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**ISTANBUL GELISIM UNIVERSITY**  
**INSTITUTE OF GRADUATE STUDIES**

Department of Economics and Finance

**INVESTIGATING THE IMPACT OF INTERNATIONAL  
TRADE ON ECONOMIC GROWTH: A CASE STUDY  
OF NIGERIA**

Master Thesis

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Asst. Prof. Dr. Edmund Ntom UDEMBA

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## **DECLARATION**

I hereby declare that in the preparation of this thesis, scientific ethical rules have been followed, the works of other persons have been referenced in accordance with the scientific norms if used, there is no falsification in the used data, any part of the thesis has not been submitted to this university or any other university as another thesis.

Baliki ALI

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## ABSTRACT

The disparity of opinions and empirical evidence on the impact of international trade on economic growth has become a nuisance, especially for developing countries like Nigeria, and calls for further research. This is the gap that this study seeks to fill. This study will investigate the impact of international trade on Nigeria economic growth. The objectives for this study are to assess the most recent effect of exchange rates on economic expansion in Nigeria, examine the impact of export on Nigeria's economic expansion, determine the link between foreign trade and Nigeria's economic expansion in to comprehend the causal connection, provide a procedure to follow when using international trade as a means to increase economic growth, Vector autoregression (VAR) analysis technique was used to estimate the various components of foreign trade. Multivariate Time series secondary data was used for this study and it was obtained from Central Bank of Nigeria Statistical Bulletin 2020, World Bank datasets etc. which covers the period 1981 to 2020. The hypothesis revealed that there is currently significant causality among exchange rate, export and economic development but there are no present of significant causality between import, foreign direct investment and economic growth of Nigeria. Therefore the null hypothesis of exchange rate and export can be accepted that supported increase in economic growth.

**Keywords:** International trade, Economic growth, vector autoregression, Import, Export, Exchange rate, FDI

## ÖZET

Uluslararası ticaretin ekonomik büyüme üzerindeki etkisine ilişkin görüşlerin ve ampirik kanıtların eşitsizliği, özellikle Nijerya gibi gelişmekte olan ülkeler için bir baş belası haline geldi ve daha fazla araştırma yapılmasını gerektiriyor. Bu çalışmanın doldurmaya çalıştığı boşluk da budur. Bu çalışma, uluslararası ticaretin Nijerya ekonomik büyümesi üzerindeki etkisini araştıracaktır. Bu çalışmanın amacı, Nijerya'da döviz kurlarının ekonomik genişleme üzerindeki en son etkisini değerlendirmek, ihracatın Nijerya'nın ekonomik büyümesi üzerindeki etkisini incelemek, dış ticaret ile Nijerya'nın ekonomik büyümesi arasındaki nedensel bağlantıyı anlamak için bir bağlantı sağlamaktır. Ekonomik büyümeyi artırmanın bir yolu olarak uluslararası ticaret kullanılırken izlenecek prosedür, dış ticaretin çeşitli bileşenlerini tahmin etmek için Vektör otoregresyon (VAR) analiz tekniği kullanılmıştır. Bu çalışma için çok değişkenli Zaman serisi ikincil verileri kullanıldı ve 1981-2020 dönemini kapsayan Nijerya Merkez Bankası İstatistik Bülteni 2020, Dünya Bankası veri kümeleri vb. ve ekonomik gelişme, ancak ithalat, doğrudan yabancı yatırım ve Nijerya'nın ekonomik büyümesi arasında anlamlı bir nedensellik mevcut değildir. Dolayısıyla, ekonomik büyümedeki artışı destekleyen döviz kuru ve ihracat sıfır hipotezi kabul edilebilir.

**Anahtar Kelimeler:** Uluslararası ticaret, Ekonomik büyüme, vektör otoregresyonu, İthalat, İhracat, Döviz kuru, DYY



## TABLE OF CONTENTS

<b>ABSTRACT</b> .....	<b>i</b>
<b>ÖZET</b> .....	<b>ii</b>
<b>TABLE OF CONTENTS</b> .....	<b>iii</b>
<b>ABBREVIATIONS</b> .....	<b>vi</b>
<b>LIST OF TABLES</b> .....	<b>vii</b>
<b>LIST OF FIGURES</b> .....	<b>viii</b>
<b>LIST OF GRAPHS</b> .....	<b>ix</b>

