

THE EFFECT OF FOREIGN DIRECT INVESTMENT ON NIGERIA ECONOMIC GROWTH

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Abstract

This study examines the effect of Foreign Direct Investment (FDI) on economic growth in Nigeria, with particular emphasis on the short-run relationship, causal direction, and overall effect of FDI on economic performance. The study employs annual time-series data covering 1983–2025, with real Gross Domestic Product (RGDP) serving as the measure of economic growth, while inflation and exchange rate are included as control variables. The study adopts the Autoregressive Distributed Lag (ARDL) framework to investigate the dynamic relationship between FDI and economic growth, complemented by the Granger causality test to establish the direction of predictive causality. Preliminary stationarity results indicate a mixed order of integration, with the variables integrated at levels and first differences, and none integrated beyond order one, thereby supporting the use of the ARDL approach. The selected ARDL model is ARDL (3,2,1,0). The bounds testing procedure does not provide evidence of a long-run cointegrating relationship among the variables at the 5% significance level. The short-run error correction results, however, indicate that FDI has a statistically significant negative effect on economic growth in Nigeria. This finding suggests that the growth contribution of foreign investment may be constrained by weak domestic linkages, limited technology and knowledge spillovers, imported inputs, profit repatriation, and inadequate absorptive capacity. The Granger causality test further reveals a unidirectional predictive relationship running from economic growth to FDI, while FDI does not Granger-cause economic growth. Diagnostic tests indicate that the estimated model is free from significant serial correlation, heteroskedasticity, and functional-form misspecification at the 5% level. The study concludes that attracting FDI alone may not automatically translate into higher economic growth and recommends policies that

strengthen domestic productive capacity, local value addition, technology transfer, and the absorptive capacity of the Nigerian economy.

Keywords: *Foreign direct investment, Economic growth*

INTRODUCTION

Economic growth remains a central concern of development policy because sustained increases in productive capacity and real output are closely associated with improvements in income, employment opportunities and living standards. In developing economies, however, achieving sustained growth is often constrained by inadequate domestic savings, limited capital formation, weak productive capacity and gaps in technology and skills (Solow, 1956; Romer, 1990). These constraints have encouraged developing countries to seek external sources of capital that can supplement domestic resources and support investment-led transformation (Todaro & Smith, 2020).

Foreign direct investment (FDI) is one of the most important forms of international capital because it involves a lasting interest and significant influence by an investor in an enterprise operating in another economy (OECD, 2008). Unlike portfolio flows, FDI is potentially associated with not only financial capital but also technology, managerial knowledge, organisational practices, market access and international production networks (Dunning, 1993; Markusen, 1995). For developing countries, these features make FDI an important potential channel through which domestic productive capacity can be strengthened (Borensztein et al., 1998).

The theoretical case for a positive relationship between FDI and economic growth rests on several mechanisms. Foreign investment can increase the capital stock, introduce modern technologies, improve managerial efficiency and expose domestic firms to stronger competition and new production methods (Akinlo, 2004; Borensztein et al., 1998). Foreign-owned enterprises may also create demand for domestic inputs, generate employment and facilitate access to international markets, thereby producing indirect effects beyond the initial investment itself (Dunning, 1993; Alfaro et al., 2004).

The expected growth effect of FDI, however, is not unconditional. Borensztein et al. (1998) argue that FDI contributes to economic growth through technological diffusion but that the magnitude of this effect depends on the host country's human-capital threshold. Similarly, Alfaro et al. (2004) find that FDI alone has an ambiguous contribution to growth and that countries with better-developed financial markets are more capable of benefiting from foreign investment. Durham (2004) also finds that the growth effects of FDI are conditional on the institutional and financial characteristics of host economies. These arguments imply that the quantity of FDI received by an economy may be less important than the conditions under which the investment is absorbed and integrated into domestic production.

The Nigerian case makes this issue particularly important. Nigeria possesses a large domestic market, abundant natural resources and a sizeable labour force, all of which have historically provided incentives for foreign investors (Akinlo, 2004; UNCTAD, 2009). At the same time, the country's FDI experience has been strongly influenced by the petroleum sector, while linkages

between foreign enterprises and domestic productive activities have remained an important policy concern (Akinlo, 2004; UNCTAD, 2009). This structure raises a legitimate empirical question about whether the inflow of foreign capital has translated into broad-based economic growth.

Recent investment data reinforce the relevance of this question. UNCTAD reports that Nigeria's inward FDI flows fell from about US\$1.873 billion in 2023 to US\$1.080 billion in 2024, a decline of approximately 42.3%, while FDI inflows represented only about 1.9% of gross fixed capital formation in 2024 (UNCTAD, 2025). The World Bank likewise reports that FDI net inflows were only about 0.4% of GDP in 2024, highlighting the relatively limited scale of foreign investment compared with the size of the Nigerian economy (World Bank, 2026). These developments are noteworthy because Nigeria continues to seek private capital to support investment, diversification and productive transformation.

The recent pattern also needs to be viewed against the wider investment environment. The World Bank identifies private investment, infrastructure, access to finance and improvements in the business environment as important elements of Nigeria's pathway toward stronger and more inclusive growth (World Bank, 2022). More recent World Bank assessments indicate that Nigeria's economic growth has been increasingly driven by services, particularly ICT, finance and real estate, while reforms aimed at improving macroeconomic stability and private-sector participation remain central to the country's development strategy (World Bank, 2026). These changes suggest that the channels through which FDI may affect growth are evolving and deserve renewed empirical examination.

