Kasu Journal of Economics and Development Studies (KASUJEDS)
Vol 12, Issue 1, No 1, June 2025. ISSN: 2805-3303 (print)

DOES AN ASYMMENTRIC NEXUS EXISTS BETWEEN EXPORT AND ECONOMIC GROWTH IN NIGERIA? EVIDENCE FROM NONLINEAR ARDL

Faiza Adamu[1], Babangida Danladi Safiyanu[2], Abdulhadi Ibrahim[3]

[1,2,3]Department of Economics and Development Studies, Federal University Gashua
Corresponding Author's Email: auduboko33@gmail.com +2348148521888

ABSTRACT

This study investigates the asymmetric relationship between exports and economic growth in Nigeria using the Nonlinear Autoregressive Distributed Lag (NARDL) model and annual time series data from 1990 to 2024. The data were sourced from Central Bank of Nigeria (CBN). The analysis was motivated by persistent macroeconomic instability in Nigeria, despite decades of export-led growth policies. The study decomposes export changes into positive and negative shocks to assess their differential effects on GDP. Results reveal a significant asymmetric relationship in both the long and short run. Notably, positive export shocks negatively impact GDP, while negative shocks unexpectedly stimulate growth. These findings challenge the traditional Export-Led Growth (ELG) hypothesis and underscore Nigeria's structural vulnerabilities, particularly its heavy reliance on crude oil exports and limited economic diversification. Additional macroeconomic variables import, exchange rate, inflation, money supply, and consumer prices also exhibit significant effects on GDP, varying by time horizon. The study recommends promoting non-oil exports, supporting domestic production, and ensuring transparent management of export revenues. These actions are essential for building a more resilient and inclusive economy capable of withstanding external shocks and fostering sustainable growth.

Key words: Export-led growth, Nonlinear ARDL, Export shocks, Crude oil dependency, Trade diversification

JEL Code: A11

1. INTRODUCTION

The relationship between exports and economic growth has long been a central issue in development economics, particularly in developing countries. Exports play a critical role in

accessing larger markets, earning foreign exchange, promoting specialization, enhancing productivity, and attracting foreign direct investment (Feder, 1983; Helpman & Krugman, 1985). These benefits underpin the Export-Led Growth (ELG) hypothesis, which argues that expanding exports can significantly boost GDP, especially in countries with abundant resources but limited domestic demand (Balassa, 1985).

Countries like China, South Korea, and Singapore have demonstrated the success of export-driven strategies. Inspired by these outcomes, Nigeria adopted similar trade-led growth policies. However, its experience has been inconsistent. Overdependence on crude oil, which accounts for over 80% of foreign exchange earnings (CBN, 2022), exposes Nigeria to global price volatility. While export booms occasionally spur growth, downturns often trigger fiscal and macroeconomic crises. Evidence shows that Nigeria reacts more severely to negative export shocks than to positive ones, implying a potential asymmetry in the export-growth relationship (Adegbite, Ogunrinola, & Akinbobola, 2020).

This study explores the asymmetric impact of exports on economic growth in Nigeria. Two key reasons justify this focus. First, Nigeria continues to face macroeconomic instability—including inflation, weak GDP growth, and exchange rate volatility—even during periods of high export earnings (IMF, 2020). Second, Nigeria is implementing non-oil export diversification under frameworks like the National Development Plan (2021–2025) and AfCFTA, necessitating evidence on how different export shocks influence growth.

Although existing studies—such as Okonkwo and Ezeabasili (2021), Adediran and Olayemi (2020), and Nduka and Ogwuru (2020)—have examined trade structure, non-oil exports, and diversification, they largely overlook the asymmetric effects of export fluctuations. This study addresses that gap using a nonlinear approach to better inform trade and fiscal policy in Nigeria's volatile external trade environment.

This paper is organized into five sections. Following this introduction, Section 2 reviews relevant empirical literature; Section 3 presents the data and methodology; Section 4 discusses the results and interpretation; and Section 5 concludes with policy recommendations.

2. LITERATURE REVIEW

This section provides a literature review on the concepts of export and economic growth, outlines the theoretical foundation based on the Export-Led Growth (ELG) hypothesis, and critically examines previous empirical studies, highlighting gaps that justify the current study's focus on Nigeria's asymmetric export-growth relationship.

