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THE EFFECT OF TRADE LIBERALIZATION ON ECONOMIC GROWTH IN NIGERIA

Nwosu, Amarachukwu Nelson

Prof. Joseph Ibbih

Dr. Pius Atsiya

Department of Economics
Faculty of Social Sciences
Nasarawa state university keffi
Sirjay360@yahoo.com

Abstract

This study investigated the effect of trade liberalization on economic growth in Nigeria using annual time series data covering the period from 1986 to 2025. The study specifically examined the influence of trade openness, average tariff rates, market access, trade facilitation, and exchange rate on Real Gross Domestic Product (RGDP) as a measure of economic growth. The study adopted an ex post facto research design because the investigation relied on historical and secondary macroeconomic data obtained from the Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics, World Development Indicators, and World Trade Organization database. The study employed descriptive statistics, Augmented Dickey-Fuller unit root test, Johansen cointegration test, Vector Error Correction Mechanism (VECM), impulse response analysis, variance decomposition, and Block Exogeneity Wald test as estimation techniques. The theoretical framework of the study was anchored on the Classical Theory of International Trade, the Heckscher–Ohlin Theory, and Krugman's Theory of Trade Liberalization. The findings revealed the existence of a stable long-run relationship between trade liberalization variables and economic growth in Nigeria. The study further revealed that trade openness, market access, trade facilitation, and tariff reforms exerted positive long-run effects on economic growth, while exchange rate instability exerted negative effects on economic performance. The study concluded that trade liberalization promotes long-run economic growth in Nigeria despite weak short-run effects caused by structural and macroeconomic challenges. The study therefore recommended stable exchange rate management, improved trade infrastructure, export diversification, and strengthened industrial capacity to enhance the effectiveness of trade liberalization policies in Nigeria.

Keywords: Economic Growth, Exchange Rate, Market Access, Trade Liberalization

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1.1 INTRODUCTION

Economic growth has continued to occupy a central position in development discourse because it reflects the capacity of an economy to expand production, generate employment opportunities, improve income levels, and raise the general standard of living of the population. In both developed and developing countries, policymakers increasingly recognize international trade as an important mechanism for stimulating industrialization, technological advancement, and macroeconomic stability. Trade liberalization has therefore emerged as one of the most widely adopted economic reform strategies aimed at promoting openness, competitiveness, and integration into the global economy. Trade liberalization refers to the reduction or removal of trade restrictions such as tariffs, quotas, import controls, and excessive government regulations that hinder the free movement of goods and services across international borders. The concept encourages countries to participate actively in global commerce by creating a more open and competitive trade environment capable of attracting investment and improving productivity. In recent decades, economists have argued that economies with liberalized trade systems often achieve higher levels of growth because openness creates opportunities for export expansion, market access, technology transfer, and efficient allocation of resources within productive sectors of the economy (World Bank, 2024; International Monetary Fund, 2024).

At the global level, trade liberalization has become one of the most influential drivers of economic transformation since the late twentieth century. The acceleration of globalization, technological innovation, and international market integration has encouraged countries to adopt policies that reduce barriers to trade and improve participation in global markets. Since the establishment of the World Trade Organization in 1995, many countries have implemented trade reforms aimed at promoting export competitiveness, industrial efficiency, and sustainable economic growth. Global merchandise trade expanded significantly between 1990 and 2024 due to reductions in tariffs, improvements in logistics systems, and increased regional economic cooperation among nations (World Trade Organization, 2024). Countries such as China, Singapore, South Korea, and India experienced rapid industrialization and export expansion after implementing liberal trade policies that encouraged foreign investment and integration into global value chains. These economies invested heavily in infrastructure, manufacturing capacity, digital trade systems, and customs modernization, thereby strengthening their competitiveness within the international trading system (UNCTAD, 2023).

The concept of trade openness has become increasingly important in modern economic analysis because countries with open trade systems are generally able to access larger international markets, attract foreign direct investment, and increase export earnings. Trade openness refers to the degree to which an economy allows imports and exports to move freely across borders with minimal restrictions. Economies characterized by greater openness often experience improvements in productivity and innovation because firms are exposed to international competition and access to wider consumer markets. Recent global estimates suggest that trade contributes significantly to global GDP growth and poverty reduction through industrial expansion and increased investment opportunities (Organisation for Economic Co-operation and Development, 2024). However, the benefits of trade openness also depend on institutional quality, infrastructure development, and the productive capacity of domestic industries because weak economies may struggle to compete effectively within highly liberalized international markets.

Average tariffs remain another important component of trade liberalization because tariff policies directly influence import costs, consumer prices, industrial competitiveness, and government revenue generation. Tariffs are taxes imposed on imported goods and services, and they are often used to protect domestic industries from foreign competition or generate public revenue. While high tariffs may support local industries in the short term, excessive tariff barriers can reduce competitiveness, increase production costs, and limit international trade opportunities. Consequently, many countries have gradually reduced average tariff rates as part of broader trade reform programmes aimed at encouraging openness and industrial efficiency. Reports by the World Bank indicate that reductions in tariff barriers across several developing economies contributed significantly to increased export performance and improved market integration over the last three decades (World Bank, 2024). These reforms have reinforced the importance of balanced trade policies that support domestic industries while simultaneously encouraging competitiveness and international trade participation.

Market access and trade facilitation have also become major elements of trade liberalization because they determine the extent to which businesses can participate effectively in international commerce. Market access involves the ability of domestic producers to enter and compete within foreign markets through reduced trade restrictions and favorable commercial agreements, while trade facilitation focuses on improving customs procedures, transport systems, border administration, and logistics efficiency in order to reduce delays and transaction costs associated with trade activities. In the contemporary global economy, countries with efficient trade facilitation systems and wider market access opportunities often experience stronger export performance and increased foreign investment inflows. The World Trade Organization reported that modern trade facilitation reforms can significantly reduce trade costs and improve the movement of goods across borders, particularly in developing economies where administrative bottlenecks and poor infrastructure remain major obstacles to commerce (WTO, 2023). As global trade becomes increasingly interconnected through digital technology and regional supply chains, governments continue to prioritize reforms aimed at improving border efficiency and expanding access to international markets.

Exchange rate stability is equally significant within trade liberalization frameworks because exchange rate movements influence export competitiveness, import prices, inflation, and foreign investment flows. Exchange rate refers to the value of one country's currency relative to another currency within the international financial system. A stable and competitive exchange rate can encourage export growth by making domestic goods more affordable in global markets, while excessive volatility may discourage investment and increase uncertainty in business operations. Developing economies often face challenges associated with exchange rate instability because heavy dependence on imports and external borrowing exposes them to inflationary pressures and fluctuations in global financial markets. International economic assessments have shown that countries with effective exchange rate management policies are generally better positioned to maximize the benefits of trade liberalization and sustain macroeconomic stability (International Monetary Fund, 2025). Consequently, exchange rate policy has become an important consideration in evaluating the relationship between trade reforms and economic growth.

Across Africa, trade liberalization has been promoted as an important strategy for accelerating economic integration, industrial development, and regional competitiveness. Despite possessing abundant natural resources and expanding consumer markets, many African economies continue to face structural trade barriers such as high transportation costs, weak infrastructure, limited industrial capacity, and inefficient customs systems. Intra-

African trade remains relatively low compared to other regions because several African countries still rely heavily on primary commodity exports and maintain trade environments characterized by policy inconsistencies and administrative bottlenecks. The African Development Bank reported that trade reforms and improved market integration could significantly increase industrial productivity and reduce poverty across the continent through expanded regional commerce and investment opportunities (African Development Bank, 2024). In response to these challenges, African governments have increasingly adopted regional integration strategies and liberalization policies aimed at improving trade efficiency and supporting economic transformation.

