



A Critical Analysis of the Impact of Foreign Direct Investment on Economic Growth in Nigeria

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Abstract

The integration of Nigeria with the global economy has increased since the 1990s, with a greater inflow of foreign direct investment (FDI). FDI is assumed to benefit a developing economy by supplementing domestic investment and generating employment through technology transfer. Studies on the impact of foreign capital on the Nigerian economy, like those of other developing countries, remain inconclusive. Most of these studies ignored the possibility of bi-directional causality between foreign direct investment and economic growth. This paper therefore examines the impact of FDI on economic growth in Nigeria, using the Ordinary Least Squares (OLS) regression technique within an extended production-function framework, complemented by diagnostic tests to ensure model robustness. The empirical analysis shows that FDI solely does not, in a real sense, cause economic growth. Moreover, results of the regression analysis could not establish that FDI is a statistically important determinant of real GDP in Nigeria. Growth in real GDP is mostly explained by its own shocks. The implication of this is that the policy linkage between real GDP and FDI is weak, and there is a need for policy to ensure provision of adequate infrastructure in order to maximize the potential benefit of FDI in Nigeria.

Keywords: Global economy; Developing economy; Economic growth; Employment; Technology; Capital; GDP

INTRODUCTION

Foreign direct investment (FDI) is widely regarded as an important source of external capital for developing economies, providing opportunities for capital formation, technology transfer, employment generation, and productivity improvement (Oyegoke and Aras, 2021; Olasehinde and Ajayi, 2022). Nigeria, as one of Africa's largest economies, has historically attracted substantial FDI, particularly into the oil and gas sector, owing to its large market and abundant natural resources. According to the United Nations Conference on Trade and Development (UNCTAD, 2025), global FDI flows have increasingly shifted towards digital economy sectors, yet Nigeria's FDI composition remains heavily concentrated in extractive industries, limiting the potential for technology spillovers and sustainable development. However, despite considerable FDI inflows, Nigeria's economic growth has remained volatile, with periods of expansion interrupted by recession and slow recovery (Giwa *et al.*, 2020; WB, 2025).

The inconsistent growth outcomes associated with FDI raise concerns about the extent to which foreign investment contributes to sustainable economic development in Nigeria. While some studies report that FDI stimulates growth through capital accumulation and productivity gains, others find weak or conditional effects, particularly where institutional capacity, domestic investment, and economic diversification are limited (Adegboye *et al.*, 2020; Emako *et al.*, 2022). The concentration of FDI in the oil sector may further restrict its broader spillover benefits. Consequently, the relationship between FDI and economic growth in Nigeria remains inconclusive. This study therefore critically analyses the impact of FDI on economic growth in Nigeria, while considering gross capital formation and trade openness as complementary factors influencing growth.

REVIEW OF LITERATURE

Conceptual Review

Concept of Economic Growth

Economic growth refers to a sustained increase in the production of goods and services in an economy over time and is commonly measured by real Gross Domestic Product (GDP), which adjusts for inflation (Oyegoke and Aras, 2021). It reflects improvements in productivity, industrial activities, income and living standards (Olasehinde and Ajayi, 2022). However, economic growth also involves structural transformation, technological advancement and diversification of economic activities (Giwa *et al.*, 2020).

In Nigeria, economic growth has been strongly influenced by the oil sector, creating a situation where increases in output and revenue do not always translate into broad employment and income improvements (Adegboye *et al.*, 2020; Shittu *et al.*, 2020). Nigeria experienced relatively strong growth between 2000 and 2014 but entered recession in 2016 following declining oil prices and macroeconomic instability (WB, 2025). Consequently, growth in Nigeria is influenced by several interacting factors, including investment, trade, institutions and external conditions (Acquah and Ibrahim, 2020; Nguyen, 2022). This study therefore considers economic growth as the dependent variable for assessing the effects of foreign direct investment and other macroeconomic factors.

Concept of Foreign Direct Investment

Foreign Direct Investment (FDI) refers to investment by an individual or firm from one country into business operations in another country with the intention of establishing a lasting interest and control (Emako *et al.*, 2022). Unlike portfolio investment, FDI normally involves long-term commitments, asset acquisition, technology transfer and managerial expertise (Okwu *et al.*, 2020).

