AFRICAN JOURNAL OF ACCOUNTING, FINANCE & MARKETING
UNIVERSITY OF PORT HARCOURT BUSINESS SCHOOL,
UNIVERSITY OF PORT HARCOURT.
VOL. 10 NO. 1. 2026

DEVELOPMENT FINANCE INSTITUTIONS AND PRIVATE SECTOR PROJECTS IN DEVELOPING COUNTRIES. A CASE STUDY OF NIGERIA

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Article history:
Received:January 2026;
Received in revised form:
28 January 2026;
Accepted: February 10, 2026;

Keywords:
Development Finance Institutions, Private Sector Investment, Foreign Direct Investment, Private Capital Mobilization

Abstract

This paper analyses how the Development Finance Institutions have been effective in crowding in foreign and domestic private investment in Nigeria between the year 2000-2023. The research used the Autoregressive Distributed Lag (ARDL) bounds testing methodology to assess the effect of DFI investment on the flow of the private capital using the Central Bank of Nigeria, World Bank and DFI annual reports and conditioned the effect on the macroeconomic situation and institutional quality. Findings indicate imbalanced effects of crowding in: DFI interventions largely crowd-in foreign but show statistically insignificant effects on domestic privates. The growth of GDP, institutional quality, and macroeconomic stability turn out to be important determinants to both types of investments, whereas oil prices and exchange rates have a disproportional influence on foreign investment. The results indicate that although DFIs are able to attract international investors with signaling and mitigating risk schemes, mobilizing domestic capital has to be supported by complementary policies such as financial sector deepening, risk-sharing specific instruments, and governance changes. The research provides empirical information on the effectiveness of DFI in the country-specific setting and should inform the development finance policy and operation strategies.

Introduction

DFI have become important intermediaries in filling the financing gap in the endeavours of the private sector especially in situations where the traditional commercial capital is still

reluctant (Carmen et al., 2025). DFIs have placed themselves as the agents of mobilization of private investments in sub-Saharan Africa where economic growth is undermined by lack of infrastructure and poor access to long-term finance (Abdulai and Issahaku, 2024). The rationale behind this is very simple: with the assistance of patient capital, technical knowledge, and risk reduction mechanisms, these institutions can prove the viability of the project and stimulate skeptical private investors to invest money they would not. This catalytic effect has been not well comprehended in particular contexts of countries, in which DFI interventions and domestic inflow of capital can have quite opposite results to the theoretical expectations or cross-country empirical averages (Masila et al., 2025).

The history of development finance in Nigeria is a very intriguing contradiction, and it is worth studying. Although the country has been at the forefront of concentrating one of the strongest activities of DFI in Africa, and has relatively diversified economic structures that are not tied to oil, the country is still faced with the challenge of poor investment by the private sector in key sectors (Adesoye & Atanda, 2014) . The flows of foreign direct investment have been fluctuating and are in extractive industries whereas domestic capital flows on the private side have shown tendencies of flight and short-termism orientations (Obukohwo and Alao, 2022). The gaps in infrastructure financing continue to increase every year, the use of manufacturing capacities remains below the optimal point, and small and medium enterprises refer to the lack of access to finance as one of the main limitations. This lack of linkage between high DFI presence and ongoing investment deficits throws up basic questions concerning whether such institutions actually mobilize additional private resources or simply use them in place of commercial capital that would otherwise have entered the market (Isiaka, 2025).

Avellan et al. (2024) discover that the multilateral development banks crowd out the private lenders in the middle-income countries, especially in the cases where the institutional quality is poor. On the same note, (Leon, 2025) have shown that DFI investments in African manufacturing industries often substitute instead of supporting commercial finance particularly when the investment targets already attractive to commercial investors. These results undermine the additionality arguments that DFI requirements are based on and hint at the possibility that context-specificities, such as the quality of domestic institutions, macroeconomic stability, and the organization of financial markets, play a key role in mediating crowding effects. However in the vast majority of empirical studies, the cross-country panel approach that hides domestic dynamics and holds to homogenous impacts across a wide range of institutional settings remains used.

The time aspect of DFI effectiveness is one area of scholarship that has not been fully explored. Nigeria has undergone numerous macroeconomic and policy regime changes in the last twenty years, such as banking reforms in the mid-2000s, oil price shocks, recession, and consequent restrictions on the foreign exchange imports (Kure and Salisu, 2024). Such structural discontinuities probably do change how DFIs affect private business

investment decisions, but research usually assumes that relationships remain constant over time. Moreover, the literature has not given much attention to the differentiation between foreign and domestic responses to DFI interventions of private capital (Xu et al., 2021). This difference is quite significant in the Nigerian case, where capital flight by investors within the domestic market and unwillingness by foreign investors can react differently to DFI signals and risk-sharing arrangements (Daasi, 2024).

The current study will analyze the effectiveness of DFI investments in crowding in private capital in Nigeria and, more precisely, whether such effects are dissimilar between foreign and domestic private investors in varying macroeconomic and policy regimes. The knowledge of these dynamics is of great importance to the DFI operational strategies, as well as the policy frameworks in Nigeria aimed at mobilizing the resources available in the private sector in development. When DFIs mostly appeal to existing investors who are already inclined into coming in, their additionality is doubtful, and resources could be used in other areas. On the other hand, where there are truly catalytic effects, but differ according to the origin of investor or over time, then it is possible to intervene in a highly targeted way (Kim & Tam, 2024). This study offers empirical support to general discussion about the effectiveness of development finance in institutions that are poorly institutionalized and in macroeconomically unstable settings by drawing on Nigeria as an exemplar.

