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GOVERNMENT BUDGET AND PRIVATE INVESTMENT PROMOTION IN NIGERIA.

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Abstract

The study investigated the impact of government budget on private investment promotion in Nigeria. The ex-post facto research design which investigates possible cause-effect relationship, was adopted for this study. The population for this study is the Nigerian economy on government budget and private investment promotion from 1990 to 2023, the year of Nigeria independence to date. Using purposive sampling technique, a sample of thirty-four (34) years (1990-2023) was considered for this study. Considering the objectives of this study and the nature of data to generate, the secondary source of data collection was employed in this study. The study employed descriptive statistics to summarize data trends and unit root tests to confirm stationarity of variables. Diagnostic and stability tests were used to ensure model reliability and validity. The ARDL model was applied to assess both short-run and long-run effects of government expenditure on investment. Moderated multiple regression was used to evaluate the interaction effect of exchange rate and inflation rate on the relationship between government spending and investment. The results of the current study indicate that government budgetary allocations to key social sectors—health, education, and agriculture—do not exert a statistically significant influence on domestic private investment (DPI) in Nigeria over the analyzed period. The study recommended that the Nigerian government prioritize improving the efficiency and transparency of budget implementation, particularly in health, education, and agriculture sectors, to ensure that allocated funds translate into tangible infrastructural and institutional improvements that can attract private investment. Furthermore, the government should design and implement targeted policies that align public spending with private sector needs, focusing on capital expenditures that enhance the business environment, such as infrastructure development, technology adoption, and capacity building.

Keywords: Health, Education, and Agriculture, private investment promotion.

INTRODUCTION

The role of government budgeting in fostering economic growth and promoting private investment is widely acknowledged in economic literature. In developing countries like Nigeria, the budget serves as a strategic tool for resource allocation and economic planning. Through capital expenditure on infrastructure, education, health, and other public goods, the government can reduce production costs and improve the business environment, thereby attracting private investment (Kolawole & Odubunmi, 2015). Efficient budget implementation, fiscal transparency, and alignment with development priorities are essential to enhance investor confidence and long-term economic stability (Okonjo-Iweala & Osafo-Kwaako, 2007).

However, Nigeria's fiscal landscape has been marred by recurrent deficits, low capital expenditure implementation, and rising public debt, which collectively distort macroeconomic stability and dampen private sector enthusiasm (Madueke et al., 2023). Poor governance, delays in budget approval, and lack of accountability further exacerbate the situation (Omole, 2021). These structural issues contribute to a weak public financial management system that impairs the effectiveness of budgetary policies in supporting investment promotion and sustainable growth.

It is therefore imperative to explore the relationship between government budgetary policies and private investment performance in Nigeria. Understanding this nexus is essential for diagnosing the

fiscal constraints limiting private sector development and for designing strategic reforms. By assessing the effectiveness of budget allocations and the institutional capacity to implement them, this study aims to uncover how government budgeting affects the private investment climate in Nigeria.

Statement of the Problem

Despite numerous fiscal reforms and increased budgetary allocations aimed at stimulating private sector growth, Nigeria has yet to witness a significant rise in private investment inflow. Studies have shown that the mismatch between capital allocation and actual capital project execution, coupled with persistent budget deficits, continues to deter private investors (Kolawole & Odubunmi, 2015; Nwaeke, 2023). The inefficiencies in budget implementation, compounded by fiscal indiscipline and policy inconsistencies, raise serious concerns about the credibility of government budget frameworks to attract and sustain private investment.

Previous studies on government expenditure and private investment in Nigeria have primarily focused on aggregate budget deficits, capital expenditure, or fiscal policy instruments, often emphasizing their long-run effects on economic growth or investment levels (Ogaga and Jacob, 2024; Ariwa and Umezuruike, 2024; Enemuo-Uzoezie and Okoye, 2024). However, there has been limited empirical analysis on the disaggregated impact of specific budget components—particularly budgeted health, education, and agricultural expenditures—on domestic private investment, especially using recent data that captures short- and medium-term dynamics through techniques like ARDL and moderated multiple regression. Moreover, few studies have examined the moderating role of exchange rate fluctuations on the relationship between government budgetary allocations and private investment, leaving an important contextual factor underexplored in the Nigerian setting. This study therefore seeks to address the above issues and close the investment gap.

Aim and Objectives of the Study

The aim of this study was to investigate the impact of government budget on private investment promotion in Nigeria. Specifically, the objectives of the study are to:

(i) investigate the impact of budgeted health expenditure on domestic private domestic investment in Nigeria.
(ii) examine the effect of budgeted education expenditure on domestic private domestic investment in Nigeria.
(iii) evaluate the effect of budgeted expenditure on agriculture on domestic private domestic investment in Nigeria.
(iv) ascertain the moderating role of exchange rate on the relationship between government budget and private domestic investment in Nigeria.

Research Questions

Considering the objectives of this study, the following research questions are raised:

(i) What impact has budgeted health expenditure on domestic private domestic investment in Nigeria?
(ii) What is the effect of budgeted education expenditure on domestic private domestic investment in Nigeria?
(iii) What is the effect of budgeted agricultural expenditure on domestic private domestic investment in Nigeria?
(v) Does exchange rate moderate the relationship between government budget and private domestic investment in Nigeria?