FDI provides developing economies with external capital that can complement domestic savings and promote productivity and growth (Opeyemi, 2020). Nigeria attracts considerable FDI because of its large market and natural resources, particularly oil and gas. However, its concentration in extractive industries has limited spillovers to manufacturing, agriculture and other productive sectors (Acquah and Ibrahim, 2020; Wiredu *et al.*, 2020). The effectiveness of FDI also depends on institutional quality, infrastructure and regulatory conditions (Adegboye *et al.*, 2020; Dada and Abanikanda, 2022). Although FDI can generate employment, technology transfer and domestic linkages, it may also crowd out local investment where domestic firms cannot compete effectively (Nupehewa *et al.*, 2022). Thus, FDI remains a major variable in explaining economic growth in Nigeria.

Concept of Gross Capital Formation

Gross Capital Formation (GCF) represents investment in fixed assets such as machinery, buildings, infrastructure and equipment used in production (Younsi *et al.*, 2021). It expands the productive capacity of an economy and contributes directly to output and productivity (Anetor, 2020; Nguyen, 2022).

Nigeria's gross capital formation has remained relatively low because of inadequate savings, infrastructure deficits and policy uncertainty (WB, 2025). This has increased reliance on foreign capital to bridge the domestic investment gap

(Oyegoke and Aras, 2021). While FDI may complement domestic investment, it may also substitute for local investment under certain conditions (Okwu *et al.*, 2020). Consequently, improving GCF is important for strengthening the economy's capacity to absorb FDI and sustain economic growth.

Concept of Trade Openness

Trade openness refers to the extent to which an economy participates in international trade and is commonly measured as the ratio of total exports and imports to GDP (Wiredu *et al.*, 2020). Greater openness can promote competition, resource allocation, market expansion and technology transfer, thereby supporting economic growth (Emako *et al.*, 2022).

For Nigeria, trade openness provides access to international markets and can encourage FDI, but it also exposes the economy to external shocks, oil-price fluctuations and exchange-rate instability (WB, 2025). Excessive dependence on imports, especially outside the oil sector, may weaken domestic industries and create trade imbalances (NBS, 2023; Opeyemi, 2020). Thus, the benefits of openness depend on domestic productive capacity and appropriate economic policies.

Concept of Exchange Rate

Exchange rate is the price of one currency in terms of another and significantly influences trade, investment and economic performance (Opeyemi, 2020). Exchange-rate stability can encourage FDI by reducing uncertainty and improving investors' confidence, while excessive volatility increases investment risk (Okwu *et al.*, 2020; Shittu *et al.*, 2020).

Nigeria has experienced considerable exchange-rate instability, partly because of its dependence on oil revenues and foreign reserves (WB, 2025). Although currency depreciation may make domestic assets cheaper to foreign investors, excessive depreciation can increase inflation, reduce purchasing power and signal macroeconomic weakness (Emako *et al.*, 2022; Odugbesan and Adebayo, 2020). Exchange rate is therefore an important determinant of both FDI and economic growth.

Concept of Inflation Rate

Inflation is the sustained increase in the general price level of goods and services and is an important indicator of macroeconomic stability (Opeyemi, 2020). While moderate inflation may accompany economic expansion, high and unpredictable inflation increases production costs, reduces purchasing power and creates uncertainty for investors (Acquah and Ibrahim, 2020).

In Nigeria, inflation has been influenced by exchange-rate depreciation, supply constraints and fiscal pressures (WB, 2025). Persistent inflation can discourage savings and investment and reduce the real value of investment returns (Emako *et al.*, 2022; Shittu *et al.*, 2020). Its interaction with exchange rates and other macroeconomic variables makes inflation an important factor in determining the relationship between FDI and economic growth.

Concept of Interest Rate

Interest rate represents the cost of borrowing or the return on savings and is an important monetary policy instrument (Okwu *et al.*, 2020). High interest rates generally increase borrowing costs and can discourage investment, while lower rates may encourage credit expansion and productive activities (Opeyemi, 2020).

In Nigeria, fluctuations in interest rates have resulted from changes in monetary policy and macroeconomic conditions (CBN, 2025). Although high rates may attract some financial capital through higher returns, they can also restrict credit access and reduce private-sector investment (Nguyen, 2022; Olasehinde and Ajayi, 2022). Interest rate is therefore relevant to the investment-growth relationship examined in this study.

Concept of Labour Force

Labour force comprises persons who are employed or actively seeking employment and constitutes an important component of production (Anetor, 2020). A large and productive labour force can enhance output, productivity and economic growth, while skilled labour can also increase a country's attractiveness to foreign investors (Nguyen, 2022).

