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Nigeria's Trade Openness and Relative Merchandise Exportation

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ABSTRACT

This study examines the management of Nigeria's trade openness and the distribution of its merchandise exports to low- and middle-income countries (LMICs) from 2000 to 2023. The main objective is to assess how export flows to LMICs specifically in South Asia, Sub-Saharan Africa, East Asia and the Pacific, and Europe and Central Asia impact Nigeria's trade openness. The study addresses a major gap in existing literature, which tends to focus on Nigeria's trade with advanced economies, overlooking the strategic potential of South–South trade and the influence of trading partners' income levels. Theoretical grounding is provided by the Gravity Model of Trade, which better captures spatial, economic, and structural trade dynamics compared to the Theory of Comparative Advantage. Using an ex-post-facto research design, the study employed time series data sourced from the World Bank and the Central Bank of Nigeria. Quantitative analysis, including the Augmented Dickey-Fuller test and the ARDL model, was applied to assess variable relationships. Key findings reveal that exports to South Asia have a positive and significant impact on trade openness, while exports to Sub-Saharan Africa and East Asia and Pacific regions show negative and significant effects. Exports to Europe and Central Asia exhibit a negative but statistically insignificant impact. Recommendations include diversifying export markets, strengthening trade agreements especially with South Asia and improving infrastructure to support trade with African and Asian partners.

Keywords: Trade Openness; Merchandise Export Spread; Low- and Middle-Income Countries (LMICs); ARDL Model

INTRODUCTION

Trade openness is central to economic performance in developing countries, enabling broader market access, efficiency gains, and technology spillovers (Rodrik, 2021). However, its impact depends not only on the volume of trade but also on where exports are directed, as destination markets shape the quality and stability of trade benefits (Linus, Lawal, & Kalu, 2024). In this context, the spread of merchandise exports to low- and middle-income countries (LMICs) has gained attention as a potential driver of sustained openness. Expanding exports across LMIC regions in South Asia, Sub-Saharan Africa, East Asia and the Pacific, and Europe & Central Asia can reduce dependence on traditional partners and position countries to leverage growing demand in emerging markets (Imbs & Wacziarg, 2023). Nevertheless, LMIC markets may also present challenges such as lower value-added opportunities and heightened exposure to volatility (Baldwin & Evenett, 2023).

For Nigeria, an economy still dominated by crude oil broadening export destinations remains a key policy priority. Although exports to LMIC regions have increased in recent years (UNCTAD, 2023), persistent constraints including weak infrastructure, tariff barriers, and low competitiveness limit deeper regional penetration (Akinboade & Kinfack, 2021). Moreover, Nigeria's trade openness exhibited wide fluctuations between 2000 and 2023 (World Bank, 2023), reflecting vulnerabilities associated with its concentrated export structure. While some studies suggest that wider export spread to LMICs can support openness (Linus, Lawal, & Kalu, 2024), others argue that trade with LMICs may reinforce commodity dependence rather than promote transformation.

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Despite these debates, limited empirical work specifically examines how Nigeria's regional export distribution across LMIC markets shapes its trade openness over time. Existing literature largely addresses aggregate export diversification or trade relations with advanced economies, offering little insight into the distinct dynamics of LMIC destinations. Given Nigeria's narrow export base, it remains unclear whether destination diversification alone can strengthen openness without complementary structural reforms. This study therefore investigates how Nigeria's merchandise export spread to LMICs in South Asia, Sub-Saharan Africa, East Asia and the Pacific, and Europe & Central Asia influences its trade openness from 2000 to 2023.

