

EMPIRICAL ANALYSIS OF THE DETERMINANTS OF GOVERNMENT EXPENDITURE IN NIGERIA

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Abstract

Government spending in Nigeria has been on the rise, reflecting a significant trend linked to two critical policy issues: debt management and budget control. This study aims to empirically identify the factors influencing government expenditure from 2004 to 2024. Specifically, it examines the interplay between tax revenue, government debt, real Gross Domestic Product (GDP), non-oil government revenue, inflation rates, and government expenditure. Two economic theories underpin this research: Wagner's Law and Keynesian theory. An enhanced model based on Ndanshau and Mdadila (2023) has been utilized for this analysis. The findings reveal that government expenditure is strongly influenced by public debt and economic growth, while tax revenue and non-oil revenue serve as weaker determinants in the context of Nigeria. Notably, the study challenges Wagner's Law, which posits that government expenditure is a function of economic growth, and instead supports the Keynesian perspective that perceives government expenditure as a result of policy actions. To ensure that government spending is effectively aligned with the revenue base of the economy, it is recommended that Nigeria diversifies its revenue sources.

Key words: Empirical analysis, Determinants of government expenditure, Nigeria

INTRODUCTION

It is concerning to observe that government expenditure has been rising steadily each year while the revenue base continues to decline. Despite this trend, government spending remains a crucial factor in the growth and development of any developing country. This highlights the importance of governmental financial engagement in achieving the growth objectives of these economies.

In Nigeria, public expenditure is notably skewed, with recurrent spending taking up a substantial portion of the national budget and leaving capital expenditure underfunded. It is widely acknowledged that government spending plays a significant role in promoting economic growth, enhancing public welfare, and reducing poverty. Research by Nasir et al. (2021) indicates that government expenditure significantly influences economic growth and development. Jeff Anyeneh et al. (2020) further demonstrate that allocating adequate resources to education and infrastructure through government spending can effectively lower poverty levels (Umeghalu et al., 2019).

The increase in public spending has also led to important policy considerations, particularly in areas such as debt management and budget control. This study aims to identify the factors contributing to the growth of government expenditure to facilitate better management of fiscal

imbalances (Umeghalu, Machi & Chukwuka, 2025).

From a broad perspective, effort is made in this study to decipher the determinants of government expenditure in Nigeria. Specifically, the study seeks to evaluate the impact of tax revenue, government debt, Gross Domestic Product, government non-oil revenue, and inflation rate on government expenditure in Nigeria, over the period 2004 to 2024. The period of the study coincides with the return of democracy in Nigeria, after several years of military rule. The return of democracy in what is termed the fourth republic, has been characterized with drastic increase in government expenditure and soaring public debt.

REVIEW OF RELATED LIERATURE

Two theories were found relevant to this study. Proposed by German economist Adolph Wagner in 1893, the Wagner Law posits that state activities tend to grow in relation to national income over the long term. According to this law, government expenditure must increase at a rate that is less than or equal to that of national output. In his theory of unemployment and interest, John Maynard Keynes illustrated that government spending is an essential policy tool for stimulating economic growth and maintaining economic stability. This perspective suggests that economic growth is closely tied to government expenditure. In contrast to classical theories advocating for balanced budgets, Keynes recommends deficit spending during economic downturns, endorsing what is known as expansionary fiscal policy (Keynesianism).

Related empirical works in the literature were found to be scarce. A study by Akonobi et al. (2021) explored the relationship between government spending and inflation rates in Nigeria. Their findings indicated that government expenditure on education has a minimal impact on inflation rates. In another research effort, Ndanshau and Madila (2023) examined the influence of government expenditure on economic growth in Tanzania covering the period from 1967 to 2020, utilizing the Autoregressive Distributed Lag (ARDL) model. Their results demonstrated a cointegration between economic growth and government spending, highlighting a long-term impact of government size on economic performance. Additionally, Olayungbo and Olayemi (2018) employed the Vector Error Correction Model to analyze data from 1981 to 2015 in Nigeria, revealing that government expenditure has a significantly adverse effect on economic growth in both the short and long term.

RESEARCH METHODOLOGY

Theoretical Framework

This study is based on two economic theories: the Wagner Law and the Keynesian theory. Proposed by German economist Adolph Wagner in 1893, the Wagner Law posits that state activities tend to grow in relation to national income over the long term. According to this law, government expenditure must increase at a rate that is less than or equal to that of national output. John Maynard Keynes illustrated that government spending is an essential policy tool for stimulating economic growth and maintaining economic stability. This perspective suggests that economic growth is closely tied to government expenditure. In contrast to classical theories advocating for balanced budgets, Keynes recommends deficit spending during economic downturns, endorsing what is known as expansionary fiscal policy (Keynesianism).