### CHAPTER ONE INTRODUCTION

1.1. Contextual Background.....	1
1.2. Problem Statement.....	2
1.3. Aim and Objectives of the Study.....	4
1.4. Research Question.....	4
1.5. Scope of the Study.....	4
1.6. Limitation of the Study.....	5
1.7. Hypothesis.....	5
1.8. Significance of the Study.....	5
1.9. Research Methodology.....	6
1.10. Plan of the study.....	6

### CHAPTER TWO

#### LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1. Introduction.....	7
2.2. Theoretical Framework.....	7
2.2.1. International Trade Theory.....	7
2.2.1.1. Absolute Advantage trade theory.....	8
2.2.1.2. Comparative Advantage trade theory.....	9
2.2.1.3. Heckscher-Ohlin trade theory.....	10
2.2.1.4. Product Life Cycle.....	11
2.2.1.5. Trade between countries with similar characteristic and intra-industry trade.....	11
2.2.2. Economic Growth Models.....	12
2.2.2.1. Harrod-Domar Growth Model.....	13

2.2.2.2. Two Gap Economic Growth Model.....	13
2.2.2.3. Growth Model of Solow-Swan.....	14
2.2.2.4. Kaldor-Passinetti Growth Model.....	17
2.2.2.5. Exogenous and Endogenous Growth Model.....	17
2.2.3. Economic Growth Theories.....	19
2.2.4. Relationship between Economic Growth and International Trade.....	20
2.2.5. Effect of Trade Policy on Nigeria economy.....	21
2.3. Literature Review.....	22
2.3.1. International Trade.....	22
2.3.1.1. Importation and Exportation.....	24
2.3.1.2. Terms of Trade.....	24
2.3.1.3. Balance of Trade.....	25
2.3.1.4. Balance of Payments.....	25
2.3.1.5. Exchange Control.....	26
2.3.1.6. Importance of International Trade.....	26
2.3.2 Economic Growth.....	27
2.3.3 Review of International Trade and Economic Growth.....	29
2.3.4 Trade Openness and Economic Growth.....	35
2.3.5 Foreign Direct Investment (FDI) and Economic Growth.....	36

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

3.1. Introduction.....	38
3.2. Descriptive of the Study Area.....	38
3.3. Approach and Research Design.....	39
3.4. Data Collection and Method.....	39
3.5. Model and Variable Description.....	40
3.5.1. Priori expectation.....	43
3.6. Data Analysis and Estimation Method.....	43
3.6.1. Unit Root (Stationary) test.....	44
3.6.2. Vector Autoregression (VAR).....	45
3.6.3. Research Quality Assurance.....	47
3.6.3.1. Test for Autocorrelation.....	48

3.6.3.2. Heteroskedasticity Test.....	48
3.6.4. Granger Causality Test.....	48
3.6.5. Forecast Error Variance Decomposition.....	49
3.7. Limitation of this Chapter.....	50

## **CHAPTER FOUR**

### **DATA ANALYSIS AND INTERPRETATION**

4.1. Introduction.....	51
4.2. Descriptive Statistics of Data.....	51
4.3. Unit Root Test.....	53
4.3.1. Trends of all the variable before stationary.....	53
4.3.2. Augmented Dickey-Fuller Unit Root Analysis.....	55
4.4. Vector Autoregression Analysis.....	56
4.5. Testing Model.....	57
4.6. Granger-causality Analysis.....	58
4.5. Forecast Error Variance Decomposition Analysis.....	60

## **CHAPTER FIVE**

### **CONCLUSION AND RECOMMENDATION**

5.1. Conclusion.....	62
5.2 Recommendation.....	64

<b>REFERENCE.....</b>	<b>65</b>
-----------------------	-----------

<b>APPENDIX.....</b>	<b>73</b>
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## **ABBREVIATIONS**

- ADF** : Augmented Dickey Fuller
- AIC** : Akaike Information Criterion
- BOP** : Balance of Payment
- CBN** : Central Bank of Nigeria
- FDI** : Foreign Direct Investment
- GDP** : Gross domestic Product
- IMF** : International Monetary Fund
- NBS** : Nigeria Bureau of Statistic
- OECD**: Organization for Economic Co-operation and Development
- OLS** : Ordinary least Square
- PLC** : Product Life Cycle
- SAP** : Structural Adjustment Program
- SIC** : Schwarz Information Criterion
- TPN** : Trade Policy of Nigeria
- USAID**: United State Agency for International Development
- VAR** : Vector Autogression
- WCED**: Western Cape Education Department

