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Deficit Financing and Capital Formation in Nigeria

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Abstract
This study examined the effect of deficit financing on capital formation in Nigeria for the period 1981 to 2023. The nexus between deficit financing and capital formation has not been adequately established by previous researchers hence this serves as strong motivation for the study. The specific objectives of the study were to determine the effect of government bonds on Nigeria's capital formation; ascertain the relationship between external borrowings and capital formation in Nigeria; analyze the relationship between domestic borrowings and capital formation in Nigeria; and investigate the effect government revenue from tax has on capital formation in Nigeria. The data were sourced from the CBN Statistical Bulletin and analyzed using the Error Correction Model (ECM) method. The results showed that Government bonds increased capital formation significantly, external borrowings had a positive effect on capital formation. There was also a significantly negative effect of domestic borrowing on capital formation and tax revenue negatively affected capital formation in Nigeria. The study concluded that government deficit financing efforts have had positive, direct and significant effect on capital formation in Nigeria. Particularly, government bonds and external borrowing have been instrumental deficit financing options that have led to increased access to capital and increased capital formation in the Nigerian economy. However, tax revenue and domestic borrowing maintained negative effect on capital formation. The recommendation was that government should increase tax revenue to prevent budget deficit that will warrant deficit financing. Also, the Nigerian government should explore more of domestic sources of deficit financing rather than external sources.

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1. Introduction

Deficit financing as a means of managing the economy was introduced in Nigeria after the Nigerian civil war, heightened by the uncertainties in the oil market and further intensified by financial and economic challenges the country witnessed within (1980 – 1999). From independence, more than 85% of Nigeria's budget was primarily on deficit Momodu & Monogbe (2021) [26]. Deficit financing or budget deficit refers to financial arrangement in which there is excess in expenditure value over revenue amount at a period in time. Although, it is a common practice at both micro and macro levels, however, when it involves government spending, it has a macroeconomic effect on the economy (Okah, Chukwu, & Ananwude, 2019) [33]. Key indicators of deficit financing are public borrowing, increasing money supply, aids and grants, etc. Deficit financing and growth of the Nigerian economy has been of great concern in recent times, scholars and policy makers wonder around the exact relationship between deficit financing and capital formation in Nigeria.

The Nigerian government has been running huge deficits since the civil war, according to Boniface, Aniefiok, Ededet and Ekere (2023). The deficit as percentage of GDP has continued to be on the increase and one immediate result is the escalating public debt. It is also been observed that large budget deficits cause increase in money growth and inflation (Basil, 2014; Eze and Ogiji, 2020) [7, 18].

There was low deficit recorded in 2001 (N103, 800 million) as compared with 1999 deficit of N285, 104.7 million which was attributed to the increased revenue, particularly from the oil sector and the restraint on expenditure Udo and Emeka (2022) [39]. The year 2001 recorded an increase in deficit of N221,100 million as compared with deficit of 2000 due to a decline in actual oil revenue relative to the budget estimate for 2002 following the reduction of Nigeria's export volume of crude oil. In 2003, deficit decline to N202,700.0 million and compared with preceding year (CBN, 2022). This was attributed to the increase in revenue from crude oil sector and the due process of carrying out government business.

Furthermore, in 2004, fiscal deficit operations resulted to a lower deficit of N172, 600.0 million as compared with the preceding year. These downwards reduction in deficit operations in Nigeria was attributed to the stock of Nigeria's external debt falling significantly from US$ 20.5 billion to US$ 3.25 billion in 2006 (CBN, 2022). Consequently, the consolidated public debt in 2006 declined to N2, 204.7 billion or 12.1%of GDP from N4, 221.0 billion or 28.3% of GDP in 2005 (CBN, 2022). Still on the trend, external borrowing stood at its peak in 2017 and 2018, recording N1,240.4 billion and N1,073.3 billion as sums borrowed by the federal government while internal borrowing stood atN2,369.0 billion and N2,554.8 billion in the same years. For the past two decades in Nigeria, government borrowing saw an all-time low sum in 2008. In 2023, it stood at an all-time astronomical height of N6171.8 billion (CBN, 2023).

Capital formation is one of the fundamental factors of economic growth and development with its attendant measures such as increment in financial institutions activities, restriction on imports, increase in exports, cut on unproductive expenditure, use of foreign aid, increase in employment, creation of overhead capital, increase in foreign investment etc. (Gbenga & Adeleke, 2023) [19]. In Nigeria, accumulation of capital both by the private and public sector has not been stable and may have not been enough to translate to economic growth. For example, Gross Fixed Capital Formation (GFCF) in Nigeria increased to 2.494 naira billion in the fourth quarter of 2017 from 2.129 billion naira in the third quarter of 2017, while the annual value at the end of 2017 was 17.43 trillion naira. Gross Fixed Capital Formation in Nigeria averaged 1.755 NGN billion from 2007 until 2017, reaching an all-time high of 2.876 NGN billion in the second quarter of 2016 and a record low of 172.36 NGN million in the fourth quarter of 2007 (CBN, 2022). Also, Gross fixed capital in Nigeria increased to 3.4 trillion naira in the fourth quarter of 2023 from 2.57 trillion naira in the third quarter of 2023 (NBS, 2024).