Significance of the Study

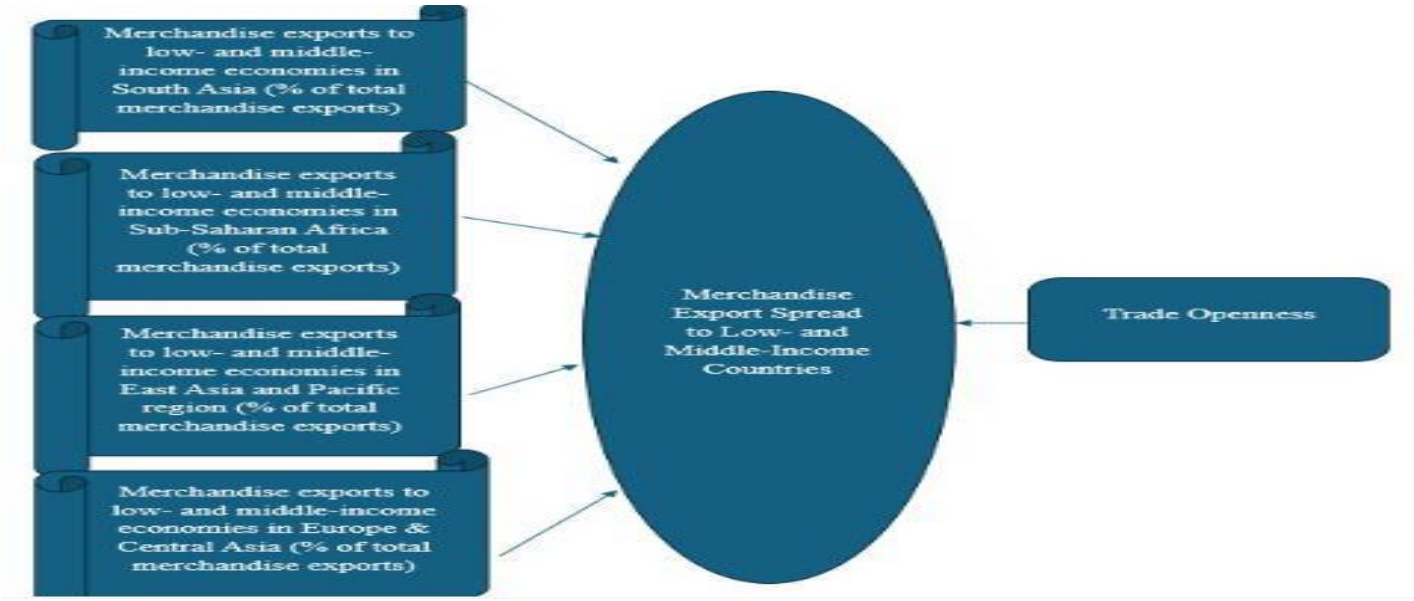
Policy relevance: It provides empirical evidence needed to craft targeted trade policies that strengthen Nigeria's global integration and reduce overdependence on traditional markets. Academic contribution: It fills a major literature gap by disaggregating export destinations across LMIC regions, offering deeper insight into Nigeria's trade dynamics. Economic planning: It helps identify which LMIC regions offer the strongest potential for enhancing trade openness, guiding diversification and long-term economic resilience.

REVIEW OF RELATED LITERATURE

Managing Nigeria's trade openness and merchandise export spread to low- and middle-income countries (LMICs) from 2000 to 2023 involves examining how diversified regional export destinations influence the country's integration into the global economy. Nigeria's heavy reliance on crude oil exports has limited its trade resilience, making diversification toward LMICs essential for reducing external vulnerabilities. Expanding exports to regions such as South Asia, Sub-Saharan Africa, and East Asia enhances market access, strengthens trade networks, and supports broader economic participation. Understanding this relationship provides insights for designing policies that promote sustainable trade openness, reduce concentration risks, and improve Nigeria's long-term economic performance.

Conceptual Framework

This study's conceptual framework explores how Nigeria's merchandise export spread to low- and middle-income countries influences trade openness. The dependent variable is trade openness, while the independent variables include exports to South Asia, Sub-Saharan Africa, East Asia and Pacific, and Europe & Central Asia, measured as percentages of total merchandise exports between 2000 and 2023 as illustrated in the conceptual framework shown in the in Fig below.



Source: Authors' creation from the variables of intertest in the study (2025)

Figure. 2.1- Trade openness and Nigeria Merchandise export spread to low- and middle-income countries

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Theoretical Literature

This study is best underpinned by the Gravity Model of Trade. The Gravity Model accounts for economic size, geographic proximity, and trade costs factors highly relevant to Nigeria's merchandise export spread and trade openness. Therefore, it provides a more realistic and empirically grounded framework for analysing Nigeria's trade with low- and middle-income countries from 2000 to 2023.

The Gravity Model of Trade

The Gravity Model of Trade explains bilateral trade flows using economic size and geographical distance, predicting larger trade volumes between bigger economies and geographically closer partners (Tinbergen, 1962). Subsequent refinements incorporate factors such as shared borders, trade agreements, and institutional proximity, improving its empirical application across countries (Anderson & van Wincoop, 2003).

For Nigeria, the model is useful in understanding how export destinations influence merchandise export spread to low- and middle-income countries (LMICs). Economic size of partner countries strongly shapes Nigeria's export flows—India's large market and energy needs, for example, make it a dominant LMIC destination (International Trade Centre, 2023). Regional proximity also matters: Nigeria trades more actively with ECOWAS neighbours due to lower transport costs and historical ties, while long distances and weaker institutional links limit deeper engagement with East Asia. Trade with Europe and Central Asia has grown but remains modest given diplomatic and logistical constraints.

Recent studies highlight market potential in African LMICs and emerging Asian economies, emphasizing that destination characteristics including market size, demand structure, and institutional compatibility shape export performance more than general distance-related considerations (Egger & Larch, 2011; Adeleye et al., 2022). These insights are particularly relevant for Nigeria, whose export base remains narrow and heavily oil dependent. While the gravity framework helps identify promising LMIC markets, it is less effective in capturing domestic constraints such as poor infrastructure and weak competitiveness, which continue to limit the benefits of trade openness (Head & Mayer, 2014).