## LIST OF TABLES

<b>Table 1:</b> Descriptive Statistics.....	51
<b>Table 2:</b> Augmented Dickey-Fuller unit root tests.....	55
<b>Table 3:</b> Defining the number of lags for VAR Model.....	56
<b>Table 4:</b> Vector Autoregression Estimates.....	56
<b>Table 5:</b> Pairwise Granger Causality Test.....	59
<b>Table 6:</b> Forecast Error Variance Decomposition Test.....	61



## LIST OF FIGURES

<b>Figure 1:</b> Conceptual research model.....	42
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## LIST OF GRAPHS

<b>Graph 1:</b> Trend variables in time series.....	54
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# CHAPTER ONE

## INTRODUCTION

### 1.1 Contextual Background

Economic growth is defined as a beneficial increase in governmental income or output through time, it is a crucial affair for all nations. A developing country like Nigeria has issues with its process of development in terms of economic growth. If there is a need or demand for commodities or services, then international trade is the transfer of those productions, services, and capital across foreign borders. This trade contributes significantly to the gross domestic product (GDP) of most nations. Compared to domestic trade, international trade is a more complicated procedure (Onoja, 2020).

The cross-border exchange of productions and services is a means by which countries can achieve and promote economic self-sufficiency, as well as a platform for converting a country's natural resources, such as oil, gold, diamonds, etc., into economic wealth. The wealth acquired in this way is used by the government to provide basic infrastructure facilities, which naturally raise the standard of living of the population and consequently lead to economic growth and development (Owolabi et al., 2015).

International trade has been given a lot of significance by classical and neoclassical economists in the development of a nation since they view it as a source of growth (Jhingan, 2006). It should be emphasized that trade is seen as a key driver of both economic growth and development on a global scale. Nigeria's total output as an open economy benefited greatly from international trade (Mike & Okojie, 2012). Ogbaji & Ebebe (2013) stated that in many developing countries like Nigeria, the government uses export and import as the key signature for its development concept, which has increased its effect on market expansion, job creation, raising income, increasing aggregate output, and knowledge dissemination.

However, when compared to other nations and its own economic endowment, the Nigerian economy has significantly underperformed. With roughly 37 different types of solid minerals and a 2013 population estimated at over 173.6 million (United States Census Bureau and World Bank). Even though Nigeria has some of the largest



gas and oil reserves in the world, its economy has lagged compared to those of other developing Asian nations like Thailand, China, Malaysia, Brazil, and Indonesia, as well as India. In terms of GDP per capita, these nations were considerably behind or on par with Nigeria in the 1970s, but they were later better able to change their economies and become significant players on the international economic scene. For instance, China ranked 114th with a GDP per capita of \$111.82 in 1970, whereas Nigeria ranked 88th with a GDP per capita of \$233.35. (Sanusi 2010). The fact that China is currently the world's second-largest economy behind the United States of America is primarily attributable to its assured trading position.

Nigeria's excessive reliance on oil is concerning since it is a resource that is wasteful and has a finite reserve that will eventually run out, and because the whims of the oil market have resulted in a sharp fall in profit given the exogenously set cost of oil (Abebefe 1995). Nigerian trade and economic reforms, which were implemented by the government to revitalize the Nigerian economy, are steps in the right direction. The government is making a lot of effort to diversify its export market and make sure that IT serves as a catalyst for the development of the country.

## **1.2 Problem Statement**

Nigeria is a nation that prioritizes imports; that is a reality. Oil's discovery has resulted in a resource curse on the economy. Crude oil is Nigeria's principal export. The agricultural industry was Nigeria's major export sector prior to the discovery of oil. Whatever the case, the agriculture sector in the economy shrank because of the 1970s oil boom. The government's concern with oil exports and development has caused the agricultural sector to take a back seat, which in turn has affected the overall efficiency of the economy.

Analyzing Nigeria's foreign trade profile, Ewubare and Obayori (2015) claim that imbalances have persisted in the nation since the 1980s. The ongoing asymmetries in the Nigerian economy's foreign trade apparently imply that more needs to be done by the government to promote development and expansion of the economy. According to Obida and Nurudeen (2010), the average annual GDP growth rate between 1971 and 1980 was close to 6.0 percent. Nigeria made millions of dollars in oil revenue during the period that it helped raise GDP. However, the reduction in oil prices that began in 1981 had a negative effect on the expansion of the economy. The average annual rate of GDP growth was -5.82% in 1981 through 1985; however, growth

between 1986 and 1998 was 4.03% on average. Furthermore, they proposed that the rate of output increased by 5.71 percent on average between 1999 and 2014. The third quarter of 2016's average growth rate shows, however, that negative results from 2015 through the first quarter of 2017 show that a recession was afflicting Nigeria's economy.

