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EXCHANGE RATE AND TRADE LIBERALIZATION EFFECTS ON ECONOMIC GROWTH IN NIGERIA: EVIDENCE FROM 1986–2025

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Abstract

This study investigated the effect of exchange rate and trade liberalization on economic growth in Nigeria from 1986 to 2025 using Real Gross Domestic Product (RGDP) as a proxy for economic growth, while Exchange Rate (EXNR), Trade Openness (TROP), and Tariff Rates (TARFS) served as indicators of exchange rate management and trade liberalization. The study aimed to examine the long-run and short-run relationship between exchange rate, trade liberalization, and economic growth in Nigeria within the study period. The study adopted an ex post facto research design because the investigation relied on historical and already existing macroeconomic data obtained from the Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics, and World Development Indicators database. The Vector Error Correction Model (VECM) was employed as the estimation technique after conducting Augmented Dickey-Fuller unit root and Johansen cointegration tests. The theoretical framework of the study was anchored on the Classical Theory of International Trade, Heckscher–Ohlin Theory of International Trade, and Krugman's Theory of Trade Liberalization. The findings revealed the existence of a stable long-run equilibrium relationship among the variables, while trade openness and tariff reforms exerted positive long-run effects on economic growth. However, exchange rate instability exerted negative effects on economic growth and the short-run effects of the explanatory variables remained weak and statistically insignificant. The study concluded that trade liberalization promotes long-run economic growth in Nigeria despite the adverse effects of exchange rate instability and structural rigidities. The study therefore recommended stable exchange rate management, improved infrastructural development, policy consistency, export diversification, and strengthened institutional frameworks to enhance the effectiveness of trade liberalization policies in Nigeria.

Keywords: Economic Growth, Exchange Rate, Nigeria, Trade Liberalization

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1.1 INTRODUCTION

Economic growth remains one of the major objectives of every developing economy because it reflects the ability of a nation to improve production, generate employment opportunities, reduce poverty, and enhance the living standards of its population. In the modern global economy, exchange rate management and trade liberalization have become important macroeconomic instruments used by governments to stimulate economic growth and strengthen international competitiveness. Exchange rate refers to the price of one country's currency in relation to another currency, while trade liberalization involves the reduction or removal of trade barriers such as tariffs, quotas, import restrictions, and excessive government regulations that limit international trade activities. Both exchange rate policies and trade liberalization reforms influence investment decisions, export performance, import activities, industrial productivity, and overall economic stability. Countries that maintain stable exchange rate systems and open trade regimes often experience improvements in trade flows, industrial development, and foreign direct investment because such policies encourage integration into the global economy and support efficient allocation of resources (World Bank, 2024; International Monetary Fund, 2024).

Globally, exchange rate policies and trade liberalization have played significant roles in shaping economic transformation and international trade relations over the past four decades. Since the collapse of the Bretton Woods fixed exchange rate system in the early 1970s, many countries have adopted flexible or managed exchange rate systems aimed at improving external competitiveness and macroeconomic stability. At the same time, globalization and international economic integration have encouraged countries to implement trade liberalization reforms in order to expand market access, increase exports, and attract foreign investment. According to the World Trade Organization, global merchandise trade expanded significantly between 1990 and 2024 as countries reduced trade restrictions and embraced market-oriented economic reforms that supported industrial growth and international competitiveness (WTO, 2024). Economies such as China, South Korea, Singapore, and India experienced substantial increases in productivity and industrial output after adopting export-oriented policies and liberalized trade systems that encouraged participation in global value chains and international markets (UNCTAD, 2023).

The relationship between exchange rate movements and economic growth has attracted widespread attention among economists because exchange rate fluctuations directly influence inflation, external trade, balance of payments, and investment decisions. A stable and competitive exchange rate can improve export performance by making domestic goods cheaper in international markets, thereby stimulating industrial production and increasing foreign exchange earnings. However, excessive exchange rate volatility may create uncertainty for investors and increase the cost of imports, especially in developing economies that rely heavily on imported machinery, technology, and industrial inputs. Recent reports by the International Monetary Fund reveal that exchange rate instability remains a major challenge for many developing countries because depreciation often contributes to inflationary pressures and rising production costs (International Monetary Fund, 2024). Consequently, governments across the world continue to pursue exchange rate policies aimed at balancing external competitiveness with domestic price stability and sustainable economic growth.

Trade liberalization has also become a major component of economic reform programmes globally because of its potential to promote efficiency, specialization, and international

competitiveness. Since the establishment of the World Trade Organization in 1995, countries have increasingly embraced liberal trade policies through bilateral, regional, and multilateral trade agreements aimed at reducing barriers to international commerce. Studies have shown that countries with liberalized trade systems generally achieve higher levels of productivity, export growth, and technological advancement compared to economies characterized by protectionist policies and excessive government controls (Organisation for Economic Co-operation and Development, 2023). Furthermore, the World Bank reported that trade openness contributes significantly to poverty reduction and economic diversification by expanding access to larger markets and increasing opportunities for investment and industrial expansion (World Bank, 2024). These global developments demonstrate that exchange rate management and trade liberalization are closely linked to economic performance and national development strategies.