With external borrowing in Nigeria standing at its peak in 2022 and 2023, recording N1, 240.4 billion and N1,073.3 billion as sums borrowed by the federal government while internal borrowing stood at N2,369.0 billion and N2,554.8 billion in the same year, it is evident that the Nigerian government has been operating based on budget deficit financing. For the past two decades in Nigeria, government borrowing saw an all-time low sum in 2008 when Nigeria gained debt relief (Boniface *et al*, 2023) [8]. In 2023, total borrowing stood at an all-time astronomical height of N6, 171.8 billion. This could be attributed to the aftermath of the pandemic that kept all nations of the world in their tents. This was necessary to meet up important ends like providing palliatives to the active poor, setting up of isolation centers, payment of wages of medical personnel etc. Thus, with increasing spate of deficit financing, this present study investigates how deficit financing affects Nigeria's capital formation.

1.1. Statement of the Problem

According to Adebayo and Yusuf (2021) [2], evidence from the Central Bank of Nigeria Statistical Bulletin show that the Nigerian government has been augmenting the budget using borrowed funds. Statistical evidence shows that external borrowings reached N38.22 trillion in 2023 up from N689 billion recorded in 2010. Also, domestic borrowing reached N53.26 billion in 2023 which amounted to total borrowing of up to N20.689 trillion in government borrowing since 2023. This can be shown in figure 1:

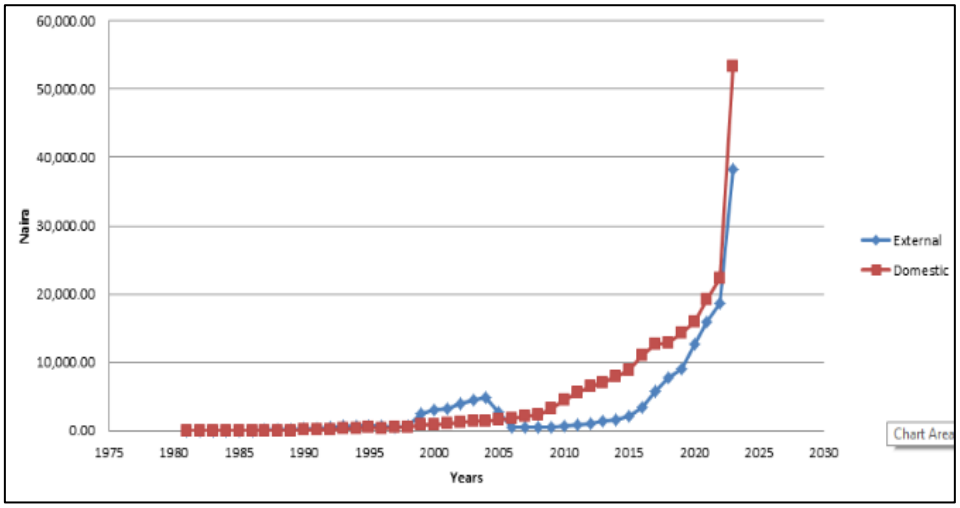

Fig 1: Trend of External and Domestic Debt Standing of Nigeria (1981-2023)

Within the same period, capital formation in Nigeria was 76.4 trillion as shown in figure 2:

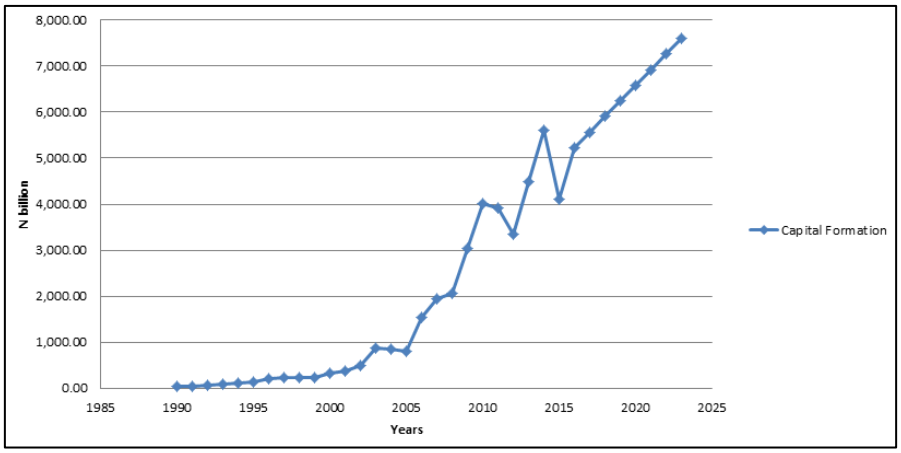

Fig 2: Trend of Capital Formation in Nigeria (1981-2023)

Figure 2 shows that capital formation was N262 billion in 1990. It increased to N2 trillion in 1999 at the dawn of Nigeria's democracy. The break out year was in 2018 when total capital formation reached N24.55 trillion and eventually skyrocketed to N76.44 trillion in 2023. Presently, it is clear that Nigeria's debt profile has reached a level of serious concern. Audu (2020) [6] said that it is expected that the growing deficit financing will enhance every aspect of the economy leading to increased savings mobilization and increased investment as a result of positive capital formation. Given the data on government deficit financing strategies through external and domestic borrowings, and the data on capital formation in Nigeria, it appears that the link between deficit financing and capital formation is still sketchy and unknown hence the need for this study.

