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EFFECT OF MARITIME TRADE ON REAL GROSS DOMESTIC PRODUCT IN NIGERIA (1990-2023)

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ABSTRACT

This study investigated the effect of maritime trade on real gross domestic product in Nigeria. The data used for the study were time series data sourced from the National Bureau of Statistics (NBS) annual abstract and Central Bank of Nigeria (CBN) statistical Bulletin, World Development Indicator (WDI), Nigerian Ports Authority (NPA) and Nigerian Shippers Council (NSC) which spanned between the period 1990 to 2023. For the dependent variables, the study utilized real GDP and the components of maritime trade (oil trade, non-oil trade and containerized trade) served as the independent variables The analytical techniques employed were Augmented Dickey Fuller (ADF) unit root test, Johansen cointegration test and bounds cointegration test. The unit root test revealed that all the variables were non-stationary at level but became stationary at first difference that is, integrated of order one I(1). The evidence of the presence of cointegration amongst the variables formed the basis for estimating the model using error correction model (ECM). The short run results showed that oil trade has a negative and non- significant effect on real GDP in Nigeria. Also, non-oil trade revealed an insignificant positive effect on real GDP in Nigeria. Furthermore, the short run result revealed that containerized trade has a negative and statistically insignificant effect on real GDP in Nigeria. Thus, the study recommended that government should prioritize agriculture, solid minerals, and manufacturing sectors through increased investment and export grants. Also, government should support indigenous businesses through export promotion strategies, trade openness, domestic protection measures. This will help generate

employment, increase real GDP and put the country on a part to sustainable economic growth.

KEYWORDS: Maritime Trade, Oil Trade, Non-Oil Trade, Containerized Trade, Real Gross Domestic Product.

INTRODUCTION

In a globalised world, the maritime trade remains a notable element in encouraging the bridging of business sectors for produced products and industrial merchandise, with seaports serving as a natural path to nations all over the world. As the global trade progresses tremendously quicker than global yield, marine trade has become an undeniably significant factor in the advancement of local economies (UNCTAD, 2023). The maritime trade spans all ventures involved with supplying, transporting and cargo services and other comparable activities. The maritime trade takes an exceptional spot in all nations' economy throughout the globe. The business, in its real sense, incorporates all businesses related to maritime which happen inside the nation's maritime space. These ranges from seaward operations, for instance, deep-water resources and maritime shipping (Ewubare & Onuchukwu, 2022).

Global containerized trade increased by 4.0 percent up from 1.7 per cent in 2016 while growth in crude oil shipments decelerated to 2.4 percent (Zhang et al., 2023). This new trend has reshaped crude oil trade patterns which became less concentrated on usual suppliers from Western Asia. Supported by the growing global refining capacity– especially in Asia – and the appeal of gas as a cleaner energy source refined petroleum products and gas increased by a combined 3.9 percent in 2022 (WTO, 2023).

Maritime trade has effectively permitted an enormous variety of resources to be more widely accessible and this has facilitated the wide-spread distribution of goods and services globally (Lloyd & Odiegwu, 2019). It is seen also that maritime trade has fostered on interdependency and inter-connectivity today on the principles of free trade are broadly accepted through the General Agreement on Trade and Tariffs (GATT) between people who would previously have considered themselves completely unconnected (Odiegwu & Adiele, 2023). The potential benefits are clear: Growth can be accelerated and prosperity more widespread; skills and technology can be more evenly dispersed and both individuals and countries or regions can take advantage of previously unimagined economic opportunities (Nicita, 2023).

Nigeria's maritime trade remains the focal point of West African traffic. For instance, the cargo throughputs to and from Nigeria account for more than 70 percent of the total volume of cargo generated by the entire West Africa sub-region of Africa (Monday *et al.,* 2021). Without Nigeria 0as a foremost market international maritime trading activities in West Africa region would be much affected due to her major export commodities such as crude oil, cocoa, palm kernel. rubber and coffee, cashew nuts, kola nuts among others (Odiegwu, 2019). The oil and natural gas export generated huge revenue to the government and have a surplus balance of payment over the years (Lloyd & Odiegwu, 2019). The Gross domestic Product per capita doubled from $1,200 per person in 2015 to an estimated $2,500 per person in 2019, with the informal sector included, the Gross Domestic Product per capita was estimated around $3,500 per person (Nigeria economy) **(**Odiegwu & Enyioko, 2022a**).**

It is widely known that over 90% of the volume of world trade is conveyed by sea and the economic growth of any country depends greatly on its performance in the international market (UNCTAD, (2023). This shows that the maritime seaborne sector is an important component in facilitating maritime trade and for this industry to be efficient there should be among other things well-functioning ports (Matekenya & Ncwadi, 2022).

The adoption of oil trade, non-oil trade and containerized trade to elicit the demand/transactions for maritime trade and the use of real gross domestic product in Nigeria would help to fill the gaps identified during the extant literature review and achieve the research objectives in this study.

Objectives of the Study

This study seeks to investigate the effect of maritime trade on real gross domestic product in Nigeria. Based on this the following objectives shall be achieved:

1) To determine the extent to which oil trade has significant effect on real gross domestic product in Nigeria.
2) To investigate the extent to which non-oil trade has significant effect on real gross domestic product in Nigeria.
3) To find out the extent to which containerized trade has significant effect on real gross domestic product in Nigeria.

Research Questions

The purpose of this research is to evaluate the effect of maritime trade on real gross domestic product in Nigeria. In line with this the following research questions have been raised and investigated in this study:

1) To what extent does trade affect real gross domestic product in Nigeria?
2) To what extent does non-oil trade affect real gross domestic product in Nigeria?
3) To what extent does containerized-trade affect real gross domestic product in Nigeria?

Research Hypotheses

This research investigates the effect of maritime trade on real gross domestic product in Nigeria. Accordingly, the following hypotheses relating to the purpose and problems of the study have been formulated and for investigation:

$Ho_{1:}$ Oil trade has no significant effect on real gross domestic product in Nigeria.

Ho_2: Non-oil trade has no significant effect on real gross domestic product in Nigeria.

Ho_3: Containerized trade has no significant effect on real gross domestic product in Nigeria.

LITERATURE REVIEW

This sectio0n reviews the literature relevant to the study. To achieve the literature review objective, the study critically examined the theoretical foundation of the study such as **Endogenous Growth Theory**, **Export**-led theory **and** theory of international trade have been x-rayed in this section Also, the literature review has captured concepts like- maritime trade, oil trade, non-oil trade, containerized trade, Real gross domestic product, empirical review as well as the summary of the literature review with evidence of gaps in literature.

Theoretical Framework

This study examines the effect of maritime trade on economic development in Nigeria. In this section the theoretical framework underpinning the study has been explored. Theories such as: Endogenous Growth Theory, Export-led theory and theory of international trade have been x-rayed in this section.

Endogenous Growth Theory

Endogenous growth theory suggests that long-term economic growth is primarily driven by factors within an economy, such as innovation, human capital investment, and knowledge accumulation, rather than being solely determined by external forces like technological

advancements. This contrasts with neoclassical growth models that often treat technological progress as an exogenous factor. Endogenous growth theory is an economic theory which argues that economic growth is generated from within a system as a direct result of internal processes. More specifically, the theory notes that the enhancement of a nation's human capital will lead to economic growth by means of the development of new forms of technology and efficient and effective means of production. Endogenous growth theory emerged in the 1980s as an alternative to the neoclassical growth theory. It questioned how gaps in wealth between developed and underdeveloped countries could persist if investment in physical capital like infrastructure is subject to diminishing returns.

Romer previously complained that his findings had not been taken seriously enough. However, he was awarded the 2018 Nobel Prize in Economics for his studies on long-term economic growth and its relationship with technological innovation. His concepts are also regularly discussed by politicians when they debate ways to stimulate economies (Romer, 1994). An endogenous growth theory implication is that policies that embrace openness, competition, change and innovation will promote growth. Conversely, policies that have the effect of restricting or slowing change by protecting or favouring particular existing industries or firms are likely, over time, to slow growth to the disadvantage of the community.

