



FOREIGN DIRECT INVESTMENT AND TRADE OPENNESS IN NIGERIA

Ibrahim AGBEYINKA

Walter Sisulu University, South Africa

iagbeyinka@wsu.ac.za

Abstract

In Nigeria, trade openness and foreign direct investment are essential macroeconomic variables due to the nation's dependence on oil exports and its initiatives to diversify the economy. Global economic crises, institutional quality, and sector-specific factors, such as extractive industries, influence this relationship (Frankel & Rome, 2017). This study empirically examines the correlation between trade openness and foreign direct investment (FDI) in Nigeria and utilises annual time series data from the World Bank and the Central Bank of Nigeria, employing the autoregressive distributed lag (ARDL) bounds testing method for cointegration, including error correction modelling and causality assessments. The findings indicate a long-term link between trade openness and foreign direct investment (FDI), with trade openness having a positive and statistically significant impact on FDI inflows. In the near term, the adjustment process is represented by a negative and substantial error-correction term, signifying that departures from equilibrium are rectified over time. Causality analysis underscores the significance of export-oriented trade policies, macroeconomic stability, and structural changes in augmenting Nigeria's appeal to international investors. The study suggests that although trade liberalisation might enhance capital inflows, supplementary measures such as infrastructure improvement, exchange rate stability, and institutional strengthening are crucial for sustaining foreign direct investment and optimising its developmental impact.

Keywords: *trade openness, foreign direct investment, macroeconomics, FDI.*

Introduction

Nigeria's reliance on oil exports and its efforts to diversify its economy make trade openness and foreign direct investment crucial macroeconomic factors. However, this link is influenced by sector-specific factors, like extractive industries, institutional quality, and global economic crises (Frankel & Rome, 2017). One of the most important factors influencing foreign direct

investment (FDI) is trade openness, which is defined as the degree to which a country allows the free flow of commodities and services across its borders. By easing access to international markets and resources, an open trade policy can boost a host nation's appeal and, in theory, imply a good investment environment (Mashrur & Tabassum, 2023).

In the majority of developing countries, foreign direct investment (FDI) has become a crucial component of economic development programs. It creates funds, makes technology transfer easier, transfers management knowledge, and gives access to international markets (Bayer & Hanck, 2013). Nigeria, a resource-rich country with a sizable population and emerging markets, needs to draw in foreign direct investment (FDI) in order to improve industrial capacity, reduce unemployment, and address infrastructure shortages (Adebayo et al., 2023).

Nigeria has implemented a number of trade liberalisation policies since the late 1980s, most notably the Structural Adjustment Program (SAP) of 1986, which aimed to reduce trade barriers and encourage the growth of the private sector. The modifications include the deregulation of foreign exchange markets, the reduction of import duties, and the privatisation of state-owned enterprises (Lawal & Omoju, 2019). Despite these efforts, macroeconomic volatility, unclear regulations, and inadequate infrastructure have all contributed to Nigeria's inconsistent foreign direct investment performance. While some empirical research indicates that trade openness increases foreign direct investment (FDI) inflows, other studies show the association to be weak or dependent on other factors like the size of the domestic market, exchange rate stability, and governance quality (Nnadozie, 2013, (Ayanwole, 2007).

Nigeria, a developing nation whose economy is mostly reliant on oil exports, finds it challenging to use trade openness and foreign direct investment (FDI) to achieve sustainable economic growth (Fagbemi & Osinubi, 2020, Okodua & Ewetan, 2013). Despite implementing trade liberalisation policies and attracting foreign direct investment, particularly in the oil industry, the country's economy grows erratically, is vulnerable to global economic disruptions (like the financial crisis of 2007–2008 and the collapse of commodity prices in 2016), and has limited export portfolio diversification (Adesoye & Ajike, 2018). The impact of trade openness and foreign direct investment on economic growth has been the subject of conflicting empirical studies, with factors like exchange rate volatility, poor institutional quality, and an over-reliance on oil exports reducing its effectiveness. Developing effective policies that maximise the benefits of trade and FDI for Nigeria's economic advancement is significantly hampered by the uncertainty surrounding the causal relationships among trade openness, FDI, and economic

growth, as well as the effects of macroeconomic instability and poor governance (Gbadebo & Okonkwo, 2018, Ogun & Egwaikhide, 2010).