Furthermore, empirical literature review shows that literature on the effect of deficit financing on capital formation in Nigeria has been scanty and insufficient. For example, most of the studies reviewed focused mainly on debt burden and economic growth (Adebayo & Yusuf, 2021; Adamu & Rasheed, 2019; Nwikina, Meekor, Cookey & Gbarato, 2021; Momodu & Monogbe, 2021; etc.) [2, 3, 28, 26]. Other studies focused only on only one aspect of government deficit financing which is either domestic debt (Obadan & Okojie, 2021; Oladipo & Adebayo, 2023) [29, 35]. The inherent problem identified by this study is the insufficiency of literature linking deficit financing and capital formation from the perspective of government external and domestic debt stock. This problem may have led to insufficient knowledge of Nigeria's capital formation direction and this poses serious problems for policy decisions. As such, this present study intends to solve this problem by providing a detailed and comprehensive analysis of the nexus between deficit financing and capital formation for the period 1981-2023.

1.2. Objectives of the Study

The main objective of this study is to examine the effect of deficit financing on capital formation in Nigeria. The specific objectives are to:

1. determine the effect of government bonds on Nigeria's capital formation;
2. ascertain the relationship between external borrowings and capital formation in Nigeria;
3. analyze the relationship between domestic borrowings and capital formation in Nigeria;
4. investigate the effect government revenue from tax has on capital formation in Nigeria.

1.3. Research Hypotheses

The hypotheses formulated for this study are stated in their null forms as follows:

- **H_1:** There is no significant relationship between government bonds and capital formation in Nigeria.
- **H_2:** There is no significant positive relationship between external borrowings and capital formation in Nigeria.
- **H_3:** There is no significant relationship between Domestic borrowing and capital formation in Nigeria.
- **H_4:** There is no significant relationship between Government revenue from tax and capital formation in Nigeria.
- The scope of the study is within the period of 1981-2023, reflecting the objective of the study and data set. The study focuses on government bonds, external borrowings, domestic borrowing and tax revenue while the dependent variable is capital formation.

2. Literature Review

2.1. Conceptual Review

Deficit financing is a recurring feature in the fiscal policies of many economies, including Nigeria, where the government often finds itself in situations where current expenditures exceed expected revenues. This scenario, commonly termed a fiscal deficit, occurs when government spending surpasses its income, creating a budgetary gap that must be filled through borrowing or other means (Boniface *et al*., 2023) [8]. According to the Central Bank of Nigeria (CBN, 2013), deficit financing is defined as a strategic practice in which the government finances excess expenditure by borrowing, often with the expectation that increased business activities will subsequently generate additional revenue to cover the shortfall. This approach is a central component of fiscal policy aimed at stimulating economic growth (Okolie & Anidiobi, 2020) [34].

Capital formation is central to economic growth and development, as it directly influences the productive capacity of a nation. As defined by Gbenga and Adeleke (2023) [19], capital formation refers to the process of building up the capital stock of a country by investing in productive assets, such as machinery, plants, equipment, and infrastructure.

This process facilitates the growth of a country's wealth by increasing its material and human capital stock, thereby enhancing the productive potential of the economy. Capital formation involves allocating a portion of society's current resources toward the production of capital goods rather than immediate consumption, which is instrumental in expanding the economic base over time (Jhingan, 2006) [22]. Mgbomene (2024) [24] noted that capital formation can be from remittances i.e., abroad or built from local capital and can also be from various sectors of the economy.

Capital formation requires that a portion of present income be saved and invested to develop both material and human resources. The goods produced through capital formation, such as tools, machinery, and infrastructure, increase the efficiency of productive efforts, enabling economies to achieve higher output and greater technical progress (Owolabi & Ajayi, 2023). Theoretical frameworks across various economic models underscore capital formation as a cornerstone of sustainable economic growth, as it lays the foundation for structural improvements and boosts the domestic production capacity (Deaton, 1977) [16]. Countries that experience high levels of capital formation tend to have more robust economic frameworks, which, in turn, support better standards of living and resilience against economic downturns (Jakpa & Osho-Itsueli, 2020; Mgbomene *et al.*, 2025) [21, 25].

2.2. Theoretical Framework

This study is anchored on the Debt overhang theory. Debt Overhang Theory was developed by economists like Paul Krugman (1988) [23] and Jeffrey Sachs (1989) [37]. The theory holds that excessive debt creates disincentives for economic growth. When the debt burden becomes too high, capital formation is negatively affected by way of increase in debt service cost which crowds out private investment and creates uncertainty in the market thus potentially hindering future investment plans. However, when debt or deficit financing is kept at moderate level, the debt overhang theory posits that access to funds is provided for businesses and government which allows companies to generate higher profits and contribute to increased capital formation.

Thus, increased deficit financing has negative consequences on individuals and businesses and on capital formation while decreased deficit financing presents healthy effect on individual and businesses and by extension on capital formation. Therefore, the potency of this theory is tested in this research as it seeks to model the link between deficit financing variables on capital formation in order to ascertain the aspect of the theory that holds true for the Nigerian case study.

