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Nexus between foreign trade and economic growth: The Nigerian Experience

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Abstract

This study investigates the relationship between foreign trade and economic growth in Nigeria. The objectives of the study are to; determine the effects of import growth rate, export growth rate, trade openness and exchange rate on Nigeria's economic growth. Using an ex-post facto research design and log-linear regression on secondary time-series data from 1985 to 2023, the study found that, import growth and export growth positively influence economic growth, with imports showing a stronger elasticity, indicating Nigeria's growth is largely import-driven. Trade openness was found to have a negative and significant impact on GDP, suggesting that high import dependency and limited export diversification expose the economy to external shocks. A positive relationship was observed between exchange rate and GDP, largely reflecting increased Naira earnings from dollar-denominated oil exports. The findings reveal that, despite the potential benefits of foreign trade, structural weaknesses, such as overdependence on crude oil, exchange rate volatility, and inefficient trade policies, undermine Nigeria's developmental gains. The study recommended amongst others, prioritizing export diversification beyond oil and strategically managing trade openness to promote economic growth.

Keywords: Balance of Payments; Economic growth; Exchange rate; Experience; Foreign trade

1. Introduction

Foreign trade has long been recognized as a key driver of economic growth, particularly in developing economies where integration into global markets serves as a catalyst for industrialization, innovation, and capital inflows. In Nigeria, the role of trade is especially critical given the country's dependence on oil exports and vulnerability to global price fluctuations. While foreign direct investment (FDI) and trade openness have shown positive contributions to growth in the long run, the heavy reliance on imports and the limited diversification of exports have constrained the full benefits of trade liberalization (Olasehinde & Ajayi, 2022). Recent evidence indicates that foreign exchange reserves, capital inflows, and FDI play significant roles in driving Nigeria's industrial growth and strengthening macroeconomic stability, although persistent exchange rate volatility continues to pose structural challenges (Nnamocha, Obioma & Emerole, 2017).

Over the years, scholars were of the view that, for economic growth to be sustained in Nigeria, foreign trade and diversification beyond oil exports is imperative. Non-oil exports, such as agriculture and manufacturing, have been shown to contribute significantly to long-term growth, though their potential remains underutilized due to policy inconsistencies and infrastructural bottlenecks (Kromtit, Kanadi & Nyapuni, 2017). Moreover, while globalization has expanded trade opportunities, Nigeria's economy continues to grapple with external debt burdens and import dependence, which can undermine the growth benefits of trade liberalization if not carefully managed (Cynthia, 2023). These dynamics highlight the complex nexus between foreign trade and economic growth in Nigeria, where opportunities for expansion coexist with structural challenges that demand strategic reforms.

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Even though foreign trade according to recent studies (Esiaka, Okafor & Uzonwanne, 2021; Omang, Aye & Tashikalma, 2024) has been shown to improve growth, Nigeria's economy continues to face structural distortions that undermine the benefits of international trade integration. Issues such as weak manufacturing capacity, infrastructure deficits, policy inconsistencies, and persistent overreliance on crude oil exports have hindered the diversification of the economy, leaving it highly vulnerable to external shocks and global market fluctuations (Esiaka et al., 2021). Furthermore, while trade liberalization is expected to enhance efficiency and competitiveness, Nigeria has witnessed mixed outcomes, with rising import dependency and trade imbalances often eroding potential growth gains (Omang et al., 2024). These contradictions create a critical need to re-examine the nexus between foreign trade and economic growth in Nigeria, thereby providing the basis for the objectives of this study. Specifically, the study seeks to investigate: the effect of import growth rate on economic growth in Nigeria; the effect of export growth rate on economic growth in Nigeria; the impact of trade openness on economic growth in Nigeria, and; the effect of exchange rate on economic growth in Nigeria. The remaining section of the work examined the literature review, methodology, results and discussion as well as conclusion and recommendations

2. Literature review

There are some important concepts that need to be clarified as it will improve understanding of some of the terms that will be used in subsequent sections of this study.