2.1 Concept of Export

Export refers to the process of selling goods and services produced in one country to buyers in another, serving as a key driver of economic growth and globalization. It enables nations to earn foreign exchange, enhance production efficiency, and access larger markets beyond domestic demand (Krugman & Obstfeld, 2018). Exports contribute significantly to gross domestic product (GDP) by stimulating industrial output, employment, and technological advancement (Salvatore, 2019). In developing economies like Nigeria, export activities—particularly of primary commodities such as crude oil—play a central role in determining fiscal and external stability (Adegbite, Ogunrinola, & Akinbobola, 2020).

The export-led growth (ELG) hypothesis posits that increased exports stimulate overall economic performance through scale economies, capital accumulation, and improved resource allocation (Helpman & Krugman, 1985). However, excessive dependence on a single export commodity may expose an economy to external shocks, price volatility, and structural imbalances (Okonkwo & Ezeabasili, 2021). Hence, diversifying exports into manufactured and non-oil sectors remains crucial for achieving sustainable economic growth in developing countries.

2.2 Concept of Economic Growth

Economic growth refers to the sustained increase in a country's productive capacity, typically measured by the rise in real Gross Domestic Product (GDP) over time. It reflects improvements in the quantity and quality of goods and services produced within an economy and is often regarded as a key indicator of national progress and welfare (Todaro & Smith, 2020). Economic growth results from various factors such as capital accumulation, technological advancement, human resource development, and institutional efficiency (Barro & Sala-i-Martin, 2019).

According to the neoclassical growth model, growth is driven by increases in labor, capital, and technological innovation, which enhance productivity (Solow, 1956). The endogenous growth theory, on the other hand, emphasizes the role of knowledge, innovation, and human capital as internal drivers of long-term growth (Romer, 1990). In developing economies like Nigeria, economic growth is often influenced by external factors such as trade, foreign investment, and macroeconomic policies. Sustainable economic growth, therefore, requires diversification, infrastructural development, and good governance to ensure that expansion in output translates into improved living standards and reduced poverty.

2.3 Theoretical Framework

This study is anchored on the Export-Led Growth (ELG) hypothesis, which posits that an increase in exports is a key driver of economic growth. The ELG theory emphasizes that expanding exports enhances production efficiency, stimulates investment, and facilitates technology transfer, thereby accelerating overall economic development (Balassa, 1978). By integrating into the global market, countries can exploit comparative advantages, achieve economies of scale, and attract foreign capital, which collectively boost GDP growth.

According to the ELG hypothesis, export expansion leads to higher foreign exchange earnings, allowing the importation of capital goods and intermediate inputs necessary for industrialization (Helpman & Krugman, 1985). This process fosters productivity improvements and diversification of the production base. Moreover, export-oriented sectors often experience faster technological diffusion, as exposure to international competition compels firms to innovate and enhance efficiency.

However, the ELG theory assumes that the export structure is diversified and value-driven. In resource-dependent economies like Nigeria, where exports are dominated by crude oil, the ELG hypothesis may not hold due to vulnerability to price fluctuations and weak linkages with the domestic economy (Awokuse, 2008). This study therefore tests the asymmetric impact of export shocks on Nigeria's economic growth using the Nonlinear ARDL (NARDL) model to determine whether positive and negative export changes produce similar effects.

2.4 Empirical Review

While early studies supported the ELG hypothesis, later empirical findings became more nuanced. Giles and Williams (2000) noted that although many Asian economies benefited from exports, Sub-Saharan Africa, including Nigeria, displayed mixed results due to weak institutions and mono-export dependency.

In Nigeria, Akinlo (2004) found a strong long-run link between exports and GDP, with oil exports dominating. Olayiwola and Okodua (2010) echoed this, advocating non-oil diversification to achieve inclusive growth. Adediran and Olayemi (2020) observed that non-oil exports positively influenced sectoral output, though the impact was limited by infrastructural constraints. Nduka and Ogwuru (2020) emphasized export diversification to reduce exposure to external shocks.

Traditional linear models assumed symmetric export effects, but Shin, Yu, and Greenwood-Nimmo (2014) introduced the NARDL model, which accounts for asymmetries. Applying this model, Adegbite et al. (2020) found that negative export shocks harm Nigeria's GDP more than positive ones help it.

This study builds on that gap, applying the NARDL model to recent data to assess asymmetric effects of exports under current policies like AfCFTA and the National Development Plan (2021–2025).

3. METHODOLOGY

This section outlines the methodology used. This provides data sources, variable definitions, model specifications, and the application of the Nonlinear Autoregressive Distributed Lag (NARDL) model to capture asymmetries in the export-growth nexus.