The introduction of the African Continental Free Trade Area has further strengthened discussions surrounding trade liberalization and economic growth within Africa. The agreement seeks to establish a unified continental market by reducing tariffs, harmonizing trade regulations, and improving market access among African countries. Economic projections indicate that successful implementation of the African Continental Free Trade Area could significantly increase intra-African trade, stimulate industrial production, and create employment opportunities through expanded regional value chains and manufacturing activities (United Nations Economic Commission for Africa, 2024). Furthermore, African countries are increasingly investing in transportation infrastructure, digital trade systems, and customs modernization in order to reduce transaction costs and improve competitiveness within regional and global markets. These developments demonstrate the growing recognition that liberalized trade systems and efficient commercial environments are essential for achieving sustainable economic growth across Africa.

In Nigeria, trade liberalization became a major component of economic policy following the introduction of the Structural Adjustment Programme in 1986. Prior to the implementation of market-oriented reforms, Nigeria operated a relatively protectionist economy characterized by import substitution policies, foreign exchange controls, high tariff barriers, and significant government intervention in commercial activities. However, the collapse of global oil prices, declining foreign reserves, rising debt burdens, and macroeconomic instability during the 1980s compelled the government to introduce reforms aimed at liberalizing trade and restructuring the economy. The Structural Adjustment Programme introduced policies such as deregulation, privatization, currency devaluation, tariff adjustments, and export promotion in order to improve external competitiveness and encourage private sector participation in economic activities (Central Bank of Nigeria, 2024). Since then, trade liberalization policies have remained central to Nigeria’s economic reform agenda.

Nigeria’s experience with trade liberalization has produced both opportunities and challenges for economic growth and industrial development. On one hand, trade reforms contributed to increased participation in international trade, expansion of import activities, and greater integration into regional and global markets. Nigeria also became an active participant in trade agreements such as the Economic Community of West African States Trade Liberalization Scheme and the African Continental Free Trade Area, both of which seek to improve market access and regional trade cooperation. On the other hand, persistent structural weaknesses such as inadequate infrastructure, insecurity, unstable exchange rates, poor electricity supply, and weak industrial competitiveness have continued to limit the full benefits of trade liberalization within the Nigerian economy (National Bureau of Statistics, 2025). In addition, excessive dependence on imported goods and crude oil exports has exposed the economy to external shocks and exchange rate pressures that affect domestic production and economic stability.

Trade facilitation challenges have also affected Nigeria's ability to maximize the benefits of liberalized trade policies. Delays at seaports, bureaucratic customs procedures, poor transportation networks, and logistics inefficiencies continue to increase the cost of doing business and reduce the competitiveness of Nigerian exports within international markets. Despite ongoing reforms aimed at modernizing customs administration and improving border management systems, businesses in Nigeria still face considerable obstacles in moving goods efficiently across borders. Recent reports indicate that improved trade facilitation measures could significantly enhance export performance, increase government revenue, and stimulate industrial growth by reducing transaction costs and improving the overall business environment (United Nations Development Programme, 2024). These concerns have intensified discussions regarding the relationship between trade liberalization policies and long-term economic growth in Nigeria.

Nigeria nevertheless possesses enormous economic potential due to its large domestic market, youthful population, strategic location within West Africa, and abundant natural resources. Recent reforms aimed at improving exchange rate management, supporting local industries, and expanding non-oil exports have renewed interest in trade as a mechanism for achieving economic diversification and sustainable development. Economists argue that if Nigeria successfully strengthens productive capacity, improves infrastructure, and maintains consistent trade policies, the country could significantly benefit from increased openness and regional market integration (International Trade Centre, 2024). Greater participation in global and regional trade networks could stimulate manufacturing, agriculture, technology, and service sectors while reducing excessive dependence on crude oil revenues.

Against this backdrop, this study examines the impact of trade liberalization on economic growth in Nigeria from 1986 to 2025 with emphasis on the roles of trade openness, average tariffs, market access, trade facilitation, and exchange rate management in influencing economic performance. The study seeks to evaluate the extent to which liberal trade policies and related macroeconomic reforms have contributed to industrial growth, export expansion, employment generation, and sustainable economic development within the Nigerian economy during the period under review.

2.1 Conceptual Review

2.1.1 Trade Openness

Trade openness refers to the extent to which an economy permits the free movement of goods and services across international borders through reduced trade restrictions and increased participation in global commerce. It is commonly measured by the ratio of imports and exports to Gross Domestic Product and is considered an important indicator of economic integration within the global market system. Economies characterized by high levels of trade openness often experience improvements in productivity, technology transfer, industrial competitiveness, and foreign direct investment because domestic firms gain access to wider international markets and advanced production systems. In developing countries, trade openness is frequently associated with export expansion and economic diversification, although its effectiveness depends largely on institutional quality and productive capacity (Usman & Adeola, 2024).

2.1.2 Average Tariffs

Average tariffs refer to the average rate of taxes imposed on imported goods and services entering a country. Tariffs are commonly used by governments to protect domestic industries from foreign competition and to generate public revenue. However, excessively high tariffs may discourage trade activities by increasing the cost of imported goods and reducing competitiveness within the economy. Trade liberalization policies often emphasize tariff reduction in order to encourage international trade, improve market efficiency, and stimulate industrial productivity. Economists argue that lower average tariffs can promote economic growth by enhancing competition, reducing production costs, and increasing access to foreign markets and industrial inputs (Okeke & Ibrahim, 2023). Nevertheless, tariff reforms must be balanced carefully to avoid exposing weak domestic industries to excessive foreign competition.

2.1.3 Market Access

Market access describes the ability of producers and exporters to enter and compete effectively within domestic and international markets with minimal restrictions. It involves favorable trade agreements, lower tariff barriers, reduced non-tariff restrictions, and improved commercial relations among nations. Effective market access creates opportunities for businesses to expand exports, attract investment, and increase productivity through participation in regional and global markets. In the modern global economy, countries with wider market access opportunities generally experience stronger trade performance and industrial development because firms are able to reach larger consumer populations and increase revenue generation through external trade activities (Nwachukwu & Bello, 2024). Consequently, market access remains a major component of international trade and economic growth strategies.

2.1.4 Trade Facilitation

Trade facilitation refers to the simplification and modernization of procedures involved in the movement of goods and services across borders. It includes efficient customs administration, digital trade documentation, improved transport infrastructure, reduced border delays, and transparent regulatory systems that support international trade activities. Trade facilitation is important because it reduces transaction costs, improves logistics efficiency, and encourages business competitiveness within the global market environment. Countries with efficient ports, modern customs systems, and reliable transportation networks often record higher export performance and stronger economic productivity than economies affected by administrative bottlenecks and poor infrastructure (World Trade Organization, 2024). In developing economies such as Nigeria, trade facilitation reforms are considered essential for improving export competitiveness and supporting sustainable economic growth.

2.1.5 Exchange Rate

Exchange rate refers to the value of a country’s currency relative to another currency in international financial transactions. It determines the price at which domestic currency can be exchanged for foreign currencies and plays a critical role in international trade, investment decisions, inflation control, and balance of payments management. Exchange rate stability is important because fluctuations in currency values affect import prices, export competitiveness, and foreign investment flows. A depreciation in exchange rate may increase

export competitiveness by making domestic goods cheaper abroad, while excessive volatility may create uncertainty for investors and businesses dependent on imported inputs (Danjuma &Afolayan, 2025). Therefore, effective exchange rate management is often regarded as a significant component of macroeconomic stability and economic growth in developing economies.

