudi Arabia (1970-89) who have also experienced oil boom and increased government expenditure over the years. The study simulated the neo-classical growth model tailored to the Azeri conditions. Their analysis suggested that the evaluated fiscal scenario poses significant risks to growth sustainability and historical experience indicates that the initial growth performance largely depends on the efficiency of scale-up expenditure. The study also sheds light on the risks associated with a sudden scaling-down of expenditure, including the political difficulties to undertake an orderly expenditure reduction strategy without undermining economic growth and the crowding-out effects of large government domestic borrowing.

### 2.3 Conceptual Framework

Government spending as a fiscal instrument serves useful roles in the process of controlling inflation, unemployment, depression, balance of payment equilibrium and foreign exchange rate stability. In the period of depression and unemployment, government spending causes aggregate demand to rise and production and supply of goods and services follow the same direction. As a result, the increases in the supply of goods and services couple with a rise in the aggregate demand exalt a downward pressure on unemployment and depression.

In the case of persistent rise in price (inflation) and the depreciation in the value of money, it is expected that reduction in government expenditures discourages aggregate demand and inflation and falling in the value of exchange rate are controlled. It is worth to note that these two tools may be adopted simultaneously in the economy. A rise in the government expenditure has the same effects as a reduction in the tax rates on aggregate demand. Similarly, the effects of a reduction in the government expenditures are the same as increases in tax rates.

### 2.4 Theories of Government Expenditure

#### 2.4.1 Peacock and Wiseman's Theory of Expenditure

Peacock and Wiseman's study is probably one of the best known analyses of the time pattern of public expenditures. They founded their analyses upon a political theory of public determination namely that governments like to spend more money and citizens do not like to pay taxes, and that government need to pay some attention to the wishes of their citizens. The duo saw taxation as setting a constraint on government expenditure. As the economy and thus incomes grew, tax revenue at constant tax rate would rise, thereby enabling public expenditure would show a gradual upward trend even although within the economy there might be a divergence between what people regarded as being desirable level of public expenditure and the desirable level of taxation. During the periods of social upheaval however, this gradual upward trend in public expenditure would be disturbed.

These periods would coincide with war, famine or some large-scale social disaster, which would require a rapid increase in public expenditures; the government would be forced to raise taxation levies. The rising of taxation levels would, however, be regarded as acceptable to the people during the period of crisis. Peacock and Wiseman referred to this as the “displacement effect”. Public expenditure is displaced upwards and for the period of the crisis displaced private for public expenditure does not however fall to its original level.

A war is not paid for from taxation; no nation has such large taxable capacity. Countries therefore borrow and debt charges have to be not after the event. Another effect that they thought might operate was the “imperfection effect” thus they suggested arise from the people Keener awareness of social problems during the period of upheaval. The government therefore expands its scope of services to improve these social conditions and because people perception to tolerable levels of taxation does not return to its former level, the government is able to finance these higher levels of expenditures originating in the expanded scope of government and debt charges.

#### 2.4.2 Ernest Engel’s Theory of Public Expenditure

Ernest Engel was also a German economist writing almost the same time as Adolph Wagner in the 19<sup>th</sup> century. Engel pointed out over a century ago that the composition of the consumer budget changes as family income increases. A smaller share comes to be spent on certain goods such as work clothing and a larger share on others, such as for coats, expensive jewelries etc.

As average income increase, smaller charges in the consumption pattern for the economy may be to occur. At the earlier stages of national development, there is need for overhead capital such as roads, harbors, power installations, pipe-borne water etc. But as the economy developed, one would expect the public share in capital formation to decline over time. Individual expenditure pattern is thus compared to nation expenditure and Engel finding is referred to as the declining portion of outlays on foods.

#### 2.4.3 Wagner Law of Increasing State Activities

Thus, Wagner was emphasizing long-term trend rather than short-term changes in public expenditure. Moreover, he was not concerned with the mechanism of increase in public expenditure. Since it is based on historical experience, the precise quantitative relationship between the extent of increase in public expenditure and time taken by it was not fixed in any could not used to predict its rate of increase in future. Actually, it is consistent with the Wagner’s law of the state that in future, the state expenditure will increase at a rate slower than the national income though speaking; it had increase at a faster rate in the past.

