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THE IMPACT OF BALANCE OF TRADE ON ECONOMIC GROWTH, NIGERIA.

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ABSTRACT

This study examined the impact of balance of trade on economic growth in Nigeria between the period spanning from 1999 to 2023. In particularly, the study examines the impact of import trade, export trade and exchange rate on economic growth within the period sampled. Secondary data were gathered from the Central Bank of Nigeria Statistical Bulletin. Autoregressive Distributed Lag Regression model was used to test hypotheses. Findings revealed that import and export have positive and significant impact on economic growth in Nigeria. Also, exchange rate has negative and significant impact on economic growth in Nigeria. In conclusion, balance of trade has significant impact on economic growth in Nigeria. This study recommended that both monetary and fiscal policy formulation that will purposively targeted at increase in export trade value should be formulate and implemented. This policy includes major incentive such as lowering tariff, interest rate and removing encumbrances associate with exportation of goods and services for the exporters. Second, governments and stakeholders at all levels involving in importation of good and services should only import goods that country has high opportunity cost in producing in order to protect domestic market. Thus, policy control measure that will discourage import goods that will favorable compete with domestic goods should be formulate and implemented.

KEYWORDS: Balance of Trade, Export, Import, Exchange Rate, Economic Growth

1. INTRODUCTION

Balance of trade (BOT) arises as a result of exchange of goods and services in terms of production, consumption, distribution and non-physical services across national frontiers. According to Adeneye, (2014) “no country is a complete island to itself,” nations in the world need each other to survive. This is the central core of international trade theory postulated by classical economist such as Adam Smith (1776), David Ricardo (1817) and their followers when both of them stress the ideas of trade absolute and comparative advantage.

Absolute advantage states that a country should specialize in producing goods and services where it has an inherent advantage, meaning it can produce more output with the same resources than other countries. This advantage can be due to factors like natural resources, skilled labor, or efficient production techniques. By specializing in these areas and trading with other countries, nations can increase overall global output and prosperity subsequently, achieved economic growth. On the other hand, comparative advantage theory developed by David Ricardo, explains how countries can benefit from international trade even if one country is more efficient at producing all goods than another. The theory focuses on the idea that countries should specialize in producing goods and services where they have a relative advantage, meaning they have a lower opportunity cost of production compared to other countries.

The international trade among nations is recorded in balance of payments (BOP). However, due to global imbalances in balance of payments (BOP) in particular in current account between developed and developing nation stakeholders and policy makers in developing nations are now paying more attention on the impact balance of trade (BOT) have on economic growth. In the Nigeria's context due to imbalances in balance of trade which is the difference between export and import BOP statement of current account position have been experiencing up and down resulting to surpluses or deficits figure. This variation has been attributed to global oil

prices and other economic factors. Expectedly, higher oil and non-oil export goods and services prices tend to result in balance surpluses, while higher imports of oil and non-oil goods and services prices lead to balance deficits. Additionally, remittances from Nigerians abroad is also expected to contributing to the current account position positively while payment of school fee, medical fee among other payment to abroad is expected to reduced BOP. It worthy to note that the BOP plays an important role in determine the direction of economic growth in both shorter and longtime. **The balance of payments (BOP) records all economic transactions between a country and the rest of the world, including trade in goods and services, investments, and financial flows (CBN, 2024) while, balance of trade (BOT) recorded the differences between exports and imports which is equal to trade surplus or trade deficit and rarely trade balances. That is when exports equal imports.**

Nevertheless, in the recent years as a result of the increase in trade openness; advancement in information and communication technology; global paradigm shifts to trade; commodity price boom; and the increasing role of developing countries in the global economy have produced series of figures in balance of payment which recorded either surplus or deficit (Moussa, 2016). Economists disagree on the simple question of whether sustained trade deficits or surplus are good, bad, or don't matter that much for a country and its economy (Adam, 2025). A trade deficit occurs when the value of a country's imports exceeds the value of its exports—with imports and exports referring to both physical goods and services.

Generally, in the world of economics, a trade deficit is about an imbalance between a country's savings and investment rates. This means that a country is spending more money on imports than it makes on its exports. Under the rules of economic accounting, it must make up for that shortfall. This can be done by either borrowing money from foreign lenders or permitting foreign investment inflow of assets. This foreign lending and investment can be seen as a vote of confidence in the domestic economy and a source of long-term economic growth, if the borrowed money or foreign investment is used wisely (such as in productivity growth). If on the contrary, an inflow of foreign capital, invested unwisely or reversed too quickly, can lead to financial problems and, potentially, recession (Adam, 2025). It could also, result to taxes imports levied. The heavy flow of foreign capital may result in foreign investors buying up too many important assets of the deficit-running country. More so, job loss may occur in certain sectors. A balance of trade deficit, while generally seen as a negative, yet offer some potential advantages in the short to medium term. A deficit can be a sign of a growing economy that is importing goods and services to fuel its expansion. It can also signal a country's ability to attract foreign investment.