Although there are many advantages to international trade for economic growth, it is frequently viewed as a barrier, especially in developing nations. This is because countries frequently depend too heavily on the global market, which increases their vulnerability to the volatility of the foreign market (Matteis, 2004).

According to Onoja (2020), there are both positive and negative effects of international trade on economic growth in Nigeria. The positive effects include availability of a wide range of goods, resource utilization, promotion of production efficiency, consumption at lower costs, and a decrease in trade fluctuations. The negative impact includes trade-related macroeconomic policy changes have made the nation's economy import-dependent. The fact that some of the products imported into the nation harm domestic industries by making their products appear petty is another reason why foreign trade hasn't really helped the economy grow. This harm results in a slowdown in the rate of economic growth of these industries' output, which then has an impact on the entire economy.

Until recently, the Nigerian economy's growth performance had been less than satisfactory throughout the previous three decades, according to statistics. Apart from oil, Nigeria exports primarily basic goods and frequently depends almost entirely on a small selection of commodities; such exports are distinguished by low costs compared to manufactured goods and erratic marketplaces. Nigeria, therefore, frequently suffers from a trade environment that is imbalanced and benefits industrialized nations. Nigeria, a country with plentiful natural resources, is now ironically recognized as one of the world's poorest nations.

The disparity of beliefs and evidence based on international trade's negative effects on economic growth has gotten out of hand, especially for developing countries like Nigeria, and this calls for further research. This work aims to close this knowledge gap. The paper aims to add to the conversation about the impact of trade on economic growth by using Nigeria as a case study. This study's primary goal is to evaluate and elaborate on the effects of global trade on the Nigerian economy's growth between

1981 and 2020. It also highlights additional elements that have an impact on the nation's economic development.

### **1.3 Aim and Objectives of the Study**

The primary goals of this research are to reevaluate and elaborate on the impacts of international trade on economic growth in Nigeria and to propose the best process to follow when using international trade as a tool to boost the country's economic growth. Reputable institutions and organizations such as the IMF, OECD, the European Union, the World Bank, etc., which strongly advocate international trade, have been disputing the idea that a country cannot survive without trade.

Therefore, the objectives for this study are.

- a) To assess the most recent impact of exchange rates on economic expansion in Nigeria
- b) Examine the impact of import and export on Nigeria's economic expansion,
- c) Determine the link between foreign trade and Nigeria's economic expansion in to comprehend the causal connection,
- d) Provide a procedure to follow when using international trade as a means to increase economic growth.

### **1.4 Research Question**

- a) How does imports affect economic expansion?
- b) How does exports affect economic expansion?
- c) How does the exchange rate affect international trade and economic expansion?
- d) What is the connection between global trade and economic expansion?

### **1.5 Scope of the Study**

The sole emphasis of this study project is the economy of Nigeria. In this manner, only data pertaining to the Nigerian economy and factors influencing the growth of global trade will be taken into account. The time frame for this study will be 40 years (1981 - 2020).

## **1.6 Limitation of the Study**

Due to how it influences the growth of the Nigerian economy, this study is only focused on international trade. The major problem will be the issue of accurate and inadequate data.

## **1.7 Hypotheses**

H1- The Nigerian economy is significantly impacted by exchange rates.

H2- International trade has a positive impact on the Nigerian economy.

H3- There is significant impact of export trade on the Nigerian economic growth.

H4- There is significant impact of import trade on the Nigerian economic growth.

H5- Foreign direct investment FDI has a significant impact on Gross Domestic Product GDP.

## **1.8 Significance of the Study**

Ehinoem and Damilola (2013) motivate international trade as one of the important keys to increasing economic growth in Nigeria due to the rise in unemployment, exchange rate fluctuations, and adverse balance of payments resulting from economic instability. External factors like poor FDI inflow, unstable currency rates, and negative net exports have been blamed for one of the significant issues that have impeded Nigeria's financial development (Obayori, 2016).

