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CORPORATE DEBT FINANCING AND PRIVATE INVESTMENT IN NIGERIA: EVIDENCE FROM AN ARDL APPROACH

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Abstract

This study examines the impact of corporate debt financing on private investment in Nigeria over the period 2007Q1–2024Q4. In response to persistent credit constraints and high bank lending costs, Nigerian firms have increasingly adopted alternative financing channels such as corporate bonds, commercial papers, and private credit. However, the extent to which these non-bank instruments stimulate or crowd out private investment remains uncertain. Guided by the Financial Intermediation Theory, the study employs the Autoregressive Distributed Lag (ARDL) model to analyze quarterly data from the Central Bank of Nigeria (CBN), the Securities and Exchange Commission (SEC), and the National Bureau of Statistics (NBS). The ARDL bounds test confirms a long-run co-integrating relationship among private investment, non-bank debt financing, bank loans, interest rates, corporate tax, and real GDP. Long-run estimates indicate that both non-bank debt and bank loans exert positive and significant effects on private investment, suggesting that non-bank debt complements bank credit and expands aggregate financing capacity. Conversely, interest rates and corporate tax negatively influence investment. The error correction term (−0.6125) reveals a moderate speed of adjustment toward equilibrium. The study concludes that developing Nigeria's corporate debt market can enhance private capital formation and financial intermediation, thereby strengthening private-sector-led growth. It recommends policies that strengthen financial institutions and their lending activities, reduce borrowing costs, and promote investment-friendly taxation to sustain private-sector-led growth.

Keywords: corporate debt financing, non-bank credit, bank loans private investment, autoregressive distributed lag model

1. Introduction

In recent years, many developing economies, including Nigeria, have experienced a growing shift toward corporate debt instruments—such as corporate bonds, commercial papers, and private credit—as alternative sources of financing for firms. This evolution has been driven by persistent constraints on bank loans, elevated borrowing costs, the need for financing diversification, and the implementation of regulatory reforms designed to deepen domestic capital markets (FSD Africa, 2022; SEC Nigeria, 2021).

In Nigeria, the Capital Market Master Plan (2021–2025) specifically aims to expand the corporate bond and commercial paper markets, strengthen disclosure standards,

and encourage greater participation by institutional investors (SEC Nigeria, 2021). Despite these reforms, the extent to which corporate debt financing stimulates private investment—particularly private fixed capital formation—remains uncertain.

Evidence from advanced economies indicates mixed outcomes. Firm-level analyses have shown that, during periods of liquidity stress, bond issuance by firms often substitutes for bank loans, prompting firms to increase their cash reserves rather than expand capital expenditure (Darmouni & Siani, 2020/2024; Halling, Yu, & Zechner, 2020). Consequently, the overall investment response to bond market expansion has been modest in such contexts (Darmouni, 2025). Conversely, macro-level and multi-country studies suggest that interactions between public debt, sovereign investment, and private sector behavior are equally important.

Public investment may "crowd in" private investment by easing infrastructure bottlenecks (World Bank, 2024), yet heavy sovereign borrowing in African markets has been shown to constrain private funding and crowd out both bank and credit channels (EIB/Finance in Africa, 2024). Access to finance continues to represent one of the most persistent barriers to private investment in Nigeria.

Historically, Nigerian firms have depended largely on commercial banks to finance their fixed investments. However, over the past two decades, structural fragilities in the banking sector—characterized by high lending rates, limited long-term credit, and stringent collateral requirements—have rendered bank loans increasingly expensive and inadequate for capital-intensive investment (CBN, 2024). In response, firms have progressively turned to instruments such as corporate bonds, commercial papers, and private credit facilities as alternative means of mobilizing capital (FSD Africa, 2022; SEC Nigeria, 2021).

Nevertheless, the overall impact of these corporate debt instruments on private investment remains ambiguous. From a theoretical standpoint, such instruments could stimulate investment by broadening financing options, reducing credit constraints, and enabling firms to initiate new productive ventures. Conversely, they could dampen investment activity if firms utilize them primarily to refinance existing bank obligations, build liquidity buffers, or pursue speculative activities rather than engage in productive expansion (Darmouni & Siani, 2020; Halling et al., 2020).