On the contrary, a trade surplus is an economic measure of a positive balance of trade, where a country's exports exceed its imports (Atish & Uma, 2025). A trade surplus represents a net inflow of domestic currency from foreign markets. It is the opposite of a trade deficit, which represents a net outflow and occurs when the result of the above calculation is negative. A trade surplus occurs when trade balance is positive. Trade balance is equal to the total value of exports minus the total value of imports. A trade surplus can create employment and economic growth, but may also lead to higher prices and interest rates within an economy (Kenton, 2024).

A country's trade balance surplus can also influence the value of its currency in the global markets, as it allows a country to have control of the majority of its currency through trade. In many cases, a trade surplus helps to strengthen a country's currency relative to other currencies, affecting currency exchange rates (Kenton, 2024). However, this is dependent on the proportion of goods and services traded by a country in comparison to other countries, as well as other market factors. When focusing solely on trade effects, a trade surplus means there is high demand for a country's goods in the global market, which pushes the price of those goods higher and leads to a direct strengthening of the domestic currency. However, a strong trade surplus doesn't necessarily mean strong economic growth it a matter of empiricism.

Conversely, balance of trade surpluses or deficit has nexus with stability or instability of exchange rate within the period of transaction. Exchange rate stability contribute to trade balance surplus because stability of a nation currency promotes exports and make imports more expensive, which can contribute to a positive balance of payments. However, the reverse will be the case under exchange rate instability. Like what is been observed over the years in Nigeria due to exchange rate instability, the country has been recording balance of payments deficit due to over dependent on importation of goods and services with less exportations leading to weak currency as against trading nations partners (CBN, 2024).

Meanwhile, in 2024, Nigeria's balance of payments (BOP) recorded a surplus of $6.83 billion, a significant turnaround from deficits in previous years, suggesting positive economic growth prospects. The surplus has been attributed to increased foreign exchange earnings, prickle in crude oil prices and a positive saving/investment-GDP ratio. According to CBN (2024), significant decline in the value and quantity of petroleum and non- oil products imported into the economy in term of gas and non-oil & electricity exported out of the economy increased by 48.3 percent and 24.5 per cent in 2024, respectively. Increase in non-oil exports and the decline in imports largely reflected the unification of the exchange rates and the subsequent depreciation of the Naira, which lowered the country's export prices and increased the demand for its exports. It also led to a decline in import demand. Likewise, the commencement of production by Dangote Refinery also led to substantial declines in the demand for fuel imports. However, the extent to which balance of trade surplus or deficit impacts on economic growth in Nigeria is still a subject of debates among the politician, economists and academic scholars.

It is against this background that this study examines the impact of balance of trade on economic growth in Nigeria between the period spanning 1999 and 2024

Statement of Problem

Trade balances have been a major foreign policy focus for the past and present government as well as investors. This is because balance of trade shows the economic outlook of the wellbeing of a nation. Thus, policymakers are aware of the implication of less exports and higher imports vice-viser. Despite, this well known fact of the implication about trade balance imbalances, Nigeria balance of trade is still experiences upsurge in trade imbalances as a result of international trading policy inconsistences and inability of export trade to cancel out import trade volume. More so, instability of the naira exchange rate conversion to other nations currency in particular United State Currency US. Dollar have continuously contributed to trade imbalances. The depreciation of naira against dollar currency have make the situation worst in the sense that it makes naira weaker to the extent that the exports volume has reduced significantly while importation is on the increase to the detriment of domestic industries.

However, while acknowledge that Nigeria recorded balance of payment surplus in 2024 subject to various factors, the volume of imports to Nigeria economy remain alarming which suggests that Nigeria is still imports dependent nation (Adeneye, 2024). Thus, it is important to finding out the extent to which export and import trade balance affect economic growth. Likewise, it is pertinent to determine the impact of exchange rate on economic growth in Nigeria between 1999 and 2024. Nevertheless, several studied have examined the impact of balance of payment vis-à-vis other components of BOP on economic growth with little or none attention on the impact balance of trade (BOT) and exchange rate has on economic growth within the spanning period of 1999 and 2024. More so, from empirical literature reviewed so far studies like; Oji (2025); Osuka, Otiwu and Kalu (2024); Deimante, Garsviene and Matuzeviciute (2020); Bakari and Mabrouki (2020); Lawal and Ezeuchenne (2020); Sanni, Musa. and Sani (2019) indicates inconclusive and mixed outcomes suggests that there is still gap in the contextual literature. Thus, the main objective of this study is to examines the impact of balance of trade on the economic growth in Nigeria. In particular, to examine the impact exports and imports trade volume as well as exchange rate has on economic growth. Thus, this study proposed the following hypotheses as follows;

HO_1: Imports trade volume has no significant impact on economic growth.
HO_2: Exports trade volume has no significant impact on economic growth.
HO_3: Exchange rate has no significant impact on economic growth.

