



Effect of foreign trade on inclusive growth in Nigeria: A Vector Error Correction Model (VECM) approach.

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Abstract

This study explored the effect of foreign trade on inclusive growth in Nigeria, focusing on the critical role of trade openness in fostering inclusive economic growth. Specifically, the study investigated the relationship between inclusive growth (IGRT) and important macroeconomic factors including trade openness (OPEN), labour force participation (LAB), exchange rate (EXR), foreign direct investment (FDI), and inflation (INF) from the period of 1985 to 2023. Secondary data were obtained from the World Development Indicators and the Central Bank of Nigeria. The Vector Error Correction Model technique was employed to capture both short-run and long-run dynamics. The findings reveal that trade openness has a positive but moderate long-run influence on inclusive growth, with a coefficient of 0.006, statistically significant at the 5% level. In contrast, inflation and exchange rate depreciation were found to have negative effects on inclusive growth, with inflation significantly undermining growth inclusivity. Labour force participation positively promotes inclusive growth, whereas foreign direct investment (FDI) appears to have a minimal impact. The short-run dynamics indicate that trade openness and other variables have limited direct effects on inclusive growth, with structural rigidities in Nigeria's economy slowing the adjustment process. The study concluded that trade openness helps to promote inclusive growth, but its influence is moderate and requires additional policies such as human capital development, infrastructural upgrades, and exchange rate stabilisation to fully achieve its inclusivity. Policymakers should prioritise trade facilitation measures, reduce tariff and non-tariff barriers, and investing in trade-enabling infrastructure.

Keywords: Foreign trade, Inclusive growth, Trade openness, Vector Error Correction Model, Nigeria.

Introduction

Sustainable development relies on inclusive growth as its fundamental principle, because it means economic expansion that promotes equitable distribution among various economic groups of society and reduces income inequality to ensure all members can avail equal opportunities (Bhatt et al., 2024). Increased economic growth indicators exist in developing economies but does not translate to inclusive growth, Nigeria, faces the challenge of achieving broad-based growth benefits for general populace. Hence, this highlights the need to identify key factors that promote inclusive growth across various sectors of the economy. Participation in international trade as manifested through trade openness constitutes one possible factor that improve inclusive growth (Agyei&Idan , 2022; Ajayi et al. , 2024; Asghar et al., 2024; Ratombo & Mongale, 2024; Wasim et al. , 2022).

The relationship between trade openness and inclusive growth in Nigeria attracts increased scholarly debates because of special economic conditions and social institutions together with political characteristics (Ajayi et al., 2024; Gonese et al., 2023; Onuogu et al., 2024). Recent studies identify inclusive growth as a multiple-dimensional concept that includes household consumption together with exports along with investments and education and income per capita as vital components leading to improved inclusive results (Hidayat et al., 2020). The long-term relationship between trade openness and inclusive growth in Nigeria emerged from the study conducted by Ajayi et al. (2024) thus showing potential benefits for equitable economic outcomes from increased trade openness. The relationship between trade activities and institution development and its

impact on inclusive development continues to be complicated. Existing studies presents conflicting insights regarding the unimportant functions of institutional infrastructure which showcases that the trade openness and inclusive growth relationship is more complex than originally thought. Various studies from Ajayi et al. (2024) and Osei (2020) confirm that trade openness positions favorably impacts economic growth though sufficient institutional strength and infrastructural development enhances its ability to be inclusive.

The investigation of trade-inclusive growth relations in various countries throughout literature reveal major gaps about Nigeria's specific experience. Nigeria's domestic economic framework defined by oil exports and extensive infrastructural shortages features an uncommon challenge to drive inclusive development since various studies show contradictory findings on trade liberalisation in Asia (Brooks & Go, 2012) and Latin America (Angulo-Bustinza et al., 2022). The debate about trade openness and inclusive growth development occurs because its effects produce different results in different economic contexts. The combination of trade openness policies tends to create increased economic growth yet the evidence indicates it worsens inequalities among nations which do not maintain proper institutions and insufficient basic infrastructure. Bacchetta et al. (2021) argued that income inequality worsens when emerging economies face challenges of trade competition, hence they highlighted the critical role of trade policies that consider local disparities. Increase in unemployment and wage inequality cannot

be avoided when countries implement trade liberalisation and they are characterised by weak institutions (Joseph, 2013 & Kayizzi-Mugerwa, 2016). Hence, this study is imperative to investigate trade openness' impact on inclusive growth because there are still few studies in Nigeria that exist. Moreover, there is still a lack of complete understanding of particular pathways through which trade openness affects inclusive growth in Nigeria.

