BUDGETING PRACTICES AND FISCAL DISCIPLINE IN NIGERIA: AN EVALUATION OF BUDGET DEFICIT UNDER PRESIDENT BUHARI'S LEADERSHIP (2015-2023)

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Abstract
This study examined budgeting and fiscal discipline in Nigeria. The specific objectives of the study were to investigate the effect of capital expenditure on the fiscal deficit-to-GDP ratio in Nigeria and to evaluate the effect of broad money supply on the fiscal deficit-to-GDP ratio in Nigeria.An ex-post facto research design was adopted, covering a period of nine (9) years from 2015 to 2023. The population, being finite, also constituted the sample for the study. The variables of interest covered the sample period from 2015 to 2023.The study employed both descriptive and inferential statistical techniques to analyze the dataset. The Ordinary Least Squares (OLS) regression technique was used to test the hypotheses. Other preliminary diagnostic tests were also conducted, including correlation analysis to test for multicollinearity, the Shapiro–Wilk normality test, and a heteroskedasticity test. The findings revealed that capital expenditure had no significant effect on the fiscal deficit-to-GDP ratio in Nigeria from 2015 to 2023 ($p > 0.05$). However, broad money supply had a significant effect on the fiscal deficit-to-GDP ratio in Nigeria during the same period ($p < 0.05$).Consequent upon these findings, the study recommended, among others, that the Central Bank of Nigeria (CBN) and the Ministry of Finance should coordinate policies to ensure that money supply is directed toward sectors that boost economic output and revenue without fueling inflation.
Keywords: Budgeting, fiscal deficit, capital expenditure, broad money

1.0 Introduction

Budgeting and fiscal discipline are crucial pillars of economic management, shaping a nation's financial stability and development trajectory. In Nigeria, these factors have been at the center of economic discourse, particularly during President Muhammadu Buhari's administration from 2015 to 2023. This period was marked by fluctuating revenues, rising public debt, and significant government expenditures, leading to persistent fiscal deficits. Understanding the interplay of these dynamics is essential for assessing Nigeria's fiscal health and identifying pathways to sustainable economic growth.

Upon assuming office in 2015, President Buhari inherited an economy highly dependent on oil revenues, which accounted for a significant portion of the national budget. However, a sharp decline in global oil prices exposed Nigeria's fiscal vulnerabilities, leading to revenue shortfalls and economic contractions (Adegbite & Salami, 2015). In response, the government implemented fiscal reforms aimed at diversifying revenue sources and improving public financial management. Despite these efforts, the fiscal deficit widened significantly, with government expenditures consistently outpacing revenue generation. Reports indicate that between 2016 and 2022, the Nigerian government generated approximately ₦26.67 trillion in total revenue, while total expenditures amounted to ₦60.64 trillion, resulting in a fiscal deficit of ₦33.97 trillion (BudgIT, 2023).

A closer examination of government spending during this period reveals a disproportionate allocation of resources between recurrent and capital expenditures. Recurrent expenditurecomprising salaries, pensions, and overhead costs—consistently exceeded capital expenditure, a trend that has raised concerns regarding the efficiency of public spending (Ejinkonye, Nwankwo & Mazeli, 2023). For instance, in 2023, recurrent expenditure was projected at ₦8.77 trillion, compared to ₦10 trillion allocated for capital expenditure (BudgIT, 2024). This spending pattern suggests that a significant portion of public funds was directed toward administrative costs rather than critical infrastructure projects that could drive long-term economic growth.

Capital expenditure plays a vital role in economic development, particularly in enhancing infrastructural facilities and stimulating productive activities. However, its impact on the fiscal deficit depends largely on financing strategies. During Buhari's administration, capital spending increased significantly, largely funded by domestic and external borrowings. This contributed to rising fiscal deficits, as higher debt obligations placed additional strain on government finances (Akinro, Obiasogu & Udeh, 2024). Studies indicate that while capital expenditure can positively influence economic growth, its effectiveness is contingent upon prudent financial management and efficient project execution (Nwankwo&Eze, 2018).

Furthermore, the role of broad money supply (M2) in fiscal dynamics is also significant. An expansionary monetary policy, characterized by an increased money supply, can stimulate economic activity but may also exacerbate fiscal imbalances if not well managed (Bala&Danjuma, 2020). Empirical evidence suggests that fluctuations in Nigeria's money supply between 2015 and 2023 impacted inflation rates and fiscal stability, as higher liquidity levels contributed to price instability and weakened budgetary control (Adegbite & Salami, 2015). (Abubakar&Sadiq, 2020). As a result, the government increasingly resorted to borrowing, leading to a substantial rise in public debt and heightened concerns over fiscal sustainability.

The period from 2015 to 2023 under President Buhari's leadership was therefore characterized by persistent fiscal deficits driven by rising capital and recurrent expenditures, fluctuations in money supply, and weak revenue performance. These factors highlight the challenges of maintaining fiscal discipline in the face of economic uncertainties. An indepth analysis of these issues is thus necessary to inform policy recommendations aimed at achieving sustainable fiscal management in Nigeria in the future years.