2. LITERATURE REVIEW

Conceptual Review

International trade is the economic exchange of goods and services between countries. That is the flow of goods and services among nations (Adeneye, 2024).

Balance of Trade (BOT): Balance of trade also known as trade balance equal to the total value of exports minus the total value of imports (Kenton, 2024). More so, trade balance could be defined as the difference between exports and imports of goods (Abaidoo & Rexford, 2019). **Exports:** Exports refer to the movement of goods and services outside the country, while **Imports** refer to the movement of goods and services into the country (Adeneye, 2024). Visible exports and imports refer to tangible goods such as crude oil, cocoa, machinery and textiles that are traded, while invisible exports and imports refer to intangible services such as banking, insurance and shipping services which accompany merchandise trade (Osuka, Otiwu & Kalu 2024; Adeneye, 2024).

More so, according to Troy (2025) export trade, involves the selling of goods and services produced in one country to buyers in another. While, import trade, involves the buying of goods and services produced from another country. Both exports and imports in involves in foreign exchange currency transaction which is priced at exchange rate units.

Exchange Rate: According to World Bank Group Development Indicator (2023) and World Data Atlas (2022) exchange rate refers to the exchange rate conversion of one nation currency to another determined by national authorities or to the rate determined in the legally sanctioned exchange market. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar). According to Odum, (2024) exchange rate refers to the rate to which a currency exchanges for another currency. It is the price of a currency for another currency. Exchange rate is determined by the interaction of demand and supply of foreign exchange
According to (Adeneye, 2021) exchange rate is the price of one currency in terms of another currency. Exchange rates can be either fixed or floating.

Economic Growth: According to Adeneye (2024) the term economic growth is described as the positive and sustained increase in aggregate goods and services produced in an economy within a given time period. Economic growth is a process by which a nation wealth increases over time (Adeneye, 2024).

Theoretical Review.
The theories of international trade explain what exactly happens in international trade. In this study international trade theories are group into four. The Mercantilists, Classical economists, Neoclassical economics, and Contemporary economists.

The Mercantilists Preposition
The concept of a "theory of balance of trade" is most strongly associated with Mercantilism in the 16th to 18th centuries. Mercantilists such as Jean-Baptiste Say (1767-1832) and Thomas Mun (1571-1641). Mercantilists believed that governments should regulate trade to maximize exports and minimize imports, leading to a trade surplus (more exports than imports). This surplus would allow a nation to accumulate precious metals and increase its wealth and power. That is, exporting more commodities to other governments helped a nation amass greater wealth in the form of trade surpluses than importing them from outside in the seventeenth century. Overseas exchange in the form of gold and silver was required during the Mercantilist era to finance foreign purchases and pay foreign trade taxes. According to the Mercantilists, the accumulated trade surplus, together with other domestic resources such as tax, allowed a monarch to increase their royal authority both at home and abroad. They spend the money at home to fund their armies and fleets. Simultaneously, they use it to compete with their overseas peers in the shipbuilding industry. As a result, the crown's strength was determined by its capacity to mobilize resources from both local and foreign sources. The Mercantilists were similarly concerned about how to enhance the authority of their governments.

Classical Economists View
Classical economists had opposing views of the Mercantilists. They believed in the role of market forces rather than official rules and restrictions. They preached the idea of "laissez-faire", or little government interference in the economy. David Hume (1711 - 1776) argued that prices and trade that flow naturally regulate the amount of money in circulation. On the part of John Stuart Mill (1848) demonstrated how foreign markets decide price. This means that the price ratio at which goods are exchanged in international trade is influenced by the intensity of demand in each country for the other's products. David Ricardo, (1817) explain the term of comparative advantage as a gain arises from foreign trade specialization, the originator of the free trade ideology, emphasized the necessity of free commerce. The relevance of the export-driven argument was further added to free trade by Adam Smith's productivity thesis, which went beyond the free trade concept.

Neoclassical Economists View
The free trade views of 19th century Classical economists such as David Ricardo and John Stuart Mill are founded on the premise of perfect worker specialization. According to this theory, trade is fueled by disparities in labor efficiency between nations for various products. However, 20th-century neoclassical economists, Eli Hecksher and Bertil Ohlin, both from Sweden, contested this premise of the prominent Classical economists. They replaced the complete labor specialization assumption with "component endowment trade theory", which posits that global relative labor productivity is the same. This argument is based on the idea that all nations can benefit from technical advancement, which Classical economists think causes disparities in labor productivity for various commodities in different countries. The source of trade, according to neoclassical economists' factor endowment

theory, is variations in factor endowments, not differences in labor productivity. Land, capital, and labor are the components they view to be causes of international commerce

Modern Economists View

Later on, economists who formed protectionist ideas began to confront both classical and neoclassical economists at the same time. The main criticism leveled against them is that they overlooked the effect that sovereign governments have on international trade. Instead of being separate countries, they treated the world's nations as regions or states inside a nation. However, national governments may influence international trade behavior in a variety of ways that are not available to domestic commerce. Taxes, subsidies, and quotas that can be applied to imported commodities may or may not be equally applied to domestic goods. Every sovereign nation's approach to designing and using these policy instruments may have an impact on its trade partners. The other main source of criticism came from individuals who believe that free trade does not benefit all countries equally. This school of thought contends that industrialized economies reap a greater share of the advantages of free trade than emerging countries. Thirlwall (2013) for example, identifies three significant explanations for today's uneven trade benefits: Manufacturers in developed nations wanted primary products with low import content, technology allowed certain companies to replace synthetic inputs for raw materials, and developed countries favored low import content of basic goods.

