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Budget Deficits, Structural Reforms, and Economic Growth in Nigeria: An ARDL Approach

Agu, Sunday Virtus
Department of Economics,
Enugu State University of Science and Technology, Agbani Enugu
Correspondence: sunday.agu@esut.edu.ng

Abstract
The relationship between budget deficits and economic growth remains one of the most debated issues in macroeconomic policy, especially in developing economies characterized by fiscal imbalances and structural challenges. This study examines the impact of budget deficits on economic growth in Nigeria from 1981–2023, with emphasis on structural reforms and macroeconomic stability. The series were obtained from the Central Bank of Nigeria Statistical Bulletins. The study employs the Autoregressive Distributed Lag (ARDL) framework to estimate both short-run and long-run dynamics using annual time-series data obtained from the Central Bank of Nigeria Statistical Bulletin. Preliminary analyses included descriptive statistics, correlation analysis, Augmented Dickey–Fuller (ADF) unit root test, and ARDL bounds cointegration test. Findings reveal that in the short run, budget deficit exerts a positive but statistically insignificant effect on economic growth, indicating that deficit financing did not significantly stimulate output growth during the study period. Inflation and government expenditure exhibit negative and insignificant effects on growth, while exchange rate depreciation negatively affects growth after lag periods. Interest rate shows mixed short-run effects, whereas the Structural Adjustment Programme (SAP) positively influences growth after adjustment periods. In the long run, budget deficit remains positive but statistically insignificant, suggesting that deficit financing alone is insufficient to sustain economic growth in Nigeria. Exchange rate positively and significantly influences growth, while interest rate exerts a significant negative effect. Government expenditure and SAP record negative but insignificant long-run effects. The study concludes that the effectiveness of budget deficits in promoting growth depends largely on expenditure efficiency, fiscal discipline, macroeconomic stability, and effective implementation of structural reforms. The study recommends that deficit financing should be directed toward productive sectors capable of generating sustainable economic returns in Nigeria.

Keywords: Budget Deficit, Economic Growth, Fiscal Policy, Structural Reforms, ARDL Model
JEL Classification Codes: H62, O40, E62, C22, O55

Introduction
Budgetary challenges in developing economies differ considerably from those experienced in advanced economies. While developed countries often prioritize technological innovation and welfare expansion, developing economies focus mainly on infrastructure development, industrialization, employment generation, and economic transformation. These economies are commonly characterized by weak institutions, narrow tax bases, low income levels, and underdeveloped financial systems. Consequently, governments frequently rely on deficit financing to supplement inadequate domestic revenue and stimulate economic activities (Abubakar, 2021). In many developing countries, including Nigeria, fiscal deficits have therefore become a persistent feature of macroeconomic management.

The role of budget deficits in economic growth remains one of the most debated issues in macroeconomic theory and policy. The Keynesian framework argues that deficit financing can stimulate aggregate demand, promote capital formation, and increase employment, especially during periods of economic slowdown. Public expenditure on infrastructure, health, education, transport, and communication is expected to enhance productivity and

accelerate economic growth (Hussain and Haque, 2017). Agu, Onwuka and Aruomah (2019) further maintain that capital expenditure on development projects can stimulate structural transformation when efficiently managed. Conversely, classical and monetarist economists argue that persistent fiscal deficits crowd out private investment, fuel inflationary pressures, increase debt burdens, and weaken macroeconomic stability. In economies characterized by institutional inefficiencies and weak fiscal discipline, deficit financing may produce limited developmental gains while worsening fiscal vulnerability.

Nigeria presents an important case for examining the relationship between budget deficits and economic growth due to its prolonged fiscal imbalances and dependence on oil revenue. Budget deficits increased from ₦3.9 billion in 1981 to approximately ₦7.1 trillion in 2021 (Umezurike, and Ariwa 2024). Although Nigeria experienced substantial increases in gross domestic product (GDP) over the years, the country continues to face persistent poverty, unemployment, infrastructural deficits, insecurity, and weak industrial productivity. These outcomes have intensified concerns regarding whether deficit financing has translated into productive investments capable of supporting sustainable economic growth. Critics argue that excessive borrowing and weak fiscal management have contributed to inflationary pressures, rising public debt, and macroeconomic instability (Ibikunle and Atukson, 2022). Amade and Oyigebe (2024) further contend that many borrowed funds were not efficiently utilized for productive investments necessary for long-run development.