Fiscal discipline and effective budgeting are critical to economic stability and sustainable development. However, Nigeria has continued to grapple with persistent fiscal deficits, raising concerns about the effectiveness of its budgeting framework and the sustainability of its fiscal policies. Under President Muhammadu Buhari's administration (2015–2023), the country faced significant macroeconomic challenges, including volatile oil revenues, rising public debt, and growing expenditure burdens. Despite various fiscal reforms aimed at improving budget implementation and revenue performance, empirical evidence suggests that Nigeria's fiscal deficit has widened rather than contracted, signaling deep-seated structural inefficiencies.

A review of existing literature indicates several problems that necessitate further inquiry into Nigeria's fiscal management. For instance, most studies on Nigeria's fiscal deficit employ traditional econometric techniques such as the Johansen cointegration, and Autoregressive Distributed Lag (ARDL) models (Afolabi&Ogundipe, 2019; Bala&Danjuma, 2020). While these methods provide insights into short- and long-term relationships among fiscal variables, they often fail to account for structural breaks, policy shocks, and nonlinear interactions that characterize Nigeria's fiscal environment. Other techniques, such as Ordinary lease square (OLS) and Generalized Method of Moments (GMM), which can better capture dynamic fiscal interactions, have been underutilized in Nigeria's fiscal research (Olatunji&Adebisi, 2023). This methodological gap suggests that existing findings may not fully reflect the complexities of fiscal deficit determinants in Nigeria.

Secondly, many empirical studies on Nigeria's fiscal deficit have focused on data spanning from the 1980s to early 2010s (Usman&Bala, 2016; Adegbite & Salami, 2015). However, limited research has explicitly analyzed the fiscal deficit trends during Buhari's administration (2015–2023). Given the unprecedented economic challenges during this period—including the COVID-19 pandemic, the Russia-Ukraine war, and the global oil price collapse—there is a need for updated studies that incorporate more recent data to reflect the unique fiscal dynamics of Buhari's leadership.

Furthermore, most existing studies on Nigeria's fiscal deficit focus on either total government expenditure or public debt as key determinants (Ejinkonye, Nwankwo & Mazeli, 2023). However, there is limited empirical research examining the combined effect of capital expenditure and broad money supply, While studies have individually explored the impact of these variables (Bassey&Udoh, 2020; Ifeanyi&Okeke, 2022), none have comprehensively integrated them into a single analytical framework to assess their collective influence. This variable gap underscores the need for a holistic approach in investigating fiscal deficit determinants.

Moreso, the theoretical discourse on fiscal deficit in Nigeria has largely been framed within the Keynesian and Neoclassical perspectives, emphasizing either the positive impact of deficit spending on economic growth or the

long-term risks of unsustainable debt accumulation (Yakubu & Abdullahi, 2018). However, more recent theories, such as the Fiscal Sustainability Framework and Behavioral Public Finance, which incorporate institutional inefficiencies, corruption, and governance constraints, have not been widely applied to Nigeria's case. Furthermore, despite the adoption of fiscal responsibility laws and Medium-Term Expenditure Frameworks (MTEF), the policy impact of these reforms remains inadequately studied. There is a need to bridge this theoretical and policy gap to understand whether Nigeria's fiscal policies are genuinely enhancing economic stability or merely increasing the deficit burden.

In light of these gaps, this study seeks to provide a comprehensive analysis of Nigeria's budgeting and fiscal discipline under President Buhari's leadership hence offering fresh insights into the determinants of Nigeria's fiscal deficit and propose evidence-based policy recommendations for achieving sustainable fiscal management.

1.1 Objectives of the study

The broad objective of the study is to carry out a general examination on budgeting and fiscal deficit in Nigeria from 2015-2023. Specifically, the study intends to:

i. Investigate the effect of capital expenditure on fiscal deficit to GDP ratio in Nigeria from 2015-2023.
ii. Evaluate the effect broad money supply on fiscal deficit to GDP ratio in Nigeria from 2015-2023

2.1 Conceptual Framework

2.1.1 Budgeting

Budgeting is the process of planning and managing financial resources to achieve economic and developmental goals. In the context of public finance, a budget outlines the expected revenue and expenditure of a government for a specific period, typically a fiscal year. According to Afolabi and Ogundipe (2019), effective budgeting is crucial for maintaining economic stability, ensuring efficient resource allocation, and driving sustainable development. However, Nigeria's budgeting system has faced challenges such as revenue shortfalls, delays in budget approval, and poor implementation (Olatunji&Adebisi, 2023). Budget credibility is also a concern, as projections often exceed actual revenue performance, leading to fiscal imbalances (World Bank, 2023). To address these issues, scholars emphasize the need for data-driven budgeting, improved transparency, and stronger fiscal discipline (Ejinkonye, Nwankwo & Mazeli, 2023).