The conclusions of this study go beyond simple academic speculation and will be extremely helpful to the public, policymakers, academic researchers, and students of government. This study will be crucial for policymakers to better understand how foreign trade and economic growth are performing. It will aid in giving the context of where previous scholars' work has been done. Additionally, it will offer a framework for future studies in international trade. For students who are motivated to improve it, this research effort will also act as a guide and offer insight for further study on this subject and related fields. The public will benefit from the study's conclusions because when international trade policies are completely implemented, there will be a rise in importers and exporters, a decline in unemployment, and an increase in national output, all of which will enhance general welfare.

## **1.9 Research Methodology**

The focus of this study is on foreign trade in the Nigerian economy. Secondary data from a multivariate time series will be used for the analysis. The secondary data will come from sources including the World Bank databases, the Central Bank of Nigeria Statistical Bulletin 2020, and the Nigerian Bureau of Statistics (NBS). The data will be analyzed using the vector autoregression procedure employed by Arodoye and Iyoha (2014). Gross Domestic Product (GDP) is a measure of economic growth (dependent). International commerce is represented by the exchange rate, exports, imports, and foreign direct investment (net inflows as a percentage of GDP) (independent).

To evaluate whether the variables were stationary and to determine the order of integration (the stationary level) using the Augmented Dickey-Fuller (ADF) test, the data will be analyzed using E-View 12 for unit root tests, Granger causality tests, and forecast variance decomposition to look at how the variables in the VAR system interact dynamically.

## **1.10 Plan of the Study**

This thesis is divided into five chapters: the first one provides an overview of the study; the second evaluates the literature and theoretical framework; the third describes the research technique; and the fourth deals with analysis and result interpretation. Finally, chapter five's summary, conclusion, and recommendation wrap up the study.

## **CHAPTER TWO**

### **LITERATURE REVIEW AND THEORETICAL FRAMEWORK**

#### **2.1 Introduction**

In order to illustrate what other scholars have found, this chapter looks at how international trade affects a nation's economic growth and other pertinent literature. The three components are: theoretical, empirical, and a review of the literature.

#### **2.2 Theoretical Framework**

##### **2.2.1 International Trade Theory**

Three historical periods of international trade theory are classical and neoclassical, modern trade theories, and new trade theories. According to traditional views, free trade will benefit all nations' economies. The absolute advantage theory created by Adam Smith and the comparative advantage theory created by David Ricardo are the two most well-known classic theories. Neoclassical theories hold that countries can profit from free trade by producing goods in which they are specialists while employing resources prudently. "The most widely used neo-classical theory is Heckscher-Ohlin Trade Theory" (Usman, 2011). Modern theories that identify economies of scale as a key factor in economic growth support the comparative advantage claim (Berkum & Beijl, 1998; Usman, 2011). In general, the traditional theories and the modern trade theories are compatible, but the new trade theories stand out from the classics in that they abandon the idea of perfect competition in favor of emphasizing the impact of market structure, product differentiation, and economies of scale on global trade.

Classical trade theory is a historical theory that has developed since 1500. The framework created by classical economists influenced future explanations and analyses of international trade (Wexler, 1979). International trade theory is a branch of economic theory that aims to demonstrate how international trade functions, where it came from, and how it affects the economy. A mercantilism theory that was created in the sixteenth century existed before Adam Smith. This idea contends that encouraging exports while limiting imports determines a nation's wealth. "This idea opposed free trade and claimed that the level of wealth in the globe was fixed since

different countries could not concurrently profit from commerce” (Berkum & Beijl, 1998).

#### *2.2.1.1 Absolute Advantage trade theory*

“According to Adam Smith, trade is a function of the absolute advantage acquired by nations of the world in terms of production of goods and services and the relativity to one another” (International Encyclopedia of the Social Sciences, (2009); Marrewijk, (2007)). Contrary to what the mercantilist approach states, Adam Smith contends that the main aim of trade cannot be a growth in a nation's overall stock of gold and silver. If a country produces something more effectively than other countries, it can expand its market internationally and become specialized in the production of that good, both in terms of price and quality. Because it would be more expensive for them to produce the same commodity than it would be for the exporter to give away a less expensive one, the importer countries might also benefit from this trade. Smith contends that each country should specialize in the goods over which it holds a clear competitive advantage and According to Smith, each nation should import commodities over which it has a clear competitive advantage and specialize in those over which it does not. By doing so, Smith contends, the world's output could be maximized through the efficient and effective use of production factors, which would increase the wealth of all nations (Smith, 1776). Thus, absolute advantage sees commerce as a positive-sum game, contrary to mercantilism's approach that sees trade as a zero-sum game (Smith, 2010). The Adam Smith model was first published in 1977 in a book that he titled "The Wealth of Nations," where he discussed how industrialized capitalist nations dominate the mercantilist system (Christie, 1776). The genetic makeup of the theory was that the need of individuals to attain and achieve some self-interests in turns leads to the society benefitting at large. In trade, countries benefit from other countries because of the need for certain resources, products, and the like that one country lacks while another has in abundance.