This study employs Vector Error Correction Model (VECM) to determine both short-run and long-run dynamics between trade openness and inclusive growth within Nigeria. This study investigates how trade openness affects inclusive development in Nigeria. This study concentrates on Nigeria to investigate the elements which shape trade openness effects on inclusive growth while developing policy ideas to promote fair economic development across the country. The study analyzes how strongly trade openness drives inclusive growth in Nigeria through its fundamental question. Hence, the research question serves to explore the intricate relationship between trade openness and its effects on inclusive growth within Nigeria with the intention of creating implementable recommendations for policymakers who want to develop trade and development approaches for economic equity.

This paper presents its sections methodically to evaluate the research problem. The first part introduces the study before moving on to evaluate previous studies on trade openness effects on inclusive growth. The methodology section describes the analysis approach by explaining in detail the implementation of

VECM. This study concludes with policy implications after showing empirical findings along with their discussion section.

Literature

Empirical Literature

Economists have studied the relationship between trade activities and economic growth together with inclusivity for many years. Literature focuses on determining how foreign trade influences multiple aspects of emerging market economic growth while simultaneously promoting wider distribution of resulting benefits. Inclusive growth focuses on equality of economic progress benefits; it should enhance quality of life across every segment of society regardless of their economic position.

Variants of conflicting findings emerge on the effect of exports on inclusive growth in Nigeria. In the study of Elvis et al. (2019) show that oil together with non-oil exports initially boost inclusive growth yet create negative effects when observing periods beyond the short-term as real GDP per capita decreases. Trade produces temporary advantages that turn into structural challenges according to their findings which demonstrates how the timeline of trade effects operates. Moreover, Ajayi et al. (2024) demonstrated trade openness and inclusive growth have a positive connection in Nigeria; they emphasised that institutional infrastructure serves as a vital mediator of between trade openness and inclusive growth. They demonstrated that trade achieves growth-alleviating potential but insufficient institutional structures reduce the potential for inclusive development therefore

demanding simultaneous trade liberalisation and institutional reform.

In Asia, Tambunan (2021) demonstrates that Indonesia faces uneven distributive growth between its regions because access to technology and energy enable inclusive benefits to reach all areas. Infrastructure inequality stands as a major impediment in the way of reaching equitable growth because of the extensive disparities reported by Indonesian research. Hidayat et al. (2020) extend the understanding of inclusive growth by describing three important components which include household spending and investment and educational development. The study confirms that inclusive growth requires more than just trade because it needs a comprehensive strategy which includes education programmes and changes to consumption patterns together with improvement in fundamental infrastructure.

In the study regarding trade and inclusive growth development continues to provide additional findings from across the international field. According to Osei (2020) the growth potential from intra-regional trade combines with extra-regional trade to enhance inclusive growth but the second component generates stronger effects. Political stability together with regional trade agreements determine how much the GDP expands because of international trade. The study shows that trade openness needs proper analysis through geopolitical structures alongside institutional frameworks to achieve meaningful analysis. Lederman (2013) found international trade affects households and firms, because trade creates

opportunities but needs proper policy controls to prevent income inequality.

Fauzel (2016) examines trade and inclusive development in Mauritius through dynamic model framework to assess the effects of trade openness upon growth in small island economies. His study shows how trade creates positive impact on inclusive economic expansion especially for countries which depend on exports as their main foreign exchange earnings. The study in conformity with the study of Osei (2020) and other studies that trade creates general economic expansion yet policymakers should dedicate active measures to distribute these benefits equitably throughout society.

