

Does Economic Performance Attract Foreign Direct Investment? Market Size, Macroeconomic Conditions and National Stability in Nigeria, 1993–2022

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Abstract

Purpose: Nigeria's economy roughly tripled in real terms between 1993 and 2022, yet net foreign direct investment (FDI) inflows fell from a peak of 2.9 per cent of GDP in 2009 to slightly below zero in 2022. This study asks whether, and through which channels, host-country economic performance shapes FDI. It examines three dimensions of performance: the size of the economy, prevailing economic conditions and national (macroeconomic) stability.

Design/methodology/approach: The study uses annual World Bank data for 1993–2022. It estimates three autoregressive distributed lag (ARDL) models, applying the bounds F-test and the error-correction t-test with small-sample critical values simulated for the actual sample size, and includes a 1999 regime-shift dummy suggested by Zivot–Andrews break tests. Direction of causality is examined with error-correction terms and Toda–Yamamoto augmented-VAR Granger tests.

Findings: FDI is cointegrated with the size of the economy ($F = 12.92$, $p < 0.01$) and, more weakly, with economic conditions ($F = 5.68$, $p < 0.10$; error-correction $t = -4.70$, $p < 0.05$), but not with the stability indicators. Contrary to the market-seeking hypothesis, real GDP has a significant *negative* long-run association with FDI intensity (-1.85 , $p = 0.028$). Trade openness raises FDI in the long run (0.062 , $p = 0.097$). Inflation reduces FDI in the short run (-0.036 , $p = 0.008$). Causality runs from market size and economic conditions to FDI in the long run, while in the short run FDI Granger-causes the exchange rate ($p < 0.001$) and trade openness ($p = 0.004$).

Research limitations/implications: The sample of 30 annual observations limits the number of regressors per model. Aggregate FDI does not distinguish resource-seeking from market-seeking investment, and governance indicators were not available for the full period.

Practical implications: A large and growing domestic market is not enough to attract FDI to Nigeria. Policy should give priority to trade integration, low and stable inflation and exchange-rate predictability, which are the channels through which performance actually reaches investors.

Originality/value: Most Nigerian studies treat FDI as a driver of growth. This study reverses the lens, models FDI as an outcome of separately measured dimensions of performance, and uses small-sample bounds inference. It documents a "growth without FDI" paradox that the market-size consensus in the FDI literature does not anticipate.

Keywords: Foreign direct investment; economic performance; market size; macroeconomic stability; ARDL bounds test; Toda–Yamamoto causality; Nigeria

JEL Classification: F21; F23; O55; E31; C32

Paper type: Research paper

1. Introduction

Foreign direct investment (FDI) is the largest and most stable source of external finance for most developing economies. It brings capital together with technology, managerial practice and access to global production networks (Borensztein et al., 1998; Dunning & Lundan, 2008). For sub-Saharan Africa, where domestic savings are low and access to capital markets is limited, FDI has long been seen as a way to close the savings and foreign-exchange gaps that constrain investment (Asiedu, 2002). Yet Africa's share of global FDI remains small, and inflows to the continent are concentrated in a few resource-rich economies and fluctuate with commodity prices (UNCTAD, 2023).

Nigeria shows this pattern starkly. Between 1993 and 2022, real GDP roughly tripled, the population more than doubled to over 220 million, and the country became one of Africa's largest economies. FDI, however, followed a very different path (Figure 1). Net inflows rose from about US\$1 billion in 1999 to a peak of 2.9 per cent of GDP in 2009 and of US\$8.8 billion in 2011. They then declined steadily to US\$0.8 billion in 2018 and turned negative in 2022, when divestment exceeded new investment (World Bank, 2025). The coexistence of a large and growing economy with shrinking FDI raises a question that the Nigerian literature has not fully answered: does economic performance actually attract FDI, and if so, through which channels?

Most empirical work on Nigeria treats FDI as an explanatory variable for growth (e.g., Ayanwale, 2007). International business theory, by contrast, treats host-country performance as a key *determinant* of FDI. In Dunning's (1980, 2000) eclectic paradigm, multinational enterprises (MNEs) invest abroad when host-country *location advantages* complement their ownership and internalisation advantages. Among the location advantages most often found to matter are market size, macroeconomic conditions and stability (Asiedu, 2006; Blonigen, 2005; Chakrabarti, 2001). On this view, Nigeria's large market should be a strong magnet for FDI, which makes its recent experience a puzzle worth explaining.

This study therefore models FDI inflows into Nigeria as a function of three dimensions of economic performance: the *size of the economy*, prevailing *economic conditions* and *national stability*. It pursues six objectives. The first three estimate the effect of each dimension on FDI. The last three establish the direction of causality between each dimension and FDI. Using annual data for 1993–2022, it applies the autoregressive distributed lag (ARDL) bounds-testing approach (Pesaran et al., 2001), which suits small samples and regressors with mixed orders of integration. Inference uses critical values simulated for the actual sample size, and causality is

tested with error-correction terms and Toda and Yamamoto's (1995) augmented-VAR procedure.