2.3. Empirical Review

Author/Date	Study	Outcome/Finding	Method	Gap
Boniface *et al.* (2023) [8]	Effects of fiscal deficit financing on Nigeria's economic growth	Deficit financing exhibited an even higher impact, correlating with a 6.7% increase in GDP	ECM approach	The study was on deficit financing and economic growth rather than on capital formation
Ajayi and Fagbemi (2023) [4]	Relationship between deficit financing, economic growth, and exchange rate volatility in Nigeria	Deficit financing leads to a depreciation of the Nigerian currency, primarily due to the high external borrowing.	Structural Vector Autoregressive (SVAR) model,	The study did not consider the effect of deficit financing on capital formation
Eze and Akinwale (2023)	Impact of fiscal deficit financing on inflation and employment rates in Nigeria	Deficit financing below 3% of GDP led to a slight increase in employment and had negligible effects on inflation	Threshold Vector Autoregressive (TVAR) model	The study did not consider the effect of deficit financing on capital formation
Abdul and Yusuf (2023) [1]	Effect of deficit financing on private sector credit availability and interest rates in Nigeria	Government borrowing exerts upward pressure on interest rates, particularly when sourced domestically	Fixed-Effects Panel Regression model,	The study did not consider the effect of deficit financing on capital formation
Chukwu and Nwachukwu (2023) [15]	Effects of deficit financing on poverty reduction in Nigeria	Deficit financing, when directed toward social welfare programs and rural infrastructure, had a modest poverty-reducing effect	Multivariate Cointegration Analysis	The study did not consider the effect of deficit financing on capital formation
Aladejare (2022)	Effects of deficit financing on inflation and capital formation in Nigeria	Deficit financing affects capital formation primarily through its impact on inflation rather than through direct channels	Multiple regression analysis	The study did not consider external and domestic debt as deficit financing options
Okafor and Nkem (2022)	Effects of deficit financing on capital formation in Nigeria	Domestic deficit financing positively influenced capital formation.	Generalized Method of Moments (GMM),	The study did not consider external and domestic debt. Limitations in data coverage
Udo and Emeka (2022) [39]	Impact of deficit financing on Nigeria's trade balance	Deficit financing contributed to trade deficits in the long term, as it increased Nigeria's reliance on imported goods	ARDL model	Capital formation was not the dependent variable
Odeyemi and Bello (2022)	Effects of fiscal deficits on Nigeria's public infrastructure development	The study found that a 5% increase in deficit financing correlated with a 2% improvement in the infrastructure index,	Dynamic Ordinary Least Squares (DOLS) model	Capital formation was not the dependent variable
Ifeanyi and Chinwe (2022)	Impact of deficit financing on public health expenditure in Nigeria	Deficit financing, when allocated to health expenditure, improved health outcomes,	Panel Cointegration Analysis	Capital formation was not the dependent variable

Nwikina *et al.* (2021)	Role of deficit financing in economic development in Nigeria	Budget deficits and government expenditure had a marginally positive effect on HDI.	ARDL model and Granger Causality Tests	Capital formation was not the dependent variable
Bushi (2021)	Review of Nigeria's fiscal deficits	Nigeria's current fiscal practices are insufficient for achieving sustainable growth,	Ordinary Least Squares (OLS) method,	Capital formation was not the dependent variable
Udoka and Anyingang (2021) [40]	Impact of deficit financing on economic growth and capital formation in Nigeria	External deficit financing had a negative effect on capital formation in Nigeria.	Vector Autoregressive (VAR) model	Data coverage did not extend to 2023
Sule and Bamidele (2021)	Relationship between deficit financing and inflation expectations in Nigeria,	Deficit financing contributed to increased inflation expectations among the public.	Dynamic OLS	Capital formation was not the dependent variable
Jakpa and Osho-Itsueli (2020) [21]	Relationship between deficit financing and Nigeria's macroeconomic performance	Increase in the domestic money supply had a positive impact on economic performance.	ARDL model	Capital formation was not the dependent variable
Okolie and Anidiobu (2020) [34]	Impact of deficit financing on Nigeria's economic growth	Reliance on external deficit financing may carry risks for economic growth, as it often involves high-interest payments and potential debt overhang.	Multiple regression analysis	Capital formation was not the dependent variable
Ogunbiyi and Adebayo (2020)	Effect of deficit financing on capital formation in Nigeria	Deficit financing had short-term positive impact on capital formation,	Structural Equation Modeling (SEM).	Deficit financing variables did not include tax revenue.
Ibrahim and Muazu (2019)	Deficit financing and capital formation in Nigeria	External and domestic borrowing contributed to capital formation.	Autoregressive Distributed Lag (ARDL) model	Data requirement was limited to 2017

Source: Author's computation

The review of literature shows that there exist numerous gaps in literature, particularly spatial, variable, method gap etc. The empirical review revealed numerous studies linking deficit financing to economic growth and other variables with few studies considering the effect of deficit financing on capital formation. Deficit financing adds to the stock of capita available for the government to utilize and ascertaining its effect on capital formation is vital for policy formulation. Apart from being one of the few studies that linked deficit financing to capital formation, this research work in particular introduced "government bonds" as a critical source of financing budget deficits. While this is a domestic source of borrowing, it is isolated because of its profound use by government in recent times. The study also extended the period of the data collection from 1981 to 2023 to accommodate recent events in government deficit financing and capital formation.