Sustained economic growth is everywhere and always a process of continual transformation. The sort of economic progress that has been enjoyed by the richest nations since the Industrial Revolution would not have been possible if people had not undergone wrenching changes. Economies that cease to transform themselves are destined to fall off the path of economic growth. The countries that most deserve the title of "developing" are not the poorest countries of the world, but the richest. [They] need to engage in the never-ending process of economic development if they are to enjoy continued prosperity.

Export-Led Theory

Export-led theory suggests that a country can achieve economic growth by focusing on increasing its exports, rather than relying solely on domestic production and consumption. By expanding exports, a nation can benefit from larger markets, gain access to foreign capital, experience economies of scale, boost productivity, and stimulate job creation.

Export-led growth is an economic strategy where a country focuses on producing goods and services for export markets as the primary driver of economic growth and development. This approach emphasizes increasing exports to generate foreign exchange earnings and investment, which can then be used to import capital goods and raw materials to further expand production capacity.

The export-led growth theory provides the theoretical basis for this paper. This theory holds that exports are the result of economic growth and one of its key driving forces. Especially in the context of developing countries, exports have become an important channel for promoting capital accumulation and technological progress through paths such as expanding international markets, attracting foreign capital, creating jobs, and promoting industrial upgrading (Balassa, 1985).

Furthermore, export activities can form economies of scale in the production process, optimize resource allocation, bring about significant technological spillover effects, and thereby enhance total factor productivity. Helpman and Krugman further pointed out that foreign trade in an open economy can strengthen market competition, promote specialized division of labor and capital accumulation, and accelerate the optimization of industrial structures and technological upgrading. Overall, the export-oriented growth theory reveals the crucial role of exports in stimulating production efficiency, enhancing international competitiveness, and supporting long-term economic growth.

Theory of International Trade

In the early 1900s a theory of international trade was developed by two Swedish economists Eli Heckscher and Bertil Ohlin. This theory has subsequently become known as the Heckscher–Ohlin model (H–O model) (Sanyal & Jones, 1982). The Heckscher–Ohlin model makes the following core assumptions (Ohlin, 1933): Labor and capital flow freely between sectors equalizing factor prices across sectors within a country. The amount of labor and capital in two countries differ (difference in endowments). Technology is the same among countries (a long-term assumption), and tastes are the same upon countries. International trade theory provides explanations for the pattern of international trade and the distribution of the gains from trade. The theory convinces most economists of the benefits of liberal trade. But many non-economists oppose liberal trade. This study is adopting the theory of international trade because it provides a valuable insight into the nature of the link between maritime trade and economic development.

The Heckscher-Ohlin (H-O) theorem holds that trade between countries arise because different countries have different factor endowments. Thus, countries which are rich in labour will export labour intensive goods and those which are rich in capital will export capital intensive goods. According to the H-O theorem, for instance, Nigeria will specialise on production of goods and services that require cheap labour available in the country, while USA will specialise on production of goods and services using cheap capital. The theory assumes that there are two commodities, two countries, no transport cost, no qualitative difference in factors of production, identical production functions, constant return to scale and full employment, among others.

International trade theory provides explanations for the pattern of international trade and the distribution of the gains from trade. The theory convinces most economists of the benefits of liberal trade. But many non-economists oppose liberal trade. Opponents include some who may have encountered trade theory but nevertheless fall prey to fallacious reasoning. This article attempts to convey why trade theory is so persuasive to economists and also to deal with why many non-economists are not persuaded.

The theory of international trade allows for effective and efficient participation in crude oil and non-oil shipment and it permits economies of scale not open to small protected economies. By introducing greater market competition of oil, non-oil and dry bulk shipment encourages a more efficient utilization of resources and greater economic development in real gross domestic product and reduction of unemployment rate.

Conceptual Review

Conceptual Framework

This study evaluated the effect of maritime trade on real gross domestic product in Nigeria. In carrying out the study three dimensions of maritime trade (independent variable or predictor variable) namely Oil Trade, Non-Oil Trade and Containerized Trade were examined. These dimensions would be adopted in line with the works of Olusegun (2020); Okwedy (2020) and Onyeabor (2018). Also, the dependent variable was Real gross domestic product was appraised.

The study adopted part of the classification of economic performance in Nigeria espoused by Agbo *et al.* (2018); Ajayi and Araoye (2019) and Ahmed (2019) in maritime trade evaluation involving economic performance indicators.

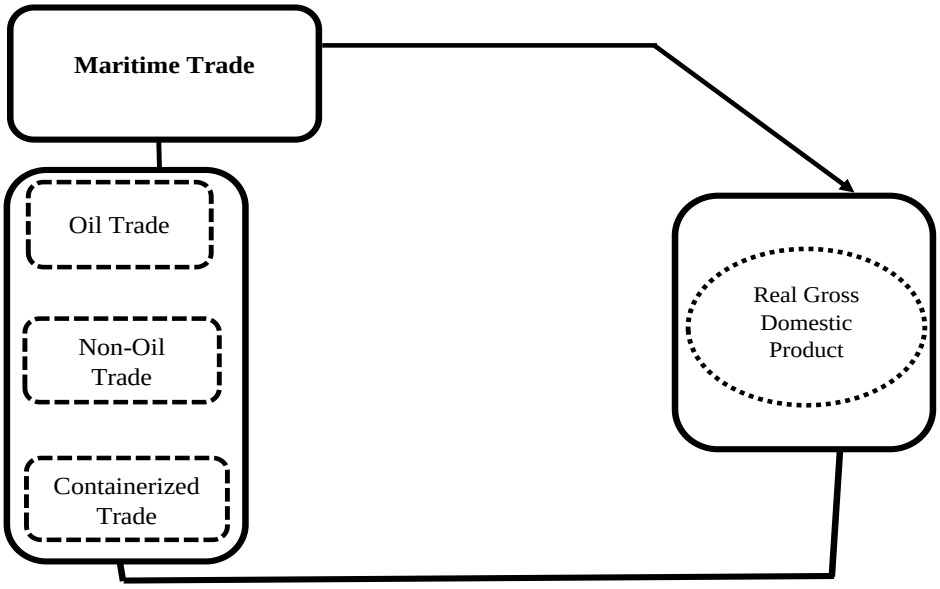

Figure 1: Conceptual Framework of the Effect of Maritime Trade on Real Gross Domestic Products in Nigeria (1981-2024)

Sources: UNCTAD, (2024a). Review of Maritime trade review of countries https://unctad.org/system/files/official-document/rmt2023 ch7_en.;

Nwamuo C. (2019). Impact of International Trade on Economic Growth: The Nigerian Experience. *European Journal of Business and Management* 11 34.

Maritime Trade

Maritime Trade refers to the global movement of goods through sea routes, involving partnerships between nations, agencies, and industries to enhance security and efficiency in commerce. Maritime trade, the backbone of global commerce, involves the movement of goods via sea routes between ports, facilitating international trade and economic growth. It's a cost-effective method for transporting goods, with over 80% of world trade by volume traveling by sea (Khayat, 2024). Maritime trade is the lifeblood of the global economy, representing the backbone of international commerce by sea. It encompasses the movement of goods and commodities across oceans, connecting distant nations, fostering economic growth, and supporting countless industries worldwide (Matekenya, Ncwadi, 2022).

The modern maritime trade industry is not without its challenges, including environmental concerns (such as emissions and oil spills), security threats (piracy and smuggling), and the imperative to align with ESG (Environmental, Social, and Governance) principles. Nevertheless, the resilience and adaptability of this industry remain evident as it continues to evolve and play a pivotal role in shaping the global economy (Odiegwu & Zeb-Obipi, 2023). Maritime trade is the one transacted by persons, companies, agencies or governments through

the sea. Stopford (2009) defines maritime trade as the movement of merchandise by vessels between the port of origin where merchandise is received from the exporter at the port of origin to the port of destination where merchandise is claimed by the importer. Nigeria's location and population make it a country of diverse economic capabilities with large investment opportunities as its maritime trade. The country has a coastline of over 750km and eight major ports excluding oil terminals with a cargo handling capacity of 35million tones per annum (WTO, 2023).