The study makes three contributions. First, it reverses the dominant FDI-led growth view in the Nigerian literature and gives a performance-led account of FDI grounded in the OLI paradigm. Second, it separates economic performance into distinct dimensions and shows that they work differently. Market size and economic conditions are tied to FDI in the long run, whereas stability matters through short-run shocks. Third, it documents a "growth without FDI" paradox: the long-run association between real GDP and FDI intensity is negative. This finding challenges the market-size consensus and points to the composition of Nigeria's growth and the nature of its FDI as the explanation.

Section 2 reviews the theory and develops the hypotheses. Section 3 describes the data and method. Section 4 reports the results, Section 5 discusses them, and Section 6 concludes with policy implications and limitations.



Figure 1. Net FDI inflows to Nigeria (% of GDP), 1993–2022. *Source:* Computed from World Bank (2025).

2. Theoretical Framework and Hypotheses

2.1 Theoretical foundations

Hymer's (1976) theory of the international operations of national firms established that FDI is not simply a movement of capital in response to interest-rate differentials. It reflects firm-specific advantages that allow foreign firms to overcome the *liability of foreignness* in host markets. Dunning's (1980, 1988, 2000) eclectic or OLI paradigm built on this insight. It explains FDI as the joint outcome of three kinds of advantage: *ownership* advantages specific to the firm, *internalisation* advantages that make in-house exploitation preferable to licensing,

and *location* advantages specific to the host country. Host-country economic performance falls under location. Large and growing markets, favourable macroeconomic conditions and stable environments raise the expected returns from producing in a location and lower the risks.

Dunning's (1993) typology of investment motives clarifies which location advantages matter for which investors. *Market-seeking* FDI responds to market size and growth. *Resource-seeking* FDI responds to natural-resource endowments. *Efficiency-seeking* FDI responds to costs, trade openness and the exchange rate. *Strategic-asset-seeking* FDI responds to existing capabilities and assets. Nigeria attracts both resource-seeking investment, mainly in oil and gas, and market-seeking investment, in telecommunications, banking, consumer goods and cement. The balance between the two determines how strongly FDI should respond to domestic market size.

The investment development path (IDP) theory (Dunning, 1981; Dunning & Narula, 1996) adds a dynamic dimension. It holds that a country's net inward and outward investment position evolves through stages as it develops, so FDI both responds to and contributes to economic performance. This implies the possibility of two-way causality, which this study tests directly. At the macroeconomic level, the Mundell–Fleming open-economy model (Fleming, 1962; Mundell, 1963) links capital flows to output, the exchange rate and macroeconomic policy. It provides the framework for specifying FDI as a function of domestic output, external-sector conditions and stability.

2.2 Size of the economy and FDI

Market size is the most robust determinant of FDI in the cross-country literature. Chakrabarti's (2001) extreme-bounds analysis found it to be the only determinant that survives all model specifications, and Blonigen (2005), Asiedu (2006) and Anyanwu (2012) confirm its importance for developing and African economies. A larger economy offers economies of scale, room for local sourcing and a larger customer base for market-seeking investors. Nigeria's population and GDP, the largest in West Africa, make market size a plausible driver of FDI.

H1. The size of the economy has a significant positive effect on FDI inflows into Nigeria.

2.3 Economic conditions and FDI

Beyond scale, investors respond to the conditions under which they will operate. The exchange rate affects both the cost of entering a market and the home-currency value of returns. Depreciation can attract efficiency-seeking FDI and asset acquisitions by lowering local costs

and asset prices, but it can deter market-seeking FDI by reducing the dollar value of local profits. Trade openness signals integration into global value chains and lowers the cost of imported inputs (Asiedu, 2002). Financial depth, measured by private-sector credit, eases local financing and supplier development. Schneider and Frey (1985) and Dupasquier and Osakwe (2006) show that favourable economic conditions are consistently associated with higher FDI in developing and African economies.

H2. Economic conditions have a significant effect on FDI inflows into Nigeria.

2.4 National stability and FDI

Because FDI involves large, irreversible, long-horizon commitments, it is especially sensitive to instability. High inflation erodes real returns and signals weak macroeconomic management. Exchange-rate volatility makes the home-currency value of returns uncertain. A heavy external-debt burden raises the risk of crises, capital controls and restrictions on profit repatriation. Busse and Hefeker (2007) and Bénassy-Quéré et al. (2007) find that political and institutional risk strongly affect FDI in developing countries, and Asiedu (2006) reports that macroeconomic instability deters FDI to Africa. Nigeria's experience of high inflation, repeated devaluations and debt overhang before the 2005 Paris Club relief makes this dimension especially relevant.

H3. National stability has a significant positive effect on FDI inflows into Nigeria.