EMPIRICAL REVIEW

Empirical studies on Nigeria's trade openness and the spread of its merchandise exports to low- and middle-income countries have revealed a wide range of insights into the country's export dynamics, policy inconsistencies, and structural trade limitations. The reviewed studies provide mixed but complementary perspectives on how Nigeria's trade policy has evolved over the past two decades and how export destinations have influenced the country's economic openness. The review starts with the core objective and followed by other specific objectives of the study.

Linus, Lawal, and Kalu (2024). This study employed the Autoregressive Distributed Lag (ARDL) model to examine the effect of international financial flows on trade outwardness in Nigeria. The dataset spans 1999–2023 and was sourced from the World Development Indicators, a World Bank repository. Official development assistance (ODA), foreign portfolio investment (FPI), and foreign direct investment (FDI) were used as proxies for international financial flows. Trade outwardness, measured as the ratio of total exports and imports to gross domestic product, was found to respond positively and significantly to ODA and FPI, while showing an insignificant and negative response to FDI. It is recommended that trade outwardness policies be aligned with international financial flows, optimizing the benefits of trade while mitigating potential adverse effects. This can be achieved through strategic import protection and targeted export promotion measures.

Complementing this line of inquiry, Ezeani and Ekeocha (2021) examined Nigeria's trade engagements within Sub-Saharan Africa from 2000 to 2020. Their aim was to evaluate how regional integration, particularly through mechanisms such as ECOWAS, influenced Nigeria's merchandise export performance. Adopting a gravity model framework with panel data regression, their findings were consistent with theoretical expectations: trade volumes were higher with neighboring countries, and existing trade agreements significantly facilitated export growth. However, they also noted that poor infrastructure, fragmented customs processes, and frequent policy

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reversals undermined Nigeria's competitiveness. While this study extended the empirical focus into a specific regional bloc, it still failed to compare these results across multiple low- and middle-income regions, thus limiting the broader applicability of the findings to global trade strategies.

Similarly, the study by Uchenna and Bello (2021) examined how shifts in export destinations affect Nigeria's trade openness, focusing on the 2005–2020 period. Their objective was to test the hypothesis that diversification of export partners to include more low- and middle-income South Asian economies enhances Nigeria's trade openness. Using generalized method of moments (GMM) for dynamic panel analysis, they found that increased trade relations with South Asian nations had a statistically significant and positive effect. Nevertheless, they also highlighted a negative outcome the over-reliance on crude oil exports to these economies perpetuated the mono-export structure of Nigeria's trade, limiting the broader benefits of openness. The authors concluded that without a deliberate shift towards non-oil exports, trade openness may not translate into broader economic gains.

GAPS IN LITERATURE REVIEW

Despite substantial research on Nigeria's trade performance, limited attention has been given to how the distribution of its merchandise exports to low- and middle-income countries (LMICs) influences its trade openness. Most studies focus on Nigeria's relationships with advanced economies such as the United States, the European Union, and China, overlooking the growing importance of South–South trade. Few empirical works disaggregate exports by the income category of partner countries, leaving gaps in understanding the structural dynamics of Nigeria's engagements with LMICs across Sub-Saharan Africa, Asia, and Eastern Europe. Longitudinal analyses covering the full 2000–2023 period which includes global shocks, policy reforms, and regional agreements like AfCFTA also remain scarce. Many prior studies rely on the Theory of Comparative Advantage, which explains production efficiency but fails to incorporate institutional factors, infrastructure, and bilateral trade costs. After reviewing both Comparative Advantage and the Gravity Model of Trade, this study adopts the Gravity Model, as it better reflects economic size, distance, and trade costs factors central to Nigeria's export dispersion and trade openness. It therefore provides a more realistic and policy-relevant framework for analysing Nigeria's trade with LMICs from 2000 to 2023.

DATA AND METHODS

Data

This work is a time series analysis as it uses datasets that have natural time ordering over 2000 to 2024. The sources used for data collection in this work are; the Central Bank of Nigeria Statistical Database, the World Development Indicators Database. The geography of this study is Nigeria and the time dimension covers a period of twenty-two (24) years, from 2000 to 2024. The start year 2000 was chosen as it was a period of increased globalization and trade liberalization, with many countries, including Nigeria. It is an important period as it marked the era where so many countries embraced free trade policies and agreements leading to not just greater openness but also enhanced merchandise export across the globe. The end year 2024 was chosen for its convenience and recency.

Method

The theoretical underpinning for this work is the Gravity Model of Trade; which is a foundational theory in international economics that explains bilateral trade flows between countries based on their economic size and geographical distance (SeeTinbergen, 1962).

