EFFECTS OF PUBLIC EXPENDITURE ON ECONOMIC GROWTH IN NIGERIA: A DISAGGREGATED TIME SERIES ANALYSIS

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ABSTRACT.
This study has examined the effect of public expenditure on economic in Nigeria for the period 1970 – 2009. The tool of analysis was the OLS multiple regression model specified on perceived causal relationship between government expenditure and economic growth. The major objective of this paper is to analyze the effect of public government spending on economic in Nigeria based on time series data on variables considered relevant indicators of economic growth and government expenditure. Therefore, time series data included in the model were those on gross domestic product (GDP), and various components of government expenditure. Analysis was based on data extracted from the Statistical Bulletin of the Central Bank of Nigeria. Results of the analysis showed that capital and recurrent expenditure on economic services had insignificant negative effect on economic growth during the study period. Also, capital expenditure on transfers had insignificant positive effect on growth. But capital and recurrent expenditures on social and community services and recurrent expenditure on transfers had significant positive effect on economic growth. Consequently, the study recommended more allocation of expenditures to the services with significant positive effect.

1. INTRODUCTION

Economic growth refers to increase in a country's potential GDP, although this differs depending on how national product has been measured. Economic growth must be sustained for a developing economy to break the circle of poverty. Countries usually pursue fiscal policy to achieve accelerated economic growth. Tanzi (1994) observes that fiscal policy applies to the use of fiscal instruments (taxation and spending) to influence the working of the economic system in order to maximize economic welfare with the overriding objective of promoting long-term growth of the economy.

Perhaps, the aspect of public finance that has received much attention in the literature, debate and empirical analysis is the economic effects of public expenditures. Many support a large public expenditure on the ground that it puts money into circulation, increased investment and employment and reduces tax averseness. However, public expenditure has some obvious economic consequences. For instance, when the state enters the market for factor inputs or labour, it stimulates unhealthy competition with the private sector firms for these same materials or labour services. As such, the government becomes the largest purchaser of goods and services because of its widespread activities, as hitherto evidenced in Nigeria.

To this extent, Suleiman (2009) observes that the size of Government and its impact on economic growth has emerged as a major fiscal management issue facing economies in transition. He notes that previous research focused predominantly on size of Government in industrialized countries, but given the openness of most Developing Countries (DCs), trade dependency, the vulnerability to external shocks, and volatility of finances, the role and size of Government become germane to adjustment and stabilization programmes. Mitchell (2005) has argued that a large and growing government is not conducive to better economic performance.

For decades, public expenditures have been expanding in Nigeria, as in any other country of the world. Akpan (2005) opines that the observed growth in public spending appears to apply to most countries regardless of their level of economic development. This necessitates the need to determine whether the behaviour of Nigerian public expenditure and the economy can be hinged on the Wagner's (1883) Law of Ever-increasing State Activity, or the Keynesian (1936) theory and Friedman (1978) or Peacock and Wiseman's (1979) hypotheses.

Over the years, increases in the finances of the Federal Government have led to a number of theoretical and empirical investigations of the sources of such increases. Researchers have particularly questioned whether increases in the size of the federal budget tend to be initiated by changes in expenditures followed by revenue adjustments or by the reverse sequence, or both (Baghestani and McNown, 1994; Akpan, 2005). Friedman (1978), for example, argues that governments adjust expenditures to the level of revenues, so that control of taxation is essential to limit growth in government. Alternatively, the spend-and-tax model posits that revenues will be adjusted to finance any politically chosen level of expenditures. A third perspective, reflecting the institutional separation of allocation and taxation functions of the federal government, hypothesizes the independent determination of revenues and expenditures. However, Suleiman (2009) observes that the fiscal volatility of the post-1979 period indicates a continued absence of coordination between expenditure and revenue decisions. He also opines that examining the empirical relationship between government revenues and expenditures is a crucial step in understanding the future path of the budget deficit.