Moreso, study conducted in Western Africa presents additional evidence for this ongoing debate. Trade openness throughout the West Africa Economic and Monetary Union (WAEMU) region produces delayed positive effects on inclusive growth in the findings of Fall et al. (2021) while manufactured exports drive forward economic development in the region. The authors stress that trade benefits are distributed unevenly thus policymakers need to create specialised policies that will resolve industry-specific difficulties across different regions. However, looking at China and Peru, Angulo-Bustinza et al. (2022) investigated on the trade link between Peru and China serves as an illustration of inclusivity challenges in global commerce. The authors demonstrated that Peru experienced a substantial increase in trade with China but this trade growth failed to distribute income and wealth benefits evenly throughout the population. The findings of Lederman (2011) supports Angulo-Bustinza

et al. (2022) because he argues that trade liberalisation generates economic growth yet it might cause greater inequality unless countries implement domestic plans to distribute trade benefits equitably.

Trade openness has a positive influence on inclusive growth throughout Jordan, based on results from Arabiyat et al. (2020), though specific local variables such as poverty levels and income inequality determine its direct effects. Trade-inclusivity relations demand specific and localized factors as evidence shows this relationship varies according to individual contexts. Agyei and Idan (2022) proved through their findings that institution quality becomes essential for sub-Saharan Africa to maximally use trade openness as a driver of inclusive growth. This indicated that economic trade alone is not sufficient for economic expansion there is need for strong institutions to achieve proper distribution of trade advantages throughout the population. Bacchetta et al. (2021) emphasised that emerging economy competition through trade creates worsened inequalities though it produces overall benefits for the economy. They support trade policies that achieve balance by taking into account how particular business sectors and particular communities get harmed and propose reverse measures to decrease these adverse consequences. The Indian economy under free trade policies experienced enhanced economic growth without creating new employment opportunities while wages across all levels became increasingly severe (Joseph, 2013). The openness of trade requires complementary measures to strengthen the labour markets and industries because their

structural issues get in the way of promoting inclusive growth.

The study of Kayizzi-Mugerwa (2016) in South-East Asia provides insights into trade-openness and investment connections to inclusive growth. Economic expansion through trade has occurred in the region yet inadequate infrastructure and fragile institutions along with limited financing possibilities prevent the realisation of inclusive growth. The need exists to build all-encompassing developmental policies that extend beyond normalising trade barriers since modern development faces multiple structural barriers to fairness.

In conclusion, the literature on foreign trade on inclusive economic growth revealed that the relationship between international trade and distributive economic success exists as an elaborate and complicated system. The openness of trade markets drives economic growth but requires strong institutions along with quality infrastructure together with strategic policies which solve problems in both geographical zones and different industries. Trade functions as a significant instrument for creating inclusive growth when institutions, education systems and technological capabilities and reform policies are implemented together. Hence, the identification of trade-enforced income inequality mechanisms and policy development methods for vulnerable population protection remains an essential, unaddressed scientific question.

Methodology

Data Source and Model Specification

The study uses secondary dataset from 1985 to 2023 with the following variables, IGRT for inclusive growth and OPEN for trade openness and LAB for labour force participation and EXR for exchange rate and FDI for foreign direct Investment and INF for inflation. The data were sourced from the World Development Indicators (WDI) published by World Bank and the Statistical Bulletin published by the Central Bank of Nigeria (CBN). Hence, the functional relationship between these variables is specified as follows;

$$IGRT_t = f(OPEN_t, LAB_t, EXR_t, FDI_t, INF_t) \quad t = 1, 2, 3, \dots, N \quad (1)$$

In econometric form, equation 1 will therefore be:

$$IGRT_t = a_0 + a_1 OPEN_t + a_2 LAB_t + a_3 EXR_t + a_4 FDI_t + a_5 INF_t + \varepsilon_t \quad (2)$$

Where $\ln = \text{Natural logarithm}$

Measurement of Inclusive Growth

The index of inclusive growth was constructed using the analytical framework developed by Anand et al (2014) to articulate the model that was estimated, where growth in income and equity are combined into an index of inclusive growth as follows:

$$\frac{dy^*}{y^*} = \frac{dy}{y} + \frac{dw}{w}$$

(3)

Where, $\frac{dy^*}{y^*}$ denotes Inclusive Growth, $\frac{dy}{y}$ is the growth in income per capita and $\frac{dw}{w}$ is the growth inequality.