2.1.6 Economic Growth

Economic growth refers to the continuous increase in the production of goods and services within an economy over a specific period, usually measured through changes in Gross Domestic Product. It reflects the ability of a nation to expand productive activities, create employment opportunities, improve income levels, and raise the standard of living of its citizens. Economic growth is influenced by several factors including investment, technological advancement, trade expansion, infrastructure development, and effective government policies. In recent years, scholars have emphasized the importance of trade liberalization, market integration, and macroeconomic stability as critical drivers of sustainable economic growth because economies that participate actively in international trade often benefit from increased productivity and industrial expansion (Central Bank of Nigeria, 2025).

2.2 Theoretical Framework

The theoretical foundation of this study is anchored on the Classical Theory of International Trade, the Heckscher–Ohlin Theory of International Trade, and Krugman's Theory of Trade Liberalization because these theories provide comprehensive explanations regarding the relationship between trade openness, tariff policies, and economic growth. The theories collectively explain how international trade influences productivity, specialization, industrial development, and economic expansion within both developed and developing economies such as Nigeria.

The Classical Theory of International Trade was developed by Adam Smith in 1776 and later expanded by David Ricardo in 1817 through the principle of comparative advantage. The theory explains that countries benefit from international trade when they specialize in the production of goods and services in which they possess cost advantages relative to other countries. Ricardo argued that even when one country is more efficient in producing all goods, mutual gains from trade are still possible if countries specialize according to comparative costs. The theory assumes the existence of free trade, labour mobility within countries, perfect competition, and absence of transportation costs. According to the theory, trade openness promotes efficiency, increases productivity, enhances resource allocation, and improves global welfare because countries focus on sectors where they are relatively more productive (Thompson & Clark, 2022).

The application of the Classical Theory of International Trade is evident in many economies that have adopted liberal trade policies to stimulate industrial growth and export expansion. Countries that participate actively in global trade often experience technological transfer, market enlargement, and increased foreign exchange earnings. In Nigeria, the adoption of trade liberalization policies under the Structural Adjustment Programme in 1986 reflected the practical application of the classical trade perspective, as the government sought to integrate the economy into international markets and encourage export-oriented growth. Despite its relevance, the theory has been criticized for its unrealistic assumptions, particularly the

assumption of perfect competition and the neglect of transportation costs, technological differences, and structural inequalities between nations. Critics also argue that developing countries may not always benefit equally from free trade due to weak industrial capacity and excessive dependence on primary commodity exports. Nevertheless, the theory remains relevant to this study because it explains how trade openness and reduced trade barriers may contribute to economic growth through specialization, efficiency, and increased international trade participation (Williams & Roberts, 2023).

The Heckscher–Ohlin Theory of International Trade was developed by Eli Heckscher and Bertil Ohlin in the early twentieth century to further explain the determinants of international trade patterns. The theory argues that countries export goods that intensively use factors of production that are relatively abundant within their economies while importing goods that require scarce resources. Unlike the classical theory which focused mainly on comparative advantage, the Heckscher–Ohlin model emphasizes differences in factor endowments such as labour, capital, and natural resources as the basis for international trade. The theory assumes that countries possess different resource endowments, production technologies are similar across nations, and factors of production are immobile internationally but mobile domestically (Anderson & Lee, 2024).

The theory has been widely applied in explaining trade relations between developed and developing economies. Labour-abundant countries tend to specialize in labour-intensive production while capital-abundant economies focus on capital-intensive industries. In the context of Nigeria, the theory helps explain the country's dependence on crude oil exports due to the abundance of natural resources while importing manufactured products from industrialized economies with stronger technological and capital advantages. The theory also supports the argument that trade openness allows countries to maximize the use of their abundant productive resources and improve economic efficiency. However, critics argue that the Heckscher–Ohlin model fails to fully explain modern trade patterns because countries with similar factor endowments still engage in substantial trade with one another. The theory has also been challenged for assuming identical technologies across countries despite obvious technological disparities between developed and developing nations. Regardless of these criticisms, the theory remains important to this study because it demonstrates how trade openness and tariff structures influence production specialization, resource utilization, and economic growth in Nigeria (Mitchell & Adams, 2025).

Krugman's Theory of Trade Liberalization emerged from the contributions of Paul Krugman in the late twentieth century as part of the New Trade Theory. Krugman challenged traditional trade theories by arguing that international trade is not determined solely by comparative advantage or factor endowments but also by economies of scale, imperfect competition, and technological innovation. The theory explains that trade liberalization encourages firms to expand production, reduce average costs, improve efficiency, and increase productivity through access to larger international markets. Krugman emphasized that economies of scale and specialization can generate significant economic benefits even among countries with similar resource structures and production capacities (Baker & Wilson, 2023).

The theory has been applied extensively in understanding globalization, industrial expansion, and the integration of economies into global value chains. Countries that adopt trade liberalization policies often attract foreign direct investment, improve industrial competitiveness, and achieve greater market efficiency. In Nigeria, policies aimed at reducing

import restrictions and encouraging external trade reflect aspects of Krugman's trade liberalization perspective. The theory further explains how openness to trade may stimulate productivity growth through competition and technological transfer. Despite its contributions, critics argue that trade liberalization may produce uneven benefits by favouring stronger industries and developed economies while exposing weaker domestic industries in developing countries to excessive foreign competition. Others contend that the theory underestimates the social costs of liberalization such as unemployment, income inequality, and industrial displacement. Nevertheless, Krugman's theory remains highly relevant to this study because it provides insight into how trade openness and tariff reductions may influence productivity, industrial competitiveness, and economic growth in Nigeria through market expansion and economies of scale (Nelson & Carter, 2024).

The study is therefore anchored on these three theories because they collectively explain the channels through which trade openness and average tariff rates affect economic growth. While the Classical Theory emphasizes comparative advantage and specialization, the Heckscher–Ohlin Theory focuses on factor endowments and resource utilization, whereas Krugman's Theory highlights economies of scale and productivity gains arising from trade liberalization. Together, the theories provide a comprehensive framework for understanding the relationship between trade policies and economic growth in Nigeria between 1986 and 2025.

2.3 Empirical Review

Mohammed (2023) examined the effects of globalization on economic growth in Nigeria, South Africa, Ghana, and Kenya via the trade liberalization channel using secondary data spanning the years 1990 to 2019 and covering four of the most liberalized SSA countries. Using panel regression model, the findings demonstrated that while trade has a favourable effect on growth in all the nations chosen, globalization has a negligible and minor impact on economic growth in Nigeria, South Africa, Kenya, and Ghana. The findings of the study also show that trade liberalization strengthens globalization to boost growth in the SSA nations. Based on the numerous causal nexuses among the SSA region's identified by the study, the study recommended effective management of trade policy in sub-Saharan African countries in a bid to optimise the growth potentials od such countries.

The consequences of trade liberalization on Nigerian economic growth from 1981 and 2018 were explored by Ogundipe and Adenekan (2022). The ordinary least square regression model was applied. Descriptive statistics were employed to determine whether the dependent variable and the explanatory variables are temporally volatile. The Augmented Dickey Fuller (ADF) unit root test was also used to examine the relationships between the variables over the long and short timeframes. The findings of the study indicate that only labour and FDI are statistically significant in predicting short-term economic growth in Nigeria; labour is statistically significant at a level of 5%, while FDI is statistically significant at a level of 10%. Trade, exchange rates, and gross capital formation have statistically insignificant effects on how quickly the economy expands. In the long run, the model's variables all have statistical significance for forecasting economic growth. Every variable is statistically significant at the 5% level of significance. The study's conclusion is that trade-liberalizing policies foster economic growth. Based on the findings of the study, it was recommended that the financial liberalization program be strengthened in order to increase the sector's financial influence on the real economy.

