

Recurrent expenditure versus capital investment: implications for service sector growth in Nigeria

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Abstract

Purpose: This study analyzed the implication of recurrent expenditure and capital investment on growth of Nigeria's service sector with the annual time series data from 2010 to 2024.

Methodology: Secondary data were obtained from Central Bank of Nigeria (CBN) Statistical Bulletin. The Ordinary Least Squares (OLS) estimation was used to analyse the relationship among the variables.

Results and conclusion: The results of the study showed that government recurrent expenditure has positive and significant influence on the growth of services in Nigeria. This means that recurrent expenditures really do make a difference in sustaining the size of the service sector. The study also discovered that the effect of government capital investment on the growth of the service sector is positive but is not significant, which means that capital investment by the government during the study period has not contributed significantly in the performance of the service sector. Furthermore, inflation rate had a positive but insignificant impacts on the growth of the service sector in Nigeria. The study is concluded that capital investment does not have as much impact on the growth of the service sector in Nigeria as recurrent expenditure. The study accordingly suggests that government should enhance capital project implementation and monitoring, sustain effective recurrent expenditure and boost fiscal management policies in order to facilitate sustainable expansion of service sector in Nigeria.

Implication of findings: Government Spending, Capital Expenditure, Recurrent Expenditure, Service Sector GDP, Inflation Rate, Nigeria, OLS.

Keywords: Capital Expenditure, Recurrent Expenditure, Service Sector GDP, Inflation Rate, Nigeria, OLS.

1. Introduction

Government spending is a major fiscal policy tool used by governments to influence economic activities and promote growth and development. Through public expenditure, governments provide infrastructure, social services, and public goods that support production, consumption, and investment in the economy. Government expenditure is broadly classified into capital expenditure, which covers spending on long-term assets such as roads, power projects, schools, and hospitals, and recurrent expenditure, which includes spending on wages, salaries, administration, and other routine government operations ((Adewale et al., 2026; Olaitan et al., 2026).

In Nigeria, government spending has continued to increase over the years as part of efforts to stimulate economic growth and improve welfare (Musa & Ismail, 2023). Successive governments have allocated substantial resources to capital projects and recurrent activities with the aim of strengthening key sectors of the economy (Adewale et al., 2026). The service sector plays a critical role in modern economies. It includes activities such as trade, transportation, communication, finance, education, health, hospitality, and other business services (Adewale, 2025). In many developing and developed countries, the service sector contributes a large share of Gross Domestic Product (GDP) and employment. In Nigeria, the service sector has grown to become the largest contributor to GDP, accounting for 57.38% of aggregate GDP in the fourth quarter of 2024, reflecting its importance to economic growth, income generation, and job creation (Yerin & Okene, 2025; NBS,

2025).

Government spending is expected to support the growth of the service market by providing infrastructure, improving public service delivery, and creating an enabling environment for private sector participation (Nwosa & Tijani, 2020). Capital expenditure on roads, electricity, communication facilities, and public buildings reduces operating costs for service-oriented businesses and improves market access (Adewale et al., 2026). Recurrent expenditure, particularly on wages and social services, increases household income and demand for services such as education, healthcare, banking, and transportation (Amarachi & Chizoba, 2024).

Empirical studies have shown mixed results on the impact of government spending on economic growth and sectoral performance. Some studies argue that government capital expenditure has a strong positive effect on growth by expanding productive capacity and supporting private investment (Francis, 2025; Ajagun et al., 2025). Others suggest that excessive recurrent expenditure may crowd out productive investment if not properly managed (Ugochukwu & Oruta, 2021). These mixed findings highlight the need to examine how different components of government spending affect specific sectors of the economy. Inflation is another important macroeconomic factor that influences the relationship between government spending and service sector growth. Inflation reduces the purchasing power of income and increases the cost of providing services (Adewale, 2025). High inflation can weaken the positive effects of government expenditure by discouraging consumption and investment in service-related activities.

In Nigeria, inflation has remained a major economic challenge over the years. Rising prices have affected household consumption and business operations, especially in service-based industries that rely heavily on consumer demand (Adewale et al., 2026). As a result, the effectiveness of government expenditure in promoting service sector growth may depend not only on the level of spending but also on the stability of the macroeconomic environment (Nnachi, Eze, & Elekwa, 2023). Government expenditure in Nigeria has increased significantly over the years, with large allocations made to both capital and recurrent spending. These expenditures are expected to stimulate economic growth and improve the performance of key sectors of the economy. However, despite the continuous rise in government spending, the growth of the service sector has not been stable, raising concerns about the effectiveness of public expenditure in supporting service market expansion.

Several studies on government expenditure in Nigeria have focused mainly on aggregate economic growth without paying adequate attention to sector-specific outcomes, particularly the service sector, which accounted for 57.38% of aggregate GDP in the fourth quarter of 2024, highlighting its substantial contribution to national output. This has created a gap in understanding how different components of government spending affect the service market directly. In addition, high and persistent inflation in Nigeria has continued to weaken purchasing power and increase the cost-of-service delivery. Inflation may reduce the positive impact of government spending by discouraging consumption and investment in service-related activities.