Ricardian trade theory by David Ricardo (1817) argued that even when one country has absolute advantage in the production of two goods against another country; it might still be more beneficial to both countries if each of them specialized in the production of only one of the goods in which it as less opportunity cost. With this, both countries can enjoy the benefits of comparative advantage and enhance the process of exchange between them.

However, **Heckscher-Ohlin model (1933)** suggests that a country's comparative advantage and trade patterns are determined by differences in the relative abundance of factors of production like labor and capital between countries. They depict that trade arises from differences in comparative cost which in turn arises from inter-country differences in relative factor endowment. Trade has acted as an important engine of growth for countries at different stages of development, not only by contributing to a more efficient allocation of resources within countries, but also by transmitting growth from one part of the world to another. Not all countries, however, necessarily share equally in the growth of trade or its benefits. This will depend on the production and demand characteristics of the goods that a country produces and trades, the domestic economic policies pursued, and the trading regime it adopts. The inconsistency in rates of growth of exports has been even wider in value terms because the terms of trade of developing countries has deteriorated vis-à-vis developed countries causing the developing countries' share of the total value of world trade to have fallen from 30 percent in 1965 to 20 percent today, (Thirlwall 2013).

Empirical Review

Oji (2025) examined the effect of balance of payments on economic growth in Nigeria. The Autoregressive Distributed Lag method was used to test for the hypothesis of the studied. The results reveal that there is cointegration between the variables understudy. 99.8 per cent variation in gross domestic product in Nigeria were explained by variation in balance of payment variables. The results found that exceptional financing have positive and significant effect on economic growth, the variables added 0.02 per cent to gross domestic product, capital account have positive but no significant effect and added 0.003, net errors and commission have positive effect and added 0.003 while current account have negative and reduced 0.015 to gross domestic product. The study

concludes that balance of payment effect variation in economic growth in Nigeria.

Osuka, Otiwu and Kalu (2024) examined the effect of balance of payment on economic development in Nigeria from 2000 – 2022. Multiple linear regression model was used to test the study hypotheses. Findings of the studied revealed that import and export have significant effect on per capita income in Nigeria.

Deimante, Garsviene and Matuzeviciute (2020) investigate the impact of the trade balance on economic growth. The study estimations are based on the European Union (EU) 28 countries panel data over the period of 1998–2018, using the OLS method of multivariate regression analysis. finding of the studied revealed that trade balance has negative and lagging impact on economic growth, and no significant differences of the impact were identified during the deficit periods. The deterioration of trade balance reduces average economic growth and from linear relationship evaluation, the study state that it does not matter whether it starts from trade deficit or surplus result. The results obtained may also obscure the possibility of a non-linear effect, which would suggest a stronger negative impact on economic growth when the trade balance deteriorates in the presence of a large trade deficit.

Bakari and Mabrouki (2020) investigated the relationship between imports and economic growth in Panama, annual data for the periods between 1980 and 2015 were tested using the Johansen cointegration analysis of Vector Auto Regression Model and the Granger-Causality tests. According to their result of the analysis, it was determined that there is no relationship between exports, imports and economic growth in Panama. On the other hand, they found that there is strong evidence of bidirectional causality from imports to economic growth and exports to economic growth.

Tiba (2019) investigate the nexus between domestic investment, exports, imports, and economic growth for the Brazilian economy during the period 1970-2017, using the VECM methodology. In the short-run, the results pointed that import, exports, and domestic investment cause economic growth. Also, economic growth causes exports. Exports, imports, and economic growth cause domestic investment. However, in the long-run, the results revealed that domestic investment and exports have a positive effect on economic growth. Also, imports have a negative effect on economic growth. The results recorded a positive impact of economic growth and imports on domestic investment. Exports have a negative effect on domestic investment. The study also recorded the absence of significant impact of economic growth, exports and domestic investment on imports, and economic growth, domestic investment, and imports on exports.

Ali, Yassin, Ali and Dalmar (2018) investigated the impact of exports and imports on the economic growth of Somalia over the period 1970-1991. They applied econometric methods such as the OLS (Ordinary Least Squares) technique. The Granger Causality and Johansen Co-integration tests were also used for analyzing the long-term association. It was found that economic growth does not Granger Cause Export but was found that export Granger Cause GDP. So, this implies that there is unidirectional causality between exports and economic growth. Also, there is a bidirectional Granger Causality between import and export.

