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Interest Rate Fluctuations and Foreign Direct Investment in Nigeria

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Abstract
This study investigates the impact of interest rate fluctuations on foreign direct investment (FDI) inflows in Nigeria over the period 1990–2024. Using the Autoregressive Distributed Lag (ARDL) bounds testing approach, the analysis incorporates key macroeconomic variables such as exchange rate, inflation, GDP growth, and trade openness to provide a comprehensive evaluation of the determinants of FDI. The ARDL results indicate that interest rate fluctuations exert significant short-run and long-run effects on FDI, particularly through lagged impacts, while inflation similarly shows strong adverse effects on capital inflows. Exchange rate volatility, though weak in the short run, demonstrates long-run significance, whereas GDP growth and trade openness consistently emerge as positive drivers of FDI inflows. The error correction model confirms a strong adjustment mechanism toward long-run equilibrium, with a coefficient of –1.43, signifying rapid correction of short-run disequilibrium. These findings highlight the critical importance of macroeconomic stability for attracting sustainable FDI. The study recommends that policy makers ensure stable interest rates, control inflation, manage exchange rate volatility, and deepen trade liberalization to enhance Nigeria's investment climate.

Keywords: *Interest rate fluctuations, Foreign Direct Investment, ARDL, Macroeconomic Stability, Nigeria*

I. INTRODUCTION

Foreign direct investment (FDI) serves as a critical engine for economic development in emerging markets, providing not only capital inflows but also technological transfers, skill enhancement, and integration into global value chains (Ovat et al., 2024). In Nigeria, Africa's largest economy and a major oil producer, FDI has historically played a pivotal role in driving growth, particularly in sectors like oil and gas, manufacturing, and telecommunications. However, recent trends reveal a concerning decline in FDI inflows, with net investments plummeting by 70% quarter-on-quarter to just $126.29 million in the first quarter of 2025, showing vulnerabilities in the investment climate (Punch Newspapers, 2025). This downturn occurs against a backdrop of macroeconomic instability, where volatile interest rates – often adjusted by the Central Bank of Nigeria in response to inflationary pressures and fiscal needs – emerge as a significant deterrent to foreign investors seeking predictable returns.

Interest rates, in particular, represent both the cost of borrowing and the reward for saving; they influence investment decisions, capital flows, and the competitiveness of borrowing costs for domestic and foreign investors (Rosa, 2024). Substantial variation in interest rates – whether due to policy shifts, changes in monetary stance, inflation expectations, or external shocks – can increase uncertainty and risk premiums, potentially deterring foreign investors (Rosa, 2024). Conversely, stable and appropriately calibrated interest rates may help create a favourable investment environment (Bello, Sulaiman, & Ahamad, 2025).

Relating to interest rate – FDI issues, the problem lies in the persistent fluctuations of interest rates, which introduce uncertainty and elevate the cost of capital for potential investors. Empirical evidence indicates that real interest rates exert a modestly negative impact on FDI decisions in Nigeria, as higher rates increase borrowing costs and signal economic risks, thereby discouraging long-term commitments (Bello et al., 2024). Moreover, studies highlight that while interest rates influence FDI inflows alongside factors like exchange rates and GDP growth, their volatility disrupts the cointegrating equilibrium between these variables, leading to suboptimal investment levels and hindering sustainable economic expansion (Chekwa et al., 2025; Ovat et al., 2024). In Nigeria's context, where FDI inflows have averaged below 1% of GDP in recent years, such instability increases challenges like unemployment, infrastructure deficits, and reliance on volatile oil revenues, perpetuating a cycle of underdevelopment.

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The motivation for this paper stems from the urgent need to disentangle the dynamic interplay between interest rate fluctuations and FDI in Nigeria from 1990 to 2024, informing evidence-based policies to foster a more attractive investment environment. The specific objective of this paper are to examine the short-run and long-run relationship between interest rate fluctuations and FDI inflows in Nigeria.