2.5 Causality between economic performance and FDI

The IDP and the FDI-led growth literature (Alfaro et al., 2004; Borensztein et al., 1998) together imply that causality may run in both directions. Economic performance attracts FDI, and FDI may in turn expand output, ease foreign-exchange constraints and affect macroeconomic conditions. Because theory does not settle the direction of causality, the study tests it empirically.

H4. There is a causal relationship between the size of the economy and FDI in Nigeria.

H5. There is a causal relationship between economic conditions and FDI in Nigeria.

H6. There is a causal relationship between national stability and FDI in Nigeria.

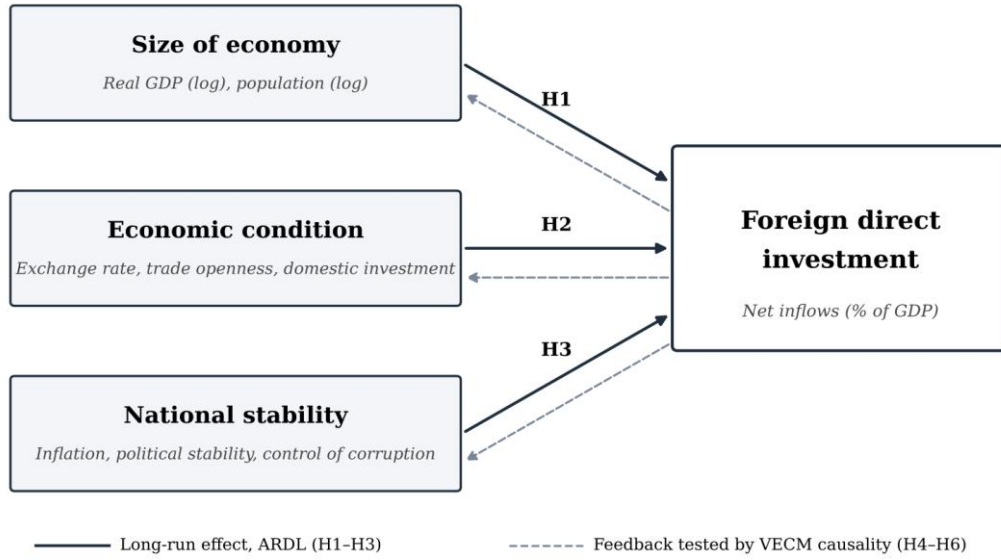


Figure 2. Conceptual model of economic performance and FDI in Nigeria

3. Data and Methodology

3.1 Data and variables

The study uses annual time-series data for Nigeria from 1993 to 2022 ($T = 30$). All series are taken from the World Bank's World Development Indicators (World Bank, 2025). Table 1 defines the variables. FDI, the dependent variable, is net inflows as a percentage of GDP, which normalises inflows for the size of the economy. The *size of the economy* is measured by the natural logarithm of real GDP, constructed as an index (1993 = 100) from the official real growth series. Population was considered but excluded because its correlation with real GDP exceeded 0.98. *Economic conditions* are measured by the logarithm of the official naira-dollar exchange rate, merchandise trade as a share of GDP, and domestic credit to the private sector as a share of GDP. *National stability* is measured by consumer price inflation, exchange-rate volatility, defined as the log of one plus the absolute annual percentage change in the official exchange rate, and total external debt as a share of GDP. The Worldwide Governance Indicators, which would capture political stability directly, (Kaufmann et al., 2011) begin only in 1996 and have gaps, so the stability block captures macroeconomic and external stability.

Table 1. Variable definitions

Dimension	Variable	Measurement (WDI code)	Expected sign
Dependent	FDI	Net FDI inflows, % of GDP (BX.KLT.DINV.CD.WD / NY.GDP.MKTP.CD)	—
Size of economy	LRGDP	Log of real GDP index, 1993 = 100 (NY.GDP.MKTP.KD.ZG)	+

Dimension	Variable	Measurement (WDI code)	Expected sign
Economic condition	LEXR	Log of official exchange rate, ₦ per US\$ (PA.NUS.FCRF)	±
	TOP	Merchandise trade, % of GDP (TG.VAL.TOTL.GD.ZS)	+
	CRED	Domestic credit to private sector, % of GDP (FS.AST.PRVT.GD.ZS)	+
National stability	INF	Consumer price inflation, annual % (FP.CPI.TOTL.ZG)	–
	LXVOL	$\ln(1 + \text{annual \% change in official exchange rate})$	–
	EDEBT	External debt stocks, % of GDP (DT.DOD.DECT.CD / NY.GDP.MKTP.CD)	–
Regime dummy	D99	1 from 1999 (civilian rule, exchange-rate unification), 0 before	+

Source: World Bank (2025), World Development Indicators.