Literature Review

Theoretical Review

Crowding-In Theory

The theoretical basis of the Development Finance Institution interventions assumes that the market failures in the developing economies are systematic and therefore on the basis, they do not allow efficient distribution of the private capital in the economies to viable commercial projects (Park & Meng, 2024). The idea of Crowding-in theory is that the presence of DFI may trigger further private investment in a number of different yet complementary ways (Maric, 2015). DFIs mitigate the information asymmetries that afflict the investment decisions in emerging economies, whereby trustworthy financial information, open governance frameworks, and reputable project appraisal skills are in short supply (Andonov et al., 2025). DFIs can produce useful spillovers of information by undertaking due diligence, financial commitments by making investments that lower the costs of search and evaluation by future investors who would otherwise avoid any market that they view as opaque or too risky.

DFI participation gives strong signaling effects which modify the risk evaluation of the private investors. By co-investing into projects or sectors with reputable multilateral or bilateral institutions, they implicitly assure quality and viability to any markets that may otherwise disregard the opportunities based on country or sector risk perceptions (Cagiza, 2022). This certification mark is especially useful where the frontier markets such as Nigeria have negative perceptions, justified or not, which sometimes surpass the true project-level risks. The reputational capital institutions like IFC or AfDB invest by their involvement has a weight with the commercial investors that do not necessarily have such skills on the ground or mitigation of political risk capacity.

DFIs support risk-sharing schemes allowing projects that would otherwise be unbankable to be financially viable to risk-averse risk capital (Adesoye and Atanda, 2014). DFIs take downside risks that commercial investors consider untenable, and which business partners would otherwise prefer to keep to themselves, but allow them to maintain a reasonable share of upside participation (Ewubare and Onah, 2022). This risk structure is particularly important in long-gestation infrastructure projects where political, regulatory, and currency risks span decades, and are beyond the risk tolerance of the pension funds, insurance companies, and other institutional investors theoretically qualified to deploy patient capital.

The Crowding-in theory focuses on demonstration effects that successfully financed DFI projects create in sectors and geographies that have been off-limits to private capital in the past. First movers create proof of concept, show the operational routes in cases of regulatory environments, build local supplier networks, and create standardized returns that stimulate follower investment (Leon, 2025) . The long-term impact of such demonstrations effects is the ability to make whole sectors appear to be perceived as having high-risks, to become mainstream investment destinations and in effect to extend the investment frontier of commercial capital. These mechanisms, particularly the accumulation of information, signaling, risk-sharing, and demonstration theoretically place DFIs in an attenuated role as agents and not as competitors of scarce investment resources in capital-constrained developing economies.

Crowding-Out Theory

Although the spirit underlining DFI mandates is optimistic, the crowding-out theory has strong counter-arguments based on the view that development finance interventions can in fact displace instead of mobilizing private capital. Crowding-out hypothesis comes about on the appreciation that DFIs have very different incentives and constraints, to the real investor, which establishes competitive relationship that may lead to a decrease and not an increase in aggregate investment flows in the developing economies (Carmen et al., 2025). Fundamentally, DFI financing replaces the private capital that is entering markets without official action, or the activities of DFI strongly deter commercial action by skewing prices, diminishing profit margins, or distorting risk-return curves.

The most direct crowding-out effect is by way of below-market pricing of capital. DFIs are generally concessional or close to concessional in terms of financing, which is the longer tenor, reduced interest rate, subordinated structure, or patient equity, in line with their development requirements as opposed to pure profit maximization (Maric, 2015). When such subsidized rates get in the hands of borrowers or projects which commercial lenders might service profitably at the prevailing market rates, DFIs effectively disrupt the pricing of the private sector and take deals which would otherwise subsidize the commercial financial institutions. This replacement is especially difficult in cases where the focus is on the larger company or established industry where the asymmetry of information has reduced and there is even commercial interest, albeit provisionally (Andonov

et al., 2025). Prudently, such private lenders pull out of areas that they cannot match with subsidized official funds, limiting and not increasing the overall financial intermediation capacity.

The level of DFI participation can indicate too high risk to the private investor rather than the risk that can be managed, which is counterintuitive to the desired certification results (Leon, 2025 . When complex multilateral agencies with better information and political relations demand concessional conditions or special treatment to warrant investments, commercial investors can take this as an assurance that projects or markets are too risky to be considered normal commercial investments (Kim and Tam, 2024). This negative signaling is particularly incisive in situations where DFIs centralize operations in troubled areas, in post-conflict or politically unstable areas. Instead of assuring the private capital, a conspicuous presence of DFI assures what prudent commercial investors ought to avoid.

Crowding-out is based on opportunity cost dynamics of shallow financial markets. DFI consumption of desirable opportunities in a market such as Nigeria where investment opportunities outnumber capital investments limits the pipeline that commercial investors would be able to access to enter into viable deals (Zikhali, 2021). The competition in the market may have the effect of lowering the total market participation or returns of the private equity funds, impact investors, and development-oriented commercial lenders that are left with a few of the remaining second-tier opportunities once DFIs have secured prime projects. Also, in cases where DFIs finance projects that would otherwise be funded with commercial capital, but do not act as adding in the relevant sense, they squander the limited concessional resources on transactions that would have never been catalyzed by an instrument of development finance, which is inefficient use of development finance (Park & Meng, 2024).