Maritime trade volume contracted marginally by 0.4 per cent in 2022, but UNCTAD projects it will grow by 2.4 per cent in 2023. Indeed, the industry remains resilient and UNCTAD expects continued but moderated growth in maritime trade volume for the medium term (Adenigbo et al., 2023).

Oil trade

Oil trading is the buying and selling of different types of oil and oil-linked assets with the aim of making a profit. As oil is a finite resource, its price can see massive fluctuations due to supply and demand changes (Chen, 2023). Oil and gas trades are dominated by three major markets in London, New York, and Singapore. These are well-established centers where many active buyers and sellers give rise to highly liquid markets. Such markets provide the opportunity for leveraged derivative investments, such as oil futures, and attract large inward risk capital. These markets provide low cost of entry and exit, and with exchange house regulation and guaranteeing the performance of the futures contracts traded on those exchanges (Azam & Feng, 2022).

The crude oil trade system is an important support for every country in providing industrial production materials, promoting economic development and guaranteeing military security. The international trade of crude oil is dominated by marine shipping, which, as a foundation for the large-volume and long-distance trade, has greatly enriched international economic cooperation in crude oil resources (Maduechesi et al., 2023). Crude oil plays a critical role in all modern economies and its trade is a vital element of the global energy supply chain ((Odiegwu & Enyioko 2022b).

Crude oil also is categorized as "sweet" or "sour" depending on the level of suffer, which occurs either as elemental sulfur or in compounds such as hydrogen sulfide. Sweet crudes have sulfur contents of 0.5 percent or less by weight, and sour crudes have sulfur contents of 1 percent or more by weight. Generally, the heavier the crude oil, the greater its sulfur

content. Excess sulfur is removed from crude oil during refining, because sulfur oxides released into the atmosphere during combustion of oil are a major pollutant (Duru et al., 2020).

Non-Oil Trade

Non-oil trade simply expressed are items other than crude oil (petroleum products) that are sold in the foreign exchange market only to generate cash are conveyed to the selling points (Ewubare et al., 2017). Farm products exports construction and manufacturing exports solid mineral exports and place in the international appear to be the four primary parts of Nigeria's non-exports industry. Agricultural commodities goods produced solid minerals entertainment and vacation services and othernon-oil trade commodities are limitless (Onuorah 2018). Non-oil goods transport comprises the movement of agricultural products, solid minerals, textiles, manpower, etc. to where they be sold (Maduechesi, 2023).

Non-oil good is made up of every other thing we export from Nigeria except petroleum products. Manufacturing exports consist of textiles, beer, cocoa butter, plastic products, processed timber, tyres, soap, detergent and fabricated iron rods. Agricultural, export merchandise includes cocoa, groundnut, palm oil, cotton, rubber (natural), yam, palm products, fish and shrimps (Saeed et al., 2021). Generally, the transportation of non-oil products is the conveyance of those commodities excluding crude oil (petroleum products), which are sold in the international market for the purpose of revenue generation.

Non-oil trade is the trading on those commodities excluding crude oil (petroleum products), which are sold in the international market for the purpose of revenue generation Ewubare et al., 2017). The Nigeria's non-oil trades sector is structured into four broad constituents which are the agricultural exports, manufactured exports, and solid mineral exports and services exports (Agbo Agu. E. & Eze, 2018). The non-oil trade products are unlimited as they include agricultural crops, manufacturing goods, solid minerals, entertainment and tourism services etc (Azam & Feng, 2022).

Containerized Trade

Containerized trade, a cornerstone of modern global commerce, involves transporting goods in standardized containers, revolutionizing shipping efficiency and reducing costs by facilitating easy transfer between trucks, trains, and ships (Adepoju, O2020). Containerization, also referred as container stuffing or container loading, is the

process of unitization of cargoes in exports. Containerization is the predominant form of unitization of export cargoes today, as opposed to other systems such as the barge system or palletization (Cariou, 2020). Road-and-rail containers, sealed boxes of standard sizes, were used early in the century; but it was not until the 1960s that containerization became a major element in ocean shipping, made possible by new ships specifically designed for container carrying. Large and fast, container ships carry containers above deck as well as below; and their cargoes are easily loaded and unloaded, making possible more frequent trips and minimum lost time in port (Adenigbo et al., 2023).

Container trade and port industry are seen as key factors for the development of countries and the globalization of the world economy. Especially international line and container operators have great investment and infrastructure opportunities and thanks to these opportunities, International large companies built huge ships to transport cargoes, and as a natural consequence of this, they needed modern ports and equipment (Chen, 2023). When the trend of world container trade in recent years is examined, it is seen that especially Far East ports, the USA and European ports generate a large part of the container trade in the world (UNCTAD, 202d).

Containerization, also referred as container stuffing or container loading, is the process of unitization of cargoes in exports. Containerization is the predominant form of unitization of export cargoes, as opposed to other systems such as the barge system or palletization. The containers have standardized dimensions (Gobna et al., 2022). The standardization of container sizes and corner fittings has revolutionized global trade and transformed the logistics industry. Before, containers of various sizes and corner fittings posed a challenge to efficient stacking and transportation of goods (Ajudua et al., 2021).

Real Gross Domestic Product (RGDP)

Real Gross Domestic Product (RGDP) is the monetary value of all the finished goods and services produced within a country's borders in a specific time period. Though RGDP is usually calculated on an annual basis, it can be calculated on a quarterly basis. RGDP includes all private and public consumption, government outlays, investments, private inventories, paid in construction costs and the foreign balance of trade (Adepoju et al. 2023). Put simply, RGDP is a broad measurement of a nation’s overall economic activity the godfather of the indicator world. Real Gross Domestic Product (RGDP) is also a monetary measure of the market value of all final goods and services produced in a period (quarterly or

yearly) of time. Nominal GDP estimates are commonly used to determine the economic performance of a whole country or region, and to make international comparisons. Nominal GDP per capita does not, however, reflect differences in the cost of living and the inflation rates of the countries; therefore, using a basis of RGDP per capita at purchasing power parity (PPP) is arguably more useful when comparing differences in living standards between nations.

Real Gross Domestic Product (RGDP) is commonly used as an indicator of the economic health of a country, as well as a gauge of a country's standard of living. Since the mode of measuring RGDP is uniform from country to country, Real Gross Domestic Product (RGDP) can be used to compare the productivity of various countries with a high degree of accuracy. Adjusting for inflation from year to year allows for the seamless comparison of current Real Gross Domestic Product (RGDP) measurements with measurements from previous years or quarters. In this way, a nation’s RGDP from any period can be measured as a percentage relative to previous periods.

Real gross domestic product is an inflation-adjusted measure that reflects the value of all goods and services produced by an economy in a given year (Egole, 2022).

Empirical Review

Adepoju (2020) investigated new seaport development-prospects and challenges: Perspectives from Apapa and Calabar Seaports. The purpose of the study was to examine and analyze the efficiencies of the Apapa and Calabar seaports in order to determine the need for any investment in seaport development. Descriptive analysis and stochastic frontier analysis (SFA) were used to examine seaports’ challenges and determine the efficiency of the ports. Secondary data and responses of the stakeholders and shipping companies were collected through 2008–2017 Real gross domestic product of the selected seaports and a well-structured questionnaire. The study found draught level cost of shipment ease of access to industries and condition of other modes of transportation as major challenges linked to the Calabar Seaport but found the Lagos Apapa seaport quite efficient. The study recommended that investment decisions to build a new seaport or dredge to upgrade the existing ones should be analyze carefully as demand should be the driving force for new port establishment: when a port cannot generate enough traffic it may not yield returns on investment as expected.

Ndikom *et al.* (2018) investigated the influence of time on seaborne oil trade in Nigeria. The study used the statistical tools of trend analysis simple regression analysis and independent sample t-test to analyze the data obtained. The study found that there is a significant difference between the export oil trade and import oil trade. The difference favours sea borne Oil trade indicating that more Oil trade has been handled/facilitated by the seaports over the time period covered in the study than containerized trade.