The main objective of this study is to examine the implication of recurrent expenditure and capital investment on growth of Nigeria's service sector. Other Specific Objectives are to: examine the effect

of government capital expenditure on the growth of the service market in Nigeria; assess the effect of government recurrent expenditure on the growth of the service market in Nigeria; evaluate the impact of inflation rate on the growth of the service market in Nigeria.

2. Literature review

Conceptual review

Government expenditure refers to the total spending by the government at all levels either federal, state, and local on goods, services, and public programs (Amobi, 2025). It is a key tool of fiscal policy used to manage the economy, stimulate growth, and provide public goods and social services (Musa & Ismail, 2023). In Nigeria, government expenditure includes spending on infrastructure, healthcare, education, defense, administration, and social welfare programs. Government expenditure is typically divided into capital expenditure and recurrent expenditure, each serving different purposes. Capital expenditure is aimed at long-term development, while recurrent expenditure covers operational and routine costs (Olaitan et al., 2026). Public spending is expected to stimulate economic activity by creating jobs, increasing demand for goods and services, and providing an enabling environment for private sector growth.

Capital expenditure refers to government spending on long-term assets and projects that are intended to improve the productive capacity of the economy (Amarachi & Chizoba, 2024). Examples include the construction of roads, bridges, schools, hospitals, power plants, and other public infrastructure (Okonkwo et al., 2023). Unlike recurrent expenditure, capital expenditure creates assets that provide benefits over several years and are essential for economic development. In Nigeria, capital expenditure is considered a key driver for sectoral growth, including the service sector. By providing infrastructure and facilities, the government enables businesses in trade, banking, transportation, and hospitality to operate more efficiently (Ajagun et al., 2025). Recurrent expenditure refers to government spending on the day-to-day operations of government and the maintenance of public services (Ajagun, et al., 2025). This includes salaries and wages of government employees, administrative costs, maintenance of government facilities, and routine operational expenses (Olaitan et al., 2026). Unlike capital expenditure, recurrent expenditure does not create long-term assets, but it is necessary to ensure the smooth functioning of government and delivery of public services. In Nigeria, recurrent expenditure has grown significantly over the years, taking a large portion of the national budget while this spending supports administrative and social service activities, excessive recurrent expenditure can limit the funds available for capital projects that are essential for long-term economic growth (Amarachi & Chizoba, 2024).

The service sector, also known as the tertiary sector, comprises all economic activities that provide services rather than physical goods which includes industries such as trade, banking and finance, transportation, information and communication, education, healthcare, hospitality, and professional services (Yerin & Okene, 2025; Nwosa & Tijani, 2020). In most modern economies, the service sector contributes a significant share of GDP and employment, making it a key driver of economic growth. In Nigeria, the service sector has experienced substantial growth over the past two decades. The expansion is partly due to increased urbanization, rising incomes, and improved infrastructure, which create demand for services such as banking, retail, transportation, and information technology (Chinedu et al., 2022). Government spending, especially on capital projects like roads, electricity, and communication networks, can further stimulate growth by creating an

enabling environment for service-based businesses (Cooray & Nam, 2025)

Inflation rate refers to the percentage increase in the general level of prices for goods and services over a period of time (Adewale, 2025). It reflects the loss of purchasing power of money, where higher inflation reduces the value of income and affects both consumers and businesses (Oyadeyi et al., 2025). Inflation is a key macroeconomic indicator that influences economic growth, investment decisions, and the effectiveness of government expenditure (Ajiboye & Olagunju, 2023; Odusina, 2023). In Nigeria, inflation has been a persistent challenge, often fueled by rising food prices, exchange rate fluctuations, and high government spending (Ogu et al., 2020). High inflation increases the cost of providing services and reduces household purchasing power, which can negatively affect demand for services such as healthcare, education, transport, and financial services (Adewale, 2025; Nnachi, et al., 2023). As a result, even if government capital and recurrent expenditures increase, their impact on service sector growth may be weakened by high inflation

Theoretical Framework

This study employs the Keynes (1936) Theory of Government Spending as a theoretical framework, which posits that government expenditure is essential for stimulating economic activity, particularly when private investment is lacking. It argues that public spending can increase aggregate demand, create jobs, and foster economic growth. The relevance of this theory to the study lies in its connection between government spending and the growth of the service sector in Nigeria. Capital expenditure on infrastructure, such as roads and electricity, improves efficiency for service-oriented businesses, while recurrent expenditure, encompassing salaries and social services, boosts household income and stimulates demand within sectors like banking, healthcare, education, and transportation. By integrating the Keynesian framework, the study suggests that both capital and recurrent expenditures significantly impact the service sector's growth, with macroeconomic factors like inflation potentially moderating these effects. This theoretical approach is deemed most appropriate for exploring how government spending can catalyze growth in Nigeria's service market.