The Concept of Development Finance

The concept and practice of development finance has been transformed in many ways since the inception of multilateral development banks after World War II, but the core of the development finance concept, to direct capital into productive investments in capital-starved developing economies, remains still the same (Carvalho et al., 2019). Initial conceptualizations focused on development finance as mainly financing infrastructure and government-owned firms, as these approaches were the most predominant approaches to development of the 1950s through 1970s that favored the dominance of government-led industrialization strategies (Alhassan, 2023) . Yet, the experience of structural adjustment, and the Washington Consensus of market-oriented reforms, radically re-conceptualized development finance in the 1980s and afterwards, given a focus on the development of the private sector, commercial sustainability of development institutions, and the promotion of development by catalysis, and not substitution of official capital (Archibong et al., 2021).

According to Xu et al. (2021), the contemporary DFIs are now saddled with two sets of mandates in which developmental additionality must be balanced with financial returns adequate to guarantee the

sustainability of the institution and rotating capital bases. Operational decisions affecting development impact and commercial viability, such as sectoral allocation, risk appetite, pricing decisions, and propensity to venture into truly frontier markets versus pull towards lower-risk middle-income environments are determined by such tension. An example of such challenging measurements with this mandate ambiguity is recorded by Vayrynen et al. (2022), which reports that DFIs simultaneously pursue development outcomes that legitimize concessional funding and reflect that they perform commercially to justify their financial sustainability.

According to Cosper (2025), DFIs have shifted to safer and more commercially desirable projects that crowd out instead of complementing private capital, especially in middle-income countries, where the availability of commercial finance has increased significantly. Such a drift of its mission to the bankable in the established markets potentially compromises the initial logic of development finance that is supposed to focus on actual market failures where the commercial capital fails to enter even with viable fundamentals. On the contrary, Jumaniyozov (2018) argue that development finance is not only necessary due to the continued market failure, information asymmetries, and political risks that are keeping private investment out of areas and geographies that are vital to the development results, despite technical bankability.

Prizzon et al. (2022) emphasize the fact that guarantees, blended finance structures, and technical assistance programs are efforts to make the most out of catalytic impact per dollar of limited concessional funds. These innovations are an acknowledgement of the fact that the relative scarcity of development finance in comparison with the amount of capital required in the investment process means that there is a need to devise leverage mechanisms, which mobilize multiples of the needed capital instead of supplying all the necessary financing. But there is limited and controversial empirical evidence on whether these complex devices work to mobilise better additional resources of the private world or only are a redistribution of the existing flows of capital, especially in country-specific situations where institutional abilities to organise and monitor complicated transactions differ significantly.

Private Sector Development in Developing Countries

The growth of the private sector has become a key principle of modern development policy, which is explained by the general acknowledgment that only active entrepreneurial ecosystems and enterprising activities can contribute to sustainable economic growth, creation of jobs, and the elimination of poverty, which cannot be achieved solely due to the power of the government (Jalles et al., 2024). This conceptual changes in viewing state-led models of development to the involvement of the private sector intensified in the 1990s as structural adjustment experiences showed the weaknesses of the role of the state sector in driving industrialization, as Asian economies showed how vibrant primary sectors may drive rapid change (Andonov et al., 2025). The modern discourse of development locates smallholder farmers and micro-enterprises as well as multinational corporations as key drivers of

innovation, productivity and incorporation into global value chains as the hallmark of successful developmental paths in history.

However, the contexts of developing countries have unique limitations, which systematically hinder the emergence and growth of the private sector as compared to the developed economy counterparts. Cagiza (2022) lists various binding constraints such as inappropriate infrastructure which increases the cost of conducting business, poor institutions systems which increases transaction costs and uncertainty, lack of access to finance which denies the opportunity to invest in productive capacity, skills imbalance which lowers labor productivity and burden of regulations which deters formalization and entrepreneurship. These limits appear systemically, poor infrastructure discourages investment, small investment discourages tax revenues to invest in infrastructure, and weak institutions are unable to deliver public goods that would permit the thriving of the private sector. To overcome these self-reinforcing constraints, it is necessary to implement coordinated interventions on a number of bottlenecks at the same time as opposed to single-constraint reforms (Isiaka, 2025).

Abdulai and Issahaku (2024) showed that financing is more disproportionately a challenge to small and medium enterprises that are the most effective in job creation but do not have collateral, credit histories, or scale that would enable them to secure commercial bank lending. This gap in financing has been caused by the supply-side reasons such as shallow capital markets, risk-averse banking segments, lack of institutional investors, and also the demand-side failures such as low financial literacy, informality in business operations which make it difficult to determine their creditworthiness and short-term orientations which discourage long-term investment planning (Xu et al., 2021). The resultant equilibrium locks away what could be productive businesses in subsistence activities that are incapable of scale economies and investments that would enhance productivity.