Bensassi *et al.,* (2019) empirically examine the effect of FDI inflows into Nigeria on real gross domestic product (RGDP) growth and how these external inflows can bring about achieving goal-of mobilizing additional financial resources for developing countries from multiple sources. The study found that labour quality has a positive and significant effect on RGDP in line with theory. Omodero and Alpheaus (2019) carried out a study on the effect of foreign debt on the economic growth of Nigeria. The regression results indicate that foreign debt exerts a significant negative influence on economic growth while foreign debt servicing has a strong and significant positive impact on economic growth. Oladimeji and Muhammed (2017) investigated the effect of international business on SMEs growth in a competitive environment particularly Nigeria. It was also revealed that the exchange rate has a significant effect on SMEs growth in Nigeria and the level at which exchange rate affects SMEs growth is relatively high.

Yakubu and Akanegbu (2018) examined trade openness and economic growth: Evidence from Nigeria. The study used multiple regression of ordinary least square estimation The study findings revealed that trade liberalization did not cause growth during the period of the study. Osabohien *et al.,* (2019) investigated the impact of agricultural export on Nigeria's economic growth. The results from the ARDL technique revealed that agricultural exports significantly affect Nigeria's economic growth this suggests that a 1percent increase in agricultural export will boost economic growth in Nigeria by approximately 25 percent.

Onuorah (2018) examined trade liberalization and economic growth in Nigeria. The results/findings revealed that the independent variables: DOP. INF. FDI. BOT and NEXP have positive significant impact on GDP while EXR and BOP shows a negative impact. Osidipe *et al.,* (2018) assessed the impact of Trade Liberalization on some selected manufacturing sectoral groups. The results of analysis led to the conclusion that trade liberalization does not have significant impact on FBT CKM and BM in Nigeria. FDI is positively signed and thus have direct impact on the three- sub-sectors. Agbo *et al.,* (2018)

reviewed the impact of international trade on the economic growth of Nigeria in Enugu Nigeria. The results of the study showed that there is a significant impact of export trade on the Nigerian economic growth. The study also revealed that there is no significant impact of import trade on the Nigerian economic growth.

Effect of Maritime trade on Real gross domestic product

International maritime trade can be referred to as the exchange of goods services and capital across international borders or territories because there is a need or want of goods or services. Such trade represents a significant share of gross domestic product (GDP) in most countries. International maritime trade is more of a complex process when compared to that of domestic trade. When trade takes place between two or more nations factors which include government policies currency economy laws judicial system and market influences trade (Odiegwu, 2019). International economic organizations were formed in order to smoothen and justify the process of trade between two or more countries. Example of this international maritime trade organization is the World Trade Organization. This organizations are aimed at the growth of international maritime trade (UNCTAD 2021).

Adepoju (2020) examined new seaport development-prospects and challenges: Perspectives from Apapa and Calabar Seaports and found that imports and exports are accounted for in a country's current account in the foreign exchange. International Trading may give consumers and countries the opportunity to be exposed to new markets and products. Almost every kind of product can be found in the international market ranging from food clothes spare parts oil dry bulks wine stocks currencies and water. Services such as tourism banking consulting and transportation.

Also Saeed *et al.,* (2021) did a study exploring the relationships between maritime connectivity international trade and domestic production. With the help of regression analysis, the study found that nations with strong international maritime trade have become prosperous and have the power to control the world economy. The study further revealed that international maritime trade can become one of the major contributors to the reduction of poverty. The study asserts that no country in the world can sustain itself or survive without exchanging goods and services with other countries in the world.

Monday *et al.,* (2021) examined real gross domestic product performance in eastern ports. The study used correlational analytical tools and found that Real gross domestic product of

Nigeria depend on her trade with other nations to a large extent. The study further revealed that Nigeria as a developing country has been struggling with realities of developmental process not only politically and socially but also economically too.

Munim and Schramm (2018) examined the impacts of port infrastructure and logistics performance on economic growth: The mediating role of maritime trade. The study used multiple regression analysis and chi-Square statistical tools with the help of Statistical Package for Social Sciences software (SPSS) the study found that international maritime trade has strong indications of fostering peace and mutual understanding among nations as port Real gross domestic product grow tremendously. The study therefore hypothesizes that: Ho_1, Ho_2 and Ho_3: Oil Trade, Non-Oil Trade and Containerized Trade have no significant effect on real gross domestic product in Nigeria.

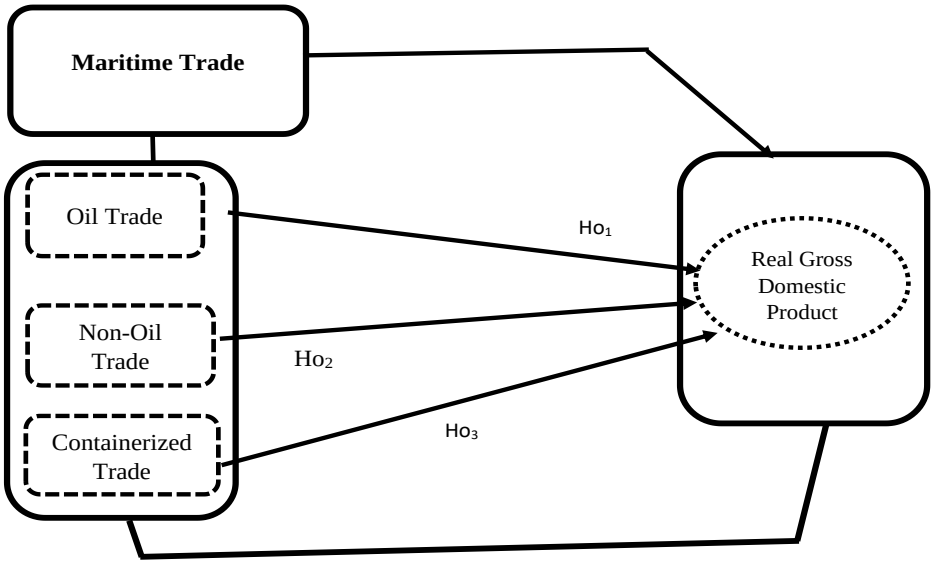

Figure 2: Operationalized Framework of the Effect of Maritime Trade on Real Gross Domestic Products in Nigeria (1990-2023)

Sources: UNCTAD, (2024a). Review of Maritime trade review of countries https://unctad.org/system/files/official-document/rmt2023 ch7_en.;

Nwamuo C. (2019). Impact of International Trade on Economic Growth: The Nigerian Experience. *European Journal of Business and Management* 11 34.

METHODOLOGY

Research Design

Research design is the blueprint that guides the researcher in acquiring and generating necessary data for the study (Akujuru & Enyioku 2018; Saeed *et al.* 2021 and Odiegwu &

Zeb-Obipi, 2023). So, this study adopted the ex-post facto research design which requires the usage of historical data to forecast future trends employing regression techniques. The focus of an ex-post facto research design is to effectively explain the characteristics of a population or a social phenomenon in the past (Akujuru & Enyioku 2018).

Method of Data Collection

Secondary sources of data were used as the main data collection sources in which accuracy, availability, adequacy, authority, scope, suitability and sources of data were considered for relevance. So, the relevant data for this study were collected from the annual reports and accounts of Nigerian Ports Authority, National Bureau of Statistics and Central Bank of Nigeria Annual Statistical Bulletins of the various years in question from their official website. The data collected were from the period of 1990-2023.

Operational Measures of Variables

There are two major variables in this study — Maritime trade (MT) and the Real gross was used to measure the dependent variable..

Model Specification

This research work adopts the model of Odiegwu and Enyioko (2022a) and Chang et al. (2020) with slightmodifications and blending (for example; real gross domestic product and containerized trade). The researchers expressed economic performance indicators as a function of Maritime trade (MT).