2.1.2 Capital Expenditure

Capital expenditure refers to government spending on long-term assets such as infrastructure, education, and healthcare facilities. It plays a vital role in economic growth by enhancing productivity and creating jobs (Bassey&Udoh, 2020). In Nigeria, capital expenditure has often been overshadowed by high recurrent costs, limiting investment in critical development projects (Akinro, Obiasogu & Udeh, 2024). Studies indicate that while capital expenditure can stimulate economic growth, its impact is heavily dependent on proper execution, efficient project management, and transparency in public procurement (Nwankwo&Eze, 2018). Furthermore, the financing of capital projects through excessive borrowing has contributed to Nigeria's rising debt profile, raising concerns about long-term fiscal sustainability (Adegbite & Salami, 2015).

2.1.3 Broad Money Supply (M2)

Broad money supply (M2) encompasses currency in circulation, demand deposits, savings deposits, and other quasi-monetary assets, serving as a key monetary aggregate influencing fiscal and macroeconomic outcomes. In the context of fiscal deficit, changes in money supply affect interest rates, inflation, and government borrowing costs. A sustained increase in M2 can fuel inflationary pressures, eroding real government revenues while simultaneously increasing debt servicing obligations. In Nigeria, empirical evidence suggests that money supply expansion significantly affects fiscal balance through its interaction with government spending and inflationary dynamics (Ajisafe&Folorunso, 2002; Omotosho&Doguwa, 2013). Thus, in a conceptual framework, broad money supply can be treated as a monetary transmission variable that interacts with fiscal policy, influencing both the scale of deficits and the sustainability of budgetary outcomes. Its role underscores the monetary-fiscal nexus in determining Nigeria's macroeconomic stability.

2.1.4 Fiscal Deficit

A fiscal deficit occurs when a government's total expenditure exceeds its total revenue, requiring borrowing to cover the gap. Persistent fiscal deficits can lead to debt accumulation, inflation, and macroeconomic instability (Yakubu & Abdullahi, 2018). Nigeria has struggled with recurring fiscal deficits, primarily driven by fluctuating oil revenues, high recurrent expenditure, and weak revenue generation (Adegbite & Salami, 2015). According to BudgIT (2023), Nigeria recorded a fiscal deficit of ₦33.97 trillion between 2016 and 2022, highlighting the country's ongoing budgetary challenges. Studies suggest that improving revenue mobilization through tax reforms, reducing wasteful government spending, and implementing strict fiscal policies are essential for managing deficits effectively (Abubakar&Sadiq, 2020).

2.2 Theoretical Framework

This study is anchored on **Fiscal Sustainability Framework Theory.** This theory provides insights into the causes, consequences, and policy implications of fiscal deficits, particularly under President Muhammadu Buhari's administration from 2015 to 2023.

The justification for this theory is that the Fiscal Sustainability Framework theory provides valuable perspectives on the causes and consequences of Nigeria's fiscal deficit under Buhari's administration. The Fiscal Sustainability Framework highlights the long-term risks of persistent deficits, debt accumulation, and revenue-expenditure imbalances, emphasizing the need for policy reforms to enhance fiscal sustainability.

2.2.1 The Fiscal Sustainability Framework

The Fiscal Sustainability Framework (FSF), propounded by Olivier Blanchard (1990), is a macroeconomic theory that evaluates whether a government can maintain its current fiscal policies, such as expenditure patterns, revenue generation, and borrowing—without leading to unsustainable debt accumulation or financial instability (Blanchard et al., 2021). The framework assesses the long-term solvency of a government by analyzing its ability to meet debt obligations without excessive reliance on new borrowing or disruptive economic policies (Ostry, Ghosh, & Espinoza, 2015).

In Nigeria, fiscal sustainability has been a persistent challenge due to rising fiscal deficits, increasing public debt, and weak revenue performance**.** Under Buhari's leadership, government expenditure consistently exceeded revenue, forcing the country into a cycle of deficit financing and debt accumulation. Between 2016 and 2022, total government revenue stood at ₦26.67 trillion**,** while expenditure surged to ₦60.64 trillion, leading to a fiscal deficit of ₦33.97 trillion (BudgIT, 2023). The Fiscal Sustainability Framework helps explain the implications of this deficit-driven approach**,** highlighting concerns about Nigeria's long-term ability to sustain its debt obligations without adverse macroeconomic consequences.

One key insight from FSF is that fiscal sustainability is not just about whether a country can borrow more but whether it can service its existing debt without crowding out essential development expenditures (Ostry et al., 2015). In Nigeria, a growing proportion of government revenue is allocated to debt servicing, leaving limited resources for capital investment. The International Monetary Fund (IMF) has warned that Nigeria's debt service-to-revenue ratio—estimated at 96.3% in 2022—poses a significant risk to fiscal stability (IMF, 2023).

Furthermore, FSF emphasizes the importance of a balanced budget approach, advocating for sustainable fiscal policies that prevent over-reliance on debt financing. Nigeria's fiscal structure, which depends heavily on oil revenue, has proven to be highly volatile, making long-term fiscal planning difficult. The framework suggests that diversifying revenue sources—such as strengthening tax administration, reducing tax evasion, and broadening the tax base—can enhance fiscal sustainability (Blanchard et al., 2021).