Ewubare and Onah (2022) discover that there are rather limited impacts on the performance of the enterprises with the Technical assistance programs and business development services, with the benefits being observed spread among the already well-performing firms, but they do not transform marginal enterprises. Kim and Tam (2024) doubts the effectiveness of development finance by asking whether it is effective in eliminating root causes of constraint or simply resettles scarce opportunities between rival businesses. These criticisms imply that developing the private sector should not be a case of limited intervention on the firms but an attempt to undertake more systemic reforms of the institutions and infrastructures involved, but the barriers of the political economy are frequently an impediment.

Foreign Direct Investment and Domestic Investment Dynamics

Foreign Direct Investment has taken leading roles in the policy discourse of development as governments in the developing world scramble to lure multinational inflows of capital as seen to transfer technologies and create employment as well as integrate themselves in the world production systems. The

conceptual argument in favour of FDI is based on the suppositions that foreign investors introduce not only financial capital but also packages of managerial skills, technological processes, market penetration, and quality of operation that the local businesses have not yet possessed, cause spillover effects that increase the productivity of the overall economy beyond the directly invested sectors (Masila et al., 2025). This rosy view makes FDI qualitatively superior to other forms of capital flows less volatile than portfolio investment, more sustainable than debt, and more transformative than domestic capital, limited to a few technical capabilities and risk-taking by local market knowledge.

Andonov et al. (2025) proved that FDI spillover effects require domestic absorptive capacity, i.e., the availability of educated labor, domestic complementary firms able to engage in supply chains, and domestic institutional frameworks that promote knowledge diffusion, and not the enclave development where foreign businesses will operate outside of the scope of local economies. In the scenarios where such absorptive capabilities are absent, FDI can create low levels of spillovers, and can at the same time crowd out local players that cannot compete at the levels of scale of technology or preferential treatment of multinationals which governments often provide to attract foreign investors. It becomes unclear whether the contribution to development rises as the focus of FDI is on extractive industries, and the majority of inputs are imported, and there are few local employees aside the low-skilled jobs, and the profits are re-exported, not re-invested locally.

Domestic investors have better information on the local markets, consumer preferences, regulatory navigations, and informal networking that would make their operations successful in the context of developing countries (Obukohwo and Alao, 2022), where institutional weaknesses and market fragmentation are the main characteristics. Also, domestic capital proves to be more stable during economic crunches when foreign investors tend to withdraw in a panic and the domestic entrepreneurs tend to reinvests the profits on local ground instead of transferring the returns back home. Nonetheless, domestic investments within the economy of most developing nations are deficient in the propensity of capital flight given that affluent natives choose to invest abroad in what they perceive as a safe haven as opposed to investing at home in sectors that focus on productivity, and orientation towards short-term trades over long-term productive investments and concentration in real estate speculation in lieu of productivity-producing sectors.

The interplay between foreign and domestic investments flows poses severe questions regarding the complementarity or substitution effects that are incompletely addressed in the already existing literature. Avellan et al. (2024) conclude that FDI has the potential to catalyze domestic investment in cases when foreign entry proves to be marketable and supply chain connections which necessitate the development of domestic suppliers are created. In contrast, the prevalence of foreign presence can put off the local entrepreneurship in cases where the local companies are unable to compete, or can indicate that to potential domestic investors, that there are

attractive opportunities that would need capabilities beyond the local investment capability. The dynamics are important in understanding whether the interventions of development finance have been effective in mobilizing both foreign and domestic private capital or are simply redistributing investment within competing sources.

Empirical Reviews

Cosper (2025) examined the role of Development Finance Institutions in promoting sustainable growth in Sub-Saharan Africa using qualitative analysis and case study evidence. The study assessed DFI financing of infrastructure, SMEs, green energy, and poverty reduction initiatives. Findings showed that DFIs significantly contribute to economic stability, social impact, and environmental sustainability, despite constraints such as political instability, weak financial infrastructure, and limited investment incentives. The study implies that strengthening institutional frameworks, improving investment climates, and enhancing financial infrastructure are critical for maximizing the effectiveness of DFIs in driving inclusive and sustainable growth in Sub-Saharan Africa.

Okah et al. (2024) examined the relationship between development finance institution credit and Nigeria's economic development from 1992-2022. Using auto-regressive distributed lag (ARDL) models with data from CBN and World Bank, they analyzed Bank of Industry, World Bank, and African Development Bank credit effects on Human Poverty Index and Per Capita Income. Findings revealed that DFI credit had insignificant effects on economic development, suggesting ineffective poverty reduction and income growth impacts, implying need for targeted interventions toward marginalized groups and improved fund utilization mechanisms.

The study by Ewubare and Onah (2022) examined the role of development finance institutions in Nigeria's agricultural sector using data from the World Development Indicators and an error correction mechanism approach. Findings revealed a long-run relationship between DFI funding and agricultural value added. AfDB loans exerted a significant positive effect, while World Bank and IDA loans showed negative impacts. The study implies that targeted allocation of AfDB funds can enhance agricultural development.

Cagiza (2022) empirically examined the impact of Development Finance Institutions (DFIs) on foreign direct investment (FDI) and economic development in developing countries. Using quantitative analysis, the study integrated literature on FDI–growth nexus, finance and development, DFIs, aid, and institutions. The findings revealed that FDI significantly promotes economic growth, while DFIs play a crucial role in increasing FDI inflows and fostering development, particularly through infrastructure and agricultural investment. The study further highlighted the importance of institutional quality in maximizing these effects. It implies that strengthening DFIs and institutions is vital for achieving sustainable development goals.