Estimation Technique

The Short-run and long-run dynamic analyses of vector error correction model technique (VECM) was used as a restricted form of VAR which provides modeling capability when variables are cointegrated. The model provides valuable results for long-run forecast prediction because VAR does not consider explicit relationships between variables over time.

$$\Delta \begin{bmatrix} IGRT_t \\ \ln OPEN_t \\ EXR_t \\ FDI_t \\ INF_t \end{bmatrix} = \alpha_0 + \sum_{i=1}^{K-1} \lambda_i \Delta \begin{bmatrix} IGRT_{t-i} \\ \ln OPEN_{t-i} \\ EXR_{t-i} \\ FDI_{t-i} \\ INF_{t-i} \end{bmatrix} + \pi \begin{bmatrix} IGRT_{t-1} \\ \ln OPEN_{t-1} \\ EXR_{t-1} \\ FDI_{t-1} \\ INF_{t-1} \end{bmatrix} + \mu_t \quad (4)$$

In the equation (4) above, where; π captures the long-run cointegration relationships, λ captures short-run dynamics, α is a constant, all other variables as stated above.

Results and Discussion

Stationarity Analysis

The unit root tests conducted on the data showed that all variables are nonstationary at their levels but they were stationary after first differencing based on Table 1 results from the Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests. The findings at first difference for most variables create support

for the results through p-value and significance test statistics that exceed the critical limits of 5% and 1% respectively. Meanwhile, the high significant p-values (0.0000) indicates, inclusive growth (IGRT), foreign direct investment (FDI) and trade openness (OPEN) exhibit strong stationarity at first difference. This indicates that these variables are integrated of order one, I(1).

Similarly, log of exchange rate (InEXR) and labour force participation (LAB) also follow the same pattern, although their level test results indicate weaker stationarity characteristics. For instance, LAB is non-

stationary at both the ADF and PP tests at levels, with p-values of 0.3818 and 0.4616, respectively. However, they achieve strong stationarity after differencing them due to highly significant p-values (0.0000). In the same vain, inflation (INF) not stationary at level at both ADF and PP but becomes stationary at first difference, with p-values below the 5% significance level. These results confirm that all variables in this study meet the requirements for further time series analysis, particularly for cointegration test for long run equilibrium, which necessitate variables to be integrated of the same order which shall be discussed in Table 3

Table 1: Unit root tests

Variables	Level		First Difference		Integration Order
	ADF	PP	ADF	PP	
IGRT	-4.11324 0.0027 *	-4.030324 0.0033 *	-4.549185 0.0009 *	-24.50942 0.0000 *	I(1)
INEXR	-2.8059 0.2043 n0	-3.8641 0.0052 *	-3.6323 0.0097 *	-3.5286 0.0126	I(1)
FDI	-4.0212 0.0163	-3.9371 0.0199	-9.5328 0.0000 *	-14.5897 0.0000 *	I(1)
OPEN	-3.25786 0.0242	-3.132958 0.0324	-4.974183 0.0003 *	-15.4932 0.0000 *	I(1)
INF	-2.3022 0.4205 n0	-2.9542 0.158 n0	-4.5667 0.0055 *	-6.4329 0.0000 *	I(1)
LAB	-2.3835 0.3818 n0	-2.2273 0.4616 n0	-6.3888 0.0000 *	-6.6843 0.0000 *	I(1)

(***)Significant at the 10%; (**)Significant at the 5%; (*) Significant at the 1% and (no) Not Significant

Lag Order Selection Criteria

The VAR lag order selection criteria presented in the Table 2 indicates that the appropriate lag length for the model depends on the specific criterion used. Each of the

criteria—sequential modified likelihood ratio (LR) test statistic, Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Information Criterion (SC), and

Hannan-Quinn Criterion (HQ)—offers guidance for selecting the optimal lag length, with differing results.