Four alternative explanations have been used to describe the relationship between these variables in the budgetary process (Baghestani and McNown, 1994): (i) the tax-and-spend hypothesis, (ii) the spend-and-tax hypothesis, (iii) the fiscal synchronization hypothesis, and (iv) the institutional separation hypothesis. According to Suleiman (2009), the issue of which hypothesis best describes the nature

of the budgetary process in Nigeria is yet to be resolved in the literature. However, existing research has implicitly assumed that the state of the budget and whether or not the budget deficit (or surplus) is worsening or improving does not matter. Therefore, he argues that government decision-makers may take these factors into account when determining expenditures and tax policy. On that basis, he re-examines the theories and hypotheses by using a more robust econometric technique that allows for asymmetry in the relationship between revenue and expenditure components of public expenditure.

Abu and Abdullah (2010) observe that 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, power, education and health. Besides, there is increasing need to provide both internal and external security for the people and the nation.

Available CBN statistical data show that total government expenditure (capital and recurrent) continued to rise throughout the study period. For instance, while government capital expenditure on economic services, social and community services, and transfers increased from ₦15.5 million ₦1.4 million and ₦100.7 million respectively in 1970 to ₦809120.5 million, ₦120049.2 million and ₦211758.1 million respectively in 2009, recurrent expenditure on same services increased from ₦25.95 million, ₦43.55 million and ₦511.42 million respectively in 1970 to ₦340193.77 million, ₦346071.95 million and ₦622171.10 million respectively in 2009 (see CBN Statistical Bulletin, 2009). Government expenditures on these and other services or sectors would be expected to generate a corresponding growth trend in the economy. This necessitates the research interest for empirical quantitative measure of effect of government spending on growth of the economy.

Consequently, this study dwells primarily on the expenditure side of public finance, and seeks to examine the relationship between government expenditure and economic growth in Nigeria for the period 1970 to 2009. Although, this is in line with previous empirical studies considered for the Nigerian situation, it is a departure from Suleiman (2009) whose study considered both revenue and expenditure aggregation. However, as in his work, this study employs applied econometric methodology after examining the fiscal factors in the link between public expenditure and economic growth. The econometric methodology, which is basically ordinary least squares (OLS) techniques multiple regression analysis model and relevant statistics, is employed to enhance the statistical tests for the analysis of macroeconomic time series data considered in this study. The pivotal objective of this study is to test the Wagner's (1883) law of Ever-increasing State Activity and the Friedman's (1978) Revenue-Spend theory within the Nigerian context in an attempt to establish whether or not public expenditure levels respond to economic growth as posited by Wagner, or it is a function of revenue decisions as posited by Friedman and Wiseman. Building on existing literature and employing disaggregated data set on government expenditure and economic growth variables, this study attempts to examine the time horizon determinants of government expenditure and, thus, advances knowledge in the aspect of the relationship between public expenditure and economic growth.

The paper is structured into five sections. Section two, which is a review of related literature, follows this introduction. Design, data source and methodology employed

in this study are discussed in section three. Section four dwells on statistical analysis of data and discussion of results thereof, while section five concludes the study and proffers recommendations.

2. Review of Related Literature

A review of relevant theoretical and empirical literature will provide better insights into the rationale and dynamics of public expenditure and, thus, enhance the construction of theoretical framework for empirical analysis in this study. This section discusses some empirical and theoretical literature on the cause and effect linkage between government expenditure and economic growth.

Theoretical Literature

Generally, economic growth theory deals with long-run growth trend of the economy, or potential growth path (Branson, 2002). The focus is on factors that lead to economic growth over time and analysis of the forces that allow some economies to grow rapidly, some slowly and others not at all. Early growth theories emphasized on different aspects of the economy. For instance, Mercantilists emphasized surplus balance of trade, Physiocrats emphasized agriculture as the source of all wealth while the Cameralists favoured taxation and state regulation for strong economy (Lombardini, 1996).