Their models are stated thus:

$RGDP = ß_0 + ß_1\ OTR + ß_2\ NOTR + ß_3\ CTR + U_t$ --------1

$Y = b_o + b_1x_1 + b_2x_2 + b_3x_3 + e$ ----------(2)

RGDP = f (OTR, NOTR, CTR)

Where;

RGDP = Real gross domestic product

OTR = Oil Trade

NOTR = Non-Oil Trade

CTR= Containerized Trade

The independent variable known as maritime trade is the gross of all maritime trade types as available data did not make provision for the individual components. The economic development indicators (real gross domestic product (RGDP), is the Dependent and moderating variables and the maritime trade (MT) was the independent variable.

Apriori Expectation

The apriori expectations adopted the findings of Odiegwu and Enyioko (2022a); Chang et al. (2020); Agbo et al. (2018) which all stated a positive significant effect of maritime trade on economic performance variables/parameter indicators.

Under this model testing, the descriptive and stationarity testing were done on all the variables and apriori reasoning, that the economic performance indicators will flow in the samedirection as maritime trade (Lloyd & Odiegwu, 2019; Nwaogbe et al. 2020).

Techniques of Data Analyses

The data generated/collected was subjected to analysis. This study applied ARDL and ECM methods of estimation. The statistical programme tool used to do the analyses was Eviews 10. Several data analyses techniques were employed for the purposes of analyzing the collected data set and drawing conclusions based on them. The following analytical techniques and steps were followed:

Test for Stationarity

In carrying out this research work, it is important to test the stationarity properties of the time series. It has been observed of late that the body of statistical estimation theory is based on asymptotic convergence theorems which assume that the data are stationary and do not have mean reverting characteristics. In real life and with time series data, the asymptotic assumption most often does not hold. This implies that the data are found to be non-stationary as opposed to stationarity assumption. The problem of stationarity lies with the fact that spurious regression commonly arises where the non-stationary series are used. Using the Augmented Dickey Fuller (ADF) Test (Fuller, 1976; Dickey and Fuller, 1979) the model. The Philip Peron (1988) test (PP) is different from the ADF test in that it makes provision for a drift term, time trend or structural break or shifts.

Test for Serial Correlation

In a time, series or panel data model, this is correlation between the errors in different time periods. A series is said to be serially correlated where the data are correlated across time and the errors arise from adjacent time periods.

The Durbin-Watson (DW) Statistic: The Durbin-Watson (DW) statistic is a test used in regression analysis to detect autocorrelation (serial correlation) in the residuals, checking if errors from one period predict errors in the next, with values from 0 to 4.

The Breusch-Godfrey Statistic: This is a joint test for autocorrelation that will allow examination of the relationship between the mean of the error term and its lagged values at the same time.

RESULTS

Presentation of Data

Time series data on annual oil trade, non-oil trade, containerized trade and real GDP from 1990 to 2023 used for this study are presented below:

Table 1: Time series data on annual oil trade, non-oil trade, containerized trade and real GDP for Nigeria covering the period from 1990 – 2023.

Year	Oil Trade Billion M/T	Non-Oil Trade Billion M/T	Containerized Trade (Per unit) TEU	Real GDP Billion N
1990	112699.60	42904.40	123101	21462.73
1991	124630.30	86393.30	136230	21539.61
1992	220945.40	127817.50	152791	22537.1
1993	254914.90	129484.60	135342	22078.07
1994	243059.80	125788.20	111300	21676.85
1995	1083391.20	622397.90	196888	21660.49
1996	1448394.60	423775.40	199844	22568.87
1997	1379401.90	707977.40	236683	23231.12
1998	893640.70	695634.70	286657	23829.76
1999	1381138.70	670346.80	344354	23967.59
2000	2141718.09	789027.60	344229	25430.42
2001	2077052.08	1149082.1	483223	26935.32
2002	2011155.83	1245717.1	545797	31064.27
2003	3392032.26	1776089.4	588593	33346.62
2004	4807586.91	1782239.9	513954	36431.37
2005	7937877.86	2109513.2	575242	38777.01
2006	7901768.64	2531431.3	637055	41126.68
2007	8878727.22	3342983.7	431950	43837.39
2008	11177365.98	4803508.0	612982	46802.76
2009	9174200.04	4912775.8	653584	50564.26
2010	13057662.52	7117787.9	685937	54612.26
2011	17366751.38	8865778.2	839977	57511.04
2012	17324246.83	7581636.0	880597	59929.89
2013	16561219.19	8140219.1	992666	63218.72
2014	14222131.08	9278810.2	1063486	67152.79
2015	9909705.44	10011521.	939379	69023.93
2016	10563230.42	7752748.3	808587	67931.24
2017	15528695.64	9264293.4	822706	68490.98
2018	20968131.07	11184309.	775842	69799.94
2019	20238224.32	20122277.	344354	71387.83
2020	13775162.11	19357622.	344229	70014.37
2021	23385521.96	18773484.4	483180	72393.67
2022	34067954.98	20298725.9	545797	74639.47
2023	44293666.72	24596787.7	588596	76684.94

Source: Nigerian Port Authority (NPA), Nigerian Shippers Council (NSC), Central Bank of Nigeria (CBN) Statistical Bulletin, National Bureau of Statistics (NBS) and World Development Indicators (WDI)(1990-2023)

The descriptive statistics which summarize and organize the characteristics of the variables are presented in table 4.2 below:

Descriptive Statistics

Table 2: Summary of Descriptive Statistics of the Variables

	OTR	NOTR	CTR	RGDP
Mean	9938353.	6188850.	512503.9	45342.92
Median	8408303.	2937208.	529875.5	42482.04
Maximum	44293667	24596788	1063486.	76684.94
Minimum	112699.6	42904.40	111300.0	21462.73
Std. Dev.	10326430	7046017.	273989.7	20455.36
Skewness	1.427041	1.194902	0.203042	0.150582
Kurtosis	5.184774	3.337017	2.043747	1.391481
Jarque-Bera	18.30195	8.251724	1.529041	3.793882
Probability	0.000106	0.016150	0.465557	0.150027
Observations	34	34	34	34
Source: Author's computation using E-views software (2025)				

Table 2 reveals that oil trade has a mean value of 9938353, a minimum value of 112699.6, a maximum value of 44293667, and a standard deviation of 10326430, indicating that the data is dispersed around its mean because the standard deviation is greater than the mean value. Correspondingly, the mean value and standard deviation of non-oil trade are 6188850, and 7046017 respectively which showed that the data is scattered around its mean as the standard deviation is greater than the mean value. Contrariwise, the descriptive statistics revealed that containerized trade has a mean value of 512503.9, minimum value of 111300, maximum value of 1063486 and a standard deviation of 273989.7 implying that the data is convergent to its mean value because the standard deviation is lower than the mean value. In the same manner, the descriptive statistics for real GDP, mean value of 45342.92 the corresponding standard deviation of 20455.36 indicates that their data are centered around their respective mean values.

Furthermore, the distribution of data for all the variables (oil trade, non-oil trade, containerized trade and real GDP) showed they are skewed to the right of the normal distribution curve given their positive skewness values. Additionally, the kurtosis value for unemployment rate and non-oil trade are slightly greater than 3 implying that their curves

have similar kurtosis to a normal distribution. Also, the kurtosis values for oil transport, inflation rate and foreign exchange rate are all higher than 3, indicating that their curves are more peak. On the other hand, real GDP and containerized trade have kurtosis values below 3, which showed that their curves are less peak. Furthermore, the probability values of the Jarque-Bera statistics revealed that containerized trade, non-oil trade and real GDP are normally distributed at 5 percent significance level while oil trade, is not.

The trends of the series which spanned through the study period (1990-2023) are presented to provide some insights into the data distribution as presented in Figure 1- 2.