Nigeria has a large and youthful population, but unemployment, underemployment and skill shortages limit the contribution of labour to economic growth (NBS, 2023; WB, 2025). FDI can create employment and facilitate skill development, but the extent of these benefits depends on the quality and absorptive capacity of domestic labour (Giwa *et al.*, 2020). Labour force is therefore considered an important factor in determining the effectiveness of FDI and overall economic performance.

Concept of Financial Development

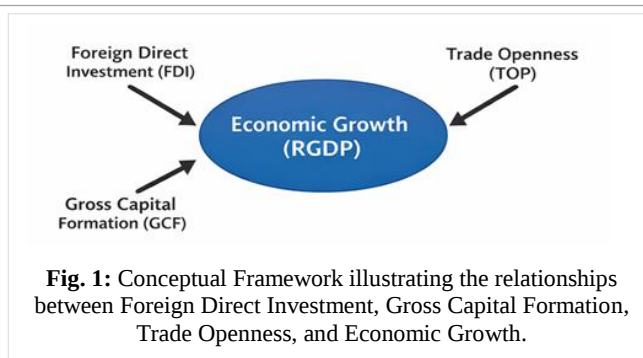
Financial development refers to improvements in the efficiency, accessibility, depth and stability of financial institutions and markets (Acquah and Ibrahim, 2020). An effective financial system mobilises savings, provides credit and facilitates productive investment, thereby supporting economic growth (Nguyen, 2022).

A developed financial system can enhance the ability of domestic firms to benefit from FDI through access to finance and business linkages. However, limited credit access and financial inclusion remain challenges in Nigeria (CBN, 2025). Financial development can therefore strengthen the relationship between FDI and economic growth by improving the economy's capacity to absorb and utilise foreign capital (Dada and Abanikanda, 2022).

Concept of Infrastructure Development

Infrastructure development refers to the provision and quality of facilities such as electricity, roads, telecommunications, water and transport systems that support economic activities (Adegboye *et al.*, 2020). Adequate infrastructure reduces production costs, improves productivity and enhances investment attractiveness (Nguyen, 2022).

Nigeria's infrastructure deficit, particularly unreliable electricity and poor transportation networks, increases the



cost of doing business and limits the potential benefits of FDI (Shittu *et al.*, 2020; WB, 2025). Poor infrastructure may also encourage FDI concentration in extractive sectors rather than manufacturing and other productive activities (Acquah and Ibrahim, 2020). Consequently, infrastructure development is essential for maximising the contribution of FDI to sustainable economic growth.

Fig. 1 shows that foreign direct investment, gross capital formation, and trade openness all have direct influences on economic growth in Nigeria. It highlights that economic growth depends on both external investment and internal economic activities. This implies that improving these variables can lead to better economic performance.

Theoretical Review

Neoclassical Growth Theory

The Neoclassical Growth Theory, associated primarily with Solow (1956) and Swan (1956), explains economic growth in terms of capital, labour and technological progress. The theory assumes diminishing returns to capital and labour, implying that continuous capital accumulation alone cannot sustain long-term growth. Technological advancement ultimately determines sustained increases in productivity (Solow, 1956).

The theory is relevant to this study because FDI increases the capital available for production and can therefore generate temporary increases in output. However, its long-term contribution depends on productivity and technological advancement. This is particularly relevant to Nigeria, where FDI has increased capital inflows without always producing sustained and broad-based growth (WB, 2025). A major limitation of the theory is its treatment of technology as exogenous and its limited consideration of institutional and human-capital factors (Romer, 1990). Nevertheless, it provides a useful foundation for examining the capital-accumulation channel through which FDI may influence economic growth.

Endogenous Growth Theory

Endogenous Growth Theory, developed through the works of Romer (1990) and Lucas (1988), argues that long-term growth is generated by factors within the economy, particularly innovation, human capital, knowledge and technology. Unlike the Neoclassical model, technology is treated as endogenous, while knowledge spillovers can generate increasing returns and sustained productivity growth.

The theory is highly relevant to FDI because multinational firms can introduce new technologies, management practices, knowledge and skills into host economies (Borensztein *et al.*, 1998). In Nigeria, FDI in sectors such as telecommunications and banking has contributed to technological development. However, the extent of these benefits depends on human capital, infrastructure and institutional capacity (Dada and Abanikanda, 2022; Giwa *et al.*, 2020). Although the theory may understate structural constraints in developing economies, it provides a strong explanation of how FDI can contribute to long-term growth through technology transfer and human-capital development. It is therefore adopted as a major theoretical foundation for this study.

