RE-EVALUATION OF GOVERNMENT EXPENDITURE ON ECONOMIC GROWTH IN NIGERIA

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Abstract

This study investigates the relationship between government expenditure and economic growth in Nigeria spanning the period from 1981 to 2022. The role of government expenditure in fostering economic growth is crucial, particularly in developing countries like Nigeria. However, the impact of government expenditure on economic growth in Nigeria has been relatively low. This deficiency has been attributed to several factors, including inadequate attention to improving capital expenditure, issues of corruption, the economic recession of 2009, prolonged military rule from 1966 to 1999, and heavy dependence on the oil sector as the primary revenue source for the economy. The study employed a descriptive research design. Gross domestic product (GDP) served as the dependent variable, while government recurrent expenditure, government capital expenditure, and gross capital formation were utilized as independent variables. The analysis confirmed that these variables were stationary and integrated of order one based on the Augmented Dickey-Fuller test. The Johansen co-integration test indicated a long-run relationship between government expenditure and economic growth in Nigeria. The Vector Error Correction Model (VECM) results revealed that government recurrent expenditure and government capital expenditure exerted negative and significant impacts on economic growth, whereas gross capital formation had a positive and significant impact. Based on these findings, the study recommends that the Nigerian government implement measures to address shortcomings in various sectors. Improving government recurrent expenditure could stimulate economic activity and contribute to overall economic growth. Furthermore, efforts should be directed towards promoting and enhancing gross capital formation and domestic investment to support the development of small and medium-scale enterprises across the country.

Keywords: government expenditure, economic growth, vector error correction model (VECM), Nigeria

Introduction

Government expenditure serves as a crucial tool in the process of development, playing a pivotal role in the functioning of economies across various stages of growth and development. Both developing and developed countries utilize public expenditure to enhance income distribution, direct resource allocation to desired sectors, and influence the overall composition of national income (Assi et al., 2019; Vtyurina, 2020; World Bank, 2008). In developing countries, government spending patterns are particularly aimed at ensuring economic stabilization, fostering growth, and expanding employment opportunities (World Bank, 2015).

The role of public expenditure in achieving macroeconomic objectives has sparked debate between two opposing schools of thought: the Wagnerians and Keynesians, who offer contrasting views on the relationship between public expenditure and economic growth. According to Essien (1997), Wagner

proposed a model suggesting that public expenditures are endogenously determined by economic growth, with a long-term tendency for public expenditure to increase relative to income aggregates like Gross Domestic Product (GDP). In contrast, Keynes (1936) argued that causality runs from public expenditure to national income. These differing perspectives within growth models invite further discussion and analysis.

Achieving sustained economic growth is a paramount macroeconomic objective pursued by every nation. According to Ijuo and Andohol (2020), ensuring rapid and sustainable economic growth and development is a primary goal shared by most economies worldwide, including developing countries like Nigeria. Essien (1997) further asserts that economic growth is a critical objective for governments in developing nations. Consequently, government expenditure has become a focal point of debate in public economics aimed at fostering economic growth.

This debate holds significant importance for countries like Nigeria, where public expenditure has increased over time. This trend often leads to rising fiscal deficits due to inadequate expenditure control systems and intense competition for funds among various Ministries, Agencies, and Departments (MDAs). These challenges highlight the limited capacity to generate sufficient revenue to finance expanding government expenditures (Kolawole, 2016). For instance, from 2010 to 2015, total government expenditure in Nigeria surged from ₦153.9 billion to ₦5.06 trillion, while GDP growth fluctuated between 4.9% in 2010 and 2.7% in 2015, with growth dipping to less than 1% in the first and second quarters of 2016.

Jhingan (2007) defines economic growth as the sustained quantitative increase in a country's per capita output or income, accompanied by growth in labor force, consumption, and volume of trade. Andohol (2012) supports this definition, stating that economic growth is the process leading to a sustained increase in the output of goods and services per capita. Conversely, Todaro & Smith (2011) define economic growth as the increase in the market value of goods and services produced by an economy over time, typically measured as the percentage increase in real Gross Domestic Product (GDP). For the purposes of this study, Todaro and Smith's definition of economic growth as the increase in the market value of goods and services produced by the economy over time is adopted.