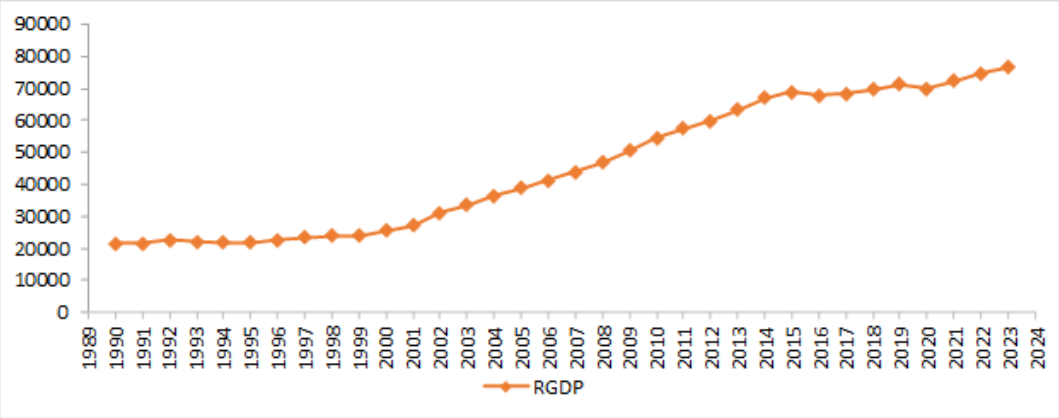

Figure .1: Trend of Real GDP in Nigeria. (1990-2023)

Sources: CBN Statistical Bulletin and NBS Annual Abstract

The graph in Figure 1 clearly shows that Nigeria's real GDP has fluctuated over time. The value of the country's real GDP increased from N21.462 trillion in 1990 to N22.537 in 1992 which indicated an increase in economic activities which was followed by a steady decline from 1993 to 1995. However, the Nigerian economy benefited from rising world oil prices in the late 1990s which saw a continuous rise in the country economic growth as reflected in the values of real GDP throughout the early 2000s. Since Nigeria's economy is heavily dependent on oil earnings, the country's real GDP hits low in 2016 as the economy contracted by 1.6 percent due to a sharp decline in global oil prices and oil production shocks, which spilled over to the non-oil sector (Word Bank, 2017). Again, Nigeria entered its worst recession in over 30 years in the third quarter of 2020 which was caused by the COVID-19 pandemic and a significant decline in oil prices which stalled global economic activities for months (NBS, 2021). However, the country's economy rebounded in 2021 as real GDP increased to N72.393 trillion from N70.014 trillion in 2020 and has continued on the upward trend since

then. The variations in Nigeria's real GDP provides an explanation on how the size of the country's productive capacity changed over the research period.

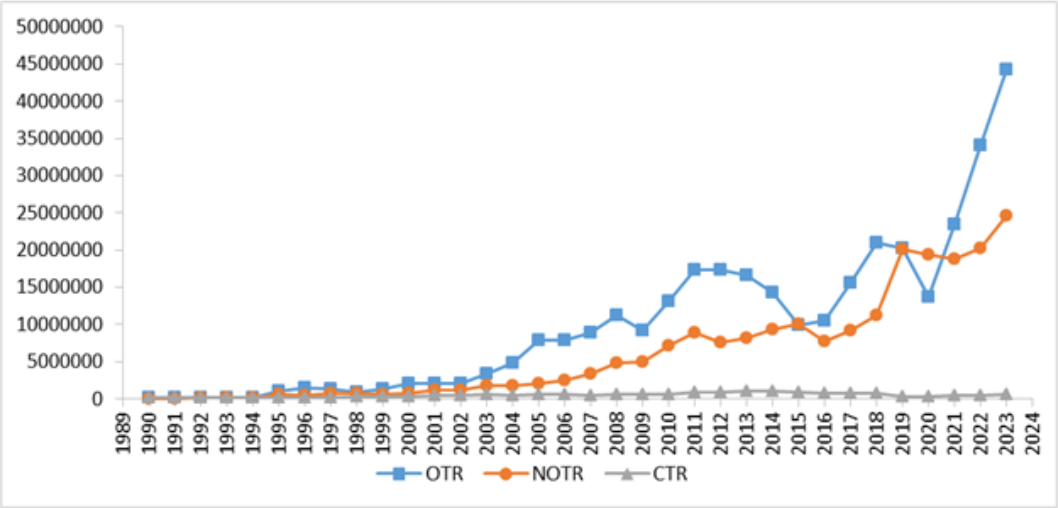

Figure 2: Trends of Oil Trade, Non-Oil Trade and containerized trade in Nigeria. (1990-2023)

Sources: Nigerian Ports Authority (NPA), Nigerian Shippers Council (NSC) and CBN Statistical Bulletin.

As observed from the graph in Figure 2, the volume of oil trade in Nigeria was 112699 billion M/T in 1990 and increased to 1448394 billion M/T in 1996 and declined to 893640 billion M/T in 1998. It rose from 2141718 billion M/T in 2000 to 11177365 billion M/T in 2008 and by 2018 stood at 20968131 billion M/T in 2018. The volume of oil trade plunged to 13775162 billion M/T in 2020 and increased to 23385521 billion M/T in 2021 and followed an upward trend since then. The upward and downward trend of oil trade in Nigeria may be due to external factors like global oil price volatility and demand, as well as internal issues like oil theft, pipeline sabotage, and infrastructure challenges. These issues impact production and lead to inconsistencies in export volume and revenue.

Since 1990, Nigeria's non-oil trade has shown a complex trend, characterized by both growth and decrease. The graph clearly showed that non-oil trade trended upwards from 1990 where it stood at 42904 billion metric tons to 622397 billion M/T in 1995 and then fluctuated downwards to 423775 billion M/T in 1996. The non-oil trade in Nigeria experienced an upward trend in the early 2000s and increased to 10011521 billion M/T in 2015. It suddenly declined to 7752748 billion M/T in 2016 and followed an upward swing to 20122277 billion

M/T in 2019 and then declined in 2020 to 19357622 billion M/T and in 2021 to 18773484 billion M/T but rebounded in 2022 to 20298725 billion M/T and rose to 24596787 billion M/T in 2023. The oscilations in Nigeria's non-oil trade since 1990 may be attributed to domestic policies, global economic shock, exchange rate fluctuations and over- reliance on oil which has hindered development of other sectors like agricultural and manufacturing.

Furthermore, containerized trade in Nigeria have had mixed trends with periods of both increase and decrease. It swung upward as it increased from 123101 twenty-foot equivalent unit in 1990 to 152791 per unit TEU in 1992 and then saw a declined in 1994 where it fell to 111300 per unit TEU. However, it followed an upward trend afterwards and by 2006 rose to 637055 per unit TEU and fluctuated downwards again in 2007 to 431950 per unit TEU. Containerized trade in Nigeria assumed an upward trend from 2008 to 2014 where it stood at 1063486 per unit TEU and experienced a plunge from 2015 to 344229 per unit TEU in 2020 and has been on the upward trend since then. The variations in containerized trade in Nigeria may be driven by global commodity demand, energy prices, poor infrastructure, international trade agreements and policies. These factors affect import and export volumes, lead to volatile freight rates and inefficiencies in cargo handling.

Data Analysis

Unit Root Test

Unit root test is carried out to confirm the stationarity of the variables examined in the model to ensure that the risk of running a spurious regression is avoided as much as possible and to guide against the loss of vital information linked to the random walk of the modeled variables (Granger & Newbold, 1976). Procedures of the e Augmented Dickey-Fuller (ADF) unit root analysis were applied and the outputs are presented in Table 3.

The result of the augmented Dickey-Fuller test of stationarity at level and first difference are presented in Table 3:

Table 3: Unit Root Test Results.

Variables	ADF Test Statistics				Integration Orders
	Level	Critical Value at 5%	1st_diff.	Critical Value at 5%	
$logrgdp_t$	-0.7517	-2.9571	-2.9649	-2.9571	I(1)
$logotr_t$	-1.8064	-2.9540	-5.3865	-2.9571	I(1)
$lognotr_t$	-2.1954	-2.9540	-8.0618	-2.9571	I(1)
$logctr_t$	-1.9096	-2.9540	-5.6538	-2.9571	I(1)

Source: Author's compilation from output of E-Views 10 (2025)

The unit root test results revealed real GDP (RGDP), oil trade (OTR) and non-oil trade (NOTR), containerized trade (CTR) were non-stationary in their level form but became stationary at first difference that is integrated of order one I(1). From the unit root analysis outcome for real GDP model and inflation rate model indicate the series have uniform order of integration 1(1) which is very ideal for the fitting of an error correction model upon confirmation of the co-integrating relationship amongst the variables. Therefore, Johansen cointegration test is most appropriate in testing for co-integration amongst the variables of interest in our models (real GDP). Contrariwise, unemployment rate model showed the variables have mixed order of integration I(0) and I(1) which satisfies the condition for estimating the model using autoregressive distributed lag (ARDL) model.