This study examines the asymmetric relationship between exports and economic growth in Nigeria using a 35 years' time series data from 1990 to 2024. Data used for Gross Domestic Product (GDP), Export (XPT), Import (MPT), Exchange rate (EXR), Money supply (M2), and inflation (INF) were obtained from Central Bank of Nigeria (CBN).

The following Table provides the summary of the variables and their measurement.

Table 1 Variables Definition

Variable	Definition	Source
Gross Domestic Product (GDP)	It is a measure of the domestic capacity of an economy. It will be used as a proxy to economic growth measured in Billions of Naira.	Central Bank of Nigeria (CBN)
Export (XPT)	This is the Annual total sale of products and services in foreign countries that are sourced or made in Nigeria, and this is measured in billions of Naira.	Central Bank of Nigeria (CBN)
Import (MPT)	This refers total monetary value of goods and services from foreign sources also measured in billions of Naira annually (Sakanko, Obilikwu& David, 2019; Sakanko& David, 2017).	Central Bank of Nigeria (CBN)
Exchange rate (EXR)	This is the Nominal Official Exchange rate measured as Nigerian Naira exchange to US dollar. It is measured by the annual average exchange rate of Naira currency to the U.S. dollar based on quarterly averages.	Central Bank of Nigeria (CBN)
Money Supply (M2)	Broad money supply representing the total amount of money circulating in the economy, including currency in circulation, demand deposits, and savings. It is measured in billions of Naira.	Central Bank of Nigeria (CBN

Inflation (INF)	Annual percentage change in the general price level of goods and services in Nigeria, typically measured using the Consumer Price Index (CPI).	Central Bank of Nigeria (CBN

Source: Author's Computation (2025)

3.1 Model Specification

This study adopts the model of Johnson and Olayiwola (2020) on the role of export in the economic growth process of Nigeria. The model is specified as:

$$MGDP_t = \sum_{j=1}^{p} \alpha_j \; MGDP_{t-j} + \sum_{j=1}^{p} \beta_j \; TE_{\,t-j} \; + \; \mu_{1t} \; \ldots\ldots\ldots\ldots\ldots\ldots \text{(equ 3.1)}$$

The model is modified and include other control variables like inflation and money supply. The modified model is given below;

$$GDP_t = \alpha_0 \; + \alpha_1 \; EXP_t + \; \alpha_2 \; \; IMP_t + \alpha_3 \; EXR_t + \; \alpha_4 \; INF_t + \; \alpha_5 \; \; M2_t + U_t \ldots\ldots\ldots \text{(equ 3.2)}$$

Where: GDP is the Gross Domestic Product, EXP is export, IMP is import, EXR exchange rate, INF is inflation, M2 is money supply, α_0, α_1 , α_2 α_3 , α_4 and α_5 are parameters to be estimated. U is the error term.

3.2 Nonlinear Autoregressive Distributed Lag (NARDL) specification

To examine the asymmetric impact of export on economic in Nigeria, a Non-Linear Autoregressive Distributed lag (NARDL) was employed. The Nonlinear Autoregressive Distributed Lag (NARDL) model, developed by Shin, Yu, and Greenwood-Nimmo (2014), extends the traditional ARDL framework by allowing for asymmetric effects of independent variables on the dependent variable. This is achieved by decomposing the explanatory variables into their positive and negative partial sums.

The general NARDL specification is as follows:

$$Y_t = \alpha + \sum_{i-1}^{p} \beta_i \, Y_{t-1} + \sum_{j=0}^{q} (\theta_j^{+} \, X_{t-j}^{+} + \theta_j^{-} X_{t-j}^{-}) + \; e_t \ldots\ldots\ldots\ldots (equ\ 3.3)$$

Where: Yt is the dependent variable, X_t^+ is the partial sum of positive changes in Xt, X_t^- is the partial sum of negative changes in Xt, βi is the coefficients of lagged dependent variable, θ_j^+ and θ_j^- are the coefficients for positive and negative changes in the independent variable, p,and ,q are optimal lag orders, and et is the error term.

4. RESULT AND DISCUSSION

This section presents the empirical results and discussion of findings on the asymmetric relationship between exports and economic growth in Nigeria. It includes descriptive statistics, stationarity, cointegration, and NARDL estimations, highlighting both short-run and long-run effects. The section also discusses diagnostic tests confirming model stability and interprets key economic implications of the results.