2.1. Conceptual Clarifications

2.1.1. Foreign Trade

Foreign trade is a vital determinant of economic performance as it facilitates the exchange of goods, services, and technology across borders, enabling countries to optimize resource allocation and benefit from global integration. In the Nigerian context, foreign trade has been central to economic activity, with exports dominated by crude oil and imports, especially manufactured products, thereby shaping macroeconomic stability. However, despite the potential of trade to drive growth, Nigeria's heavy reliance on oil exports and vulnerability to global price fluctuations continue to constrain its developmental gains (Mohammed & Ahmed, 2021). Recent evidence suggests that strengthening non-oil exports and improving trade balance management are necessary steps to fully harness the benefits of foreign trade for sustainable growth (Okonkwo & Ejem, 2020).

2.1.2. Economic Growth

Economic growth, measured primarily by increases in gross domestic product (GDP), reflects the ability of an economy to expand its output and improve the living standards of its population. In Nigeria, economic growth has exhibited volatility due to structural dependence on oil revenues, weak industrialization, and recurrent macroeconomic instability. Recent studies indicate that diversification, efficient utilization of trade revenues, and macroeconomic reforms are critical to ensuring more resilient and sustainable growth outcomes (Uzonwanne, 2021). Furthermore, growth in Nigeria is increasingly linked to how effectively the economy manages trade shocks, enhances non-oil exports, and strengthens institutional frameworks to promote inclusive development (Anyanwu & Emina, 2020).

2.2. Theoretical Review: The New Trade Theory (Krugman's Theory)

The New Trade Theory, pioneered by Paul Krugman in the late 1970s and early 1980s, emphasizes the role of economies of scale, imperfect competition, and product differentiation in shaping global trade patterns. Unlike traditional theories of trade such as Ricardian comparative advantage, which stress differences in resource endowments, Krugman's framework highlights how increasing returns to scale and network effects allow countries to specialize and trade even when they have similar factor endowments. This theory explains why trade often occurs between developed economies with comparable resources and why firms gain competitive advantages through specialization and innovation (Krugman, 1979). In the Nigerian context, the theory is relevant because it underscores the importance of diversifying production structures and achieving scale in non-oil industries to enhance export competitiveness and reduce overdependence on crude oil revenues (Okonkwo & Ejem, 2020).

The relevance of Krugman's theory to this study lies in its policy implications: Nigeria can improve economic growth, not only by trading based on resource endowments but also by developing industries that achieve economies of scale and product differentiation. Encouraging innovation, infrastructure development, and industrial clustering can help the country integrate more effectively into global value chains. This is especially crucial for promoting non-oil exports such as manufacturing and agro-industrial products, thereby making trade a more sustainable driver of economic growth.

Thus, New Trade Theory provides a useful framework for analyzing how Nigeria can expand its export base beyond oil and leverage global competitiveness for long-term growth (Mohammed & Ahmed, 2021).

2.3. Review of Related Empirical Studies

Recent empirical studies have extensively examined the nexus between foreign trade and economic growth in Nigeria, producing mixed but insightful evidence. For instance, Mohammed and Ahmed (2021) adopted a Johansen cointegration technique alongside vector error correction modeling (VECM) to analyze the trade-growth relationship and found that both imports and exports exert significant positive long-run effects on economic growth, though export growth plays a stronger role in driving GDP expansion. Their study highlights the importance of diversifying Nigeria's export base beyond crude oil in order to sustain growth.

Similarly, Uzonwanne (2021) employed autoregressive distributed lag (ARDL) bounds testing and confirmed that trade contributes to growth by providing access to foreign markets and technology. However, the study cautioned that the benefits are undermined by Nigeria's dependence on crude oil exports, which exposes the economy to global oil price volatility and external shocks. This resonates with the findings of Anyanwu and Emina (2020), who used time-series econometric techniques and stressed that structural weaknesses, such as inadequate infrastructure, weak institutions, and limited industrialization, significantly constrain the positive impact of foreign trade on growth, thereby reducing the country's ability to leverage trade for sustainable development.