Test for Cointegration

Real GDP Model

With the verification of the order of integration of the variables, the co-integration test of long run relationship was carried out using the Johansen cointegration test method and the results of Johansen test are presented in Table.4 below.

Table .4 Unrestricted Cointegration Rank Test. (Trace)

Hypothesized		**Trace**	**0.05**	
No. of CE(s)	**Eigenvalue**	**Statistic**	**Critical Value**	**Prob.****
None *	0.502767	49.34650	47.85613	0.0360
At most 1	0.412777	26.98820	29.79707	0.1019
At most 2	0.237185	9.952971	15.49471	0.2844
At most 3	0.039490	1.289314	3.841466	0.2562
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
**MacKinnon-Haug-Michelis (1999) p-values				

Source: Author's compilation from output of Eviews 10 (2025)

Tabulated above is the cointegration analysis output which revealed the existence of a long run relationship amongst the variables captured in the model. The result indicates one cointegrating equation given that the trace statistics value is greater that the critical value at 0.05 significance level. The presence of a long run association between the regressand (real GDP) and the regressors (oil trade, non-oil trade and containerized trade) give credence to the application of Error Correction Mechanism (ECM).

Model Estimation

Estimation of the Error Correction Model (ECM) For Real GDP Model

The behaviour of the variables in the short run and the speed of adjustment of the model to long run equilibrium position were estimated using the error correction mechanism and the results of the estimation are presented in Table 5.

Table 5: Parsimonious ECM Estimates. (Sample: 1990-2023)

Dependent Variable: LOGRGDP				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.018186	0.009882	1.840360	0.0806
D(LOGRGDP(-1))	0.614728	0.157253	3.909161	0.0009
D(LOGOTR)	-0.013238	0.018322	-0.722505	0.4783
D(LOGNOTR)	0.026715	0.020432	1.307465	0.2059
D(LOGCTR)	-0.008073	0.024397	-0.330897	0.7442
ECM(-1)	-0.116418	0.049727	-2.341151	0.0297
R-squared	0.637132	F-statistic		3.511641
Adjusted R-squared	0.455698	Prob(F-statistic)		0.008091
Durbin-Watson Stat	2.415484			

Source: Author's computation from output of Eviews 10 (2025)

The short run results from Table 5 above revealed that Nigeria's real GDP in the past period has a positive and statistically significant effect on the current real GDP at 0.05 significance level given the associated probability value of 0.0009. This implies that a percent increase in the real GDP from the past time period will stimulate real GDP in the current period by 0.614728 percent. The result also showed that oil trade has a negative effect on real GDP in Nigeria. This implies that a percent increase in oil trade will lead to a decrease in real GDP by 0.013238 percent. This outcome is not in conformity with the a priori expectation of the study. Also, the negative effect of oil trade on real GDP in Nigeria was found not to be statistically significant at 0.05 level with an associated probability value of 0.4783.

Contrarily, the estimated coefficient of non-oil trade showed it has a positive effect on real GDP in Nigeria at 0.05 level highlighting that a percent increase in non-oil trade boost real GDP by 0.026715. The finding is consistent with the a priori expectation of the study.

Furthermore, the result revealed that containerized trade has a negative effect on real GDP in Nigeria. This suggests that an increase in containerized trade by one percent is associated with a decrease in real GDP by 0.008073 percent signifying non-conformity with the a priori expectation of the study. The coefficient of determination (R^2) is estimated at 0.6371 which implies that 63.7 percent of the variations in real GDP are explained by the independent variables examined in the model (oil trade, non-oil trade and containerized trade).

Also, the Durbin-Watson Statistics value of 2.41 falls within the acceptable range, further suggesting that the residuals are relatively independent. Additionally, the probability value of the F-statistics (0.0080) indicates that the independent variables are collectively significant in explaining changes in real GDP in Nigeria. Furthermore, the error correction coefficient is negative (-0.1164) and statistically significant with a probability value of 0.0297 indicating that the model can adjust to long run equilibrium position at a relatively slow speed of 11.6 percent.

Post-estimation Tests

Table 6: Inspection of CLRM Assumptions for Real GDP Model.

Real GDP Model				
Tests	**CLRM Problem**	**Test Stats.**	**Prob.**	**Decision**
Breusch-GodfreyLM	Serial Correlation	6.2039	0.1021	Serial independence
Breusch-Pagan-Godfrey	Heteroscedasticity	12.459	0.2544	Constant Variance
Jarque Bera	Normality Test	2.3245	0.3127	normally Distributed
Ramsey RESET	Model Specification	0.5211	0.4791	Model is not misspecified
CUSUM	Stability	-	-	Model is Stable
Source: Author's computation from output of Eviews 10 (2025)				
Source: Author's compilation from output of E-Views 10 10 (2025)				

As presented in Table 6, the Breusch-Godfrey Serial correlation LM test result shows there is complete absence of autocorrelation in the estimated stochastic term. The test illustrated that, the chi-square statistics value is 6.2039 with a probability value of 0.1021 for model 1, 0.2778 with a probability value of 0.8703 Hence, the null hypothesis is accepted at 0.05 significance level. This implies that serial autocorrelation is not present in the stochastic term.

The heteroscedasticity analysis based on the Breusch-Pagan-Godfrey method showed that there is no existence of heteroscedasticity in the stochastic term as the null hypothesis is

accepted. The chi-square value 12.459 and probability value of 0.2554 for model 1, 3.8153 led to the study upholding the null hypothesis.

The Jarque-Bera Normality test results indicate that their residuals are normally distributed. Thus, the null hypothesis is not rejected as the Jarque Bera test statistic values in the examined models exceed 0.05 significance level.

The Ramsey's reset test result shows that there is no functional or specification error, given the F-Statistic of 0.52116 and a probability value of 0.4791 for model 1, 0.1044 and 0.7494 for model 2, 0.1962 and 0.6672 for model 3 and 0.0047 and 0.9461 for model 4 respectively

The stability test conducted using the cumulative sum (CUSUM) indicates that the parameters are stable and no structural breaks exist in the series. Figure 4.5 - 4.8 show that the respective plots of the cumulative sum (CUSUM) lie within the 5 percent critical level.

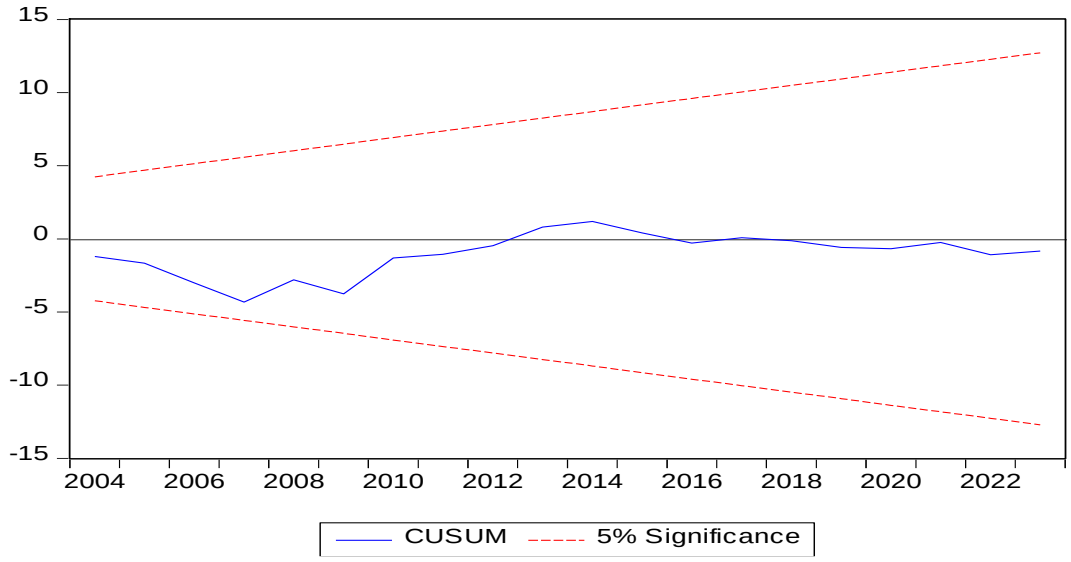

Figure 3: Plot of Cumulative Sum (CUSUM) For Real GDP Model.