3.2 Model specification

Following the Mundell–Fleming open-economy framework and the OLI paradigm, FDI is specified as a function of each performance dimension in turn:

$$FDI_t = \alpha_0 + \alpha_1 LRGDP_t + \delta D99_t + \varepsilon_t \quad (1)$$

$$FDI_t = \beta_0 + \beta_1 LEXR_t + \beta_2 TOP_t + \beta_3 CRED_t + \delta D99_t + \varepsilon_t \quad (2)$$

$$FDI_t = \gamma_0 + \gamma_1 INF_t + \gamma_2 LXVOL_t + \gamma_3 EDEBT_t + \delta D99_t + \varepsilon_t \quad (3)$$

Estimating the three dimensions in separate models keeps degrees of freedom manageable with 30 observations and mirrors the study's objectives. The step dummy D99 captures the 1999 regime shift, when Nigeria returned to civilian rule and unified its official and market exchange rates. The Zivot–Andrews tests in Section 4.2 locate a structural break at this point for FDI, the exchange rate and trade openness.

3.3 Estimation strategy

Unit root tests. The order of integration of each series is established with augmented Dickey–Fuller (ADF; Dickey & Fuller, 1979) and Phillips–Perron (PP; Phillips & Perron, 1988) tests with an intercept. The Zivot and Andrews (1992) test, which allows for one endogenous structural break, is used as a robustness check. The ARDL approach is valid for regressors that are I(0), I(1) or a mixture, but not for I(2) series.

ARDL bounds test. The long-run relationship is tested with the bounds procedure of Pesaran et al. (2001). For a regressor vector X , the conditional error-correction form of the ARDL(p, q) model is:

$$\Delta FDI_t = c + \lambda_1 FDI_{t-1} + \lambda_2' X_{t-1} + \sum_{i=1}^{p-1} \phi_i \Delta FDI_{t-i} + \sum_{j=0}^q \theta_j' \Delta X_{t-j} + \delta D99_t + u_t \quad (4)$$

Two tests are applied (Pesaran et al., 2001, Case III). The F-test examines $H_0: \lambda_1 = \lambda_2 = 0$, and the t-test examines $H_0: \lambda_1 = 0$. Cointegration is concluded when the statistic exceeds the upper, I(1), bound. It is rejected when the statistic falls below the lower, I(0), bound, and the result is

inconclusive in between. Because the asymptotic critical values of Pesaran et al. (2001) can over-reject in small samples (Narayan, 2005), critical values were simulated for each model's actual sample size, lag structure and regime dummy. The F-bounds used 20,000 replications and the t-bounds 10,000. Lag orders were chosen by the Akaike information criterion (AIC), with a maximum of two lags. Long-run coefficients are recovered as $-\lambda_2/\lambda_1$, with standard errors computed by the delta method. The coefficient λ_1 is the speed of adjustment (error-correction term), which should be negative and significant (Engle & Granger, 1987).

Causality. Long-run causality from the regressors to FDI is indicated by a negative and significant error-correction term in a cointegrated model. Because the series have mixed orders of integration, short-run causality in both directions is tested with the Toda and Yamamoto (1995) procedure. A bivariate VAR in levels of order k , chosen by the AIC, is augmented with one extra lag ($d_{\max} = 1$) and with D99, and Wald χ^2 tests are applied to the first k lags. The procedure is valid regardless of whether the series are I(0), I(1) or cointegrated.

Diagnostics. Each ARDL model is tested for serial correlation (Breusch–Godfrey LM, two lags), heteroskedasticity (Breusch–Pagan–Godfrey), normality of residuals (Jarque–Bera) and functional form (Ramsey RESET). Parameter stability is checked with the CUSUM test (Brown et al., 1975). All estimation was carried out in Python with statsmodels 0.15 (Seabold & Perktold, 2010).

4. Results

4.1 Descriptive statistics

Table 2. Descriptive statistics, 1993–2022 (N = 30)

Variable	Mean	Std. dev.	Min.	Max.	Skewness	Kurtosis	J–B (p)
FDI (% GDP)	1.301	0.897	−0.029	2.900	0.119	1.702	0.337
LRGDP	5.247	0.455	4.586	5.778	−0.245	1.455	0.194
LEXR	4.747	0.937	3.086	6.054	−0.774	2.575	0.199
TOP (% GDP)	27.216	10.686	8.729	42.931	−0.131	1.618	0.290
CRED (% GDP)	10.316	3.344	6.174	19.626	1.218	4.007	0.013
INF (%)	17.728	16.034	5.386	72.836	2.385	7.635	0.000
XVOL (%)	18.018	58.139	0.000	321.905	4.993	26.630	0.000
EDEBT (% GDP)	20.753	15.283	6.015	54.123	0.978	2.453	0.076

Note: XVOL is reported before log transformation. J–B = Jarque–Bera normality test. *Source:* Authors' computation from World Bank (2025).