Research Hypotheses

To answer the questions raised in this study, the following null hypotheses are formulated and tested:

Ho_1: Budgeted health expenditure has no significant effect on domestic private investment in Nigeria.
Ho_2: There is no significant relationship between budgeted education expenditure on domestic private investment in Nigeria.
Ho_3: Budgeted expenditure on agriculture has on significant impact on domestic private investment in Nigeria.
Ho_4: Does exchange rate does not significantly moderate the relationship between government budget and private domestic investment in Nigeria.

LITERATURE REVIEW

Budgeted Government Expenditure

Government budget, comprising both recurrent and capital expenditure, is a primary instrument for resource allocation and macroeconomic stabilization. A well-structured and efficiently implemented budget can crowd in private investment by addressing infrastructure gaps, enhancing market access, and improving investor confidence. Particularly, capital expenditure on transport, power, water supply, and communication can significantly lower operational costs for private investors. Furthermore, government fiscal responsibility and budget transparency can provide signals of policy stability, further encouraging private capital inflows.
Nevertheless, the impact of government budget on private domestic investment in Nigeria has been inconsistent. Several empirical studies such as by Aregbeyen and Kolawole (2015) revealed that the dominance of recurrent expenditure, especially on wages and subsidies, has limited the transformative potential of public budgets. Additionally, frequent budget delays, supplementary appropriations, and lack of implementation discipline have weakened the credibility of fiscal policy. Thus, while government expenditure has the potential to promote private investment, its real impact depends heavily on its composition, quality, and execution.

Budgeted Health Expenditure

Health expenditure is considered a form of human capital investment that contributes to workforce productivity and national economic performance. In Nigeria, government budget allocations to the health sector have historically been below the Abuja Declaration benchmark of 15% of the national budget. When adequately funded and effectively implemented, health expenditure reduces disease burden, improves labor supply quality, and reduces healthcare costs for private investors. A healthier population enhances firm productivity, reduces absenteeism, and attracts investment into sectors that rely heavily on skilled labor. Therefore, a logical expectation exists that public health spending should have a positive correlation with domestic private investment.
However, empirical evidence in Nigeria has shown that budgeted health expenditure does not significantly influence private investment. This could be due to poor execution rates of the health budget, corruption, and infrastructural decay that undermine the intended outcomes. According to studies such as by Egunjobi (2013) and Olanipekun, Adebayo, and Jimoh (2020), the disconnect between budgetary allocations and actual healthcare delivery limits any potential crowd-in effect of government spending. Consequently, private investors continue to bear high health-related costs, which increases the cost of doing business and reduces investment appetite in affected sectors.

Budgeted Education Expenditure

Public spending on education plays a critical role in building a skilled labor force and supporting knowledge-based economic growth. Education enhances human capital, innovation, and workforce efficiency, all of which are essential to creating a conducive environment for private investment. In Nigeria, increased budgetary allocations to education could lower the cost of training for private firms, improve productivity, and incentivize businesses to invest domestically rather than outsourcing skilled labor.

Despite these theoretical expectations, the relationship between education expenditure and private investment in Nigeria has remained statistically insignificant in several empirical studies (Adegbite & Agu, 2012). This anomaly is attributed to low quality of education delivery, strike actions, curriculum mismatch, and insufficient infrastructure, which render such investments ineffective in the short term. Furthermore, leakages in fund utilization and poor policy implementation further weaken the ability of education spending to influence private investment behavior, making it imperative to examine not just allocations, but outcomes and institutional efficiency.

Budgeted Expenditure on Agriculture

Agriculture remains a significant component of Nigeria's economy, employing over 30% of the population and contributing to food security and rural development. Government expenditure in agriculture, when effectively utilized, can reduce production costs through subsidies, extension services, irrigation systems, and rural infrastructure. These measures can encourage domestic private investment by de-risking the sector and improving profitability. Enhanced government support for agricultural mechanization and research and development can also expand the value chain and create opportunities for agribusiness investors.

However, despite various budgetary provisions, the sector has continued to face underperformance in Nigeria. Studies such as Lawal (2011) and Nwosa (2020) highlight the misalignment between allocated budgets and actual development outcomes in agriculture. Issues such as poor fund disbursement, bureaucratic inefficiencies, and politicization of agricultural programs often neutralize the impact of government expenditure. As a result, domestic private investors remain skeptical and tend to avoid agricultural ventures due to perceived high risks and government unpredictability.

Private Investment Promotion-Domestic Private Investment

Domestic private investment refers to the expenditure by private individuals, firms, or institutions within a country aimed at acquiring capital goods such as machinery, buildings, and equipment to produce goods and services (Koutche, 2021; Nwaeke, 2023). It plays a crucial role in economic development by stimulating job creation, enhancing productive capacity, and fostering innovation and technological advancement. Unlike public investment, which is undertaken by the government, domestic private investment originates from non-governmental sources and is often influenced by factors such as macroeconomic stability, interest rates, ease of doing business, infrastructure, and the regulatory environment. It serves as a key driver of economic growth by increasing aggregate demand and supply through expanded production capacity and improved competitiveness.

In developing countries like Nigeria, domestic private investment is essential for achieving sustainable economic growth and reducing dependence on foreign capital. However, its growth is often hindered by challenges such as policy inconsistencies, poor infrastructure, security concerns, limited access to finance, and high levels of corruption. Government actions, particularly through budgetary allocations to critical sectors such as health, education, and agriculture, can influence the investment climate by either encouraging or discouraging private sector participation. Furthermore, macroeconomic variables like exchange rates and inflation rates can significantly impact investor confidence and the cost of capital. Therefore, fostering a conducive environment through sound fiscal policies and strategic public investments is fundamental to boosting domestic private investment and unlocking Nigeria’s economic potential.