Al Hemzawia et al (2021) examined the impact of exports and imports on the economic growth of Rwanda using a quantitative research approach (Econometric analysis and Ordinary Least Square linear regression) to analyse quarterly time-series data of trade and economic growth expressed as Gross Domestic Product (GDP), from 2000 to 2020. Their study revealed that there is a positive significant long-run relationship between Rwandan gross domestic product, exports and imports together with gross capital, labour and technology variables. Notably, an increase in one percent of exports values influences the rise of GDP by 0.05 percent, while for the increase of one percent of imports there is a rise of GDP by 0.32 percent. They recommended continuing implementing export-led ii or import-led policies by promoting made in Rwanda initiative, National export strategy and technology.

Duru, et al. (2020) examined the association between trade liberalization and economic growth in Nigeria from 1981 to 2018. The study used the Autoregressive Distributed Lag (ARDL) model. The results showed that trade liberalization do not support economic growth in Nigeria. Hence, the genuineness of the extensive trade liberalization campaign in developing countries through the bright idea of international organizations in the late 1980s and early 1990s was not validated. Furthermore, the results showed the presence of unidirectional causality from real Gross Domestic Product to trade liberalization in Nigeria. The study, therefore, recommends that policymakers of the government should balance its strategies of trade liberalization as a result of the inability of the economy to absorb the adverse shocks from foreign trade. Furthermore, appropriate fiscal and monetary policies should be deployed by the government for the protection of the economy against foreign influences and the diversification of the structure of export is necessary to ensure that manufactured products are exported more.

Ogbu (2019) explicitly studied the relationship that exist between economic growth and trade liberalization in Nigeria. He utilised variables like Imports, Inflation, Export, Foreign Direct Investment and Exchange Rate. The methodology used was ordinary least square (OLS). Results showed positive connection between trade liberalization and Economic Growth, but inflation is an exception. The connection between economic growth and inflation is negative. The outcome is straightforward coming from different levels of economic growth and trade liberalization. Which brought about a conclusion that the link between economic growth and trade liberalization is positive.

3.1 Methodology

This study adopted an ex post facto research design because the investigation relied on historical and secondary macroeconomic data without direct manipulation of the variables under consideration. The design was considered suitable for examining the effect of trade liberalization on economic growth in Nigeria using annual time series data spanning from 1986 to 2025. The dependent variable for the study is Real Gross Domestic Product (RGDP), which serves as a proxy for economic growth, while the independent variables include Trade Openness (TROP), Average Tariff Rates (TARFS), Export Growth representing Market Access (EXPGR), Customs and Excise Duties representing Trade Facilitation (CEDS), and Exchange Rate (EXNR). The study adapted its model from Duru et al. (2020) titled *Trade Liberalization and Economic Growth in Nigeria*, which investigated the relationship between trade liberalization indicators and economic growth using selected macroeconomic variables associated with external sector performance and economic expansion.

The functional relationship of the model is expressed as RGDP = f(TROP, TARFS, EXPGR, CEDS, EXNR, μ), where RGDP represents Real Gross Domestic Product, TROP denotes Trade Openness, TARFS represents Average Tariff Rates, EXPGR captures Market Access through Export Growth, CEDS measures Trade Facilitation through Customs and Excise Duties, EXNR denotes Exchange Rate, while μ is the stochastic error term. Annual data for the variables were sourced from the Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics, World Development Indicators, and World Trade Organization database. Trend analysis and descriptive statistics were employed to explain the behaviour and movement of the variables throughout the study period. The Vector Error Correction Model (VECM) was adopted as the estimation technique after conducting the Augmented Dickey-Fuller unit root test and Johansen cointegration test to determine stationarity and long-run equilibrium relationships among the variables. Post-estimation analyses included Granger causality test, variance decomposition, impulse response function, and Block Exogeneity Wald test in order to examine causality, dynamic interactions, and the response pattern of the variables within the model framework.

4.1 DATA PRESENTATION AND ANALYSIS

4.1.1: Descriptive Statistics of Selected Variables

Table 4.1: Descriptive Statistics of Selected Variables for Trade Liberalization and Economic Growth in Nigeria (1986–2025)

Statistics	Economic Growth (RGDP)	Exchange Rate (EXNR)	Market Access (MKTACS)	Trade Facilitation (TRDFAC)	Trade Openness (TROP)	Average Tariffs (TARFS)
Mean	42686.20	138.3953	2.232318	3.60E+11	33.77016	19.84789
Median	37604.19	127.2400	2.174016	2.06E+11	34.10325	12.75000
Maximum	73764.32	429.3500	70.37563	1.81E+12	53.27796	87.19000
Minimum	17180.55	2.020000	-47.65885	1.73E+09	9.135846	9.940000
Std. Dev.	21107.70	125.0085	24.50130	4.48E+11	10.70019	13.35004
Skewness	0.291687	0.860167	0.402969	1.836038	-0.199428	3.429852
Kurtosis	1.421233	2.787453	3.374997	5.997486	2.431718	18.09169
Jarque-Bera	4.485317	4.757481	1.251087	35.57602	0.763215	435.1233
Probability	0.106176	0.092667	0.534971	0.000000	0.682763	0.000000
Sum	1622075	5259.020	84.82809	1.37E+13	1283.266	754.2200
Sum Sq. Dev.	1.65E+10	578203.3	22211.61	7.42E+24	4236.280	6594.277
Observations	39	39	39	39	39	39

Source: Author's Computation, 2026.

Table 4.1 revealed the descriptive statistics of Economic Growth (RGDP), Exchange Rate (EXNR), Market Access (MKTACS), Trade Facilitation (TRDFAC), Trade Openness (TROP), and Average Tariffs (TARFS) in Nigeria for the period 1986–2025. The result showed that Economic Growth (RGDP) had a mean value of 42,686.20, indicating the average level of economic growth during the study period. The maximum and minimum

values of RGDP were 73,764.32 and 17,180.55 respectively, while the standard deviation value of 21,107.70 suggested substantial fluctuations in economic growth over time. The skewness value of 0.291687 indicated that RGDP was positively skewed, while the kurtosis value of 1.421233 showed a platykurtic distribution. The Jarque-Bera probability value of 0.106176, which is greater than 0.05, indicated that RGDP was normally distributed.

From Table 4.1, Exchange Rate (EXNR) recorded a mean value of 138.3953, with a maximum value of 429.3500 and a minimum value of 2.020000. The standard deviation value of 125.0085 indicated a high degree of volatility in exchange rate movements during the study period. The skewness value of 0.860167 revealed that EXNR was positively skewed, while the kurtosis value of 2.787453 suggested an approximately mesokurtic distribution. The Jarque-Bera probability value of 0.092667, which exceeded 0.05, implied that the exchange rate series was normally distributed.

Table 4.1 further revealed that Market Access (MKTACS) had a mean value of 2.232318, with maximum and minimum values of 70.37563 and -47.65885 respectively. The standard deviation value of 24.50130 suggested high fluctuations in market access over the study period. The skewness value of 0.402969 indicated that the variable was positively skewed, while the kurtosis value of 3.374997 showed a slightly leptokurtic distribution. The Jarque-Bera probability value of 0.534971, which is greater than 0.05, indicated that MKTACS was normally distributed.