3. Methodology

This study utilizes an ex-post facto research design, suitable for examining existing data to analyze the relationship between deficit financing and capital formation in Nigeria. Secondary, time-series data were sourced from the Central Bank of Nigeria Statistical Bulletin (CBN, 2023) and the National Bureau of Statistics (NBS, 2023). Given the time-series nature of the data, stationarity must be established to avoid spurious results. This is accomplished using the Augmented Dickey-Fuller (ADF) test, which checks if variables are stationary in levels or require differencing. The cointegration test is done after having established stationarity of the data. In carrying out the co-integration test, the series of data must be integrated at level i.e. I (0) or at first difference i.e. I (1). The Johansen test is used to test for co-integration in series that are integrated at first difference all through. The Error Correction Model (ECM) model is employed to analyze the short run relationships between the variables.

3.1. Model Specification

By way of modification of the model specified in Ibrahim and Muazu (2019), we retain capital formation as the dependent variable, while the independent variables include government bonds, external borrowing, domestic borrowing and tax revenue representing different forms of deficit financing. The functional model for this study is specified as:

$$CAPF = f(\text{Deficit Financing}) \quad (1)$$

The functional model is expanded by disaggregating deficit financing sources thus:

$$CAPF = f(GOVB, EXTB, DOMB, TAXR) \quad (2)$$

In linear econometric form, the model is represented as:

$$CAPF_t = \beta_0 + \beta_1 GOVB_t + \beta_2 EXTB_t + \beta_3 DOMB_t + \beta_4 TAXR_t + \varepsilon_t \quad (3)$$

Where:
CAPF = Capital formation (dependent variable)
GOVB = Government bonds (a source of deficit financing)
EXTB = External borrowing (a source of deficit financing)
DOMB = Domestic borrowing (a source of deficit financing)
TAXR = Tax revenue (a source of deficit financing)
β_0 = Intercept of the model
$\beta_1 - \beta_4$ = Coefficients of the independent variables,
ε_t = Stochastic error term at time 't'.
The model assumes positive coefficients for each variable based on economic theory:

- **$\beta_1 > 0$:** Government bond is expected to contribute positively to capital formation, as they mobilize domestic funds for investment.
- **$\beta_2 > 0$:** External borrowing should ideally increase capital formation by funding development projects.

- **$\beta_3 > 0$:** Domestic borrowing (aggregated) is expected to contribute positively to capital formation since government can also look inwards in the economy to augment budget.
- **$\beta_4 > 0$:** Tax revenue is anticipated to enhance capital formation, as it enables government spending on infrastructure.

4. Data Analysis

4.1. Unit Root Test

Table 1 shows a summary of Augmented Dickey Fuller (ADF) unit tests carried out on each of the variables. The test is done at 5% critical value as follows:

Table 1: Summary of Unit Root Test Result

		ADF Test statistics			
Variable		**At Level**	**1st Difference**	**Decision**	**Order of Integration**
CAPF		-1.0817	-3.2881	Stationary at 1st difference	I (1)
GOVB		-1.6553	-7.0118	Stationary at 1st difference	I (1)
EXTB		-0.5699	-4.4591	Stationary at 1st difference	I (1)
DOMB		-1.2398	-3.1247	Stationary at 1st difference	I (1)
TAXR		-1.8535	-5.0709	Stationary at 1st difference	I (1)
Critical Values	1%	*-3.6793*	*-3.7379*		
	5%	*-2.9678*	*-2.9919*		

Source: Authors' Computation

The unit root test above reveals that capital formation (CAPF), government bonds (GOVB), external borrowings (EXTB), domestic borrowing (DOMB) and tax revenue (TAXR) are all stationary at first difference and are said to be integrated of order one, I(1). This implies that the data have statistical properties that do not vary over time when they are first differenced. Based on this result, the study tests for the existence of a long-run relationship or cointegrating relationship amongst the variables using the Johansen cointegration test.

4.2. Johansen Cointegration Test

Null hypothesis (H_0): No long run relationship exists amongst the variables (no cointegration)

Alternate hypothesis (H_1): There is long run relationship amongst the variables

Table 2: Summary of the Johansen Cointegration Test

Trace Statistic					Max-Eigen Statistic		
Hypothesized No of CE (S)	**Eigen-Value**	**Trace statistics**	**5% Critical Value**	**Prob**	**Max-Eigen statistics**	**5% Critical value**	**Prob**
None *	0.60447	53.4311	47.85613	0.0137	26.8981	24.58434	0.0410
At most 1 *	0.38576	26.5330	22.79707	0.0136	14.1337	13.13162	0.0342
At most 2	0.26941	12.3993	15.49471	0.1388	9.10337	11.26460	0.2776
At most 3	0.10743	3.29597	3.841466	0.0694	3.29597	3.841466	0.0694
At most 4	0.04857	2.34977	2.985745	0.5971	2.34977	2.350748	0.2284

Source: Authors' Computation

Note: **Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

**Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

Table 2 summarizes the Trace and Max-eigen statistics for the Johansen cointegration test. Both statistics show two cointegrating equations at 5% level. The criteria for decision here is that there must be at least one cointegrating equation to reject the null hypothesis of no cointegration. Since the Trace and Max-eigen statistics show two cointegrating equations, we therefore reject the null hypothesis and conclude that there is long run relationship between deficit financing and capital formation in Nigeria.