Empirical Review

Adewale, Sanni, and Oyedeji (2026) analyzed the relationship between Government Expenditure and Service Sector Growth in Nigeria. The study used descriptive ex-post facto research design with the use of the Autoregressive Distributed Lag (ARDL) model for both short-run and long-run estimation. Results showed that capital expenditure in the government sector had a positive, albeit insignificant, long-term effect, whilst recurrent expenditure of the government sector had a positive and significant long-term effect on the growth of service sector. Recurrent expenditure, however, had a significant negative impact in the short run due to inefficiencies in spending. However, service sector growth was negatively but not significantly impacted by inflation. The study was able to establish that good fiscal stewardship, effective allocation of expenditure and increased investment in productive infrastructure is key to sustainable growth of the service sector in Nigeria.

In the case of Nigeria, Musa and Ismail (2023) established a positive relationship between government expenditure and GDP between 1970 and 2020 which suggests the persistence of growth. They emphasized the need for robust expenditure policies for sustainable growth. The study Nnachi et al. (2023) found that government expenditure on the health, education, and other sectors has a significant effect on the inflation rate in Nigeria (1986 to 2021), whereas government expenditure on

agriculture has short term impact. They urge fiscal prudence for the fight against inflation. However, Chinedu, Peace and Stanislaus (2022) found that from 1981 to 2019, government spending was not statistically significant in influencing growth, noting that it is inefficiently allocated and suggested that government spending on infrastructure should be improved. Using data from 1981–2024,

Mensah and Adukpo (2025) investigated the influence of government spending on Ghana's economic growth over the period from 1972 to 2021. Their findings indicate that capital government expenditure plays a significant role in enhancing GDP growth, whereas recurrent expenditure appears to have an insignificant effect. Granger causality tests demonstrated a bidirectional relationship between capital expenditure and GDP, with a unidirectional flow from GDP to recurrent expenditure. These results align with Keynesian theory, advocating for increased investment in infrastructure to foster long-term economic growth in Ghana. In Nigeria, Akomolehin (2025) examined the effects of government expenditure on infrastructural development and economic growth from 1999 to 2022, using secondary data and the Autoregressive Distributed Lag (ARDL) method. The research revealed a stable long-run equilibrium, where capital expenditure significantly boosts GDP, while recurrent expenditure generally showed insignificant or negative implications. The study calls for enhanced efficiency in public spending to achieve sustainable growth.

Similarly, Amarachi and Chizoba (2024) assessed the impact of public sector capital expenditure on economic development between 2000 and 2020, finding no significant link among capital spending, industrial production, and unemployment. They concluded that public capital expenditure has not translated effectively into economic development in Nigeria, recommending improved efficiency in capital allocation and a reduction in recurrent spending. Okonkwo et al. (2023) examined the impact of government capital expenditure on economic growth from 1981 to 2021, utilizing the Autoregressive Distributed Lag (ARDL) model. Their results reveal a long-term relationship between capital spending in administrative and economic services and economic growth, emphasizing the significance of targeted expenditure in the post-pandemic context.

Research Hypotheses

Based on the specific objectives of the study and the empirical evidence reviewed, the following null hypotheses are formulated:

H₀₁: Government capital expenditure has no significant effect on the growth of the service sector in Nigeria.

H₀₂: Government recurrent expenditure has no significant effect on the growth of the service sector in Nigeria.

H₀₃: Inflation rate has no significant effect on the growth of the service sector in Nigeria.

3. Methodology

This study utilizes an ex-post facto research design to investigate the implication of recurrent and capital expenditure on the growth of Nigeria's service sector. The study relies on secondary data from the Central Bank of Nigeria Statistical Bulletin, covering 2010 to 2024, to analyze historical trends in government expenditure and service sector performance. Quantitative methods, including

descriptive statistics, correlation, and regression analyses, will be employed to assess the impacts of government expenditures on service sector GDP while controlling for inflation, with EViews software for data

Model specification

The study adopts a linear regression model to examine the impact of government expenditure on service sector growth. The model is specified as follows:

$$SSGDP_t = \beta_0 + \beta_1 GCE_t + \beta_2 GRE_t + \beta_3 INF_t + \epsilon_t$$

In this model, the service sector GDP (SSGDP) is the dependent variable, while government capital expenditure (GCE) and government recurrent expenditure (GRE) are independent variables. Inflation rate (INF) serves as the control variable. The coefficients for the explanatory variables are denoted as β_1 – β_3 , with β_0 as the intercept and ϵ_t as the error term.

Measurement of Variables

The dependent variable for this study is service sector GDP, measured in billions of naira annually. The independent variables include government capital expenditure and government recurrent expenditure; both measured in billions of naira annually. Inflation rate, expressed as a percentage, serves as the control variable to account for macroeconomic conditions that may influence service sector growth.