This uncertainty is particularly salient in emerging markets like Nigeria, where corporate bond markets are relatively shallow, dominated by a few large issuers, and constrained by liquidity and transparency issues (SEC Nigeria, 2021). Empirical findings from advanced economies suggest that corporate bond issuance during financial tightening often substitutes for bank loans without yielding proportional increases in real investment (Darmouni, 2025). However, such results may not directly apply to Nigeria, where financial market depth, institutional quality, and investor diversity differ substantially (EIB, 2024).

Evidence within Nigeria remains mixed: while some studies report a positive association between bond market development and private investment, others find weak or even negative relationships between private credit growth and investment performance (Owoeye *et al.,* 2023). Although aggregate time-series and ARDL-based studies indicate that bond market expansion correlates with overall economic growth, its influence on private fixed capital formation remains limited and inconclusive (Research on Nigeria Bond Market Development & Growth, 2024–2025).

Persistent structural weaknesses—including low issuer diversity, limited investor participation, inadequate market infrastructure, and transparency challenges—continue to hinder the effective functioning of Nigeria's corporate debt market (FSD Africa, 2022; SEC Nigeria, 2021). Moreover, rising public sector borrowing in Nigeria introduces additional complexity into the financing–investment relationship.

Substantial government debt issuances can absorb domestic liquidity and elevate interest rates, thereby constraining private sector access to funding (Jalles, 2024). Under such circumstances, corporate debt could either act as a complementary financing source, mitigating credit shortages, or as a costly substitute, with limited impact on productive investment. Understanding which of these dynamics prevails is essential for designing policies that foster private-sector-led growth and effective capital market development in Nigeria.

Against this background, the present study aims to empirically examine the impact of corporate debt financing on private investment in Nigeria over the period 2007Q1–2024Q4. Specifically, the study investigates the long-run and short-run dynamics among corporate debt, bank loans to corporates, lending interest rates, corporate taxation, and real GDP.

This study contributes to clarifying the role of corporate debt markets in promoting private investment and informing financial sector policies within Nigeria's evolving macroeconomic context. Therefore, the guiding research question is does rising corporate borrowing crowd out or crowd in private investment in Nigeria? In line with this question, the following hypothesis are formulated:

H_{01}: Corporate borrowing has no significant effect on private investment in Nigeria.

H_{02}: Corporate borrowing has a significant effect on private investment in Nigeria.

2. Literature Review

Conceptual Review

Corporate Debt Financing

Corporate debt financing refers to credit obtained by firms from financial institutions or markets. Private sector firms often borrow from financial institutions because these institutions provide more flexible, accessible, and specialized financing options than traditional bank loans. NBFIs—such as insurance companies, pension funds, microfinance institutions, and leasing firms—offer tailored products, faster loan approvals, and less stringent collateral requirements. They also provide long-term financing and support for sectors or enterprises that banks may consider too risky, including small and medium-sized enterprises (SMEs) and startups. Consequently, financial institutions serve as important alternative funding sources that help firms overcome credit constraints, diversify financing channels, and sustain investment and growth.

Corporate debt financing represents an alternative financing channel that supports firms' investment and liquidity needs without depending solely on commercial banks. According to Darmouni and Siani (2024), the rise in lending enhances financial deepening by providing diverse and flexible funding sources, especially in economies where bank loans are constrained or unfavourable. Similarly, Eze and Onyekachi (2023) noted that corporate debt financing helps firms to manage liquidity shocks and finance long-term projects, particularly when banking sector credit tightens.

Nonetheless, excessive growth in private credit can also compete with traditional bank loans, potentially crowding out bank loans (Darmouni & Siani, 2020). Thus, corporate debt financing plays a dual role—either crowding in or crowding out investment—depending on the efficiency of financial intermediation and regulatory framework.

Private Investment

Private investment refers to the expenditure by individuals, firms, or private entities on capital goods such as machinery, infrastructure, and technology with the aim of increasing future productive capacity and profitability. It serves as a key driver of economic growth and employment generation (Solow, 1956; Kazeem & Bello, 2021). In developing economies like Nigeria, private investment performance is often influenced by macroeconomic stability, financing availability, and institutional quality (Adeleke, 2021).

According to Ngugi and Wekesa (2022), the growth of financial intermediation can stimulate private investment by easing credit constraints and diversifying sources of finance. However, Ibrahim and Afolabi (2020) observed that high interest rates and unstable policy environments often discourage private investors from undertaking new projects. Therefore, the responsiveness of private investment to financial variables reflects the overall efficiency of the credit market and fiscal environment.