II. LITERATURE REVIEW

2.1 Conceptual Literature Review

a) Foreign Direct Investment

Foreign direct investment (FDI) refers to the cross-border investment made by a resident entity in one economy (the investor) to acquire a lasting interest in and significant degree of influence over an enterprise operating in another economy (the investee), typically involving at least 10% ownership of voting stock or equivalent control rights (Organisation for Economic Co-operation and Development [OECD], 2023). This form of investment transcends mere portfolio flows by establishing a durable relationship between the investor and the enterprise, facilitating not only capital transfer but also the infusion of managerial expertise, technological innovations, and access to international markets (United Nations Conference on Trade and Development [UNCTAD], 2024). Conceptually, FDI is distinguished by its long-term orientation, aimed at generating sustained economic benefits rather than short-term financial gains, thereby serving as a cornerstone for host countries' development agendas.

b) Interest Rate/Interest Rate Fluctuations

Interest rates represent the cost of borrowing funds or the return on lending, expressed as a percentage of the principal amount over a specified period, serving as a pivotal tool in monetary policy to regulate economic activity (Mishkin, 2021). In essence, they equilibrate the supply and demand for loanable funds in financial markets, influencing consumption, investment, and savings decisions across economies. Nominal interest rates, which include inflationary expectations, are typically set by central banks like the Central Bank of Nigeria (CBN) through instruments such as the Monetary Policy Rate (MPR), while real interest rates – adjusted for inflation – better reflect the true opportunity cost of capital and are more relevant for long-term investment assessments (Bello et al., 2024). In developing contexts like Nigeria, where financial systems are often shallow and dominated by informal sectors, interest rates not only signal liquidity conditions but also act as barometers of macroeconomic health, with elevated rates often deployed to combat hyperinflation stemming from fiscal deficits and external shocks.

Interest rate fluctuations, on the other hand, denote the variability or volatility in these rates over time, driven by factors such as policy interventions, global commodity price swings, exchange rate depreciations, and geopolitical uncertainties (Ovat et al., 2024).

2.2 Theoretical Literature Review

a) Ownership-Location-Internalization (OLI) Theory

The Ownership-Location-Internalization (OLI) theory, also known as the eclectic paradigm, developed by John H. Dunning (1980), provides a comprehensive framework for explaining why multinational enterprises (MNEs) engage in foreign direct investment (FDI) rather than alternative modes like exporting or licensing. This theory integrates three core advantages that must coalesce for FDI to occur: ownership-specific advantages (O-advantages), location-specific advantages (L-advantages), and internalization-specific advantages (I-advantages). Ownership advantages encompass proprietary assets such as superior technology, brand equity, management expertise, and economies of scale that MNEs possess, enabling them to compete effectively in foreign markets. Location advantages refer to host-country attributes like market size, labor costs, resource endowments, and infrastructure that make it more efficient to produce locally rather than import. Internalization advantages highlight the benefits of retaining control over operations within the firm – such as safeguarding intellectual property and minimizing transaction costs – over arm's-length arrangements like franchising (Dunning & Lundan, 2008).

In the context of interest rate fluctuations and FDI in Nigeria, the OLI paradigm offers valuable insights by showing how macroeconomic volatility disrupts the locational pull factors that attract inflows. Nigeria's abundant natural resources, particularly oil reserves, represent strong L-advantages, historically drawing FDI into extractive sectors; however, erratic interest rates – often surging in response to inflationary pressures and currency instability – elevate the cost of local financing and signal heightened economic risks, thereby diminishing the net attractiveness of the location (Ovat et al., 2024). For instance, when the Central Bank of Nigeria hikes rates to defend the naira, it increases the opportunity cost of capital for MNEs, potentially eroding the profitability of greenfield investments and prompting

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a shift toward less volatile destinations. This aligns with Dunning's assertion that locational factors must be weighed against dynamic risks, where interest rate volatility acts as a deterrent by amplifying uncertainty in return calculations (Dunning & Lundan, 2008).

b) Internalisation Theory

Internalization theory, pioneered by Peter Buckley and Mark Casson (1976), posits that multinational enterprises (MNEs) opt for foreign direct investment (FDI) as a strategy to internalize the use of intermediate products – such as knowledge, technology, and managerial skills—within the firm rather than transacting them through external markets like licensing or subcontracting. At its core, the theory argues that markets for intangible assets are imperfect due to information asymmetries, opportunistic behavior, and high transaction costs, making it more efficient for firms to establish wholly-owned subsidiaries abroad to protect and exploit their proprietary advantages. By internalizing operations, MNEs minimize risks associated with intellectual property theft, quality control failures, and contractual enforcement in foreign jurisdictions, thereby maximizing the net returns from their firm-specific assets (Buckley & Casson, 2009). This approach contrasts with arm's-length trade, emphasizing hierarchical control as a superior governance mechanism in the presence of market failures.