According to the SC test statistic, the optimal lag length is 1, as it yields the largest significant test value (30.84844) at the 5% level. Similarly, the LR, FPE, AIC and HQ criteria also identify lag 3 as optimal, as evidenced by the lowest values for these criteria (55.651752 for LR, 40293.62 for FPE, 26.91982 for AIC and 26.91982 for HQ). These results suggest that a single lag is

sufficient to capture the dynamic relationships among the variables while minimising prediction error and ensuring model efficiency.

On the other hand, the AIC criterion selects lag 3 as optimal, as it provides the lowest value (26.91982) at this lag. Hence, selection AIC of lowest value of lag 3 **was used in this study** as suggests that including additional lags might capture more information about the relationships between the variables at the expense of simplicity.

Table 2:VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-626.79	NA	74615971	35.155	35.41896	35.24716
1	-480.02	236.467	163379.7	29.001	30.84844*	29.64581
2	-429.48	64.5735	86752.8	28.1935	31.62441	29.39095
3	-370.56	55.65175*	40293.62*	26.91982*	31.9343	28.67001*

* Indicates lag order selected by the criterion

Source: Author's computation based on E-view 9 (2025).

Cointegration test

The optimal lag length selection for the model occurs through the use of the Akaike information criterion (AIC). The analysis uses 6 as the maximum allowed lag length in the tests. The analysis demonstrated that all the variables lack stationary characteristics when examined at level data but they become stationary after applying first differences to the entire set of variables. The investigation of cointegration properties for the model should be the first step before continuing with model estimation.

The Table 3A reveals four cointegrating equations in this model according to the trace test but the maximum eigen-value test from Table 3B confirms this number of significant cointegrating equations at 5%.

The detection of no spurious regression risks makes it possible to carry out the model estimation. The ECM should be used to bind short-run disequilibrium to long-run value in this relationship. AIC was selected as the method to identify the optimal number of lags needed for the model.

Table 3A: Result of Unrestricted Cointegration Rank Test (Trace)

Hypothesised		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.
None *	0.92048	208.705	95.75366	0.0000
At most 1 *	0.77951	120.093	69.81889	0.0000
At most 2 *	0.64738	67.1775	47.85613	0.0003
At most 3 *	0.39168	30.6953	29.79707	0.0393
At most 4	0.25986	13.2986	15.49471	0.1043
At most 5	0.07601	2.76679	3.841466	0.0962

* Denotes rejection of the hypothesis at the 0.05 level

Table 3B: Maximum Eigenvalue test

Hypothesised		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.
None *	0.920481	88.61166	40.07757	0.0000
At most 1 *	0.779505	52.91586	33.87687	0.0001
At most 2 *	0.647375	36.48224	27.58434	0.0028
At most 3 *	0.391675	17.39663	21.13162	0.1541
At most 4	0.259856	10.53186	14.26460	0.1793
At most 5	0.076007	2.766786	3.841466	0.0962

Max-eigenvalue test indicates 4 cointegratingeqn(s) at the 0.05 level

* Denotes rejection of the hypothesis at the 0.05 level

Source: Author's computation (2025)

Short run estimate regression results

In the Table 4 below the short-run dynamics reveal the relationship between inclusive growth (IGRT) and its lagged values, as well as the explanatory variables. The error correction term (ECT) has a coefficient value of -0.032 and a statistically weak t-statistic of -0.48 indicating it is insignificant. The insignificant result along with a weak adjustment factor indicates that short-run corrections of long-run equilibrium deviations do not occur. The result highlights slow

equilibrium recovery after shocks because of economic structure rigidity in Nigeria's market. The short-term dynamics of inclusive growth become observable through changes that happen one and two periods later ($D(IGRT(-1))$ and $D(IGRT(-2))$) to its current value. $D(IGRT(-1))$ has a negative and statistically significant coefficient of -0.439 with a t-statistic of -2.06, indicating that previous periods' decline in inclusive growth negatively influence current growth. This suggests a persistence of negative shocks over