4.1 Summary Statistics

Table 4.1 presents the summary statistics for six key macroeconomic variables in Nigeria over 35 observations. The average GDP growth is 1.56%, with a maximum of 12.21% and a minimum of -4.60%, indicating significant economic volatility. Exports (XPT) have a high mean of ₦64.42 million, reflecting Nigeria's dependence on foreign trade. Exchange rate (EXR) shows an average of ₦8.04/$, with notable depreciation over time as the maximum is ₦745.80/$, suggesting currency instability. Imports (MPT) average ₦5.07 million, implying strong external consumption. The Consumer Price Index (CPI), with a mean of 7.21 and a standard deviation of 4.73, indicates moderate but fluctuating inflation. Money supply (M2) has a high mean of ₦1.39 million and a wide range, pointing to substantial variation in monetary expansion. These variations underscore Nigeria's macroeconomic instability and justify further empirical analysis.

Table 4.1 Summary statistics

	GDP	EPT	EXR	MPT	CPI	M2
Mean	1.5566	64424656	8.0383	5073769	7.209127	1396098
Maximum	12.210	2.3657	745.8	2.4243	18.87365	1.1047

Minimum	-4.5972	7.611348	8.0383	2.70963	2.3445	391543.5
Std. Dev.	3.6487	6898157	91.4213	6388512	4.72989	2658378
Observations	35	35	35	35	35	35

Source: Generated Using STATA 17.

4.2 Test of Stationarity

Table 4.2 presents the stationarity results using the Augmented Dickey-Fuller (ADF), Phillips-Perron (PP), and Zivot–Andrews (ZA) unit root tests. These tests determine the order of integration of each variable in the study.

From the results, GDP, Exports (EPT), Exchange Rate (EXR), Imports (MPT), and Money Supply (M2) are non-stationary at level but become stationary after first differencing, indicating they are integrated of order one, I(1). This means their time series data have trends or unit roots that need to be differenced once to achieve stationarity.

In contrast, Inflation (INF) and Consumer Price Index (CPI) are found to be stationary at level, i.e., I(0), across all tests. The Zivot–Andrews test further confirms structural breaks in various years (e.g., 2005 for GDP, 2015 for EXR), which supports the robustness of the stationarity results.

These findings justify the application of the Nonlinear ARDL (NARDL) model, which accommodates variables integrated at both I(0) and I(1), making it suitable for this study.

Table 4.2: ADF, PP, and Zivot–Andrews Tests

Variables	ADF test stat		PP test stat		Zivot–Andrews			Oder of integration
	At level	At first diff.	At level	At first diff.	Break Date	At level	At first diff	
GDP	Prob. 0.72796 -1.0464	Prob. 0.0000 -5.29376	Prob.0.72798 -1.04648	Prob. 0.0000 -5.32599	2005	Prob. 0.3434 -3.4945	Prob. 0.000 -6.0483	Stationary at first difference I(1)
EPT	-0.56099 prob. 0.8683	-4.0560 prob. 0.0037	-0.0718 prob. 0.9732	-4.7488 prob. 0.0028	2016	Prob. 0.4757 -3.3466	Prob. 0.000 -6.1143	Stationary at first difference I(1)

EXR	-1.94001 Prob. 0.3114	-6.6505 prob. 0.000	8.3719 prob. 1.0000	8.3719 prob. 1.0000	2015	Prob. 0.27142 -3.721590	Prob. 0.000 -8.1775	Stationary at first difference I(1)
MPT	-3.6992 prob. 1.000	-3.80293 prob. 1.0000	3.4050 prob. 1.0000	-3.1156 prob. 0.0015	2020	Prob. 0.9952 0.85159	Prob. 0.0002 -2.85159	Stationary at first difference I(1)
INF	-3.1668 prob. 0.0290	-3.5778 prob. 0.0000	-3.0268 prob. 0.0403	-7.5299 prob. 0.0000	1995	Prob. 0.000 -5.9272	Prob. 0.000 -6.9272	Stationary at level I(0)
CPI	-2.8602 prob. 0.05850	-5.0955 prob. 0.0000	-3.0827 prob. 0.0369	-6.1956 prob. 0.0000	1988	Prob. 0.010 -4.9365	Prob. 0.000 -6.2265	Stationary at level I(0)
M2	-2.5383 Prob 0.43343	-5.5444 Prob 0.0000	-2.1334 Prob 0.12343	-5.44334 Prob 0.0000	1995	Prob 0.09343 -3.4334	Prob 0.0000 -7.98744	Stationary at first difference I(1)

Source: Generated using STATA 17

4.3 Cointegration Test

The NARDL bounds test presented in Table 4.3 assesses whether a long-run cointegration relationship exists among the variables. The calculated F-statistic is 4.666, which exceeds the 5% upper bound critical value (I(1) = 4.000) for a sample size of 40. Since the F-statistic lies above the upper bound, the null hypothesis of no level (long-run) relationship is rejected at the 5% significance level. This implies that a long-run asymmetric cointegration relationship exists among the variables. Therefore, the NARDL model is appropriate for estimating both short-run and long-run dynamics in the export-growth relationship in Nigeria.