Dependency Theory

Dependency Theory emerged from the works of scholars such as Frank (2001) and Amin (1976) and explains underdevelopment through unequal relationships between developed and developing economies. The theory argues that developing countries may become dependent on developed economies through trade, investment and financial relationships. In its original formulation, Frank (1967) contended that the capitalist world-system actively underdevelops peripheral nations through the extraction of surplus value, creating a structure of dependency that perpetuates inequality and limits autonomous industrialisation.

From this perspective, FDI may reinforce dependency when foreign firms dominate strategic sectors, repatriate profits and establish limited linkages with domestic industries (Frank, 2001). Nigeria's concentration of FDI in the oil sector provides a relevant context for this argument. However, Dependency Theory has been criticised for being overly pessimistic because FDI has contributed to industrialisation and growth in some developing economies (Easterly, 2001). Despite this limitation, the theory provides a useful counter-perspective by drawing attention to capital repatriation, weak domestic linkages and the possible negative consequences of excessive reliance on foreign capital. It complements the growth theories by providing a balanced assessment of FDI's potential benefits and costs.

Empirical Review

Oyegoke and Aras (2021) examined the effect of FDI on economic growth in Nigeria using annual data from 1981–2018. Employing OLS alongside unit-root and cointegration tests, the study found that FDI had a positive and significant effect on economic growth, although macroeconomic instability weakened its impact. The authors recommended improved infrastructure, stronger institutions and a stable investment environment.

Olasehinde and Ajayi (2022) investigated the short- and long-run relationship between FDI and Nigerian economic growth using annual data from 1986–2020. Using the Vector Error Correction Model and cointegration techniques, the study found a positive but weak short-run effect and a stronger long-run relationship. The study concluded that institutional weaknesses and structural problems limited the effectiveness

of FDI and recommended improved governance and economic diversification.

Giwa *et al.* (2020) examined FDI inflows and real economic growth in Nigeria using data covering 1980–2017. The study employed an ARDL model, error-correction mechanism and bounds testing. The findings showed that FDI had a positive and significant long-run effect on real GDP, while the short-run effect was insignificant. Trade openness and capital formation also contributed to growth. The study recommended stronger human capital and institutional development.

Emako *et al.* (2022) examined FDI and economic growth across 25 developing countries using panel data from 1995–2019. Fixed- and random-effects models showed that FDI had a positive and significant effect on economic growth, although the magnitude varied according to institutional quality and economic structure. The study concluded that developing countries need stronger institutions and economic diversification to maximise FDI benefits.

Adegboye *et al.* (2020) examined the interaction between institutional quality, FDI and economic development in 30 sub-Saharan African countries from 2000–2017 using dynamic panel estimation. The findings showed that FDI contributed more positively to growth where institutional quality was strong, while weak institutions reduced or reversed its effect. The study therefore emphasised governance, reduced corruption and policy stability.

Shittu *et al.* (2020) investigated FDI, globalisation and economic growth in 15 West African countries using panel data from 1990–2016. Panel cointegration, FMOLS and DOLS techniques revealed that FDI had a positive but conditional effect on growth, while weak political governance reduced its effectiveness. The study recommended improved political stability and institutional quality.

Okwu *et al.* (2020) analysed FDI and economic growth using panel data from 30 developed and developing economies covering 1995–2018. The results indicated that FDI had a positive and significant effect on economic growth, with stronger effects in developing economies. Domestic investment and trade openness were also found to complement FDI. The study recommended favourable investment environments and stronger domestic productive capacity.

Overall, the empirical evidence generally supports a positive relationship between FDI and economic growth, but the magnitude and sustainability of the effect depend on institutional quality, domestic investment, trade openness, human capital and macroeconomic stability.

Gap in Literature

The reviewed literature reveals several gaps that justify the present study. First, many previous Nigerian studies focused primarily on the direct relationship between FDI and economic growth without sufficiently examining the combined influence of other macroeconomic variables. Since economic growth is affected by several interconnected

factors, analysing FDI in isolation may provide an incomplete explanation of Nigeria's growth performance.

Second, existing studies differ considerably in their findings concerning the magnitude and significance of FDI's impact on growth. Some report strong positive effects, while others identify weak or conditional relationships. This inconsistency suggests that country-specific conditions and the inclusion of relevant macroeconomic variables require further investigation.

Third, many studies have employed conventional econometric techniques, while relatively fewer studies have adequately considered the dynamic interactions among FDI, domestic investment, trade, exchange rate, inflation, interest rate, labour force, financial development and infrastructure. This creates a methodological and variable-selection gap.