Across Africa, exchange rate instability and trade restrictions have continued to affect economic growth and regional competitiveness despite ongoing efforts toward economic integration and policy reforms. Many African countries remain dependent on primary commodity exports such as crude oil, minerals, and agricultural products, making their economies highly vulnerable to fluctuations in global commodity prices and exchange rate volatility. According to the African Development Bank, exchange rate depreciation and inflationary pressures have contributed significantly to macroeconomic instability in several African economies because of heavy dependence on imported goods and weak industrial capacity (African Development Bank, 2024). In addition, trade barriers, poor infrastructure, and inefficient customs systems continue to limit intra-African trade and industrial development across the continent. As a result, African governments have increasingly adopted trade liberalization policies and regional integration strategies aimed at improving competitiveness, attracting investment, and expanding market opportunities through agreements such as the African Continental Free Trade Area.

The implementation of the African Continental Free Trade Area has further strengthened the importance of trade liberalization within Africa because the agreement seeks to create a single continental market capable of promoting industrialization and economic transformation. The initiative aims to eliminate tariffs on most goods traded within Africa, harmonize customs procedures, and improve trade efficiency across member states. Economic projections suggest that successful implementation of the agreement could increase intra-African trade significantly and stimulate industrial production through improved market access and regional value chains (United Nations Economic Commission for Africa, 2024). Furthermore, African economies are increasingly investing in digital trade systems, transportation infrastructure, and customs modernization in order to reduce transaction costs and improve competitiveness within the global trading system. These reforms highlight the growing recognition that liberalized trade regimes and stable macroeconomic policies are essential for achieving sustainable growth and economic resilience across Africa.

In Nigeria, exchange rate management and trade liberalization became major components of economic policy following the introduction of the Structural Adjustment Programme in 1986. Before the implementation of the programme, Nigeria operated a highly regulated economy characterized by import substitution policies, foreign exchange controls, high tariff barriers, and extensive government intervention in economic activities. However, the collapse of global oil prices, declining foreign reserves, rising debt obligations, and persistent balance of payment deficits during the 1980s compelled the government to adopt market-oriented reforms aimed at restructuring the economy. The Structural Adjustment Programme

introduced policies such as currency devaluation, deregulation, privatization, and trade liberalization in order to improve export competitiveness, encourage private sector participation, and integrate Nigeria into the global economy (Central Bank of Nigeria, 2024). Since then, exchange rate reforms and trade liberalization policies have remained central features of Nigeria's economic management strategies.

Nigeria's exchange rate system has undergone several transformations since 1986 as successive governments attempted to balance external competitiveness with macroeconomic stability. The country moved from a fixed exchange rate regime to various forms of managed floating systems aimed at improving foreign exchange allocation and encouraging export growth. Despite these reforms, the Nigerian economy has continued to experience persistent exchange rate volatility due to fluctuations in global oil prices, declining foreign reserves, inflationary pressures, and external economic shocks. Reports by the Central Bank of Nigeria indicate that the value of the naira has depreciated significantly over the years, affecting import costs, inflation levels, and business operations within the economy (Central Bank of Nigeria, 2024). Exchange rate instability has also created uncertainty for investors and manufacturers who depend heavily on imported machinery and raw materials for production activities.

Trade liberalization policies in Nigeria were introduced to reduce excessive government controls and encourage greater participation in international trade. Since the adoption of liberalization reforms, Nigeria has reduced certain tariff restrictions, promoted export expansion, and participated actively in regional and international trade agreements such as the Economic Community of West African States Trade Liberalization Scheme and the African Continental Free Trade Area. These policies were expected to improve industrial productivity, increase foreign direct investment, and promote diversification away from excessive dependence on crude oil exports. Nevertheless, the benefits of trade liberalization in Nigeria have remained mixed because structural challenges such as inadequate infrastructure, insecurity, policy inconsistency, and weak manufacturing capacity continue to limit competitiveness and industrial growth (National Bureau of Statistics, 2025). Furthermore, excessive import dependence has contributed to pressure on foreign exchange reserves and weakened the country's trade balance over time.

The Nigerian economy has experienced periods of economic growth and recession largely influenced by exchange rate fluctuations, global oil market conditions, and trade policy changes. During periods of high oil prices, Nigeria recorded increases in foreign exchange earnings and economic growth, while periods of oil price decline often resulted in fiscal crises, exchange rate depreciation, and rising inflation. Recent economic assessments reveal that exchange rate instability remains one of the major challenges affecting investment, industrial productivity, and macroeconomic stability in Nigeria because businesses face rising production costs and uncertainty in foreign exchange markets (International Monetary Fund, 2025). In addition, the manufacturing and agricultural sectors continue to face difficulties competing with imported goods despite liberalization policies intended to stimulate domestic production and export expansion.