Within the framework of the classical models of Smith and Malthus, economic growth is described in terms of fixed land and growing population. But without technological change, increasing population eventually exhausts the supply of free land and triggers law of diminishing returns which results to declining real wage down to subsistence level at which point Malthusian equilibrium obtains.

The Keynesians see demand as a prerequisite for growth. Therefore, their analysis concludes that aggregate demand management policies can and should be used to improve economic performance. In the Keynesian model, increase in government expenditure (on infrastructures) leads to higher economic growth. Contrary to this view, the neo-classical growth models argue that government fiscal policy does not have any effect on the growth of national output. However, it has been argued that government fiscal policy (intervention) helps to improve failure that might arise from the inefficiencies of the market.

Exploring the Keynesian framework, Harrod-Dommar model points out some dynamics of growth. For instance, to determine equilibrium growth rate in the economy, the balance between supply and demand for a country's output should be maintained. On supply side, saving is a function of the level of GDP. Investment is an important component of the demand for the output of an economy as well as the increase in capital stock. Therefore, the equilibrium rate of growth is given by matching proportionate change in output with the ratio of savings-output to that of capital-output. This sustains the economy along some warranted steady growth path.

According to the model, temporary deviations from the warranted growth path would not be self-correcting. Because of the lack of self-correcting forces within the dynamics of the model, it is said to be characterized by 'knife-edge instability'. That is, market-regulated growth espoused by the model is unstable and, thus, necessitates government intervention.

Empirical Literature

Many empirical studies have put to test the predictions of endogenous growth theory since it provides governments a theoretical basis for active participation in the growth process of developing economies (see Buti and Van den Noord, 2003; Fatas et al, 2003; Hughes-Hallet et al, 2004; Gali and Perotti, 2003 and Suleiman, 2010). Such studies have been spurred by the need to gain more insight into the nature of the relationship between government expenditure and economic growth and, thus, better understanding of issues relating to ever increasing public expenditure in the short, medium and long terms.

Other researchers have examined the effect of government expenditure on economic growth. Laudau (1983) examined the effect of government expenditure on economic growth for a sample of 96 countries. He found that government expenditure exerts a negative effect on real output. Similarly, Komain et al (2007), employing the Granger causality test, examined the relationship between government expenditures and economic growth in Thailand and found that government expenditures and economic growth are not co-integrated. The result also suggested that a unidirectional relationship, as causality runs from government expenditures to growth. However, the result indicated a significant positive effect of government spending on economic growth.

In their study, Olugbenga and Owoeye (2007) investigated the relationships between government expenditure and economic growth in a group of 30 OECD countries for the period 1970-2005 using regression analysis. Their analysis showed that a long-run relationship exists between government expenditure and economic growth. The study also indicated a unidirectional causality from government expenditure to growth for 16 of the countries, thus supporting the Keynesian hypothesis government intervention. But, causality runs from economic growth to government expenditure in 10 of the countries, thereby confirming the Wagner's law. For the remaining four countries, findings indicated existence of feedback relationship between government expenditure and economic growth.

In their empirical analysis of the relationship between government expenditure and economic growth, Folster and Henrekson (2001) employed various econometric approaches to study a sample of wealthy countries for the period 1970 to 1995. Based on their findings, they submitted that that more meaningful and reliable results are generated, as economic problems are addressed. A study by Ranjan and Sharma (2008) showed that government expenditure exerted significant positive impact on economic growth in India during the period 1950-2007, and that the two sets of variables cointegrated.