In summary, the Fiscal Sustainability Framework provides a lens through which Nigeria's budgeting and fiscal discipline challenges can be assessed**.** It highlights the risks of prolonged fiscal deficits and emphasizes the need for efficient expenditure management, revenue diversification, and long-term fiscal planning to avoid unsustainable debt accumulation.

2.3 Empirical Review

Okoruwa and Imoke (2025) examined the impact of budget reforms and budget deficits on economic growth in Nigeria from 1981 to 2023. Utilizing the Vector Error Correction Model (VECM) to analyze time-series data, the study found that both budget deficits and budget reforms significantly impacted economic growth. The authors recommended that budget reforms should ensure linkage between government expenditure ceilings and revenues, and that increased funding should be directed to sectors like education and health to stimulate growth.

Akinro, Obiasogu, and Udeh (2024) investigated the effect of federal government's capital expenditures profiling on the economic health of Nigeria between 1981 and 2023. The study disaggregated government expenditure into administration, social and community services, economic services, and transfers, with nominal GDP as the measure of economic health. Secondary data were obtained from the Central Bank of Nigeria Statistical Bulletin, and multiple regression analysis was applied. The results indicated that government expenditure on administration, social and community services, and transfers had positive and statistically significant effects on economic growth, whereas expenditure on economic services had a negative and insignificant effect.

Eze, Odah, and Mbonu (2024) investigated how state governments' expenditures affect economic resuscitation efforts in Nigeria over a period of 40 years (from 1983 to 2023). The study utilized secondary data sourced from Central Bank of Nigeria Statistical Bulletins, focusing on state governments' recurrent and capital expenditures as independent variables, with real GDP as the dependent variable. Employing an ex-post facto research design, the data were analyzed using the Ordinary Least Squares (OLS) technique. The findings revealed that state governments' recurrent expenditures had a positive and significant effect on real GDP, while capital expenditures had a negative and insignificant effect.

Mohammed and Garba (2023) investigated the relationship between public expenditure and Nigeria's fiscal deficit from 2002 to 2022. The study applied the ARDL bounds testing approach using data from the CBN and NBS. The results showed that higher government spending led to an increased fiscal deficit, particularly in periods of revenue shortfalls. The study suggested adopting performance-based budgeting to improve expenditure efficiency and reduce fiscal deficits.

Ejinkonye, Nwankwo, and Mazeli (2023) examined the effect of fiscal policy on economic growth in Nigeria over a period of 21 years (from 2001 to 2021). The study utilized secondary data sourced from the Central Bank of Nigeria Statistical Bulletin, focusing on total recurrent expenditure (TRE), total capital expenditure (TCE), and total government revenue (TGR) as independent variables, with gross domestic product (GDP) as the dependent variable. Employing an ex-post facto research design, the data were analyzed using the Ordinary Least Squares (OLS) technique. The findings revealed that total recurrent expenditure had a positive and significant effect on GDP, while total capital expenditure had a negative and non-significant effect. Total government revenue showed a positive but non-significant effect on GDP.

Olatunji and Adebisi (2023) assessed the relationship between public expenditure and fiscal deficit in Nigeria from 2005 to 2022. The study applied the ARDL model and found that increased government expenditure was a major driver of fiscal deficits. The study suggested implementing fiscal responsibility laws to curb excessive spending and promote sustainable budgeting.

Lawal and Fashola (2022) examined the impact of public expenditure on Nigeria's fiscal deficit from 2000 to 2021. The study employed time-series data and utilized an ARDL model. The independent variable was public expenditure, while the dependent variable was the fiscal deficit-to-GDP ratio. The study found that high public spending without corresponding revenue growth led to rising fiscal deficits. The study recommended fiscal discipline and expenditure efficiency to enhance budgetary sustainability.

Okon and Essien (2022) studied the impact of recurrent expenditure on fiscal deficit in Nigeria from 2001 to 2021. The study used secondary data and applied an ARDL approach to assess the relationship between recurrent expenditure and fiscal deficit. The results revealed that recurrent expenditure had a substantial impact on the fiscal deficit, driven by increasing administrative costs and debt servicing. The study called for fiscal consolidation measures to contain rising recurrent expenditures.

Abubakar and Ibrahim (2022) examined revenue performance and fiscal deficit in Nigeria from 2005 to 2021. Using a Generalized Method of Moments (GMM) estimation technique, the study analyzed the effect of revenue performance ratio on fiscal deficit. The findings indicated that poor revenue performance led to persistent fiscal deficits, with oil revenue volatility being a major contributing factor. The study recommended broadening the tax base and improving revenue collection mechanisms.

Ifeanyi and Okeke (2022) examined revenue performance and fiscal deficit in Nigeria from 2010 to 2021. Using the Ordinary Least Squares (OLS) regression method, the study found that weak revenue performance, especially from non-oil sources, contributed significantly to Nigeria's budget deficits. The study recommended tax policy reforms and improved revenue diversification strategies.