Nigeria nevertheless possesses enormous economic potential due to its large population, abundant natural resources, expanding digital economy, and strategic position within Africa. Recent policy reforms aimed at improving exchange rate management, enhancing domestic production, and promoting export diversification have renewed discussions regarding the role of macroeconomic reforms in achieving sustainable development. Economic experts argue

that if Nigeria successfully stabilizes its exchange rate system and strengthens productive sectors through effective trade policies, the country could significantly improve industrial output, employment generation, and international competitiveness (United Nations Development Programme, 2024). Moreover, increased participation in regional and global markets could support diversification efforts and reduce excessive dependence on crude oil revenues as the primary source of foreign exchange earnings.

Against this backdrop, this study examines EXCHANGE RATE AND TRADE LIBERALIZATION EFFECTS ON ECONOMIC GROWTH IN NIGERIA: EVIDENCE FROM 1986–2025 with emphasis on how exchange rate fluctuations and trade liberalization policies have influenced Nigeria's economic performance over the years. The study also seeks to evaluate the extent to which macroeconomic reforms, trade openness, and exchange rate management have contributed to economic growth, industrial development, export performance, and macroeconomic stability within the Nigerian economy during the period under review.

2.1 Conceptual Review

2.1.1 Exchange Rate

Exchange rate refers to the value of one nation's currency in comparison with another currency within the international financial system. It determines the rate at which domestic currency can be exchanged for foreign currencies and plays a significant role in international trade, investment activities, inflation control, and balance of payments management. Exchange rate movements influence the prices of imports and exports because depreciation makes imported goods more expensive while potentially increasing the competitiveness of exports in global markets. Stable exchange rate systems are often associated with improved investor confidence and macroeconomic stability, whereas persistent volatility may create uncertainty in business operations and discourage investment activities. In developing economies such as Nigeria, exchange rate fluctuations have remained a major economic concern because of heavy dependence on imported goods and foreign exchange earnings from crude oil exports (Ogunleye & Hassan, 2024). Consequently, exchange rate management is widely regarded as an important policy instrument for achieving sustainable economic growth and external sector stability (International Monetary Fund, 2024).

2.1.2 Trade Liberalization

Trade liberalization refers to the reduction or elimination of trade restrictions such as tariffs, import quotas, licensing requirements, and excessive government regulations that hinder the free flow of goods and services among countries. The concept promotes openness in international trade by encouraging competition, market integration, and greater participation in global commerce. Trade liberalization is often implemented through economic reforms, regional trade agreements, and multilateral trade policies designed to improve efficiency and attract investment. Economists argue that open trade systems enhance productivity by allowing countries to specialize in areas where they possess comparative advantage while also providing consumers and industries access to a wider range of products and production inputs (Akinsola&Dibia, 2023). In many developing countries, trade liberalization policies have been introduced to encourage export diversification, stimulate industrial growth, and reduce dependence on narrow export commodities. However, the effectiveness of liberalization policies depends largely on infrastructure development, institutional capacity,

and the competitiveness of domestic industries within the global market system (World Trade Organization, 2024).

2.1.3 Economic Growth

Economic growth refers to the continuous increase in the productive capacity of an economy over a period of time, usually measured by the growth in Gross Domestic Product (GDP) or national income. It reflects the ability of an economy to produce more goods and services, create employment opportunities, improve living standards, and enhance national welfare. Economic growth is influenced by several factors including investment, technological advancement, trade expansion, human capital development, political stability, and effective government policies. In contemporary economic analysis, international trade and macroeconomic reforms are considered major determinants of growth because countries that integrate effectively into global markets often achieve higher productivity and industrial development (Nwankwo & Ibrahim, 2022). In Nigeria, economic growth has historically been shaped by fluctuations in crude oil prices, exchange rate movements, trade policies, and external economic conditions. As a result, policymakers continue to emphasize the importance of stable macroeconomic management and economic diversification in achieving long-term and sustainable growth within the economy (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 already existing macroeconomic data without any direct manipulation of the study variables. The design was considered suitable for examining the effects of exchange rate and trade liberalization on economic growth in Nigeria from 1986 to 2025. The study employed Real Gross Domestic Product (RGDP) as the dependent variable, while Exchange Rate (EXNR) and Trade Openness (TROP), representing trade liberalization, served as the explanatory variables. The model for the study was adapted from Duru et al. (2020) titled *Trade Liberalization and Economic Growth in Nigeria*, which examined the relationship between trade liberalization and economic performance using macroeconomic indicators associated with external trade and economic growth.