Absolute advantage can help us understand how international trade dynamics work and can serve as a foundation for trade theories, but because of its limitations, especially in the last century, it is unable to explain how trade patterns have changed. One of the primary limitations is that Smith views labor as a uniform indicator of production throughout a nation. Another major obstacle to explaining international trade is Smith's suggestion that a nation with a clear advantage in a good's production should always export it. This is not often the case in the actual world of trade, and it

may not always be in the recommended country's best interest. As a result, David Ricardo clarifies this scenario in his work from 1819 and introduces the phrase "comparative advantage" to the literature on international trade.

### *2.2.1.2 Comparative Advantage trade theory*

Even when countries have an absolute advantage in producing some commodities, according to Ricardo (1819), absolute advantage is a unique requirement of comparative advantage, and nations should import some of these products. He describes it in terms of opportunity cost, which is the act of foregoing the production of a certain amount of one item in favor of one unit of another good (Fletcher, 2011). Even though it lacks an absolute edge over others, a country can export certain goods by possessing a comparative advantage (Suranovic, 2010). When a nation can produce a good at a lower overall cost than another nation, it gains a comparative advantage. As a result, the efficient use of factor endowments and economic well-being may both increase if countries concentrated on specific products in which they had comparative advantage instead of simply absolute advantage (Acharya, 2008).

In addition, comparative advantage is useful in explaining trade trends because commerce is influenced by variations in factor endowment or technology between nations. Due to resources or technological advantages, some countries today specialize in specific industries and export goods from those industries (Acharya, 2008). "For instance, although high value added and high-tech items produced through specialization are the source of comparative advantage in highly developed countries, the benefit stems from frequently labor-intensive production in emerging countries" (World Bank, 1989).

The majority of the factors mentioned in the previous pages under the title of "absolute advantage," including imperfect competition, economies of scale, and demand-side trade, are not taken into account by comparative advantage and cannot be used to explain intra-industry trade, which is particularly common between developed nations. As a homogenous production factor within the nation and the only cost and exchange determinant, the theory continues to ignore disparities in labor productivity across national borders (Suranovic, 2010). Reciprocal demand and supply were not mentioned by John Stuart Mill until much later in his work (Mill, 2009), with the cost of production being the primary factor in determining the value of goods.



### *2.2.1.3 Heckscher-Ohlin trade theory*

The Heckscher-Ohlin model is based on the Heckscher-Ohlin (O-H) theorem, the Stolper-Samuelson theorem, factor price equalization, and the Rybczynski theorem. The O-H theorem will be the only one examined in this study because of its capacity to explain the factors that lead to disparities in comparative advantage between nations. “This is because it is the work that has contributed the most to the literature in comparison to the others” (Smith, 2010).

The model's major contribution is the addition of the capital endowments variable as a second production component, alongside the sole production element of comparative advantage, labor, which is defined as the infrastructure, machines, systems, and equipment. The production reality—different factor proportions—is revealed by the assumption of two distinct production factors. The H-O theorem states that countries should use the two factors differently when producing and exporting commodities and that there must be a clear relation between factor availability in the nation and component intensity of exported items. As a result, it will result in two different sorts of commodities: capital-intensive and labor-intensive goods. The capital-rich country will export capital-intensive goods, whereas the labor-rich country will export labor-intensive goods (Suranovic, 2010).

Numerous studies have been done throughout the years to support the H-O theory. Leontief (1953) examined trade relations between the US and the rest of the world in opposition to the H-O theory and found that the US sold goods with a high labor content while importing items with a high capital content. “Academicians were pushed to explain intra-industry trade, which consists of two-way trade in identical items, especially between industrialized countries, as a result of the Leontief paradox, among other factors” (Krugman, 1979; Krugman, 1981; Krugman, 1986; Linder, 1961; Posner, 1961; Vernon, 1966). The issue has ushered in the "New International Trade Theories" age of writing on global trade.