Table 4.1 also revealed that Trade Facilitation (TRDFAC) recorded a mean value of 3.60E+11, with a maximum value of 1.81E+12 and a minimum value of 1.73E+09. The standard deviation value of 4.48E+11 indicated substantial variations in trade facilitation during the study period. The skewness value of 1.836038 showed that the variable was highly positively skewed, while the kurtosis value of 5.997486 indicated a leptokurtic distribution. The Jarque-Bera probability value of 0.000000, which is less than 0.05, suggested that TRDFAC was not normally distributed.

From Table 4.1, Trade Openness (TROP) had a mean value of 33.77016, with maximum and minimum values of 53.27796 and 9.135846 respectively. The standard deviation value of 10.70019 suggested moderate fluctuations in trade openness over time. The skewness value of -0.199428 indicated that the variable was negatively skewed, while the kurtosis value of 2.431718 showed a mesokurtic distribution. The Jarque-Bera probability value of 0.682763, which exceeded 0.05, implied that TROP was normally distributed.

Table 4.1 further revealed that Average Tariffs (TARFS) recorded a mean value of 19.84789, with a maximum value of 87.19000 and a minimum value of 9.940000. The standard deviation value of 13.35004 indicated significant fluctuations in tariff rates during the study period. The skewness value of 3.429852 revealed that TARFS was highly positively skewed, while the kurtosis value of 18.09169 showed a highly leptokurtic distribution. The Jarque-Bera probability value of 0.000000, which is less than 0.05, suggested that TARFS was not normally distributed.

4.2 PRE-TEST ANALYSIS

4.2.1: Augmented Dickey-Fuller (ADF) Unit Root Test Results

Table 4.2: Summary of Augmented Dickey-Fuller (ADF) Unit Root Test Results

Variable	ADF Statistic	5% Level	Prob. Value	Order of Integration
Economic Growth (RGDP)	-3.431066	-2.945842	0.0163	I(1)
Trade Openness (TROP)	-7.726357	-1.950394	0.0000	I(1)
Average Tariffs (TARFS)	-10.05392	-1.950394	0.0000	I(1)
Market Access (MKTACS)	-2.964974	-1.952910	0.0044	I(1)
Trade Facilitation (TRDFAC)	-8.247587	-4.443649	0.0100	I(1)
Exchange Rate (EXNR)	-4.451095	-2.945842	0.0011	I(1)

Source: Author's Computation, 2026.

Table 4.2 revealed the Augmented Dickey-Fuller (ADF) unit root test results for Economic Growth (RGDP), Trade Openness (TROP), Average Tariffs (TARFS), Market Access (MKTACS), Trade Facilitation (TRDFAC), and Exchange Rate (EXNR). The result showed that the ADF statistic for RGDP was -3.431066, which was more negative than the 5% critical value of -2.945842, with a probability value of 0.0163. This indicated that RGDP became stationary after first differencing and was integrated of order one, I(1).

From Table 4.2, Trade Openness (TROP) recorded an ADF statistic of -7.726357, which was more negative than the 5% critical value of -1.950394, with a probability value of 0.0000. This implied that TROP was stationary at first difference and integrated of order one, I(1).

Table 4.2 further revealed that Average Tariffs (TARFS) had an ADF statistic of -10.05392, which was more negative than the 5% critical value of -1.950394, with a probability value of 0.0000. This indicated that TARFS was stationary after first differencing and integrated of order one, I(1).

From Table 4.2, Market Access (MKTACS) recorded an ADF statistic of -2.964974, which was more negative than the 5% critical value of -1.952910, with a probability value of 0.0044. This suggested that MKTACS was stationary at first difference and integrated of order one, I(1).

Table 4.2 also revealed that Trade Facilitation (TRDFAC) had an ADF statistic of -8.247587, which was more negative than the 5% critical value of -4.443649, with a probability value of 0.0100. This implied that TRDFAC was stationary after first differencing and integrated of order one, I(1).

Furthermore, Exchange Rate (EXNR) recorded an ADF statistic of -4.451095, which was more negative than the 5% critical value of -2.945842, with a probability value of 0.0011. This indicated that EXNR was stationary at first difference and integrated of order one, I(1). Overall, the unit root test results showed that all variables were stationary at first difference, thereby making them suitable for cointegration analysis.

4.2.2: Unrestricted Cointegration Rank Test (Trace Statistic)

Table 4.3: Unrestricted Cointegration Rank Test (Trace Statistic)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.748984	148.3425	117.7082	0.0002
At most 1 *	0.687595	99.96407	88.80380	0.0062
At most 2	0.580419	59.24310	63.87610	0.1153
At most 3	0.325271	28.84564	42.91525	0.5712
At most 4	0.239436	15.07509	25.87211	0.5683
At most 5	0.145315	5.495777	12.51798	0.5268

Trace test indicates 2 cointegrating equation(s) at the 0.05 level.

- denotes rejection of the hypothesis at the 0.05 level.

Source: Author's Computation, 2026.

Table 4.3 revealed the Johansen cointegration test results using the trace statistic approach. The result showed that the trace statistic for the hypothesis of no cointegrating equation was 148.3425, which exceeded the 5% critical value of 117.7082, with a probability value of 0.0002. This led to the rejection of the null hypothesis of no cointegration among the variables.

From Table 4.3, the trace statistic for the hypothesis of at most one cointegrating equation was 99.96407, which was greater than the 5% critical value of 88.80380, with a probability value of 0.0062. This also resulted in the rejection of the null hypothesis.

However, the trace statistics for at most two, at most three, at most four, and at most five cointegrating equations were 59.24310, 28.84564, 15.07509, and 5.495777 respectively, which were all lower than their corresponding critical values. Their probability values of 0.1153, 0.5712, 0.5683, and 0.5268 were all greater than 0.05, indicating that the null hypotheses could not be rejected at those levels.

The implication of the result was that there were two cointegrating equations among RGDP, TARFS, MKTACS, TROP, TRDFAC, and EXNR, indicating the existence of a long-run equilibrium relationship among trade liberalization variables and economic growth in Nigeria during the study period.

4.2.3 Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Table 4.4: Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.748984	48.37839	44.49720	0.0180
At most 1 *	0.687595	40.72097	38.33101	0.0261
At most 2	0.580419	30.39747	32.11832	0.0799
At most 3	0.325271	13.77054	25.82321	0.7418
At most 4	0.239436	9.579316	19.38704	0.6637
At most 5	0.145315	5.495777	12.51798	0.5268

Max-eigenvalue test indicates 2 cointegrating equation(s) at the 0.05 level.

- denotes rejection of the hypothesis at the 0.05 level.

Source: Author's Computation, 2026.

Table 4.4 revealed the Johansen cointegration test results using the maximum eigenvalue statistic. The result showed that the maximum eigenvalue statistic for the hypothesis of no cointegrating equation was 48.37839, which exceeded the 5% critical value of 44.49720, with a probability value of 0.0180. This led to the rejection of the null hypothesis of no cointegration.

Table 4.4 further revealed that the maximum eigenvalue statistic for the hypothesis of at most one cointegrating equation was 40.72097, which was greater than the 5% critical value of 38.33101, with a probability value of 0.0261. This also resulted in the rejection of the null hypothesis.

However, the maximum eigenvalue statistics for at most two, at most three, at most four, and at most five cointegrating equations were 30.39747, 13.77054, 9.579316, and 5.495777 respectively, which were all lower than their corresponding critical values. Their probability values of 0.0799, 0.7418, 0.6637, and 0.5268 were all greater than 0.05, indicating that the null hypotheses could not be rejected.

The result indicated the existence of two cointegrating equations among the variables, confirming the presence of a long-run relationship between trade liberalization and economic growth in Nigeria.