Empirical evidence on the impact of budget deficits on economic growth in Nigeria remains inconclusive. Some studies report positive effects of deficit financing on economic growth, particularly when deficits are directed toward productive sectors and maintained within sustainable thresholds. Umaru, Aliero, and Abubakar (2021) find that moderate deficits positively influence output growth, while Amade and Oyigebe (2024) report that deficit spending promotes growth when allocated toward infrastructure and productivity-enhancing investments. Conversely, Mohammed and Ogba (2021) identify a negative and insignificant effect of deficits on growth due to weak fiscal management, while Eche et al. (2022) report that increases in government deficits depress GDP growth. These conflicting findings suggest that the impact of budget deficits depends largely on financing structure, macroeconomic conditions, institutional effectiveness, and expenditure composition.

Despite the growing literature, an important limitation of many previous Nigerian studies is the failure to adequately account for structural economic reforms that may alter the relationship between budget deficits and economic growth. Nigeria has experienced several major economic reforms over the years, including the Structural Adjustment Programme (SAP), banking sector reforms, fiscal consolidation measures, debt restructuring initiatives, exchange rate deregulation, and post-2010 public financial management reforms. These reforms significantly changed the structure of the Nigerian economy, fiscal operations, and macroeconomic environment. Ignoring such structural changes may lead to biased estimates and misleading policy conclusions regarding the effectiveness of deficit financing. Consequently, one major novelty of the present study is the incorporation of structural economic reform dynamics into the analysis of the budget deficit-growth relationship in Nigeria.

The justification for this study is therefore multifaceted. First, persistent fiscal deficits and rising public debt continue to generate serious policy concerns regarding fiscal sustainability and economic stability in Nigeria. Second, existing empirical studies on the budget deficit-growth nexus provide mixed and contradictory findings due to differences in methodology,

model specification, time coverage, and failure to account for structural reforms. Third, many earlier studies do not sufficiently capture recent fiscal developments, debt accumulation patterns, and evolving macroeconomic realities within the Nigerian economy. Fourth, incorporating structural economic reforms into the analysis provides a more comprehensive understanding of how policy shifts influence the effectiveness of deficit financing on economic growth. Finally, the study employs updated time-series data covering 1981–2023 and adopts robust econometric techniques capable of estimating both short-run and long-run relationships. The findings are expected to provide evidence-based insights for effective fiscal policy formulation, sustainable debt management, and efficient allocation of public expenditure toward productive sectors capable of promoting inclusive and resilient economic growth in Nigeria.

Literature Review

Budget deficit and economic growth remain closely connected issues in macroeconomic policy discussions, particularly in developing economies where governments often rely on fiscal intervention to stimulate productive activities and address structural constraints. A budget deficit occurs when government expenditure exceeds government revenue within a fiscal period, thereby requiring borrowing or other financing mechanisms to bridge the fiscal gap. Economic growth, on the other hand, refers to the sustained increase in a country's productive capacity, commonly measured through growth in real Gross Domestic Product (GDP). In developing countries such as Nigeria, budget deficits are frequently justified on the grounds that public spending can support infrastructure development, employment generation, industrialization, and broader economic transformation.

The relationship between budget deficits and economic growth is theoretically ambiguous. On one hand, deficit financing may stimulate aggregate demand, increase public investment, and accelerate economic activities when resources are underutilized. Government spending on infrastructure, education, health, and other productive sectors may enhance productivity and crowd in private investment. On the other hand, persistent fiscal deficits may contribute to inflationary pressures, rising public debt, exchange rate instability, and crowding out of private investment, especially when borrowed funds are inefficiently utilized. Consequently, whether budget deficits promote or hinder growth depends largely on the structure of the economy, the composition of expenditure, financing sources, institutional effectiveness, and the prevailing macroeconomic environment.