International trade patterns have begun to notably change as the outcome of the collapse of the colonial world economy, particularly following World War II. Conventional trade theories were no longer able to account for some trade patterns, such as intra-industry trade, and some even came to be somewhat contradictory, such as the Leontief paradox. In order to close the gap and improve the ability to comprehend global trade, academics have created another methodology. “Therefore, the new theories loosen the constraints of comparative advantage, perfect competition,

and factor endowment and reevaluate the significance of economies of scale, product differentiation, and imperfect competition in global trade” (Krugman, 1986).

#### *2.2.1.4 Product Life Cycle*

Posner (1961) asserted that each nation's level of technological competence is a deciding element in output. Therefore, it is more likely that the nation with the technical advantage and the use of it in manufacturing will be the initial exporter of that thing for a particular period of time. However, if another country sets up local production facilities, the exporting nation's comparative advantage will probably be reduced, turning the original exporter of that article into an importer.

Posner's (1961) position was expanded upon by Vernon (1966), who created a product life cycle (PLC) model to clarify trade patterns. Three stages of product development make up the model. The PLC model predicts that new ideas in certain product categories associated with high revenue are much more likely to be implemented and originally marketed to potential customers. The inventive nation immediately begins low-level exportation as part of the "new product" stage. Using the advantages of a dominant market structure and rising global demand, the exporting country quickly expands exports at this moment, causing the goods to advance to the stage 2 and mature.

The second stage sees the entry of competitors from many nations; from this point on, efforts to differentiate products to prevent price competition on the international market increase. Vernon (1966) contends that, at an advanced stage, production relocation—often referred to as "production relocation"—occurs as a result of the standardization of some items in order to survive in the escalating price war. In fact, the PLC strategy is validated by the fact that several firms are moving their industrial sites from western countries (the north) to eastern countries (the south).

#### *2.2.1.5 Trade between countries with similar characteristic and intra-industry trade*

While the Heckscher-Ohlin model links global commerce to disparities in factor endowments when including capital as the current production component, Ricardo claims that trade is a result of differences in labor productivity or technology. Moreover, if trade actually took place as predicted by conventional ideas, nations would only export the goods in which they have a distinct competitive edge. The fact

is that industrialized nations conduct a substantial portion of global trade, and these nations both import and export certain goods from the same industry (Linder 1961, Vernon 1966). Classical theories, which do not assume two-way trade of the same product between nations, are unable to describe the situation, especially when one nation has a comparative advantage over another.

According to Linder (1961), the situation can be explained by representative demand and intra-industry trade taking place among nations where there are similarities in per capita income. This is because when a product is developed, target consumer preferences are taken into account. These preferences are likely to be comparable in nations with similar per capita incomes. Naturally, Linder's approach takes into account a number of modern ideas, such as product differentiation and economies of scale, but he was unable to adequately separate intra-industry trade from inter-industry commerce.

### **2.2.2. Economic Growth Models**

Models of economic growth must necessarily use some simplifications because the concept of economic growth depends on a wide range of factors that fluctuate over time. These simplifications involve categorizing and grouping the factors that contribute to economic growth. In models of economic growth, exogenous variables often include a capital depletion rate and population growth. When it comes to the interest rate, the models can be split into two categories. For instance, the neoclassical models of Solow and Uzawa and models that use the production function AK fit under the first group, where the savings rate is exogenous.

The second category of models consists of those that have an endogenous interest rate, such as the Keynesian neoclassical models of Kaldor, Pasinetti, and Ramsey. Models can also be separated based on the capitalization ratio. Both the AK models and the Harrod-Domar models take this value to be constant. Consequently, the capital/production ratio in neoclassical models is subject to vary throughout time.

The criterion of time can be used to categorize growth economic models. The main objective of long-term models is to identify the direction of sustainable growth. They describe a pattern that the economy should follow as it expands (Wozniak, 2008). Short-term models alludes to Keynes's contributions to science. Their primary goal is to ascertain whether actual production can approach potential output levels (Wozniak, 2008).