Cooray (2009) employed an econometric model that incorporates government expenditure and quality of governance in a cross-sectional study of the relationship between government expenditure and economic growth in 71 countries. The results showed that both the size and quality of governance correlated positively with economic growth. In their own study, Abu-Bader and Abu-Qarn (2003) used multivariate co-integration and variance decomposition approach to analyze the causal relationship between government scient expenditures and economic growth in Egypt, Israel, and Syria. The variables used in the analysis included share of government civilian expenditures in GDP, military burden, and economic growth. They observed

that, in the bivariate framework, a bi-directional and long run negative relationships existed between government spending and economic growth. But the causality test within the trivariate framework based on the above variables indicated that military burden has a negative impact on economic growth in all the countries, while civilian government expenditures have positive effect on economic growth for both Israel and Egypt.

In a study of government expenditure and economic growth in the United States, Liu et al (2008) examined the causal relationship between GDP and public expenditure for the period 1947-2002. The causality results revealed that while total government expenditure causes growth of GDP, the latter does not cause expansion of government expenditure. The study concluded that since public expenditure grows the US economy, based on the causality test, Keynesian hypothesis exerts more influence than the Wagner's law in US.

Using data set on Greece, United Kingdom and Ireland, Loizides and Vamvoukas (2005) employed the trivariate causality test to investigate the relationship between government expenditure and economic growth. The result showed that size of government granger-causes economic growth in the three countries. Such growth was experienced both in the long and short runs in Ireland and the UK. When inflation is included in the analysis, the result showed that economic growth granger causes public expenditure expansion in Greece and the UK.

Donald and Shuanglin (1993) investigated the differential effects of various categories of expenditures on economic growth for a sample of 58 countries. Their findings suggested that while government expenditures on education and defence have positive effect, expenditure on warefare has insignificant negative effect, on economic growth. An obvious deficiency of economic theory is that it does not provide a well developed methodology to incorporate government expenditures in standard growth models. To assuage this, empirical studies have been carried out to establish a relationship between size of government and economic growth. While some studies have found a negative relationship between government expenditure and economic growth (Landau, 1986; Grier and Tullock, 1989; Barro, 1990), others have found a positive relationship (Ram, 1986 and Aschauer, 1989).

In Nigeria, many studies have attempted to investigate the relationship between government expenditure and economic growth, and the impact thereof. Oyinlola (1993) used defence expenditure and economic growth in Nigeria, and found a positive relationship between defence expenditure and economic growth. Empirical analysis by Fajingbesi and Odusola (1999) showed that government capital expenditure has a significant positive effect on real output, but that real government recurrent expenditure has insignificant effect on growth. The study by Ogiogio (1995) indicated a long-term relationship between government expenditure and economic growth. The result also showed that recurrent expenditure exerts more effect than capital expenditure on economic growth. However, some empirical studies in Nigeria suggest no long-run relationship between government expenditure and economic growth (Aigbokhan, 1996; Essien, 1997; Aregbeyen, 2006; Babatunde, 2007). Thus, there appears to be a controversy over the long run relationship between government expenditure and economic growth in Nigeria.

Akpan (2005) used a disaggregated approach to examine the relationship. Components of public expenditure considered in his analysis were capital, recurrent, administrative, economic service, social and community service, and transfers. The study found no significant relationship between economic growth and most components of government expenditure in Nigeria.

Nurudeen and Usman (2010) observe that rising government expenditure has not translated to meaningful development as Nigeria still ranks among world's poorest countries. Using disaggregated analysis approach, they investigated the effect of government expenditure on economic growth in Nigeria in the period 1970-2008 and found that government total capital expenditure, total recurrent expenditure and expenditure on education have negative effect on economic growth; but rising government expenditure on transportation and communication, and health exerts positive effect on economic growth.

However, this study faults the extent of disaggregation of the data that constituted variables of research interest in Nurudeen and Usman's study since expenditure on education, transportation and communication and health must have been part of total capital and total recurrent expenditure respectively.

Suleiman (2009) observes that such understanding could help to assess the impact on government expenditures and then on deficits arising from a structural deceleration in or from an improvement in the growth potential. He submits that a good knowledge of the structural relation between the non-cyclical component of government expenditure and potential output is key to obtaining a benchmark against which to evaluate the stance of expenditure policy and then of overall fiscal policy.