Thus, in the initial stage of economy growth, the state finds out that it has to expand its activities quite fast in several fields like education, health, civil amenities, transport, communications, and so on. But when the initial deficiency is removed, then the increase in state activities many be slowed down. The factors, which contribute to the tendency of increasing public expenditure, relate to a growing role of the state in ever-increasing socio-economic complexities of modern society.

### 2.5 Public Expenditure Policies in Nigeria

The Second National Development plan (1970-1974) accorded a leading role to government just as it considered public enterprise as crucial to growth and self – reliance due to capital scarcity, structural defects in the private sector and perceived danger of foreign dominance of the private sector. The third National Development plan (1975-1980) advocated some shift in resources allocation in favor of rural areas, which were said to have benefited little from the economic growth of 1970’s. Thus small farmers and the rural population were expected to benefit from public expenditure.

However, against the background of the austere fiscal outlook of the government, under the Third National Plan (1981- 1985)), the role of fiscal policy was viewed mainly as the generation of revenue through increased tax effort and the control of public spending. The structural adjustment programmed (SAP) introduced in July 1986 recognized that the financial resources for public expenditure for the rest of the 1980s and beyond were likely to be

less than was previously envisaged. And given the uncertainty in the oil market and substantial debt repayment falling due, there was need to curtail government expenditure, especially those involving foreign exchange.

In the main, as with other IMF and World Bank programmers, measures were to be taken to reduced government expenditure. Such measures, include reduction of the growth of government wage bill; reduction in government subsidies on fertilizer, foods petroleum and petroleum products; limiting or delaying new investments, and the rationalization, and hence the privatization and commercialization of public enterprise, thereby efficiency of investment and expenditure control and administration. During the first National Rolling Plan (1990-1992), government aimed at effort of combat inflation hence budgetary deficit were to be avoided hence government expenditure was made more cost- effective and kept levels that were consistent with the nation’s resources, realistic growth targets and general economic stability.

## 2.6 Hypothesis of the Study

The hypothesis to be tested read thus:

**H<sub>0</sub>:** Government spending has negative relationship with economic development.

**H<sub>1</sub>:** Government spending has positive relationship with economic development.

## 3.0 Regression and Interpretation of Findings

### 3.1 Model Specification

$$GDP = \alpha_0 + \beta_1 REC + \beta_2 CAP + \mu$$

Where

$\alpha_0$  = Autonomous income

$\beta_1$  and  $\beta_2$  are parameters

GDP = Gross Domestic Product

REC = Recurrent Expenditure

CAP = Capital Expenditure

$\mu$  = Error Term

### 3.1 Analysis of the Result

Variable	Coefficient	Std. Error	T-Statistic	Prob
C	1.906842	0.446915	4.266677	0.0001
CAP	0.465034	0.080428	5.782012	0.0000
REC	0.573402	0.085944	6.671792	0.0000
R-square	0.945787	Mean Dep Var	12.66979	
Adj R-squared	0.942775	S.D. Dep Var	2.602483	
S.E of REG	0.622559			
Sum squared	13.95288			
Log likelihood	-35.29503	F-stat	314.0228	
Durbin Watson Stat Test	2.088658	Prob (F-stat)	0.000000	

### 3.1.1 Presentation and Interpretation of Result

$$\text{LogGDP} = \text{Log } \beta_0 + \text{Log } \beta_1 \text{REC} + \text{Log } \beta_2 \text{CAP} + \mu$$

$$\text{LogGDP} = 1.906842 + \log 573402 \text{REC} + \log 0.465034 \text{CAP} + \mu$$

(0.446915)      (0.85944)      (0.080428)

#### a. Coefficients

The slopes of the coefficient are in line with a priori (predictions). The Coefficients are positive and significant at 1% level. That is a percentage change in capital expenditure will induce a 0.465% unit change in GDP while and a percentage change recurrent expenditure will induced a 0.573% unit in GDP.

#### b. Goodness of Fit Test (R<sup>2</sup>)

The R<sup>2</sup> test is used to show the total variation of the dependent variable that can be explained by the independent

variable. The  $R^2$  is equal to 0.945787 that is 94.5787% of the dependent variable (Gross Domestic Product can be explained by the change in recurrent and capital expenditure in the economy within the period under review.