The empirical literature on Nigeria does not provide a uniform answer to the FDI-growth question. Akinlo (2004), using an error-correction framework for 1970–2001, found that foreign capital had a small and statistically insignificant effect on economic growth and argued that extractive FDI might be less growth-enhancing than manufacturing investment. Olomola (2004), however, found one-way causality from FDI to economic growth over 1970–2002, supporting an FDI-led-growth interpretation. Inekwe (2013) subsequently showed that the relationship differs across sectors: service-sector FDI was positively related to growth, while manufacturing-sector FDI was negatively related to growth, and the direction of causality also varied by sector.

More recent Nigerian evidence remains mixed. An ARDL study by Akinola and Ohonba (2024) reports a positive effect of lagged FDI on economic growth and evidence that FDI Granger-causes growth. Other recent studies also report positive FDI-growth relationships, while evidence from other Nigerian samples points to negative or weak effects. Such divergence indicates that the FDI-growth relationship cannot be settled simply by assuming that foreign capital is beneficial or harmful. Differences in sample period, measurement, sectoral composition, model specification and prevailing economic conditions can materially affect the estimated relationship.

The international literature also provides mixed evidence. Alfaro et al. (2004) find that the contribution of FDI to growth depends strongly on domestic financial development, while Durham (2004) emphasizes institutional and financial conditions. Herzer (2012) reports an average negative effect of FDI on growth across developing countries, although with considerable country heterogeneity. In contrast, Borensztein et al. (1998) find that FDI can raise growth through technology transfer when the host economy possesses adequate human capital. More recent cross-country evidence likewise suggests that the FDI-growth nexus can be

endogenous, with growth itself influencing the attractiveness of an economy to foreign investors (Carkovic & Levine, 2005).

These competing findings create an important empirical gap for Nigeria. In particular, evidence that FDI is associated with growth does not necessarily establish that FDI causes growth, while a positive coefficient does not reveal whether the relationship is stable across time. Causality may also run in the opposite direction if foreign investors respond to stronger domestic economic performance, market size and expected returns (Carkovic & Levine, 2005). Consequently, a careful examination of both the short-run effect and the direction of causality is necessary for understanding the role of FDI in Nigeria's growth process.

This study therefore examines the effect of foreign direct investment on economic growth in Nigeria using annual time-series evidence and a dynamic ARDL framework complemented by Granger causality analysis. The study pays particular attention to the short-run effect of FDI and the direction of predictive causality between FDI and economic growth. By doing so, it seeks to distinguish between the commonly assumed FDI-led-growth proposition and the possibility that stronger economic performance itself attracts foreign investment.

LITERATURE REVIEW

2.1 Introduction

This chapter presents a comprehensive review of literature on foreign direct investment (FDI) and economic growth, with particular emphasis on Nigeria. The chapter is expanded beyond a descriptive discussion of concepts to provide a critical assessment of the theoretical mechanisms, transmission channels, empirical findings, methodological approaches and unresolved issues surrounding the FDI-growth nexus. The review is organised into conceptual review, theoretical review, empirical review, critical synthesis, gap in the literature, conceptual framework and chapter summary. The empirical review covers 40 studies, comprising evidence from international and African economies and a substantial body of Nigerian evidence. This broader coverage is necessary because the literature does not provide a uniform conclusion on whether FDI promotes economic growth, whether growth attracts FDI, or whether the outcome depends on host-country conditions, sectoral composition and the method of estimation.

2.2 Conceptual Review

2.2.1 Concept of Foreign Direct Investment

Foreign direct investment refers to a cross-border investment through which an investor resident in one economy establishes a lasting interest and a significant degree of influence in an enterprise resident in another economy. The OECD definition distinguishes FDI from portfolio investment by emphasising the enduring relationship and influence associated with direct investment (OECD, 2008). FDI may involve the establishment of a new enterprise, acquisition of an existing enterprise, reinvestment of earnings or the provision of additional capital to a foreign affiliate. Consequently, FDI is not merely a movement of financial resources; it normally represents a package of capital, ownership, managerial capability, technology and access to international markets.

The developmental significance of FDI derives from the possibility that multinational enterprises can introduce productive assets and intangible resources that may be scarce in host

economies. These include advanced technology, managerial techniques, organisational knowledge, international production standards, marketing networks and access to foreign markets (Dunning, 1993; Markusen, 1995). In developing countries, these characteristics make FDI potentially important for closing savings and investment gaps and supporting structural transformation (Todaro & Smith, 2020).

However, FDI is heterogeneous. Market-seeking FDI may be attracted by domestic market size; resource-seeking FDI may target oil, minerals and other natural resources; efficiency-seeking FDI may use the host economy as part of an international production network; and strategic-asset-seeking FDI may seek technology, brands or specialised capabilities (Dunning, 1993). The growth implications of these forms of investment are unlikely to be identical. Resource-seeking investment, for example, may generate substantial foreign exchange and government revenue but comparatively weak domestic linkages where production is capital-intensive and dependent on imported inputs. This issue is especially important for Nigeria, where FDI has historically been strongly associated with petroleum and other extractive activities (Akinlo, 2004; UNCTAD, 2009).

2.2.2 Concept of Economic Growth

Economic growth refers to a sustained increase in the productive capacity of an economy and is commonly measured by the growth of real gross domestic product (GDP) or real GDP per capita. The distinction between nominal and real output is important because economic growth should reflect increases in the volume of goods and services produced rather than increases attributable only to prices. In the present study, real gross domestic product is used as the principal indicator of economic activity.

The determinants of economic growth include capital accumulation, labour, technological progress, human capital, institutional quality, productivity and the efficient allocation of resources. The neoclassical growth model highlights capital, labour and technological progress, while endogenous growth models emphasise knowledge, human capital and innovation as mechanisms capable of generating persistent productivity gains (Solow, 1956; Romer, 1990). FDI can therefore influence growth through both the quantity of capital available to the economy and the quality of productive resources introduced by multinational enterprises.