Finally, cross-country studies may not adequately reflect Nigeria's unique economic structure, particularly its dependence on oil, infrastructure deficits, institutional challenges and exchange-rate instability. Findings from other developing countries may therefore not be directly applicable to Nigeria.

Consequently, this study seeks to fill the identified gaps by examining the effect of FDI on economic growth in Nigeria while incorporating relevant macroeconomic variables. By focusing specifically on Nigeria and considering the interaction among investment, trade, monetary and structural factors, the study aims to provide a more comprehensive explanation of the FDI-growth relationship and contribute to the existing body of empirical literature.

METHODOLOGY

Research Design

This study adopts a quantitative ex post facto research design, which is appropriate for examining relationships among economic variables using historical data without manipulating the variables. The choice of research design aligns with the principles articulated by Ørngreen and Levinsen (2017), who advocate for structured methodological approaches that balance empirical rigour with practical applicability in business and economic research. The design is suitable because variables such as foreign direct investment, economic growth, gross capital formation and trade openness occur naturally and cannot be experimentally controlled. It enables the researcher to analyse historical relationships and trends using secondary time-series data. The design is considered appropriate for economic studies because it provides an objective basis for examining relationships among existing variables (Bhattacharyya, 2006; Kothari, 2004).

Model Specification

The study specifies an extended production-function model to examine the effect of foreign direct investment on economic growth in Nigeria.

Functional form:

$$RGDP = f(FDI, GCF, TOP) \quad (1)$$

Econometric form:

$$\ln RGDP = \beta_0 + \beta_1 \ln FDI + \beta_2 \ln GCF + \beta_3 \ln TOP + \mu \quad (2)$$

where:

RGDP = Real Gross Domestic Product (economic growth),
FDI = Foreign Direct Investment,
GCF = Gross Capital Formation,
TOP = Trade Openness,

β_0 is the constant,

$\beta_1 - \beta_3$ are the coefficients of the explanatory variables, and
 μ is the error term.

The log-linear specification is adopted to reduce scale differences and facilitate elasticity interpretation.

Description and Measurement of Variables

Real GDP is used as the dependent variable and proxy for economic growth. FDI represents foreign capital inflows into Nigeria, while GCF captures domestic investment in productive assets. Trade openness measures the degree of integration of the Nigerian economy into international trade. The complete description, proxies, and measurement details are summarized in Table 1.

Table 1: Variable description, measurement, and data sources.

Variable	Proxy	Measurement	Source
Economic Growth	RGDP	Real GDP (constant prices)	CBN (2025); WB (2025)
Foreign Direct Investment	FDI	Net FDI inflows (₦ billion)	CBN (2025)
Domestic Investment	GCF	Gross capital formation (₦ billion)	WB (2025)
Trade Openness	TOP	(Exports + Imports) / GDP (%)	WB (2025)

Sources of Data

The study relies entirely on secondary data obtained from credible sources, principally the World Bank World Development Indicators, Central Bank of Nigeria Statistical Bulletin, and National Bureau of Statistics. Annual data covering 1988–2025 are used. This whole period of coverage was, however, grouped into nine (9) equal parts based on the availability of the data as required. Secondary data are appropriate because they provide consistent historical observations required for analysing macroeconomic relationships over time (Goundar, 2012).

Method of Data Analysis

The study employs descriptive statistics to summarize the characteristics of the variables, followed by unit-root tests to determine their stationarity and avoid spurious regression. Cointegration tests are used to establish whether a long-run relationship exists among the variables. Where cointegration is established, an Error Correction Model (ECM) is applied to examine short- and long-run dynamics. Ordinary Least Squares (OLS) regression is subsequently used to estimate the direction and magnitude of the relationship between FDI and economic growth. These techniques provide a systematic econometric framework for analysing time-series data.

Table 2: A-Priori expectations and economic rationale.

Variable	Expected Sign	Economic Explanation
FDI	Positive (+)	Increases capital and technology
GCF	Positive (+)	Expands domestic productive capacity
TOP	Positive (+)	Promotes trade, competition and efficiency

A-Priori Expectations

Based on economic theory, FDI, GCF and trade openness are expected to have positive effects on economic growth. FDI is expected to increase capital accumulation, technology transfer and employment; GCF is expected to expand productive capacity; while trade openness is expected to improve market access, competition and efficiency. These hypothesized relationships are explicitly summarized in Table 2.

The actual results, however, will depend on the prevailing economic and institutional conditions in Nigeria.

The analytical procedure adopted in this study is summarised in Fig. 2

The flowchart presents the step-by-step process used in the study, starting from data collection to final interpretation. It shows a logical sequence of analysis, ensuring that the study follows a systematic and reliable procedure. This implies that the findings are based on a structured and well-organised analytical approach.