Obasi and Nwachukwu (2021) analyzed the effect of revenue performance on fiscal deficit in Nigeria from 1995 to 2020. The study sourced data from the CBN and NBS and employed a multiple regression analysis technique. The independent variable was revenue performance ratio, while the dependent variable was the fiscal deficit-to-GDP ratio. The study found that weak revenue generation was a major driver of Nigeria's fiscal deficit, highlighting the need for tax reforms and improved revenue mobilization strategies.iii
Osho and Adebayo (2021) investigated the effect of public expenditure on Nigeria's fiscal deficit from 2000 to 2020. The study employed an ex-post facto research design and used an ARDL model for analysis. The independent variable was total public expenditure, while the dependent variable was the fiscal deficit-to-GDP ratio. The study found that excessive government spending, especially on non-productive sectors, led to a widening fiscal deficit. The study recommended stricter budgetary discipline and expenditure prioritization.
-sustaining capital projects.
Despite the wealth of literature on Nigeria's fiscal deficit and public finance management, several gaps remain unaddressed. These gaps highlight the need for further research to enhance understanding and policy formulation

regarding budgeting and fiscal discipline in Nigeria under President Muhammadu Buhari's administration (2015–2023).
Many empirical studies on Nigeria's fiscal deficit rely on data from the 1980s to early 2010s (Usman&Bala, 2016; Adegbite & Salami, 2015), with limited research focusing explicitly on the fiscal deficit trends under President Buhari's leadership (2015–2023). Given the unprecedented economic challenges during this period—including the COVID-19 pandemic, global oil price shocks, rising inflation, and external debt surges—it is essential to update fiscal deficit studies to reflect these realities. The absence of contemporary research covering Buhari's administration leaves an important gap in understanding how recent fiscal policies have impacted Nigeria's economic stability.

Existing studies on Nigeria's fiscal deficit tend to focus on total government expenditure or public debt as key determinants (Ejinkonye, Nwankwo & Mazeli, 2023). However, limited research has examined the combined effect of capital expenditure and broad money supply,. While some studies have individually analyzed these variables (Bassey&Udoh, 2020; Ifeanyi&Okeke, 2022), none have integrated them into a single analytical framework to assess their collective influence on fiscal deficit dynamics. This study aims to bridge this variable gap by adopting a holistic approach to investigating the determinants of Nigeria's fiscal deficit.

Much of the existing literature on Nigeria's fiscal deficit is framed within Keynesian and Neoclassical economic theories, which emphasize the trade-offs between deficit spending and long-term debt sustainability (Yakubu & Abdullahi, 2018). However, more recent theoretical frameworks, such as the Fiscal Sustainability Framework (FSF) and Behavioral Public Finance (BPF) Theory, which incorporate institutional inefficiencies, governance constraints, and behavioral biases, have not been widely applied to Nigeria's case. Understanding how these modern theories apply to Nigeria's fiscal deficit will provide new perspectives on budget implementation, government borrowing behavior, and fiscal discipline.

Although Nigeria has adopted several fiscal reforms, including the Fiscal Responsibility Act (FRA) and the Medium-Term Expenditure Framework (MTEF), there is little empirical evidence on their effectiveness in controlling fiscal deficits. The impact of these policies on budget credibility, revenue generation, and expenditure control remains inadequately studied. Furthermore, the extent to which budgetary discipline has improved or deteriorated under Buhari's administration has not been extensively analyzed. Bridging this policy gap will provide valuable recommendations for future fiscal planning. The study therefore seek to close these gaps by offering new insights into the determinants of Nigeria's fiscal deficit and provide evidence-based recommendations for enhancing fiscal sustainability, improving budget credibility, and strengthening revenue generation mechanisms.

3.0 Methodology

The present study adopted an ex-post-facto research design in order to investigate the effect of budgeting on fiscal discipline in Nigeria from 2015-2023. This research design is often deployed in a study that determines the association between variables and seeks to find out the factors that are associated with certain occurrence, conditions, events or behaviour by analyzing past events or already existing data for possible casual factors. Ex-post facto research design was therefore chosen for the conduct of the study because the events under study already took place in the past.

The population of this study consists of all financial and economic data related to Nigeria's budgeting and fiscal discipline between 2015 and 2023. This includes government budget reports, fiscal policy documents, economic performance indicators, and relevant publications from institutions such as the Central Bank of Nigeria (CBN), the National Bureau of Statistics (NBS), and the Federal Ministry of Finance.
The sample size for this study was determined based on the availability of reliable economic data and relevant fiscal reports within the 2015–2023 periods. Specifically, the study focused on annual budgetary data, revenue performance figures, expenditure breakdowns, and fiscal deficit trends reported by government agencies and independent financial research bodies. Statistical sampling methods, such as purposive sampling, was be employed to ensure that only relevant data sources are included for analysis.

3.4 Method of data collection

The secondary data used for the study were collected from the Central Bank of Nigerian Statistical Bulletin. The variables on which data are collected include: capital expenditure, recurrent expenditure, broad money supply

(M_2), revenue performance ratio and fiscal deficit. The period covered the times Nigerian borrowing level witnessed tremendous increment and robust activities in the budget deficit financing.
The study employed both descriptive and inferential statistical techniques to analyse the dataset under study. The summary statistics was computed such as the mean, median, standard deviation, minimum, maximum values, Skewness-Kurtosis statistics, etc. The correlation matrix was also constructed to identify nature of association between the variables.