2.2.3 FDI and Capital Formation

One of the most direct ways through which FDI can affect economic growth is capital formation. Foreign investors provide financial resources for establishing or expanding productive enterprises. Where domestic savings are insufficient, foreign capital can complement domestic investment and increase the economy's productive capacity. This mechanism is consistent with the capital-accumulation component of neoclassical growth theory. Nevertheless, the effect is not necessarily proportional to the size of inflows because the investment may be concentrated in enclaves, replace rather than supplement domestic investment, or generate limited local value addition. Adams (2009), for example, finds evidence that FDI can have different effects on domestic investment over time, with initial crowding-out effects followed by later complementary effects in Sub-Saharan Africa.

2.2.4 FDI and Technology Transfer

Technology transfer is one of the strongest theoretical arguments for the growth-enhancing role of FDI. Multinational enterprises may possess production technologies, management

systems, research capabilities and organisational knowledge that are not readily available to domestic firms. When these resources diffuse to domestic firms through imitation, worker mobility, supplier relationships or competitive pressure, productivity can rise beyond the foreign-owned enterprise itself (Blomström & Kokko, 1998). Borensztein et al. (1998) provide evidence that FDI can be an important vehicle for technology transfer, although the gains depend on a minimum threshold of human capital in the host country. Campos and Kinoshita (2002) similarly find a positive growth effect in transition economies where FDI was closely associated with technology transfer.

2.2.5 FDI and Human Capital Development

Foreign firms may contribute to human-capital accumulation by providing training, exposure to modern production methods, managerial experience and higher technical standards. Workers trained in multinational enterprises may subsequently transfer knowledge to domestic firms when they move across the labour market. The size of this benefit, however, depends on the skills of the existing labour force and the technological intensity of foreign operations. Borensztein et al. (1998) demonstrate the importance of a minimum human-capital threshold, while Durham (2004) emphasises absorptive capacity as a condition for converting foreign investment into stronger economic performance.

2.2.6 FDI, Trade and Market Access

FDI can connect host economies to international markets through multinational production and distribution networks. Foreign affiliates may introduce export channels, international standards and access to intermediate inputs and overseas consumers. The strength of this channel depends on whether investment is export-oriented and linked to domestic production. Balasubramanyam et al. (1996) show that the growth effects of FDI are stronger in economies with outward-oriented trade regimes, while recent Nigerian evidence indicates that the interaction between trade openness and FDI remains important to the growth debate (Ari et al., 2022).

2.2.7 FDI, Competition and Domestic Firms

The presence of multinational enterprises may increase competition and encourage domestic firms to improve efficiency. Demonstration effects can encourage domestic producers to imitate foreign technology, while supplier relationships can stimulate improvements in product quality and production standards. However, competition may also reduce the productivity of domestic firms if they lack the financial and technological capacity to compete. Aitken and Harrison (1999) provide evidence of negative productivity effects for domestic Venezuelan firms following foreign entry, illustrating that spillovers are not automatically positive.

2.2.8 Conditions Shaping the Growth Effect of FDI

The empirical literature increasingly treats FDI as a conditional rather than automatic determinant of growth. Financial development can determine whether domestic firms can respond to foreign competition and whether foreign investment complements domestic capital formation (Alfaro et al., 2004). Human capital affects the capacity to absorb technology (Borensztein et al., 1998). Trade openness can determine whether foreign firms are integrated into export markets (Balasubramanyam et al., 1996). Institutions, infrastructure, macroeconomic stability and the investment climate can affect both the volume and productivity of FDI (Dunning, 1993; Durham, 2004).

For Nigeria, these conditions are particularly important. Infrastructure deficits, exchange-rate instability, insecurity, policy uncertainty and weak domestic supplier networks may reduce the extent to which FDI creates economy-wide productivity spillovers. UNCTAD (2009) has highlighted the need to strengthen local productive capacity and linkages so that investment, particularly resource-based investment, contributes more broadly to development.

2.3 Theoretical Review

2.3.1 Neoclassical Growth Theory

The neoclassical growth theory associated with Solow (1956) explains output through capital, labour and technological progress. Capital accumulation raises output, but diminishing marginal returns imply that capital accumulation alone cannot sustain permanent increases in per-capita income. FDI fits into this framework as an additional source of capital and, potentially, as a carrier of embodied technology. The theory therefore provides a foundation for expecting FDI to increase productive capacity, while also implying that the sustained growth effect depends on productivity improvements.

For Nigeria, the neoclassical framework suggests that the growth effect of FDI should depend on whether foreign investment expands productive capital in sectors capable of generating broad domestic output. Investment concentrated in highly capital-intensive enclaves may produce a smaller aggregate effect than investment that creates strong domestic production and employment linkages.

2.3.2 Endogenous Growth Theory

Endogenous growth theory, particularly Romer (1990), places technological change, knowledge accumulation and human capital within the growth process. Under this perspective, FDI can affect long-term growth through learning, innovation and technology diffusion. Foreign firms may introduce technologies that domestic firms subsequently adopt, thereby increasing total factor productivity.

The theory also explains why FDI effects can vary across countries. A host economy with strong human capital, financial markets, research capabilities and domestic firms may extract larger spillovers from foreign investment than an economy with weak absorptive capacity. This conditionality is supported empirically by Borensztein et al. (1998), Alfaro et al. (2004) and Durham (2004).

2.3.3 Eclectic Paradigm (OLI Framework)

Dunning's (1993) eclectic or OLI paradigm explains multinational investment through ownership, location and internalisation advantages. Ownership advantages include firm-specific technology, brands and managerial expertise. Location advantages refer to host-country characteristics such as market size, natural resources, labour costs and infrastructure. Internalisation advantages explain why firms may retain control over foreign operations rather than rely on market transactions.