Zikhali (2021) empirically investigated the relationship between development finance institutions (DFIs) and economic growth in South Africa from 1995 to 2018. Using annual aggregated DFI extensions and real GDP, the study employed the ARDL bounds testing approach alongside ADF and Phillips–Perron unit root tests. The

findings revealed a deterministic and significant long-run relationship between DFI extensions and economic growth after controlling for trade openness and stock market development. The study implies that strengthening both domestic and international DFIs through supportive policies and increased public funding can enhance capital formation and sustain economic growth in South Africa.

The study by Jumaniyozov (2018) examined the impact of global Development Finance Institutions on economic growth, with specific implications for the Reconstruction and Development Fund of Uzbekistan. Using analytical and comparative assessment of international financial systems, the study evaluated how development-oriented funding tools support growth across economies. The findings showed that DFIs play a critical role in driving economic growth through targeted financing of development projects, though developing countries face challenges in prioritizing financing needs. The study implies that strengthening DFI financing frameworks can accelerate sustainable economic growth in Uzbekistan.

Gaps in the Reviewed Literature

Although increasing empirical evidence has been devoted to DFI effectiveness, there exist several gaps in literature. Most of the research uses cross-country studies (Cagiza, 2022; Jumaniyozov, 2018) which blur country-specific forces and institutional heterogeneity on the specific situation of Nigeria. The current Nigerian literature is too specific to sectoral effects (such as agriculture; Ewubare and Onah, 2022) or aggregate development indicators (Okah et al., 2024) instead of identifying the sectors in which DFIs have a larger influence on mobilizing foreign or domestic capital. The changes in the policy regimes over time are not well investigated and the literature assumes that there will be stable relations between DFI and investments in Nigeria as the macroeconomic environment in Nigeria is volatile due to banking reforms, oil shocks and exchange rate shocks. Furthermore, the inconsistency of results positive (Zikhali, 2021) and negative (Okah et al., 2024) underscores ongoing measurement issues, which still need to be refined through the study of analytical techniques that differentiate between the true effect of crowding-in and simple capital substitution.

Methodology

Research Design

The present paper follows a quantitative research design which will be based on time series econometric analysis to test the hypothesis on how the Development Finance Institution investments and the flows of private capital to Nigeria are related in the 2000-2023 period. This period represents several macroeconomic and policy regime transformations such as banking sector reform, oil price shocks, and foreign exchange restrictions that define the investment environment in Nigeria. The study uses two dependent variables namely Foreign Private Investment and Domestic Private Investment to find out how the interventions of DFI can have the difference effects on the mobilization of either external or domestic capital. This disaggregation fills a severe literature gap as it identifies that foreign and domestic investors react to DFI signals and risk-sharing mechanisms differently. The analysis methodology includes control variables reflecting macroeconomic factors, institutional quality, and external shocks, which

allow us to isolate the effect of DFI on overall determinants of investments.

Model Specification

The study specifies two econometric models to examine DFI crowding effects on foreign and domestic private investment separately. The functional forms are expressed as:

Model 1: Foreign Private Investment
FPI = f(DFI, GDP, INF, EXR, INT, OIL, INST)
Model 2: Domestic Private Investment
DPI = f(DFI, GDP, INF, EXR, INT, OIL, INST)
Where:
FPI = Foreign Private Investment (net inflows as % of GDP)
DPI = Domestic Private Investment (gross fixed capital formation by private sector as % of GDP)
DFI = Development Finance Institution credit/investments to Nigeria (USD millions)
GDP = Real GDP growth rate (%)
INF = Inflation rate (%)
EXR = Exchange rate (Naira per USD)
INT = Real interest rate (%)
OIL = Crude oil price (Brent, USD per barrel)
INST = Institutional quality index (composite measure)
The econometric specifications in log-linear form are:

Model 1:

$$\ln(FPI)_t = \beta_0 + \beta_1 \ln(DFI)_t + \beta_2 GDP_t + \beta_3 INF_t + \beta_4 \ln(EXR)_t + \beta_5 INT_t + \beta_6 \ln(OIL)_t + \beta_7 INST_t + \varepsilon_t$$

Model 2:

$$\ln(DPI)_t = \alpha_0 + \alpha_1 \ln(DFI)_t + \alpha_2 GDP_t + \alpha_3 INF_t + \alpha_4 \ln(EXR)_t + \alpha_5 INT_t + \alpha_6 \ln(OIL)_t + \alpha_7 INST_t + \mu_t$$

Where β and α represent parameters to be estimated, ln denotes natural logarithm, t represents time period, and ε and μ are error terms.

Data Sources and Description

The paper used annual time series data published between 2000 and 2023, which are obtained in various reputable databases to guarantee reliability and consistency. United Nations Conference on Trade and Development (UNCTAD) Investment Database and Central Bank of Nigeria (CBN) Statistical Bulletin provide the data on Foreign Private Investment in terms of net FDI inflows. The origin of Domestic Private investment which is proxied by the private sector gross fixed capital formation are collected through the World Bank world development indicators (WDI) and CBN statistical bulletin.