Similarly, real GDP values were utilized to address the issue of nominal series, which include a price component that may obscure the underlying characteristics of interest. This is particularly problematic when comparing two nominal variables, as the significant influence of price in each can lead to artificially high correlation coefficients (Dimitrios & Hall, 2007). Government expenditure encompasses expenditures for the provision of public goods and services, especially in sectors where the price mechanism fails to efficiently allocate resources to maximize welfare. These public goods are typically non-excludable and non-rivalrous in consumption, which means potential producers cannot profitably produce them or recover costs (Ajayi & Iyoha, 1998). Government expenditure can be categorized into recurrent, capital, and transfers.

Generally, Nigerian economic policies are believed to significantly influence the trajectory of government expenditures aimed at fostering economic growth. However, the practical outcomes in Nigeria have divided policymakers on whether the expansion of government spending enhances or hampers economic growth. Meanwhile, existing empirical studies (Abu & Abdullahi, 2010; Badamosi, 2003; Feltenstein & Iwata, 2005; Robinson, Eravwoke & Ukavwe, 2014; Abutu & Agbede, 2015; Kolawole, 2016; Bonmwa & Ishmael, 2017; Onifade, Evik, Erdogan, Asongu, & Bekun, 2020) have not provided a consensus on the relationship between government expenditure and economic growth. Results and evidence vary depending on the countries/regions studied, the analytical methods employed, and how

public expenditures are categorized. Therefore, this study aims to fill this gap by investigating the impact of government expenditures on economic growth in Nigeria from 1981 to 2019, aiming to ascertain whether public expenditure positively affects the Nigerian economy or not.

Statement of the Problem

Over the past decade, Nigeria's government expenditure has escalated from millions to billions and potentially trillions of naira, reflecting a significant portion of the budget allocated to expenditures. This trend would be justified if the economy were experiencing a surplus or equilibrium in its balance of payments, or if there were corresponding improvements in infrastructure to enhance commerce and social amenities to uplift the welfare of the average citizen. However, these conditions are lacking despite the substantial increase in estimated expenditures. This suggests potential issues either with how the government allocates its budget or with the methodology used to compute and manage these expenditures. The disparity between Nigeria's economic performance and the substantial rise in government expenditure over recent years prompts a fundamental inquiry into its impact on economic growth and development in the country. Government spending, as argued by scholars, exerts a profound influence on economic growth. Increased government capital expenditure in sectors like health and education, for instance, typically leads to higher economic growth rates. The empirical evidence from trend analysis between government expenditure and economic growth in Nigeria sheds light on this issue. In recent years, Nigerian governments have allocated significant funds to operating expenses, overhead costs, and infrastructure, expecting these expenditures to accelerate economic growth and development. However, current realities in the country suggest that the economy is not achieving the expected level of output growth.

Statistics indicate that Nigeria's public expenditure as a percentage of GDP has fluctuated over the period from 1970 to 2019. For instance, the average public expenditure as a proportion of GDP was approximately 21.07% during 1970-1979, slightly increasing to 21.57% in 1980-1989. However, it has since declined: to 14.07% in 1990-1999 and further to 7.67% in 2000-2009. This trend suggests a reduction in the size and involvement of the Nigerian government in economic activities over time. This trend could be attributed to the economic deregulation process that began in the 1980s with the introduction of the Structural Adjustment Programme (SAP). From 1970 to 1999, capital expenditure as a percentage of total government expenditures remained high and increasing, until it dropped to 30.88% in 2000-2009 from an average of about 48.87%. This decline continued to 16.16% in 2010-2019. This downward trend may be linked to the global economic crisis of 2008-2009 and the transition from military rule to democratic governance between 1998 and 1999.Moreover, total government expenditure has consistently increased over the period from 1970 to 2019 in Nigeria. A decade-by-decade breakdown shows average annual growth rates of total government expenditure were approximately 23.20%, 41.24%, 15.82%, and 11.82% during the periods 1980-1989, 1990-1999, 2000-2009, and 2010-2019 respectively (CBN, 2020).Analyzing the nexus between government expenditure and economic growth trends in the economy will provide crucial insights for Nigeria. Allocation of limited public resources across sectors is a critical concern for policymakers. This research aims to answer the following questions: (i) what is the impact of government recurrent expenditure on economic growth in Nigeria? (ii) how has government capital expenditure influenced economic growth in Nigeria? (iii) to what extent does gross capital formation contribute to economic growth in Nigeria?