RESULTS

Model Estimation

The study estimates the specified log-linear production-function model represented by Eq. (2). The analysis is based on the nine groups (observations) as per availability, for 1988, 1993, 1998, 2005, 2008, 2013, 2018, 2023 and 2025. The original data report RGDP, FDI and GCF in ₦ billion and TOP in percentages.

Research Methodology

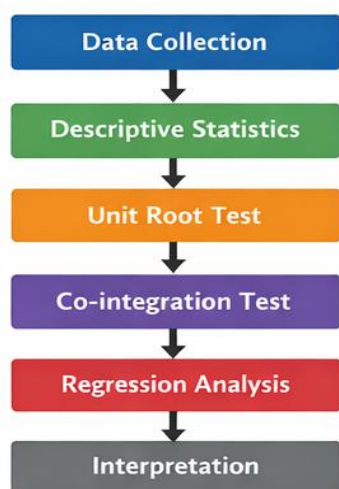


Fig. 2: Sequential analytical framework for data analysis and model estimation.

Table 3: OLS regression results.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Constant	2.2969	1.154	1.990	0.103
lnFDI	-0.2166	0.152	-1.428	0.213
lnGCF	1.1294	0.168	6.720	0.001
lnTOP	-0.1015	0.399	-0.255	0.809
R ²	0.9970			
Adjusted R ²	0.9952			
F-statistic	587.80			0.000001
Durbin-Watson	2.7402			

Source: Author's computation, 2026.

The regression results (Table 3) indicate that the model explains approximately 99.70% of the variation in RGDP, as shown by the R² of 0.9970. The adjusted R² of 0.9952 remains very high. The F-statistic of 587.80, with a probability value of 0.000001, indicates that the explanatory variables are jointly statistically significant.

However, the exceptionally high R² is being interpreted cautiously because the analysis is based on only nine observations and the variables exhibit strong common movements over time.

Interpretation of Individual Coefficients

Foreign Direct Investment (lnFDI)

The coefficient of FDI is -0.2166, with a probability value of 0.213. Thus, holding GCF and TOP constant, a 1% increase in FDI is associated with an estimated 0.217% decrease in RGDP. However, this relationship is statistically insignificant at the 5% level. Therefore, the evidence does not establish that FDI has a significant independent effect on economic growth in the sample.

The negative sign does not imply that FDI necessarily reduces Nigerian economic growth. Rather, it may indicate that the growth effect of FDI depends on factors such as its sectoral composition, domestic linkages, technology transfer, employment creation and the capacity of the domestic economy to absorb foreign capital and technology.

Gross Capital Formation (lnGCF)

GCF has a coefficient of 1.1294, with a t-statistic of 6.720 and probability value of 0.001. The coefficient is positive and statistically significant at the 1% level. Hence, a 1% increase in GCF is associated with approximately a 1.129% increase in RGDP, ceteris paribus. This indicates that capital accumulation has a strong positive association with Nigerian economic growth.

Trade Openness (lnTOP)

The coefficient of TOP is -0.1015, with a probability value of 0.809. A 1% increase in trade openness is associated with an estimated 0.102% decrease in RGDP, holding other variables constant. However, the coefficient is statistically insignificant. Thus, the evidence does not establish an independent effect of trade openness on economic growth within the sample.

Table 4: Diagnostic results.

Diagnostic Test	Statistic	Probability	Decision
Breusch-Pagan Heteroskedasticity	2.9714	0.3961	No heteroskedasticity
Breusch-Godfrey Serial Correlation	3.9751	0.0462	Serial correlation indicated
Shapiro-Wilk Normality	0.8912	0.2053	Normality not rejected
Ramsey RESET	5.8550	0.0728	No significant misspecification
Durbin-Watson	2.7402	—	Relatively high

Hypothesis Testing

The study tests:

H₀₁: Foreign Direct Investment has no significant impact on economic growth in Nigeria.

Since the probability value of the FDI coefficient (0.213) is greater than 0.05, the study fails to reject H₀₁. Consequently, the available evidence does not establish a statistically significant impact of FDI on economic growth in Nigeria within the supplied sample.

Diagnostic Results

The diagnostic results (Table 4) generally support the adequacy of the estimated model. There is no significant evidence of heteroskedasticity or non-normality, while the Ramsey RESET test does not indicate significant functional-form misspecification at the 5% level. However, the Breusch-Godfrey probability value of 0.0462 indicates evidence of serial correlation at the 5% level. This constitutes an important limitation when interpreting the conventional OLS standard errors.