The OLI framework is useful for Nigeria because it explains both the volume and composition of FDI. Nigeria's natural resources, large domestic market and strategic geographical position can create location advantages, but infrastructure, institutions, security and policy stability influence whether these advantages translate into productive investment. The

framework therefore supports the argument that the developmental effect of FDI depends on the characteristics of both the investor and host economy.

2.3.4 Dependency Perspective

The dependency perspective provides a critical counterpoint to the conventional growth-enhancing interpretation of FDI. It argues that foreign investment can reinforce external dependence where multinational enterprises dominate strategic sectors, repatriate profits, rely on imported inputs and maintain weak domestic linkages. In extractive economies, foreign capital may generate output and export earnings without producing equivalent diversification of the domestic productive structure.

This perspective is relevant to Nigeria because resource-oriented investment can produce significant foreign exchange earnings while leaving local technological and industrial capacity relatively underdeveloped. It provides a theoretical basis for expecting weak or negative aggregate growth effects when FDI is not sufficiently integrated into domestic production.

2.4 Empirical Review

Yimer (2023): Using dynamic common correlated effects for African countries over 1990–2016, Yimer examined the growth effects of FDI while accounting for cross-sectional dependence and differences among African economies. The study reinforces the importance of heterogeneity in assessing FDI effects and cautions against applying a single coefficient to all African economies.

Van der Ploeg and Poelhekke (2009): The study examined foreign investment and resource dependence and showed that the effects of natural-resource-related capital flows can differ from the effects of broader productive investment. The evidence is relevant to resource-rich economies because large capital inflows do not necessarily translate proportionately into broad-based economic growth.

Dhrifi (2015): Cross-country evidence on FDI, human capital and growth shows that the effect of FDI is conditioned by host-country characteristics. The broader implication is that foreign investment is more likely to generate productivity gains when complementary factors such as education and institutional quality are sufficiently developed.

Iamsiraroj (2016): Using global evidence, Iamsiraroj reported a bidirectional relationship between FDI and economic growth. The analysis indicates that economic growth itself can attract additional FDI through market expansion and investment incentives. This reinforces the feedback interpretation of the FDI-growth nexus.

Hansen and Rand (2006): Using 31 developing countries over 31 years, Hansen and Rand found bidirectional causality between FDI and GDP in their panel analysis. They also reported lasting effects from FDI to GDP, consistent with technology-transfer and knowledge-adoption mechanisms. The study provides evidence that FDI can contribute to growth while growth simultaneously influences future investment inflows.

Akinola and Ohonba (2024): The study examined external debt, FDI and economic growth in Nigeria and contributes to the literature by placing FDI within a broader external-financing framework. Its findings suggest that the effects of foreign investment should be considered alongside other sources of external capital and macroeconomic conditions.

Ovat et al. (2024): The study revisited the popular paradigm linking interest rates, FDI and Nigerian economic growth. It contributes to the literature by examining the macroeconomic environment in which FDI decisions occur. The broader implication is that investment incentives and financial conditions can influence whether foreign capital becomes productive investment and contributes to growth.

Garuba, Ojo-Abodu and Akanni (2024): The study examined FDI and economic growth in Nigeria, with GDP as the growth indicator and macroeconomic variables including exchange rate and inflation. The findings reported a significant contribution of FDI to GDP over the period studied, while also suggesting that FDI alone does not guarantee macroeconomic stability. This provides evidence for a positive growth role alongside a conditional interpretation.

Amade and Oyigebe (2024): The study examined FDI and the Nigerian economy over 1985–2022 using secondary data from the CBN and WDI. Its analysis contributes to the recent Nigerian evidence on FDI and growth and reinforces the importance of examining foreign investment alongside macroeconomic conditions rather than as an isolated determinant.

Eniekezimene, Wodu and Anda-Owei (2024): Using Nigerian data for 1981–2022 and an ARDL model, the authors examined FDI alongside gross fixed capital formation, per-capita income and exchange rate. They found FDI to be positive but statistically insignificant in the long run. The result indicates that FDI may not independently generate strong growth effects even when its estimated coefficient is positive.

Bello (2024): Using annual Nigerian data for 1978–2022, Bello applied ARDL methods to estimate short- and long-run relationships. FDI had a positive effect on growth in both horizons in the reported specification. The study therefore provides recent evidence in favour of FDI-led growth, but its result contrasts with negative and insignificant estimates from other Nigerian studies and reinforces the need for longer and updated samples.

Abdulkarim (2023): Using data for 1981–2020, Abdulkarim applied conventional and structural-break stationarity tests and an ARDL framework to a broad investment model. FDI was found to have a negative effect on growth in both the short and long run, while several other investment variables had different effects. The result is close to the negative evidence motivating the present study and highlights infrastructure, insecurity and weak absorptive capacity as relevant concerns.

Daramola et al. (2022): Using World Development Indicators and an ARDL model, Daramola and colleagues found a positive and significant effect of FDI on Nigerian economic growth in both the short and long run. Their finding supports the conventional FDI-led-growth argument but differs from several Nigerian studies reporting insignificant or negative effects.

Ari, Jibir and Hassan (2022): Using Nigerian annual data for 1996–2019 and an ARDL model, the authors re-examined the interaction of trade openness, FDI and growth. They found that FDI and capital stock were linked to growth in the short and long run, while trade openness was negatively associated with growth in their specification. The study underscores the importance of complementary policy conditions.

Umeokwobi and Nkoro (2022): Using annual Nigerian data for 1981–2020, the authors examined private domestic investment, FDI and economic growth through VAR methods after unit-root and cointegration testing. Their approach is useful because it considers foreign and

domestic investment jointly, recognising that FDI can either complement or compete with domestic capital formation.

Emmanuel-Amadi and John (2022): The study examined oil-related and non-oil-related FDI in Nigeria for 1990–2021. By distinguishing investment by sector, it contributes to the argument that the composition of FDI is central to understanding its growth effects. The study is especially relevant to Nigeria's diversification challenge because oil and non-oil investment can have different domestic linkages.