Exchange Rate as a Moderating Variable

The exchange rate can act as a key macroeconomic moderator, influencing the transmission of government expenditure into private investment outcomes. A stable and predictable exchange rate can reduce uncertainty for investors, especially those who rely on imported inputs or engage in cross-border trade. It enhances price competitiveness, especially in export-oriented industries, and makes domestic investment planning more predictable. Thus, exchange rate stability is critical in magnifying or neutralizing the impact of fiscal policies on private investment.

In the case of Nigeria, exchange rate volatility—primarily driven by oil price shocks, speculative behavior, and inconsistent monetary policies—has often distorted the expected effects of government budgeting. Empirical findings by Ajakaiye and Fakiyesi (2009) suggest that such volatility introduces risk premiums and discourages long-term investment decisions, regardless of budget provisions. In scenarios where the exchange rate weakens significantly, cost of imported capital goods and raw materials rises, offsetting any gains from increased government spending. This moderating effect underscores the need for coordinated fiscal and monetary policies to achieve meaningful private sector-led growth.

Theoretical Review

Crowding-In and Crowding-Out Theory

The Crowding-In and Crowding-Out Theory, largely attributed to Hicks (1937) and further developed by Keynes (1936), provides a fundamental framework to understand the interaction between government expenditure and private investment. According to this theory, government spending can either complement or compete with private sector investment, depending on the nature and composition of the expenditure. The "crowding-in" effect occurs when public investment in infrastructure, health, education, or other productive sectors reduces the cost of doing business, enhances productivity, and improves market confidence, thereby stimulating additional private sector investment. This scenario suggests a positive relationship between government expenditure and private investment, where the public sector acts as a catalyst for economic growth by creating an enabling environment that attracts private capital.

Conversely, the "crowding-out" effect happens when excessive government spending—especially recurrent expenditure financed by borrowing—leads to higher interest rates, inflation, or fiscal deficits that discourage private investment. In this case, government borrowing may absorb available financial resources, leaving fewer funds accessible for private entrepreneurs and firms. Additionally, inefficient allocation of government funds toward non-productive uses such as subsidies or administrative expenses may fail to generate the necessary public goods or services that could support private sector activities. In the Nigerian context, empirical evidence suggests that while certain government expenditures can crowd in private investment, significant portions of recurrent expenditure and poor fiscal discipline have contributed to crowding out effects, limiting the potential of the government budget to stimulate domestic private investment effectively (Aregbeyen & Kolawole, 2015).

Empirical Review

Ogaga and Jacob (2024), examined the effect of government deficit on private investments in Nigeria for the longrun period of 1981 to 2022. The control variables, which are GDP growth rate, total government revenues, total government expenditures, inflation and private sector credits in Nigeria are coded GDPG, GVR, GVX, INF and CPS. The result of the study showed that, as government deficit impede private investments, its effect was statistically significant, together with a significant negative effect from private sector credits and government revenues. This means that government deficit crowd out private investments in Nigeria from 1981 to 2022, all things being equal. In line with the findings/conclusion made in this study, the following recommendation is put forward: As government deficit coefficient took up a negative sign, it means it impeded private investment in Nigeria. To address the deleterious impact of domestic debt on private investment, government, together with its borrowing from the domestic credit market should get the monetary policy of the Central Bank of Nigeria to address the inflation and exchange rates uncertainties so that the market scope of the private investors will be enlarged.

Nwokocha and Ibrahim (2025) explored public budgeting as a macroeconomic tool for promoting private investment in Nigeria from 1990 to 2023. The study employed autoregressive techniques and found that transparent, investment-focused budgeting enhances investor confidence and long-term capital formation. However, over-reliance on recurrent expenditure and fiscal indiscipline

hindered private sector participation. The authors advocated for robust fiscal planning, capital expenditure prioritization, and budget implementation reforms to attract private capital into strategic sectors.

Ariwa and Umezuruike (2024), used ARDL modeling, the authors analyzed how government budget deficits impact private domestic investment in Nigeria from 1981 to 2022. The findings revealed a statistically significant negative effect of budget deficits and public debt on private investment. Meanwhile, exchange rate improvements were found to have a favorable influence. The study stressed that the government should reorient budget spending toward productive capital projects to encourage investment. Furthermore, sustainable debt practices were recommended to reduce crowding-out effects.

Omodero (2024) assessed the impact of state bond issuance on private investment using ARDL bounds testing and data from 1989 to 2021. Results indicated that excessive reliance on bond financing by state governments leads to a crowding-out of private investors due to competition for domestic funds. The paper concluded that bonds should be used selectively and mainly for economically viable capital projects. A shift toward public-private partnerships was recommended to limit negative spillovers on the private sector.

Enemuo-Uzoezie and Okoye (2024) examined the influence of fiscal policy instruments such as inflation, interest rates, tax revenue, and government expenditure components on private investment. Findings showed that recurrent expenditure and inflation negatively affect private sector investment, whereas capital expenditure exerts a crowd-in effect. The researchers concluded that Nigeria's fiscal policy stance must shift from consumption-driven to investment-enabling to support sustainable economic growth. They advised the government to enhance capital budgeting efficiency.