Empirically, this work is benchmarked after the work of Uchenna and Bello (2021), who did a work on the effects of shifts in export destinations on Nigeria's trade openness. Their objective was to test the hypothesis that diversification of export partners to include more low- and middle-income South Asian economies enhances Nigeria's trade openness. Using generalized method of moments (GMM) for dynamic panel analysis, they found that increased trade relations with South Asian nations had a statistically significant and positive effect.

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For the purpose of this work however, modifications were made by way of making the study country-specific and time series instead of a pane estimation. Essentially, the study evaded the aggregation bias that is common with panel data studies.

The investigated relationship is functionally presented thus:

$$Y_t = \alpha y_{t-1} + X_t\beta + \varepsilon_t$$

Where:

Yi,t: trade openness (e.g., total trade or export-GDP ratio) for Nigeria

Yi,t−1: lagged trade openness (capturing persistence),

Xi,t: vector of regressors (e.g., merchandise export to low income, middle income and high-income countries),

ε = error term.

This work adopted the Auto-Regressive Distribution Lag Model (ARDL) in the estimation of

the variables of interest, so as to measure both the short and long run elasticity.

The model estimated under the ARDL framework is capture as follows:

$$\begin{aligned} \boldsymbol{TOPNS_t} = \boldsymbol{\beta_0} &+ \sum_{n=1}^{k} \Delta \boldsymbol{\beta_1 TOPNS_{t-n}} + \sum_{n=1}^{k} \Delta \boldsymbol{\beta_2 MSASIA_{t-n}} + \sum_{n=1}^{k} \Delta \boldsymbol{\beta_3 MSSA_{t-n}} \\ &+ \sum_{n=1}^{k} \Delta \boldsymbol{\beta_4 MEASIPACI_{t-n}} + \sum_{n=1}^{k} \Delta \boldsymbol{\beta_5 EURCASIA_{t-n}} + \sum_{n=1}^{k} \Delta \boldsymbol{\beta_6 GDP_{t-n}} \\ &+ \sum_{n=1}^{k} \Delta \boldsymbol{\beta_7 IMPGDS_{t-n}} + \sum_{n=1}^{k} \Delta \boldsymbol{\beta_8 EXPGDS_{t-n}} + \boldsymbol{\vartheta_1 MSASIA_t} + \boldsymbol{\vartheta_2 MSSA_t} \\ &+ \boldsymbol{\vartheta_3 MEASIPACI_t} + \boldsymbol{\vartheta_4 EURCASIA_t} + \boldsymbol{\vartheta_4 GDP_t} + \boldsymbol{\vartheta_6 IMPGDS_t} + \boldsymbol{\vartheta_7 EXPGDS_t} + \boldsymbol{\varepsilon_t} \end{aligned}$$

Where;

β_0 = The Intersect;

β_1 – β_8 = The Coefficient of the short-run parameters;

ϑ_1 – ϑ_7 = The Coefficient of the long-run parameters;

ε_t = The Noise term.

The anticipated outcome between the dependent variable and independent variable of this work is presented in the table below.

Apriori Expectation

SYMBOL	VARIABLES	EXPECTED SIGN
MSASIA	Middle-income economies in South Asia	Positive
MSSA	Middle-income economies in Sub-Saharan Africa	Positive

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MEASIPACI	Middle-income economies in East Asia	Positive
EURCASIA	Middle-income economies in Europe and Central Asia	Positive

The variables for the model of this work are described in the table below;

DESCRIPTION OF MODEL VARIABLES

S/N	Name of variable	Notation	Role	Source
1	MSASIA	Middle-income economies in South Asia	Independent variable	World Development Indicators (WDI)
2	MSSA	Middle-income economies in Sub-Saharan Africa	Independent Variable	World Development Indicators (WDI)
3	MEASIPACI	Middle-income economies in East Asia	Independent Variable	World Development Indicators (WDI)
4	EURCASIA	Middle-income economies in Europe and Central Asia	Independent Variable	World Development Indicators (WDI)
5	Trade Openness	TOPNS	Dependent variable	World Development Indicators (WDI)
6	Gross Domestic Product	GDP	Control Variables	World Development Indicators (WDI)

Source: Computed by the Author

The estimation process in this study follows three steps. First, the preestimation tests are tests are used to assess assumptions and conditions necessary for valid statistical inference. They are conducted before performing the ARDL analyses. These include the basic descriptive statistics which tests for aggregative properties, skewness, kurtosis, variance, dispersion. overall distribution of a dataset, aiding in understanding and interpreting the data. The test for linear association and stationarity were done using correlation and unit root test.

Second, the Auto Regression Distributed Lag model (ARDL) was employed. The ARDL is an econometric approach used to estimate the long-run and short-run relationships between variables in a time series context. The ARDL was selected over other regression model due to its allowance for the inclusion of variables with different orders of integration (stationarity level) in the same model. ARDL captures both the long-run and short-run dynamics between variables and also, allows for varied estimation lags for the regressor and regressand.