The theoretical foundation of this study is anchored primarily on the Keynesian theory of budget deficit and the Endogenous Growth Theory. The Keynesian framework, developed by John Maynard Keynes (1936), argues that government deficit spending can stimulate aggregate demand, increase employment, and restore economic activities during periods of economic slowdown. The theory emphasizes the expansionary role of fiscal policy and supports government borrowing when such borrowing is directed toward productive investment capable of generating multiplier effects within the economy. This perspective is particularly relevant in developing economies where infrastructure gaps, unemployment, and low private investment constrain growth.

The Endogenous Growth Theory, associated with Romer (1986) and Lucas (1988), further provides a useful framework for understanding the long-run implications of deficit financing on growth. Unlike the neoclassical growth framework, endogenous growth models emphasize that investment in infrastructure, human capital, innovation, and institutional development can generate sustained increases in productivity and long-run economic growth. The theory suggests that fiscal deficits may positively influence growth if borrowed resources are

allocated toward productive sectors capable of enhancing the economy's productive capacity. However, where deficits finance recurrent expenditure, inefficiencies, or unproductive consumption, the growth effects may be weak or even negative.

Empirical Literature Review

Empirical studies on the relationship between budget deficits and economic growth in Nigeria have produced mixed and often conflicting findings. Existing studies differ in terms of objectives, estimation techniques, model specifications, and conclusions regarding the effectiveness of deficit financing in promoting economic growth.

Umaru, Aliero, and Abubakar (2021) investigated the impact of budget deficits on economic growth in Nigeria with emphasis on identifying possible threshold effects in the deficit-growth relationship. The study employed the Autoregressive Distributed Lag (ARDL) model alongside the Threshold Autoregressive (TAR) technique for the analysis. The findings revealed that moderate budget deficits positively influence economic growth when deficits remain below a threshold level of 2.02% of GDP. The study therefore concluded that moderate and sustainable fiscal deficits can stimulate growth in Nigeria.

Similarly, Amade and Oyigebe (2024) examined the effect of budget deficits on economic growth in Nigeria over the period 1983–2023. The study utilized the ARDL estimation technique to analyze both short-run and long-run relationships among the variables. The findings showed that deficit spending significantly promotes economic growth, particularly when fiscal resources are directed toward infrastructure and productivity-enhancing investments. The study recommended improved fiscal transparency and efficient allocation of deficit-financed expenditure.

Fredrick, Otum, and Onyekachi (2016) investigated the relationship between budget deficits and economic growth in Nigeria using time series data covering 1970–2011. The study adopted the Ordinary Least Squares (OLS) regression technique for the analysis. The findings revealed a positive relationship between budget deficits and economic growth, thereby supporting the Keynesian proposition that deficit spending can stimulate aggregate demand and productive activities within the economy.

Other empirical studies, however, report adverse effects of fiscal deficits on economic growth. Mohammed and Ogba (2021) examined the effect of budget deficits on economic growth in Nigeria using annual data from 1985–2020. The study employed the Augmented Dickey-Fuller (ADF) unit root test, ARDL cointegration approach, and Granger causality analysis. The findings revealed that budget deficits exert a negative and statistically insignificant effect on economic growth due to weak fiscal management and inefficient utilization of public resources.

Similarly, Eche et al. (2022) investigated the long-run effect of fiscal deficit financing on economic growth in Nigeria using the ARDL framework. The study found that increases in government deficit financing significantly depress GDP growth in Nigeria. The findings further showed that persistent fiscal deficits contribute negatively to macroeconomic performance, thereby emphasizing the importance of fiscal discipline and sustainable borrowing practices.

Jakpa and Osho-Itsueli (2020) examined the impact of deficit financing on Nigeria's macroeconomic performance over the period 1990–2019. The study adopted the ARDL estimation technique to analyze both short-run and long-run dynamics. The findings revealed

that fiscal deficits and inflation negatively and significantly influence macroeconomic performance in both the short and long run. The study concluded that persistent fiscal imbalances weaken economic stability over time.