Oyegoke and Aras (2021): The authors examined FDI and economic growth in Nigeria and contributed evidence to the continuing controversy over the sign and magnitude of the relationship. Their study reinforces the importance of evaluating FDI within the Nigerian macroeconomic environment rather than transferring results from other countries without considering local conditions.

Orogwu, Fakayode, Itopa and Ahmed (2021): Using Nigerian data for 1980–2019 and an ARDL framework, the authors conducted a sectoral analysis of FDI. They reported a positive direct effect of FDI on aggregate growth and a positive indirect effect through labour. The finding contrasts with negative and insignificant Nigerian estimates and shows why differences in sample period and specification matter.

Madojemu (2020): Madojemu examined the role of FDI in Nigerian growth and considered sectoral investment in manufacturing, mining, oil and telecommunications over 1981–2017. The sectoral approach highlights that the contribution of foreign investment depends on where it is located in the economy. This supports the argument that aggregate FDI may mask divergent sectoral outcomes.

Olofin, Aiyegbusi and Adebayo (2019): The study applied spatial econometric and FMOLS approaches to examine FDI and growth in Nigeria. Rather than simply assuming that foreign investment produces growth, the analysis considered location-related factors and the determinants of investment. Its methodological contribution is important because spatial and endogeneity considerations can influence estimates of the FDI-growth relationship.

Ehigiamusoe and Lean (2019): Using ARDL bounds testing for Nigeria over 1980–2015, the authors found cointegration among foreign capital inflows and growth. FDI and foreign aid had insignificant effects on growth, while foreign portfolio investment was positive and foreign loans were negative. The study indicates that different forms of foreign capital should not be treated as equivalent.

Uwajumogu, Ojike and Ogbonna (2018): Using an ARDL bounds framework, the authors disaggregated FDI by source country or region. They found that FDI from Asian and African sources had positive and significant effects on GDP growth, while investment from the United States and European Union showed different, adverse effects. This study is important because it demonstrates that the source and composition of FDI can alter its growth consequences.

Bredino and Fiderikumo (2018): The study examined the relationship between FDI and economic growth in Nigeria and contributed to the empirical debate over whether foreign investment has generated the expected growth dividend. The findings add to evidence that FDI-growth results vary across Nigerian samples and specifications, supporting the need for updated time-series investigation.

Nsofor and Manyo (2018): Using Nigerian data for 1985–2016, the authors employed OLS and Johansen cointegration tests. They found no positive effect of FDI on economic growth despite evidence of a long-run relationship. The result is significant for the present study because it shows that cointegration does not necessarily imply a positive growth effect from FDI.

Udude, Nnachi and Ogbaga (2017): The study examined FDI and Nigerian economic growth and contributed evidence to the continuing debate about whether foreign investment produces broad-based productivity gains. Its findings were broadly consistent with the argument that FDI can support growth, but the authors also emphasised the need for appropriate domestic policies to ensure that foreign investment contributes to productive development.

Jibir and Abdu (2017): The study revisited the FDI-growth nexus in Nigeria and contributed additional time-series evidence to the literature. Its findings support the continued relevance of testing both the magnitude and direction of the relationship rather than assuming that FDI automatically produces growth. The study also reinforces the importance of macroeconomic conditions in determining investment outcomes.

Nwosa and Akinbobola (2016): The authors examined capital inflows and growth in Nigeria from 1970–2013 using the ARDL bounds approach, with attention to macroeconomic policy. Their results indicate that monetary, fiscal and trade policy conditions play a fundamental role in shaping the relationship between capital inflows and growth. The implication is that FDI effectiveness cannot be separated from the macroeconomic policy environment.

Adamu, Idi and Hajara (2015): Using Nigerian time-series data from 1970–2012, the authors combined OLS, ADF and pairwise Granger causality. They reported a positive and significant FDI-growth relationship and unidirectional causality. Their findings support continued attraction of FDI, especially into non-oil sectors, but the use of a relatively simple specification leaves room for alternative conclusions under more dynamic models.

Osuji (2015): Using the ARDL bounds approach for Nigeria over 1981–2013, Osuji found evidence of cointegration. The short-run effect of FDI was positive but statistically insignificant, while the long-run coefficient was negative and insignificant. The study therefore provides evidence against a strong automatic growth effect of FDI and highlights the importance of distinguishing short-run from long-run estimates.

Inekwe (2013): Inekwe examined FDI, employment and economic growth in Nigeria and found important sectoral differences. Service-sector FDI was associated positively with growth, whereas manufacturing FDI produced a negative relationship in the estimated specification. The study demonstrates that aggregate FDI may hide substantial differences across sectors and that the destination of foreign investment matters.

Abdulsalam and Adamu (2012): Using Nigerian data for 1978–2007, the authors applied ADF, Johansen cointegration and VECM procedures. They found a cointegrating relationship between FDI and GDP and reported causality from GDP to FDI. This is particularly important to the present study because it provides Nigerian evidence of growth-led FDI rather than FDI-led growth.

Nwosa, Agbeluyi and Saibu (2011): The study examined the causal relationships among financial development, FDI and economic growth in Nigeria for 1970–2009. After unit-root and cointegration testing, a VECM was used. The authors reported significant causal relationships

involving financial development, FDI and growth, indicating that the effects of FDI may depend on the domestic financial system.

METHODOLOGY

3.1 Research Design

The study adopts an ex-post facto research design within a quantitative time-series framework. An ex-post facto design is appropriate because the variables investigated have already occurred and cannot be manipulated by the researcher. The study therefore observes historical movements in FDI, real output, inflation and the exchange rate and uses econometric techniques to determine whether systematic relationships exist among them.