Literature Review

Chandana Aluthge, Adamu Jibir, and Musa Abdu (2021) conducted a study on the influence of Nigerian government expenditure, categorized into capital and recurrent expenditures, on economic growth using time series data spanning from 1970 to 2019. The research employed the Autoregressive Distributed Lag (ARDL) model and addressed structural breaks in both the unit root test and co-integration analysis to ensure robustness of findings.

The findings revealed that capital expenditure exerted a positive and significant impact on economic growth in both the short run and long run. In contrast, recurrent expenditure showed no significant impact on economic growth in either timeframe. The study recommended that the government should increase its allocation towards capital expenditure, particularly focusing on meaningful projects that directly benefit citizens' welfare. Additionally, it suggested improving the allocation of recurrent expenditure by reallocating resources towards productive activities that enhance human development across the country.

Salisu and Haladu (2021) investigated the interplay between agricultural output, government expenditure, and economic growth in Nigeria using annual time series data spanning from 1985 to 2019. Their analysis utilized the Zivot-Andrew unit root test and the Gregory-Hansen cointegration test, which indicated that the variables were stationary and exhibited a cointegration relationship. In the short term, their findings revealed that agricultural output had a negative and statistically insignificant impact on real GDP. Conversely, government expenditure and the exchange rate showed positive and statistically significant effects on economic growth. Jabbar et al. (2021) conducted a study to analyze the concurrent and partial impacts of investment, government expenditure, and economic growth on people's welfare using secondary data from 2014 to 2019 sourced from the Central Bureau of Statistics and the Directorate General of Fiscal Balance. The data underwent non-participant observation and was analyzed using multiple linear regression analysis. The findings indicated that collectively, investment, government expenditure, and economic growth significantly influence people's welfare. Specifically, government expenditure and economic growth were found to have a positive and statistically significant partial effect on people's welfare. However, investment showed a positive but statistically insignificant partial effect.

Wandeda et al. (2021) investigated how government expenditure affects economic growth in Sub-Saharan Africa using panel data from 35 countries spanning the years 2006 to 2018. Their research utilized dynamic panel data analysis and two-step system Generalized Method of Moments (GMM). The study revealed that expenditures on education and health significantly influence income growth in the region. Interestingly, the impact of education spending varies, being more pronounced in low-income countries within Sub-Saharan Africa compared to middle-income countries.

Babalola and Ijie (2021) examined the immediate and prolonged impacts of government expenditure on substance abuse prevalence and the rehabilitation of drug addicts on the real growth rate in the Nigerian economy. Using the ARDL technique for analysis, the study found noteworthy short-term effects of both government recurrent and capital expenditures, along with the presence of rehabilitated drug addicts, on real economic growth. However, over the long term, only capital expenditure aimed at addressing substance abuse demonstrated a significant influence on the real growth rate in Nigeria.

Bewaji et al. (2021) investigated the effects of Federal government expenditure on education on Nigeria's economic growth using data spanning from 1980 to 2018. They utilized Ordinary Least Squares (OLS) regression and the Augmented Dickey-Fuller (ADF) test in their analysis. The study revealed a positive relationship between Real Gross Domestic Product (RGDP) and government expenditure in education

(GEDU). Although the initial hypothesis suggested no long-term impact, the findings demonstrated a positive effect of GEDU on economic growth. However, the study highlighted challenges such as instability and insufficient government expenditure in education.