Bank Loans (BLNt)

Bank loans to the private sector (BLNt) represent credit extended by commercial banks to businesses and households for productive purposes. This variable is a critical indicator of the banking sector's role in promoting investment and economic growth (Ajibola & Odusola, 2019). The availability of bank loans facilitates firm expansion, modernization, and technological advancement. However, when lenders expand their market share, it may reduce banks' traditional intermediation function, leading to a crowding-out effect on bank loans (Darmouni, 2020).

According to the European Investment Bank (2024), strong competition between bank and firms can either improve credit efficiency or trigger financial segmentation, depending on the institutional setup. In Nigeria, fluctuations in bank loans are influenced by monetary policy rates, liquidity levels, and corporate demand for long-term financing.

Interest Rate (INTt)

The lending interest rate (INTt) represents the cost of borrowing funds from financial institutions and serves as a key determinant of investment decisions. High interest rates increase the cost of capital, discouraging borrowing and reducing private investment, while lower rates encourage credit expansion and capital formation (Adeleke, 2021; Ibrahim & Afolabi, 2020).

According to Bai (2024), volatility in interest rates can distort firms' financing decisions, especially in emerging markets where financial markets are shallow. In the Nigerian context, Kazeem and Bello (2021) highlighted that sustained high lending rates have historically limited firms' access to affordable capital, reducing their investment appetite. Conversely, a stable and predictable interest rate environment promotes long-term investment planning and enhances private sector productivity.

Corporate Tax Rate (TAXt)

The corporate tax rate (TAXt) is the proportion of corporate profits paid to the government as tax. It influences investment decisions by affecting after-tax returns and

firms' capacity to reinvest profits (Ibrahim & Afolabi, 2020). High corporate tax rates tend to discourage private investment, as firms retain less income for expansion and innovation (Okafor & Daramola, 2023).

Conversely, moderate taxation can stimulate investment by ensuring fiscal sustainability without excessively burdening enterprises (Eze & Onyekachi, 2023). According to the World Bank (2024), well-structured corporate tax policies can attract foreign investment and promote domestic capital accumulation when combined with sound financial regulation. Therefore, TAXt plays a crucial role in shaping firms' cost structure and overall investment climate.

Theoretical Framework

The Financial Intermediation Theory

This study is anchored on the Financial Intermediation Theory, which provides a sound framework for understanding how financial institutions both bank and other corporate bodies mobilize savings and allocate credit to productive investment in an economy. The Financial Intermediation Theory explains how financial institutions act as intermediaries between savers and borrowers to promote efficient capital allocation and economic growth. It argues that direct transactions between surplus and deficit units are often hindered by information asymmetry, high transaction costs, and risk management difficulties.

Financial intermediaries—such as banks and financial institutions—bridge this gap by mobilizing savings, assessing credit risks, transforming liquidity, and providing long-term finance to firms. Through these functions, they facilitate investment, stimulate private sector growth, and enhance overall economic development (Gurley & Shaw, 1960). Empirically, this theory supports the "crowding-in hypothesis"—the idea that the development of credit markets complements rather than displaces bank loans, expanding total credit availability and boosting investment (Darmouni & Siani, 2024; Ngugi & Wekesa, 2022).

Over time, the concept has expanded beyond traditional banks to include other financial intermediaries such as pension funds, insurance companies, finance houses, and corporate bond markets. These institutions provide alternative channels of credit that complement or substitute the traditional banking system, particularly in economies facing credit rationing or weak banking penetration. In the context of Nigeria, where commercial banks often exhibit conservative lending due to regulatory and risk constraints, corporate debt financing (including bonds, commercial papers, and private credit) has emerged as a vital financing source.

Empirical Review

Corporate debt financing—comprising corporate bonds, private credit funds, and other instruments—has gained attention as an alternative channel for mobilizing private investment, particularly in economies where traditional banking systems are constrained. In Nigeria, recent empirical and policy-oriented studies have explored the extent to which debt instruments facilitate private sector investment and economic expansion. However, the evidence remains mixed and largely constrained by underdeveloped markets, limited institutional participation, and macro-financial instability.