Third, post estimation tests were conducted after estimating model parameters, to assess the validity, reliability, and significance of the estimated parameters or model. They help evaluate the goodness-of-fit, check assumptions, perform model diagnostics, or compare alternative models. These tests provide additional insights and validation for the estimated results and help in drawing robust conclusions from the analysis. These include test for overall significance of the model, the use of the Durbin Watson (DW) statistics for first order autocorrelation and the Breusch and Godfrey Lagrange Multiplier Tests (BG LM Tests) for higher order auto-correlation. The Breusch – Pagan – Godfrey method was used for heteroscedasticity test while model stability was confirmed using both the Ramsey RESET test and the Cumulative Sums of Square (CUSUM).

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RESULTS

The data in Appendix One sourced from World Development Indicators (WDI) were presented for analysis using Auto-regressive distributed lag method. It includes the proxies representing the variables utilized in this study. The data set extends from 2000 to 2023.

TABLE 3 Summary of Basic Descriptive Statistics

Variables	Mean	Median	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Prob	CV	Obs
TOPNS	0.36	0.36	0.08	-0.09	1.94	1.14	0.56	0.22	24
EURCASIA	1.23	1.05	0.61	1.47	6.39	17.68	0.00	0.5	21
IMPGDS	5.61	6.48	2.61	-0.27	1.93	1.44	0.48	0.47	24
MEASIPACI	10.32	11.56	2.60	-1.88	5.22	19.11	0.00	0.25	24
MSASIA	14.11	14.58	1.94	-1.90	5.83	22.60	0.00	0.13	24
MSSA	21.03	24.02	6.43	-1.38	3.28	7.79	0.02	0.31	24
GDP	3.35	3.71	1.54	-0.48	1.98	1.96	0.37	0.46	24
EXPGDS	5.90	5.88	2.52	0.06	2.13	0.77	0.67	0.43	24

Source: Computed from E-views by the author

Table 3 above, portrays the metrics of central tendency, tests for dispersion, tests for normality, and degree of peakness of the distribution, to show how closely distributed the variables are. From the table, MSSA has the highest mean and TOPNS has the lowest mean and median value. That shows that MSSA is less closely distributed, while TOPNS is more closely distributed. Standard deviation is a measure of dispersion, that is, how far apart is the distribution. The table shows that MSSA is more dispersed than the other variables as it has the highest value. Skewness measures the degree of symmetry or departure from symmetry of the distribution; it is the evenness of the distribution. The distribution is normal if skewness is zero (0). Kurtosis measures the degree of peakness of the distribution. Kurtosis can be platy-kurtosis (statistical distribution with kurtosis less than three [< 3]); kurtosis can be lepto-kurtosis (statistical distribution with kurtosis greater than three [> 3]); and kurtosis can be meso-kurtosis (normal distribution with kurtosis of three [3]). From the highlights above, it can be inferred that EURCASIA, MEASIPACI, MSSA and MSASIA are leptokurtic, while TOPNS, IMPGDS, GDP and EXPGDS are platykurtic. The Jarque-Bera test is used to assess the normality of a data sample. CV stands for coefficient of variation, often known as the relative standard deviation (RSD). It is defined as the ratio of the standard deviation to the mean of a data set, expressed as a percentage. All the values in the CV are less than 1 which implies that the distribution is not highly dispersed.

To ascertain the linear relationship between the variables, correlational matrices were computed. The result in Appendix Two displays correlation factors between different variables. The cells each display the correlation between two variables. Data are summarized using correlation matrices, which are also utilized as inputs for more sophisticated studies and as diagnostics for such analyses. The maximum possible variation of the correlation is 100%. For a variable to share linear relationship with the other, the t-statistics should be greater than 2.5, or the probability should be less than 0.05; this shows a significant correlation. Based on the decision criteria, TOPNS shares a linear relationship with only one of the independent variables (EURCASIA).

Next, the stationarity properties of the series are evaluated. Stationary time series have constant mean, variance, and auto-covariance over time. It is essential for time series analysis and modeling. The test used is the

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Augmented Dickey-Fuller (ADF), following the traditional unit root test and the breakpoint consistent approach which are shown below:

Table 4: Summary of the Traditional Unit Root Test

Variables	TRADITIONAL UNIT ROOT TEST			
	ADF Statistics	CV @ 5%	P - Value	Inference
TOPNS	-6.100272	-3.632896	0.0003	i(0)
EURCASIA	-6.161108	-3.040391	0.0001	i(0)
IMPGDS	-5.005341	-3.644963	0.0034	i(1)
MEASIPACI	-3.455655	-3.004861	0.0197	i(1)
MSASIA	-4.463859	-3.644963	0.0101	i(1)
MSSA	-4.647102	-3.644963	0.0070	I(1)
GDP	-3.088498	-3.004861	0.0423	I(0)
EXPGDS	-4.422405	-3.632896	0.0104	I(0)

Source: Compiled by the author using Eviews10 results

From table 4 above, MEASIPACI, IMPGDS, MSASIA, and MSSA were found in the traditional unit root test to have attained stationarity at order 1 of integration while TOPNS, EURCASIA, GDP, and EXPGDS were found to be stationary at levels.