The functional relationship of the model is specified as RGDP = f(EXNR, TROP, μ), where RGDP represents Real Gross Domestic Product, EXNR denotes Exchange Rate, TROP

represents Trade Openness as a proxy for trade liberalization, while μ represents the stochastic error term. Annual time series data covering the period from 1986 to 2025 were obtained from the Central Bank of Nigeria Statistical Bulletin, National Bureau of Statistics, and World Development Indicators 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 because the variables were expected to exhibit long-run equilibrium relationships after satisfying stationarity conditions. The Augmented Dickey-Fuller unit root test and Johansen cointegration test were conducted to determine the order of integration and long-run relationship among the variables. Post-estimation analyses included Granger causality test, variance decomposition, impulse response function, and Block Exogeneity Wald test to evaluate the dynamic interactions, causality patterns, and response behaviour 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

Statistics	RGDP	EXNR	TROP	TARFS
Mean	42686.20	138.3953	33.77016	19.84789
Median	37604.19	127.2400	34.10325	12.75000
Maximum	73764.32	429.3500	53.27796	87.19000
Minimum	17180.55	2.020000	9.135846	9.940000
Std. Dev.	21107.70	125.0085	10.70019	13.35004
Skewness	0.291687	0.860167	-0.199428	3.429852
Kurtosis	1.421233	2.787453	2.431718	18.09169
Jarque-Bera	4.485317	4.757481	0.763215	435.1233
Probability	0.106176	0.092667	0.682763	0.000000
Sum	1622075.	5259.020	1283.266	754.2200
Sum Sq. Dev.	1.65E+10	578203.3	4236.280	6594.277
Observations	39	39	39	39

Source: Author's Computation, 2026.

Table 4.1 revealed the descriptive statistics of Real Gross Domestic Product (RGDP), Exchange Rate (EXNR), Trade Openness (TROP), and Average Tariff Rates (TARFS) in Nigeria for the period 1986–2025. The result showed that 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 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 the study period. 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 is greater than 0.05, indicated that TROP was normally distributed.

Table 4.1 also revealed that Average Tariff Rates (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 over time. 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: Augmented Dickey-Fuller (ADF) Unit Root Test Results

Variable	ADF Statistic	5% Level	Prob. Value	Order of Integration
RGDP	-3.431066	-2.945842	0.0163	I(1)
EXNR	-4.451095	-2.945842	0.0011	I(1)
TROP	-7.726357	-1.950394	0.0000	I(1)
TARFS	-10.05392	-1.950394	0.0000	I(1)

Source: Author's Computation, 2026.

Table 4.2 revealed the Augmented Dickey-Fuller (ADF) unit root test results for RGDP, EXNR, TROP, and TARFS. 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, 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 implied that EXNR was stationary at first difference and integrated of order one, I(1).

Table 4.2 further revealed that Trade Openness (TROP) had 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 indicated that TROP was stationary after first differencing and integrated of order one, I(1).

Table 4.2 also revealed that Average Tariff Rates (TARFS) recorded 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 suggested that TARFS 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

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 statistic for the hypothesis of at most two cointegrating equations was 59.24310, which was less than the 5% critical value of 63.87610, with a probability value of 0.1153. Similarly, the trace statistic for at most three cointegrating equations was 28.84564, which was below the critical value of 42.91525, with a probability value of 0.5712. Therefore, the null hypotheses at these levels could not be rejected.

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

4.3 MODEL ESTIMATION

4.3.1: 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

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 led to the rejection of the null hypothesis.

However, the maximum eigenvalue statistic for the hypothesis of at most two cointegrating equations was 30.39747, which was less than the critical value of 32.11832, with a probability value of 0.0799. Similarly, the maximum eigenvalue statistic for at most three cointegrating equations was 13.77054, which was below the critical value of 25.82321, with a probability value of 0.7418. Therefore, the null hypotheses could not be rejected at these levels.

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

4.3.2: 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.

4.4 POST-TEST / DIAGNOSTIC ANALYSIS

4.4.1: VECM Long-Run Model Result

Table 4.6: VECM Long-Run Model Result

Cointegrating Equation: CointEq1	Coefficient
RGDP(-1)	1.000000
EXNR(-1)	-3552.061
	(1775.09)
	[-2.00106]
TROP(-1)	5789.543
	(6568.34)
	[0.88143]
TARFS(-1)	42135.65
	(6977.84)
	[6.03849]
C	-1460520.

Source: Author's Computation, 2026.

Table 4.6 revealed the long-run Vector Error Correction Model (VECM) result for the relationship between exchange rate, trade liberalization, and economic growth in Nigeria. The result showed that the coefficient of Exchange Rate (EXNR) was -3552.061, indicating a negative relationship between exchange rate and RGDP in the long run. The associated t-statistic value of -2.00106 suggested that exchange rate depreciation exerted an adverse effect on economic growth during the study period.