Model specification

The model of this study is built upon the previous methodologies utilized by Ndanshau and Madila (2023). In this analysis, six variables are included, with a scope that differs from that of the earlier study. The model is specified thus:

$$GOEXP = f(TAXR, RGDP, GDEBT, GONOR, INFR) \quad (1)$$

Where GOEXP = Government Expenditure, TAXR = Tax Revenue, RGDP = Real gross domestic product, GDEBT = Government Debt

GONOR = Government non – oil Revenue, INFR = Inflation rate.

VAR is a distributed Lag Model which normally captures the Lag effect of a variable thus

$$Y_t = a + B_0 X_t + yY_{t-1} + U_t \quad (2)$$

Estimation Techniques and Procedures

This study will analyze time series data on government expenditure, tax revenue, government debt, gross domestic product, government non-oil revenue, and inflation rates, spanning from 2004 to 2024. Specifically, we will apply a Vector Autoregression (VAR) model. The VAR model treats all variables as endogenous, offering several advantages, including clarity in interdependencies, Granger causality, impulse response functions, and enhanced forecasting capabilities.

DATA ANALYSES AND RESULT PRESENTATION

Summary of Cholesky One Stand and Deviation Impulse Response functions (periods 1-10)

See Results

Table 1

Shock Variable	Response Variable	Initial Response	Peak Response	Long-run Behaviour (Period 10)	Interpretation
GOVEXP	GOVEXP	Positive (0.2901)	0.2901 (P1)	Positive (0.0157)	Government expenditure exhibits strong own-shock persistence but gradually converges to equilibrium.
TAXR	GOVEXP	Positive (0.0985)	0.0985 (P2)	Positive (0.0056)	Tax revenue shocks stimulate government expenditure in the short run but the effect weakens over time.
GDEBT	GOVEXP	Positive (0.1366)	0.1366 (P2)	Positive (0.0483)	Public debt shocks exert a sustained positive effect on government expenditure.
RGDP	GOVEXP	Positive (0.0262)	0.0633 (P5)	Positive (0.0348)	Economic growth increases government expenditure, with the effect peaking in the medium term.
GONR	GOVEXP	Positive (0.0144)	0.0144 (P2)	Positive (0.0057)	Non-oil revenue positively influences government expenditure, though the magnitude remains modest.
INFL	GOVEXP	Positive (0.0028)	0.0028 (P2)	Approximately zero (-0.00002)	Inflation shocks have negligible influence on government expenditure.
GOVEXP	TAXR	Negative (-0.0032)	0.0245 (P4)	Positive (0.0091)	Government expenditure initially reduces tax revenue but later generates a mild positive effect.
GDEBT	TAXR	Positive (0.0456)	0.0579 (P4)	Positive (0.0328)	Debt expansion contributes positively to tax revenue dynamics.
RGDP	TAXR	Positive (0.0432)	0.0432 (P2)	Positive (0.0118)	Economic growth positively influences tax revenue throughout the horizon.
GOVEXP	RGDP	Positive (1.2487)	1.2487 (P1)	Negative (-0.1051)	Government expenditure strongly stimulates output initially, but the effect diminishes and becomes slightly negative in the long run.
GDEBT	RGDP	Negative (-0.3613)	0.9671 (P2)	Negative (-0.4655)	Debt shocks generate short-run gains but adversely affect growth over time.
GOVEXP	GONR	Positive (0.0482)	0.0482 (P1)	Positive (0.0305)	Government expenditure enhances non-oil revenue generation persistently.
GDEBT	GONR	Positive (0.0676)	0.1112 (P4)	Positive (0.1029)	Debt accumulation significantly increases non-oil revenue over the forecast horizon.
GOVEXP	INFL	Positive (0.0730)	0.0874 (P2)	Positive (0.0178)	Fiscal expansion exerts inflationary pressure, though the effect weakens over time.
GDEBT	INFL	Positive (0.1491)	0.1491 (P1)	Positive (0.0507)	Debt shocks contribute positively to inflation throughout the horizon.

Source: Extract from Researcher's Computation from E-view 13

From Table 1 and Figure 1, it could be observed that Lag values of government expenditure influence current value of government expenditure. This is because government expenditure exhibits strong own-shock which later converge to equilibrium. Public debt shocks exert a sustained positive effect on government expenditure – a negative volatility. Tax Revenue shocks stimulate government expenditure in the short – run but weakens over time. This is another way of saying that Tax Revenue is not a strong contributor to Government spending in Nigeria.