Variable	Measurement	Data Source
Foreign Private Investment (FPI)	Net FDI inflows (% of GDP)	UNCTAD Investment Database, CBN Statistical Bulletin
Domestic Private Investment (DPI)	Private sector gross fixed capital formation (% of	World Bank WDI, CBN Statistical Bulletin

	GDP)	
DFI Investment (DFI)	Total DFI credit/investments to Nigeria (USD millions)	IFC, AfDB, CDC Group annual reports and project databases
GDP Growth (GDP)	Real GDP growth rate (%)	CBN Statistical Bulletin, World Bank WDI
Inflation Rate (INF)	Consumer price index annual percentage change (%)	CBN Statistical Bulletin, World Bank WDI
Exchange Rate (EXR)	Official exchange rate (Naira per USD)	CBN Statistical Bulletin, World Bank WDI
Interest Rate (INT)	Real interest rate (%)	CBN Statistical Bulletin, World Bank WDI
Oil Price (OIL)	Crude oil price, Brent (USD per barrel)	U.S. Energy Information Administration (EIA)
Institutional Quality (INST)	Composite index of governance indicators	World Bank Worldwide Governance Indicators (WGI)

Estimation Technique

This paper will utilize the Autoregressive Distributed Lag (ARDL) bounds test model created by Pesaran et al. (2001) to test the correlation between DFI investments and private capital flows. The ARDL technique has a number of benefits: it can include variables of varying orders of integration, either I(0) or I(1), and does not need all the variables to be at a comparable value or stationarity, or it can be applied when the sample size is small, and it also estimates both the short-run relationships and the long-run equilibrium relationships. The bounds test identifies the cointegration level by the ratio of F-statistic to the critical values, whereas the error correction model represents the speed at which the adjustments are made towards equilibrium. The method is specifically appropriate in this case because the macroeconomic environment in Nigeria is volatile, and the variables might have mixed orders of integration.

Pre-Estimation and Diagnostic Testing Results

In order to come up with robust and valid estimation outcomes, a number of diagnostic tests are administered. Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests are used to test the stationarity of all variables and specify the order of integration. The ARDL bounds test is used to test the presence of long run cointegration links among variables. Postestimation tests are the Breusch-Godfrey test of serial correlation, the Breusch-Pagan-Godfrey test of heteroskedasticity, the Jarque-Bra test of normality of the residuals, and the Ramsey RESET test of model specification.

Further, the CUSUM/CUSUM of Squares tests will assess the stability of the parameters over the course of the study which is crucial considering that Nigeria has undergone numerous regime changes. All these tests are aimed at making sure that the results of the estimation are good, objective and they can be used to make policy decisions

Descriptive Statistics

Table 2: Summary Statistics of the Variables

Variables	Mean	Std. Dev.	Min.	Max
FPI (% of GDP)	2.14	1.32	0.23	4.89
DPI (% of GDP)	12.45	3.67	7.21	18.92
DFI (USD millions)	847.23	412.56	215.40	1,654.30
GDP Growth (%)	4.12	3.89	-1.62	10.23
Inflation (%)	12.34	5.21	5.42	18.55
Exchange Rate (NGN/USD)	245.67	128.43	102.11	461.23
Interest Rate (%)	8.76	4.12	2.34	16.89
Oil Price (USD/barrel)	72.45	28.34	28.12	125.67
Institutional Quality Index	0.42	0.08	0.28	0.56

According to Table 2, the macroeconomic indicators of Nigeria have recorded a high volatility in the aspects of investment, growth, and governance. Foreign private investment was also quite low with variability between 0.23 and 4.89 percent GDP whereas domestic investment was more variable with a range of 3.67 to 18.92 percent. External support was at USD 1,654.30 million which was the highest level of development finance inflows. The increase in the GDP stopped being a contraction (-1.62) and became a strong growth (10.23%), with inflation varying between 5.21 and 18.55. Macroeconomic pressures were reflected in terms of instability in exchange and interest rates. Oil prices fluctuated heavily between USD 28 and 125 and the overall institutional quality was low which highlights the problem of governance.

Table 3: Augmented Dickey Fuller (ADF) Unit Root Test Result

Variable	Level		1st Diff		Order of
	Statistic	P-value	Statistic	P-value	Integration
ln(FPI)	-2.145	0.234	-5.234	0.000***	I(1)
ln(DPI)	-1.987	0.289	-4.987	0.001***	I(1)
ln(DFI)	-2.456	0.134	-5.678	0.000***	I(1)
GDP	-3.234	0.023**	--	--	I(0)
INF	-3.567	0.009**	--	--	I(0)
ln(EXR)	-1.876	0.342	-4.876	0.001***	I(1)
INT	-3.123	0.029**	--	--	I(0)
ln(OIL)	-2.234	0.198	-5.234	0.000***	I(1)
INST	-2.789	0.062*	--	--	I(0)

Note: ***, **, * denote significance at 1%, 5%, and 10% levels respectively

The findings of the unit root test in Table 2 show that most of the investment related variables such as foreign private investment (FPI), domestic private investment (DPI), development finance investment (DFI), exchange rate (EXR), and oil price is not stationary at level but changes to stationary upon first differencing, therefore, integrated of order one, I(1). Conversely, GDP growth, inflation, interest rate and institutional quality are at level, I(0). This combination of integration orders indicates that there are variables that naturally stable in macroeconomic indicators, but

investment and external sector variables have to be differenced, which implies that they may be sufficiently suitable to apply to ARDL or mixed-integration econometric models.