3. Research Methodology

This study investigate the impact balance of trade have on economic growth in Nigeria between the period of 1999 and 2023. The study employed ex-post factor design. Secondary data (time series) on variables which include; real gross domestic product (RGDP), total import trade oil and non-oil (IMP), total export trade oil and non-oil (XPT) and foreign exchange rate (FXR) were sourced from Central Bank of Nigeria Annual Statistical Bulletin, between the period of 1999 and 2023. After, unit root test outcomes autoregressive distributed lag (ARDL) regression was adjudged good for the model specification.

Model Specification

The model specification was in line with Autoregressive Distributed Lag (ARDL) approach. Autoregressive distributed lag (ARDL) model, also known as bounds testing approach to co-integration, was originally developed by Pesaran and Pesaran (1997) and expanded by Pesaran, Shinb and Smith (2001). ARDL models are linear time series models in which both the dependent and independent variables are related not only contemporaneously, but across historical (lagged) values as well. In particular, if y_t is the dependent variable and x1,…,x_k are k explanatory variables, a general ARDL(p,q1,…,qk) model is given by:

$$y_t = a_0 + a_{1t} + \sum_{i=1} \psi_i y_t + \sum_{j=1} \sum_{1=0} \beta_{j1j} X_{j,t-1j} + \varepsilon_t \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

where ε_t are the usual innovations, a_0 is a constant term, and a_1,ψ_i, and $\beta_{j,lj}$ are respectively the coefficients associated with a linear trend, lags of y_t, and lags of the k regressors (x_{jt}) for j=1,…k. Alternatively, let L denote the usual lag operator and define $\psi(L)$ and $\beta j(L)$ as the lag polynomials:

$$\psi(L) = 1 - \sum_{\substack{i=1 \\ p}} \psi_i L_i \text{ and } \beta_j(L) = \sum_{\substack{i=0 \\ q_i}} \beta_j 1_j L_{1j} \quad \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

Then, equation (1) above can also be written as:

$$\psi(L) y_t = a_o + a_{1t} + -\Sigma k \beta_j(L)_{xjt} + \varepsilon_t \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3)$$

Although, ARDL model have been used in econometrics for decades. They have gained popularity in recent years as a method of examining cointegrating relationships. ARDL models are especially advantageous in their ability to handle cointegration with inherent robustness to misspecification of integration orders of relevant variables. This study adopts the unrestricted autoregressive distributed lag model developed by Pesaran, and Smith (2001). This study model is specified as follows.

$$RGDP_t = \beta_0 \sum_{i=1}^{P} + \beta_1 \Delta IMP_{t-1} + \beta_2 \Delta XPT_{t-1} + \beta_3 \Delta FXR_{t-1} + \mu_t \ldots\ldots\ldots (4)$$

Where;

RGDP is real gross domestic product,
IMP is total import trade (oil and nonoil),
XPT is total export trade (oil and nonoil),
FXR is foreign exchange rate
Δ is a difference operator, t is time, β_0 is an intercept term,
β_1, β_2 and β_3, 1 to $\delta 3$ are the coefficients of their respective variables and,
ps are the lag lengths while μ_t is random error.

To examine the existence of long-run relationship following Pesaran et al (2001), the study first test, based on Wald test (F-statistics), for the joint significance of the coefficients of the lagged levels of the variables, i.e. Ho: $\delta 1 = \delta 3 = 0$ and H1: $\delta 1 \neq \delta 3 \neq 0$. The asymptotic critical values bounds, which are tabulated in Pesaran et al (2001), provide a test for cointegration with the lower values assuming the regressors are I(0), and upper values assuming purely I(1) regressors.

If the calculated F-statistics exceeds the upper critical value, the null hypothesis is rejected, implying that there is cointegration. However, if it is below the lower critical value, the null hypothesis cannot be rejected, indicating lack of cointegration. If the calculated F-statistics falls between the lower and upper critical values, the result is inconclusive. Once cointegration is established, the conditional ARDL long-run model can be estimated as:

$$RGDP_t = \beta_0 \sum_{i=1}^{P} + \beta_1 \Delta IMP_{t-1} + \beta_2 \Delta XPT_{t-1} + \beta_3 \Delta FXR_{t-1} + \mu_t \text{ ……..(5)}$$

In the next step, we obtain the short-run dynamic parameters by estimating an error correction model associated with the long-run estimates. This is specified as follows:

$$RGDPI_t = \beta_0 \sum_{i=1}^{P} + \beta_1 \Delta IMP_{t-1} + \beta_2 \Delta XPT_{t-1} + \beta_3 \Delta FXR_{t-1} + \delta_1 IMP + \delta_2 XPT + \delta_3 FXR + \vartheta ecm + \mu_t$$

… (6)

Where ecm is the error correction representation of equation (6) and ϑ is the speed of adjustment. Where ϑ is the speed of adjustment parameter and ECM is the residuals that are obtained from the estimated co-integration model of equation. Peseran et al., (2001) suggested applying the cumulative sum of recursive residuals (CUSUM) and the cumulative sum of squares of recursive residuals (CUSUMSQ) tests whose equation is detailed in Brow, Durbin and Evans (1975) to assess the parameter constancy of the model. The justification for co-integration and error correction model is to add richness, flexibility and versatility to the econometric modeling and to integrate short-run dynamics with long-run equilibrium.