Ayres (2025), in a study sponsored by British International Investment, extends the analysis to the regional level, comparing Nigeria's corporate bond mobilization efforts with those of peer Sub-Saharan African economies. The study found that Nigeria's reliance on

sovereign borrowing has constrained the growth of its corporate debt segment, while countries with better-developed institutional frameworks—such as Kenya and South Africa—exhibit stronger private investment responses to corporate bond issuance. Ayres (2025) concludes that Nigeria's experience underscores the importance of institutional quality, credit-rating depth, and secondary market liquidity in translating debt financing into tangible private investment outcomes.

PwC Nigeria (2024) provides one of the most comprehensive overviews of Nigeria's corporate bond market performance in recent years. The report indicates a significant decline in corporate bond issuance—by as much as 83% in the first half of 2024—while sovereign debt instruments continued to dominate the domestic fixed-income market. This concentration of capital in government securities effectively limits the liquidity available for corporate issuers, creating a crowding-out effect on private investment. The study concludes that while debt financing instruments could provide firms with access to long-term capital, the shallowness of Nigeria's corporate debt market prevents this potential from being fully realized. These finding echoes classical financial intermediation theory, which posits that well-developed financial markets are essential for efficient resource allocation and productive investment (Levine, 2005, as cited in PwC, 2024).

Similarly, Kodongo (2024) examined Nigeria's bond market within a broader macro-financial framework and found that macroeconomic volatility—particularly high inflation, exchange rate instability, and fiscal dominance—has eroded investor confidence and increased corporate borrowing costs. These factors discourage private firms from issuing debt. The study also observed that sovereign bond yields in Nigeria remain disproportionately high relative to corporate issues, which further suppresses corporate participation in the market. Kodongo (2024) therefore argues that macroeconomic stability and fiscal discipline are prerequisites for any meaningful link between corporate debt and private investment. This aligns with the crowding-out hypothesis, where excessive public borrowing limits the availability of private capital.

Darmouni and Siani (2020, 2024) investigated the phenomenon of liquidity-driven bond issuance using firm-level panel data during the COVID-19 liquidity shock. Employing difference-in-differences and regression analysis, they found that firms increased bond issuance largely to strengthen cash buffers and repay bank lines, leading to a reduction in bank loans. They concluded that bond issuance can crowd out bank loans, especially during liquidity stress periods, and recommended that regulators monitor substitution effects. However, their study's focus on developed markets limits its applicability to emerging economies with shallow bond markets.

Similarly, Darmouni (2025) and Halling et al., (2020) examined post-pandemic policy support to bond markets. Using an updated firm-level dataset, the study showed that although policy stimulus boosted issuance, much of the proceeds were held as liquidity rather than used for capital investment. Thus, bond market stimulus enhanced corporate solvency but had mixed effects on real investment. They recommended pairing market support with policies that encourage productive investment. Nonetheless, the study's focus on advanced economies suggests caution when generalizing to African contexts.

In a broader context, Francois et al. (2024) from the World Bank analyzed the "crowding-in" effect of public investment using a multi-country panel dataset from 1980–2019. Their findings revealed that public investment could crowd in private investment

when it addresses infrastructure bottlenecks. They concluded that the crowding relationship depends on the quality and focus of public projects. Nevertheless, cross-country heterogeneity poses estimation challenges.

Empirical studies on Nigeria's bond market development have generally shown a positive association between corporate debt financing and investment. Using ARDL and time-series techniques, these studies found that deeper bond markets support investment but that short-run effects remain weak. For example, Owoeye (2023) provided complementary evidence using ARDL analysis (1990–2019) and reported that while fixed-income securities contribute positively to Nigeria's capital market, the effect is not statistically significant in the long run. The study recommended improved long-term issuance and transparency but acknowledged that post-2019 market dynamics may yield different results.

In a related vein, Grundy et al. (2024) examined cross-country interactions between sovereign and corporate debt issuance. Their findings suggested that sovereign debt maturity structures influence corporate bond issuance—sometimes complementing rather than crowding out private borrowing. They recommended aligning public debt management with corporate financing goals. Similarly, De Fraisse (2024) studied the impact of government debt maturity on corporate investment composition in the United States. The study found that long-term public debt supply raises discount rates, discouraging long-duration private investments. Although conceptually relevant, the results' generalizability to emerging economies remains limited.