FDI averaged 1.30 per cent of GDP over the period. It reached a maximum of 2.90 per cent in 2009 and a minimum of −0.03 per cent in 2022, with a standard deviation of 0.90 that confirms

its volatility. Inflation averaged 17.7 per cent and peaked at 72.8 per cent in 1995. The exchange rate depreciated from ₦22 per dollar in 1993 to ₦426 in 2022, with the largest single adjustment at the 1999 unification. External debt fell from 54 per cent of GDP in 1993 to 6 per cent in 2008 after the 2005 Paris Club debt relief, before rising again to about 16 per cent. Inflation and exchange-rate volatility are strongly right-skewed, reflecting a small number of extreme years.

4.2 Unit root tests

Table 3. Unit root test results

Variable	ADF level	ADF 1st diff.	PP level	PP 1st diff.	ZA stat. (break)	Order
FDI	-2.533	-6.704***	-2.450	-6.929***	-4.236 (1998)	I(1)
LRGDP	-1.008	-2.986**	-0.851	-3.075**	-2.196 (2015)	I(1)
LEXR	-1.188	-5.167***	-1.145	-5.367***	-7.938*** (1998)	I(1)
TOP	-1.770	-4.571***	-2.085	-5.377***	-6.673*** (1998)	I(1)
CRED	-2.745*	-4.640***	-1.790	-3.487***	-5.341*** (2006)	I(1)
INF	-3.489***	-3.681***	-3.612***	-5.063***	-3.073 (2015)	I(0)
LXVOL	-3.964***	-5.216***	-4.517***	-11.795***	-5.559*** (1998)	I(0)
EDEBT	-1.331	-4.360***	-2.486	-4.309***	-4.633* (2004)	I(1)

Note: All tests include an intercept. ZA = Zivot–Andrews test with a break in the intercept, applied to levels; break year in parentheses. One, two and three asterisks denote rejection of the unit-root null at 10%, 5% and 1%, respectively.

Inflation and exchange-rate volatility are stationary in levels, while the remaining series are stationary after first differencing. No series is I(2). This mixed order of integration rules out the Johansen procedure, which requires all series to be I(1), and supports the ARDL approach. The Zivot–Andrews tests locate structural breaks around 1998–1999 for FDI, the exchange rate, trade openness and exchange-rate volatility, which supports the inclusion of the D99 regime dummy.

4.3 Bounds tests for cointegration

Table 4. ARDL bounds test results

Model	ARDL order	Statistic	10% I(0) / I(1)	5% I(0) / I(1)	1% I(0) / I(1)	Conclusion
<i>F-bounds test</i>						
M1: Size of economy (k = 1)	(2, 2)	12.923	4.83 / 5.98	6.18 / 7.47	9.36 / 10.83	Cointegrated (1%)
M2: Economic condition (k = 3)	(1, 1, 1, 1)	5.677	3.30 / 4.68	4.09 / 5.73	6.10 / 8.29	Cointegrated (10%)
M3: National stability (k = 3)	(2, 1, 1, 1)	4.617	3.30 / 4.71	4.12 / 5.73	6.18 / 8.63	Inconclusive
<i>t-bounds test</i>						
M1: Size of economy		-3.720	-2.81 / -3.18	-3.24 / -3.60	-4.04 / -4.50	Cointegrated (5%)

Model	ARDL order	Statistic	10% I(0) / I(1)	5% I(0) / I(1)	1% I(0) / I(1)	Conclusion
M2: Economic condition		-4.700	-2.78 / -3.71	-3.18 / -4.17	-4.06 / -5.09	Cointegrated (5%)
M3: National stability		-0.634	-2.75 / -3.60	-3.20 / -4.09	-4.09 / -5.14	Not cointegrated

Note: Case III (unrestricted intercept, no trend), with D99 as a fixed regressor. Critical values simulated for each model's sample ($n = 28$) and lag structure: 20,000 replications for F and 10,000 for t. k = number of regressors.

For Model 1, the F-statistic of 12.92 exceeds the 1 per cent upper bound and the t-statistic of -3.72 exceeds the 5 per cent upper bound, so FDI and the size of the economy are clearly cointegrated. For Model 2, the F-statistic of 5.68 exceeds the upper bound only at 10 per cent, but the t-statistic of -4.70 exceeds the 5 per cent upper bound. Together these indicate a long-run relationship between FDI and economic conditions. For Model 3, the F-statistic of 4.62 falls between the bounds even at 10 per cent and the t-statistic of -0.63 is far from significant, so there is no evidence of a long-run relationship between FDI and the stability indicators. Model 3 is therefore interpreted only for its short-run dynamics.

4.4 Long-run and short-run estimates

Table 5. Long-run coefficients (dependent variable: FDI, % of GDP)

Regressor	Coefficient	Std. error	t-statistic	p-value
<i>Model 1: Size of economy</i>				
LRGDP	-1.849**	0.781	-2.368	0.028
Constant	7.998**	3.426	2.335	0.030
<i>Model 2: Economic condition</i>				
LEXR	-0.355	0.695	-0.512	0.615
TOP	0.062*	0.035	1.748	0.097
CRED	0.049	0.036	1.353	0.192
Constant	0.077	2.601	0.030	0.977

Note: Long-run coefficients = $-\lambda_2/\lambda_1$ from equation (4), with delta-method standard errors. Model 3 is omitted because no long-run relationship was found (Table 4). One, two and three asterisks denote significance at 10%, 5% and 1%, respectively.