DISCUSSION

The findings from investigating the effect of maritime trade on economic performance in Nigeria covering the period between 1990 -2023 provide essential insights into how the components of maritime trade; oil trade (OTR), non-oil trade (NOTR) and containerized trade affect Nigeria's real gross domestic products (RGDP). Also, the effect of a moderating variable (foreign exchange rate) on maritime trade and economic performance in Nigeria was also examined. The empirical results were discussed to ascertain if the specified objectives of the study were achieved and also link the findings with the theoretical expectations. The

findings were equally discussed in line with the stated hypotheses to ascertain if the null hypotheses are to be rejected or not.

Effect of Maritime Trade (Oil Trade, Non-Oil Trade and Containerized Trade) On Real gross domestic product in Nigeria

The estimated Error Correction Model (ECM) results showed that oil trade has a negative effect on real GDP in Nigeria in the short run suggesting that a percent increase in oil trade will reduce real GDP by 0.0132 percent. This result is not in conformity with a priori expectation of the study and this may be attributed to high volatility in global oil prices and the country's over reliance on oil revenue. According to Omjimite and Akpolodje (2019), Nigeria's heavy reliance on exporting crude oil has significant consequences for its economy due to the extreme volatility of the oil market. Additionally, this finding aligns with Jiménez-Rodríguez and Sánchez (2005) who argued that rise in oil prices is predominantly associated with adverse effects on economic activity within nations that rely on oil imports. Furthermore, the negative effect of oil trade on Nigeria's real GDP in the short run was found not to be statistically significant at 0.05 significance level given the associated probability value of 0.4783. Hence, we fail to reject the null hypothesis since the probability value is greater than 0.05. In effect, the findings indicate that changes in oil trade does not determines the extent of increase or decrease in Nigeria's real GDP. Based on the short run result, the study submits that oil trade has a non-significant negative effect on real GDP in Nigeria.
Also, the short run estimated coefficient of non-oil trade revealed it has positive effect on real GDP in Nigeria which is consistent with a priori expectation of the study indicating that one percent rise in containerized trade boost real GDP by 0.02671 percent. This result is in line with the findings of Aremu (2016) and Oruta (2015) whose empirical outcome revealed that non-oil trade is positively correlated with economic growth in Nigeria. However, the positive effect of non-oil trade on real GDP was found not to be statistically significant given the corresponding probability values of 0.2059. Hence, the we fail to reject the null hypothesis and submit that containerized trade has insignificant positive effect on real GDP in the short run.

Furthermore, the short run result revealed that containerized trade has a negative effect on real GDP in Nigeria which indicates that one percent increase in non-oil trade will bring about a decrease in real GDP by 0.008 percent. This finding is not in consonance with the theoretical expectation of the study which may be due fluctuations in dry cargo freight rate

driven by demand and supply shocks (Sunghwa, Hyunsok & Jangha, 2023). Also, the finding disagrees with the empirical result of Nektarios, Konstantinos and Dimitiris (2021) whose outcome showed that containerized trade has a significant positive effect on real GDP. In addition, the negative effect of containerized trade on Nigeria's real GDP in the short run was found not to be statistically significant at 0.05 significance level given the probability value of 0.7442. Hence, we fail to reject the null hypothesis since the probability value is greater than 0.05. Based on the short run result, the study submits that containerized trade has a negative and non-significant effect on real GDP in Nigeria.

Findings indicated that exports of oil strongly and positively impact Nigeria's GDP over the short time period. This underscores the importance of oil earnings in Nigeria's overall economic development. Exports of petroleum are Nigeria's primary source of income, government spending, and foreign exchange which supports aggregate investment and production capacity. This finding is consistent with that of Oladosu et al. (2023), who concluded that the exports of oil positively and significantly impact Nigeria's GDP in the period of long run. The finding also reaffirms the conclusions of Ugwo et al. (2019), who discovered that the exports of oil impact Nigeria's economic performance positively and significantly. This finding is also supported by Ashakah et al. (2025), who found that Nigeria's exports of non-oil have fallen short of expectations, raising suspicion about the efficiency of the chosen export development tactics. Further findings reveal that inflation negatively but insignificantly affects GDP in both runs (short and long). This is in tandem with Owamah and Mgbomene (2025) as they found out that inflation negatively affected the growth of Nigeria's economy. In economic theory, high inflation increases uncertainty, and discourages investment and consumption, which harms economic growth (Ashakah et al., 2025). The insignificant effect of inflation on GDP in the long-term period in Nigeria may be as a consequence of its effect been usually overshadowed by structural issues, weak monetary transmission, & cost-push factors, making it less significant in driving long-run output.

Also, the short run result showed that dry bulk transport has positive effect on real GDP which indicates that a percentage increase in dry bulk transport in the leads to an increase in real GDP by 0.0105 percent. This finding conforms to the theoretical expectation of the study and aligns with Jiang et al. (2018) who argue that dry bulk transport is a key link in global economic development because it is the main transportation medium for intercontinental industrial raw materials, primary grain products, and other basic primary products and semi-

finished products. Contrariwise, the long run result showed that dry bulk transport has insignificant negative effect on real GDP which may be due fluctuations in dry cargo freight rate driven by demand and supply shocks (Khayati, 2021). In addition, the positive effect of dry bulk transport on real GDP in the short run was found not to be statistically significant at 0.05 significance level given the probability value of 0.2178. Hence, we fail to reject the null hypothesis since the probability value is greater than 0.05. In effect, the findings indicate that changes in dry bulk transport does not determine the extent of increase or decrease in real GDP. Based on the short run result, the study submits that dry bulk transport has positive but non-significant effect on real GDP in Nigeria.

CONCLUSION

Nigeria's maritime trade, particularly containerized and non-oil trade has untapped potential to drive economic development by: Stimulating GDP growth, creating employment and moderating inflation. Evidently, the study concluded that:

1) The short run of oil trade has a negative and non- significant effect on real GDP; non-oil trade revealed a positive and not statistically significant effect on real GDP; the short run result revealed that containerized trade has a negative and statistically insignificant effect on real GDP in Nigeria.
2) In the short run oil trade has insignificant positive effect on inflation rate; non-oil trade has a positive and non-significant effect on the inflation rate; containerized trade revealed a not significant negative effect on inflation rate in Nigeria.
3) Oil trade has insignificant negative effect on unemployment rate in the short run; contrariwise, oil trade has a negative and statistically significant impact on unemployment rate in the long run; non-oil trade has positive and statistically significant effect on unemployment rate in the long run and containerized trade has negative and significant effect on unemployment rate.

Recommendations

Some of the major policy recommendations of this study are as follows:

1) To boost oil trade, the policy focus of government should be on increasing domestic production, diversifying the economy beyond oil, and addressing issues like oil theft and insecurity. Specifically, revamping refineries to meet domestic demand, prioritizing exports of refined products.

2) To promote growth in Nigeria's non-oil trade, government should prioritize agriculture, solid minerals, and manufacturing sectors through increased investment and export grants. Also, government should support indigenous businesses through export promotion strategies, trade openness, domestic protection measures, reducing bureaucratic hurdles and simplify export processes to make it easier for businesses to export non-oil products. This will help generate employment, increase real GDP and put the country on a part to sustainable economic growth.
3) To foster containerized trade growth in Nigeria, policies of the government should focus on infrastructure development, technological innovation, and streamlining regulations. This includes investing in modern port facilities, promoting intermodal transportation, and implementing electronic customs procedures. Encouraging digitalization and fostering a more transparent and less corrupt environment are also crucial for attracting investment and ensuring efficiency.

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