4.3 MODEL ESTIMATION

4.3.1: VAR Lag Order Selection Criteria

Table 4.5: VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1945.261	NA	1.07e+41	111.5006	111.7672	111.5927
1	-1754.753	304.8132*	1.62e+37*	102.6716*	104.5380*	103.3159*
2	-1728.153	33.44000	3.35e+37	103.2087	106.6749	104.4053
3	-1696.356	29.07125	7.46e+37	103.4489	108.5149	105.1977

- indicates lag order selected by the criterion.

Source: Author's Computation, 2026.

Table 4.5 revealed the Vector Autoregressive (VAR) lag order selection criteria for the variables used in the study. The result showed that lag one [1] was selected as the optimal lag length because the majority of the selection criteria, including the Final Prediction Error (FPE), Akaike Information Criterion (AIC), Schwarz Criterion (SC), and Hannan-Quinn Criterion (HQ), all selected lag one.

From Table 4.5, lag one recorded the lowest AIC value of 102.6716, SC value of 104.5380, and HQ value of 103.3159 compared to other lag lengths. The implication of this result was that lag one was the most appropriate lag structure for estimating the Vector Error Correction Model (VECM) in the study.

4.3.2: Abridged VECM Long-Run Model Result

Table 4.6: Abridged VECM Long-Run Model Result

Cointegrating Equation: CointEq1		Coefficient
RGDP(-1)		1.000000
TARFS(-1)		42135.65
EXPGR/MKTACS(-1)		32149.20
TROP(-1)		5789.543
CEDS/TRDFAC(-1)		2.21E-06
EXNR(-1)		-3552.061
C		-1460520
Variable	**Standard Error**	**t-Statistic**
TARFS(-1)	(6977.84)	[6.03849]
EXPGR/MKTACS(-1)	(4420.37)	[7.27296]
TROP(-1)	(6568.34)	[0.88143]
CEDS/TRDFAC(-1)	(7.1E-07)	[3.11743]
EXNR(-1)	(1775.09)	[-2.00106]

Source: Author's Computation, 2026.

Table 4.6 revealed the long-run Vector Error Correction Model (VECM) result for the relationship between trade liberalization and economic growth in Nigeria. The result showed that the coefficient of Average Tariffs (TARFS) was 42135.65, indicating a positive relationship between tariff rates and economic growth in the long run. The associated t-statistic value of 6.03849 suggested that tariff rates exerted a strong influence on economic growth during the study period.

From Table 4.6, the coefficient of Market Access (MKTACS) was 32149.20, indicating a positive relationship between market access and RGDP in the long run. The associated t-statistic value of 7.27296 suggested that market access significantly influenced economic growth in Nigeria.

Table 4.6 further revealed that Trade Openness (TROP) had a coefficient value of 5789.543, indicating a positive relationship with economic growth. However, the associated t-statistic value of 0.88143 suggested that the effect was statistically weak.

From Table 4.6, the coefficient of Trade Facilitation (TRDFAC) was 2.21E-06, indicating a positive relationship between trade facilitation and economic growth. The associated t-statistic value of 3.11743 suggested that trade facilitation significantly influenced economic growth during the study period.

Table 4.6 also revealed that Exchange Rate (EXNR) recorded a coefficient value of -3552.061, indicating a negative relationship between exchange rate and economic growth in the long run. The associated t-statistic value of -2.00106 suggested that exchange rate depreciation exerted adverse effects on economic growth in Nigeria.

The constant term of -1460520 represented the long-run equilibrium adjustment level in the model. Overall, the result implied that trade liberalization variables maintained long-run relationships with economic growth in Nigeria during the study period.

4.4 POST-TEST / DIAGNOSTIC ANALYSIS

4.4.1: Block Exogeneity Wald Test

Table 4.7: Block Exogeneity Wald Test

Dependent Variable: D(RGDP)

Excluded Variable	Chi-sq	Df	Prob.
D(TARFS)	0.116656	1	0.7327
D(MKTACS)	0.046806	1	0.8287
D(TROP)	0.520708	1	0.4705
D(TRDFAC)	1.196405	1	0.2740
D(EXNR)	0.004533	1	0.9463
All	1.593385	5	0.9020

Source: Author's Computation, 2026.

Table 4.7 revealed the Block Exogeneity Wald Test results for the causal relationship between trade liberalization variables and economic growth in Nigeria. The result showed that the Chi-square value for D(TARFS) was 0.116656 with a probability value of 0.7327, which is greater than 0.05. This indicated that Average Tariffs did not significantly cause changes in RGDP in the short run.

From Table 4.7, Market Access (MKTACS) recorded a Chi-square value of 0.046806 with a probability value of 0.8287, indicating that market access did not significantly influence economic growth in the short run.

Table 4.7 further revealed that the Chi-square value for D(TROP) was 0.520708 with a probability value of 0.4705, implying that trade openness did not significantly cause changes in RGDP in the short run.

From Table 4.7, Trade Facilitation (TRDFAC) had a Chi-square value of 1.196405 with a probability value of 0.2740, indicating that trade facilitation did not significantly influence economic growth in the short run.

Table 4.7 also revealed that Exchange Rate (EXNR) recorded a Chi-square value of 0.004533 with a probability value of 0.9463, suggesting that exchange rate did not significantly cause changes in economic growth in the short run.

The joint significance test for all explanatory variables produced a Chi-square value of 1.593385 with a probability value of 0.9020. Since the probability value exceeded 0.05, the null hypothesis could not be rejected. Therefore, the study concluded that trade liberalization variables did not exert significant short-run causal effects on economic growth in Nigeria.

4.4.2: Response of Economic Growth (RGDP)

Table 4.8: Response of Economic Growth (RGDP)

Period	RGDP	TARFS	MKTACS	TROP	TRDFAC	EXNR
1	1419.442	0.000000	0.000000	0.000000	0.000000	0.000000
2	2138.578	-44.40613	-174.2588	102.0736	-279.9918	39.57712
3	2446.612	-56.47959	-32.57033	155.1628	-506.1894	112.7173
4	2585.277	19.97102	91.94347	163.3343	-665.5246	73.38000
5	2679.162	6.132086	134.5331	194.9309	-790.0420	10.62025
6	2746.988	9.667424	180.1064	245.6164	-876.9212	-8.393645
7	2771.860	21.81669	239.2787	262.6981	-936.1498	-21.67212
8	2795.607	25.74774	249.7045	271.5089	-981.7132	-42.81359
9	2813.180	22.48676	269.1905	287.0286	-1010.562	-50.54973
10	2821.478	29.22346	286.9810	294.1632	-1029.919	-55.94628

Source: Author's Computation, 2026.

Table 4.8 revealed the impulse response of Economic Growth (RGDP) to shocks in RGDP, TARFS, MKTACS, TROP, TRDFAC, and EXNR over a ten-period horizon. The result showed that RGDP responded positively to its own shocks throughout the study period.

From Table 4.8, RGDP recorded a response value of 1419.442 in period one, which steadily increased to 2821.478 in period ten. This indicated that economic growth maintained positive self-adjustment over time.

Table 4.8 further revealed that the response of RGDP to shocks in Average Tariffs (TARFS) was initially negative in periods two and three with values of -44.40613 and -56.47959 respectively, but later became positive from period four onward, reaching 29.22346 in period ten. This suggested that tariff shocks initially exerted adverse effects on economic growth before becoming positive in later periods.

From Table 4.8, the response of RGDP to shocks in Market Access (MKTACS) was negative in period two with a value of -174.2588, but later became positive and increased steadily to 286.9810 in period ten. This implied that market access shocks eventually exerted positive effects on economic growth in the long run.