Aluthge et al. (2021) examined the influence of Nigerian government expenditure, categorized into capital and recurrent expenditures, on economic growth using time series data spanning from 1970 to 2019. The study employed the Autoregressive Distributed Lag (ARDL) model and took into consideration structural breaks in both the unit root test and the co-integration analysis to ensure the reliability of the findings. The study's primary findings indicate that capital expenditure exerts a positive and significant impact on economic growth, both in the short run and the long run. In contrast, recurrent expenditure shows no significant impact on economic growth in either the short run or the long run.

Theoretical Foundation

Wagner's Theory of Government Expenditure

Adolph Wagner introduced the theory of government expenditure in 1893, emphasizing the role of the public sector in facilitating economic activities and managing diverse societal goals. Efficiency and equity are pivotal in guiding public spending to prevent disorder and ensure optimal service delivery to stakeholders (Hindriks & Myles, 2005). Wagner's law, a cornerstone of this theory, posits that public expenditure tends to increase continuously with economic growth.

According to Magazzino and Giolli (2015), Wagner's law asserts that as economies develop, the public sector's share of GDP expands over time. This growth is underpinned by several principles: the complexity of economic activities increases with growth, leading to rising public expenditures; urbanization and externalities also result from increased public spending; public goods exhibit a significant income elasticity of demand; and economic growth stimulates demand, further driving public expenditure growth.

In the context of developing nations like Nigeria, however, the alignment of expenditure growth with economic development has often been elusive due to potential fiscal illusions in governmental activities. Despite the expectation that increased expenditure should promote economic development, empirical realities sometimes diverge from this hypothesis.

Solow's Theory

Robert Solow and T.W. Swan introduced the Solow model in 1956, also known as the Solow-Swan model. This model underscores the significance of saving/investment rates and population growth rates as fundamental determinants of economic growth, assuming other factors remain constant. According to Solow's model, higher rates of saving and investment result in the accumulation of more capital per worker, thereby increasing output per worker. Conversely, high population growth rates have a negative impact on economic growth because a larger portion of savings in economies with rapid population growth must be allocated to maintaining the capital-labour ratio. In the absence of technological advancements, an increase in capital per worker does not proportionately increase output per worker due to diminishing returns. Consequently, capital deepening tends to reduce the rate of return on capital over time.

Methodology

The study utilized an ex-post facto research design, a systematic approach where the researcher lacks direct control over independent variables because they have already occurred or are inherently not manipulated. This design was chosen because the study aims to utilize existing data and retrospectively analyze causal relationships. The research focused on analyzing both dependent and independent variables.

Specifically, the study examined real gross domestic product (GDP) as the dependent variable, while government recurrent expenditure and government capital expenditure served as the independent variables. The analytical methods employed for model evaluation included the ARDL (AutoRegressive Distributed Lag) Bound Test, co-integration technique, and error correction mechanism. These analyses were conducted using the EViews 9.0 analytical tool.

$$GDP = GRE + GCE + GCF \qquad\qquad 2$$

$$LRGP_t = b_0 + b_1 LGRE_t + b_2 LGCE_t + b_3 LGCF = \varepsilon_t \qquad\qquad 3$$

Anticipated Expectation

It is anticipated that the parameter estimates, including government recurrent expenditure (GRE) and government capital expenditure (GCE), will show a positive relationship with economic growth. Therefore, a priori, it is expected that GRE > 0 and GCE > 0.

Unit Root Analysis

To examine stationarity and the presence of unit roots in the data, the Augmented Dickey-Fuller (ADF) test was conducted. The results of the test are presented below:

Table 1: Augmented Dickey Fuller Unit Root Test Results

Trend and Intercept @ level

Series	ADF Test Statistic	5% critical values	Order	Remarks
LGDP	0.154281	-3.523623	1(0)	Not Stationary
LGRE	-0.374600	-3.526609	1(0)	Not Stationary
LGCE	-1.552156	-3.523623	1(0)	Not Stationary
LGCF	-2.268206	-3.523623	1(0)	Not Stationary

Sources: Researchers' compilation from E-view (version 9.0), 2021

Table 2: Augmented Dickey Fuller Unit Root Test Results
Trend and Intercept @ 1st difference