In relation to interest rate fluctuations and FDI in Nigeria, internalization theory illuminates how macroeconomic volatility influences MNEs' decisions to internalize versus externalize operations, particularly in high-risk environments. Elevated and unpredictable interest rates in Nigeria – often exceeding 20% amid inflationary spirals – increase the cost of external financing and heighten the premium for hedging currency risks, compelling MNEs to rely more heavily on internal capital markets to fund FDI projects (Ovat et al., 2024). For example, when rate hikes signal liquidity squeezes or potential recessions, MNEs may accelerate internalization by channeling parent-company funds to subsidiaries, bypassing costly local borrowing and mitigating exposure to domestic financial instability (Chekwa et al., 2025). This is evident in Nigeria's oil sector, where international oil companies (IOCs) like Shell and ExxonMobil have internalized upstream investments through equity stakes and joint ventures, shielding against rate-induced capital cost surges that could erode project viability.

2.3 Empirical Literature Review

A number of studies find that higher interest rates have a negative effect on FDI inflows into Nigeria. This perspective aligns with the classical economic theory that a high cost of capital deters investment. For instance, Emmanuel, Ike, & Alhasan (2019) found a significant negative relationship between interest rates and FDI in Nigeria between 2006 and 2018. They argue that as the Central Bank of Nigeria (CBN) raises interest rates to combat inflation, it increases the cost of borrowing for domestic firms and foreign investors who seek local financing. This higher cost of capital makes FDI projects less profitable, thus reducing the attractiveness of Nigeria as an investment destination. Similarly, Chekwa et al. (2025), in their recent study, identify interest rates as a significant macroeconomic deterrent to FDI. Their research suggests that the volatility of interest rates creates an uncertain environment, making long-term investment planning difficult for foreign investors. This aligns with the findings of Lawal & Abdullahi (2024), who conclude that interest rate volatility negatively impacts overall investment patterns, including FDI, by increasing risk perception.

Conversely, some empirical studies challenge the notion of a strong negative link, suggesting that the impact of interest rates on FDI in Nigeria is either insignificant or overshadowed by other factors. Bello, Sulaiman, & Ahamad (2024), for example, found a weak and statistically insignificant relationship between interest rates and FDI in their study. They argue that FDI decisions are often driven by long-term strategic factors like market size, access to raw materials, and political stability, rather than short-term monetary policy variables like interest rates. In this view, foreign investors with large capital reserves may not rely on local borrowing, making them less sensitive to domestic interest rate changes. Ovat et al. (2024) also re-evaluate the popular paradigm, finding that while interest rates play a role, their effect is less pronounced than that of other macroeconomic variables. They emphasize the importance of a stable exchange rate and a conducive business environment

The literature also highlights the mediating role of other variables, which may explain the conflicting findings. Nwagu (2023), in a broader study on macroeconomic variables, confirms that while interest rates are a factor, other elements like a stable exchange rate and GDP growth are more significant drivers of FDI. The study by Adegoriola Adewale & Comfort (2022) further emphasizes this, focusing on the nexus between exchange rate

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fluctuation and FDI. They found that a volatile exchange rate is a more critical deterrent for foreign investors than interest rate fluctuations, as it affects the repatriation of profits and the valuation of their assets. This suggests that investors may be willing to absorb higher borrowing costs if the currency remains stable, ensuring the value of their investment is protected.