Table 4.8 also revealed that the response of RGDP to shocks in Trade Openness (TROP) remained positive throughout the periods after period one, increasing from 102.0736 in period two to 294.1632 in period ten. This suggested that trade openness exerted increasing positive effects on economic growth over time.

From Table 4.8, the response of RGDP to shocks in Trade Facilitation (TRDFAC) remained negative throughout the periods after period one, declining from -279.9918 in period two to -1029.919 in period ten. This implied that trade facilitation shocks exerted persistent adverse effects on economic growth during the study period.

Table 4.8 further revealed that the response of RGDP to shocks in Exchange Rate (EXNR) was positive in the early periods, increasing from 39.57712 in period two to 112.7173 in period three, but later became negative from period six onward, reaching -55.94628 in period ten. This indicated that exchange rate shocks initially stimulated economic growth before exerting adverse effects in the long run.

4.4.3: Variance Decomposition of Economic Growth (RGDP)

Table 4.9: Variance Decomposition of Economic Growth (RGDP)

Period	S.E.	RGDP	TARFS	MKTACS	TROP	TRDFAC	EXNR
1	1419.442	100.0000	0.000000	0.000000	0.000000	0.000000	0.000000
2	2590.569	98.17139	0.029383	0.452480	0.155252	1.168154	0.023340
3	3604.750	96.76796	0.039724	0.241853	0.265461	2.575169	0.109830
4	4490.180	95.51717	0.027580	0.197803	0.303410	3.856547	0.097493
5	5293.396	94.34608	0.019980	0.206922	0.353928	5.002536	0.070553
6	6035.553	93.28495	0.015625	0.248211	0.437846	5.958903	0.054462
7	6716.748	92.35341	0.013671	0.327326	0.506505	6.754073	0.045017
8	7350.677	91.57531	0.012642	0.388701	0.559341	7.423023	0.040979
9	7945.160	90.92094	0.011622	0.447502	0.609279	7.971533	0.039124
10	8504.112	90.36944	0.011325	0.504489	0.651470	8.424800	0.038478

Source: Author's Computation, 2026.

Table 4.9 revealed the variance decomposition analysis of Economic Growth (RGDP) over the ten-period horizon. The result showed that RGDP accounted for 100% of its forecast error variance in period one, indicating that economic growth was entirely explained by its own innovations at the initial stage.

From Table 4.9, the contribution of RGDP to its own variance gradually declined from 100.0000% in period one to 90.36944% in period ten. This suggested that although economic growth remained the dominant source of its fluctuations, the influence of trade liberalization variables increased over time.

Table 4.9 further revealed that Average Tariffs (TARFS) contributed 0.029383% to RGDP variance in period two and declined slightly to 0.011325% in period ten, indicating a relatively weak contribution to fluctuations in economic growth.

From Table 4.9, Market Access (MKTACS) contributed 0.452480% to RGDP variance in period two and increased gradually to 0.504489% in period ten. This implied that market access exerted a small but increasing influence on economic growth variations.

Table 4.9 also revealed that Trade Openness (TROP) contributed 0.155252% to RGDP variance in period two and increased steadily to 0.651470% in period ten, indicating that trade openness exerted a growing influence on economic growth fluctuations.

From Table 4.9, Trade Facilitation (TRDFAC) contributed 1.168154% to RGDP variance in period two and increased significantly to 8.424800% in period ten. This suggested that trade facilitation became an increasingly important determinant of economic growth variations over time.

Table 4.9 further revealed that Exchange Rate (EXNR) contributed 0.023340% to RGDP variance in period two and stabilized at 0.038478% in period ten, indicating a relatively small but persistent contribution to economic growth fluctuations.

Overall, the variance decomposition result suggested that RGDP fluctuations were largely explained by its own shocks, while trade liberalization variables contributed moderately to economic growth variations in Nigeria during the study period.

4.5 Discussion of Findings

The study examined the effect of trade liberalization on economic growth in Nigeria from 1986 to 2025 using Economic Growth measured by Real Gross Domestic Product (RGDP) as the dependent variable, while Exchange Rate (EXNR), Market Access (MKTACS), Trade Facilitation (TRDFAC), Trade Openness (TROP), and Average Tariffs (TARFS) served as explanatory variables representing different dimensions of trade liberalization and external sector performance. The descriptive statistics revealed that economic growth recorded a mean value of 42686.20, while exchange rate, market access, trade facilitation, trade openness, and average tariffs recorded mean values of 138.3953, 2.232318, 3.60E+11, 33.77016, and 19.84789 respectively, indicating that Nigeria experienced significant fluctuations in external trade conditions and macroeconomic performance during the study period. The high standard deviation values of 125.0085 for exchange rate, 24.50130 for market access, 4.48E+11 for trade facilitation, and 13.35004 for tariff rates further revealed considerable instability in Nigeria's trade environment and policy implementation, while the skewness value of 3.429852 and kurtosis value of 18.09169 for tariff rates indicated the presence of extreme fluctuations and irregularities in tariff administration over the years. The descriptive findings therefore suggest that trade liberalization policies in Nigeria were characterized by volatility and policy inconsistencies which influenced economic growth performance throughout the period under investigation.

The Augmented Dickey-Fuller unit root test established that all the variables became stationary after first differencing at I(1), as economic growth recorded an ADF statistic of -3.431066, trade openness recorded -7.726357, average tariffs recorded -10.05392, market access recorded -2.964974, trade facilitation recorded -8.247587, while exchange rate recorded -4.451095, all exceeding their respective critical values at the 5 percent significance level. This result confirmed the absence of spurious regression and justified the adoption of the Vector Error Correction Mechanism estimation technique. The Johansen cointegration trace and maximum eigenvalue tests further revealed the existence of two cointegrating equations because the trace statistics of 148.3425 and 99.96407 exceeded their critical values of 117.7082 and 88.80380 respectively, while the maximum eigen statistics of 48.37839 and 40.72097 equally exceeded their critical values of 44.49720 and 38.33101 with probabilities less than 0.05. This finding implies that trade liberalization variables and economic growth maintained stable long-run equilibrium relationships in Nigeria throughout the study period. The finding supports the Classical Theory of International Trade which argues that increased trade integration, specialization, and openness improve productivity and long-run economic performance through expanded participation in international trade activities. The result also validates the Heckscher–Ohlin Theory which explains that countries derive growth benefits from trade by utilizing their abundant productive resources efficiently and engaging in specialization according to comparative resource advantages.

The VECM long-run estimation revealed that average tariffs, market access, trade openness, and trade facilitation exerted positive relationships with economic growth as indicated by coefficient values of 42135.65, 32149.20, 5789.543, and 2.21E-06 respectively, while exchange rate exerted a negative relationship with economic growth with a coefficient value of -3552.061. The positive coefficient of average tariffs suggests that tariff administration contributed positively to economic growth through revenue generation and protection of domestic industries from excessive foreign competition, while the positive coefficient of market access implies that increased access to international markets enhanced export opportunities, trade participation, and productive activities within the Nigerian economy. Similarly, the positive relationship between trade openness and economic growth indicates that liberal trade policies promoted market expansion, resource allocation efficiency, and economic integration, whereas the positive effect of trade facilitation suggests that improvements in customs administration, logistics, and trade infrastructure contributed positively to economic activities and external trade performance. These findings strongly align with the Classical Theory of International Trade and Krugman's Theory of Trade Liberalization which emphasize that trade openness and reduced barriers to international trade promote economies of scale, efficiency gains, technological transfer, specialization, and productivity improvement. The findings also support the Heckscher–Ohlin Theory because Nigeria's participation in international trade enhanced the utilization of its abundant natural resources and expanded opportunities for external market integration. However, the negative long-run relationship between exchange rate and economic growth contradicts the optimistic assumptions of the Classical and Krugman trade theories because persistent exchange rate depreciation and instability weakened productive activities, increased import costs, and reduced macroeconomic stability within the Nigerian economy despite the adoption of trade liberalization policies.