Some studies have also emphasized the importance of threshold effects, financing composition, and asymmetry in the deficit-growth relationship. Aero and Ogundipe (2018) investigated the impact of fiscal deficits on economic growth in Nigeria with particular emphasis on identifying sustainable fiscal thresholds. The study employed the Threshold Autoregressive (TAR) model for the analysis. The findings identified a fiscal deficit threshold of 5% of GDP, beyond which deficits become detrimental to economic growth. The study concluded that moderate fiscal deficits may stimulate growth when maintained within sustainable limits.

Usman, Agunbiade, and Akuso (2024) examined the impact of public budget deficit financing on economic growth in Nigeria using data spanning 1986–2021. The study employed the Nonlinear Autoregressive Distributed Lag (NARDL) model to account for asymmetry in the relationship. The findings revealed that different sources of deficit financing exert asymmetric effects on economic growth, implying that positive and negative changes in fiscal variables affect economic growth differently. The study further showed that external financing channels tend to produce less favorable growth outcomes compared to domestic financing sources.

Similarly, Uremadu, Umezurike, and Onyele (2024) investigated the effects of different sources of budget deficit financing on Nigeria's economic performance using annual data from 1981–2021. The study employed the Ordinary Least Squares (OLS) regression technique and the ARDL framework for the analysis. The findings revealed that non-bank public financing and banking system financing positively and significantly affect economic growth, whereas external deficit financing negatively influences economic performance. The study concluded that the composition and structure of deficit financing play critical roles in determining macroeconomic outcomes in Nigeria.

Despite the growing body of literature, several important gaps remain unresolved. First, many previous studies do not adequately capture recent fiscal developments in Nigeria, particularly post-COVID-19 fiscal shocks, rising debt accumulation, and evolving macroeconomic conditions. Second, limited attention has been paid to the interaction between budget deficits and key macroeconomic variables such as inflation, exchange rate volatility, and interest rates, despite their importance in shaping fiscal outcomes and economic performance. Third, while some studies have incorporated threshold and nonlinear analyses, very few studies have explicitly considered the role of structural economic reforms in influencing the relationship between budget deficits and economic growth in Nigeria.

This omission is particularly important because Nigeria has experienced major structural reforms over the years, including the Structural Adjustment Programme (SAP), exchange rate deregulation, banking sector reforms, debt restructuring initiatives, and fiscal consolidation policies. Among these reforms, the Structural Adjustment Programme introduced in 1986 marked a major turning point in Nigeria's fiscal and macroeconomic framework by promoting market liberalization, exchange rate adjustments, privatization, and reduced government intervention. These reforms significantly altered fiscal operations, borrowing patterns, and macroeconomic dynamics within the economy. Consequently, ignoring such

structural reforms may produce incomplete or biased conclusions regarding the effectiveness of deficit financing on economic growth.

The present study therefore contributes to the literature by incorporating structural reform dynamics, particularly the Structural Adjustment Programme (SAP), into the analysis of the budget deficit-growth relationship in Nigeria. This represents a major novelty of the study. In addition, the study extends the empirical analysis to 2023 in order to capture recent fiscal developments and post-pandemic policy responses. The study also integrates important macroeconomic transmission variables such as inflation, interest rate, and exchange rate volatility within a unified empirical framework. By combining updated data, structural reform considerations, and robust econometric techniques, the study seeks to provide a more comprehensive and policy-relevant understanding of the relationship between budget deficits and economic growth in Nigeria.

Methodology

Ex-post facto research design was adopted for the study. Time series data for the period 1981-2023 were obtained from the Central Bank of Nigeria statistical bulletin various years. The econometric technique of Autoregressive distributed lagged model (ARDL) was used for estimation of the model parameters. Preliminary investigation of the data began with the summary of the descriptive statistics of the time series data to check for normal distribution in the series. This was followed by the correlation analysis of the different series in the study in order to avoid multicollinearity problems. The test for stationarity of the data was conducted using the augmented Dickey-Fuller (1979) unit root test. The essence is to make sure that all the variables are mean reverting, that is, they have constant mean, constant variance and constant covariance. In other words, that they are stationary. The Augmented Dickey-Fuller (ADF) test would be used for this analysis since it adjusts for serial correlation. The model is specified as follows:

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \qquad 3.1$$

The null hypothesis of no stationarity is rejected if the probability of the ADF t-statistic falls below 0.05, otherwise. If otherwise, the series is non stationary.