Table 4.3: NARDL Bounds Test

	10%		5%		1%	
Sample Size	I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
35	2.46	3.46	2.947	4.088	4.093	5.532
40	2.427	3.395	2.893	4	3.967	5.455
Asymptotic	2.2	3.09	2.56	3.49	3.29	4.37

Shin, Yu, and Greenwood-Nimmo (2014).

4.4 **Asymmetric Impact of Export on Economic growth in Nigeria**

Table 4.4: Long-run NARDL coefficients, Dependent variable: GDP

Variables	**Coefficient**	**Stand. Error**	**t-stat**	**Prob.**
EPT_POS	-0.53768	0.01403	-38.3239	0.0000
EPT_NEG	0.37815	0.07592	4.98202	0.0005

MPT	0.88386	0.15960	5.55885	0.0006
INF	-0.09549	0.02860	-3.4084	0.0066
EXR	0.2343	0.03434	6.2894	0.0012
CPI	0.1983	0.01456	13.6195	0.0000
M2	-0.09767	0.02455	3.97841	0.0002
Constant	-0.307464	0.117089	-2.625906	0.0221

Source: Generated using STATA 17

Table 4.4 reveals a significant asymmetric relationship between exports and economic growth in Nigeria. The coefficient of EPT_POS (-0.53768) is negative and highly significant, suggesting that positive export shocks (increases in exports) lead to a decline in GDP. This counterintuitive outcome may be attributed to Nigeria's overreliance on crude oil exports, which often results in Dutch Disease, where booming export revenues cause neglect of productive non-oil sectors, currency appreciation, and misallocation of resources. Additionally, revenues from export booms may be mismanaged or lost to corruption, reducing their growth-enhancing effect. On the other hand, EPT_NEG (0.37815) is positive and significant, indicating that declines in exports are associated with higher economic growth. This may reflect Nigeria's structural response to export downturns—such as renewed domestic production, currency devaluation fostering import substitution, or increased government focus on non-oil sectors.

Other variables show expected signs. MPT (0.88386) suggests imports contribute positively to GDP, possibly due to the inflow of capital goods. EXR (0.2343) indicates that naira depreciation supports growth by making exports more competitive. INF (-0.09549) negatively affects GDP, reflecting inflation's distortionary effect. M2 (-0.09767) indicates excessive money supply may fuel inflation and reduce real growth, while CPI contribute positively to growth.

Table 4.5: Short-run NARLD coefficients, Dependent variable: GDP

Variables	**Coefficient**	**Stand. Error**	**t-stat**	**Prob.**
D(GDP (-1))	0.65946	0.1678	3.93734	0.0006
EPT_POS	0.94349	0.1107	1.9617	0.0602
EPT_NEG	0.27881	0.1760	8.5220	0.0009
D(MPT)	0.20427	0.0446	4.5809	0.0006
INF(-2)	0.08117	0.0143	5.6765	0.0008

D(EXR)	-0.7863	0.1462	-5.3781	0.0005
D(CPI(-1))	0.0923	0.0233	3.9631	0.0006
D(M2(-1))	0.1756	0.0589	2.9772	0.0001
ECM(-1)	-0.69763	0.1296	-5.3816	0.0000
R-Square = 0.762890				
Durbin-Watson = 2.729				
F-Stat. = 6.768				

Source: Generated using STATA

Table 4.5 presents the short-run dynamics of the NARDL model estimating the impact of exports and macroeconomic variables on GDP in Nigeria. Focusing on the export, EPT_POS (0.94349) is positive but only marginally significant ($p = 0.0602$), suggesting that increases in exports have a modest and delayed short-run effect on GDP. In contrast, EPT_NEG (0.27881) is strongly significant ($p < 0.01$), showing that a short-run decline in exports significantly increases GDP. This paradox may reflect Nigeria's tendency to reallocate focus towards domestic production or receive compensatory government spending in times of export shocks, thereby boosting short-term growth.