Adebayo and Chukwuma (2024) examined the link between capital expenditure and private sector investment in Nigeria. The analysis showed that capital expenditure significantly promotes private investment by improving infrastructure and business conditions. However, the study noted that implementation delays and corruption reduce the effectiveness of capital budgets. It recommended fiscal transparency and better project monitoring mechanisms to ensure budgetary allocations yield the intended investment outcomes.

Ifeakachukwu et al. (2024), employed an error correction model, the study investigated how different public expenditure types affect private investment. Capital expenditure was found to crowd in private investment, while recurrent expenditure and inflation exerted negative effects. Additionally, high interest rates were found to deter private capital formation. The authors suggested that the Nigerian government reprioritize its budget composition to favor infrastructural development and adopt inflation-targeting policies to stimulate long-term private sector growth.

Iriabije et al. (2023), examined capital expenditure and economic development: implications for economic planning in Nigeria from 1990-2020. Specifically, the study seeks to examine the effect of capital expenditure on economic growth as a prerequisite for planning, and to examine the effect of some selected sectors as a tool for planning in Nigeria. The study employs the Autoregressive distributed lag bound (ARDL) technique and descriptive statistics to address the specific objectives. The study reveals that capital expenditure significantly impact economic growth both in the short run and in the long run period. The findings of the sector also revealed that key sectors of the economy such as the manufacturing sectors, the service sector and the agricultural sector are growth enhancing sectors of the Nigerian economy. The study therefore recommends, amongst others, that Nigerian government should block all leakages through which capital expenditure is being mismanaged. Furthermore, the government should be specific in its spending and should ensure that spending plans are directed towards these sectors given that they have untapped potentials for growth stimulation and development of the Nigerian economy.

Agbana and Ebisine (2022), looked at Nigeria's agricultural expenditure proxy by agricultural credit guarantee scheme fund and government expenditure on agriculture; and economic growth proxy by real GDP using secondary data from CBN Statistical Bulletin from 1981 to 2021, as well as Ordinary Least Square regression method to analyze the data. Various literatures were reviewed

with conflicting results. However, the findings from the empirical analysis of the current study from the long run normalize equation showed that the variables government expenditure on agriculture and agricultural credit guarantee scheme fund have positive and significance impact on economic growth in Nigeria) for the period of study. Using the adjusted R square, the explanatory variables accounted for 71.3 per cent contribution to economic growth in Nigeria. The study affirmed that government expenditure on agriculture has positive and significant impact on economic growth in Nigeria. Thus, the study therefore recommended that government should evolve policies toward diversifying the economy and encourage the campaign for improvements in the non-oil sectors of the economy especially agricultural sector. More so, government should be more proactive in insisting on the private sector, especially, the financial sector to set aside funds annually for agricultural financing to compliment government efforts, as well as making efforts through its agencies to enlighten farmers of the availability of such credit facilities.

Gambo and Guluwa (2021), looked at government expenditure on the agricultural sector and economic growth in Nigeria. To achieve this, time series data on Real Gross Domestic Product, GCEXP (Government Capital Expenditure on Agriculture) and GREXP (Government Recurrent Expenditure on Agriculture) in the Nigerian economy from 1980 to 2019 was gotten. The Auto Regressive Distributed Lag (ARDL) method was used to analyze the data. The study discovered that government expenditure on the agricultural sector has a significant impact on economic growth in Nigeria. The study recommends that Government should increase its level of expenditure to the agricultural sector, thereby providing more funding in the sector to raise its productivity and increase its contribution to economic growth in Nigeria. Another recommendation is that the Central Bank of Nigeria should come out with stable policy guideline to enable the commercial banks disburse loans to farmers at a very lower interest rate, in order to help them expand their production capacity.

Nwaba et al. (2023), investigated the relationship between capital expenditure cost and economic development in Nigeria. The study adopted ex-post-factor research design targeted at determining the relationship between capital expenditure cost on education sector and economic development in Nigeria. The population of this study was the entire Nigerian economy where the properties of data used for this research were extracted covering 2003 to 2022. A sample is a part or unit of the population. Using judgmental sampling technique, a sample of 20years' period from 2003 to 2022 was used. Time series secondary data obtained basically from the CBN bulletin and world demographic index for a period of 20years were used. Multiple regression analysis was used to test the hypothesis on the strength of relationship between the predictors and criterion variable (HDI). Co-integration test was used to determine the long-run effect of the predictors on the criterion variable (HDI). The results revealed a significant positive relationship between health sector expenditure cost and economic development in Nigeria. The results also revealed an insignificant negative relationship between education sector expenditure cost and economic development in Nigeria. The study's long-run test between the variables shows no presence of long-run relationship between the variables. The concluded that a significant relationship exist between health sector expenditure cost and economic development in Nigeria. The researcher further suggests that the Nigerian government should allocate a larger portion of its budget to healthcare.

Gap in literature

Previous studies on government expenditure and private investment in Nigeria have primarily focused on aggregate budget deficits, capital expenditure, or fiscal policy instruments, often emphasizing their long-run effects on economic growth or investment levels (Ogaga and Jacob, 2024; Ariwa and Umezuruike, 2024; Enemuo-Uzoezie and Okoye, 2024). However, there has been limited empirical analysis on the disaggregated impact of specific budget components—particularly budgeted health, education, and agricultural expenditures—on domestic private investment, especially using recent data that captures short- and medium-term dynamics through techniques like ARDL and moderated multiple regression. Moreover, few studies have examined the moderating role of exchange rate fluctuations on the relationship between government budgetary allocations

and private investment, leaving an important contextual factor underexplored in the Nigerian setting.