Series	ADF Test Statistic	5% critical values	Order	Remarks
LGDP	-3.724182	-3.526609	1(1)	Stationary
LGRE	-8.857477	-3.526609	1(1)	Stationary
LGCE	-6.470999	-3.526609	1(1)	Stationary
LGCF	-5.627304	-3.526609	1(1)	Stationary

Sources: Researchers' compilation from E-view, version 9.0, 2021

Tables 1 and 2 present the results of the Augmented Dickey-Fuller (ADF) unit root test for the variables at the level, first differencing, and second differencing, respectively. In Table 1, at the 5 percent significance level, none of the variables were stationary at the level because their critical values exceeded their Augmented Dickey-Fuller (ADF) statistics in absolute terms. Therefore, the variables exhibited unit roots, necessitating first differencing to achieve stationarity. In Table 2, after first differencing, Gross Domestic Product (LGDP), Government Recurrent Expenditure (LGRE), Government Capital Expenditure (LGCE), and Gross Capital Formation (LGCF) all became stationary as their ADF test statistics exceeded the critical values at the 5 percent significance level. This suggests that the series, although initially non-stationary at the level, became integrated of order one, I(1). This indicates the potential for cointegration among the variables, which warrants further investigation through cointegration tests to examine their long-run relationships.

Co-integration Result

While individual series may not exhibit stationarity, it has been proposed that a linear combination of these series can yield a cointegrated error. The level of integration refers to the number of times the series must be differenced to achieve stationarity. To explore this, the Johansen cointegration test was employed. The model with lag 1 was selected under the assumption of linear determinism. The summarized results are presented in Table 3 below:

Table 3: Johansen Co-Integration test for the series; LGDP, LGRE, LGCE, LGCF
Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.558380	65.85008	47.85613	0.0004
At most 1 *	0.394890	33.15786	29.79707	0.0198
At most 2	0.179723	13.06406	15.49471	0.1125
At most 3 *	0.120576	5.139531	3.841466	0.0234

Trace test indicates 3 cointegrating eqn(s) at the 0.05 level
Sources: Researchers' compilation from E-view, 9.0, 2021.

The results presented in Table 3 indicate that the trace statistics exceed the critical values in three of the hypothesized equations. This suggests the presence of a long-run relationship among the specified equations in Model 1. Consequently, the coefficients of the parameters will be estimated using the Vector Error Correction Model (VECM). Specifically, gross domestic product (GDP) exhibits a long-run relationship with government recurrent expenditure (LGRE), government capital expenditure (LGCE), and gross capital formation (LGCF). This finding confirms the existence of at least one cointegration relationship among the variables used to model the relationship between government expenditure and economic growth, indicating their equilibrium in the long run. In other words, the null hypothesis of no cointegration among the variables is rejected. Therefore, the test results demonstrate the presence of a long-run equilibrium relationship with one cointegrating equation at the 5% significance level.

Vector Error Correction Mechanism (VECM)

Since the variables in the model exhibit a long-run relationship among them, implying a cointegrating equilibrium in the long term, there is a need to account for short-term fluctuations. To capture these short-term dynamics and estimate the parameters of the economic relationships among the selected variables, the Vector Error Correction Model (VECM) was employed. The results of this analysis are presented in Table 4 below:

Table 4: VEC Result
Standard errors in ( )& t-statistics in [ ]

Cointegrating Eq:	CointEq1
LOG(GDP(-1))	1.000000
LOG(GRE(-1))	-0.703946 (0.08843) [-7.96042]
LOG(GCE(-1))	-0.224911 (0.07273) [-3.09250]
LOG(GCF(-1))	0.608059 (0.23691) [2.56663]
C	-5.604694

Error Correction:	D(LOG(GDP))	D(LOG(GRE))	D(LOG(GCE))	D(LOG(GCF))
CointEq1	-0.397136	0.253972	1.086366	0.247759
R-squared	0.601975	0.222960	0.364617	0.201205
Adj. R-squared	0.478451	-0.018190	0.167429	-0.046697
Sum sq. resids	0.192216	1.790485	2.363028	0.293911
S.E. equation	0.081413	0.248477	0.285454	0.100672
F-statistic	4.873314	0.924570	1.849083	0.811632