Other studies have emphasized the critical role that trade openness plays in economic growth. Okonkwo and Ejem (2020), using ordinary least squares (OLS) regression and causality analysis, demonstrated that greater trade openness positively influences GDP growth, particularly when complemented by sound macroeconomic policies and export diversification strategies. Supporting this, Echekoba and Ananwude (2019) found through panel regression that trade openness enhances foreign direct investment inflows and facilitates technology transfer, which in turn raise productivity and improve economic performance. However, Olofin and Udoh (2019), using generalized method of moments (GMM) estimation, cautioned that while openness can foster growth, it also increases vulnerability to external shocks and capital flight, suggesting that Nigeria's economy requires stronger domestic production capacity and institutional reforms to fully benefit from global integration.

Finally, Olayemi (2018) examined the moderating effect of exchange rate volatility through error correction modeling and showed that unstable exchange rates weaken export competitiveness and raise import costs, thereby dampening the potential gains of foreign trade. Collectively, these studies emphasize that foreign trade has a substantial but conditional impact on Nigeria's economic growth. The empirical evidence suggests that while exports, imports, trade openness and exchange rates all play critical roles, the extent of their contribution depends largely on structural reforms, diversification and macroeconomic stability.

3. Methodology

This study adopts the ex-post facto research design, utilizing secondary time-series data sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin and National Bureau of Statistics (NBS). The period of study spans from 1985 to 2023, providing sufficient scope to capture the dynamics impact of foreign trade variables on Nigeria's economic growth.

The functional model for this study is specified as follows:

$$GDP = f\,(IMPgr, EXPgr, OPN, EXR) \quad (1)$$

The econometric model is therefore specified in a log-linear form as:

$$LogGDP = \beta_0 + \beta_1 LogIMPgr + \beta_2 LogEXPgr + \beta_3 LogOPN + \beta_4 LogEXR + \mu_t \quad (2)$$

Where:
GDP = Real Gross Domestic Product (proxy for economic growth)
IMPgr = Import growth rate
EXPgr = Export growth rate
OPN = Trade openness (measured as the ratio of trade to GDP)
EXR = Exchange rate
μt = Random error term

β_0 = Intercept; β_1, β_2, β_3, β_4 = Coefficients. The model will be estimated using the log-linear regression technique, as it is suitable for examining elasticities and the dynamic effects of trade-related variables on economic growth.

4. Results

This section presents and discusses the outcomes of the model estimation, first with the descriptive statistics and subsequently addressing the regression technique.

Table 1 Descriptive Statistics

	GDP	OPN	EXR	IMPGR	EXPGR
Mean	48119.96	308.9118	151.5905	0.314223	0.330785
Median	18124.06	314.5780	128.2700	0.142000	0.106000
Maximum	202365.0	550.2128	853.0000	3.638700	3.613500
Minimum	187.8306	75.22695	1.000000	-0.378500	-0.394500
Std. Dev.	58156.41	102.2313	169.7575	0.671630	0.734150
Skewness	1.085655	-0.114345	2.107297	3.571466	2.872899
Kurtosis	2.997825	2.851835	8.709016	17.34733	12.65348
Jarque-Bera	7.661218	0.120659	81.82798	417.4096	205.0812
Probability	0.021696	0.941454	0.000000	0.000000	0.000000
Sum	1876678.	12047.56	5912.030	12.25470	12.90060
Sum Sq. Dev.	1.29E+11	397147.1	1095070.	17.14128	20.48112
Observations	39	39	39	39	39

Source: Author's Computation (2025)

The descriptive statistics provide important perspectives into Nigeria's economic and trade dynamics over the study period. Real GDP averages ₦48,119.96 billion, but the stark difference between the mean and median (₦18,124.06 billion) reveals a heavily right-skewed distribution, confirmed with the skewness value of 1.086, indicating that Nigeria's growth has been uneven, with periods of exceptionally high output driven mostly by oil booms. The wide range (₦187.83 billion to ₦202,365 billion) and high standard deviation (₦58,156.41 billion) reveals Nigeria's volatile growth trajectory, shaped by external shocks and policy instability.

Trade variables exhibit pronounced instability, reflecting Nigeria's reliance on volatile commodity markets. Import growth (IMPGR) and export growth (EXPGR) average 0.314 and 0.330, respectively, suggesting marginal trade expansion, but their extreme ranges (−0.379 to 3.639 for imports, −0.395 to 3.614 for exports) and high standard deviations (0.672 and 0.734) suggest erratic performance, most likely due to fluctuating oil revenues. Both variables are strongly right-skewed (skewness > 2.8) and leptokurtic (kurtosis > 12), indicating sporadic surges in trade activity.