The present study filled these gaps by applying an ARDL modeling approach alongside moderated multiple regression analysis to assess both the direct effects of specific government budget components and the moderating influence of exchange rates on domestic private investment in Nigeria. By focusing on budgeted health, education, and agricultural expenditures separately and incorporating the exchange rate as a moderator, this research provides a more nuanced understanding of how government spending interacts with macroeconomic conditions to influence private sector investment decisions. This comprehensive and up-to-date analysis addresses the limitations of prior aggregate studies and contributes to policy discussions aimed at optimizing public expenditure to stimulate private investment in Nigeria's unique economic environment.

METHODLOGY

The ex-post facto research design which investigates possible cause-effect relationship, was adopted for this study. The population for this study is the Nigerian economy from the year of Nigeria independence to date. Using Census sampling technique, a sample of thirty four (34) years (1990-2023) was considered for this study. Considering the objectives of this study and the nature of data to generate, the secondary source of data collection was employed in this study. The study employed descriptive statistics to summarize data trends and unit root tests to confirm stationarity of variables. Diagnostic and stability tests were used to ensure model reliability and validity. The ARDL model was applied to assess both short-run and long-run effects of government expenditure on investment. Moderated multiple regression was used to evaluate the interaction effect of exchange rate and inflation rate on the relationship between government spending and investment. The following models were used to test all the research hypotheses.

ARDL Model:

$$DPI = f[\propto_o+\beta_1 BHE_t+\beta_2 BEE_t+\beta_3 BAE_t+ \text{---------} - \mu i] \text{----------} (1)$$

MMR Model:

$$DPI = f[\propto_o+\beta_1 BHE_t+\beta_2 BEE_t+\beta_3 BAE_t+ \beta_4 EXR_t + \beta_5(BHE_t \times EXR_t) + \beta 6(BEE_t \times EXR_t) + \beta_7(BAE_t \times EXR_t) + \text{---------} - \mu i] \text{----------} (2)$$

Where:

DPI	=	Domestic Private Investment
BHE	=	Budgeted Health Expenditure
BEE	=	Budgeted Education Expenditure
BAE	=	Budgeted Agriculture Expenditure
EXR	=	Exchange Rate
$\propto$	=	Regression Constant
β	=	Regression Coefficient
μ	=	Stochastic term

DATA ANALYSIS AND DISCUSSION

Data analysed here are the measures for government budget are budgeted health expenditure (BHE), Budgeted Education Expenditure (BEE), and Budgeted Agricultural Expenditure (BAE), while exchange rate (EXR) was used as a control variable. Domestic Private Investment (DPI) was used to measure private investment promotion.

Table 1: Descriptive Analysis

	DPI	BHE	BEE	BAE	EXR
Mean	4.146137	2.492663	2.921811	4.081082	1.991780
Median	3.943987	2.546393	2.976915	4.121815	2.001092

Maximum	7.322345	2.706402	3.181746	4.272733	2.096356
Minimum	2.366820	2.196535	2.544279	3.684932	1.846102
Std. Dev.	1.309861	0.190859	0.237301	0.170360	0.079179
Skewness	0.911531	-0.384290	-0.325223	-0.968800	-0.377217
Kurtosis	3.218911	1.555801	1.548790	3.153865	1.897239
Jarque-Bera	3.090522	2.453389	2.318334	3.463141	1.636482
Probability	0.213256	0.293260	0.313747	0.177006	0.441207
Sum	91.21501	54.83859	64.27984	89.78380	43.81916
Sum Sq. Dev.	36.03048	0.764968	1.182546	0.609471	0.131655
Observations	34	34	34	34	34

The descriptive statistics for the study variables based on 34 observations indicate that Domestic Private Investment (DPI) has a mean of 4.15 with a relatively high standard deviation of 1.31, suggesting moderate variability and a right-skewed distribution (Skewness = 0.91). Among the government budget indicators, Budgeted Health Expenditure (BHE), Budgeted Education Expenditure (BEE), and Budgeted Agricultural Expenditure (BAE) have means of 2.49, 2.92, and 4.08 respectively, with relatively low standard deviations, indicating consistency in government spending in these sectors over the period. BHE and BEE are slightly negatively skewed, while BAE is moderately negatively skewed (Skewness = -0.97), implying a concentration of values above the mean. The exchange rate (EXR) has a mean of 1.99 and low variability (Std. Dev. = 0.08), reflecting minimal fluctuations. All variables exhibit non-significant Jarque-Bera probabilities (p-values > 0.05), suggesting they are approximately normally distributed. Overall, the data reveal stable patterns in government expenditures and exchange rates, while domestic private investment shows more variation, possibly due to differing responses to macroeconomic and fiscal conditions.