III. RESEARCH METHODOLOGY

3.1 Research Design

This research used the ex post facto and descriptive research design. Ex post facto design is a type of research method that examines how independent variables influence a dependent variable. The emphasis is on the ability of past behaviors to forecast future causes. As a result, a researcher cannot change already-taken acts or behaviors, nor can they alter particular features and attributes that a variable possesses. To identify a cause-and-effect link between the independent and dependent variables, this sort of research study evaluates hypotheses. In this study, the hypotheses on the impacts, relative significance and forecasting powers of the independent variables of interest rate on foreign direct investment in Nigeria were tested.

3.2 Model Specification

In order to empirically investigate the relationship between interest rate fluctuations and foreign direct investment (FDI) in Nigeria from 1990 to 2024, the study adapts the model of Bello et al. (2024) and autoregressive distributed lag (ARDL) econometric modeling approach anchored on the Ownership-Location-Internalization (OLI) framework. The baseline functional relationship is expressed as:

$$FDI = f(INT, EXR, INF, GDPGR, TRADE) \quad (3.1)$$

Where: FDI = Foreign Direct Investment inflows, INT = Interest rate (proxy for cost of capital), EXR = Exchange rate (proxy for currency stability), INF = Inflation rate (proxy for macroeconomic stability), GDP = Gross Domestic Product Growth Rate (proxy for market size), and TRADE = Trade openness (proxy for external sector performance).

The corresponding econometric model can be specified in a log-linear form as:

$$LnFDI_t = \beta_0 + \beta_1 INT_t + \beta_2 EXR_t + \beta_3 INF_t + \beta_4 GDPGR_t + \beta_5 TRADE_t + \mu_t \quad (3.2)$$

Where: β_0 = Constant term, $\beta_{1...}$ β_5 = Coefficients of the explanatory variables, μ_t = Error term, Ln = log term

This log-linear specification is chosen to reduce heteroskedasticity, improve normality of residuals, and interpret the coefficients in terms of elasticities (Gujarati & Porter, 2009). The inclusion of exchange rate, inflation, GDP growth, and trade openness as control variables is consistent with prior FDI literature in Nigeria (Ovat et al., 2024; Bello et al., 2024; Nwagu, 2023).

Thus, the model hypothesizes that interest rate fluctuations exert a significant influence on FDI inflows in Nigeria, either through the cost of borrowing or through investment opportunity costs relative to other competing economies.

IV. RESULTS AND DISCUSSION OF FINDINGS

4.1. Summary of Descriptive Statistics

Table 4.1 presents the summary of the descriptive statistics i.e., the measures of central tendency which explains the extent of distribution of values of a variable around the mean, and measures of dispersion-which measures the tendency of values of a variable to scatter away from the mean. The measures include the skewness and kurtosis.

Table 4.1 Descriptive Statics

	FDI	INT	EXR	INF	GDPGR	TRADE
Mean	1.274536	2.968136	198.8671	18.70559	4.222343	35.49686
Median	1.196726	5.371280	131.2743	13.00697	4.195924	34.46000
Maximum	2.900249	18.18000	1478.965	72.83550	15.32916	53.28000
Minimum	-0.039127	-31.45257	8.038285	5.388008	-2.035119	20.72000
Std. Dev.	0.839325	9.846512	263.6575	15.86930	3.850174	9.075167
Skewness	0.221604	-1.374576	3.509628	2.071452	0.524998	0.163468
Kurtosis	1.896684	5.800586	17.16925	6.495683	3.592593	2.171022
Jarque-Bera	2.061705	22.45996	364.6382	42.85088	2.119916	1.158050
Probability	0.356703	0.000013	0.000000	0.000000	0.346470	0.560445
Sum	44.60875	103.8848	6960.348	654.6957	147.7820	1242.390
Sum Sq. Dev.	23.95187	3296.429	2363520.	8562.376	504.0107	2800.194
Observations	35	35	35	35	35	35

Source: Author's Computation using E-Views

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Table 4.1 presents the descriptive statistics of the variables used in the study, namely Foreign Direct Investment (FDI), Interest Rate (INT), Exchange Rate (EXR), Inflation (INF), GDP Growth Rate (GDPGR), and Trade Openness (TRADE). The statistics include measures of central tendency (mean, median), measures of dispersion (standard deviation, minimum and maximum values), and measures of distribution (skewness, kurtosis, and Jarque–Bera test).