Trade openness (OPN), averaging 308.91, shows relative stability (skewness ≈ −0.11, kurtosis ≈ 2.85), with a near-normal distribution (Jarque-Bera p = 0.941), suggesting it is a very reliable trade indicator. In contrast, the exchange rate (EXR), averaging ₦151.59/1$, displays severe volatility (standard deviation = ₦169.76), with extreme depreciation episodes (max = ₦853/$) and strong right-skewness (2.107), reflecting Nigeria's chronic currency instability.

Table 2 Log-Linear Regression Model

Dependent Variable: LOG(GDP)				
Method: Least Squares				
Sample: 1985 2023				
Included observations: 32 after adjustments				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.009205	1.518604	4.615557	0.0002
LOG(IMPgr)	0.479440	0.093210	5.143665	0.0001
LOG(EXPgr)	0.144150	0.059544	2.420907	0.0270
LOG(OPN)	-0.762452	0.268781	-2.836702	0.0114
LOG(EXR)	1.660553	0.058679	28.29894	0.0000
R-squared	0.982670	Mean dependent var		9.174924
Adjusted R-squared	0.978593	S.D. dependent var		2.325713
S.E. of regression	0.340282	Akaike info criterion		0.878632
Sum squared resid	1.968461	Schwarz criterion		1.126596
Log likelihood	-4.664953	Hannan-Quinn criter.		0.937045
F-statistic	240.9914	Durbin-Watson stat		1.507344
Prob(F-statistic)	0.000000			

Source: Author's Computation (2025)

The log-linear regression model estimates the impact of foreign trade variables on Nigeria's economic growth (GDP), with all coefficients interpreted as elasticities due to the logarithmic transformation. The high R-squared (0.983) indicates that 98.3% of the variation in GDP is explained by the model, suggesting an exceptionally strong fit. The statistically significant F-statistic (p = 0.000) confirms the overall validity of the regression.

From the result, import growth (IMPGR) has a positive and highly significant coefficient (0.479, p = 0.0001), implying that a 1% increase in import growth is associated with a 0.479% increase in economic growth, implying that imports, likely capital goods and raw materials play an important role in Nigeria's economic expansion by enabling domestic production and industrialization.

Likewise, export growth (EXPGR) also shows a positive but smaller effect (0.144, p = 0.027), meaning a 1% increase in exports leads to a 0.144% GDP growth. The weaker elasticity compared to imports may reflect Nigeria's reliance on sole primary commodities (e.g. crude oil), which are subject to price volatility and limited value-added benefits.

Trade Openness (OPN) has a negative and significant coefficient (−0.762, p = 0.011), indicating that a 1% increase in trade openness reduces GDP by 0.762%. This implies there is a structural trade imbalance in Nigeria, where high import dependency and low export diversification expose the economy to external shocks, outweighing the benefits of openness. In addition, this negative effect also signals inefficiencies in trade policies or poor competitiveness in non-oil sectors.

Exchange Rate (EXR) has a strong positive effect (1.661, p = 0.000), suggesting that a 1% depreciation (increase in EXR) leads to a 1.661% increase in GDP. This shows Nigeria's dependence on oil exports (priced in dollars), where a weaker naira temporarily boosts export earnings. However, this effect could mask long-term inflationary risks or imported input cost pressures. The high adjusted R-squared (0.979) reinforces model reliability, while the Durbin-Watson stat (1.507) falls within the grey (or indecision) region; therefore, the model will be suggested to further diagnostic tests.