4. Results and discussion

Table 1: Descriptive statistics of the study variables

	SSGDP	GCE	GRE	INF
Mean	65017.75	2306.76	6230.762	15.50995
Median	64119.18	1242.3	4779.989	12
Maximum	130539.4	11590	14287.56	33.88
Minimum	27736.94	653.6	3109.379	8
Std. Dev.	27529.38	2782.209	3373.713	7.518004
Skewness	0.744899	2.703884	1.025056	1.293865
Kurtosis	3.279138	9.558026	3.098584	3.750804
Jarque-Bera	1.435887	45.15729	2.632924	4.537536
Probability	0.487754	1.56E-10	0.268082	0.10344
Sum	975266.2	34601.4	93461.43	232.6493
Sum Sq. Dev.	1.06E+10	1.08E+08	1.59E+08	791.2854
Observations	15	15	15	15

Source: Author's Computation (2026)

Note: SSGDP represents service-sector GDP, GCE represents government capital expenditure, GRE represents government recurrent expenditure, and INF represents inflation rate.

The descriptive statistics in Table 1 give general statistics for the distribution of service sector GDP, government capital expenditure, government recurrent expenditure and inflation rate for the study period of 2010-2024. The mean value of GDP in the service sector was ₦66,584.17 billion, the lowest value was ₦27,736.94 billion, and the highest value was ₦130,539.40 billion. The difference between the

minimum and maximum are rather significant, suggesting a significant increase in the scale of the service sector during the study period.

The mean value of government capital expenditure was ₦2,300.74 billion with the lowest recorded capital expenditure being ₦653.60 billion and the highest being ₦11,590.00 billion. The capital expenditure is reported with a very large standard deviation amount of ₦2,819.62 billion, which suggests that there was significant variation in capital expenditure over the year, especially the significant capital expenditure recorded in 2024. The average value of government recurrent expenditure was ₦6,098.22 billion, minimum ₦3,109.38 billion and maximum of ₦14,287.56 billion. The large magnitude of the standard deviation of ₦3,544.47 billion suggests that there was a high level of variability in recurrent expenditure during the study period.

The inflation rate had a mean of 15.51%, a minimum of 8.00% and a maximum of 33.88%. Its standard deviation of 7.52% indicates considerable fluctuations in the inflationary environment. The distribution of government capital expenditure is the most strongly affected by relatively high value of the expenditure, in this case in the later years, as it is found to be strongly positively skewed (2.51). There is moderate positive skewness in the government recurrent expenditure and inflation figures, and low positive skewness in service-sector GDP.

The kurtosis statistics show that the distribution of government capital expenditure is leptokurtic implying that there were relatively high concentrations of observations around the mean (central values) with extreme values. The GDP in the service sector is slightly platykurtic, whereas the government recurrent expenditure and inflation show moderate level of peakedness. The Jarque-Bera probability values suggest that GDP in the services sector, government recurrent expenditure and government inflation do not significantly deviate from normality at the 5% level while government capital expenditure significantly deviates from normality. The descriptive statistics are, however, mainly used to gain an initial understanding of the characteristics and distribution of the variables before the following econometric analyses. This study will continue with the use of correlation analysis of the relationships between these variables in table 2 below.

Table 2. Correlation Matrix

Statistics	LSSGDP	LGCE	LGRE	INF
LSSGDP	1			
LGCE	0.8544	1		
LGRE	0.7966	0.5400	1	
INF	0.8760	0.8497	0.7425	1

Source: Author's Computation (2026)

The analysis presented in Table 2 indicates the correlation coefficients among key variables: service sector GDP, government capital expenditure, government recurrent expenditure, and the inflation rate. A notable finding is the significant positive correlation of service sector GDP with government capital expenditure (0.8544), government recurrent expenditure (0.7966), and the inflation rate (0.8760), suggesting these variables align positively during economic growth within the service sector. Additionally, government capital expenditure correlates positively with both government recurrent expenditure (0.5400) and inflation rate (0.8497), indicating co-movement.

The correlation between government recurrent expenditure and inflation rate stands at 0.7425, reflecting that increases in recurrent expenditure impact the inflationary context. Overall, the results show that all variables exhibit positive correlations; however, the correlation coefficients do not indicate perfect multicollinearity, thus confirming the absence of multicollinearity issues. Thus, the study proceeds to document a unit root test with the assumption of an intercept and no trend using the Augmented Dickey Fuller (ADF) Technique. Table 3 provides an overview of the results.