The Apriori Expectation:
$\beta_0 < 0$; β_1, β_2 and $\beta_3 > 0$ and β_1, β_2 and $\beta_3 < 0$; it is expected that balance of trade via total import trade (IMP) and total export trade (XPT) will have positive impact on economic growth while foreign exchange rate instability (FXR) will have negative impact on economic growth at a given period

Technique of Data Analysis:
Econometric techniques analysis of autoregressive distributed lag test was adopted in analyzed the data The researcher subjected the data collected to various diagnosis tests which includes; Augmented Dickey-Fuller Unit Root Test (ADF), Cointegration, and Error Correction test.
Eview 10 was used to generate and analyzes descriptive as well as inferential statistics for the study. However, the analysis includes both residual and coefficient diagnostics tests in order to satisfy certain econometric assumptions.

4. Results and Discussion

This section presents the data analysis and result as well as discussion of the results.

Table 1
Descriptive Statistics

	RGDP	IMP	XPT	FXR
Mean	54117.18	9882950.	11701116	212.7180
Median	58180.35	9439425.	10387694	153.8600
Maximum	77936.10	32642666	36247788	645.1900
Minimum	24215.78	862515.7	1188970.	92.69000
Std. Dev.	17818.53	8723919.	8331994.	133.2624

Skewness	-0.334415	1.083255	1.080779	1.671989
Kurtosis	1.647289	3.360168	4.338515	5.489989
Jarque-Bera	2.372042	5.024468	6.733288	18.10649
Probability	0.305434	0.081087	0.034505	0.000117
Sum	1352930.	2.47E+08	2.93E+08	5317.950
Sum Sq. Dev.	7.62E+09	1.83E+15	1.67E+15	426212.8
Observations	25	25	25	25

Source: Researcher Computation (2025) using (Eview10)

Table 1 presents the descriptive statistics which describes the characteristic of the data used in the study. The skewness which measures the degree of asymmetric of the series shows that IMP, XPT and FXR have positive sign that is long-right tail while, RGDP has negative sign that is long-left tail. However, RGDP and IMP are normal skewness and platykurtic because kurtosis values are less than 3. While, XPT and FXR distribution is peaked (leptokurtic) relative to the normal becuse the kurtosis exceeds 3. The Jarque-Bera test statistic which measure the difference of the skewness and kurtosis of the series with those from the normal distribution show that not all the variables understudy was significant. While, XPT and FXR were significant RGDP and IMP were not significant. However, the entire probability of Jarque-Bera statistic exceeds (in absolute value) the observed value under the null hypothesis - a small probability value leads to the rejection of the null hypothesis of no normal distribution. Thus, it can be concluded that the study data exhibit normal distribution.

Table 2:
Series of Augmented Dickey-Fuller Test (ADF) Output Results

Coefficients	Critical Values at 5%	ADF Values	Probability	Order of Integration
D(RGDP)	-2.998064	-3.128123	0.0384	I(0)
D(IMP)	-2.998064	-3.024582	0.0474	I(0)
D(XPT)	-2.998064	-2.938054	0.0564	I(0)
D(FXR)	-3.040391	1.270172	0.9972	I(I)

Source: Researcher Computation (2025) using (Eview 10)

Table 2 present the series of unit root tests of (ADF). The results show that the entire variables are stationary of order I(0) in first differencing exception of foreign exchange rate (FXR) Following, evidence of mixed unit root test result Autoregressive distributed lag (ARDL) was employed to analyzes the study data to ascertain both short run and long run estimation.

Table 3:
Autoregressive Distributed Lag Estimate.
Dependent Variable: RGDP
Method: ARDL
Date: 05/22/25 Time: 12:10
Sample (adjusted): 2001 2023
Included observations: 23 after adjustments
Maximum dependent lags: 3 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (3 lags, automatic): IMP XPT FXR
Fixed regressors: C
Number of models evalulated: 192
Selected Model: ARDL(1, 2, 1, 2)
Note: final equation sample is larger than selection sample

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
RGDP(-1)	0.860840	0.046743	18.41642	0.0000
IMP	0.000420	0.000215	1.952476	0.0728
IMP(-1)	-0.000528	0.000259	-2.043265	0.0618
IMP(-2)	0.000422	0.000199	2.117463	0.0541
XPT	9.30E-06	0.000127	0.073455	0.9426
XPT(-1)	0.000289	0.000213	1.358387	0.1974
FXR	-11.56065	6.383934	-1.810898	0.0933