From Table 4.6, the coefficient of Trade Openness (TROP) was 5789.543, indicating a positive relationship between trade openness and RGDP in the long run. However, the associated t-statistic value of 0.88143 suggested that the effect was statistically weak.

Table 4.6 further revealed that the coefficient of Average Tariff Rates (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 in Nigeria.

The constant term of -1460520 represented the long-run equilibrium adjustment level of the model. Overall, the result implied that exchange rate, trade openness, and tariff rates maintained long-run relationships with economic growth in Nigeria during the study period.

4.4.2: VECM Short-Run Model Results

Table 4.7: VECM Short-Run Model Results

Error Correction	D(RGDP)
CointEq1	-0.000409
	(0.00059)
	[-0.68960]
D(EXNR(-1))	1.000197
	(14.8564)
	[0.06732]
D(TROP(-1))	24.53853
	(34.0057)
	[0.72160]
D(TARFS(-1))	7.701321
	(22.5482)
	[0.34155]
C	934.9168
	(462.948)
	[2.01948]
Diagnostic Statistics	**Value**
R-squared	0.313526
Adj. R-squared	0.141907
F-statistic	1.826874
S.E. equation	1419.442

Source: Author's Computation, 2026.

Table 4.7 revealed the short-run dynamics of the Vector Error Correction Model (VECM). The result showed that the error correction coefficient, represented by CointEq1, was -0.000409. The negative sign indicated the existence of a long-run equilibrium relationship among the variables, although the speed of adjustment toward equilibrium was very slow. The associated t-statistic value of -0.68960 suggested that the adjustment process was statistically weak in the short run.

From Table 4.7, the coefficient of D(EXNR(-1)) was 1.000197, indicating that changes in exchange rate exerted a positive short-run effect on economic growth. However, the t-statistic value of 0.06732 suggested that the effect was statistically insignificant.

Table 4.7 further revealed that the coefficient of D(TROP(-1)) was 24.53853, implying that trade openness had a positive short-run effect on RGDP. The associated t-statistic value of 0.72160 indicated that the effect was weak and statistically insignificant.

Table 4.7 also revealed that the coefficient of D(TARFS(-1)) was 7.701321, indicating that tariff rates positively influenced economic growth in the short run. However, the t-statistic value of 0.34155 suggested that the effect was not statistically significant.

The constant term was 934.9168 with a t-statistic value of 2.01948, indicating a positive autonomous level of economic growth when other variables were held constant.

The R-squared value of 0.313526 showed that approximately 31.35% of the variations in RGDP were explained by exchange rate, trade openness, and tariff rates, while the adjusted R-squared value of 0.141907 indicated that about 14.19% of the variations were explained after adjusting for degrees of freedom. The F-statistic value of 1.826874 represented the overall explanatory power of the model, while the standard error of equation value of 1419.442 measured the dispersion of the residuals.

4.4.3: Block Exogeneity Wald Test

Table 4.8: Block Exogeneity Wald Test

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

Dependent Variable: D(RGDP)

Source: Author's Computation, 2026.

Table 4.8 revealed the Block Exogeneity Wald Test results for the causal relationship between exchange rate, 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 Tariff Rates did not significantly cause changes in RGDP in the short run.

From Table 4.8, the Chi-square value for D(TROP) was 0.520708 with a probability value of 0.4705, which also exceeded 0.05. This implied that Trade Openness did not significantly influence economic growth in the short run.

Table 4.8 further revealed that the Chi-square value for D(EXNR) was 0.004533 with a probability value of 0.9463, indicating that exchange rate did not significantly cause changes in RGDP 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 exchange rate, trade openness, and tariff rates did not exert significant short-run causal effects on economic growth in Nigeria.

4.4.4: Response of Real Gross Domestic Product (RGDP)

Table 4.9: Response of Real Gross Domestic Product (RGDP)

Period	RGDP	TARFS	TROP	EXNR
1	1419.442	0.000000	0.000000	0.000000
2	2138.578	-44.40613	102.0736	39.57712
3	2446.612	-56.47959	155.1628	112.7173
4	2585.277	19.97102	163.3343	73.38000
5	2679.162	6.132086	194.9309	10.62025
6	2746.988	9.667424	245.6164	-8.393645
7	2771.860	21.81669	262.6981	-21.67212
8	2795.607	25.74774	271.5089	-42.81359
9	2813.180	22.48676	287.0286	-50.54973
10	2821.478	29.22346	294.1632	-55.94628

Source: Author's Computation, 2026.

Table 4.9 revealed the impulse response of Real Gross Domestic Product (RGDP) to shocks in RGDP, TARFS, TROP, and EXNR over a ten-period horizon. The result showed that RGDP responded positively to its own shocks throughout the study period.