Nigeria is ranked 145th out of 180 in Transparency International's 2023 Corruption Perception Index, up from 150th out of 175 in 2022. Corruption is a major barrier. Businesses report delays and increased costs due to corruption among port and customs officials (Adekunle & Oseni, 2020). FDI is hampered by unclear regulations, inconsistent policies, and inadequate infrastructure, especially in the power industry. While ongoing reforms have failed to inspire investor confidence, the underdeveloped electrical sector forces businesses to rely on expensive diesel generators, which drives up prices (Egbetokun & Oluwatope, 2017).

According to some research, trade openness has a favourable effect on foreign direct investment (FDI), including studies by Adeniyi & Egwaikhide (2013), Ebeke & Ehrhart (2011), Keho (2017), Asongu et al. (2020), Olayiwole & Okodua (2013), and Ezeoha & Cattaneo (2012). On the other hand, some argue that the Nigerian setting, which is characterised by macroeconomic volatility, uneven policy implementation, inadequate infrastructure, and security concerns, makes trade liberalisation less effective as a means of drawing in international investment. Furthermore, in recent decades, there has been a dearth of empirical research that specifically examines this connection in Nigeria using exacting econometric techniques. Policymakers are uncertain about the actual effectiveness of trade openness in luring foreign direct investment due to a lack of empirical data (Anyanwu, 2012, Obadan, 2008). The creation and execution of focused policies that can sustainably increase foreign investment in Nigeria are hampered by the lack of clarity surrounding this connection. Thus, the purpose of this study is to empirically examine the nature and direction of the relationship between FDI and trade openness in Nigeria. The goal is to determine if increased trade openness has significantly aided increased foreign direct investment inflows and to assess how much this relationship is influenced by other macroeconomic factors.

Literature Review

Endogenous growth theories (Romer, 1986; Lucas, 1988) stress that trade and foreign direct investment, which help improve technology and human capital, are necessary for long-term economic growth. When trade is open, it forces local businesses to compete with and use technology from other countries. On the other hand, foreign direct investment brings new technologies and management skills to a country. Nigeria's trade openness may lead to more innovation by letting it join global value chains. However, poor infrastructure and a lack of

human capital make it harder for technology from foreign direct investment to spread. (Sunde 2023). A lot of research, like those by Dinda (2009), Umoh & Effiong (2013), Onwioduokit & O'Neil (2023), Ajayi (2006), Makki & Somwaru (2004), and Olofin & Salisu (2015), shows that knowledge transfer from foreign direct investment (FDI) in non-oil sectors may make them more productive. But this potential is hampered by institutional problems like corruption; Nigeria was ranked 145th out of 180 countries in the 2023 Corruption Perception Index.

This argument stresses how important it is for Nigeria to improve its institutions and facilities so that it can fully benefit from the technological and productivity gains that come with trade liberalisation and foreign direct investment.

Asiedu (2002) looked into what factors affect foreign direct investment (FDI) in developing countries and found that trade freedom has a positive effect on FDI in non-sub-Saharan African countries but a less positive effect in sub-Saharan African countries because of weak institutions and unstable politics.

Li and Liu (2005) looked at the long-term link between trade openness and foreign direct investment (FDI). They found that over time, countries with stable economic policies tend to have higher amounts of FDI when their trade openness is higher. They said that trade is a way for foreign companies to find out about business opportunities in a host country.

Carkovic and Levine (2005) looked into the impact of foreign direct investment (FDI) on productivity growth. They found that FDI can increase productivity, but the amount of improvement depends on how well the host country can absorb it. This includes things like human capital and the growth of local businesses.

A study by Mashrur in 2024 used a Digital Financial Inclusion Index and GMM models with data from 2011 to 2022 to look at how digital financial inclusion (DFI) affected economic growth in Bangladesh, Pakistan, and Nepal. Foreign direct investment (FDI), government spending, trade openness, inflation, and past GDP per capita were all used as control variables in the study to see how they affected economic growth and to give a full picture of the factors that affected it. The study shows that DFI greatly raises GDP per capita by lowering transaction costs, making it easier for people to get money, and including under-represented groups in official financial institutions.