The study employs the Autoregressive Distributed Lag (ARDL) bounds testing approach to examine the short-run and long-run relationship between budget deficit and economic growth in Nigeria. The ARDL bounds cointegration test is first conducted to determine the existence of a long-run equilibrium relationship among the variables. Cointegration is confirmed when the computed F-statistic exceeds the upper bound critical value. The ARDL technique is preferred because it accommodates variables integrated of order I(0) and I(1), supports small sample estimation, and effectively captures dynamic relationships through appropriate lag structures (Charemza and Deadman, 1992; Laurenceson and Chai, 2003). The approach also allows for the derivation of an Error Correction Model (ECM), which combines short-run dynamics with long-run equilibrium adjustments (Banerjee et al., 1993). Once cointegration is established, both the short-run and long-run ARDL models are estimated accordingly. The short-run and long-run formulations of the ARDL model are re-specified as follows:

$$\Delta RGDP = \propto_0 + \propto_{1i} \sum_{i=1}^{P} \Delta RGDP_{t-1} + \propto_{2i} \sum_{i=0}^{q} \Delta BDF_{t-i} + \propto_{3i} \sum_{i=0}^{q} \Delta INF_{t-1} + \propto_{4i} \sum_{i=0}^{q} \Delta EXR_{t-i} + \propto_{5i} \sum_{i=0}^{q} \Delta INT_{t-i} + \propto_{6i} \sum_{i=0}^{q} \Delta GEXP_{t-i} + \propto_{7i} \sum_{i=0}^{q} \Delta SAP_{t-i} + \delta_1 BDF_{t-1} + \delta_2 INF_{t-1} + \delta_3 EXR_{t-1} + \delta_4 INT_{t-1} + \delta_5 GEXP_{t-1} + \delta_6 SAP_{t-1} + \varphi ECM + \mu_t \quad (3.2)$$

Where: $\propto_i$= short regression coefficients and i= 0, 1,…,n; β = long run regression coefficients; φ = error correction coefficient (speed of adjustment from the short run to the long run equilibrium after a shock)

In conducting ECM, the expected sign of the result should be negative and the value lies between 0 and 1. A positive ECM implies a model misspecification or an indication of structural changes and will not give us the rate of these change in the dependent and independent variables.

Post-estimation diagnostic tests are conducted to ensure the reliability and stability of the estimated model. The Jarque–Bera test is employed to examine the normality of the residuals, while the Durbin–Watson statistic is used to detect the presence of autocorrelation. The Breusch–Pagan–Godfrey test is further applied to assess heteroscedasticity in the error term. In addition, model stability is evaluated using the CUSUM tests. The model is considered stable when the plots remain within the 5% critical bounds. The null hypotheses of normality, homoscedasticity, and stability are accepted when the probability values exceed the 5% significance level. These diagnostic procedures help ensure the robustness and validity of the estimated ARDL model.

Results and Discussions

The descriptive statistics reveal substantial variability and non-normality among the variables. The result of summary of descriptive statistics is presented in Table 1:

Table 1: Result of descriptive statistics

	RGDP	BDF	INF	EXR	INT	GEXP
Mean	39475.67	-1160.425	19.32665	128.0539	13.32558	3000.997
Median	30745.19	-114.2765	13.67347	118.5669	13.50000	1018.178
Maximum	76684.94	1697.046	76.75887	645.1941	26.00000	18773.77
Minimum	16048.31	-6404.785	0.223606	0.610025	6.000000	9.637000
Std. Dev.	21407.80	2003.548	17.01775	142.7435	4.008746	4230.307
Skewness	0.485751	-1.169369	1.859064	1.546409	0.521775	1.963718
Kurtosis	1.593272	3.438022	5.747362	5.553334	4.013719	6.731368
Jarque-Bera	5.236503	10.14363	38.29234	28.81903	3.792284	52.58159
Probability	0.072930	0.006271	0.000000	0.000001	0.150147	0.000000
Sum	1697454.	-49898.28	831.0460	5506.318	573.0000	129042.9
Sum Sq. Dev.	1.92E+10	1.69E+08	12163.37	855780.1	674.9419	7.52E+08
Observations	43	43	43	43	43	43