The mean value of FDI is 1.27, with a median of 1.20, suggesting that FDI inflows in Nigeria have been relatively low but positive over the study period. The skewness value of 0.22 indicates a slight right-tail distribution, while the kurtosis of 1.89 suggests a platykurtic distribution (flatter than normal). The Jarque–Bera probability (0.36) confirms that FDI data is normally distributed.

Interest rate has a mean of 2.96, but with a wide range from –31.45 to 18.18, and a high standard deviation of 9.84, showing significant volatility in Nigeria's interest rate regime. The negative skewness (–1.37) indicates a left-tail distribution, while a kurtosis of 5.80 shows a leptokurtic distribution (peaked). The Jarque–Bera probability (0.000013) indicates non-normality in the data distribution.

The exchange rate shows a mean of 198.86 with a large deviation (263.66) and extreme values ranging between 8.04 and 1,478.97, reflecting episodes of currency depreciation in Nigeria. The skewness (3.51) and high kurtosis (17.17) confirm that the exchange rate series is heavily right-skewed and highly leptokurtic, deviating significantly from normality (Jarque–Bera probability = 0.0000).

Inflation has a mean of 18.71, ranging from 5.39 to 72.83, indicating persistent inflationary pressures. The skewness of 2.07 and kurtosis of 6.49 suggest a positively skewed and leptokurtic distribution, with the Jarque–Bera probability (0.0000) confirming non-normality.

GDP growth rate has a mean of 4.22, with values ranging from –2.03 to 15.33, and a standard deviation of 3.85. The skewness (0.52) indicates moderate right skew, while kurtosis (3.59) suggests the presence of fat tails. However, the Jarque–Bera probability (0.35) suggests that GDP growth data is normally distributed.

Finally, trade openness averages 35.49, with a standard deviation of 9.08 and a range from 20.72 to 53.28. The distribution is slightly right-skewed (0.16) and platykurtic (2.17), with a Jarque–Bera probability of 0.56, confirming normality.

Overall, the descriptive statistics reveal that while FDI, GDP growth, and trade openness follow approximately normal distributions, interest rates, exchange rates, and inflation display high volatility and significant departures from normality, reflecting macroeconomic instability in Nigeria during the period under review.

4.1.2 Unit Root Tests Results of the Variables

Econometric studies have shown that most financial and macro-economic time series variables are non-stationary and using non-stationary variables leads to spurious regression (Engel & Granger, 1987). Thus, the variables were investigated for their stochastic properties, using the ADF unit roots tests. The results of the unit root tests are presented in Table 4.2

Table 4.2: Unite Root Test Results

Variables	ADF Statistics	5% Critical Value	Order of Integration
FDI	-7.100581	-2.954021	I(I)
INT	-4.497714	-2.960411	I(I)
EXR	6.510840	-2.954021	I(I)
INF	-4.657166	-2.954021	I(I)
GDPGR	-3.803579	-2.951125	I(0)
TRADE	-5.555172	-2.957110	I(I)

Source: Author's Computation

As indicated in Table 4.2, all the variables contained in the model are stationary but at different order. All the variables used in the model were stationary at first difference except gross domestic product growth rate (GDPGR) which was stationary at level. Given these results of different orders of integration/stationarity, there was a need to conduct a co-integration test to ascertain whether or not there exist long-run relationships amongst the variables.

4.1.3 ARDL Bound Test

The ARDL bounds test for cointegration was employed to investigate the existence of a long-run equilibrium relationship among the variables of the study. The result is presented in Table 4.3.

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Table 4.3: ARDL Bound Test Result

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	12.84567	10%	2.08	3
K	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15
			Finite Sample:	
Actual Sample Size	32		n=35	
		10%	2.331	3.417
		5%	2.804	4.013
		1%	3.9	5.419
			Finite Sample: n=30	
		10%	2.407	3.517
		5%	2.91	4.193
		1%	4.134	5.761

Source: Author's Computation using E-Views

As shown in Table 4.3, the test produced an F-statistic value of 12.84567 with k = 5 regressors and an actual sample size of 32. For the finite sample of approximately 35 observations, the lower and upper bound critical values are 2.331 (I(0)) and 3.417 (I(1)) at the 10% level, 2.804 (I(0)) and 4.013 (I(1)) at the 5% level, and 3.900 (I(0)) and 5.419 (I(1)) at the 1% level. Comparing these critical values with the computed F-statistic (12.84567) shows that the test statistic exceeds the upper bound values at all levels of significance.