Table 3. ADF Unit Root Test

Variables	ADF-Stat	5% CV	P-Value	Stationarity	Int. Order
INF	-2.041783	-2.963972	0.2684	Non-stationary	
D(INF)	-4.306203	-2.971853	0.0022	Stationary	I(1)
LSSGDP	-3.605445	-2.971853	0.0122	Stationary	I(0)
LGCE	-6.827415	-2.967767	0.0000	Stationary	I(0)
LGRE	-3.455134	-2.967767	0.0170	Stationary	I(0)
LGDP*	-2.359463	-2.971853	0.1617	Non-stationary	
D(LSSGDP)	-4.103023	-3.574244	0.0160	Stationary	I(1)

Source: Author's Computation (2026)

The inflation rate is not stationary at level but becomes stationary after first differencing, as shown in Table 3. The absolute value of the ADF statistic exceeds the 5% first difference critical value, with a probability value below 5%, indicating that inflation is 1st order integrated (I(1)). Conversely, the GDP of the service sector (LSSGDP), government capital expenditure (LGCE), and government recurrent expenditure (LGRE) are stationary at level, as their ADF statistics exceed the 5% critical values and their probability values are below 5%. These variables are thus integrated of order zero (I(0)). However, the service sector GDP is stationary at the first difference as well. The unit root test results indicate mixed integration orders among the variables, combining I(0) and I(1) types. This variance in order of integration renders the Engle-Granger and Johansen cointegration methods unsuitable for the study, leading to further testing with Diagnostic Tests, the results of which are presented in Table 4.

Table 4: Diagnostic Tests

Test	Statistic	Probability
Jarque-Bera (Normality)	1.311949	0.518936
Breusch-Pagan-Godfrey (Heteroskedasticity)	2.309921	0.121893
Breusch-Godfrey Serial Correlation LM Test (F-statistic)	0.979400	0.601600
Breusch-Godfrey Serial Correlation LM Test (Obs*R-squared)	12.225900	0.200900
Ramsey RESET Test (F-statistic)	2.946468	0.116824

Source: Author's Computation (2026)

The diagnostic test results validate the validity and reliability of the estimated Ordinary Least Squares (OLS) model used to assess the effects of recurrent expenditure and capital investment on service sector growth in Nigeria. The Jarque-Bera normality test yielded a value of 1.311949 with a probability of 0.518936, indicating that the residuals are normally distributed and the normality assumption for OLS estimation is satisfied. The Breusch-Godfrey Serial Correlation LM test produced an F-statistic of 0.979400 and a probability value of 0.601600, failing to reject the null hypothesis of no serial correlation due to both p-values exceeding 0.05. This confirms that the estimated coefficients are efficient, unbiased,

and free of autocorrelation in the residuals.

Further analysis using the Breusch-Pagan-Godfrey heteroskedasticity test showed a test statistic of 2.309921 with a probability value of 0.121893, which again is above the 5 per cent significance level. This result means the variance of the error term remains constant and the error term follows a homoskedastic pattern, thus supporting the reliability of the OLS estimates.

Additionally, the Ramsey RESET test produced an F-statistic value of 2.946468 with a probability of 0.116824, leading to the conclusion that the null hypothesis of correct model specification does not get rejected, signifying no evidence of omitted variable bias or misspecification of the functional form. Overall, these diagnostic results affirm that the OLS model is suitable for analyzing the relationship between recurrent expenditure, capital investment, and service sector growth in Nigeria, adhering to the essential assumptions required for classical linear regression analysis.

Table 5. OLS Regression Results

Dependent Variable: SSGDP

Method: Least Squares

Sample: 2010 2024

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GCE	0.102269	0.162589	0.629005	0.542188
GRE	0.485231	0.20861	2.326021	0.04015
INF	0.011906	0.01411	0.843801	0.416753
C	5.879263	1.346836	4.36524	0.001126
R-squared	0.800317	Mean dependent var		10.99787
Adjusted R-squared	0.745858	S.D. dependent var		0.432612
S.E. of regression	0.218091	Akaike info criterion		0.015367
Sum squared resid	0.523199	Schwarz criterion		0.20418
Log likelihood	3.88475	Hannan-Quinn criter.		0.013355
F-statistic	14.69579	Durbin-Watson stat		0.492633
Prob(F-statistic)	0.000365			

Source: Author's Computation (2026)

Table 5 presents regression results examining the relationship between government expenditure components and Nigeria's GDP from service activities. The positive coefficient for Government Capital Expenditure (GCE) is 0.1023, but it is not statistically significant ($p=0.5422$), indicating minimal impact on the service sector GDP. Conversely, Government Recurrent Expenditure (GRE) demonstrates a significant positive relationship with a coefficient of 0.4852 ($p=0.0401$), suggesting a 1% increase in GRE leads to a 0.49% increase in service sector GDP, highlighting its crucial role in the sector's performance. The inflation rate (INF) shows a positive coefficient of 0.0119 with a non-significant probability of 0.4168, implying little effect on service sector GDP.