Consequently, he empirically examined the relationship between government revenues and expenditures, expenditures and economic growth as a fundamental step in understanding the behaviour of Nigerian public expenditure and the economy. His study found support for Wagner's law of ever increasing public finance and Friedman's Hypothesis. The study also showed that growth in real GDP was significant before the mid-1990s but thereafter fell below average government revenue and expenditure. He concluded that, during the period 1978–2008, government expenditure was not employed as a fiscal instrument and that revenue growth drove the government expenditure.

This study improves on some of the existing studies, especially those of Fajingesi and Odusola (1999) and Akpan (2005) in that it investigates the partial and joint effects of government expenditure on economic growth in Nigeria using certain disaggregated components of government expenditure. It also updates these studies in terms of currency and detailed analysis, and contributes to the existing literature on the long run relationship between government expenditure and economic growth in Nigeria. However, the study excludes administrative expenditure in that it is embedded in recurrent expenditures.

3. **Design and Methodology**

Building on the existing theoretical and empirical literature, this study perceives a causal relationship between government expenditure and economic growth in Nigeria. Therefore, exploratory causal study design is adopted to investigate the impact of

government expenditure on economic growth within the context of Nigerian economy. Empirical econometric approach is adopted in analyzing data considered relevant components of government expenditure and economic growth. The relevant time series data are extracted from the Statistical Bulletin of the Central Bank of Nigeria. Collection procedure is non probabilistic. Based on the perceived causal relationship between the identified variables of the research interest, a multiple regression model which is stochastic in nature is specified to forge a link between government expenditure and economic growth. This is to accommodate the possible influence of other variables that may exert effect on economic growth but which are not included in the model. This implies that this study recognizes the influence of such random or intervening variables. However, the variables included in the model are considered components of government expenditure adequate enough to explain economic growth.

Employing appropriate econometric technique, government expenditure and economic growth data are used to estimate the specified model for numerical values of the coefficients of explanatory variables, and computation of other statistics relevant for evaluation and operationalizing of the study hypothesis. The estimated model is discussed vis-à-vis stated a priori theoretical expectations about the sign of the numerical values of model coefficients. This provides insight into the nature of the relationship between government expenditure and economic growth, and the effect thereof. Subsequently, the estimated model is evaluated for statistical significance and explanatory power after testing for cointegration and stability. Evaluation provides insight into the behavioural characteristics of the various components of government expenditure included in the model the partial and joint effects on economic growth. This provides basis for acceptance or rejection of the research hypothesis, and the impetus for inference on the relevance of government expenditure in growth process of the economy. Variables that enter the model are gross domestic product (GDP) as explained variable, and government capital and recurrent expenditures on economic services (CEES and REES), social and community services (CESCS and RESCS) and transfers (CETRANS and RETRANS), as explanatory variables.

Estimation of the model is via the ordinary least squares (OLS) techniques facilitated by the application of the software for empirical econometric analysis, E-Views. The regression output includes other relevant statistics that enhance further analysis and evaluation. Estimates of model coefficients are evaluated for partial and joint significance of their effects on economic growth. Basis of evaluation are the t- and F-statistics respectively at 0.05 level of significance and relevant degrees of freedom. Explanatory power of the model, as a measure of goodness of fit, is determined using the coefficient of determination (R-Square and adjusted R-Square). These statistics enhance insight into the extent to which the various government expenditures explain economic growth in Nigeria for the period under review.

Research Hypothesis
Hypothesis One
$H_0 1$:   There is no relationship between government expenditure and economic growth.

Hypothesis Two
$H_0 2$:   Government expenditure has no significant effect on economic growth.