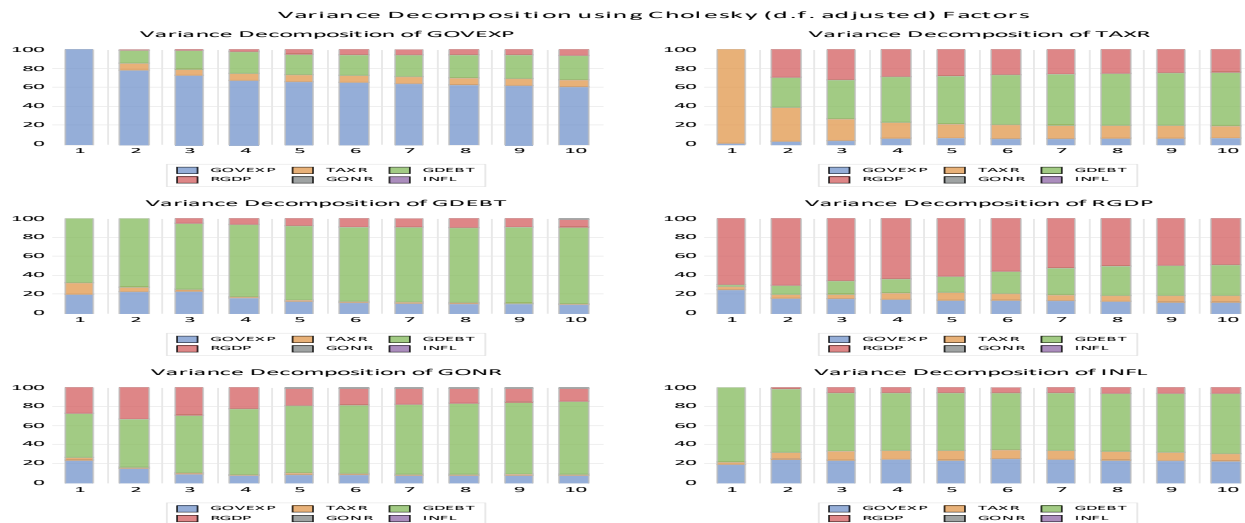


Figure 1: Variance Decomposition using Cholesky (d.f. adjusted) Factors

Furthermore, Economic growth increases government expenditure, with the effect peaking in the medium term. This is another way of saying that Economic growth is a major influencer of Government expenditure in Nigeria. Non – oil revenue positively influences government expenditure, through the magnitude remains modest. Inflation shocks have negligible influence on government expenditure. Government expenditure strongly stimulated output only in the short-run. This is another way of saying that output is influenced from the shocks of real investment in the long-run.

Summary of Forecast Error Variance Decomposition Results (Period 10)

From the Table 2, it is evident that variations in government expenditure are predominantly driven by its own innovations, while public debt stands out as the most significant external factor. The findings suggest that government debt is primarily self-generated, with expenditure and economic growth playing a moderate role. In simpler terms, Nigeria is facing substantial debt levels, where the current spending on debt servicing seems trivial compared to the total debt already accumulated. Additionally, the gross domestic product (GDP) is insufficient to fully address this debt. Notably, inflation is greatly affected by shocks related to public debt and government expenditure.

Table 2:

Dependent Variable	Own Shock (%)	Most Important External Shock (%)	Second Most Important External Shock (%)	Interpretation
GOVEXP	60.50	GDEBT (25.94)	TAXR (7.08)	Government expenditure variations are mainly explained by its own innovations, while public debt is the most influential external determinant.
TAXR	12.79	GDEBT (57.45)	RGDP (23.53)	Tax revenue fluctuations are predominantly driven by public debt and economic growth shocks.
GDEBT	81.62	GOVEXP (8.48)	RGDP (8.55)	Government debt is largely self-driven, with expenditure and economic growth exerting moderate influence.
RGDP	48.84	GDEBT (32.90)	GOVEXP (11.45)	Economic growth is strongly influenced by debt dynamics and government expenditure in the long run.
GONR	0.71	GDEBT (77.04)	RGDP (14.11)	Non-oil revenue variations are overwhelmingly explained by public debt and economic growth shocks.
INFL	0.03	GDEBT (62.85)	GOVEXP (21.93)	Inflation is primarily influenced by public debt and government expenditure shocks.

Source: Extract from Researcher's Computation from E-view 13

Analysis of Government Expenditure and Debt Influences

CONCLUSION

This study identifies the key factors influencing government expenditures in Nigeria as past government expenditure shocks, public debt, lagged shocks of public debt, and economic growth. Conversely, tax revenues and non-oil revenues appear to be less influential within the parameters of this analysis.

The study challenges the Wagner Law, which suggests that government expenditure should increase at a rate that is equal to or less than national output. The results indicate that government expenditure significantly exceeds economic growth, with economic growth contributing only a small portion to overall government spending. Furthermore, government expenditure is substantially financed through borrowing. This aligns with Keynesian theory, which advocates for deficit spending. Overall, government expenditure shows a tendency to be self-driven and is regarded as a matter of policy.

The study recommends that the Nigerian government diversifies and strengthens its revenue base to ensure government expenditure is primarily influenced by the country's revenue structure. Promoting policies aimed at enhancing tax revenue generation and stabilizing the non-oil revenue base is essential. Secondly, careless borrowing should be avoided to minimize the considerable resources allocated to debt management and budget control, thirdly, fiscal policy measures should

be designed to ensure that government expenditure aligns with national output.

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