Other variables also exhibit meaningful relationships. D(MPT) (0.20427) suggests that increases in imports, particularly of capital or intermediate goods, positively influence GDP. INF(-2) (0.08117) is positive and significant, possibly capturing inflationary adjustments with a lag that temporarily stimulates economic activity. However, D(EXR) (-0.7863) is negative and significant, indicating that exchange rate depreciation initially harms GDP, perhaps through rising import costs or uncertainty. D(CPI(-1)) and D(M2(-1)) also show positive, significant effects, highlighting the short-term roles of consumer spending and liquidity expansion in supporting output growth

The Error Correction Term (ECM) coefficient of -0.6976 is negative and statistically significant, confirming the existence of a stable long-run relationship among the variables. It implies that approximately 69.8% of the deviation from the previous period's equilibrium is corrected in the current period. This relatively high speed of adjustment indicates that when shocks push GDP away from its long-run path, it quickly reverts to equilibrium within a short time frame.

4.3 Diagnostic Test

The diagnostic tests presented in the appendix confirm the robustness and reliability of the estimated NARDL model. The multiplier graph illustrates asymmetric effects of export shocks on GDP, with negative shocks having a stronger impact than positive ones. The Breusch-Pagan-Godfrey test results show no evidence of heteroskedasticity, confirming constant error variance and reliable standard errors. CUSUM and CUSUM of Squares plots indicate model stability, though the latter approaches the boundary near the end, suggesting slight variance shifts. Additionally, the histogram of residuals shows approximate normality, supported by a bell-shaped curve. However, the Jarque-Bera test statistic of 2.39 with a p-value of 0.032 indicates a mild deviation from normality.

Skewness (-0.13) and kurtosis (1.66) values reflect slight asymmetry and lower-than-normal peakness.

4.4 Discussion

The findings of this study reveals a significant asymmetric relationship between exports and economic growth in Nigeria, consistent with recent literature. In the long run, positive export shocks (EPT_POS) negatively impact GDP, while negative export shocks (EPT_NEG) positively influence growth. This contradicts the traditional export-led growth hypothesis and supports the findings of Adegbite, Ogunrinola, and Akinbobola (2020), who also reported that Nigeria's overreliance on oil exports yields inconsistent growth outcomes due to poor diversification and governance. However, Okonkwo and Ezeabasili (2021) found a positive long-run effect of exports on growth, showing that structural differences in methodology and export composition may influence outcomes.

In the short run, EPT_NEG remains significant and positive, suggesting a temporary adaptive response to export declines—likely driven by increased domestic production or policy interventions. The insignificant short-run impact of EPT_POS mirrors results by Nduka and Ogwuru (2020), who noted that Nigeria’s growth is not export-driven in the short term, especially when dominated by raw materials.

Imports (MPT) have a consistently positive and significant effect on GDP in both the short and long run, similar to findings by Adediran and Olayemi (2020), who argued that capital goods imports support productive capacity in Nigeria.

Exchange rate (EXR) has a mixed effect: positive in the long run but negative in the short run. This aligns with Aliyu and Isah (2022), who found that depreciation initially disrupts economic activity due to import dependency, but benefits exports in the long term.

Inflation (INF) has a negative long-run impact, confirming its distortionary role as reported by Ogundipe et al. (2021), but its short-run positive lag effect may reflect price adjustments. Money supply (M2) shows a negative long-run effect but a positive short-run impact, indicating that excess liquidity may boost activity in the short term but fuel inflation in the long run—consistent with Olanrewaju and Okonkwo (2023).

In general, the study highlights the complexity of Nigeria's macroeconomic structure and the limitations of traditional linear models in explaining export-growth dynamics.

5. CONCLUSION AND RECOMMENDATIONS

This section provides the conclusion and recommendations of the study, summarizing the key findings on the asymmetric effects of exports on Nigeria’s economic growth. It emphasizes policy actions such as export diversification, institutional reform, and sustainable industrialization to achieve long-term economic stability and reduce dependence on oil exports.

This study examined the asymmetric relationship between exports and economic growth in Nigeria using the Nonlinear ARDL (NARDL) approach. The results revealed significant asymmetries: positive export shocks negatively affected GDP, while negative shocks unexpectedly spurred growth. These findings contradict the traditional Export-Led Growth (ELG) hypothesis and highlight the structural weaknesses of Nigeria’s export economy, particularly its heavy reliance on crude oil. Other variables—imports, exchange rate, inflation, money supply, and consumer prices—also significantly influenced GDP, but with varying effects across the short and long term.