Sources: Researchers' compilation from E-view, 9.0, 2021

Table 4 above presents the results of regressing gross domestic product (GDP) against government recurrent expenditure (LGRE), government capital expenditure (LGCE), and gross capital formation (LGCF). According to the findings, the constant term has a coefficient of -5.604694, indicating that in the absence of any performance by the explanatory variables, GDP would decrease by approximately 5.6%. The coefficient of government recurrent expenditure (GRE) is -0.703946, suggesting that a one-unit increase in government recurrent expenditure leads to a decrease of 0.7 billion naira in GDP. Similarly, the coefficient of government capital expenditure (GCE) is -0.224911, indicating that a one-unit increase in government capital expenditure results in a decrease of 0.22 billion naira in gross domestic product.

Conversely, the coefficient of gross capital formation (GCF) is 0.608059, indicating that a one-unit increase in gross capital formation leads to an increase of 0.6 billion naira in economic growth in Nigeria. This highlights that gross capital formation has a positive and significant impact on economic growth during the study period.

Furthermore, the negative signs associated with both government recurrent and capital expenditures imply that they have negative and statistically insignificant impacts on economic growth in Nigeria. This could be attributed to factors such as high levels of corruption, insecurity, economic recession, and unfavourable exchange rates affecting their effectiveness.

Based on the VECM results presented earlier, the cointegrating coefficient is -0.397136. This signifies that the speed of adjustment from short-run disequilibrium towards long-run equilibrium occurs at a rate of approximately 39% annually. In practical terms, this means that the system corrects its previous period's imbalance by about 39% per year. The negative sign, fractional nature, and statistical significance of the cointegrating coefficient uphold the Granger Representation Theorem (GRT), which posits that a negative and statistically significant error correction coefficient is essential for variables to be considered cointegrated.

However, the adjustment rate of the model is noted to be slow, as indicated by the magnitude of the coefficient. Additionally, the coefficient of determination (R-squared) is 0.601975, indicating that 60% of the total variations in GDP are adequately explained by changes in the explanatory variables included in the model. The remaining 40% of the variations are attributed to influences from other variables not accounted for in the regression model.

Conclusion

This research investigated the impact of government expenditure on economic growth in Nigeria. Despite receiving limited attention in the literature, the role of government expenditure in fostering economic growth is crucial. It remains a pressing socio-economic issue in Nigeria, underscoring the motivation behind conducting this study on its impacts.

The study utilized a Vector Error Correction Model (VECM) to estimate the effects of government expenditure on economic growth in Nigeria. The adoption of the VECM model was appropriate as it is a valuable technique for estimating both short-run and long-run effects of economic variables.

Based on the empirical evidence from the VECM and cointegration test analysis, it is evident that a long-run equilibrium relationship exists between government expenditure and economic growth in Nigeria during the study period. Additionally, the Error Correction Model (ECM) coefficient shows a negative and statistically significant sign, indicating a tendency to return to this long-run equilibrium.

Furthermore, the long-run coefficients of the study's variables indicate that both government recurrent and capital expenditures had statistically significant negative impacts on economic growth in Nigeria over the study period. In contrast, gross capital formation showed a statistically significant positive impact on economic growth in the country

Recommendations

Based on the findings of the time series data analysis, the following recommendations are proposed:

1. Given that government recurrent expenditure (GRE) was found to have a negative and significant impact on economic growth in Nigeria, measures should be implemented to address shortcomings in this sector. Improving government recurrent expenditure has the potential to stimulate economic activity and contribute to overall economic growth.

2. Since the analysis revealed that government capital expenditure has a negative and significant influence on economic growth in Nigeria, close monitoring of the management of capital expenditure is recommended. Enhancing the efficiency and effectiveness of capital expenditure management can potentially bolster economic growth in Nigeria.

3. The government should prioritize and bolster gross capital formation and domestic investment to foster an environment conducive to the growth of small and medium-scale enterprises in the country. This initiative can stimulate economic activity and support sustainable economic growth.

These recommendations aim to address the identified challenges and capitalize on opportunities to enhance economic growth in Nigeria.

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