Consequently, the null hypothesis of no long-run relationship among the variables is rejected. This finding provides strong evidence of the presence of a stable cointegrating relationship between the dependent variable and the explanatory variables within the ARDL framework. Thus, the results justify the subsequent estimation of both the long-run and short-run ARDL models.

4.1.4 ARDL Test Result

The results of the Autoregressive Distributed Lag (ARDL) model estimation are presented in Table 4.4. Table 4.4 also allows for the interpretation of the short-run dynamics of the variables on Foreign Direct Investment (FDI) in Nigeria.

Table 4.4: ARDL Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
FDI(-1)	-0.437030	0.180015	-2.427738	0.0282
INT	-0.012400	0.014089	-0.880099	0.3927
INT(-1)	-0.013842	0.014573	-0.949805	0.3573
INT(-2)	-0.057474	0.013755	-4.178385	0.0008
INT(-3)	-0.084914	0.015470	-5.488840	0.0001
EXR	0.000139	0.000836	0.166464	0.8700
EXR(-1)	-0.002361	0.001874	-1.259729	0.2270
INF	-0.005919	0.010845	-0.545772	0.5932

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INF(-1)	0.028771	0.014908	1.929824	0.0728
INF(-2)	-0.052518	0.012172	-4.314811	0.0006
INF(-3)	-0.079664	0.012212	-6.523516	0.0000
GDPGR	-0.056405	0.028853	-1.954870	0.0695
GDPGR(-1)	-0.037030	0.029722	-1.245859	0.2319
GDPGR(-2)	0.129496	0.031598	4.098257	0.0009
GDPGR(-3)	0.061153	0.026871	2.275769	0.0380
TRADE	0.062851	0.016165	3.888039	0.0015
C	2.042312	0.799265	2.555237	0.0220

R-squared	0.933257	Mean dependent var	1.268803
Adjusted R-squared	0.862064	S.D. dependent var	0.874539
S.E. of regression	0.324801	Akaike info criterion	0.893609
Sum squared resid	1.582439	Schwarz criterion	1.672281
Log likelihood	2.702261	Hannan-Quinn criter.	1.151717
F-statistic	13.10888	Durbin-Watson stat	1.894740
Prob(F-statistic)	0.000005		

Source: Author's Computation using E-Views

The ARDL model result presented in Table 4.4 exhibits strong explanatory power, with an R-squared of 0.933 indicating that approximately 93.3% of the variation in FDI is accounted for by the regressors, while the adjusted R-squared of 0.862 confirms robustness after penalizing for degrees of freedom. The F-statistic of 13.11 ($p < 0.001$) rejects the null of overall insignificance, and the Durbin-Watson statistic of 1.89 suggests no serial correlation, supporting the model's validity for inference.

Table 4.4 also indicate that the lagged dependent variable, FDI(-1), is negative and statistically significant at the 5% level (–0.4370, p = 0.0282), confirming the presence of persistence in foreign direct investment inflows in Nigeria. This suggests that past inflows significantly influence current inflows, but the negative sign indicates partial adjustment toward equilibrium in the long run.

On interest rate fluctuations, the results show a significant negative impact of past interest rates on FDI. While the current interest rate (INT) and its first lag (INT(-1)) are statistically insignificant (Prob. values of 0.3927 and 0.3573, respectively), the second (p-value = 0.0008) and third (p-value = 0.0001) lags are highly significant. This means that a rise in interest rates does not have an immediate effect on FDI, but after a two-to-three-period lag, it significantly discourages foreign investment. This suggests that investors may take time to react to monetary policy changes or that the full impact of higher borrowing costs is not felt immediately.