Furthermore, as stated earlier, the Autoregressive Distributed Lag Model (ARDL) econometric technique was employed as the principal estimation method and the result is shown in table 5.

Table 5: Summary of ARDL regression result

PANEL A MODEL (2, 0, 0, 1, 0)								
Variables	Short run estimates				Long run estimates			
	Coefficient	Std. Error	T-stat	P-value	Coefficient	Std. Error	T-stat	P-value
LOG(MSASIA)	0.85	0.36	2.37	0.04	0.82	0.29	2.79	0.02
LOG(MSSA)	-0.34	0.75	-0.45	0.66	-0.11	0.03	-3.14	0.01
LOG(MEASIPACI)	-0.67	0.37	-1.81	0.11	-0.11	0.03	-3.60	0.00
LOG(EURCASIA)	-0.51	0.31	-1.6	0.14	-0.49	0.25	-1.90	0.09
LOG(GDP)	0.17	0.09	1.81	0.11	-0.65	0.37	-1.74	0.12
PANEL C: DIAGNOSTICS TESTS								
BG-LM	0.64 (0.56)							

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BPG	0.83 (0.62)
RESET	3.34 (0.11)

Source: Extracted by the author from E-views 10

In Panel B of table 5, diagnostic tests were carried out on the regression estimates to confirm their reliability and validity. The BG-LM is the test for higher auto correlation, and the insignificant p-value of the BG-LM test demonstrates that there is no higher order autocorrelation for the models. The BPG is a test for heteroscedasticity. The BPG test insignificant p-value implies that there are no heteroscedastic residuals in the model. To test for model stability, The RAMSEY RESET Test was employed. The Ramsey RESET (Regression Error Specification Test) is insignificant (>0.05) which suggests that there is no specification error or biases in the model.

In summary, the model is considered to be best, linear, and unbiased. This conclusion is supported by the diagnostic test, specifically the BG-LM test, which shows no evidence of higher autocorrelation. The insignificance of the BPG indicates the absence of heteroscedastic residuals. Furthermore, the RESET test demonstrated model's stability without any specification errors.

With the confirmation of the model's superior characteristics, linearity, and lack of bias, the elasticity of openness to the relative merchandise exports are discussed in the following section.

This result reveals that Nigeria’s merchandise exports to low- and middle-income economies in South Asia is positively and significantly responsive to its Trade openness. In line with this objective and using ARDL model to test the hypothesis, the finding reveals that Nigeria’s merchandise exports to low- and middle-income economies in South Asia is positively and significantly responsive to its Trade openness. In practical terms, this finding means that when Nigeria increases its trade openness, such as by reducing tariffs, simplifying trade procedures, or promoting international trade agreements, its merchandise exports to low- and middle-income economies in South Asia, tend to increase significantly.

The analysis also suggested that a 1% increase in the MASIA leads to a modest 82% increase in Nigeria Merchandise exports. This suggests that Nigeria's exports to these markets are highly responsive to changes in trade policies and conditions. By opening up its economy and making trade easier, Nigeria can capitalize on opportunities in South Asia, leading to increased exports and potentially boosting economic growth and development. In essence, the more Nigeria adopts open trade policies, the more its exports to South Asia are likely to grow, which can have positive implications for the country's economy.

Secondly, it is discovered that there is a significant relationship between Nigeria’s merchandise exports to low- and middle-income economies in East Asia and the Pacific and its trade openness. In line with this objective and using ARDL model to test the hypothesis, the finding reveals Merchandise exports to low- and middle-income economies in Sub-Saharan Africa has a negative and significant outcome. The finding opines that as Nigeria increases its trade openness, such as by reducing tariffs or simplifying trade procedures, its merchandise exports to low- and middle-income economies in Sub-Saharan Africa actually decrease. This negative relationship implies that opening up Nigeria's economy to international trade may lead to increased competition from foreign goods, potentially making it more challenging for the country's exports to penetrate or maintain market share in other Sub-Saharan African countries. This could be due to various factors, such as Nigeria's exports being less competitive compared to goods from other countries, or regional trade agreements and economic partnerships not being effectively utilized to promote Nigerian exports within the region. The significant relationship indicates that the impact of trade openness on Nigeria's exports to these markets is notable and should be considered in trade policy decisions.

In summary, while trade openness can bring benefits, Nigeria's export performance in low- and middle-income Sub-Saharan African economies may face challenges that need to be addressed through targeted trade policies and strategies.