The R-squared value of 0.8003 suggests that the model explains about 80% of variations in service sector GDP, with an adjusted R-squared of 0.7459, confirming good explanatory power. The overall model is statistically significant with an F-statistic of 14.6958 ($p=0.0003649$), affirming the explanatory variables' collective significance in explaining GDP. However, a Durbin-Watson statistic of 0.4926 indicates

potential positive autocorrelation, though the Breusch-Godfrey test showed no serial correlation in residuals, supporting model reliability.

Table 6. Variance Inflation Factors

	Coefficient	Uncentered	Centered
Variable	Variance	VIF	VIF
GCE	0.026435	457.8576	4.867784
GRE	0.043518	1021.704	3.208584
INF	0.000199	18.41676	3.312277
C	1.813968	572.0668	

Source: Author's Computation (2026)

The Variance Inflation Factor (VIF) results in Table 6 were used to check for any multicollinearity among the explanatory variables of the estimated OLS model. The centered VIF values are 4.867784 for Government Capital Expenditure (GCE), 3.208584 for Government Recurrent Expenditure (GRE) and 3.312277 for Inflation (INF). All the centered VIF values are less than the usual cutoff value of 10.0, indicating that there is no evidence of significant multicollinearity among the explanatory variables. The absence of multicollinearity shows that the independent variables are not highly correlated with each other nor they provide the same information of the service sector variation in Nigeria. Hence, the estimated coefficients are stable and reliable, and the standard errors are not excessively large because of linear dependence of the regressors.

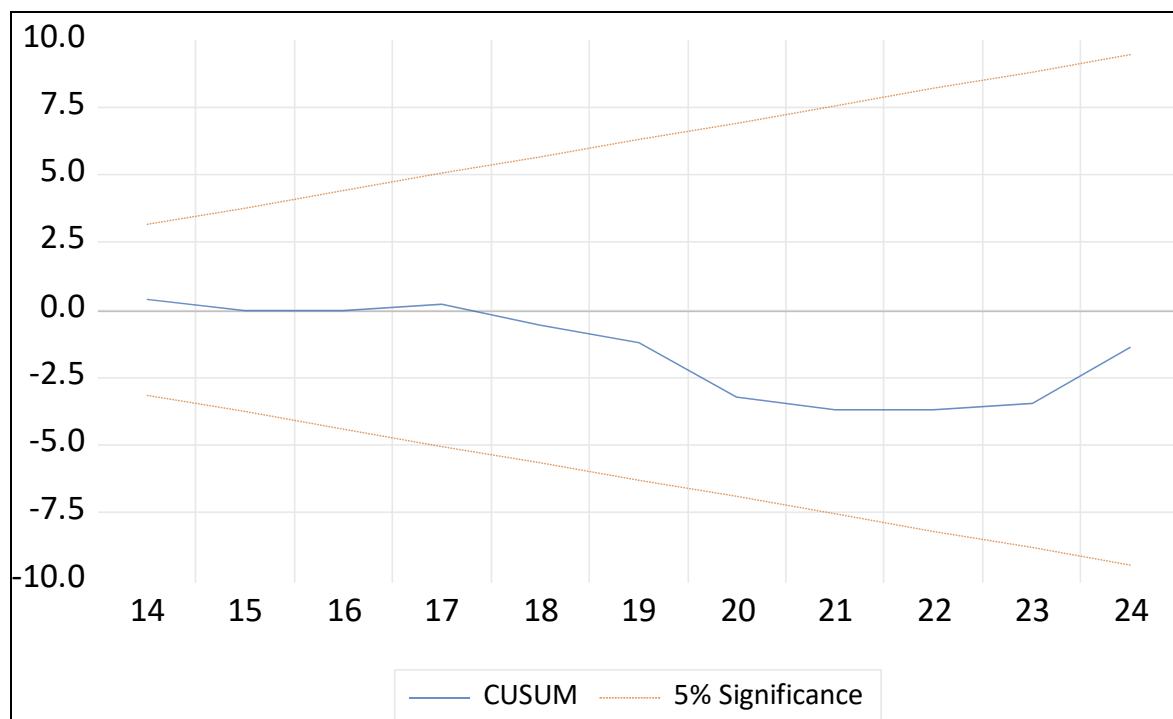


Figure 1: CUSUM Stability Test for the OLS Model

Source: Author's Computation (2026)

The Cumulative Sum (CUSUM) stability test, as illustrated in Figure 1, indicates that the Ordinary Least

Squares (OLS) model assessing the effects of recurrent expenditure and capital investment on growth in Nigeria's service sector is stable. The CUSUM test evaluates the stability of estimated coefficients over the sample period and is deemed stable when it remains within the critical bounds set at 5 percent above and below the centerline. The CUSUM statistic consistently stays within the 5 percent significance limits throughout the study period.

Although a slight downward trend appears in the final years, it does not breach the critical bounds, suggesting no structural or parameter instability. Therefore, the estimated coefficients remain constant over time, indicating that the relationships among variables—growth in the service sector, inflation, government capital expenditure, and recurrent expenditure—are unchanged throughout the sample period. Thus, the model is structurally stable and reliable for policy analysis, reinforcing the validity of the regression results and the robustness of the empirical evidence presented in this study.