Source: Author's output of Descriptive Statistics using Eviews 9

Inflation exhibits high positive skewness (1.86) and leptokurtic distribution (5.75), while exchange rate records skewness and kurtosis values of 1.55 and 5.55, respectively. Government expenditure also shows strong right-skewness (1.96) and high kurtosis (6.73). These values indicate the presence of extreme observations and reflect significant macroeconomic instability and policy volatility in Nigeria over the study period.
The series were subjected to test for association using pair wise correlation analysis. The essence is to check for the existence of multicollinearity among the series. The result is presented in Table 2:

Table 2: Result of correlation analysis

	RGDP	BDF	INF	EXR	INT	GEXP
RGDP	1.00					
BDF	-0.29	1.00				
INF	-0.27	0.30	1.00			
EXR	0.88	0.02	-0.17	1.00		
INT	-0.03	0.27	0.35	0.16	1.00	
GEXP	0.86	0.06	-0.13	0.97	0.13	1.00

Source: Author's output of correlation analysis using Eviews 9

The correlation results show strong positive relationships between RGDP and EXR (0.88), RGDP and GEXP (0.86), and particularly between EXR and GEXP (0.97). This suggests possible multicollinearity concerns between exchange rate and government expenditure. Other variables exhibit weak to moderate correlations. Transforming the series through logarithmic conversion or differencing can help reduce multicollinearity by stabilizing variance, minimizing extreme fluctuations, and weakening excessive linear associations among the explanatory variables.

Table 3 presents the results of the Augmented Dickey–Fuller (ADF) unit root test conducted to examine the stationarity properties of the variables used in the study prior to model estimation.

Table 3: Augmented Dickey-Fuller unit root Test of the variables

Variable	Level Form		First Difference		Order of integration
	ADF test statistic	Probability	ADF test statistic	Probability	
LRGDP	-0.218689	0.9279	-4.081761	0.0027	I(1)
BDF	-1.935137	0.3136	-6.050301	0.0000	I(1)
INF	-3.197916	0.0271			I(0)
LEXR	-1.960934	0.3024	-5.496826	0.0000	I(1)
INT	-3.274406	0.0225			I(0)
LGEXP	-1.347365	0.5983	-7.840742	0.0000	I(1)

Source: Author's output of ADF unit root test using Eviews 9

The ADF unit root results show that INF and INT are stationary at level, while LRGDP, BDF, LEXR, and LGEXP become stationary after first differencing. The variables are

therefore integrated of order I(0) and I(1), justifying the use of the ARDL framework for the analysis.

Table 4 presents the results of the ARDL bounds cointegration test used to examine the existence of a long-run relationship among the variables included in the model.

Table 4: Result of bound test cointegration

ARDL Bounds Test		
Test Statistic	Value	k
F-statistic	8.638109	6
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.12	3.23
5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

Source: Author's output of bound test cointegration analysis using Eviews 9

The ARDL bounds test results confirm the existence of a long-run cointegrating relationship among the variables. The computed F-statistic of 8.6381 exceeds the upper bound critical values at the 10%, 5%, 2.5%, and 1% significance levels. Consequently, the null hypothesis of no cointegration is rejected, implying the presence of a stable long-run equilibrium relationship among the variables included in the model.

The selected short run ARDL model is (1, 0, 0, 1, 3, 4, 3. Table 5 presents the short-run ARDL error correction estimates for the relationship between budget deficit and economic growth in Nigeria. The results capture the short-run dynamics of the explanatory variables and the speed of adjustment toward long-run equilibrium following short-run disequilibrium.