At the subnational level, Bai (2024) found that increased local government borrowing can crowd out private bank loans by absorbing available credit. The study recommended better coordination between local and private financing needs. In the same year, Agarwal (2024) differentiated the crowding effects of government loans and bond holdings on bank loans and found that SME lending was most negatively affected when public borrowing surged. Complementing these findings, Darmouni (2020) on VoxEU synthesized prior studies and concluded that while bond markets act as substitutes for bank loans during crises, much of the funding is retained as liquidity. Darmouni recommended coupling bond market development with targeted investment incentives.

Jalles (2024) employed a panel VAR across emerging and developing countries and found that both public and private investment shocks promote growth, with public investment crowding in private investment when it reduces infrastructural constraints. Nevertheless, heterogeneous responses across countries make generalization difficult.

Wahidin (2021) analyzed 44 countries using dynamic panel models (1990–2017) and concluded that bond market development enhances private investment, particularly in economies with mature institutions. However, pre- and post-crisis differences suggest time-varying effects. The SEC Nigeria Capital Market Master Plan (2021–2025) further reinforced the need for institutional reforms. The policy document observed that corporate bond and commercial paper markets in Nigeria remain shallow with limited issuer diversity. It recommended improving market-making and pension fund participation to deepen the market.

Recent cross-country evidence by Griffith (2021–2024) confirmed that bond market depth positively correlates with private investment only when institutional quality is high. The study called for governance and investor protection reforms in developing economies. Furthermore, meta-analyses of post-2020 firm-level evidence revealed that

firms substituted bond financing for bank loans primarily for liquidity reasons. While this substitution stabilized balance sheets, it did not necessarily stimulate new investment.

Country-level studies in Nigeria have presented mixed results, showing positive but statistically weak impacts of bond activity on private investment. They concluded that the Nigerian corporate bond market remains too small to exert significant macro effects. FSD Africa (2022) similarly noted that defaults in Africa's commercial paper market reduced investor confidence, underlining the importance of transparency and regulation. Thus, the literature collectively underscores that the impact of corporate debt financing on private investment is context-dependent, mediated by institutional depth, macroeconomic stability, and financial market development.

3. Research Methodology

This study adopts an ex post facto research design, which relies on historical time-series data to examine the relationship between corporate debt financing and private investment in Nigeria over the period 2007Q1–2024Q4. The design is appropriate because it enables the analysis of existing economic data to identify both long-run and short-run effects without manipulating variables. Quarterly data on private fixed capital formation, corporate debt financing, bank loans to the private sector, lending interest rate, corporate tax, and real GDP were obtained from reliable sources such as the Central Bank of Nigeria (CBN), World Bank, Securities and Exchange Commission (SEC), FMDQ, and the National Bureau of Statistics (NBS).

The study's analytical framework is based on the Autoregressive Distributed Lag (ARDL) approach developed by Pesaran, Shin, and Smith (2001), which is suitable for small-sample time-series data and for variables integrated of order I(0) or I(1). The ARDL model allows for the simultaneous estimation of both short-run dynamics and long-run equilibrium relationships among the variables.

Model Specification

The functional form of the model is expressed as:

$$INV_t = f(NBD_t, BLN_t, INT_t, TAX_t, GDP_t) \quad \ldots\ldots\ldots\

Table 1
Description of Variable

Variable	Description	Source	Variables Expected Sign
INV	Private fixed capital formation (% of GDP)	NBS, World Bank	Dependent variable
NBD	Non-bank debt financing (value of corporate bonds, commercial papers, private credit by firms)	FMDQ, SEC Nigeria	Independent Variable (+ or −)
BLN	Bank loans to corporates (commercial bank loans to private sector)	CBN Statistical Bulletin	Control Variable (+)
INT	Lending interest rate (weighted average)	CBN	Control Variable (−)
TAX	Corporate income tax rate	FIRS	Control Variable (−)
GDP	Real GDP growth rate	NBS	Control Variable (+)

Source: Researcher's Output (2025)

4. Result and Discussion

Unit Root Test

Table 2
ADF Unit Root Test

Variable	ADF T-Statistic (Level)	5% Critical Value	Prob.	ADF T-Statistic (1st Diff.)	5% Critical Value	Prob.	Order of Integration
INV	-1.684250	-2.917650	0.4389	-5.872314	-2.917650	0.0000	I(1)
NBD	1.412570	-2.917650	0.9991	-5.953820	-2.917650	0.0000	I(1)
BLN	-0.945823	-2.915522	0.7645	-9.405261	-2.916566	0.0000	I(1)
INT	1.528661	-2.904198	0.9975	-5.385712	-2.904848	0.0000	I(1)
TAX	-6.912342	-2.904848	0.0028	—	—	—	I(0)
GDP	-0.328741	-2.904198	0.7426	-7.085463	-2.904848	0.0000	I(1)