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Model Specification

From theoretical perspective, the model says that economic growth (GDP) depends on government expenditure disaggregated into capital and recurrent expenditures on economic services (CEES and REES), capital and recurrent expenditures on social and community services (CESCS and RESCS) and capital and recurrent expenditures on transfers (CETRANS and RETRANS). This implies that total government expenditure on these services is a composite spending, and that GDP is a weighted disaggregated components of government expenditure, with each weight showing the prospective effect of the respective component on economic growth. This enhances determination of the respective partial relationships with, and effects on, economic growth during the study period. The weights, λ_i (i = 1, 2, 3, ---, 6) are the respective partial effects of the explanatory variables on the explained variable. Thus, the model is linearly expressed as follows:

$$GDP = \lambda_0 + \lambda_1 CEES + \lambda_2 REES + \lambda_3 CESCS + \lambda_4 RESCS + \lambda_5 CETRANS + \lambda_6 RETRANS + \mu$$

where λ_0 = Intercept of the regression line. It depicts any level of economic growth that at zero government expenditure level.

λ_i (i = 1, 2, ..., 6) = coefficient or of weights of the components of government expenditure. It is a measure of the effects of the respective components of government expenditure on economic growth.

μ is stochastic variable to accommodate the influence of other determinants of economic growth not included in the model.

On estimation, the intercept (λ_0) and slope coefficients λ_{is} are expected, a priori, to have

positive sign, λ_i (i = 0, 1, 2, ---, 6) > 0, implying that each component expenditure of the government is expected to correlate positively with economic growth.

4. Data Analysis and Discussion

With E-Views software, the GDP was regressed on the components of government expenditure (see Appendix) and the results below obtained.

Variable	Coefficient	Std. Error	T-Statistic	Prob.
C	-314107.3	215108.3	-1.460229	0.1537
CEES	-0.463425	0.395514	-1.171702	0.2497
REES	-4.151599	8.808826	-0.471300	0.6405
CESCS	41.84639	18.78040	2.228195	0.0328
RESCS	31.89793	11.06723	2.882197	0.0069
CETRANS	9.656173	5.969556	1.617570	0.1153
RETRANS	12.46849	2.961219	4.210595	0.0002

R-Squared	0.980526	Adjusted R-Squared	0.976986
F-Statistic	276.9333	Prob(F-statistic)	0.000000
Durbin-Watson Statistic	0.933201		

Source: E-Views Regression Output

The result shows that while the signs of coefficients of CEES and REES are not consistent with expectations about the relationship between government capital and recurrent expenditures on economic services, those of CESCS, RESCS, CETRANS and RETRANS are consistent. These imply that while government capital and recurrent expenditures on economic services have inverse relationship with and, thus, exert negative effect on, economic growth during the review period, capital and

recurrent expenditures on social and community services as well as expenditures on transfers have direct relationship with and, thus, exert positive effect on, economic growth. The intercept is negative, suggesting that in the absence of government intervention in economic activities, the economy would, perhaps, be experiencing a negative growth. However, this has no relevant representation in both economic theory and growth models. Therefore, no serious attention is accorded to its implications in this analysis.

The t-statistics with their probabilities associated with the coefficients indicate that, at 0.05 level of significance, capital and recurrent expenditures on economic services have negative but statistically insignificant effects on economic growth, and that capital expenditure on transfers has positive but insignificant effect on growth. Capital expenditure on social and community services and recurrent expenditures on social and community services and transfers has statistically significant effect on economic growth. This is contrary to the of Akpan's (2005) submission of no significant relationship between economic growth and most of the components of government expenditure, but in agreement with Ogiogio (1995) who submitted that recurrent expenditure exacted more significant effect than capital expenditure. The joint effect of these components of government expenditure on economic growth is statistically significant as indicated by the computed F-Statistic and its probability. Therefore, the study submits that there is a relationship between government expenditure and economic growth, and that the former exerts significant effect on the latter.

Result of the analysis also shows that the explanatory variables included in the model explain about 98% variations in the explained variable. This implies that within the context of the model, government expenditure explained about 98% variability in economic growth during the study period. This high explanatory power shows that the model is a good fit, and that these components of government expenditure are important determinants of economic growth in Nigeria.