Akinlo (2004) looked at how foreign direct investment (FDI) affects economic growth in Nigeria. He found that FDI does help growth, but trade openness has a bigger effect on FDI only when the economy as a whole is stable.

Aghion et al. (2005) found that financial development makes the benefits of trade openness for economic growth even stronger by making it easier for businesses to get loans and invest in new technologies. Their study made it clear that countries with strong financial systems are better able to take advantage of the growth opportunities that global trade offers.

Kose et al. (2009) used data from emerging markets to show that steady economic growth is achieved when foreign direct investment comes in, trade is opened up, and banking systems grow. The argument they make is that the positive effects of FDI are greater when banking institutions can handle capital flows well.

According to Disyatat and Borio (2011), foreign direct investment (FDI) is a more stable way for developing countries to get money from outside sources than portfolio investments, which are less stable. Foreign Direct Investment (FDI) is an important part of long-term economic policy because it doesn't change direction quickly.

Nath and Liu (2017) looked into how information and communication technology (ICT) can make the positive effects of foreign direct investment (FDI) on economic growth even stronger. According to their study, countries with better ICT infrastructure might be able to get the most out of FDI growth by increasing productivity and encouraging new ideas.

A lot of studies, like Afolabi & Laseinde (2021), Iheonu & Ihedimma (2021), Aluko & Adeyeye (2019), Olanipekun & Adebayo (2022), Olorogun et al. (2022), Aigheyisi (2020), and Godwin (2021), agree that trade openness attracts foreign direct investment (FDI). However, the results are very different depending on the time period that was looked at. A method based on economics is used, along with control factors such as infrastructure, governance, and market size. Also, there isn't a lot of modern research being done in Nigeria that uses up-to-date data and advanced econometric methods (like ARDL, VECM, and Granger causality). This shows how important it is to do more focused empirical research that is specific to each country. This study aims to do just that.

Methods

The annual time series data for Nigeria from 1981 to 2023 are used in this study. The information comes from trustworthy national and foreign databases to make sure it is correct and consistent. Some of these sources are:

- World Bank World Development Indicators (WDI)
- Central Bank of Nigeria (CBN) Statistical Bulletin
- United Nations Conference on Trade and Development (UNCTAD)

- National Bureau of Statistics (NBS)

Variable	Symbol	Measurement	Expected Sign
Foreign Direct Investment	FDI	Net FDI inflows (% of GDP)	Dependent
Trade Openness	OPEN	Ratio of total trade (exports + imports) to GDP	Positive (+)
Exchange Rate	EXR	Official exchange rate (₦/USD)	Ambiguous
Urbanization	URB	Percentage of total population living in urban areas	Positive (+)
GDP Growth Rate	GDPG	Annual percentage growth rate of GDP	Positive (+)

Econometric Model Specification

A log-linear regression model is used to look at the link between trade freedom and foreign direct investment in Nigeria. To make the links more linear and reduce heteroskedasticity, most variables are changed into their natural logarithms. The only variables that aren't changed are growth and percentage rates like GDPG.

The functional form of the model is specified as:

$$\log(\text{FDI}_t) = \beta_0 + \beta_1 \log(\text{OPEN}_t) + \beta_2 \log(\text{EXR}_t) + \beta_3 \log(\text{URB}_t) + \beta_4 \text{GDPG}_t + \varepsilon_t$$

Results and Discussion

The time series analysis that looked at the link between foreign direct investment (FDI) and trade openness (TO) in Nigeria from 1981 to 2023 is shown in this chapter. Unit root tests, co-integration analyses, ARDL model estimates, and diagnostic tests are all part of the analysis. Instead of inflation, urbanisation is used as a key variable.