Multicollinearity is also a concern. The calculated VIF values are approximately 51.57 for FDI, 61.13 for GCF and 3.85 for TOP, indicating particularly strong collinearity between FDI and GCF. This may make it difficult to precisely isolate their individual effects in such a small sample.

Discussion of Findings

The results provide a critical perspective on the role of FDI in Nigeria's economic growth. Although the coefficient of FDI is negative, it is statistically insignificant. The study therefore finds no sufficient evidence that FDI independently determines economic growth after controlling for gross capital formation and trade openness.

This result suggests that foreign investment inflows do not automatically translate into broad-based economic growth. The developmental benefits of FDI may depend on the nature and destination of the investment, the level of domestic productive capacity, technology spillovers, employment creation and linkages between foreign enterprises and domestic firms.

In contrast, gross capital formation has a strong positive and statistically significant relationship with RGDP. Its elasticity of 1.1294 suggests that capital accumulation is an important contributor to economic performance in Nigeria. This finding

reinforces the importance of investment in infrastructure, productive assets, machinery, technology and other forms of capital.

Trade openness is negative but statistically insignificant. Hence, the model does not provide sufficient evidence that trade openness independently affects economic growth. The finding suggests that openness produces stronger growth benefits when supported by adequate domestic productive capacity and competitiveness.

The very high correlation among some variables, particularly FDI and GCF, means that the results should be interpreted with caution. This is probably due to the small number of observations, and hence a suggestion that future researchers should expand the observations to avoid a similar limitation to the strength of statistical inference.

Policy Implications

The findings suggest several policy directions.

First, Nigeria should focus on quality rather than merely the volume of FDI. Priority should be given to investments capable of generating employment, technology transfer, domestic value addition and linkages with Nigerian enterprises.

Second, greater attention should be given to gross capital formation, given its strong positive and significant relationship with economic growth. Investment in infrastructure, energy, transport, technology and productive facilities should therefore remain central to economic policy.

Third, policies should encourage stronger local participation in foreign-invested enterprises, including local sourcing, supplier development, workforce training and technology transfer.

Fourth, trade openness should be supported by measures that strengthen domestic productive capacity and international competitiveness. Openness without adequate infrastructure, finance, skills and productive capacity may not generate substantial growth benefits.

Finally, future research should employ complete annual observations rather than the nine selected observations used here. This would provide greater degrees of freedom and support more robust time-series estimation.

Conclusion

The study critically examined the impact of foreign direct investment on economic growth in Nigeria using a log-linear model incorporating FDI, gross capital formation and trade openness.

The results indicate that FDI has a negative but statistically insignificant coefficient of -0.2166. Accordingly, the null hypothesis that FDI has no significant impact on economic growth is not rejected. The evidence therefore does not establish an independent statistically significant effect of FDI on Nigerian economic growth within the supplied sample.

In contrast, gross capital formation has a positive and statistically significant coefficient of 1.1294, demonstrating its strong association with economic growth. Trade openness

has a negative but statistically insignificant coefficient of -0.1015.

Overall, the findings suggest that FDI should not be regarded as an automatic engine of economic growth in Nigeria. Its contribution is likely to depend on the quality of investment, domestic linkages, technology transfer and the absorptive capacity of the Nigerian economy. The stronger role of gross capital formation further suggests that Nigeria should pursue FDI policies alongside sustained investment in domestic productive capacity, infrastructure and institutions.

Nevertheless, the results should be interpreted cautiously because the dataset contains only nine selected observations, together with evidence of serial correlation and substantial multicollinearity between FDI and GCF. The findings are therefore best regarded as indicative rather than definitive.

SUMMARY OF FINDINGS, CONCLUSION, AND POLICY RECOMMENDATIONS

Summary of Findings

This study critically examined the impact of Foreign Direct Investment (FDI) on economic growth in Nigeria using a log-linear production-function model comprising Real Gross Domestic Product (RGDP), Foreign Direct Investment (FDI), Gross Capital Formation (GCF) and Trade Openness (TOP). Based on the supplied data covering selected years between 1988 and 2025, the estimated OLS model produced an R^2 of 0.9970 and a significant F-statistic of 587.80 with a probability value of 0.000001, indicating that the explanatory variables jointly explain a substantial portion of the variation in RGDP, and thus confirmed the joint statistical significance of the model.