For inflation (INF), the contemporaneous effect is negative but insignificant (–0.0059, p = 0.5932). Interestingly, INF(-1) shows a positive but weakly significant effect (0.0288, p = 0.0728), while INF(-2) (–0.0525, p = 0.0006) and INF(-3) (–0.0797, p = 0.0000) are negative and highly significant. This mixed pattern suggests that while inflation may initially stimulate investment in the short run, persistent inflationary pressures undermine FDI inflows in the medium to long run.

Regarding GDP growth rate (GDPGR), the current value is negative and weakly significant (–0.0564, p = 0.0695), but the third lag, GDPGR(-3), is positive and significant (0.0612, p = 0.0380). This indicates that the growth effect on FDI is realized with a time lag, suggesting that foreign investors respond to sustained economic growth rather than short-term fluctuations.

Trade openness (TRADE) is positive and highly significant (0.0629, p = 0.0015), implying that greater openness to international trade promotes FDI inflows into Nigeria by expanding market opportunities and reducing investment barriers.

Overall, the ARDL results suggest that while interest rate fluctuations and persistent inflation exert adverse effects on FDI inflows, trade openness and lagged GDP growth exert positive and significant influences. This highlights the importance of maintaining stable macroeconomic policies and deepening trade liberalization to attract sustained foreign investment into Nigeria.

4.1.5 ARDL Error Correction Regression

Table 4.5 explains how variables adjust back to their long-run equilibrium after a short-run shock.

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Table 4.5: ARDL ECM Results

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(INT)	-0.012400	0.009410	-1.317734	0.2074
D(INT(-1))	0.142388	0.014620	9.739263	0.0000
D(INT(-2))	0.084914	0.009809	8.656850	0.0000
D(EXR)	0.000139	0.000330	0.421256	0.6795
D(INF)	-0.005919	0.006868	-0.861874	0.4023
D(INF(-1))	0.132182	0.011814	11.18904	0.0000
D(INF(-2))	0.079664	0.009743	8.176195	0.0000
D(GDPGR)	-0.056405	0.017194	-3.280547	0.0051
D(GDPGR(-1))	-0.190649	0.023930	-7.966778	0.0000
D(GDPGR(-2))	-0.061153	0.017873	-3.421490	0.0038
CointEq(-1)*	-1.437030	0.128078	-11.21996	0.0000

Source: Author's Computation using E-Views

The coefficient of the error correction term (CointEq(-1)) in Table 4.5 is -1.437030 which is highly significant at the 1% level (p = 0.0000). This negative and significant coefficient confirms the presence of long-run causality and indicates that deviations from the long-run equilibrium are corrected at a speed of approximately 143.7% per period. This suggests a rapid adjustment mechanism, implying that any short-run disequilibrium is corrected in less than one year.

4.2 Evaluation of Research Hypotheses

The research hypotheses were tested with reference to the standard 5% level of significance, i.e., (α = 0.05).

The decision rule is, if the p-value is less than α (i.e. 0.05), then (H_o), the null hypothesis is rejected, and if otherwise we accept the H_0.

H_0: Interest rate fluctuations have no significant short-run and long-run impact on FDI inflows in Nigeria.

H_1: Interest rate fluctuations have significant short-run and long-run impact on FDI inflows in Nigeria.

From the ARDL long-run estimates (Table 4.4), the coefficients of interest rate and its lags show varying effects. In the long run, the contemporaneous interest rate (INT) and its first lag [INT(-1)] were statistically insignificant with p-values of 0.3927 and 0.3573, respectively, suggesting no long-run impact. However, higher-order lags of interest rate were highly significant, particularly INT(-2) (p = 0.0008) and INT(-3) (p = 0.0001), indicating that interest rate fluctuations significantly affect FDI inflows in the long run, albeit with a lagged response.

In the short-run ECM results (Table 4.5), the contemporaneous change in interest rate [D(INT)] was insignificant (p = 0.2074). However, the first and second lags, D(INT(-1)) (p = 0.0000) and D(INT(-2)) (p = 0.0000), were both positive and highly significant, confirming that interest rate fluctuations exert strong short-run effects on FDI inflows after a lag.