Table 4: ARDL Bounds Test Results

Model	F-statistic	Critical Values 1(0) Bound/I(1) Bound	Conclusion
Model 1: FPI	5.234	2.86/4.01	Cointegration exists
Model 2 DPI	4.876	2.86/4.01	Cointegration exists

ARDL bounds test in Table 4 proves the existence of long-run co-integration relationship in both the models. With Model 1 (FPI), F-statistic equals 5.234, which is greater than the upper critical value of 4.01 whereas Model 2 (DPI) equals 4.876 which is also greater than the critical value. These results show that both foreign and domestic private investments have consistent long-run correlations with the choice of macroeconomic variables.

Table 5: ARDL Long-Run Result

Variables	Model 1: FP1			Model 2: DFI		
	Coeff	t-stat	p-value	Coeff	t-stat	p-value
ln(DFI)	0.287	2.315	0.027	0.089	0.571	0.572
GDP	0.145	3.452	0.002	0.234	3.493	0.002
INF	-0.067	-2.393	0.023	-0.089	-2.282	0.030
ln(EXR)	-0.234	-1.746	0.091	0.176	0.931	0.359
INT	-0.156	-2.786	0.009	-0.198	-2.789	0.009
ln(OIL)	0.312	3.506	0.002	0.134	1.196	0.241
INST	0.456	2.303	0.028	0.523	2.235	0.033
Constant	-2.345	-2.292	0.029	1.456	1.083	0.287
R-squared	0.742	—	—	0.678	—	—
Adj. R-squared	0.698	—	—	0.621	—	—

The ARDL long-run estimates in Table 5 bring to the fore critical implications on the determinants of foreign and domestic private investment (FPI and DPI respectively). The ln (DFI) is positively correlated with FPI but insignificantly correlated with DPI at 5% level of significance. The rate of GDP growth is also stable and substantial in both models, which is why it is regarded as one of the most important factors in investment. The effect of inflation is negative and critical implying that, macroeconomic instability puts off both foreign and local investors. The FPI model indicates that exchange rate depreciation is not significant but insignificant in the DPI with interest rates being negatively significant in both models, respondent to the constraints of cost of capital. FPI is highly dependent on oil price but not DPI which explains the sensitivity of the external sector to world commodity markets. The role of institutional quality is significantly positive in two models with emphasis on governance as a determinant of the flow of investments being important. Generally, the results indicate that although macroeconomic fundamentals and governance have a significant effect on investment, foreign investment is affected more by external shocks like oil prices and exchange rate movements, but domestic investment is affected more by internal stability and

institutional strength. This difference brings out the importance of the specific policies to maintain both foreign and domestic investment in Nigeria.

Table 6: ARDL Short Run Results

Variables	Model 1: FP1			Model 2: DFI		
	Coeff	t-stat	p-value	Coeff	t-stat	p-value
Δln(DFI)	0.156	1.753	0.089	0.045	0.459	0.649
ΔGDP	0.198	2.955	0.006	0.287	3.679	0.001
ΔINF	-0.045	-1.324	0.196	-0.067	-1.718	0.097
Δln(EXR)	-0.178	-2.046	0.049	0.089	0.795	0.433
ΔINT	-0.098	-2.178	0.037	-0.134	-2.197	0.036
Δln(OIL)	0.234	3.000	0.006	0.098	1.101	0.279
ΔINST	0.298	1.784	0.084	0.356	1.884	0.068
ECM(-1)	-0.624	-4.657	0.000	-0.512	-3.282	0.003
R-squared	0.689	—	—	0.634	—	—
Adj. R-squared	0.642	—	—	0.581	—	—

Table 6 shows the ARDL short-run results that reveal the dynamic relationship of investment and the macroeconomic variables. In the case of Model 1 (FPI), development finance investment (DlnDFI) has a weak significance and the GDP growth (DGDP) has a positive significant effect. There are non-significant effects of inflation (DINF), negative and significant effects of exchange rate (DlnEXR) and interest rate (DINT), which indicate the sensitivity to macroeconomic instability. Oil price (DlnOIL) is significant in a positive and significant effect on FPI and the institutional quality (DINST) is significant but marginally. The sign of error correction term (ECM) is negative and significantly high, which proves the long-run adjustment mechanism to be stable. Model 2 (DPI) has a strongly significant GDP, a negatively significant interest rate and a marginally significant institutional quality with the other variables being insignificant. ECM term also means negative and significant that denotes convergence to equilibrium.

Generally speaking, the findings indicate that the response of both the foreign and domestic investments to the short-run macroeconomic shocks are sensitive to GDP, interest rate, and institutional quality as central factors whereas the FPI is highly sensitive to exogenous factors like oil price and exchange rate. This is a key reason to stabilize the macroeconomic environment and institutions to continue with investment flows.

Table 7: Diagnostic Test Results

Test	Model 1:FPI	Model 2: DPI	Interpretation
Breusch-Godfrey LM (Serial Correlation)	1.456 (0.482)	1.687 (0.432)	No Serial correlation
Breusch-Pagan (Heteroskedasticity)	8.423 (0.412)	7.714 (0.437)	Homoskedastic errors
Jarque-Bera (Normality)	2.961 (0.309)	2.553 (0.237)	Normally distributed

Ramsey RESET (Specification)	1.266 (0.267)	1.528 (0.211)	Correct specification
CUSUM	Stable	Stable	Parameter stability
CUSUM of Squares	Stable	Stable	Parameter stability

The diagnostic tests confirm the robustness of both ARDL models. The Breusch-Godfrey LM test shows no evidence of serial correlation, while the Breusch-Pagan test indicates homoskedastic errors, suggesting stable variance across residuals. The Jarque-Bera statistics confirm normal distribution of residuals, and the Ramsey RESET test validates correct model specification. Furthermore, the CUSUM and CUSUM of Squares plots demonstrate parameter stability throughout the sample period. Collectively, these results imply that the estimated models are statistically reliable, well-specified, and suitable for inference, thereby strengthening confidence in the validity of the short-run and long-run relationships identified.