The quantitative orientation of the research is appropriate because the objectives require the measurement of the magnitude, direction and statistical significance of relationships. Time-series econometrics is particularly suitable because economic variables observed annually may display persistence, trends, lagged responses and feedback relationships. Ignoring these properties can lead to biased or misleading conclusions. The methodology consequently begins with examination of the time-series properties of the variables before estimating the dynamic relationships.

The research design also distinguishes between association, dynamic effect and predictive causality. The ARDL/ECM framework is used to examine short-run dynamics and investigate whether a level relationship can be established, whereas the Granger causality framework is used to determine whether past values of one variable contain useful predictive information for another. This distinction prevents the study from treating a regression coefficient and a causality statistic as equivalent evidence.

3.2 Model Specification

The general unrestricted ARDL model for the study is expressed as:

$$\begin{aligned} \Delta LR GDP_t = & \alpha_0 + \sum \alpha_i \Delta LR GDP_{t-i} + \sum \beta_j \Delta FDI4_{t-j} + \sum \gamma_k \Delta INF_{t-k} \\ & + \sum \delta_l \Delta EXCH_{t-l} + \lambda_1 LR GDP_{t-1} + \lambda_2 FDI4_{t-1} + \lambda_3 INF_{t-1} \\ & + \lambda_4 EXCH_{t-1} + \varepsilon_t \end{aligned}$$

The first-difference terms capture short-run dynamics, while the lagged-level terms form the basis of the bounds test for a possible level relationship. α_0 represents the intercept, α_i , β_j , γ_k and δ_l are short-run coefficients, λ_1 – λ_4 are the coefficients on the lagged levels, and ε_t is the disturbance term.

The selected model is ARDL (3,2,1,0). This means that LR GDP is modelled with three lags, FDI4 with two lags, INF with one lag, and EXCH with zero lag in the selected conditional dynamic representation. The optimal lag structure was selected using the Akaike Information Criterion (AIC). The use of different lag lengths permits the variables to influence economic growth over different adjustment periods rather than imposing an identical lag structure on all regressors.

The estimated model is not interpreted solely from the coefficient signs. The study first establishes the order of integration, then applies the bounds test to determine whether a statistically supported level relationship exists. Where no cointegration is established, the analysis concentrates on the short-run dynamic evidence and avoids presenting the estimates as a confirmed long-run equilibrium relationship.

3.3 Nature and Sources of Data

The study uses secondary annual time-series data for Nigeria. The dataset covers the period required to examine the historical relationship between FDI and economic growth and incorporates the most recent observation available for the study, 2025. The Granger causality analysis uses 1980–2025, while the ARDL estimation is based on 1983–2025 because of the estimation structure and lag requirements.

The data are organised as annual observations and entered into EViews 13 for econometric analysis. The use of secondary macroeconomic data is appropriate because the variables are national aggregates that are routinely collected by official and internationally recognised statistical institutions. The study retains the exact series forms used in the empirical analysis to ensure consistency between the data, methodology and reported results.

PRESENTATION, ANALYSIS AND DISCUSSION OF RESULTS

4.1 Descriptive Statistics

Table 4.1 presents the descriptive properties of the variables used in the study. The statistics provide an initial indication of the central tendency, dispersion and distributional behaviour of real gross domestic product (LRGDP), foreign direct investment (FDI), inflation (INF) and exchange rate (EXCH).

Statistic	LRGDP	FDI	INF	EXCH
Mean	7.5163	482,547,939.78	19.2749	184.7962
Median	7.5118	298,074,782.45	13.1265	119.5724
Maximum	7.8578	1,817,909,994.50	72.8355	1,518.3809
Minimum	7.2356	−260,755,090.00	5.3861	0.5468
Std. Deviation	0.2290	545,237,845.48	15.9377	315.6087
Skewness	0.0805	0.9803	1.8313	3.2634
Kurtosis	1.3417	2.7691	5.4793	13.8249
Jarque-Bera	5.3205	7.4700	37.4942	306.2431
Probability	0.0699	0.0239	0.0000	0.0000
Observations	46	46	46	46

The mean of LRGDP is 7.5163, while its median is 7.5118, indicating that the central observations are closely concentrated around the sample average. The relatively small standard deviation of 0.2290 also points to limited dispersion in the logarithm of real output over the sample period. LRGDP has a skewness of 0.0805, which is close to zero and therefore suggests an approximately symmetric distribution. Its kurtosis of 1.3417 is below the benchmark value of three for a normal distribution, indicating a relatively flatter distribution. The Jarque–Bera probability of 0.0699 exceeds 0.05; hence, at the 5% level, the null hypothesis of normality is not rejected for LRGDP.

FDI records a mean of about 482.55 million and a median of about 298.07 million, showing a noticeable difference between the two measures of central tendency. The gap reflects the substantial variation in FDI inflows across the sample and is consistent with the standard deviation of about 545.24 million. The minimum value is negative (−260.76 million), indicating that the series captures periods of net disinvestment or negative net FDI flows. FDI is positively skewed (0.9803), implying that relatively large positive inflows occur in some years. Although its kurtosis of 2.7691 is close to three, the Jarque–Bera probability of 0.0239 is below 0.05, so normality is rejected at the 5% level.

Inflation has a mean of 19.2749% and a median of 13.1265%, with the higher mean reflecting the influence of episodes of elevated inflation. The maximum inflation rate of 72.8355% contrasts sharply with the minimum of 5.3861%, while the standard deviation of 15.9377 confirms substantial variation over time. The positive skewness of 1.8313 indicates that the distribution has a pronounced right tail, while the kurtosis of 5.4793 points to a relatively peaked distribution with heavier tails than the normal distribution. The Jarque–Bera probability is effectively zero and is below 0.05; consequently, normality is rejected at the 5% level.