Table 5: Result of the short run ARDL analysis of the model

Dependent Variable: LRGDP				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(BDF)	0.000002	0.000003	0.862413	0.3987
D(INF)	-0.000560	0.000335	-1.669142	0.1107
D(LGEXP)	-0.003384	0.037811	-0.089493	0.9296
D(LEXR)	-0.016943	0.020650	-0.820474	0.4216
D(LEXR(-1))	-0.002852	0.022169	-0.128632	0.8989
D(LEXR(-2))	-0.066313	0.021402	-3.098367	0.0057
D(INT)	0.000000	0.001996	0.000105	0.9999
D(INT(-1))	0.004316	0.001685	2.560752	0.0186
D(INT(-2))	0.002252	0.001619	1.390493	0.1797
D(INT(-3))	0.004972	0.001520	3.271074	0.0038
D(SAP)	-0.007781	0.035280	-0.220553	0.8277
D(SAP(-1))	-0.049302	0.037736	-1.306502	0.2062
D(SAP(-2))	0.076420	0.032326	2.364055	0.0283
CointEq(-1)	-0.109419	0.031784	-3.442615	0.0026

Source: Author's output of Short Run ARDL analysis using Eviews 9

The short-run ARDL results reveal that budget deficit (BDF) has a positive coefficient of 0.000002, indicating a positive relationship with economic growth. However, the probability value of 0.3987 shows that the effect is statistically insignificant. This implies that increases

in budget deficit did not significantly stimulate economic growth in Nigeria during the study period. The finding aligns with Mohammed and Ogba (2021), who reported weak growth effects of fiscal deficits due to poor fiscal management and inefficient public expenditure. However, it contrasts with Umaru, Aliero, and Abubakar (2021), Amade and Oyigebe (2024), and Fredrick, Otum, and Onyekachi (2016), who found that deficit financing promotes growth when directed toward productive sectors. The insignificant effect observed in this study suggests that deficit financing in Nigeria may not have been efficiently allocated to productive investments capable of generating immediate growth benefits. The result also points to problems such as corruption, leakages, weak fiscal discipline, and excessive recurrent expenditure.

Inflation (INF) and government expenditure (LGEXP) both exhibit negative but insignificant effects on economic growth, indicating that rising inflation and increased government spending did not significantly improve economic performance in the short run. The negative expenditure result further suggests inefficiencies in public spending and poor implementation of development projects.

Exchange rate (LEXR) records a negative effect on growth, with the second lag remaining statistically significant at the 1% level. This indicates that exchange rate depreciation reduces economic growth over time through higher import costs and production instability. Interest rate (INT) shows mixed effects, although some lagged values positively and significantly influence growth, suggesting temporary improvements in savings mobilization and financial intermediation.

The structural adjustment programme (SAP) initially exerts negative effects, but the second lag becomes positive and statistically significant. This implies that economic reforms may produce growth benefits gradually after initial adjustment costs. The error correction term is negative and significant, confirming long-run equilibrium and indicating that about 10.94% of short-run disequilibrium is corrected annually. Overall, the findings suggest that the growth effect of budget deficits in Nigeria depends largely on expenditure efficiency, macroeconomic stability, and the broader policy environment.

Table 6 presents the long-run ARDL estimates for the relationship between budget deficit and economic growth in Nigeria. The results show the long-run effects of the explanatory variables on real gross domestic product (LRGDP) over the study period.

Table 6: Long run ARDL result of the model

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
BDF	0.000022	0.000025	0.901680	0.3780
INF	-0.005115	0.003968	-1.289025	0.2121
LGEXP	-0.582057	0.288468	-2.017748	0.0572
LEXR	0.995570	0.347938	2.861342	0.0097
INT	-0.099398	0.030412	-3.268387	0.0038
SAP	-0.238812	0.313619	-0.761470	0.4553
C	12.620518	1.124108	11.227142	0.0000