Table 2 Unit Root Tests

Variable	ADF t-Statistic	ADF Prob.	ADF Result	Decision
DPI	-4.4980	0.0023	I(1)	Stationary
BHE	-4.8502	0.0398	I(1)	Stationary
BEE	-2.3573	0.0201	I(0)	Stationary
BAE	-4.1910	0.0026	I(1)	Stationary
EXR	-4.9407	0.0003	I(1)	Stationary

The unit root test results using the Augmented Dickey-Fuller (ADF) method in Table 2 reveal the stationarity status of each variable. Domestic Private Investment (DPI), Budgeted Health Expenditure (BHE), Budgeted Agricultural Expenditure (BAE), and Exchange Rate (EXR) are all stationary at first difference, denoted as I(1), with their respective ADF t-statistics being significantly

negative and p-values below the 5% significance level. This implies that these variables are non-stationary in levels but become stationary after differencing, indicating the presence of a unit root. On the other hand, Budgeted Education Expenditure (BEE) is stationary at level, denoted as I(0), with an ADF t-statistic of -2.3573 and a p-value of 0.0201, which is also significant at the 5% level. These findings justify the use of regression techniques that account for mixed integration orders, such as Autoregressive Distributed Lag (ARDL) models, to ensure robust and valid estimation of the long-run and short-run dynamics among the variables.

Table 3 ARDL Long Run Form and Bounds Test for model 1

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BHE	-73.52439	25.80578	-2.849144	0.0173
BEE	46.69797	23.03579	2.027193	0.0701
BAE	14.96257	8.067498	1.854672	0.0933
C	-10.03623	16.48239	-0.608906	0.5562

EC = DPI - (-73.5244*BHE + 46.6980*BEE + 14.9626*BAE - 10.0362)

F-Bounds Test			Null Hypothesis: No levels relationship	
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	2.370247	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66

The ARDL long-run estimation reveals mixed effects of government budget components on Domestic Private Investment (DPI). Budgeted Health Expenditure (BHE) has a significant negative impact on DPI (coefficient = -73.52, p = 0.0173), suggesting that increased health spending may crowd out private investment in the long run. In contrast, Budgeted Education Expenditure (BEE) shows a positive and marginally significant relationship with DPI (coefficient = 46.70, p = 0.0701), while Budgeted Agricultural Expenditure (BAE) also exerts a positive, though weakly significant, influence (coefficient = 14.96, p = 0.0933), indicating potential for these sectors to stimulate private investment. However, the F-Bounds Test yields an F-statistic of 2.370, which lies at the lower bound (I(0)) of the 10% significance level, rendering the evidence for a long-run cointegrating relationship inconclusive and necessitating further short-run dynamic analysis to establish robustness.

Table 4 ARDL Error Correction Regression for model 1

Dependent Variable: D(DPI)
Selected Model: ARDL(1, 2, 2, 2)
Case 2: Restricted Constant and No Trend
Date: 04/14/25 Time: 15:48
Sample: 1 34
Included observations: 34

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(BHE)	-40.61187	18.97033	-2.140810	0.0580
D(BHE(-1))	61.46912	26.33230	2.334362	0.0417
D(BEE)	10.83312	8.665740	1.250109	0.2397
D(BEE(-1))	-26.33786	12.25563	-2.149042	0.0572
D(BAE)	1.078213	4.744112	0.227274	0.8248
D(BAE(-1))	-8.364117	5.954422	-1.404690	0.1904
CointEq(-1)*	-0.945944	0.232231	-4.073294	0.0022

R-squared	0.580352	Mean dependent var	0.080431
Adjusted R-squared	0.400503	S.D. dependent var	1.136290
S.E. of regression	0.879798	Akaike info criterion	2.842952
Sum squared resid	10.83661	Schwarz criterion	3.191126
Log likelihood	-22.85099	Hannan-Quinn criter.	2.918514
Durbin-Watson stat	1.856940		

* p-value incompatible with t-Bounds distribution.

The ARDL Error Correction Model (ECM) results indicate both short-run dynamics and adjustment toward long-run equilibrium for Model 1, where Domestic Private Investment (DPI) is the dependent variable. The error correction term (CointEq(-1)) is negative and statistically significant at 1% (coefficient = -0.946, p = 0.0022), confirming the existence of a stable long-run relationship and showing that approximately 95% of the disequilibrium is corrected each period. In the short run, the first difference of Budgeted Health Expenditure (D(BHE)) has a negative and marginally significant effect on DPI (p = 0.0580), while its lagged value (D(BHE(-1))) positively and significantly affects DPI (p = 0.0417), indicating a possible lagged investment response to health budget changes. Similarly, the lagged change in Budgeted Education Expenditure (D(BEE(-1))) is negative and nearly significant (p = 0.0572), suggesting possible short-term volatility in DPI due to education budget adjustments. Other coefficients, including agricultural expenditure, are statistically insignificant in the short run. The model explains about 58% of the variation in DPI (R^2 = 0.580), with a Durbin-Watson statistic of 1.86, indicating no serious autocorrelation, thus supporting the model's reliability.

Test of null hypotheses 1-3

Ho_1: Budgeted health expenditure has no significant effect on domestic private investment in Nigeria.

Ho_2: There is no significant relationship between budgeted education expenditure on domestic private investment in Nigeria.

Ho_3: Budgeted expenditure on agriculture has on significant impact on domestic private investment in Nigeria.