Table 6. Short-run (error-correction) estimates

Regressor	M1: Size	M2: Condition	M3: Stability
ECT (λ_1 , FDI_{t-1})	-0.558*** (0.150)	-0.875*** (0.186)	-0.086 (0.135)
ΔFDI_{t-1}	-0.262 (0.160)	—	-0.503** (0.182)
$\Delta LRGDP_t$	-1.267 (3.486)		
$\Delta LRGDP_{t-1}$	4.429 (2.946)		
$\Delta LEXR_t$		0.280 (1.128)	
ΔTOP_t		0.027 (0.022)	
$\Delta CRED_t$		0.070 (0.044)	
ΔINF_t			-0.036*** (0.012)

Regressor	M1: Size	M2: Condition	M3: Stability
INF_{t-1}			-0.043*** (0.012)
$\Delta LXVOL_t$			0.333*** (0.115)
$\Delta EDEBT_t$			-0.016 (0.018)
D99	1.701*** (0.413)	0.592 (1.815)	-0.263 (0.472)
R ² (ARDL in levels)	0.771	0.811	0.813
Adjusted R ²	0.705	0.732	0.720
F-statistic (p)	11.76 (0.000)	10.20 (0.000)	8.72 (0.000)
Durbin–Watson	1.832	1.784	2.236
Observations	28	28	28

Note: Estimates from the conditional error-correction model, equation (4); standard errors in parentheses. Significance of the ECT is judged against the t-bounds in Table 4. One, two and three asterisks denote significance at 10%, 5% and 1%, respectively.

Size of the economy (H1). Contrary to H1, real GDP has a significant *negative* long-run association with FDI intensity. A 10 per cent increase in real GDP is associated with a 0.18-percentage-point fall in FDI as a share of GDP (coefficient -1.849 , $p = 0.028$). The short-run growth terms are not significant. The error-correction term of -0.558 implies that about 56 per cent of any deviation from the long-run relationship is corrected within a year. The regime dummy is positive and highly significant (1.701 , $p < 0.001$), indicating an immediate upward shift in FDI intensity of about 1.7 percentage points after 1999, equivalent to about 3.0 points in the long run ($1.701/0.558$), other things equal. H1 is therefore rejected in its directional form. The size of the economy does affect FDI significantly, but negatively.

Economic conditions (H2). In the long run, trade openness has a positive effect that is significant at 10 per cent: a 10-percentage-point rise in the trade-to-GDP ratio raises FDI intensity by about 0.62 points ($p = 0.097$). Private-sector credit is positive but not significant ($p = 0.192$), and the exchange-rate level has no significant long-run effect ($p = 0.615$). No short-run term is individually significant at 5 per cent. The error-correction term of -0.875 indicates rapid adjustment, with about 88 per cent of disequilibrium corrected within a year. H2 is partially supported. Economic conditions as a block are tied to FDI in the long run, with trade openness the main individual channel.

National stability (H3). No long-run relationship exists between FDI and the stability indicators, but stability has clear short-run effects. A one-point rise in the inflation rate lowers FDI intensity by 0.036 points in the same year ($p = 0.008$), and the lagged inflation level has a similar negative effect (-0.043 , $p = 0.003$). Exchange-rate volatility is associated with a short-run *increase* in FDI intensity (0.333 , $p = 0.010$). External debt has no significant short-run

effect. H3 is partially supported: inflation is a significant short-run deterrent, but stability does not shape FDI in the long run.

4.5 Diagnostic and stability tests

Table 7. Residual diagnostic tests

Test	M1: Size	M2: Condition	M3: Stability
Breusch–Godfrey LM, F (p)	0.105 (0.901)	0.237 (0.792)	0.361 (0.702)
Breusch–Pagan–Godfrey, F (p)	0.534 (0.776)	0.847 (0.575)	0.845 (0.587)
Jarque–Bera, χ^2 (p)	1.809 (0.405)	1.387 (0.500)	21.708 (0.000)
Ramsey RESET, F (p)	0.169 (0.685)	1.829 (0.193)	0.079 (0.782)
CUSUM sup statistic (p)	0.616 (0.843)	0.716 (0.684)	0.567 (0.905)

None of the models shows serial correlation, heteroskedasticity or functional-form misspecification at conventional levels. Residuals are normally distributed for Models 1 and 2. For Model 3, normality is rejected because of a few extreme years, notably the 72.8 per cent inflation of 1995, so its standard errors should be read with some caution. The CUSUM statistics remain inside the 5 per cent bounds throughout for all three models (Figure 3), indicating that the coefficients are stable over the sample.