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Thirdly, no significant relationship exists between Nigeria's merchandise exports to low- and middle-income economies in East Asia and the Pacific and its trade openness. In line with this objective and using ARDL model to test the hypothesis, the result shows that there is a negative and significant effect on Nigeria's merchandise exports to low- and middle-income economies in East Asia and the Pacific and its trade openness. This negative relationship from this result could be due to several factors. For instance, Nigeria's exports to these markets might be facing stiff competition from other countries that have stronger trade relationships or more competitive products. Additionally, the reduction in tariffs and trade barriers might lead to increased imports from East Asia and the Pacific, which could potentially crowd out Nigerian exports in the domestic market or make it harder for Nigerian products to compete in these foreign markets. The significant effect indicates that the impact of trade openness on Nigeria's exports to these markets is substantial and should be a consideration in trade policy decisions. This finding might suggest that Nigeria needs to adopt targeted strategies to promote its exports to East Asia and the Pacific, such as enhancing product quality, improving marketing efforts, or negotiating favourable trade agreements with countries in the region. In practical terms, policymakers would need to carefully weigh the benefits of trade openness against the potential negative impacts on specific export markets and consider implementing measures to support Nigerian exporters in these challenging markets.

CONCLUSION

This study focused on Managing Nigeria's trade openness and Nigeria Merchandise Export spread to Low- and Middle-income countries. The explanatory variables encompassed Middle-income economies in South Asia, Middle-income economies in Sub-Saharan Africa, Middle-income economies in East Asia, and Middle-income economies in Europe and Central Asia.

To explore the stationarity properties of the variables, the Augmented Dickey Fuller (ADF) unit root test was employed, while the co-integration test yielded long run relationship regarding the relationship between these variables. Utilizing the Autoregressive Distributed Lag (ARDL) method, the study examined the impact of these variables on the Nigeria's trade openness. Time series data spanning from 2000 to 2023 were obtained from the World Development Indicators (WDI).

The study found that the Nigeria's merchandise exports to low- and middle-income economies in South Asia exhibits a positive and significant relationship on trade openness. Nigeria's merchandise exports to low- and middle-income economies in Sub-Saharan Africa has a negative and statistically significant relationship on trade openness. On the other hand, Nigeria's merchandise exports to low- and middle-income economies in East Asia and the Pacific has a negative and significant relationship on trade openness. Lastly, Nigeria's merchandise exports to low- and middle-income economies in Europe and Central Asia showed a negative and insignificant relationship on trade openness. Ultimately, the research revealed that Nigeria Merchandise Export spread to Low and Middle income countries significantly impacts trade openness.

To improve Nigeria's trade openness, the appropriate authorities should take the following actions:

Diversify export Markets: It is recommended that the country should prioritize diversifying its export markets, with a focus on low- and middle-income economies in South Asia. Additionally, it recommends strengthening and negotiating new trade agreements with South Asian countries to reduce tariffs and non-tariff barriers, promoting increased trade and investment flows.

The research recommends reviewing and reassessing Nigeria's trade policies and agreements with Sub-Saharan African countries to identify areas that may be hindering trade and exports. Furthermore, it suggests investing and improving transportation infrastructure, such as roads, ports, and border crossings, to reduce transportation costs and enhance the efficiency of trade with Sub-Saharan African countries.

It advises developing strategic partnerships with East Asian and Pacific countries to enhance economic cooperation, investment, and trade as well as conducting market research to better understand the needs and preferences of East Asian and Pacific markets and develop targeted strategies to promote Nigerian exports.

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Lastly, in order to improve the stand of Nigeria and European and Central Asian markets, the research suggests focusing on improving the quality and competitiveness of Nigerian products to increase their appeal in European and Central Asian markets.

By implementing these recommendations, the appropriate authorities can work towards improving the Nigeria merchandise exports, fostering economic growth, and ultimately improving the countries Trade openness.

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APPENDIX ONE

Values of Trade openness, Merchandise Exports to Middle-income economies in Europe and Central Asia, Middle-income economies in East Asia, Middle-income economies in South Asia, Middle-income economies in Sub-Saharan Africa, Imported Goods, Exported goods and Gross domestic product in Nigeria.

Year	TOPNS	EURCASIA	IMPGDS	MEASIPACI	MSASIA	MSSA	GDP	EXPGDS
2000	0.476829	3.89E-05	1.20E+10	2.882656	14.51725	7.042101	6.92E+10	2.10E+10
2001	0.480995	NA	1.57E+10	3.837190	11.70623	6.441555	7.36E+10	1.96E+10
2002	0.357006	NA	1.58E+10	6.259704	11.79992	9.471072	9.51E+10	1.81E+10
2003	0.470839	NA	2.19E+10	11.51470	14.98916	23.80930	1.05E+11	2.74E+10
2004	0.435202	1.032103	2.10E+10	11.62356	14.54606	24.02906	1.36E+11	3.81E+10
2005	0.510163	1.032103	3.26E+10	11.62356	14.54606	24.02906	1.76E+11	5.70E+10
2006	0.399003	1.066700	3.59E+10	11.42398	15.03366	24.81492	2.38E+11	5.92E+10
2007	0.410186	1.037257	4.66E+10	11.24063	14.61870	24.14741	2.78E+11	6.75E+10
2008	0.448366	1.037239	6.42E+10	11.24043	14.61844	24.14862	3.39E+11	8.80E+10
2009	0.365670	1.032874	4.95E+10	11.63225	14.55693	24.03261	2.95E+11	5.84E+10