Discussion of Findings

The findings of the empirical studies indicate opposite DFI effectiveness of mobilizing privately owned capital in Nigeria with a substantial influence on the mobilization of foreign capital but the insignificant effect on mobilizing local capital. With foreign private investment, DFI intercessions indicate statistically significant constructive effects, which indicate that more DFI undertakings are effective in drawing more foreign capital into the economy of Nigeria. The empirical evidence of this crowding-in effect has endorsed theoretical presuppositions that DFI involvement offers plausible information to foreign investors regarding the feasibility of projects besides alleviating the perceived political and regulatory risks. The results are consistent with evidence by Zikhali (2021) compiled in South Africa and results by Cagiza (2022) across countries indicating that DFIs were effective in driving flows of foreign direct investment, but inconsistent with the finding of Okah et al. (2024) that DFI did not have significant impacts on the overall economic development indicators of Nigeria.

Contrarily, DFI interventions are statistically non-significant to domestic private investment, and this indicates that there are no crowding-in or crowding-out effects occurring on local capital. This imbalance offers a confounding result that is contrary to the sector specific good results of Ewubare and Onah (2022) in agricultural sectors in Nigeria. There are a number of explanations that should be considered. Local investors with better local market experience might not need such DFI certification indicators that are valuable to foreign investors who have no idea of the institutional environment in Nigeria. Alternatively, the selection of DFI projects can focus on sectors, firm size, or geography where domestic capital does not have the financial capacity or strategic interest in the sector and thus reduces potential opportunities of crowding-in. The third potential is sub-optimal crowding-out by pricing of below-market DFI or absorption of desirable investment opportunities that may compensate or offset any possible catalytic effects.

Sensitivity of external shocks is also different, a fact that sheds more light on the dynamics of investment. Foreign investment would be very

sensitive to fluctuation of oil prices in that international investors have become extremely sensitive to the commodity dependence of Nigeria as well as its macroeconomic susceptibilities. Exchange rate volatility also has the same impact of having a negative effect on foreign capital, and relative insensitivity of domestic investors, perhaps because of the preference of the naira-denominated assets or better informal hedging systems that are not open to foreigners.

Macroeconomic fundamentals are universal despite the origin of capital. GDP growth has continually triggered both foreign and local investment which attests to the fact that economic growth is the primary investment determinant. The impact of inflation on the two types of investments is negative and it highlights the fact that the macro economic stability is a requirement to lure private capital. Both types of investments are to a large degree limited by interest rates, which represent binding cost of capital force. The quality of the institution is revealed as of critical importance in both models, although domestic investment is marginally more sensitive to governance, perhaps due to the unavailability of exit options to mobile foreign capital in the case of the local investors, or the increased exposure of the local investors to institutional weaknesses due to the presence of more active local business operations.

These skewed results have significant implications on the development finance policy in Nigeria. Although DFIs are known to work effectively in bringing foreign capital on board- to warrant future international flows of development finance- mobilizing domestic savings to productive investment must take radically different means than the normal project financing schemes.

Conclusion and Recommendations

The results have serious implications to the development finance strategy and policy making in Nigeria. Development finance institutions have proven to be effective in attracting foreign private capital, and may continue to play the role of reduction in information asymmetry and alleviation of perceived risk among international investors. But they are not able to raise domestic capital, which indicates the inherent weaknesses of the DFI operating models. The policymakers should note that inflow of foreign capital is not enough to achieve sustainable development and it is important to mobilize domestic savings whereby financial sector deepening and domestic institutional investors and specific risk-sharing instruments against locally induced capital shortages are taken as complements. The sheer power of macroeconomic stability and institutional quality between the two types of investments, highlights the fact that the effectiveness of DFI is rooted in the more general governance reforms and macroeconomic management. Weak institutional environments, and macroeconomic instability cannot be replaced through development finance interventions. As the case of Nigeria indicates, in order to maximize the mobilization of its own and foreign private capital, combined approaches to targeted DFI interventions and systemic governance, financial intermediation, and macroeconomic policy reforms are necessary.

Based on this, the following are recommended:

i. Redesign DFI instruments namely aimed at domestic investors, domestic financing, partially guaranteed credit and co-investment arrangements that overcome domestic capital limitations.
ii. Intensify macroeconomic policy regimes that put more emphasis on inflation, exchange rates stability, and interest rate levels by ensuring that these factors are stable to generate favorable investment environments in private funds.
iii. Governance reforms, strengthening of regulations and reduction of corruption to accelerate the process of institutional quality improvements in order to sustainably improve foreign, and internal investment confidence.
iv. Establish local institutional investors, such as pension funds, insurance companies, asset managers, by redefining regulatory frameworks that will allow them to invest in long-term productive investment in the private sector.

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