4.3. Model Estimation

Table 3: Error Correction Model Result

Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	18.67787	1.524034	12.25555	0.0000
GOVB	0.136319	0.026374	5.168693	0.0000
EXTB	0.337146	0.065177	5.172744	0.0000
DOMB	-0.286454	0.118694	-2.413382	0.0234
TAXR	-0.136091	0.069772	-1.950518	0.0634
ECM (-1)	-0.113148	0.016328	-6.929691	0.0118
R-squared	0.955822	Mean dependent var		31.30654
Adjusted R-squared	0.948139	Durbin-Watson stat		1.775427
F-statistic	124.4055	Prob(F-statistic)		0.000000

Source: Authors' Computation

The short run estimates (Table 3) show that as government bonds increases, capital formation also increases significantly by 0.1363 units annually. Similarly, external borrowing increases capital formation significantly by 0.3371 units. This represents positive and direct relationship between external sources of deficit financing and capital

formation in Nigeria. However, tax revenue and domestic borrowing are both negatively related to capital formation meaning that for every unit change in tax revenue and domestic borrowing, capital formation decreases by 0.1361 and 0.2865 units respectively.

Furthermore, Table 3 shows that the coefficient of the model residual is negative and significant. This implies that the short run model has good predictive properties. The adjustment mechanism is therefore estimated at 11.31% annually. This indicates that holding the deficit financing variables at a steady state of decrease by 11.31% annually, capital formation in Nigeria will attain long run equilibrium.

In addition, the Durbin Watson statistic suggests that there is no autocorrelation in the model since the DW value of 1.775 tends towards 2 than to 0. Evidence from the cumulative sum (CUSUM) test affirms the stability and suitability of the model for forecasting since the CUSUM line is within the upper and lower bounds 5% critical value lines (See figure 3). The adjusted R-squared value of 0.9481 indicates that deficit financing account for up to 94.81 per cent of the changes in capital formation in Nigeria.

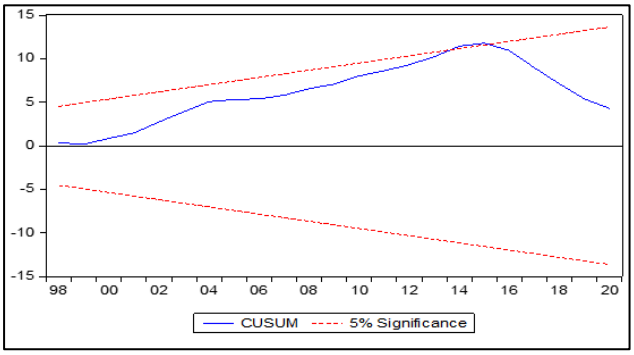

Fig. 3: Cumulative Sum Test

4.4. Test of Research Hypotheses

Test of Hypothesis One

H_1: There is no significant relationship between government bonds and capital formation in Nigeria.

t-statistic = 5.1687 (*p-value* = 0.0000)

t-table = $t_{0.025,38}$ = 2.041

Decision Rule: Since the t-statistic is greater than the t-table value at 5% level of significance, we reject the null hypothesis and conclude that there is significant relationship between government bonds and capital formation in Nigeria.

Test of Hypothesis Two

H_2: There is no significant positive relationship between external borrowings and capital formation in Nigeria.

t-statistic = 5.1727 (*p-value* = 0.0000)

t-table = $t_{0.025,38}$ = 2.041

Decision Rule: The t-statistic is greater than the t-table value at 5% level of significance; therefore, we reject the null hypothesis and conclude that there is significant positive relationship between external borrowings and capital formation in Nigeria.

Test of Hypothesis Three

H_3: There is no significant relationship between Domestic borrowing and capital formation in Nigeria.

t-statistic = -2.4133 (*p-value* = 0.0234)

t-table = $t_{0.025,38}$ = 2.041

Decision Rule: Since the t-statistic is greater than the t-table value at 5% level of significance; therefore the study rejects the null hypothesis and conclude that there is significant negative relationship between Domestic borrowing and capital formation in Nigeria.

Test of Hypothesis Four

H_{04}: There is no significant relationship between Government revenue from tax and capital formation in Nigeria.

t-statistic = -1.9505 (*p-value* = 0.0634)

t-table = $t_{0.025,38}$ = 2.041

Decision Rule: Given that the t-statistic is less than the t-table value at 5% level of significance; the study accepts the null hypothesis and concludes that there is no significant relationship between Government revenue from tax and capital formation in Nigeria.

4.5. Discussion of Findings

This research work investigated the effect of deficit financing on capital formation in Nigeria from 1981 to 2023. Specifically, the study examined the effects of government bonds, external borrowings, domestic borrowings and tax revenue on capital formation in Nigeria. The statistical properties of the time series data were examined through stationarity test using the Augmented Dickey-Fuller (ADF) unit root test. The results showed that all the variables were integrated after first differencing. This necessitated the test for long run relationship amongst the variables using the Johansen Cointegration test. The result established the existence of a long-run relationship between diaspora remittances and domestic investment in Nigeria.