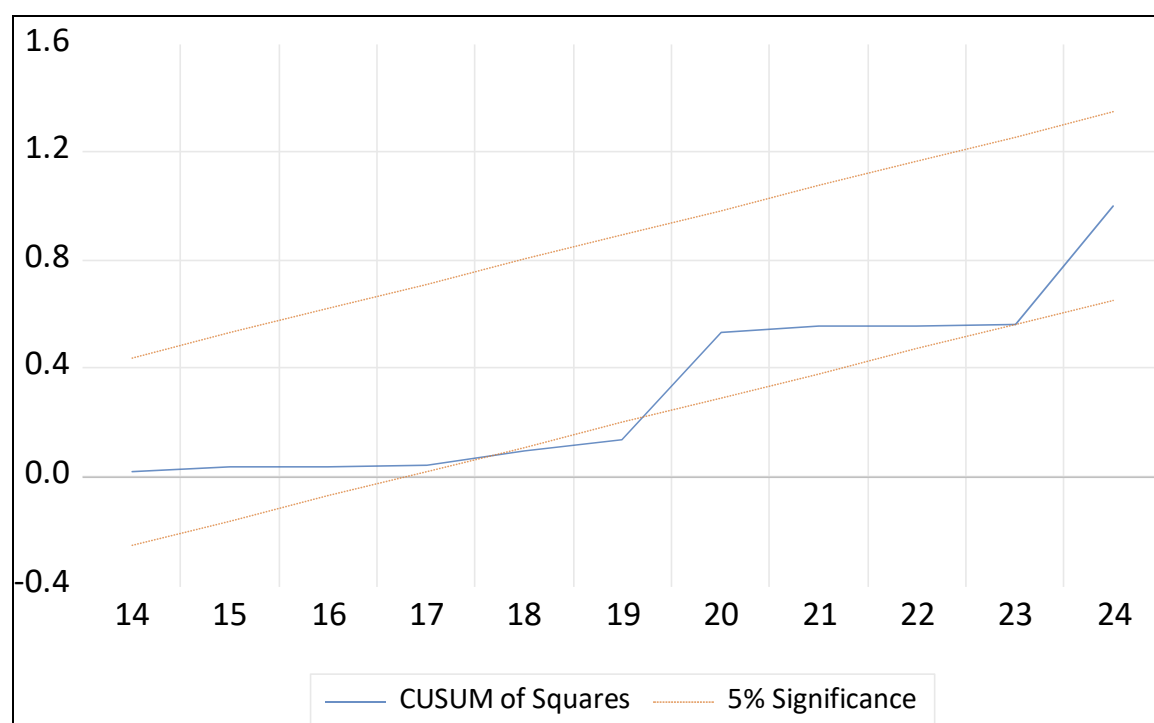


Figure 4.2: CUSUM of Squares (CUSUMSQ) Stability Test for the OLS Model

Source: Author's Computation (2026)

The Cumulative Sum of Squares (CUSUMSQ) stability test reveals that the Ordinary Least Squares (OLS) model used to analyze the effects of recurrent and capital expenditures on Nigeria's service sector growth is stable. The CUSUMSQ test, which assesses the stability of variance in regression coefficients, showed that the statistic remained within the 5% critical bounds during the study period, indicating no significant changes in estimated coefficient variances.

Although there is a slight upward trend towards the end of the observation period, it does not exceed the critical limits, confirming the absence of structural breaks. The results imply that the relationship among government capital expenditure, recurrent expenditure, inflation, and service sector growth is stable, suggesting the model's reliability for statistical inference and policy implications and reinforcing

the robustness and validity of the empirical findings.

Discussions of findings

The study focused on effect of government capital expenditure, recurrent expenditure and inflation on growth of service sector in Nigeria. The results carry significant implications for fiscal policy and the effectiveness of public expenditure in promoting development of the service sector.

The first result implies that government capital spending has a positively non-significant effect on service-sector GDP in Nigeria. The sign of the coefficient is positive, suggesting that an increase in capital expenditure is correlated with an increase in the output of the service sector; however, the coefficient is not statistically significant, meaning that the service sector output has not been affected by an increase in capital expenditure during the period of study. This income finding has a policy implication as it is expected that the capital expenditure will create infrastructure and other productive assets that will enable service-based businesses to operate. However, the negligible impact might signal issues in the implementation, completion, maintenance and productive use of government capital projects. Insufficient levels of infrastructure quality, delays in projects, project abandonment, and inefficient capital resource allocation then may constrain the effectiveness of public investments in service-sector output. The result is in line with the result reported by Adewale, Sanni and Oyediji (2026) in which they reported positive and insignificant long run effect of the government's capital expenditure on the growth of the service sector in Nigeria. It, however, differs from Mensah and Adukpo (2025) who reported that capital expenditure had a significant positive effect on the economic growth of Ghana. The gap could be due to differences in the quality of institutions, in the ways that public expenditure is used, in how infrastructure is provided, and in the types of infrastructure that are built in different countries. The implication here is that higher capital expenditure is not always enough to spur growth of the service sector, but that service capital projects need to be improved in terms of quality, efficiency, completion, and economic productivity.