Table 5 Dependent Variable: DPI model 1

Method: ARDL
Date: 04/14/25 Time: 15:45
Sample (adjusted): 12 32
Included observations: 21 after adjustments
Dependent lags: 1 (Fixed)
Dynamic regressors (2 lags, fixed): BHE BEE BAE
Fixed regressors: C

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
DPI(-1)	0.054056	0.286419	0.188731	0.8541
BHE	-40.61187	32.86648	-1.235662	0.2448
BHE(-1)	32.53105	45.98421	0.707440	0.4954
BHE(-2)	-61.46912	40.31325	-1.524787	0.1583
BEE	10.83312	11.76387	0.920881	0.3788
BEE(-1)	7.002669	16.43600	0.426057	0.6791
BEE(-2)	26.33786	19.31844	1.363353	0.2027
BAE	1.078213	8.693597	0.124024	0.9038
BAE(-1)	4.711415	8.829908	0.533575	0.6053
BAE(-2)	8.364117	10.77579	0.776195	0.4556
C	-9.493707	16.48220	-0.575998	0.5773

R-squared	0.668744	Mean dependent var	4.230866
Adjusted R-squared	0.337489	S.D. dependent var	1.278940
S.E. of regression	1.040990	Akaike info criterion	3.223904
Sum squared resid	10.83661	Schwarz criterion	3.771035
Log likelihood	-22.85099	Hannan-Quinn criter.	3.342645
F-statistic	2.018817	Durbin-Watson stat	1.856940
Prob(F-statistic)	0.141674		

*Note: p-values and any subsequent tests do not account for model selection.

Based on the ARDL regression results presented in Table 5, the null hypotheses (Ho1–Ho3) are tested using the probability (p-values) associated with the relevant coefficients for budgeted health expenditure (BHE), education expenditure (BEE), and agricultural expenditure (BAE) on domestic private investment (DPI). For Ho1, none of the BHE coefficients (current or lagged) are statistically significant at the 5% level (e.g., BHE: p = 0.2448; BHE(-1): p = 0.4954; BHE(-2): p = 0.1583), suggesting no significant effect, hence Ho1 is not rejected. For Ho2, all coefficients for BEE and its lags are also statistically insignificant (e.g., BEE: p = 0.3788; BEE(-1): p = 0.6791; BEE(-2): p = 0.2027), indicating no significant relationship, so Ho2 is not rejected. Similarly, for Ho3, the coefficients for BAE (current and lags) are far from significance (e.g., BAE: p = 0.9038; BAE(-1): p = 0.6053; BAE(-2): p = 0.4556), meaning no significant impact, and Ho3 is also not rejected. Overall, the model's F-statistic is not significant (p = 0.1417), and individual predictors do not pass significance thresholds, reinforcing that none of the budgeted expenditure categories significantly influence DPI within the tested period.

Table 6 Breusch-Godfrey Serial Correlation LM Test for model 1:

F-statistic	0.070468	Prob. F(2,8)	0.9325
Obs*R-squared	0.363553	Prob. Chi-Square(2)	0.8338

The Breusch-Godfrey Serial Correlation LM test results indicate that there is no serial correlation in the residuals of the ARDL model, as evidenced by the high p-values for both the F-statistic (0.9325) and the Obs*R-squared statistic (0.8338), which are well above the 0.05 threshold. With no significant serial correlation detected, the model's residuals are independent, supporting the reliability and validity of the regression estimates.

Table 4.6 Heteroskedasticity Test: Breusch-Pagan-Godfrey for model 1

F-statistic	0.904757	Prob. F(10,10)	0.5613
Obs*R-squared	9.974974	Prob. Chi-Square(10)	0.4427
Scaled explained SS	1.599150	Prob. Chi-Square(10)	0.9986

The Breusch-Pagan-Godfrey heteroskedasticity test results suggest that there is no evidence of heteroskedasticity in the residuals of the ARDL model. The F-statistic of 0.9048 and the associated p-value of 0.5613, along with the Obs*R-squared statistic of 9.9750 (p-value 0.4427), indicate that the null hypothesis of homoskedasticity cannot be rejected at conventional significance levels. Therefore, the model does not exhibit issues with non-constant variance in the residuals, confirming the robustness of the regression estimates.

Table 7 Ramsey RESET Test for model 1

Equation: UNTITLED
Specification: DPI DPI(-1) BHE BHE(-1) BHE(-2) BEE BEE(-1) BEE(-2)
BAE BAE(-1) BAE(-2) C
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	0.051405	9	0.9601
F-statistic	0.002642	(1, 9)	0.9601

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	0.003181	1	0.003181
Restricted SSR	10.83661	10	1.083661
Unrestricted SSR	10.83343	9	1.203715

The Ramsey RESET test for model 1 indicates that the model's functional form is correctly specified. The t-statistic of 0.0514 and the associated F-statistic of 0.0026, with a probability value of 0.9601, suggest that the inclusion of squared fitted values does not significantly improve the model. Therefore, the null hypothesis that the model is correctly specified cannot be rejected. The F-statistic

of 1.6525 (with a p-value of 0.2299) from the unrestricted test equation further supports that no specification errors exist in the model.

Model 2:

Test of null hypothesis 4

Ho_4: Does exchange rate does not significantly moderate the effect of government budget on private domestic investment in Nigeria.