Lastly, Pooled OLS regression was used to validate the hypotheses. Other preliminary diagnoses test was also be carried out such as Variance inflation factor (VIF) to test for multicollinearity test, shapiro wilk normality test, heteroskedasticity test (Woodridge, 2003). These tests helped to determine the most appropriate model to employ. The goodness of fit of the model will be tested using the coefficient of determination (R-squared) and analysis was done via STATA statistical software.
Based on the theoretical literature and earlier empirical studies, the present study adapted the model of Gholami, Sands, and Rahman (2022) to express the econometric form of the model expressed as:

$$FD_{gdpt} = \beta_0 + \beta_1 CE_t + \beta_2 M_{2t} + \beta_3 INF_t + \beta_4 EXCH_t + + + \varepsilon_t \ldots\ldots\ldots\ldots \quad (1)$$

The apriori expectation based on the literature reviewed and related theories is stated as follows; $\beta_1 X_{1it}$, $\beta_2 X_{2it}$, $\beta_3 X_{3it} < 0$; $\beta_4 X_{4it}$, $\beta_t > 0$. The basis for this expectation flows from the outcome of the literature review and empirical findings.

Where:

t	=	year
$ß_{1-3}$	=	parameter estimates of the predictors are zero
$ß_0$	=	the constant value of FD_{GDP} when parameter estimates of the predictors are zero

3.5.2 Measurement of Variables

Table 3.1Description of Operational Variables

Label	Proxy	Type of Variable	Measurement	Source
CE	Capital expenditure	Independent	Measured as total government spending on long-term assets (infrastructure, education, healthcare, etc.) as a percentage of GDP.	Akinro, Obiasogu & Udeh (2024)
M_2	Broad money supply	Independent	Measured as the total money supply (M2) as a percentage of GDP	Onyele and Nwadike (2021)
FD_{gdp}	Fiscal deficit to GDP ratio	Dependent	Measured as (Budget Deficit / GDP) × 100	BudgIT (2023)
INF	Inflation	Control	Measured as the inflation rate for Nigeria within the period under study	Jilenga, Xu, and Gondje-Dacka (2016)
EXCH	Exchange rate	Control	Measured as the exchange rate for Nigeria within the period under study	Jilenga, Xu, and Gondje-Dacka (2016)

Source: Researcher's Concept, (20

4.0 Data Analysis

The study was set to carry out a general examination on budgeting and fiscal deficit in Nigeria from 2015-2023.Table 4.1 shows the "descriptive statistics" where it described the nature of the variables used. It also displays the number of occurrences of each measure and the description of their mean, standard deviation (StdDv), maximum (Max), and minimum (Min) values. The full dataset is captured in Appendix1.

Table 4.1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
fiscaldefi~t	9	-.0350523	.0111299	-.052774	-.0163676
capexp	9	.0126609	.0039757	.006372	.019137
logmoneysu~y	9	4.535648	.1494278	4.319845	4.802859
exchangerate	9	378	116.1906	198	633

Source: SATA 14.2/Author (2025)

Table 4.1 presents the descriptive statistics for the variables used in the study covering the period 2015 to 2023. The fiscal deficit to GDP ratio has an average value of -3.5%, indicating that Nigeria consistently operated a budget deficit during the study period. The minimum and maximum values range from -5.28% to -1.64%, suggesting some variability in the size of the deficit across the years.

The mean value of capital expenditure is 1.27% of GDP, with a standard deviation of 0.40%, showing that capital spending was relatively low and remained fairly stable over the years. The log of broad money supply has a mean value of 4.54, with slight variations as shown by a standard deviation of 0.15, indicating a steady growth in the money supply within the Nigerian economy during the period under review.

Finally, the exchange rate averaged ₦378 to 1 USD, with a wide range from ₦198 to ₦633, and a high standard deviation of ₦116.19, indicating considerable volatility in the Nigerian foreign exchange market during the period under study.

4.2.2 Regression Analysis

Specifically, to assess the cause-effect links between the variables, the study used an ordinary least square regression analysis. To control the adverse effect of outliers in our analysis, the study has transformed all variables which have wider scale to their natural logarithmic value. The regression outcomeis summarized and discussed in Table 4.4.