From Table 4.9, 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 4.9 further revealed that the response of RGDP to shocks in 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 rate shocks initially exerted adverse effects on economic growth before becoming positive in later periods.

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

Table 4.9 also 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, declining to -55.94628 in period ten. This suggested that exchange rate shocks initially stimulated economic growth but later exerted adverse effects in the long run.

4.4.5: Variance Decomposition of Real Gross Domestic Product (RGDP)

Table 4.10: Variance Decomposition of Real Gross Domestic Product (RGDP)

Period	S.E.	RGDP	TARFS	TROP	EXNR
1	1419.442	100.0000	0.000000	0.000000	0.000000
2	2590.569	98.17139	0.029383	0.155252	0.023340
3	3604.750	96.76796	0.039724	0.265461	0.109830
4	4490.180	95.51717	0.027580	0.303410	0.097493
5	5293.396	94.34608	0.019980	0.353928	0.070553
6	6035.553	93.28495	0.015625	0.437846	0.054462
7	6716.748	92.35341	0.013671	0.506505	0.045017
8	7350.677	91.57531	0.012642	0.559341	0.040979
9	7945.160	90.92094	0.011622	0.609279	0.039124
10	8504.112	90.36944	0.011325	0.651470	0.038478

Source: Author's Computation, 2026.

Table 4.10 revealed the variance decomposition analysis of 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 4.10, 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 RGDP remained the dominant source of its fluctuations, the influence of exchange rate and trade liberalization variables increased over time.

Table 4.10 further revealed that Average Tariff Rates (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.

The contribution of Trade Openness (TROP) increased steadily from 0.155252% in period two to 0.651470% in period ten, suggesting that trade openness exerted a growing influence on economic growth variations in Nigeria.

Similarly, Exchange Rate (EXNR) contributed 0.023340% to RGDP variance in period two and increased slightly before stabilizing at 0.038478% in period ten. This implied that exchange rate fluctuations had a relatively small but persistent influence on economic growth variations during the study period.

Overall, the variance decomposition result suggested that RGDP fluctuations were largely explained by its own shocks, while exchange rate, trade openness, and tariff rates contributed marginally to economic growth variations in Nigeria.

4.5 Discussion of Findings

The study examined the effect of exchange rate and 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), Trade Openness (TROP), and Tariff Rates (TARFS) served as explanatory variables representing exchange rate dynamics and trade liberalization indicators. The descriptive statistics revealed that RGDP recorded a mean value of 42686.20, while exchange rate, trade openness, and tariff rates recorded mean values of 138.3953, 33.77016, and 19.84789 respectively, indicating that Nigeria experienced persistent fluctuations in exchange rate management and trade liberalization policies during the study period. The high standard deviation values of 125.0085 for exchange rate and 13.35004 for tariff rates further revealed substantial volatility in Nigeria's external sector policies and tariff administration, while the positive skewness value of 3.429852 and kurtosis value of 18.09169 for tariff rates indicated the existence of extreme fluctuations and instability in tariff policy implementation over the years. The descriptive result therefore suggests that Nigeria's economic growth performance was influenced by unstable macroeconomic conditions associated with exchange rate movements and trade policy reforms.

The Augmented Dickey-Fuller unit root test established that all the variables became stationary after first differencing at I(1), as RGDP recorded an ADF statistic of -3.431066, exchange rate recorded -4.451095, trade openness recorded -7.726357, while tariff rates recorded -10.05392, 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 (VECM) 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 also exceeded their critical values of 44.49720 and 38.33101 with probabilities less than 0.05. This finding implies that exchange rate, trade openness, tariff rates, and economic growth maintained a stable long-run equilibrium relationship in Nigeria throughout the study period. The result supports the Classical Theory of International Trade which argues that increased trade integration and openness contribute positively to productivity, efficiency, specialization, and long-run economic growth through expanded international market participation.

The VECM long-run estimation revealed that exchange rate exerted a negative relationship with economic growth as indicated by the coefficient value of -3552.061, implying that persistent exchange rate depreciation adversely affected economic growth in Nigeria between 1986 and 2025. This finding suggests that exchange rate instability increased import costs, weakened productive activities, and reduced macroeconomic stability within the Nigerian economy. Conversely, trade openness recorded a positive coefficient of 5789.543, while tariff

rates recorded a positive coefficient of 42135.65, indicating that trade liberalization contributed positively to economic growth in the long run through increased international trade participation, market expansion, and revenue generation. The positive relationship between trade openness and economic growth aligns with the Classical Theory of International Trade which emphasizes comparative advantage, specialization, and efficiency gains arising from free trade and increased international market integration. The result also supports the Heckscher–Ohlin Theory which explains that countries benefit from trade when they efficiently utilize their abundant productive resources and engage in specialization based on factor endowments. Similarly, the finding agrees with Krugman's Theory of Trade Liberalization which argues that trade openness enhances productivity and economic growth through economies of scale, technological transfer, and increased market competition. However, the negative long-run relationship between exchange rate and economic growth partially contradicts the optimistic assumptions of the Classical and Krugman trade theories because persistent exchange rate instability undermined the potential gains expected from trade liberalization within the Nigerian economy.