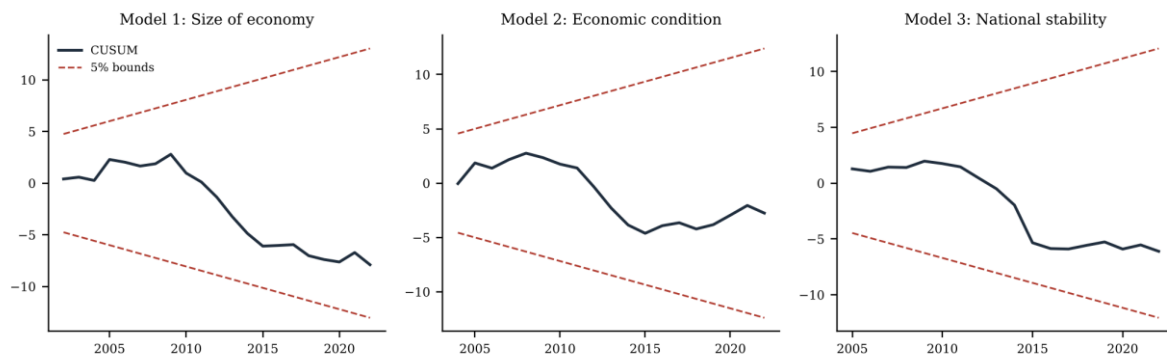


Figure 3. CUSUM tests of parameter stability (5% significance bounds)

4.6 Causality

Table 8. Toda–Yamamoto Granger causality tests

Null hypothesis	k	Wald χ^2	p-value	Conclusion
LRGDP does not Granger-cause FDI	2	0.336	0.845	Do not reject
FDI does not Granger-cause LRGDP	2	5.541	0.063	Reject at 10%
LEXR does not Granger-cause FDI	2	4.514	0.105	Do not reject
FDI does not Granger-cause LEXR	2	17.131	0.000	Reject at 1%
TOP does not Granger-cause FDI	2	0.405	0.817	Do not reject
FDI does not Granger-cause TOP	2	11.130	0.004	Reject at 1%
CRED does not Granger-cause FDI	2	1.137	0.566	Do not reject
FDI does not Granger-cause CRED	2	2.734	0.255	Do not reject
INF does not Granger-cause FDI	1	0.363	0.547	Do not reject
FDI does not Granger-cause INF	1	0.271	0.603	Do not reject

Null hypothesis	k	Wald χ^2	p-value	Conclusion
LXVOL does not Granger-cause FDI	2	1.099	0.577	Do not reject
FDI does not Granger-cause LXVOL	2	0.419	0.811	Do not reject
EDEBT does not Granger-cause FDI	1	0.075	0.785	Do not reject
FDI does not Granger-cause EDEBT	1	0.846	0.358	Do not reject

Note: Bivariate VAR in levels of order k (AIC), augmented with d_max = 1 extra lag and the D99 dummy; Wald χ^2 with k degrees of freedom.

Combining the error-correction evidence with Table 8 gives the following picture of causality.

Size of the economy and FDI (H4). The significant error-correction term in Model 1 indicates long-run causality running from market size to FDI. In the short run, there is weak evidence of feedback from FDI to real GDP ($\chi^2 = 5.54, p = 0.063$). The relationship is therefore long-run unidirectional from size to FDI, with marginal short-run feedback from FDI to output. H4 is supported.

Economic conditions and FDI (H5). The error-correction term in Model 2 indicates long-run causality from economic conditions to FDI. In the short run, causality runs in the opposite direction. FDI Granger-causes the exchange rate ($\chi^2 = 17.13, p < 0.001$) and trade openness ($\chi^2 = 11.13, p = 0.004$), while no economic-condition variable Granger-causes FDI. Causality is thus bidirectional across horizons, and H5 is supported.

National stability and FDI (H6). With no cointegration and no significant Toda–Yamamoto statistic in either direction, there is no evidence of Granger causality between FDI and inflation, exchange-rate volatility or external debt. The short-run effects in Table 6 are contemporaneous, not predictive. H6 is not supported.

5. Discussion

The study set out to determine whether, and through which channels, Nigeria's economic performance shapes its FDI inflows. The answer is more nuanced than the cross-country consensus suggests. The three dimensions of performance relate to FDI in different ways and at different horizons.