Given these findings, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_{11}) is accepted. This implies that interest rate fluctuations significantly influence FDI inflows in Nigeria, both in the short run and long run, though the effects are predominantly lagged rather than contemporaneous.

4.3 Discussion of Findings

The results of this study provide important insights into the dynamic relationship between foreign direct investment (FDI) inflows and selected macroeconomic indicators in Nigeria. The descriptive statistics (Table 4.1) revealed that FDI inflows in Nigeria remained relatively low and volatile between 1990 and 2024, with a mean of 1.27% of GDP, highlighting the country's persistent struggle to attract sustainable foreign capital. Similarly, macroeconomic indicators such as interest rate, exchange rate, inflation, GDP growth, and trade openness exhibited significant fluctuations over the study period, underscoring the unstable investment climate.

The ARDL test results (Table 4.4) showed that interest rate fluctuations have a significant long-run and short-run impact on FDI inflows, although the effect is predominantly lagged rather than

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contemporaneous. This finding suggests that foreign investors respond to interest rate movements over time, possibly reflecting the adjustment of capital allocation decisions and the search for more stable returns. This aligns with studies such as Akinlo (2021) and Otepola (2022), which observed that high interest rate volatility discourages foreign investors, thereby reducing the attractiveness of Nigeria's investment environment.

The results further revealed that exchange rate movements did not exert a significant impact on FDI inflows in the short run, but lagged exchange rate effects indicated some long-run significance. This suggests that exchange rate volatility undermines investor confidence, consistent with the findings of Adegbite and Ayadi (2019). However, the positive but weak effect of exchange rate in the long run could reflect instances where currency depreciation lowers production costs, thus attracting efficiency-seeking FDI.

On the other hand, inflation was found to significantly influence FDI inflows both in the short run and long run. While contemporaneous inflation was insignificant, lagged inflation variables were strongly significant, indicating that inflationary pressures impact foreign investors after a period of adjustment. This confirms the adverse role of macroeconomic instability in discouraging long-term capital flows, as highlighted by Ojong, Effiong, and Ekpenyong (2020).

For GDP growth rate, the results showed mixed effects. In the short run, GDP growth had both negative and positive lagged effects, while in the long run, it showed significant positive impacts. This implies that sustained economic growth is a critical determinant of FDI inflows, as foreign investors are generally attracted to large and growing markets. This finding corroborates the growth-led FDI hypothesis and aligns with empirical studies such as Okonkwo and Eze (2023).

Finally, trade openness was found to exert a positive and significant long-run impact on FDI inflows, confirming that a more open economy encourages cross-border capital flows by expanding market access and reducing trade barriers. This supports the argument of liberalization theorists who emphasize that openness fosters integration into global production networks and enhances the attractiveness of domestic markets to multinational corporations.

Overall, the findings highlight that while macroeconomic fundamentals such as growth and openness are key drivers of FDI inflows, instability factors – particularly interest rate and inflation fluctuations – undermine Nigeria's attractiveness to foreign investors. Thus, the study reinforces the importance of macroeconomic stability, consistent monetary policy, and trade liberalization as critical measures for improving FDI inflows into Nigeria.

V. CONCLUSION AND RECOMMENDATION

Based on the findings, this study concludes that interest rate fluctuations and other key macroeconomic variables have a significant and long-term impact on Foreign Direct Investment (FDI) in Nigeria. The relationship is primarily characterized by a lagged effect, meaning foreign investors do not react to immediate policy changes but rather to sustained trends over time. This shows the importance of a consistent and predictable macroeconomic environment in attracting and retaining FDI.

Based on the findings, the study offers the following recommendations:

1. **Promote monetary policy stability:** The Central Bank of Nigeria (CBN) should prioritize consistent and predictable monetary policies aimed at reducing interest rate volatility. Stable interest rates would encourage long-term planning and improve investor confidence.
2. **Address inflationary pressures:** Government should adopt a mix of fiscal discipline and supply-side policies to control inflation. A stable price environment is critical for reducing investment risks associated with rising operational costs.
3. **Enhance exchange rate management:** While exchange rate flexibility is important, excessive volatility should be minimized through strategic interventions. This would improve Nigeria's competitiveness and reduce uncertainties for foreign investors.

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