FXR(-1)	26.46185	28.24739	0.936789	0.3659
FXR(-2)	-42.78897	31.83455	-1.344105	0.2019
C	8724.998	1759.325	4.959287	0.0003

R-squared	0.997913	Mean dependent var	56664.49
Adjusted R-squared	0.996468	S.D. dependent var	16171.99
S.E. of regression	961.0781	Akaike info criterion	16.87301
Sum squared resid	12007725	Schwarz criterion	17.36670
Log likelihood	-184.0396	Hannan-Quinn criter.	16.99717
F-statistic	690.6887	Durbin-Watson stat	2.117139
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.
Source: Researcher Computation (2025) using (Eview10)

Table 3 presents, ARDL regression estimation, the first part of the output gives a summary of the settings used during estimation. The result shows that automatic selection (using the Akaike Information Criterion) was used with a maximum of 3 lags of both the dependent variable and the regressor. Out of the 192 models evaluated, the procedure has selected an ARDL (1,2,1,2) including observation of 23 after adjustment.

The real gross domestic RGDP(-1) a proxy for economic growth at lag 1 coefficient is 0.86 about 86% with probability value of 0.00 less than 0.05 levels of significance is statistically significant. This implies that holding other independent variables constant, a one percent increase in RGDP at period of lagged 1 translate to approximately 86% increase in its present value. This suggests that RGDP at period of lagged is moving in the same direction with its present value.

Also, the total import trade value coefficients at current level period (IMP), period of lag IMP(-1) and IMP(-2) are; 0.000420, -0.000528 and 0.000422 with the probabilities values of 0.07, 0.06 and 0.05 respectively. Indicates, that one percent increase in total import trade value at current level period and period of lag 2 causes about 0.042% and 0.042% respectively increase in economic growth. On the contrary, total import trade at period of lag 1 lead to about -0.53% decline in economic growth. However, with the probabilities values greater than 0.05 level of significant suggests that in the short term total import trade value is statistically insignificant.

More so, the total export trade value coefficients at current level period (XPT) and XPT(-1) period of lag 1 are 0.00000930 and 0.000289 with probabilities value of 0.9426 and 0.1974 respectively, implies that one percent increase in total export trade value at current level period and period of lag 1 effect about 0.00093% and 0.0289% respectively increase in economic growth. However, with the probabilities values greater than 0.05 level of significant suggests that in the short term total export trade value is statistically insignificant.

In addition, the foreign exchange rate coefficients at current level period (FXR), period of lag FXR(-1) and FXR (-2) are; -11.56065, 26.46185 and -42.78897 with the probabilities values of 0.09, 0.36 and 0.20 respectively. Indicates, that one percent increase in foreign exchange rate at current level period and period of lag 2 causes about -1,156% and -4,278.8% respectively decrease in economic growth. However, at period of lag 1 foreign exchange rate lead to about 2, 646.1% increase in economic growth. However, with the probabilities values greater than 0.05 level of significant suggests that in the short term foreign exchange rate is statistically insignificant
The Coefficient of fixed variable, that is, constant (C) also known as the intercept, is the value of RGDP when other independent variables have a value of zero is 8724.998 with probability value of 0.00 less than 0.05 level of significance is statistically significant. This result simply suggests that increase in RGDP in Nigeria within the sampled period is associated with other factors which are not explained by any of the explanatory variables stated in the model.

More so, the R-Square often refers as the coefficient of determination also known as a measures of the goodness-of-fit, is 0.99, approximately 99%. This means that 99% of the changes in RGDP a proxy for economic growth at time t, are explained by the changes in the explanatory variables while, the remaining 1% could be explained by factors outside this model represented by error term. Adjusted R-squared value is 99% variation in the dependent variable which is explained by only those independent variables that, in reality, affect the dependent variable. More so, Durbin-Watson statistic (DW) is 2.1 approximately 2 shows there is no serial autocorrelation. Furthermore, the F-statistic coefficient which measure the overall goodness fit of the study model is 690.6887

with probability value of 0.00 indicates that the model is statistically significant and competent to estimate the impact of independent variables on the dependent variable.

Table 4:
ARDL Long Run Form and Bounds Test

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Significance.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	22.81638	10%	2.37	3.2
K	3	5%	2.79	3.67
		2.5%	3.15	4.08
		1%	3.65	4.66
Actual Sample Size	23	Finite Sample: n=30		
		10%	2.618	3.532
		5%	3.164	4.194
		1%	4.428	5.816

Source: Researcher Computation (2025) using (Eview10)

Table 4 present autoregressive distributed lag (ARDL) long-run model estimation. The procedure starts by conducting the bounds test for the null hypothesis of no co-integration. The result show that calculated F-statistics exceeds the upper critical value, the null hypothesis is rejected, implying that there is cointegration. However, if it is below the lower critical value, the null hypothesis cannot be rejected, indicating lack of cointegration. If the calculated F-statistics falls between the lower and upper critical values, the result is inconclusive. Once cointegration is established, the conditional ARDL long-run model can be estimated.