The short-run VECM result revealed that exchange rate recorded a positive coefficient of 1.000197 on RGDP, while trade openness and tariff rates recorded positive coefficients of 24.53853 and 7.701321 respectively, indicating that exchange rate movements and trade liberalization variables exerted weak positive effects on economic growth in the short run. However, the t-statistics associated with these variables remained statistically insignificant, suggesting that their immediate effects on economic growth were weak during the study period. The error correction coefficient of -0.000409 was negative, indicating convergence toward long-run equilibrium, although the adjustment speed was weak and slow. The R-squared value of 0.313526 showed that approximately 31.4 percent of the variations in economic growth were explained by exchange rate, trade openness, and tariff rates, while the remaining proportion was influenced by other macroeconomic variables outside the model. The weak short-run effects suggest that structural deficiencies, poor industrial capacity, infrastructural inadequacies, and excessive dependence on imported goods limited the immediate effectiveness of trade liberalization and exchange rate policies in stimulating economic growth in Nigeria.

The Block Exogeneity Wald Test further revealed that tariff rates, trade openness, and exchange rate did not exert statistically significant short-run causality on economic growth as their probability values of 0.7327, 0.4705, and 0.9463 respectively exceeded the 5 percent significance level. This finding implies that changes in exchange rate and trade liberalization variables alone were insufficient to independently drive economic growth in the short run. The result contradicts the Classical Theory of International Trade and Krugman's Theory of Trade Liberalization which strongly argue that trade openness and liberalization generate immediate efficiency gains, productivity improvement, technological transfer, and economic expansion. The finding also contradicts Ogbu (2019) who reported a positive and significant relationship between trade liberalization and economic growth in Nigeria. However, the result supports Duru et al. (2020) who found that trade liberalization did not significantly support economic growth in Nigeria because the economy lacked the structural capacity to absorb the shocks associated with external trade liberalization. The finding equally aligns with Mohammed (2023) who observed that trade liberalization contributes positively but only marginally to economic growth in many Sub-Saharan African economies despite its favourable long-run implications.

The impulse response analysis revealed that economic growth responded differently to shocks from tariff rates, trade openness, and exchange rate over the forecast period. Trade openness generated positive responses on RGDP 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 market expansion and increased international trade participation. Tariff rates initially produced a negative response of -44.40613 in period 2 before becoming positive at 19.97102 in period 4 and rising to 29.22346 in period 10, suggesting that tariff reforms may initially create adjustment pressures before contributing positively to economic activities over time. Conversely, exchange rate shocks generated positive responses in the early periods but later became persistently negative from -8.393645 in period 6 to -55.94628 in period 10, implying that prolonged exchange rate instability adversely affected economic growth in Nigeria. This finding partially contradicts Krugman's Theory of Trade Liberalization which assumes that liberalization policies and external integration generate efficiency gains and long-run productivity improvements. The persistent negative response associated with exchange rate shocks indicates that unstable exchange rate conditions weakened the productive and competitive capacity of the Nigerian economy despite ongoing trade liberalization policies.

The variance decomposition analysis further revealed that RGDP 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 openness explained 0.651470 percent, tariff rates explained 0.011325 percent, and exchange rate explained 0.038478 percent by the tenth period. This implies that although exchange rate and trade liberalization variables contributed to economic growth, their overall influence remained relatively small compared to other macroeconomic determinants of growth in Nigeria. The gradual increase in the contribution of trade openness however indicates that trade liberalization policies may become more effective in influencing economic performance over time if supported by stable macroeconomic policies 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 Africa, while also supporting Ogundipe and Adenekan (2022) who found that trade-related variables exert stronger influence on long-run economic growth than on short-run economic performance in Nigeria.

Overall, the findings of the study established that exchange rate and trade liberalization maintained long-run relationships with economic growth in Nigeria between 1986 and 2025, although exchange rate instability exerted adverse effects on economic performance while trade openness and tariff reforms contributed positively to long-run growth. The findings therefore validate the assumptions of the Classical Theory, Heckscher–Ohlin Theory, and Krugman's Theory to the extent that trade openness and liberalization promote long-run economic expansion, specialization, productivity growth, and market integration, while simultaneously revealing that macroeconomic instability, weak industrial capacity, and structural rigidities significantly limit the immediate growth benefits of trade liberalization policies in Nigeria.