Source: Author's output of Long Run ARDL analysis using Eviews 9

The long-run ARDL results reveal mixed effects of the explanatory variables on economic growth in Nigeria. Budget deficit (BDF) has a positive coefficient of 0.000022, but the probability value of 0.3780 indicates that the effect is statistically insignificant. This suggests that although deficit financing may support economic growth, its long-run contribution remains weak. The finding partly supports Umaru, Aliero, and Abubakar (2021), Amade and Oyigebe (2024), and Fredrick, Otum, and Onyekachi (2016), who reported positive effects of

deficit financing on growth. However, unlike those studies, the present study shows that the effect is not sufficiently strong in the long run. The result implies that deficit financing alone cannot guarantee sustainable growth unless borrowed funds are efficiently allocated to productive sectors. The finding also agrees with Mohammed and Ogba (2021), who linked weak fiscal outcomes to poor fiscal discipline and inefficient public expenditure management.

Inflation (INF) exerts a negative but insignificant effect on economic growth, supporting the argument that persistent inflation weakens macroeconomic stability and investment activities. Government expenditure (LGEXP) also records a negative relationship with growth and is marginally significant at the 10% level, suggesting that public spending may not contribute effectively to growth due to inefficiency, corruption, and excessive recurrent expenditure.
Exchange rate (LEXR) has a positive and statistically significant coefficient of 0.995570 ($p = 0.0097$), indicating that exchange rate movements positively influence long-run economic growth through improved export competitiveness and domestic production. In contrast, interest rate (INT) exerts a negative and significant effect on growth with a coefficient of -0.099398 ($p = 0.0038$), implying that high borrowing costs discourage long-run investment and productive activities.
The structural adjustment programme (SAP) records a negative but insignificant coefficient, suggesting that the long-run benefits of economic reforms remained weak during the study period. Nevertheless, the inclusion of SAP represents an important contribution because many previous studies ignored the role of structural reforms in the budget deficit-growth relationship. Overall, the findings suggest that the effectiveness of budget deficits in promoting long-run growth depends largely on expenditure efficiency, macroeconomic stability, and policy consistency.

Limitations of the Study

This study is subject to some limitations. First, the analysis relies on annual time-series data covering the period 1981–2023, which limits the number of observations available for estimation. Although the ARDL technique is suitable for small samples, the limited observations may still affect the strength of long-run inferences. Second, the study focuses mainly on selected macroeconomic variables such as budget deficit, inflation, exchange rate, interest rate, government expenditure, and structural reforms. Other important factors capable of influencing economic growth, including institutional quality, political stability, external debt composition, and corruption, were not explicitly incorporated due to data limitations. Third, the Structural Adjustment Programme (SAP) was used as a proxy for structural reforms, which may not fully capture the complexity and multidimensional nature of Nigeria's economic reform processes. Despite these limitations, the study provides useful empirical evidence on the relationship between budget deficits and economic growth in Nigeria.

Conclusion and Policy Implications

This study examined the relationship between budget deficit and economic growth in Nigeria using the ARDL framework over the period 1981–2023. The findings reveal that budget deficit exerts a positive but statistically insignificant effect on economic growth in both the short run and the long run. This suggests that deficit financing alone does not automatically translate into sustainable economic growth in Nigeria. The results further show that inflation and government expenditure negatively affect growth, while exchange rate positively influences long-run economic growth. Interest rate exerts a significant negative effect on economic growth, indicating that high borrowing costs discourage productive investment.

The findings also reveal that the benefits of structural reforms under SAP are weak in the long run, although some short-run improvements emerge after adjustment periods.

The study therefore concludes that the effectiveness of budget deficits in promoting economic growth depends largely on expenditure efficiency, macroeconomic stability, fiscal discipline, and policy consistency. Deficit financing should be directed toward productive sectors such as infrastructure, manufacturing, education, and agriculture rather than excessive recurrent expenditure. Government should strengthen fiscal transparency, reduce leakages and corruption in public spending, and improve monitoring mechanisms to ensure efficient utilization of borrowed funds. Monetary authorities should also maintain stable inflation and moderate interest rates to encourage investment and productive activities. Furthermore, future economic reforms should be supported with strong institutional frameworks and effective implementation strategies in order to achieve sustainable long-run growth in Nigeria.

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