Consequently, the model estimates showed that government bonds and external borrowings have positive and direct relationships with capital formation in Nigeria. Also, the positive effects of both government bonds and external borrowings were found to have significant effect on capital formation in Nigeria for the period under study. This finding is directly in line with the findings of Boniface *et al* (2023) [8] who found that external deficit financing has a positive relationship with economic growth. Also, Bushi (2021) found a positive relationship between public and domestic debts; and economic growth in Nigeria. However, previous studies such as Okolie and Anidiobu (2020) [34], Ajayi and Fagbemi (2023) [4] found negative relationship between deficit financing and economic growth and between capital formation and growth respectively. This difference in findings may be attributed to the focus of these studies on the economy rather than on capital formation.

The implication of the positive effects of government bonds on capital formation is that the Nigerian government has been increasing efforts towards issuing bonds that will ensure accumulation of capital for investment purposes. Abdul and Yusuf (2023) [1] observed that the issuance of the sovereign green bond is one that has led to increased access to capital by the government which has helped in funding public infrastructure. Also, Chukwu and Nwachukwu (2023) [15] found that deficit financing, when directed toward social welfare programs and rural infrastructure, had a modest poverty-reducing effect. Thus, Chukwu and Nwachukwu (2023) [15] concluded that financing from external borrowing

can be used to enhance social welfare and rural infrastructure in Nigeria.

Furthermore, the negative effect of tax revenue and domestic borrowing in the model shows that Nigeria's increasing deficit financing though domestic sources is impacting negatively on capital formation because of the continued use of tax revenue and domestic borrowing to service external borrowings. The short run positive effects of government bond and external sources of deficit financing may turn negative in the long run given the negative effect of tax revenue and domestic borrowing on capital formation.

The negative sign of the error correction coefficient indicated that there is adjustment towards long-run equilibrium. As a result, the study confirms the effect of deficit financing in enhancing capital formation in Nigeria in the long run. The indices for deficit financing used in the model jointly accounted for up to 94.81% of the changes in capital formation for the period reviewed. The diagnostic tests carried out on the data showed that the error terms were not serially correlated hence the model was non-spurious. Also, the model showed long run stability based on the Cumulative Sum (CUSUM) test.

4.6. Policy Implications

The implications of the findings to policy is that with increased effect of government bond on capital formation, the Nigerian government should approve for periodic issuance of bonds beyond the current rate so as to harness this domestic borrowing option. This will enhance access to funds, increase capital formation and make both businesses and government to have enough funds for investment purposes.

Again, policies that will promote domestic sources of deficit financing should be promoted. Policies such as matching budget expenditure with tax revenue and using proceeds from government investments to service external debts. When government MDAs are mandated to carry out this function, here will less pressure on government to finance deficits from external borrowing and this will improve internal funds generation and help the overall economy to become stable.

5. Conclusion and Recommendations

The findings led to the conclusion that government deficit financing efforts have had positive, direct and significant effect on capital formation in Nigeria. Particularly, government bonds and eternal borrowing have been instrumental deficit financing options that have led to increased access to capital and increased capital formation in the Nigerian economy. This serves as a huge benefit to the Nigerian economy as capital mobilization is made possible by increased budget deficit financing in the short run. However, the positive effect of deficit financing on capital formation in the short run is being affected as tax revenue and domestic borrowing maintained negative effect on capital formation. Increased tax revenue and increased domestic borrowing are expected to add to the stock of capital in the economy but when the reverse is the case, it portends immediate adverse effect on the economy.

The following recommendations which are stemming from the findings are very necessary to be considered:

1. Efforts should be made by the government to maintain a near-balanced fiscal budget by increasing government revenue which gives rise to deficit financing. The years of deficit financing has augured well for the economy through increased capital formation but the long run effect should be considered.
2. Government should explore more of domestic sources of deficit financing rather than external sources. This is in a bid not to affect the potential positive effect of tax revenue which would have hitherto been used to service external borrowings.
3. Government bonds and external borrowed funds should be judiciously used as tools for increasing Nigeria's capital formation so as to enhance the economy. Government should increase her revenue base through tax reform programmes, and make viable policies to increase tax revenue from these sources in times of budget deficit.