Source: Authors Computation using E-view 10 (2025)

The Augmented Dickey-Fuller (ADF) unit root test was conducted to determine the stationarity of the time series variables in the study. The null hypothesis of the ADF test

states that the variable has a unit root (non-stationary), while the alternative hypothesis indicates stationarity.

From the results above, at level, the ADF test statistics for all variables except TAX are less negative than the 5% critical value, and their corresponding probabilities are greater than 0.05, implying that they are not stationary at level. However, after taking the first difference, their ADF test statistics become more negative than the 5% critical value, and the p-values fall below 0.05, suggesting that the series become stationary after first differencing. Hence, INV, NBD, BLN, INT, and GDP are integrated of order one, I(1). In contrast, TAX is stationary at level with a significant p-value of 0.0028, meaning it is integrated of order zero, I(0).

ARDL Bounds Test for Co-integration

Table 3

ARDL Bounds Test for Co-integration

Test Statistic	Value	Significance Level	Lower Bound (I(0))	Upper Bound (I(1))	Decision
F-statistic	**5.874**	10%	2.26	3.35	Evidence of Co-integration
		5%	2.62	3.79	
		2.5%	2.96	4.18	
		1%	3.41	4.68	

Source: Authors Computation using E-view 10

The ARDL bounds test was conducted to examine the presence of a long-run relationship among the variables private investment (INV), Non-bank debt (NBD), bank loans (BLN), interest rate (INT), tax revenue (TAX), and real gross domestic product (GDP). The computed F-statistic value of 5.874 exceeds the upper critical bound value of 3.79 at the 5% significance level, indicating that the null hypothesis of no long-run relationship among the variables is rejected.

This result confirms the existence of a stable long-run co-integrating relationship between private investment and its determinants. In other words, fluctuations in non-bank corporate debt, bank loans, interest rates, tax, and GDP jointly influence investment behavior in the long run. Therefore, it is appropriate to proceed with the estimation of both the long-run and short-run ARDL models to understand the nature and magnitude of these relationships.

Long-Run ARDL

Table 4

Estimated Long-Run ARDL Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Remark
NBD (Non-bank Corporate Debt)	0.2847	0.0921	3.092	0.004	Positive and Significant
BLN (Bank Loans)	0.1564	0.0718	2.178	0.035	Positive and Significant
INT (Interest Rate)	-0.1292	0.0547	-2.362	0.026	Negative and Significant
TAX (Tax Revenue)	-0.0875	0.0401	-2.182	0.034	Negative and Significant
GDP (Economic Growth)	0.5129	0.1103	4.650	0.000	Positive and Highly Significant
C (Constant)	1.7321	0.5937	2.918	0.006	—

Source: Authors Computation using E-view 10 (2025)

The long-run ARDL results show that non-bank corporate debt financing (NBD) exerts a positive and statistically significant effect on private investment in Nigeria. This suggests that increased borrowing from non-bank sources such as corporate bonds and commercial papers stimulates investment activity. The finding supports Darmouni and Siani (2024) and Ngugi and Wekesa (2022), who observed that deepening corporate debt markets can "crowd in" private investment by easing credit constraints in Developing Economies and Kenya respectively.

Conversely, interest rate (INT) and tax revenue (TAX) exhibit negative and significant relationships with investment, implying that higher borrowing costs and excessive taxation discourage long-term capital formation. This result aligns with Adeleke (2021) and Ibrahim & Afolabi (2020), who both reported that macroeconomic instability and high interest rates depress investment growth in Nigeria. However, the positive and significant coefficient of bank loans (BLN) indicates that the banking sector still plays a complementary role in financing investment which is in line with Ajibola & Odusola (2019), but contrasts with the "crowding-out" argument of Eze & Onyekachi (2023), who found that non-bank credit expansion often displaces traditional bank loans.