Table 8 MMR estimation of exchange rate on the effect of government budget on private domestic investment

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.544[a]	.296	.178	1.18730
2	.545[b]	.297	.131	1.22093

a. Predictors: (Constant), Zscore(BAE), Zscore(BEE), Zscore(BHE)

b. Predictors: (Constant), Zscore(BAE), Zscore(BEE), Zscore(BHE), INT

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.684	.354		10.393	.000
	Zscore(BHE)	-4.503	2.826	-2.826	-1.593	.128
	Zscore(BEE)	2.065	2.677	1.338	.771	.450
	Zscore(BAE)	3.185	1.253	1.534	2.542	.020
2	(Constant)	3.758	.620		6.066	.000
	Zscore(BHE)	-4.107	3.946	-2.577	-1.041	.312
	Zscore(BEE)	2.234	2.979	1.447	.750	.464
	Zscore(BAE)	2.975	1.913	1.433	1.555	.138
	INT	-.203	1.365	-.266	-.148	.884

a. Dependent Variable: DPI

Based on the Moderated Multiple Regression (MMR) analysis results in Table 8 for Model 2, the test of null hypothesis 4 (Ho4), which posits that exchange rate does not significantly moderate the effect of government budget components on private domestic investment (DPI) in Nigeria, is evaluated using the interaction term (INT). In Model 2, which includes the moderator (exchange rate interaction term), the coefficient for INT is -0.203 with a p-value of 0.884. This high p-value indicates that the interaction effect is statistically insignificant at the 5% level. Additionally, the change in R-squared between Model 1 (R^2 = 0.296) and Model 2 (R^2 = 0.297) is negligible, suggesting that including the interaction term did not substantially improve the model's explanatory power. Given the insignificant coefficient of the interaction term and minimal model improvement, the null hypothesis (Ho4) is not rejected. Therefore, the result implies that exchange rate does not

significantly moderate the effect of government budgetary allocations (to health, education, and agriculture) on domestic private investment in Nigeria during the study period.

Discussion of Findings

The results of the current study indicate that government budgetary allocations to key social sectors—health, education, and agriculture—do not exert a statistically significant influence on domestic private investment (DPI) in Nigeria over the analyzed period. This is evident from the ARDL regression results, where all the coefficients for the budgeted expenditures and their lags have p-values far above the conventional 5% significance threshold. This suggests that fiscal efforts in these sectors, while critical to development, have not translated into immediate or measurable impacts on private sector investment. Additionally, the Moderated Multiple Regression (MMR) analysis reveals that the exchange rate does not significantly moderate the effect of these expenditures on DPI, as the interaction term (INT) remains statistically insignificant. The negligible change in R-squared between the base and moderated models further reinforces the weak explanatory power of fiscal policy tools in catalyzing private investment under current macroeconomic conditions.

These findings contrast with several previous empirical studies that suggest a more dynamic and often negative relationship between public fiscal activities and private investment in Nigeria. For instance, studies by Ogaga and Jacob (2024) and Ariwa and Umezuruike (2024) underscore the crowding-out effect of fiscal deficits and public debt on private investment, recommending stronger monetary-fiscal coordination. Other scholars, like Nwokocha and Ibrahim (2025) and Adebayo and Chukwuma (2024), highlight the importance of transparent and capital-intensive budgeting in fostering investor confidence and economic competitiveness. While certain sectors, especially agriculture and health, are found by researchers such as Agbana and Ebisine (2022), Gambo and Guluwa (2021), and Nwaba et al. (2023) to contribute positively to economic growth, their fiscal effects may not directly influence private investment, possibly due to issues like implementation inefficiencies, corruption, and weak institutional frameworks. Therefore, while the findings of this study may appear inconsistent with parts of the literature, they underscore a critical need for reform in public spending efficiency and fiscal governance to unlock private sector-led growth in Nigeria.

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The findings of this study reveal that government budgetary allocations to key social sectors—health, education, and agriculture—have not significantly influenced domestic private investment (DPI) in Nigeria within the period under review. The ARDL regression results indicated that none of the current or lagged values of budgeted health expenditure (BHE), budgeted education expenditure (BEE), or budgeted agricultural expenditure (BAE) had statistically significant effects on DPI. Similarly, the moderated multiple regression (MMR) analysis showed that the exchange rate did not significantly moderate the relationship between these budget components and DPI, as evidenced by the insignificance of the interaction term and the negligible change in R-squared. This suggests that public sector expenditure, as currently structured, may lack the strategic orientation or execution efficiency necessary to catalyze private sector investment.

These findings contrast with several prior studies that emphasize the potential of capital and sector-specific government spending to stimulate private investment and economic growth, especially when such expenditures are well-targeted and complemented by macroeconomic stability. The lack of significance in this study could reflect issues such as inefficient budget implementation, misallocation of resources, corruption, or a mismatch between public expenditure and private sector needs. Thus, while theoretically public investment should crowd-in private investment by reducing business costs and enhancing infrastructure, the empirical reality in Nigeria suggests that structural and institutional bottlenecks may be undermining this expected relationship.

Recommendations

1. Based on the study's findings and the reviewed literature, it is recommended that the Nigerian government prioritize improving the efficiency and transparency of budget implementation, particularly in health, education, and agriculture sectors, to ensure that allocated funds translate into tangible infrastructural and institutional improvements that can attract private investment. Strengthening fiscal discipline and minimizing leakages through enhanced monitoring and accountability mechanisms will help maximize the impact of public expenditure on the private sector.
2. Furthermore, the government should design and implement targeted policies that align public spending with private sector needs, focusing on capital expenditures that enhance the business environment, such as infrastructure development, technology adoption, and capacity building. Collaborating with the private sector through public-private partnerships can also help leverage private capital and expertise, mitigating the crowding-out effects seen with inefficient budgetary allocations.
3. Finally, maintaining macroeconomic stability by addressing inflation and exchange rate volatility will create a more conducive environment for private investment to thrive alongside public expenditure initiatives.

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