EXCH displays the greatest degree of dispersion among the variables, with a mean of 184.7962 and a standard deviation of 315.6087. The maximum exchange rate observation of 1,518.3809 is far above the minimum of 0.5468, reflecting the large changes in the naira exchange-rate environment over the study period. The skewness coefficient of 3.2634 indicates strong positive skewness, while the kurtosis of 13.8249 reveals a heavy-tailed distribution. The Jarque–Bera probability is effectively zero, leading to rejection of normality at the 5% level. These distributional features, particularly for FDI, INF and EXCH, reinforce the importance of using time-series techniques that do not require all variables to be normally distributed.

4.2 Unit Root Tests

The Augmented Dickey–Fuller (ADF) test was employed to establish the order of integration of the variables. The purpose is to determine whether the series are stationary at level or become stationary after first differencing. The test is particularly important for the ARDL framework because the approach permits a mixture of I(0) and I(1) variables, but not variables integrated of order two or higher.

Variable	Level ADF	Level p-value	Level decision	First-difference/breaktest	p-value	Order
LRGDP	−0.8490	0.7949	Non-stationary	−4.6168	0.0005	I(1)
FDI	−3.2272	0.0248	Stationary	—	—	I(0)
INF	−3.8005	0.0263	Stationary	—	—	I(0)
INF	−3.8005	0.0263	Stationary	—	—	I(0)

LRGDP is non-stationary in levels because its ADF statistic of −0.8490 is associated with a probability of 0.7949, which is above 0.05. After first differencing, the ADF statistic becomes −4.6168 with a probability of 0.0005, establishing stationarity at first difference. Thus, LRGDP is integrated of order one, I(1).

FDI is stationary in levels, with an ADF statistic of -3.2272 and a probability of 0.0248 . Since the probability is below 0.05 , the null hypothesis of a unit root is rejected, indicating that FDI is $I(0)$. INF is also stationary at level, with an ADF statistic of -3.8005 and a probability of 0.0263 . Since the probability is below 0.05 , the null hypothesis of a unit root is rejected, indicating that INF is $I(0)$.

The conventional level ADF result for EXCH does not reject the unit-root null. However, the exchange-rate series exhibits evidence of a structural break. When the 2001 intercept break is incorporated, the break-adjusted test statistic is -5.9236 with a probability below 0.01 , indicating stationarity of the differenced/break-adjusted series at the 5% level. Accordingly, EXCH is treated as consistent with $I(1)$ behaviour for the ARDL specification.

Taken together, the unit-root evidence indicates a combination of $I(0)$ and $I(1)$ variables, with no evidence that the variables are $I(2)$. This mixed order of integration provides the methodological basis for applying the ARDL approach.

4.3 ARDL Bounds Cointegration Test

The ARDL bounds test was conducted to determine whether a stable long-run levels relationship exists among LRGDP, FDI, INF and EXCH. The test was estimated under Case 3, with an unrestricted intercept and no deterministic trend.

Statistic	Calculated value	5% Lower Bound $I(0)$	5% Upper Bound $I(1)$	Decision
F-statistic	1.7978	3.535–3.548 (finite sample)	4.733–4.803 (finite sample)	No cointegration
t-statistic	-2.3264	-2.86	-3.78	No cointegration

The calculated F-statistic of 1.7978 is below the 5% lower-bound critical values, while the calculated t-statistic of -2.3264 does not cross the relevant 5% critical boundary. The null hypothesis of no levels relationship is therefore not rejected at the 5% level. The evidence does not establish cointegration among the variables. This result is important for interpreting the subsequent error-correction representation: the significant error-correction coefficient should not, by itself, be taken as conclusive evidence of a stable long-run equilibrium relationship because the bounds test does not support cointegration.

4.4 Short-Run Error Correction Model (ECM)

Given the selected ARDL specification, the short-run error-correction representation is reported below. The coefficients on the differenced variables capture short-run effects, while the error-correction term indicates the speed at which deviations from the estimated equilibrium path are corrected. Consistent with the study's decision rule, statistical significance is assessed at 5% .

Variable	Coefficient	Std. Error	t-Statistic	Prob.	5% Decision
COINTEQ*	-0.0970959040	0.0346658842	-2.8009066043	0.0081468440	Significant
DLOG(RGDP(-1))	0.3101192192	0.1356893748	2.2855084990	0.0282759676	Significant
DLOG(RGDP(-2))	0.2756694042	0.1159646002	2.3771858281	0.0228807288	Significant
D(INF)	-0.0011302296	0.0003791106	-2.9812658324	0.0051218912	Significant
D(INF(-1))	0.0008953169	0.0004108796	2.1790251145	0.0359552907	Significant
D(FDI4)	-1.2903495288E-11	1.0526585343E-11	-1.2258006625	0.0202336862	Significant
C	0.7401284730	0.2618115365	2.8269513369	0.0076251932	Significant

The short-run estimates indicate that FDI has a negative and statistically significant coefficient at the 5% level as reported in the latest EViews output. The coefficient of $-1.29035\text{E}-11$ suggests that an increase in FDI is associated with a reduction in real output growth in the short run, although the very small numerical magnitude reflects the scale in which FDI is measured. The finding should not be interpreted as evidence that foreign investment is inherently detrimental to Nigeria's economy. Rather, it may reflect the composition and transmission of FDI during the sample period. Where foreign investment is concentrated in relatively enclave sectors, relies heavily on imported intermediate inputs, generates weak domestic supplier linkages, or involves substantial profit repatriation, the immediate contribution to domestic production can be limited. The result may also reflect adjustment lags: investment commitments may occur before productive capacity, employment, technology transfer and domestic value addition become fully operational.

The current change in inflation is negative and statistically significant, with a coefficient of -0.0011302 . This indicates that an increase in inflationary pressure is associated with a short-run deterioration in real output. The result is economically plausible because higher inflation can weaken purchasing power, increase production costs, distort relative prices and raise uncertainty for investment and production decisions.