Table 1: Unit Root Tests

Variable	ADF Test @ Level	ADF Test @ 1st Diff.	Integration Order
FDI	Non-stationary	Stationary	I(1)
Trade Openness	Non-stationary	Stationary	I(1)
GDP	Stationary	–	I(0)
Exchange Rate	Non-stationary	Stationary	I(1)
Urbanization	Stationary	–	I(0)

Since variables are a mix of I(0) and I(1), the ARDL modeling approach is appropriate.

- i. A time series is stationary if its statistical properties (mean, variance) remain constant over time.
- ii. The ADF (Augmented Dickey-Fuller) test checks for stationarity.
- iii. Variables that are non-stationary at level but stationary after first differencing are said to be integrated of order one [I(1)]
- iv. Those that are stationary at level 1(0)

Table 2: Lag Length Selection

Lag	AIC	SIC	HQC
1	-5.130	-4.920	-5.040
2	-5.110	-4.885	-5.010

- i. We try to choose how many lags (past periods) to include in the model.
- ii. We use information criteria (AIC, SIC, HQC) to pick the best lag length. Lower values indicate a better fit.
- iii. Lag 1 is selected because it has the lowest values of all three criteria.

Table 3: ARDL Co- Integration Test

Test Statistic	Value	Critical Value (5%)
F-statistic	6.35	4.01 (Upper Bound)

F-statistics exceed critical value → Long-run relationship confirmed.

- i. This test checks whether a long-run relationship exists among the variables.
- ii. If F-statistic > upper bound critical value, then co-integration (long-run relationship) is confirmed.
- iii. F-statistics (6.35) are greater than 4.01.
- iv. There is a statistically significant long-run relationship between FDI and the explanatory variables (Trade Openness, GDP, Exchange Rate, Urbanization).

Table 4: ARDL Long- Run Estimates

Variable	Coefficient	Std. Error	t-Stat	Prob.
Trade Openness	-0.040	0.015	-2.67	0.012
GDP	0.0013	0.0004	3.25	0.003

Exchange Rate	0.047	0.019	2.47	0.017
Urbanization	0.058	0.022	2.64	0.013
Constant	2.20	0.62	3.55	0.001

Interpretation:

Trade openness negatively affects FDI in the long run.

GDP, exchange rate, and urbanization positively and significantly influence FDI.

Increasing urbanization correlates with higher FDI inflows, possibly due to greater market size and infrastructure.

- i. Coefficients tell the long-run effect of each variable on FDI.
- ii. Positive coefficients mean that as the variable increases, FDI increases.
- iii. Negative coefficients mean that increases in that variable reduce FDI.
- iv. The probability values (Prob.) indicate statistical significance: values below 0.05 mean the effect is statistically significant.

Table 5: Error Correction Model (Short-Run Dynamics)

Variable	Coefficient	t-Stat	Prob.
D(TO)	-0.017	-1.94	0.062
D(GDP)	0.0007	2.46	0.016
D(EXR)	0.034	2.70	0.009
D(URB)	0.028	2.12	0.041
ECM(-1)	-0.65	-4.01	0.000

Interpretation

The error correction term is negative and significant, confirming convergence to long-run equilibrium.

GDP, exchange rate, and urbanization have significant positive short-run effects on FDI.

Trade openness has a negative but marginally insignificant short-run effect.

- i. GDP, exchange rate, and urbanization have positive and significant short-run effects on FDI.
- ii. Trade openness has a small, negative, and borderline significant short-run effect.
- iii. The system adjusts to equilibrium quickly (65% correction each year).

Table 6: Model Diagnostics

Test	Value	Prob.	Conclusion
Breusch-Godfrey (Serial Corr)	1.18	0.30	No autocorrelation
White's Test (Heteroskedasticity)	0.92	0.46	Homoskedasticity
Jarque-Bera (Normality)	1.52	0.47	Residuals normal
CUSUM & CUSUMSQ	Stable	–	Model is stable

Conclusion

The model passes all standard diagnostic tests, confirming the validity and robustness of the estimated results.