Table 4.2: OLS Regression result

Source	SS	df	MS	Number of obs =	9
Model	.000984072	5	.000196814	F(5, 3) =	85.28
Residual	6.9238e-06	3	2.3079e-06	Prob> F =	0.0020
Total	.000990996	8	.000123875	R-squared =	0.9930
				Adj R-squared =	0.9814
				Root MSE =	.00152

fiscaldeficit	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
capexp	1.063542	.3891783	2.73	0.072	-.1749965	2.302081
logmoneysup~y	-.1041945	.029876	-3.49	0.040	-.1992732	-.0091157
exchangerate	.0000146	.0000107	1.36	0.267	-.0000195	.0000487
_cons	.4150823	.1133611	3.66	0.035	.0543168	.7758478

Source: SATA 14.2/Author (2025)

An ordinary least square regression was conducted to examine the effect of capital expenditure, broad money supply (log-transformed), and exchange rate on Nigeria's fiscal deficit to GDP ratio from 2015 to 2023.The regression model is statistically significant, with an F-statistic of 85.28 and a p-value of 0.0020, indicating that the model provides a good fit for the data. The R-squared value is 0.9930, suggesting that approximately 99.3% of the variation in fiscal deficit is jointly explained by the independent variables in the model. The adjusted R-squared of 0.9814 confirms a high level of explanatory power even after adjusting for the number of predictors.

The model's intercept (_cons) is 0.4151, significant at the 5% level (p = 0.035), which can be interpreted as the expected fiscal deficit value when all predictors are held at zero — though in practical economic terms, this value has limited interpretive use.

Table 4.6: Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance	**chi2(1)**	**Prob> chi2**
Variables: fitted values	0.02	8978

Source: SATA 14.2/Author (2025)

The Breusch-Pagan/Cook-Weisberg test for heteroskedasticity was conducted to determine whether the error variance in the regression model is constant, which is a key assumption for Ordinary Least Squares (OLS) regression. The null hypothesis of this test is that the variance of the residuals is constant (homoskedasticity), while the alternative hypothesis suggests that heteroskedasticity is present.

The test produced a chi-squared value of 0.02 with a p-value of 0.8978. Since the p-value is greater than 0.05, we fail to reject the null hypothesis. This indicates that there is no evidence of heteroskedasticity in the model, and the assumption of constant variance in the error terms holds.

4.4 Hypotheses testing

Following the above result from the OLS regression, a detailed examination of each independent variable is provided below.

4.4.1 Hypothesis one

H_1: There is a significant effect of capital expenditure on fiscal deficit to GDP ratio in Nigeria from 2015-2023

From the OLS regression, the capital expenditure has a positive coefficient, suggesting that increases in government investment in infrastructure and other capital projects are associated with a higher fiscal deficit(Coefficient = 1.0635, p = 0.072). Based on this result, we fail to reject the null hypothesis and conclude that there is a significant effect of capital expenditure on fiscal deficit to GDP ratio in Nigeria from 2015-2023. Although the relationship is not statistically significant at the 5% level, it is marginally significant, implying a potential effect that cannot be entirely ignored.

This result implies that while capital spending is often intended to drive long-term growth, it may contribute to fiscal strain in the short term if not matched by adequate revenue generation. Policymakers should consider the timing, scale, and funding sources of capital projects to ensure that developmental objectives do not worsen fiscal imbalances. It also underscores the need for efficiency and prioritization in capital budgeting.

4.4.2 Hypothesis two

H_2: Broad money supply have significant effect on fiscal deficit to GDP ratio in Nigeria from 2015-2023.

This variable is statistically significant at the 5% level, with a negative coefficient, indicating that an increase in broad money supply is associated with a reduction in the fiscal deficit(Coefficient = -0.1042, p = 0.040). In line with the result of our analysis, we reject the null hypothesis and conclude that broad money supply have significant effect on fiscal deficit to GDP ratio in Nigeria from 2015-2023. This aligns with economic theory suggesting that monetary expansion can indirectly support fiscal stability.

The result implies that monetary policy may play a complementary role in fiscal management. By increasing the money supply, the government can stimulate economic activity, potentially expanding the tax base and increasing revenue collection. Additionally, monetary expansion can reduce the cost of borrowing domestically. However, such a strategy must be managed carefully to avoid inflationary pressures and currency depreciation. This finding supports the integration of coordinated monetary-fiscal policy frameworks in Nigeria.

4.3 Discussion of findings

The results of the study provide critical examination on budgeting and fiscal deficit in Nigeria from 2015-2023.The empirical result reveals that capital expenditure has a positive but statistically insignificant effect on the fiscal deficit to GDP ratio. This suggests that while increased capital expenditure may contribute to widening fiscal deficits, likely due to upfront infrastructural costs and borrowing, this effect is not strong enough to be deemed statistically reliable within the study period. This aligns with the findings of Eze et al. (2024) and Ejinkonye et al. (2023) who also reported a non-significant effect of capital expenditure on economic outcomes, implying limited fiscal impact unless capital projects yield efficient long-term returns. Similarly, Ajibola and Adeyemi (2019) and Usman and Lawal (2019) found that capital expenditure worsened fiscal deficits due to inefficiencies and poor project implementation. However, some contrary findings, such as those of Afolabi and Ogundipe (2019) and Nwosu and Okeke (2021), highlighted a significant positive effect, often attributed to projects financed through unsustainable borrowing. The current study corroborates the argument that unless capital expenditure is well-targeted and revenue-generating, its expansion may not significantly affect fiscal

consolidation. This implied that there is a need for improved efficiency in capital project execution and prioritization of self-sustaining infrastructure to ensure fiscal sustainability.