The Block Exogeneity Wald Test further revealed that average tariffs, market access, trade openness, trade facilitation, and exchange rate did not exert statistically significant short-run causality on economic growth because their probability values of 0.7327, 0.8287, 0.4705, 0.2740, and 0.9463 respectively exceeded the 5 percent significance level. This result implies that trade liberalization variables alone were insufficient to independently stimulate economic growth in the short run despite their positive long-run contributions. The finding contradicts the Classical Theory of International Trade and Krugman's Theory of Trade Liberalization which strongly argue that liberalization policies generate immediate gains in efficiency, productivity, competition, and economic expansion. The finding however supports Duru et al. (2020) who found that trade liberalization did not significantly support economic growth in Nigeria because the economy lacked the structural and industrial capacity required to absorb external trade shocks effectively. The result also aligns with Mohammed (2023) who observed that trade liberalization contributes positively but only marginally to economic growth in many Sub-Saharan African economies. Similarly, the findings partially agree with Ogundipe and Adenekan (2022) who reported that trade liberalization variables exert stronger long-run effects on economic growth than short-run effects within the Nigerian economy. The weak short-run effects observed in this study may therefore be attributed to poor infrastructure, weak manufacturing capacity, institutional inefficiencies, excessive import dependence, and macroeconomic instability which limited the immediate benefits of trade liberalization policies in Nigeria.

The impulse response analysis further revealed that economic growth responded differently to shocks from the various trade liberalization variables over the forecast period. Trade openness generated positive responses on economic growth from 102.0736 in period 2 to

294.1632 in period 10, indicating that increased trade openness contributed positively to economic growth over time through greater international market participation and increased trade activities. Market access initially generated a negative response of -174.2588 in period 2 before becoming positive from 91.94347 in period 4 to 286.9810 in period 10, suggesting that increased market integration initially created adjustment difficulties before contributing positively to productive activities and export performance over time. Average tariffs also produced negative responses in the early periods before becoming persistently positive from period 4 onward, indicating that tariff reforms may initially generate disruptions but eventually support domestic production and economic growth. Conversely, trade facilitation generated persistently negative responses from -279.9918 in period 2 to -1029.919 in period 10, implying that deficiencies in trade infrastructure, customs procedures, logistics systems, and institutional frameworks weakened the effectiveness of trade facilitation policies in stimulating economic growth in Nigeria. Exchange rate shocks initially generated positive responses but later became persistently negative from -8.393645 in period 6 to -55.94628 in period 10, indicating that prolonged exchange rate instability adversely affected economic growth over time. These findings partially contradict Krugman's Theory of Trade Liberalization which assumes that liberalization policies and international integration generate sustained productivity gains and industrial competitiveness. The persistent negative responses associated with exchange rate instability and weak trade facilitation indicate that structural deficiencies and macroeconomic instability undermined the potential gains expected from trade liberalization within the Nigerian economy.

The variance decomposition analysis further revealed that economic growth continued to explain the largest proportion of its own forecast error variance, accounting for 100 percent in period 1 and 90.36944 percent in period 10, while trade facilitation explained 8.424800 percent, trade openness explained 0.651470 percent, market access explained 0.504489 percent, exchange rate explained 0.038478 percent, and tariff rates explained 0.011325 percent by the tenth period. This implies that although trade liberalization variables contributed to economic growth, their overall influence remained relatively small compared to other macroeconomic determinants of growth within the Nigerian economy. However, the gradual increase in the contribution of trade openness, market access, and trade facilitation indicates that trade liberalization policies may become more effective over time if supported by stable macroeconomic policies, institutional reforms, infrastructural development, and improved productive capacity. The findings therefore support Mohammed (2023) who maintained that trade liberalization contributes positively but marginally to economic growth in Sub-Saharan African economies, while also supporting Al Hemzawia et al. (2021) who found that external trade variables positively influence economic growth through increased trade participation and market integration. The findings equally align with Ogbu (2019) who reported a positive relationship between trade liberalization and economic growth in Nigeria, although the present study further revealed that such positive effects are more pronounced in the long run than in the short run.

Overall, the findings of the study established that trade liberalization maintained significant long-run relationships with economic growth in Nigeria between 1986 and 2025, as market access, trade openness, trade facilitation, and tariff reforms contributed positively to long-run economic performance while exchange rate instability exerted negative effects on economic growth. The findings therefore validate the assumptions of the Classical Theory of International Trade, the Heckscher–Ohlin Theory, and Krugman's Theory of Trade Liberalization to the extent that trade openness, market integration, specialization, and liberal trade policies promote long-run economic expansion, productivity growth, and international

competitiveness, while simultaneously revealing that structural rigidities, infrastructural deficiencies, institutional weaknesses, and exchange rate instability significantly constrain the immediate and full realization of the growth benefits associated with trade liberalization policies in Nigeria.

5.1 Conclusion

This study examined the effect of trade liberalization on economic growth in Nigeria from 1986 to 2025 using Real Gross Domestic Product (RGDP) as the dependent variable, while Exchange Rate (EXNR), Market Access (MKTACS), Trade Facilitation (TRDFAC), Trade Openness (TROP), and Average Tariffs (TARFS) served as indicators of trade liberalization and external sector performance. The study employed descriptive statistics, Augmented Dickey-Fuller unit root test, Johansen cointegration test, Vector Error Correction Mechanism, impulse response analysis, variance decomposition, and Block Exogeneity Wald test to evaluate the dynamic relationship among the variables. The findings established the existence of a stable long-run equilibrium relationship between trade liberalization variables and economic growth in Nigeria. The study further revealed that market access, trade openness, trade facilitation, and tariff reforms exerted positive long-run effects on economic growth, indicating that increased integration into international markets contributed positively to productivity, market expansion, and economic development. However, exchange rate instability exerted negative effects on economic growth in the long run, suggesting that persistent depreciation and macroeconomic volatility weakened productive activities and external sector performance. The study also found that trade liberalization variables exerted weak and statistically insignificant short-run effects on economic growth due to structural rigidities, poor infrastructure, weak industrial capacity, institutional inefficiencies, and excessive dependence on imports. The study therefore concluded that although trade liberalization promotes long-run economic growth in Nigeria, the full realization of its benefits remains constrained by exchange rate instability and persistent structural weaknesses within the economy.

5.2 Recommendations

- The government should implement stable and market-oriented exchange rate policies capable of reducing excessive currency volatility and promoting macroeconomic stability in order to improve productive activities and investor confidence within the Nigerian economy.
- Policy makers should strengthen trade liberalization policies by expanding market access opportunities, promoting export diversification, and encouraging greater participation of domestic industries in international trade activities.
- The government should improve trade facilitation mechanisms through investment in transportation systems, port infrastructure, customs administration, logistics networks, and digital trade platforms in order to enhance trade efficiency and reduce transaction costs.
- Authorities should ensure consistency and transparency in tariff administration and trade policies to minimize policy uncertainty and create a more conducive environment for local and foreign investment.
- The government should formulate complementary fiscal and monetary policies aimed at strengthening domestic industrial capacity, reducing excessive import dependence, and encouraging the production and export of value-added goods.

- Institutional and regulatory frameworks guiding trade liberalization should be strengthened through effective monitoring, accountability, and policy coordination in order to enhance the long-run effectiveness of trade liberalization policies on economic growth in Nigeria.

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