time. The coefficient value of $D(IGRT(-2))$ amounts to 0.055 which indicates no significant effect. Rapid action should be taken during short-term economic downturns to stop their continued negative impact on growth inclusiveness. The coefficients for trade openness variables $D(OPEN(-1))$ and $D(OPEN(-2))$ show positive relationships with values of 0.006 and 0.002. The coefficients are statistically insignificant because their t-statistics (1.21 and 0.56) remain below the critical thresholds. The variations of trade openness create limited short-term effects on inclusive growth patterns. The study demonstrates that trade benefits from reform initiatives need extended outlooks because essential supportive measures including education investments and infrastructure initiatives and trade facilitation need time to manifest.

A mixed outcome appears in different independent variables which incorporate foreign direct investment (FDI), inflation (INF), and labour force participation (LAB) and exchange rate (InEXR). None of these variables demonstrate significant short-run effects, as all t-statistics are below critical values. For example, the lagged changes in exchange rate ($D(InEXR(-1))$ and $D(InEXR(-2))$) and FDI ($D(FDI(-1))$ and $D(FDI(-2))$) show inconsistent signs but remain insignificant. Similarly, inflation and labour force participation fail to exhibit notable short-run impacts. The low R-squared value of 0.437, and F-statistic of 1.32 show that the short-run relationships operate weakly between these variables thus indicating the challenging nature of achieving inclusive growth alongside the requirement of specific targeted policies.

Table 4: Short run dynamics of foreign trade and Inclusive growth in Nigeria.

	Coefficient	Standard error	t-statistics
ECT	-0.032	-0.067	-0.479
$D(IGRT(-1))$	-0.439	-0.213	-2.058
$D(IGRT(-2))$	0.055	-0.208	0.262
$D(OPEN(-1))$	0.006	-0.005	1.213
$D(OPEN(-2))$	0.002	-0.004	0.561
$D(INEXR(-1))$	0.578	-1.929	0.299
$D(INEXR(-2))$	-0.422	-1.989	-0.212
$D(FDI(-1))$	0.171	-0.375	0.455
$D(FDI(-2))$	0.271	-0.492	0.551
$D(INF(-1))$	-0.023	-0.026	-0.895
$D(INF(-2))$	0.005	-0.029	0.168
$D(LAB(-1))$	-0.103	-0.12	-0.86

D(LAB(-2))	0.029	-0.095	0.303
C	-0.024	-0.402	-0.061
R-squared	0.437		
Adj. R-squared	0.105		
F-statistic	1.316		

Source: Author's computation from Eview(9.0)

Long run estimate (Normalise Cointegrating) regression results

The normalized cointegrating coefficient results of relationship between inclusive growth (IGRT) and the explanatory variables: trade openness (InOPEN), inflation (INF), exchange rate (InEXR), labour force participation (LAB), and foreign direct investment (FDI). Presented in Table 4 and is shown in its implicit form in equation 5, therefore to make it interpretable, it is rewritten by changing the signs. The explicit form is given by equation 6. As a consequence, the coefficient for trade openness (InOPEN) is 0.006, showing a positive but limited long-run influence on inclusive development. The t-statistic of 3.39 supports this impact as statistically significant at conventional levels of 5%. This study implies that higher trade openness increases inclusive growth in Nigeria, but with a moderate impact. However, the modest extent of the effect might reflect structural limitations, such as insufficient domestic value addition or poor export diversification. This evidence supports that foreign trade requires supplementary policies and actions which will bring out maximum benefits from international trading.

An increase in inflation (INF) brings about a negative effect (-0.077) on inclusive growth in the long-run based on the results. This is confirmed by the significance of the effect through the t-statistic value of -7.79 which demonstrates how high inflation destabilizes growth inclusivity. Rising inflation creates several destructive impacts by reducing purchasing power along with savings value and discouraging investment and reduce inclusive growth. Stable prices maintain a fundamental role in creating an appropriate economic development and inclusion-friendly environment for Nigeria's growth. The identification of price instability underlines the need for effective inflation management approaches because unstable prices reduce purchasing power and slow productive investments that form brings about shared growth development.