5.1 Conclusion

The study concludes that Nigeria's current export structure is not conducive to sustained economic growth. The adverse effect of positive export shocks suggests that oil-driven booms have not translated into inclusive development, likely due to weak institutional frameworks and poor diversification. The findings signal the urgent need for a restructured, resilient export strategy.

5.2 Recommendations

The study provides the following recommendations;

i. There is need to diversify the export base beyond oil, with a focus on promoting non-oil sectors such as agriculture, manufacturing, and services.
ii. Government support should include trade incentives, improved logistics, and strategic use of platforms like AfCFTA.
iii. Domestic production must be enhanced through infrastructure development, SME support, and local content policies to reduce import dependence and stimulate internal economic activity. Transparent and productive use of export revenues, particularly from oil, is essential for long-term development.

The policy implication is clear: Nigeria must transition from commodity dependence to a value-added, diversified export economy. Sustainable growth will depend on institutional reforms, macroeconomic stability, and a strategic shift toward inclusive, export-driven industrialization.

REFERENCES

Adediran, O. S., & Olayemi, S. O. (2020). Non-oil export and economic growth nexus in Nigeria: An autoregressive distributed lag (ARDL) approach. *International Journal of Economics and Financial Issues*, *10*(4), 140–146.

Adegbite, A. E., Ogunrinola, I. O., & Akinbobola, T. O. (2020). Oil exports and economic performance in Nigeria: Asymmetric evidence from NARDL approach. *African Journal of Economic Policy*, *27*(1), 1–22.

Akinlo, A. E. (2004). Foreign direct investment and growth in Nigeria: An empirical investigation. *Journal of Policy Modeling*, *26*(5), 627–639.

Aliyu, A. M., & Isah, S. A. (2022). Exchange rate volatility and economic performance in Nigeria: Evidence from nonlinear ARDL approach. *African Journal of Economic Policy*, *29*(1), 75–92.

Awokuse, T. O. (2008). Export-led growth and the role of agglomeration economies. *Journal of Macroeconomics*, *30*(3), 1168–1182.

Balassa, B. (1978). Exports and economic growth: Further evidence. *Journal of Development Economics*, *5*(2), 181–189.

Balassa, B. (1985). Exports, policy choices, and economic growth in developing countries after the 1973 oil shock. *Journal of Development Economics*, *18*(1), 23–35.

Barro, R. J., & Sala-i-Martin, X. (2019). *Economic growth* (2nd ed.). MIT Press.

Central Bank of Nigeria (CBN). (2022). *Statistical bulletin*.

Feder, G. (1983). On exports and economic growth. *Journal of Development Economics*, *12*(1–2), 59–73.

Giles, J. A., & Williams, C. L. (2000). *Export-led growth: A survey of the empirical literature and some non-causality results* (Econometrics Working Paper EWP0001). University of Victoria.

Helpman, E., & Krugman, P. R. (1985). *Market structure and foreign trade: Increasing returns, imperfect competition, and the international economy*. MIT Press.

International Monetary Fund (IMF). (2020). *Nigeria: Staff report for the 2020 Article IV consultation* (IMF Country Report No. 20/33).

Johnson, D. A., & Olayiwola, K. (2020). The role of export in the economic growth process of Nigeria. *Nigerian Journal of Economic and Social Studies*, *62*(2), 101–118.

Krugman, P. R., & Obstfeld, M. (2018). *International economics: Theory and policy* (11th ed.). Pearson Education.

Nduka, E. K., & Ogwuru, H. O. (2020). Export diversification and sustainable economic growth in Nigeria: Evidence from ARDL model. *Nigerian Journal of Economic and Social Studies*, *62*(3), 55–74.

Ogundipe, A. A., Oyetunji, A. A., & Ogunniyi, A. (2021). Inflation and economic performance in Nigeria: A disaggregated approach. *International Journal of Economics, Commerce and Management*, *9*(6), 45–60.

Okonkwo, O., & Ezeabasili, A. C. C. (2021). Trade structure, openness and economic growth in Nigeria: Evidence from ARDL bounds test. *Journal of Applied Economic Sciences*, *16*(1), 112–121.

Olanrewaju, S. A., & Okonkwo, O. S. (2023). Money supply and macroeconomic stability in Nigeria: A structural modeling approach. *Nigerian Journal of Economic Policy*, *30*(2), 55–70.

Olayiwola, K., & Okodua, H. (2010). Foreign direct investment, non-oil exports, and economic growth in Nigeria: A causality analysis. *Asian Economic and Financial Review*, *1*(3), 1–10.