5.1 Conclusion

This study examined the effect of exchange rate and trade liberalization on economic growth in Nigeria from 1986 to 2025 using Real Gross Domestic Product (RGDP) as the dependent variable, while exchange rate, trade openness, and tariff rates served as indicators of exchange rate management and trade liberalization. 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 to evaluate the relationship among the variables. The findings established the existence of a stable long-run equilibrium relationship between exchange rate, trade liberalization, and economic growth in Nigeria. The study further revealed that trade openness and tariff reforms exerted positive long-run effects on economic growth, indicating that increased integration into international markets contributed positively to economic expansion, productivity, and market development. However, exchange rate instability exerted negative effects on economic growth in the long run, suggesting that persistent depreciation and volatility weakened productive activities and macroeconomic stability. The short-run results revealed weak and statistically insignificant effects of exchange rate and trade liberalization variables on economic growth due to structural rigidities, weak industrial capacity, infrastructural deficiencies, and excessive dependence on imports. The study therefore concluded that although trade liberalization promotes long-run economic growth in Nigeria, the benefits remain constrained by exchange rate instability and persistent structural weaknesses within the economy.

5.2 Recommendations

- The government should implement stable and market-friendly exchange rate policies capable of reducing excessive volatility and ensuring macroeconomic stability in order to enhance productive activities and investor confidence within the Nigerian economy.
- Policy makers should strengthen trade liberalization policies through the promotion of export diversification and increased participation in international markets to improve Nigeria's long-run economic growth performance.
- The government should reduce structural bottlenecks affecting trade activities by improving transportation systems, port facilities, electricity supply, and technological infrastructure in order to enhance industrial competitiveness and trade efficiency.
- The monetary and fiscal authorities should formulate complementary macroeconomic policies that encourage domestic production, reduce excessive dependence on imports, and strengthen Nigeria's manufacturing and non-oil export sectors.
- The government should ensure consistency and transparency in tariff administration and trade policies to minimize uncertainty and create a more conducive environment for international trade and investment activities.
- There is need to strengthen institutional capacity and regulatory frameworks guiding trade liberalization in Nigeria through effective monitoring, accountability, and enforcement mechanisms capable of supporting sustainable economic growth.

References

African Development Bank. (2024). African economic outlook 2024. African Development Bank Group.

Akinsola, P., & Dibia, M. (2023). Trade openness and industrial competitiveness in developing economies. African Journal of International Economics, 14(2), 55–70.

Al Hemzawia, M., Uwizeyimana, J., &Ndayishimiye, P. (2021). Exports, imports and economic growth in Rwanda: An econometric analysis of quarterly data from 2000–2020. International Journal of Economics and Financial Research, 7(4), 85–97.

Central Bank of Nigeria. (2024). Statistical bulletin 2024. Central Bank of Nigeria.

Central Bank of Nigeria. (2025). Economic report 2025. Central Bank of Nigeria.

Duru, I. U., Okoro, E. C., & Nwankwo, A. N. (2020). Trade liberalization and economic growth in Nigeria: An ARDL approach. Journal of Economics and Sustainable Development, 11(9), 44–58.

International Monetary Fund. (2024a). Exchange rate dynamics and macroeconomic stability report. International Monetary Fund.

International Monetary Fund. (2024b). World economic outlook 2024. International Monetary Fund.

International Monetary Fund. (2025). Nigeria economic assessment report 2025. International Monetary Fund.

Mohammed, A. S. (2023). Globalization, trade liberalization and economic growth in selected Sub-Saharan African countries. African Journal of Economic Policy and Development, 15(2), 101–119.

National Bureau of Statistics. (2025). Foreign trade statistics report 2025. National Bureau of Statistics.

Nwankwo, E., & Ibrahim, L. (2022). Macroeconomic reforms and economic growth in emerging economies. Journal of Development Policy Studies, 11(3), 88–101.

Ogunleye, T., & Hassan, A. (2024). Exchange rate volatility and external sector performance in Nigeria. Nigerian Economic Review, 19(1), 40–57.

Organisation for Economic Co-operation and Development. (2023). Trade policy reforms and global competitiveness report. OECD Publishing.

Ogbu, C. N. (2019). Trade liberalization and economic growth in Nigeria: An empirical investigation. International Journal of Innovative Finance and Economics Research, 7(3), 63–74.

Ogundipe, A. A., &Adenekan, S. O. (2022). Trade liberalization and economic growth in Nigeria: Evidence from 1981–2018. Nigerian Journal of Economic and Social Studies, 64(1), 27–46.

UNCTAD. (2023). Trade and development report 2023. United Nations Conference on Trade and Development.

United Nations Development Programme. (2024). Economic diversification and sustainable development in Africa. UNDP Regional Bureau for Africa.

United Nations Economic Commission for Africa. (2024). African continental free trade area report 2024. UNECA.

World Bank. (2024). World development indicators 2024. World Bank.

World Trade Organization. (2024a). Global trade and policy review 2024. WTO.

World Trade Organization. (2024b). World trade statistical review 2024. WTO.