The exchange rate variable (InEXR) has a statistical significance with a value of -0.794 as well as a t-statistic of -3.93. The result also shows that exchange rate depreciation generates negative impacts on inclusive growth. An exchange rate depreciation increases import prices and increases inflation, which causes hardships for vulnerable people. The results in Table 5 below also revealed that labour force

participation (LAB) has a positive relationship on inclusive growth because it produces a significant coefficient of 0.106 which has a t-statistic value of 3.98. This relationship highlights the important role of human capital utilisation in growth trajectory. Conversely, the coefficient for foreign direct investment (FDI) is positive at 0.144 but statistically insignificant, given the t-statistic

is -1.27. This shows channeling FDI into industries that directly impact inclusive growth is challenging, this may be responsible for the insignificance. The findings show that while international trade and human capital characteristics greatly affect inclusive growth, the contribution of FDI remains constrained, presumably due to inadequate absorptive ability or mismatched investment priorities.

Table 5: Long run (Normalised Cointegrating equation) of foreign trade and inclusive growth in Nigeria.

Normalised cointegrating coefficients (standard error in parentheses)					
IGRT	InOPEN	INF	InEXR	LAB	FDI
1	-0.006	0.077	0.794	-0.105	0.144
Standard Error	(-0.002)	(-0.010)	(-0.202)	(-0.027)	(-0.113)
t-statistics	{3.393}	{-7.787}	{-3.930}	{3.976}	{-1.270}

Source: Author's computation from Eview(9.0)

$$1 * IGRT - 0.006 (InOPEN) + 0.077 (INF) + 0.794 (InEXR) - 0.105 (LAB) + 0.144 (FDI) = 0 \quad (5)$$

$$IGRT = 0.006 (InOPEN) - 0.077 (INF) - 0.794 (InEXR) + 0.105 (LAB) - 0.144 (FDI) \quad (6)$$

Findings of this study align with studies that highlight the gradual and modest impact of trade openness on growth inclusiveness in developing economies (Agyei and Idan, 2019; Ajayi et al., 2024; Arabiyat et al., 2020; Fall et al., 2021; Osei, 2020; Sakyi et al., 2018) and deviate from Elvis et al., (2019); who found negative effect of trade on inclusive growth. Previous studies showed different results based on other economic contexts regarding inflation and exchange rate depreciation because they produced neutral impacts rather

than negative effects. The modest impact of trade openness reflects limited export diversification and a reliance on raw commodity exports, such as crude oil. Weak infrastructure and policy inefficiencies further constrain the ability of trade to drive inclusive growth is responsible for these results.

Diagnostic and stability tests

Table 6 shows results on serial correlation and heteroskedasticity test. These results demonstrate that the model passed the diagnostic tests. There is no evidence of autocorrelation at 5% confidence level, and the model equally passes to no white heteroskedasticity at 5% confidence level.

Table 6: VECM diagnostic test results

Tests		
	Breusch-Godfrey Serial Correlation LM Tests	Breusch-Pagan-Godfrey Heteroskedasticity Tests
Probability values	0.1683	0.6164

Source: Authors' computations (2025)

Conclusion

This study provides important insight into the impact of foreign trade on inclusive growth in Nigeria. The analysis revealed that foreign trade impact inclusive growth in a modest positive in the long run, while trade openness functions more independently in expanding growth inclusiveness in the Nigerian economic context.

Trade openness creates a slight positive influence on inclusive growth which indicates its worth as an economic development instrument. Meanwhile trade policies alone cannot contribute to meaningful growth inclusiveness without complementary policies. The structural weaknesses of the Nigerian economy become evident through inflation rate and exchange rate depreciation and require stability-driven policies to safeguard trade benefits from macroeconomic variable shocks.

This study therefore, recommends that trade facilitation should be prioritized by improving customs procedures (ease bottlenecks), reducing tariff and non-tariff barriers, and investing in trade-enabling infrastructure. These reforms will assist to fully maximize foreign trade benefits in achieving inclusive growth and development in Nigeria.

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