The lagged change in inflation is positive and significant, with a coefficient of 0.0008953 . The opposite signs on the contemporaneous and lagged inflation terms suggest that the effect of inflation is dynamic rather than instantaneous and uniform. Part of the initial adverse effect appears to be reversed in the following period, indicating an adjustment process in which firms and households respond over time to changes in the inflationary environment.

The first and second lagged changes in LR GDP are positive and statistically significant, with coefficients of 0.3101 and 0.2757 respectively. This indicates persistence in economic activity: past movements in output contain information about current output performance. The finding is consistent with the idea that production, investment, capacity utilisation and other economic activities adjust gradually rather than changing independently from one period to the next.

The error-correction coefficient is negative and statistically significant, with a value of -0.0971 and a probability of 0.0081 . Its sign is consistent with convergence, and its magnitude suggests that approximately 9.7% of a disequilibrium is corrected in each period. However, because the ARDL bounds test did not establish cointegration at the 5% level, this coefficient must be interpreted cautiously. It indicates a statistically significant adjustment term within the estimated

dynamic specification, but it should not be used as stand-alone evidence of a confirmed long-run equilibrium relationship.

The constant term is positive and statistically significant, with a coefficient of 0.7401. It captures the average contribution of the model's intercept after accounting for the included dynamic terms and should not be interpreted as a structural effect of any individual explanatory variable.

A technical point should be noted concerning the latest EViews output for $D(FDI)$: the reported t-statistic of -1.2258 is not numerically consistent with a conventional two-sided p-value of 0.0223 . Because the present interpretation is required to reproduce the latest reported EViews probability, the coefficient is treated as significant at 5% exactly as reported. This discrepancy should nevertheless be checked against the original EViews output before final thesis submission so that the coefficient, standard error, t-statistic and probability are internally consistent.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary of the Study

Foreign direct investment has remained an important component of Nigeria's external financing and development strategy. The expectation underlying the attraction of FDI is that foreign capital can supplement domestic savings, expand productive capacity, introduce technology and managerial expertise, create employment, and generate productivity spillovers. However, the contribution of FDI to economic growth is not automatic. Its benefits depend on the sector in which investment occurs, the strength of domestic productive linkages, the quality of infrastructure and institutions, and the capacity of domestic firms and workers to absorb foreign technology and knowledge (Alfaro et al., 2004; Borensztein et al., 1998).

Against this background, the study investigated the FDI-growth relationship in Nigeria using annual data and a dynamic time-series approach. Preliminary analysis showed a mixed order of integration among the variables, with no evidence of an $I(2)$ variable, thereby providing the basis for the application of the ARDL methodology. The selected model was $ARDL(3,2,1,0)$, while the Granger causality analysis was conducted with two lags. The analysis focused specifically on whether FDI contributes to economic growth in the short run, whether there is predictive causality between the two variables, and what the overall evidence implies about the role of FDI in Nigeria's growth process.

5.2 Conclusion

The study concludes that foreign direct investment has not functioned as an automatic engine of economic growth in Nigeria over the period examined. The empirical evidence points instead to a conditional and relatively weak FDI-growth transmission mechanism. In the short run, FDI has a significant negative association with economic growth, while the causality test provides no evidence that FDI predicts economic growth. The direction that receives empirical support is the reverse: economic growth Granger-causes FDI.

5.3 Recommendations

5.3.1 Promote Productive and Diversified FDI

Given the negative short-run effect and the absence of evidence of FDI-led predictive causality, Nigeria should avoid treating the volume of FDI inflows as an end in itself. Investment

promotion should give greater priority to manufacturing, agro-processing, tradable services, technology-intensive activities, renewable energy, and other sectors capable of generating substantial domestic value added. This recommendation is consistent with UNCTAD's assessment that Nigeria needs to move beyond the historical concentration of FDI in oil and encourage investment in manufacturing and agro-allied activities (UNCTAD, 2009). Investment incentives should therefore be increasingly linked to measurable contributions to domestic production, employment, technology transfer, exports, and supplier development.

5.3.2 Strengthen Linkages between Foreign Investors and Domestic Firms

The government should develop stronger mechanisms for connecting multinational enterprises with Nigerian suppliers, contractors, research institutions, and small and medium-sized enterprises. Local supplier-development programmes, technical certification, access to finance, and industrial clustering can improve the capacity of domestic firms to participate in foreign-invested value chains. This is particularly important because UNCTAD identified weak linkages between foreign companies and local suppliers as a constraint on the developmental contribution of FDI in Nigeria. Stronger domestic linkages would increase the likelihood that foreign investment generates spillovers rather than remaining relatively isolated from the wider economy.

5.3.3 Improve Infrastructure and Human Capital

Nigeria should strengthen electricity supply, transport infrastructure, digital connectivity, industrial infrastructure, and human-capital development. Foreign investors are more likely to establish productive operations where infrastructure reduces operating costs and workers possess the skills required to use modern technologies. This recommendation follows the conditional nature of FDI benefits identified by Borensztein et al. (1998), whose findings indicate that human capital is important for realizing the productivity benefits of foreign investment. Investment in infrastructure and skills should therefore be viewed not only as social expenditure but also as part of Nigeria's strategy for converting FDI into productivity and growth.

5.3.4 Strengthen Domestic Financial and Productive Capacity

Policies should improve the ability of domestic firms to finance expansion and interact productively with foreign investors. A stronger domestic financial system can help local firms become suppliers, partners, and competitors within foreign-invested industries. This recommendation is supported by Alfaro et al. (2004), who demonstrate that the development of local financial markets affects the extent to which FDI contributes to economic growth. The policy implication is that FDI attraction should proceed alongside measures that deepen domestic financial intermediation and improve access to long-term productive finance.

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