However, the individual results revealed that FDI had a coefficient of -0.2166 with a probability value of 0.213, indicating a negative but statistically insignificant relationship with economic growth. Consequently, the null hypothesis that FDI has no significant impact on economic growth in Nigeria could not be rejected. In contrast, Gross Capital Formation recorded a positive and statistically significant coefficient of 1.1294 ($p = 0.001$), affirming its role as a robust driver of economic performance. Trade Openness also showed a negative (-0.1015) but statistically insignificant effect with a probability value of 0.809. Diagnostic checks confirmed model adequacy regarding heteroskedasticity and normality, though evidence of serial correlation and high multicollinearity (particularly between FDI and GCF) necessitates cautious interpretation of the findings.

Conclusion

The study concludes that Foreign Direct Investment did not exert a statistically significant independent impact on economic growth within the Nigerian context examined. This finding does not imply that FDI is detrimental; rather, it suggests that the expected growth dividends from foreign capital are not automatic. The benefits of FDI are highly contingent upon the quality of the investment, its sectoral composition, and the absorptive capacity of the domestic economy. Conversely, the robust positive effect of Gross

Capital Formation underscores that domestic investment in physical assets and infrastructure remains the most reliable pathway to sustainable economic expansion. Policymakers must therefore look beyond merely attracting foreign capital and focus on building domestic productive capacities to ensure that when FDI does arrive, it catalyzes rather than substitutes local enterprise.

Nigeria-Specific Policy Recommendations

Based on the empirical evidence and the unique structural realities of the Nigerian economy, the following targeted recommendations are proposed:

1. *Prioritize Quality over Quantity of FDI through Sectoral Targeting:* Rather than pursuing aggregate FDI inflows, the Nigerian Investment Promotion Commission (NIPC) should actively screen and channel investments towards non-oil productive sectors such as agro-processing, solid minerals, and light manufacturing. This will diversify the economy away from the resource-curse dependency and generate broader employment linkages.
2. *Aggressively Address the Infrastructure Deficit:* The strong significance of GCF implies that public and private domestic investment must be scaled up. Specifically, the government must tackle the persistent national grid collapses and epileptic power supply, which inflate production costs and render many foreign-owned factories uncompetitive. Investment in reliable power and rail transportation should be prioritized using public-private partnership frameworks.
3. *Enforce Local Content and Linkage Policies:* To ensure FDI translates into domestic growth, the government must strictly enforce the Nigerian Oil and Gas Industry Content Development (NOGICD) Act and extend similar local-content frameworks to the telecommunications and mining sectors. This will mandate multinationals to source raw materials and services from local suppliers, fostering technology spillovers.
4. *Stabilize the Foreign Exchange (FX) Environment:* The current multiplicity of exchange rate windows creates significant uncertainty for foreign investors calculating returns on capital. The Central Bank of Nigeria should accelerate efforts toward FX market unification and improving liquidity to boost investor confidence and reduce the speculative pressure that often crowds out long-term productive investment.
5. *Complement Openness with Industrial Policy:* Given the statistically insignificant effect of trade openness, Nigeria must avoid "openness for its own sake." Trade policies should be combined with protective industrial strategies that nurture nascent domestic industries, enabling them to compete effectively before full exposure to international competition, thereby preventing the de-industrialization often associated with unchecked imports.
6. *Expand the Data Infrastructure for Evidence-Based Policy:* Given the statistical limitations encountered in this study (specifically the multicollinearity between FDI and GCF), the National Bureau of Statistics (NBS) should

improve the frequency and granularity of sectoral FDI and capital formation data to facilitate more robust econometric evaluations in future research.

In sum, this study underscores that Nigeria cannot rely on foreign capital inflows as a panacea for its developmental challenges. The growth-enhancing potential of FDI remains latent, conditional upon deliberate policy interventions that strengthen domestic productive capacity, stabilize the macroeconomic environment, and enforce backward linkages with local suppliers. Conversely, the robust performance of gross capital formation reaffirms that sustainable growth is built from within—through sustained investment in physical infrastructure, technology, and human capital. Given the statistical limitations encountered, notably the high collinearity between FDI and GCF and the small sample size, future research should prioritize the use of higher-frequency quarterly data, sectorally disaggregated FDI flows, and advanced time-series techniques such as Threshold Regression or Dynamic Conditional Correlation models to capture nonlinearities and regime shifts. Ultimately, the Nigerian growth story will be determined less by the volume of foreign investment it attracts, and more by the strength of the domestic economic ecosystem that receives it.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/ or falsification, double publication and/or submission, and redundancy, have been completely observed by the authors.

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