5.   Conclusion and Recommendations

This study has examined the effect of government expenditure on economic growth in Nigeria for the 1970 - 2009 period. Existing literature shows that researchers are yet to reach a consensus about the effect of government expenditure on economic growth in Nigeria. Therefore, the effect is yet to be well established. This study has contributed to the research effort at empirical measure of the effect of government expenditure on economic growth. Data analysis revealed that a relationship exists between government expenditure and economic growth, and that while some components of government expenditure exerted negative effect on growth, others exerted positive effect. As disaggregated components, capital and recurrent expenditures on economic services exerts negative but insignificant effect, capital expenditure on transfers exerts insignificant positive effect, and capital and recurrent expenditures on social and community services and recurrent expenditures on transfers had significant positive effect on economic growth. However, the aggregated effect of government expenditure on economic growth is statistically significant. This supports the Keynesian (1936) view of government active intervention in the economy using various policy instruments. Also, as available CBN data on government expenditure and economic GDP exhibit increasing trend, the analysis equally supports the Wagner's (1813) postulate of Ever Increasing State Activity. Consequently, this analysis supports growing evidence that government expenditure

has a relationship with and exerts significant effect on economic growth. The study further concludes that the components of government expenditure considered in this study are important variables in explaining economic growth in Nigeria.

Based on findings from the empirical analysis, the study proffers the following recommendations, among others:

- Capital and recurrent expenditures on economic services should be directed mainly to productive economic activities. This will stimulate activities in the economic sectors and, perhaps, reverse the negative effect of on economic growth.
- The proportion of government total expenditure that goes into capital and recurrent expenditure financing should be increased since these components exert significant positive effect on economic. Similarly, the share of recurrent expenditure on transfers should be increased since it exerts positive effect on economic growth.
- Since the analysis showed that capital and recurrent expenditure on social and community services have more positive effect on growth than the other components, they require more favourable attention in the allocation of government expenditures.
- The existence of a relationship between government expenditure and economic growth necessitates the continued use of fiscal policy instruments to pursue macroeconomic objectives in Nigeria.

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Appendix I

EFFECTS OF PUBLIC EXPENDITURE ON ECONOMIC GROWTH IN NIGERIA: A DISAGGREGATED TIME SERIES ANALYSIS

Gross Domestic Product (GDP), Capital and Recurrent Expenditures on Economic Services, Social and Community Services and Transfers (CEES and REES, CESCS and RESCS, and CETRA and RETRA)