The second finding shows that there is a positive and statistically significant impact of government recurrent expenditure on the service sector GDP. The coefficient of 0.4852 indicates that a 1% rise in recurrent expenditure is expected to lead to an around 0.49% rise in service-sector GDP, all else being equal. This finding implies that the role of recurrent expenditure in supporting activities in the service sector in Nigeria cannot be undermined. Recurrent spending is used to pay salaries, administer the government, provide public education, provide health and human services, provide security, provide maintenance, and other day-to-day government expenditures that support economic activities within the service sector either directly or indirectly. It also can create jobs and purchasing power in the public sector, which can create demand for transportation, financial services, retail, education, healthcare and hospitality services. The result is consistent with the result obtained by Adewale, Sanni, and Oyediji (2026) which revealed that recurrent expenditure has a positive long run effect on service sector growth in Nigeria. It is also in line with Musa and Ismail (2023) who found that there was a positive link between government spending and economic performance in Nigeria. It contrasts, however, with the results of Akomolehin (2025) which indicated that the effects of recurrent expenditure on economic growth were generally negligible or negative. This difference could be due to the fact that the definition of aggregate economic growth includes a number of sectors of the economy, while the present study concentrates on the service sector. It is suggested that recurrent expenditure should be considered not only as a consumption

share of government spending. Recurrent expenditure can help promote services-sector activity when channeled into productive public services, human capital, and administration and maintenance of public facilities. However, it does not mean that the spending of recurrent expenditure can grow without control, because if there is an expenditure on administration (other than productive), it has the potential to reduce the fiscal sustainability.

The third result shows that inflation had a positive but not statistically significant impact on GDP in the services sector. The positive coefficient suggests that the nominal value of service-sector GDP grew when the general price level increased during the sample period, although the coefficient is not statistically significant, suggesting that inflation is not a strong enough influence on service-sector output to be included in the estimated model. Therefore, this result does not necessarily indicate inflation's advantage to the service sector. Instead, the positive correlation seen may be due to the effect of price increases on economic activity's nominal monetary value. The negligible impact also indicates that the impact of inflation on performance of services may be less than what is captured by government capital and recurrent expenditure. However, it is still a matter of concern for the policy makers since it can lead to high operating costs, low household purchasing power and low investment decision making and even uncertainties for the service-oriented businesses. It is implied that the fiscal expenditure policy should go hand in hand with measures that promote macroeconomic stability. Moderate and predictable inflation would enhance the likelihood that growth in service-sector GDP will be indicative of changes in the real economy, and not simply the general price level.

The results show that service-sector GDP is more strongly and significantly correlated with the recurrent expenditure than capital expenditure and inflation for the period of the study. The immediate performance of government institutions and public services could have a more direct link to the performance of services than capital spending whose benefits rely on effective project implementation and completion. The results endorse the Keynesian view that governments can boost the economy by increasing expenditure – and, in particular, in providing public services. The insignificant effect of capital expenditure suggests, however, that the growth power of public spending has to be mediated not just by the size of the capital expenditure, but by its effectiveness in delivering productive economic assets. Thus fiscal policy needs to balance productive recurrent spending with efficiently implemented capital investment, instead of merely relying on an increase in overall government spending, in Nigeria.

5. Conclusion

The study concluded that government capital expenditure positively impacts service sector GDP in Nigeria, but the effect is not statistically significant, indicating limitations due to inefficiencies, project delays, and poor implementation. Conversely, a significant positive relationship is established between government recurrent expenditure and service sector GDP, highlighting its critical role in sustaining sector performance through salary payments and administration efficiency. Inflation was found to exert a positive but not statistically significant influence on service sector GDP, suggesting a weak correlation between inflation and productivity changes. Overall, recurrent expenditure emerges as the primary influence on service sector GDP, while capital expenditure and inflation demonstrate negligible effects.

Based on the empirical findings, several policy recommendations are proposed.

1. The government needs to enhance capital expenditure project efficiency and execution, with a focus on using capital funds to support productive infrastructure to directly boost service sector development.
2. Policymakers should continue to make public administration, education, health and service delivery as some of the recurrent expenditure channels more effective since it has been demonstrated that such expenditure is very beneficial to the performance of the service sector in Nigeria.

The government and the monetary authorities must reinforce inflation management policies to guarantee macroeconomic stability, although inflation was determined to be insignificant in this study, as the long-term economic performance may be affected indirectly by high inflation volatility.

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