6. References

1. Abdul M, Yusuf H. Effect of deficit financing on private sector credit availability and interest rates in Nigeria. Afr Dev Rev. 2023;11(2):265-89.
2. Adebayo A, Yusuf M. Debt overhang in Nigeria: Impact and policy implications. Niger Econ J. 2021;43(2):121-39.
3. Adamu M, Rasheed A. Deficit financing and economic development in Nigeria: An empirical analysis. J Afr Econ. 2019;14(1):34-52.
4. Ajayi R, Fagbemi O. Relationship between deficit financing, economic growth, and exchange rate volatility in Nigeria. Glob J Manag Bus Res Econ Commer. 2023;18(3):28-36.
5. Aladejare SA. Deficit financing, inflation, and capital formation: Evidence from Nigeria. Niger Econ Rev. 2022;47(1):60-78.
6. Audu SI. Pattern of spending and the level of tax revenue in Nigeria. Int J Res Innov Soc Sci. 2020;4(9):561-7.
7. Basil O. Deficit financing and economic growth in developing economies: A case study of Nigeria. J Econ Policy Stud. 2014;10(2):120-32.
8. Boniface O, Oluwafemi A, Olusola T. Fiscal deficits and capital formation in Nigeria. Afr Econ J. 2023;18(3):215-37.
9. Bushi KM. Theoretical review of the impact of fiscal deficits on economic growth in Nigeria. Eur Sci J. 2021;17(1):67-87.
10. Central Bank of Nigeria. Annual report on monetary policy and fiscal developments. Abuja: CBN Publications; 2021.
11. Central Bank of Nigeria. Annual report and financial statement [Internet]. Abuja: CBN; 2022 [cited 2025 Sep 2]. Available from: https://www.cbn.gov.ng.
12. Central Bank of Nigeria. Economic and financial review. Abuja: CBN; 2022;60(2).
13. Central Bank of Nigeria. Nigeria's fiscal deficit and economic growth: Challenges and policy options. Abuja: CBN Publications; 2022.
14. Debt Management Office. Nigeria's debt sustainability analysis report [Internet]. Abuja: DMO; 2023 [cited 2025 Sep 2]. Available from: https://www.dmo.gov.ng.
15. Chukwu C, Nwachukwu B. Effects of deficit financing on poverty reduction in Nigeria. J Econ Int Finance. 2023;3(6):407-17.
16. Deaton A. The measurement of capital. Cambridge: Cambridge University Press; 1977.
17. Eze E, Akinwale U. Impact of fiscal deficit financing on inflation and employment rates in Nigeria. J Econ Sustain Dev. 2023;7(16):189-96.

18. Eze OR, Ogiji FO. Impact of fiscal policy on the manufacturing sector output in Nigeria: An error correction analysis. Int J Bus Manag Rev. 2020;1:35-55.
19. Gbenga O, Adeleke M. Capital formation and economic growth: Evidence from Nigeria. Afr Econ Rev. 2023;15(2):101-19.
20. Ifeanyi J, Chinwe G. Impact of deficit financing on public health expenditure in Nigeria. Int J Econ Financ Manag. 2022;2(1):12-32.
21. Jakpa S, Osho-Itsueli G. Deficit financing and macroeconomic performance: the Nigeria experience. J Interdiscip Stud Contemp Issues. 2020;6(2):1-14.
22. Jhingan ML. The economics of development and planning. Delhi: Vrinda Publications; 2006.
23. Krugman P. Financing vs. forgiving a debt overhang. J Dev Econ. 1988;29(3):253-68.
24. Mgbomene C. Diaspora remittances and growth of the agricultural sector in Nigeria. J Acad Res Econ. 2024;16(2):1-14.
25. Mgbomene C, Ashakah F, Metieh F, Okoro E, Dim H, Opara F. Crude oil price volatility and the Nigerian economy. Int J Energy Econ Policy. 2025;15(3):390.
26. Momodu AA, Monogbe TG. Budget defect and economic performance in Nigeria. Saudi J Bus Manag Stud. 2021;2(3):1-9.
27. National Bureau of Statistics. Economic survey of Nigeria 2021. Abuja: NBS Publications; 2021.
28. Nwikina CG, Meekor JJ, Cookey SCM, Gbarato LM. Deficit financing and economic development: the Nigeria's experience. Int J Adv Acad Res. 2021;7(6):34-48.
29. Obadan M, Okojie E. Domestic debt and economic growth in Nigeria: An ARDL Bound test approach. Econ Bus Rev. 2021;33(1):225-36.
30. Odeyemi A, Bello T. Effects of fiscal deficits on Nigeria's public infrastructure development. Int J Econ Financ Issues. 2022;8(3):56-67.
31. Ogunbiyi A, Adebayo J. Effect of deficit financing on capital formation in Nigeria. Curr Res J Econ Theory. 2020;3(1):29-35.
32. Okafor E, Nkem J. Effects of deficit financing on capital formation in Nigeria. Eur J Account Finance Res. 2022;2(10):122-35.
33. Okah JC, Chukwu KC, Ananwude AC. Deficit financing and economic growth in Nigeria: 1987-2017. Asian J Econ Bus Account. 2019;12(1):1-12.
34. Okolie B, Anidiobu G. Public finance and economic stability in developing economies: Insights from Nigeria. J Econ Perspect. 2020;12(2):145-63.
35. Oladipo R, Adebayo O. Public debt and investment climate in Nigeria. Econ Policy Rev. 2023;14(4):113-32.
36. Owolabi T, Ajibola K. Fiscal policy: Its impact on economic growth in Nigeria 1980-2020. J Econ Int Finance. 2021;3(6):407-17.
37. Sachs J. The debt overhang of developing countries. In: Debt, stabilization, and development: Essays in memory of Carlos Díaz-Alejandro. Oxford: Oxford University Press; 1989.
38. Sule M, Bamidele L. Relationship between deficit financing and inflation expectations in Nigeria. J Sustain Dev Afr. 2021;10(3):21-29.
39. Udo A, Emeka E. Impact of deficit financing on Nigeria's trade balance. J Appl Finance Bank. 2022;2(4):49-68.
40. Udoka R, Anyingang N. Impact of deficit financing on economic growth and capital formation in Nigeria. Int Inst Sci Technol Educ J Econ Sustain Dev. 2021;5(16):87-96.