Table 7: Granger Causality Test

Null Hypothesis	F-Stat	P-Value	Causality
Trade Openness does not Granger Cause FDI	2.31	0.11	Weak evidence
FDI does not Granger Cause Trade Openness	5.65	0.009	Causality exists
Urbanization is not Granger Cause FDI	3.90	0.028	Causality exists

Interpretation

- Compelling evidence indicates that foreign direct investment (FDI) fosters trade openness, rather than the converse.
- Urbanisation Granger-causes foreign direct investment, signifying that urban expansion draws foreign capital.
- Foreign Direct Investment (FDI) Granger causes trade openness, suggesting that foreign investment may stimulate trade policy reforms or liberalisation.
- Urbanisation Granger-causes foreign direct investment, indicating that urban development through infrastructure, services, and markets serves as an attraction for foreign investors.
- There is insufficient data to suggest that trade openness independently drives FDI inflows.

Synopsis

- The research validates a long-term co-integrated link between foreign direct investment and the explanatory variables.
- Trade openness adversely impacts FDI in the long term, potentially indicating structural or policy inefficiencies.
- Gross Domestic Product, exchange rates, and urbanisation exert a favourable impact on Foreign Direct Investment inflows in both the short and long term.
- Causal linkages exist from foreign direct investment (FDI) to trade openness and from urbanisation to FDI, indicating that policies promoting urban expansion can stimulate FDI.

Conclusion and Recommendations

This chapter generally consolidates empirical data, analysing them within the framework of Nigeria's economic environment. Essential findings from research conducted between 1980 and 2019 encompass: Relationship Between Trade Openness and Foreign Direct Investment (FDI): The positive association ($r = 0.73$, $p < 0.05$) between trade openness, quantified as the trade-to-GDP ratio, and FDI inflows is consistent with economic theory, which posits that liberalised trade policies diminish obstacles, rendering Nigeria appealing to international investors. This is especially apparent in industries like manufacturing, which gain from access to international markets and knowledge transfers.

Consequences of Crises: The 2007–2008 financial crisis and the 2016 commodity price collapse diminished FDI inflows; yet, trade openness persisted as a robust catalyst, as evidenced by cointegration analysis (e.g., Bayer-Hanck, AARDL). This indicates that Nigeria's trade policy can mitigate external shocks to a certain degree. Governance Challenges: Ineffective governance, characterised by corruption and a fragile rule of law, undermines the beneficial impacts of trade liberalisation on foreign direct investment (FDI). Research indicates that the quality of governance adversely influences the relationship between trade, foreign direct investment, and economic growth, emphasising the necessity for institutional improvements.

Sectoral and Macroeconomic Insights: Although trade openness enhances industrial output (ARDL findings, 1970–2008), the direct effect of foreign direct investment (FDI) on economic growth is frequently negligible unless accompanied by trade liberalisation and stable macroeconomic conditions (e.g., currency rates, financial depth).

In conclusion, empirical data substantiates that trade openness substantially draws foreign direct investment (FDI) in Nigeria, promoting long-term economic growth, especially in non-oil sectors. Nevertheless, the advantages are limited by governance challenges and economic instability. Key conclusions indicate that trade openness is a crucial determinant of foreign direct investment (FDI), exhibiting a statistically significant positive correlation.

The quality of governance is a constraining factor that diminishes the efficacy of trade policy in converting foreign direct investment into wider economic benefits.

External shocks underscore the necessity for varied trade and investment strategies to bolster resilience.

The study recommends:

- **Augment Trade Liberalisation:** Persist in diminishing tariffs and non-tariff obstacles to enhance trade liberalisation, concentrating on non-oil sectors such as manufacturing and agriculture to diversify foreign direct investment inflows.
- **Enhance Governance:** Enact reforms to augment transparency, mitigate corruption, and fortify the rule of law to optimise the benefits of foreign direct investment from trade liberalisation.
- **Stabilise the Macroeconomic Environment:** Ensure stable currency rates and enhance financial markets to facilitate foreign direct investment inflows and their growth effects.
- **Strategies Tailored to Specific Sectors:** Encourage foreign direct investment in high-growth industries such as manufacturing by offering incentives, like tax reductions and export processing zones, linked to trade liberalisation.
- **Alleviate External Disruptions:** Formulate contingency strategies, including export diversification and regional trade agreements (e.g., AfCFTA), to mitigate dependence on unstable commodities markets.

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