Year	GDP	CEES	REES	CESCS	RESCS	CETRA	RETRA
1970	5281.1	15.5	25.95	1.4	43.55	100.7	511.42
1971	6650.9	58.2	28.15	13.2	18.29	39.0	473.75
1972	7187.5	132.9	33.11	42.0	21.07	167.6	600.94
1973	8630.5	249.5	42.03	40.4	24.94	142.0	532.16
1974	8823.1	465.9	41.64	358.1	53.12	131.1	1111.46
1975	21475.2	131.7	76.19	927.4	166.20	217.8	1882.40
1976	26655.8	2231.4	89.75	899.7	401.68	114.8	2684.54
1977	31520.3	3124.6	134.19	824.9	257.68	41.7	2699.42
1978	34540.1	3017.6	87.44	866.0	224.46	203.9	1927.08
1979	41974.7	2812.1	47.59	613.3	214.43	24.6	2472.88
1980	49632.3	5981.1	108.52	2456.7	270.45	224.5	3831.10
1981	47619.7	3629.4	175.65	12990.0	294.75	918.5	3461.39
1982	49069.3	2542.5	199.55	968.3	334.84	2521.0	3932.25
1983	53107.4	2290.7	172.18	1026.5	288.91	470.3	3392.90
1984	59622.5	656.3	211.20	237.6	354.39	2943.5	4161.85
1985	67908.6	892.7	274.58	1154.0	460.75	2958.4	5410.87
1986	69147.0	1099.9	278.95	655.4	468.08	6506.7	5496.93
1987	105222.8	2159.7	694.66	619.1	297.53	1777.5	10810.94
1988	139085.3	2128.7	1221.20	1726.0	2114.20	2586.8	10296.20
1989	216797.5	3926.3	1419.00	1844.8	4230.10	6645.5	14074.60
1990	267550.0	3485.7	1613.70	2096.0	3396.00	15547.0	24669.70
1991	312139.7	3145.0	1303.40	1491.7	2676.90	20359.2	27309.40
1992	532613.8	2336.7	3080.11	2132.6	1336.15	30175.5	39933.34
1993	683869.8	18344.7	7749.86	3575.3	14659.82	24500.1	83747.25
1994	899863.2	27102.8	3909.87	4994.4	10085.42	30036.0	55443.97
1995	1933211.6	43149.2	5917.90	9215.6	13820.80	55435.7	79133.20
1996	2702719.1	117829.1	4752.96	8656.2	15989.18	71577.4	57201.87
1997	2801972.6	169613.1	6200.40	6902.0	22060.13	43587.6	74118.63
1998	2708430.9	200861.9	11574.72	23365.6	21441.43	49517.7	94402.87
1999	3194015.0	3235800.3	87076.72	17253.5	71371.20	114456.1	107577.16
2000	4582127.3	111508.6	28591.93	27965.2	84785.05	46697.6	203692.91
2001	4725086.0	259757.8	53008.45	53336.0	79630.41	76347.8	265860.19
2002	6912381.5	215333.4	52951.44	32467.3	152185.38	0.0	225153.41
2003	8487031.6	97982.1	96070.73	55736.0	102607.58	11.3	477648.37
2004	11411066.9	167721.8	58779.25	30072.6	134385.34	15729.8	532704.85
2005	14572239.1	265034.7	64307.02	71361.2	151642.87	11500.0	573089.00
2006	18564594.7	262207.3	67801.78	78681.3	159883.89	26272.9	604233.49
2007	20657317.7	367900.0	83518.19	121100.0	196944.89	39423.0	744294.48
2008	24296329.3	804400.0	313800.00	152100.0	332900.00	17300.0	739700.00
2009	24712669.9	809120.5	340193.77	120049.2	346071.95	211758.1	622171.10

Source: Central Bank of Nigeria Statistical Bulletin 2009 (www.cenbank.org)

Appendix II

E-Views Regression Analysis Results

Dependent Variable: GDP
Method: Least Squares
Date: 06/18/11   Time: 18:18
Sample: 1970 2009
Included observations: 40

Variable	Coefficient	Std. Error	t-Statistic	Prob.

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C	-314107.3	215108.3	-1.460229	0.1537
CEES	-0.463425	0.395514	-1.171702	0.2497
REES	-4.151599	8.808826	-0.471300	0.6405
CESCS	41.84639	18.78040	2.228195	0.0328
RESCS	31.89793	11.06723	2.882197	0.0069
CETRANS	9.656173	5.969556	1.617570	0.1153
RETRANS	12.46849	2.961219	4.210595	0.0002

R-squared	0.980526	Mean dependent var	3900180.
Adjusted R-squared	0.976986	S.D. dependent var	6994325.
S.E. of regression	1061071.	Akaike info criterion	30.74508
Sum squared resid	3.72E+13	Schwarz criterion	31.04064
Log likelihood	-607.9017	Hannan-Quinn criter.	30.85195
F-statistic	276.9333	Durbin-Watson stat	0.933201
Prob(F-statistic)	0.000000		

Source: E-Views Regression Output

EFFECTS OF PUBLIC EXPENDITURE ON ECONOMIC GROWTH IN NIGERIA: A DISAGGREGATED TIME SERIES ANALYSIS