Table 3 Diagnostic Tests

Test	Statistic	Value	Probability
Breusch-Godfrey Serial Correlation LM Test	F-statistic	2.853130	Prob. F(1,16) = 0.1106
	Obs*R-squared	3.329361	Prob. Chi-Square(1) = 0.0681
Heteroskedasticity Test: Breusch-Pagan-Godfrey	F-statistic	1.037149	Prob. F(4,17) = 0.4169
	Obs*R-squared	4.315610	Prob. Chi-Square(4) = 0.3650
	Scaled explained SS	2.328518	Prob. Chi-Square(4) = 0.6756

Source: Author's Computation (2025)

The diagnostic tests indicate that the regression model is reasonably well-specified. The Breusch-Godfrey Serial Correlation LM Test yields a p-value of 0.1106 (F-statistic) and 0.0681 (Obs*R-squared), failing to reject the null hypothesis of no serial correlation at the 5% significance level, implying that the model does not suffer from significant autocorrelation. The Heteroskedasticity Test (Breusch-Pagan-Godfrey) shows p-values of 0.4169 (F-statistic) and 0.3650 (Obs*R-squared), strongly supporting homoskedasticity. This implies stable variance in residuals, reinforcing the reliability of the standard errors and t-statistics.

In summary, the model passes key diagnostic checks: no severe autocorrelation and no heteroskedasticity are detected. The absence of heteroskedasticity validates the use of ordinary least squares (OLS) without correction.

5. Discussion of Findings

The findings from the analysis provide important insights into Nigeria's trade-growth nexus, both reinforcing and challenging existing literature. The descriptive statistics highlight the volatile and oil-dependent nature of Nigeria's economy, with GDP exhibiting extreme fluctuations and right-skewness, corroborating Uzonwanne's (2021) observation that oil price shocks exacerbate economic instability. Trade variables similarly display erratic trends, particularly imports and exports, which align with Mohammed and Ahmed's (2021) findings on the dominance of primary commodities in Nigeria's trade structure. The pronounced volatility in exchange rates further underscores Olayemi's (2018) caution about currency instability undermining trade benefits, as the naira's depreciation episodes reflect systemic macroeconomic vulnerabilities.

The regression results provide detailed understanding of trade's contribution to growth. The positive impact of imports supports the argument by Anyanwu and Emina (2020) that imports of capital goods can stimulate domestic production, though the larger elasticity compared to exports suggests Nigeria's growth remains import-driven. The negative effect of trade openness contrasts with Okonkwo and Ejem's (2020) optimism about liberalization but aligns with Olofin and Udoh's (2019) warning that openness without diversification risks exposing the economy to shocks. The exchange rate's positive coefficient, while seemingly counterintuitive, mirrors Nigeria's oil-reliant structure, where depreciation temporarily inflates dollar-denominated export earnings but may mask deeper inefficiencies, as noted by Echekoba and Ananwude (2019). Collectively, the findings stress that trade's growth benefits in Nigeria are contingent on structural reforms, echoing the broader literature's call for diversification, institutional strengthening and strategic policy adjustments to mitigate volatility and maximize gains.

6. Conclusion and recommendations

This study explored the multifaceted relationship between foreign trade and economic growth in Nigeria, highlighting the dynamics that define this relationship. The findings reaffirm that, while imports, exports and trade openness contribute positively to growth, their full potential is undermined by structural weaknesses such as overdependence on crude oil, exchange rate volatility and inefficient trade policies. The analysis found that, Nigeria's trade-led growth potential remains largely unfulfilled, constrained by persistent gaps in industrialization, infrastructure and institutional capacity. Historically, the country's reliance on oil exports has magnified external vulnerabilities, and the regression result further reveal how this dependence distorts the developmental gains of trade, making a compelling case for urgent policy and structural reforms.

Based on the findings, the following recommendations are proposed to improve the nexus between foreign trade and economic growth in Nigeria:

Nigerian government should prioritize export diversification and value-added production to reduce dependence on crude oil and volatile commodity markets. This requires implementing targeted industrial policies that support non-oil sectors such as agriculture, manufacturing, and services through tax incentives, access to credit, and infrastructure development. The establishment of special economic zones (SEZs) with streamlined regulations would attract foreign investment and boost export competitiveness. Additionally, trade policies should encourage backward integration to strengthen domestic supply chains, ensuring that import growth translates into productive capacity rather than mere consumption.

Moreover, policymakers should adopt a strategic approach to trade openness by balancing liberalization with measures to protect and grow critical domestic industries. Also, international development partners and research institutions should support Nigeria's trade capacity-building efforts through knowledge exchange, technical assistance, and funding for trade-enabling projects.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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