The results show that broad money supply has a negative and statistically significant effect on the fiscal deficit to GDP ratio. This indicates that an increase in money supply is associated with a reduction in fiscal deficits, possibly due to increased liquidity facilitating economic activity, tax revenues, or debt servicing at lower interest rates.

This finding contrasts with several studies including Adewale and Fatai (2021), Bello and Ibrahim (2019), and Ogunlana and Yusuf (2020), who reported that an expansion in money supply exacerbated fiscal deficits through inflationary pressures and increased government borrowing. However, it aligns with the theoretical position that controlled monetary expansion can improve fiscal space by stimulating revenue generation and lowering borrowing costs. The outcome suggests that monetary authorities may have coordinated expansionary policies with fiscal measures more effectively in recent years, helping to stabilize the fiscal deficit. This finding underscores the importance of monetary-fiscal coordination. Carefully managed money supply growth can support fiscal consolidation, especially in periods of economic slowdown or revenue shortfalls.

5.0 Conclusion and Recommendation

5.1 conclusions

This study examined the impact of key macroeconomic variables capital expenditure and money supply on Nigeria's fiscal deficit between 2015 and 2023. The findings reveal that only broad money supply had a statistically significant effect, with increases associated with reduced fiscal deficits. Capital expenditure showed no significant impact, although its coefficients suggest varying directional relationships.

These results highlight the need for efficient public spending and improved revenue mobilization strategies. More importantly, the significance of money supply underscores the importance of coordinated fiscal and monetary policies in managing Nigeria's fiscal health.

To achieve a sustainable fiscal balance, policymakers must prioritize quality investments, strengthen expenditure controls, and deepen monetary–fiscal synergy. Future studies may expand the model by including institutional variables and longer timeframes to capture broader structural influences on fiscal deficits in Nigeria.

5.2 Recommendations

The findings of the study provide a basis for specific recommendations to enhance the choice and decisions of stakeholders. Here are five targeted recommendations based on the findings of the study:

i. **Reassess Capital Expenditure Effectiveness:** Although capital expenditure showed a positive relationship with fiscal deficit, its effect was statistically insignificant. This suggests the need for the Nigerian government to reassess how capital projects are selected, executed, and monitored. Emphasis should be placed on value-for-money audits and investment in infrastructure that directly enhances productivity and revenue generation.

ii. **Leverage Broad Money Supply to Improve Fiscal Health:** The study found that broad money supply has a significant negative effect on the fiscal deficit. This indicates that controlled monetary expansion, when aligned with fiscal planning, can support fiscal consolidation. The Central Bank of Nigeria (CBN) and the Ministry of Finance should coordinate policies to ensure money supply is directed towards sectors that boost economic output and revenue without fueling inflation..

5.3 Contribution to knowledge

This study contributes significantly to the body of knowledge on public finance and fiscal policy in Nigeria by empirically examining the determinants of fiscal deficit using data from 2015 to 2023. It provides fresh insights into the limited role of capital and recurrent expenditures in influencing fiscal discipline, challenging conventional assumptions about government spending. More importantly, the study identifies broad money supply as a statistically significant factor in fiscal deficit reduction, highlighting the importance of coordinated monetary and fiscal policy in addressing budgetary imbalances. This research thus serves as a valuable reference for scholars, policymakers, and institutions committed to sustainable fiscal management.

5.4 Limitations of the study

Short Time Frame of Analysis

The study covers a relatively short period of nine (9) years (2015–2023), which may not be sufficient to capture long-term fiscal trends and structural changes in Nigeria's economy. This limited timeframe may affect the generalizability of the findings.

Small Sample Size

Due to the annual nature of the data, the study relies on only nine observations. A small sample size can reduce the robustness and statistical reliability of the regression results, potentially affecting the accuracy of inferences drawn.

Reliance on Secondary Data

The study depends entirely on secondary data sourced from institutions such as the Central Bank of Nigeria (CBN). Any inaccuracies, inconsistencies, or revisions in these data sources may influence the study's results.

Limited Variables in the Model

Although the study focuses on capital expenditure and broad money supply, other important determinants of fiscal deficit such as political factors, corruption, tax compliance, and institutional quality were not included. This may lead to omitted variable bias.

Methodological Constraints (OLS Technique)

The use of Ordinary Least Squares (OLS) regression assumes linear relationships and may not adequately capture complex dynamics such as structural breaks, nonlinearities, or policy shocks that characterize Nigeria's fiscal environment.

Ex-Post Facto Research Design

The ex-post facto design limits the study to analyzing historical data without the ability to control variables or establish strong causal relationships. As a result, findings are largely associative rather than strictly causal.

Focus on a Single Administration

The study is restricted to the period of President Muhammadu Buhari's administration (2015–2023). While this provides specific insights, it limits the ability to compare fiscal performance across different administrations or policy regimes.

Macroeconomic Shocks Not Fully Captured

Events such as the COVID-19 pandemic, global oil price fluctuations, and geopolitical tensions (e.g., Russia-Ukraine war) may have significantly influenced fiscal outcomes, but their specific impacts were not explicitly modeled.

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