#### c. The Durbin Watson Test

The Durbin Watson statistic is used to test the existence serial correlation between the variables. Durbin Watson is equal to 2.088658, implies the absence of serial correlation. This is because the closer the DW value is to two, the better the evidence of the absence of serial correlation. There is no evidence of positive first order serial correlation.

#### d. Test of Significance

##### (i) Recurrent expenditure

T-cal = 6.7

T-tab = 2.03

Since T-cal is greater than T-tab, the null hypothesis is rejected suggesting that there is a positive relationship between recurrent expenditure and economic development.

##### (ii) Capital expenditure

T-cal = 5.8

T-tab = 2.03

Since T-cal is greater than T-tab the null hypothesis is rejected and we do not reject alternative hypothesis claiming that there is a positive relationship between capital expenditure and economic development.

### 4 Conclusion and Recommendation

This work has so far explained the theories of government expenditure by relevant scholars such as Wagner's theory and Wiseman-peacock theory. According to Wagner, there are inherent tendencies for the activities of different layers of a government (such as central, state and local government) to increase both and extensively. The main thesis of Wiseman-Peacock theory is that government does not increase in a smooth and continuous manner, but in jerks or steep like fashion. And has pointed out the main reason for increase in government expenditure. The secondary data gathered were regressed and it shows clearly that there is a positive relationship between GDP and recurrent and capital expenditure.

Since a fact has been established that there is a great impact of government expenditure in relation to the economic growth of Nigeria. It can therefore be said that the higher the government spending, the higher the level of economic growth (*ceteris paribus*) and the lower the government spending, the lower the level of economic growth of the nation. Overall, the empirical evidence suggests that the increase in the government spending in this work has been based on the fact that there is no corruption and embezzlement in the system. So, it can therefore be said it is because of the level of corruption in the system that something might be wrong with the computation of the figure. Further research and notice can be made in order to examine the lapses in embezzlement level of our past leaders in terms of budgetary inflation; correctness of proper imputation and computation of the monetary figures as well as checkmating the past wrong manipulation so as to correct it for future purposes. It could therefore be recommended that government should promote efficiency in the allocation of development resources through emphasis on private sector participation and privatization/commercialization.

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Year	GDP	REC	CAP
1970	5,281.10	716.1	187.8
1971	6,650.90	823.6	173.6
1972	7,187.50	101230	457.3
1973	8,630.50	963.5	565.7
1974	18,823.10	1517.1	1223.5
1975	21,475.20	2734.9	3207.7
1976	26,655.80	3815.4	4041.3
1977	31,520.30	3819.2	5004.6
1978	34,540.10	2800	5200
1979	41,974.70	3187.2	4219.5
1980	49,632.30	4805.2	10163.3
1981	47,619.70	4846.7	6567
1982	49,069.30	5506	6417.2
1983	53,107.40	4750.8	4885.7
1984	59,622.50	5827.5	4100.1
1985	67,908.60	7576.4	5464.7
1986	69,147.00	7696.9	8526.8
1987	105,222.80	15646.2	6372.5
1988	139,085.30	19409.4	8340.1
1989	216,797.50	25994.2	15034.1
1990	267,550.00	36219.6	24048.6
1991	312,139.70	38243.5	28340.9
1992	532,613.80	53034.1	39763.3
1993	683,869.80	136727.1	54501.8
1994	899,863.20	89974.9	7091830
1995	1,933,211.60	127629.8	121138.3
1996	2,702,719.10	124491.3	212926.3
1997	2,801,972.60	158563.5	269651.7
1998	2,708,430.90	178097.8	309015.6
1999	3,194,015.00	449662.4	498027.6
2000	4,582,127.30	461600	239450.9
2001	4,725,086.00	579300	438696.5
2002	6,912,381.30	696800	321378.1
2003	8,487,031.60	984300	241688.3
2004	11,411,066.90	1032700	351300
2005	14,572,239.10	1223700	519500
2006	18,564,594.70	1290201.9	552385.8
2007	20,657,317.70	1589270	759323
2008	23,842,170.70	2117362	1123458

Table 1. Datasheet of Mock-up Test

Source: CBN Statistical Bulletin, Golden Jubilee Edition, December 2008 (Financial Statistics; 1970-2008, p. 202, 137, 45.)