Romer, P. M. (1990). Endogenous technological change. *Journal of Political Economy*, *98*(5, Part 2), S71–S102.

Salvatore, D. (2019). *International economics* (13th ed.). Wiley.

Shin, Y., Yu, B., & Greenwood-Nimmo, M. (2014). Modelling asymmetric cointegration and dynamic multipliers in a nonlinear ARDL framework. In R. Sickles & W. Horrace (Eds.), *Festschrift in honor of Peter Schmidt* (pp. 281–314). Springer.

Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics*, *70*(1), 65–94.

Todaro, M. P., & Smith, S. C. (2020). *Economic development* (13th ed.). Pearson Education.

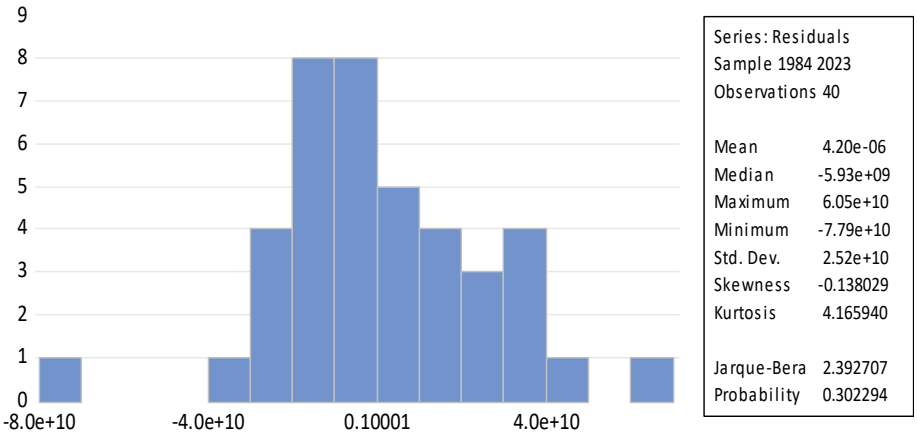
APPENDIX

HETEROSKEDASTICITY

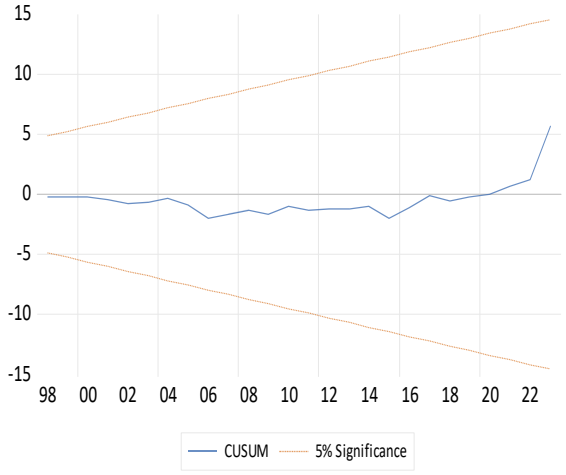
Heteroskedasticity Test: Breusch-Pagan-Godfrey

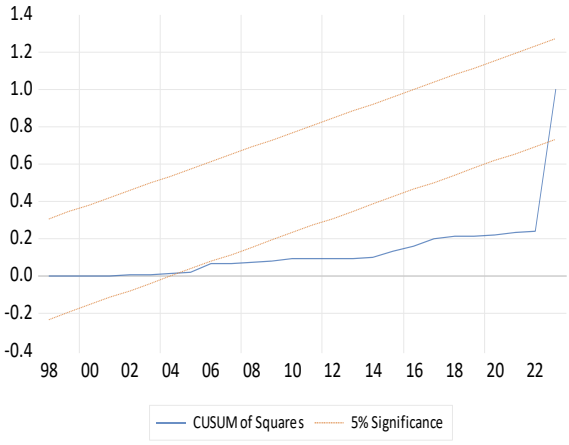
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
Null hypothesis: Homoskedasticity			
F-statistic	1.645667	Prob. F(13,26)	0.13551
Obs*R-squared	18.056146	Prob. Chi-Square(13)	0.15539
Scaled explained SS	12.076038	Prob. Chi-Square(13)	0.52148

NORMALITY TEST



STABILITY TEST


15
10
5
0
-5
-10
-15
98 00 02 04 06 08 10 12 14 16 18 20 22
CUSUM
5% Significance


1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
98 00 02 04 06 08 10 12 14 16 18 20 22
CUSUM of Squares
5% Significance