The most striking result is the negative long-run association between real GDP and FDI intensity. In the cross-country literature, market size is the most robust positive determinant of FDI (Asiedu, 2006; Chakrabarti, 2001), so this "growth without FDI" finding needs explanation. Three mechanisms are consistent with it. First, the *composition* of Nigeria's growth matters. Much of the expansion since the mid-2000s came from services, trade and agriculture, sectors that are largely domestically owned and capital-light, while FDI remained

concentrated in oil and gas. FDI therefore did not keep pace with output. Second, the dominance of resource-seeking FDI means that inflows respond to oil-sector conditions such as prices, licensing and security in the Niger Delta, not to the size of the domestic market (Asiedu, 2006). The decline in upstream investment after 2014, including divestment by international oil companies, coincided with continued, if slower, GDP growth. Third, market size may matter for investors only in *effective* terms, through purchasing power, infrastructure and ease of doing business. Large headline GDP does not attract FDI if those complements are missing. The result does not mean that market size is irrelevant. It means that, in Nigeria, the market has grown faster than its ability to attract foreign capital, so FDI intensity has fallen.

The economic-condition results point to trade integration as the main channel through which macroeconomic conditions attract FDI. The positive long-run effect of trade openness supports Asiedu's (2002) finding for Africa and is consistent with efficiency-seeking and value-chain investment. The short-run causality from FDI to the exchange rate and to trade openness is also economically meaningful. FDI inflows are a significant source of foreign exchange in Nigeria, so swings in FDI feed into the official exchange rate and import capacity. This two-way link is consistent with the investment development path (Dunning & Narula, 1996). It also implies that FDI shocks can amplify external-sector volatility.

The stability results show that macroeconomic stability matters mainly in the short run. Inflation has a significant negative effect on FDI in the same and following year, consistent with evidence that macroeconomic instability deters FDI to Africa (Asiedu, 2006; Dupasquier & Osakwe, 2006). The positive short-run association between exchange-rate volatility and FDI intensity runs against H3. It is best read as a devaluation effect. The largest exchange-rate adjustments, in 1999, 2016 and 2020, lowered the dollar cost of Nigerian assets and may have encouraged acquisitions and recapitalisations by foreign investors. Devaluation also mechanically reduces dollar GDP, which raises the FDI-to-GDP ratio even when inflows are unchanged. This result should therefore not be read as evidence that currency instability is desirable.

Finally, the strong positive effect of the 1999 regime dummy indicates that the return to civilian rule and exchange-rate unification produced a lasting upward shift in FDI intensity, of about 3 percentage points in the long run. This is consistent with the institutional determinants literature (Bénassy-Quéré et al., 2007; Busse & Hefeker, 2007) and suggests that political and institutional change shaped FDI more than year-to-year variation in the macroeconomic stability indicators.

5.1 Theoretical implications

The findings qualify the location-advantage arm of the OLI paradigm in an important way. Location advantages are not simply additive. A large market attracts FDI only when the investors present are market-seeking and when complementary conditions such as openness, price stability and institutional credibility are in place. Where FDI is mainly resource-seeking, as in Nigeria, market size can be decoupled from FDI or even negatively related to FDI intensity. The results also show that the dimensions of performance operate at different horizons. Size and conditions are structural, long-run determinants, whereas stability shocks have short-run effects. Studies that measure economic performance as a single construct cannot capture this distinction.

6. Conclusion, Policy Implications and Limitations

This study examined how the size of the economy, economic conditions and national stability affect FDI into Nigeria over 1993–2022, using ARDL bounds tests with small-sample critical values and Toda–Yamamoto causality tests. FDI is cointegrated with the size of the economy and with economic conditions, but not with the stability indicators. Real GDP has a negative long-run association with FDI intensity, trade openness a positive one, and inflation a negative short-run effect. Causality runs from market size and economic conditions to FDI in the long run, while in the short run FDI drives the exchange rate and trade openness.

The policy implications follow directly. First, Nigeria cannot rely on the size of its market to attract FDI. Investment promotion should focus on turning headline market size into effective market size through power, transport and logistics infrastructure, and on diversifying FDI away from oil into manufacturing, agro-processing and services. Second, trade integration is the clearest positive long-run lever. Lower tariff and non-tariff barriers, faster port clearance and full implementation of the African Continental Free Trade Area should raise both trade and FDI. Third, the Central Bank of Nigeria's commitment to low and stable inflation is also an investment policy, because inflation measurably deters FDI in the short run. Fourth, because FDI drives the exchange rate in the short run, sudden stops in FDI can destabilise the naira. Policymakers should therefore treat a stable, transparent foreign-exchange regime and the predictable repatriation of profits as core parts of the investment climate.

The study has limitations. With 30 annual observations, each model includes at most three regressors and the tests have limited power. The Model 2 bounds F-test is significant only at 10 per cent, so its conclusions rest partly on the t-test. Aggregate FDI combines resource-

seeking investment in oil and gas with market-seeking investment, so the determinants of each cannot be separated. Governance indicators were unavailable for the full period, so political stability is captured only by the regime dummy. Future research could use sectoral or firm-level FDI data, quarterly data, nonlinear ARDL models to capture asymmetric responses to devaluation, or panel data across West African economies to test whether the "growth without FDI" pattern is specific to Nigeria.

Declarations

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Data availability: All data are publicly available from the World Bank's World Development Indicators. The compiled dataset and estimation code are available from the corresponding author on request.

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