Table 5:
ARDL Long Run Form and Bounds Test

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	8724.998	1759.325	4.959287	0.0003
RGDP(-1)*	-0.139160	0.046743	-2.977132	0.0107
IMP(-1)	0.000314	0.000148	2.115177	0.0543
XPT(-1)	0.000298	0.000133	2.246924	0.0426
FXR(-1)	-27.88777	10.60876	-2.628749	0.0208
D(IMP)	0.000420	0.000215	1.952476	0.0728
D(IMP(-1))	-0.000422	0.000199	-2.117463	0.0541
D(XPT)	9.30E-06	0.000127	0.073455	0.9426
D(FXR)	-11.56065	6.383934	-1.810898	0.0933
D(FXR(-1))	42.78897	31.83455	1.344105	0.2019

* p-value incompatible with t-Bounds distribution.

Source: Researcher Computation (2025) using (Eview10)

Table 5 present conditional error correction regression results. Given the probabilities values of the entire variables at period of lag 1, which is less than 0.05 level of significance, the results show that entire variables at period of lag 1were statistically significant while at first differences D(IMP), D(XPT) and D(FXR) were statistically insignificant at 0.05 level of significance

Table 6:
Levels Equation

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.

IMP	0.002254	0.001090	2.067138	0.0592
XPT	0.002144	0.000683	3.140211	0.0078
FXR	-200.4004	87.87888	-2.280417	0.0401
C	62697.49	12899.65	4.860403	0.0003

EC = RGDP - (0.0023*IMP + 0.0021*XPT -200.4004*FXR + 62697.4948)

Source: Researcher Computation (2025) using (Eview10)

Table 6 presents level equation result on which the hypotheses of this study is based. The results show that the entire explanatory variables in study were statistically significant at 0.05 level of significance. More so, the result reveals that IMP and XPT were positively related to RGDP while foreign exchange rate is negatively related to RGDP

Table 7
ARDL Error Correction Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IMP)	0.000420	0.000122	3.454883	0.0043
D(IMP(-1))	-0.000422	0.000131	-3.226543	0.0066
D(XPT)	9.30E-06	8.60E-05	0.108108	0.9156
D(FXR)	-11.56065	4.800377	-2.408280	0.0316
D(FXR(-1))	42.78897	10.71797	3.992266	0.0015
CointEq(-1)*	-0.139160	0.011393	-12.21409	0.0000

R-squared	0.749028	Mean dependent var	2282.856
Adjusted R-squared	0.675213	S.D. dependent var	1474.710
S.E. of regression	840.4384	Akaike info criterion	16.52518
Sum squared resid	12007725	Schwarz criterion	16.82140
Log likelihood	-184.0396	Hannan-Quinn criter.	16.59968
Durbin-Watson stat	2.117139		

* p-value incompatible with t-Bounds distribution.
Source: Researcher Computation (2025) using (Eview10)

Table 7 present, ARDL ECM regression estimation, in this context the estimated parameters were subjected to test based on economic theory so as to ascertain whether they agree with expected sign. In other words, the model sought to relate the changes in RGDP as proxy for economic growth in Nigeria to its understudy explanatory variable to ascertain the conformation with 'a priori' expectation underlying each variable. The result shows that, the CointEq(-1) coefficient of the error correction term which measures the speed of adjustment towards long-run equilibrium is negative and statistically significant at 5% level. The ECM has the expected negative sign which stands at -0.139. The coefficient of the ECM revealed that the speed with which changes in RGDP at time t, adjusts respond to regressors is about -13.9% in the short-run. This is in conformity with this study aprior expectation.

5. CONCLUSION AND RECOMMENDATIONS

In conclusion this study examined the impact balance of trade has on economic growth between the period spanning 1999 and 2023. Balance of trade was proxies by total imports and exports trade values, they serve as explanatory variables. Also, foreign exchange rate in the model serve as moderating variable while, economic growth proxy by real gross domestic product (RGDP) serve as dependent variable. Autoregressive distributed lag (ARDL) econometric technique was employed to ascertain both short run and long run relationship between the dependent and independent variables.

This study concludes that balance of trade via total imports and exports trade values have positive and statistically significant impact on economic growth. This study also concludes that foreign exchange rate have negative and statistically significant impact on economic growth. Therefore, the three hypotheses ($H0_1$, $H0_2$ and $H0_3$) stated earlier in section one of this study is been rejected and alternative hypotheses which states otherwise is been accepted.

As manifested from the findings of this study, the following recommendations are suggested: first, that both monetary and fiscal policy formulation that will purposively targeted at increase in export trade value should be formulate and implemented. This policy includes major incentive such as lowering tariff, interest rate and removing encumbrances associate with exportation of goods and services for the exporters. Second, governments and stakeholders at all levels involving in importation of good and services should only import goods that country has high opportunity cost in producing in order to protect domestic market. Thus, policy control measure that will discourage import goods that will favorable compete with domestic goods should be formulate and implemented.

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