Furthermore, the strong positive impact of GDP confirms that economic growth enhances investors' confidence and stimulates investment, consistent with Solow's (1956) growth model and empirical evidence from Kazeem & Bello (2021). Thus, the long-run equilibrium relationship indicates that both bank and non-bank debt channels jointly influence private investment, though the efficiency of these channels depends on macroeconomic stability.

Short-Run ARDL

Table 5

Estimated Short-Run ARDL Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.	Remark
D(NBD)	0.1723	0.0584	2.949	0.005	Positive and Significant
D(BLN)	0.0841	0.0412	2.040	0.046	Positive and Significant
D(INT)	-0.0674	0.0276	-2.442	0.020	Negative and Significant
D(TAX)	-0.0349	0.0153	-2.281	0.028	Negative and Significant
D(GDP)	0.2562	0.0665	3.852	0.001	Positive and Highly Significant
ECM(-1)	-0.6125	0.1149	-5.330	0.000	Significant and Correct Sign

Source: Authors Computation using E-view 10 (2025)

The short-run results reveal that changes in non-bank debt financing (NBD) continue to exert a positive and significant effect on private investment, implying that short-term access to alternative financing mechanisms promotes immediate investment activities. This finding reinforces Okafor & Daramola (2023), who emphasized that short-run liquidity from corporate bonds supports capital-intensive projects when bank loans is tight.

Similarly, bank loans (BLN) maintain a positive short-run effect, suggesting that both financing sources operate complementarily rather than competitively in the Nigerian financial system. The negative coefficients of interest rate and tax confirm their short-term disincentive effects on investment, consistent with Keynesian investment theory and prior empirical findings by Adeleke (2021).

The error correction term (ECM) carries the expected negative sign (−0.6125) and is statistically significant at the 1% level, indicating that approximately 61% of disequilibrium from the previous period's shock is corrected each year. This confirms a moderate speed of adjustment towards long-run equilibrium.

Comparatively, the results contradict the "crowding-out hypothesis" suggested by Darmouni and Siani (2020) in the U.S. context, where expansion of non-bank credit sometimes reduces traditional bank loans and total investment. However, in Nigeria's case, the positive coefficients indicate a "crowding-in effect", where non-bank debt complements rather than displaces bank loans, thereby fostering greater private investment.

5. Conclusion and Recommendations

The ARDL bounds test confirmed the presence of a long-run co-integrating relationship between private investment and its key determinants non-bank debt financing, bank loans, interest rate, tax revenue, and GDP. The long-run results revealed that non-debt (NBD) significantly and positively affects private investment, indicating that increased borrowing from corporate and other non-bank financial sources enhances private capital formation in Nigeria.

Likewise, bank loans (BLN) and economic growth (GDP) exert positive influences, suggesting that both banking and non-bank credit channels complement each other in financing productive investment. However, interest rate (INT) and tax revenue (TAX) exhibited negative and significant effects, emphasizing the dampening effect of high

borrowing costs and fiscal burdens on investment. The short-run dynamics further confirmed these relationships, with a significant and correctly signed error correction term (ECM = -0.6125), indicating a moderate adjustment speed toward long-run equilibrium.

Thus, the study concludes that non-bank debt financing plays a catalytic role in Nigeria's investment growth, supporting the financial intermediation and credit-deepening perspectives, while emphasizing the need for macroeconomic and fiscal stability to sustain investment performance.

Base on the findings the study recommends the following

(i) Strengthen Financial Institutions: The government and regulatory agencies such as the Central Bank of Nigeria (CBN) and the Securities and Exchange Commission (SEC) should enhance the depth and transparency of corporate debt markets (e.g., corporate bonds and finance houses). This will attract more investors and improve firms' access to alternative financing sources.

(ii) Promote Complementarity between bank loans and non-bank debt: Policies should be designed to ensure synergy rather than competition between the banking sector and other intermediaries. A harmonized credit policy can enhance overall capital mobilization and support private sector investment.

(iii) Maintain a Stable Interest Rate Environment: Since high interest rates discourage investment, the monetary authority should pursue interest rate moderation through effective liquidity management and inflation control.

(iv) Implement Investment-Friendly Tax Policies: Reducing excessive tax burdens and providing tax incentives for productive sectors will encourage firms to reinvest profits and expand capacity.

(v) Sustain Economic Growth and Macroeconomic Stability: Since GDP growth positively influences investment, fiscal and monetary coordination should aim at maintaining macroeconomic stability, as it strengthens investor confidence and long-term capital formation.

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