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2010	0.418409	1.060104	7.09E+10	10.42587	14.94069	23.49339	3.67E+11	8.27E+10
2011	0.466216	1.060104	9.08E+10	10.42587	14.94069	23.49338	4.14E+11	1.02E+11
2012	0.386658	1.032225	8.09E+10	11.62494	14.54778	24.03022	4.64E+11	9.85E+10
2013	0.338525	1.032124	7.67E+10	11.62380	14.54636	24.02944	5.20E+11	9.94E+10
2014	0.297875	1.032119	8.64E+10	11.62375	14.54629	24.02920	5.74E+11	8.46E+10
2015	0.245413	1.032157	7.19E+10	11.62417	14.54682	24.02980	4.93E+11	4.90E+10
2016	0.211160	1.051554	4.70E+10	11.89393	14.88440	24.58686	4.05E+11	3.84E+10
2017	0.270880	1.084252	5.09E+10	12.21087	15.05421	25.23985	3.76E+11	5.08E+10
2018	0.326449	1.081822	7.16E+10	12.18350	15.24678	25.18154	4.22E+11	6.60E+10
2019	0.359833	1.056154	1.01E+11	11.89443	14.88503	24.57845	4.75E+11	6.99E+10
2020	0.259407	3.182372	7.22E+10	10.67770	15.54038	19.33224	4.32E+11	3.99E+10
2021	0.268432	2.106020	6.75E+10	9.783161	16.75164	12.85259	4.41E+11	5.09E+10
2022	0.306115	2.065290	7.70E+10	6.869442	8.603976	27.78109	4.77E+11	6.91E+10
2023	0.345432	1.813151	6.54E+10	11.75536	8.780522	10.20689	3.64E+11	6.03E+10

Source: World development Indicators (WDI)

Where:

TOPNS = Trade openness

EURCASIA = Merchandise Exports to Middle-income economies in Europe and Central Asia

MEASIPACI = Merchandise Exports to Middle-income economies in East Asia and Pacific

MSASIA = Merchandise Exports to Middle-income economies in South Asia

MSSA = Merchandise Exports to Middle-income economies in Sub-Saharan Africa

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GDP = Gross domestic product

IMPGDS = Imported Goods

EXPGDS = Exported goods

APPENDIX TWO

Summary of Correlational matrix

Variables	TOPNS	EURCASIA	IMPGDS	MEASIPACI	MSASIA	MSSA	GDP	EXPGDS
TOPNS	1.00							
EURCASIA	R = -0.48	1.00						
	{-2.42}	-----						
	[0.02]	-----						
IMPGDS	R= -0.34	R = 0.35	1.00					
	{-1.61}	{1.63}	-----					
	[0.12]	[0.11]	-----					
MEASIPACI	R = -0.24	R = 0.14	R = 0.31	1.00				
	{-1.10}	{0.62}	{1.42}	-----				
	[0.28]	[0.53]	[0.16]	-----				
MSASIA	R = 0.02	R = -0.20	R = -0.08	R = 0.21	1.00			
	{0.09}	{-0.91}	{-0.38}	{0.97}	-----			
	[0.92]	[0.36]	[0.70]	[0.34]	-----			
MSSA	R = -0.08	R = -0.05	R = 0.28	R = 0.53	R = 0.09	1.00		
	{-0.38}	{-0.22}	{1.29}	{2.76}	{0.43}	-----		
	[0.70]	[0.82]	[0.21]	[0.01]	[0.66]	-----		

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GDP	R = -0.65	R = 0.39	R = 0.89	R = 0.35	R = -0.06	R = 0.32	1.00	
	{-3.81}	{1.84}	{8.96}	{1.67}	{-0.30}	{1.48}	-----	
	[0.00]	[0.08]	[0.00]	[0.11]	[0.76]	[0.15]	-----	
EXPGDS	R = 0.22	R = -0.07	R = 0.68	R = 0.33	R = -0.05	R = 0.43	R = 0.53	1.00
	{0.98}	{-0.31}	{4.05}	{1.53}	{-0.24}	{2.08}	{2.75}	-----
	[0.33]	[0.75]	[0.00]	[0.14]	[0.80]	[0.05]	[0.01]	-----

Source: Extracted by the author from E-views

Where;

R = Correlation; t = {T-statistics}; P-value = [Probability]