### *2.2.2.1 Harrod-Domar Growth Model*

A model developed by Roy Harrod and Evsey Domar searched for the possibility of long-term growth. The short-term Keynesian model, which assumes the capitalist economy's unpredictability, was expanded (Harrod 1939; Domar 1946). The Harrod-Domar model states that growth is manageable if the rates of actual, guaranteed, and natural growth are all equal. Harrod refers to such a state as the "golden age," in which macroeconomic equilibrium guaranteed full use of capital and labor. Equilibrium, on the other hand, requires the balance between savings, which are controlled by homeowners, and investments, which are controlled by capitalists. As a result, that is challenging to achieve. Exogenous, or determined outside of the model, are the savings rate and population growth, which depend on their own natural dynamics. The model also presupposes that the ratio of capital to labor will always be fixed, eliminating any chance of factor substitution. The three growth rates cannot be balanced, so there is no mechanism. Consequently, the Harrod-Domar model identifies two issues. To begin with, it is impossible for a capitalist economy to increase at the prescribed rate of growth while retaining full employment. Unchosen unemployment is always a component of the economic growth process. Second, there is no convergence toward equilibrium inside a capitalist economy. Thus, Harrod and Domar revealed the unsustainable character of economic booms by perversely seeking a dynamic equilibrium path.

### *2.2.2.2 Two Gap Economic Growth Model*

In contrast to the Harrod-Domar model, this one contends that economic growth results from closing the savings and foreign currency disparities. This indicates that for a country's economy to prosper, it must generate both adequate capital for investments and foreign exchange for international commerce (Ghatak, 1978).

A large savings or foreign exchange gap prevents many least-developed nations from experiencing economic progress. Then, it is suggested that international trade (imports and exports) be used to close the imbalance. Once formed, trade policy must consider export-led growth since it is thought to create resources to enhance a country's revenues that support a country's development cycle while also helping to pay off external debts and increase a country's reserves of foreign currency. Additionally, imports could be favorable if they consist of productive capital products instead of consumer goods, which may increase the currency differential (Krueger, 1985).

Export-led growth may provide income to support a nation's development, overcome the external currency deficit, and increase reserves of foreign currency in a country like Nigeria, which is heavily reliant on imports. Capital equipment and useful items that increase production, on the other hand, must be imported to make up for the savings deficit.

### *2.2.2.3 Growth Model of Solow-Swan*

The Solow-Swan model serves as the starting point for discussion of the neoclassical theories of economic growth. In reaction to the poor outcomes of the Harrod-Domar model, a model for long-term growth in the economy was given by Robert Solow (Solow 1956). Because American economist Trevor Swan presented a related model in the same year, the model under discussion is known as the Solow-Swan model (Swan 1956). Its main objective was to demonstrate how an economy may have sustained growth over time.

The concept of economic growth has been subjected to various evaluations by different theorists and scholarly works in literature. Several economists defined economic growth in numerous forms, terminology and jargons. Among the acclaimed scholars who broadened the concept of economic growth and gave a lengthy and refined opinion of the subject matter are Robert Solow and Trevor Swan. Economic growth took a brand new direction in the 1950s, all thanks to the theorists Robert Solow and Trevor Swan, who assessed the concept differently and developed a widely recognized and used model during that era. According to their theory, they believed that for every capital and labor, there is a diminishing return, which is the aftermath of employing the capital and labor (Solow and Trevor, 1956). This model views economic growth in terms of the proportion of capital and labor employed in the production of a unit of commodity or service.

According to Solow and Trevor (1956), investment is a key measure for the accumulation of capital and resources, but depreciation causes a progressive decrease in investment levels. This is to denote that several factors surrounding investment leads to it experience of diminishing returns. Investment does not survive on its own; various mechanisms are involved in making investment a reality, and because capital is not constant, the experience of diminishing returns in capital turns to other factors such as the need to increase capital and labor. An insignificant amount of technological progress and an economic/labor output situation attain a height where the capital per

worker and economic output/labor remain the same due to depreciation in investment and capital per annum. This procedure, according to the model, is regarded as a steady state. At this point the model pinpointed that an increase in productivity level caused by advancement in technology will result to a boost in the output per labour regardless of the economy been in a steady state.

The model assumes that an increase in productivity at a constant and stable rate increases the likelihood of stable output and labor in a steady-like proportion. This in turn yields economic growth, which can surface in terms of an increment in the shared GDP from investment or from taking technological initiatives. The model also pointed out that no matter the shared GDP of investment, capital and labor tend to emerge together at a steady state point, which results in the rate of output per worker being determined only by technological advancement rates. In lieu of this, the model emphasized that the economic growth rate is the same among all countries of the world, although each and every country operates at a different GDP level per worker, which is a determinant of the shared GDP on investments. Also, due to the technology made accessible to every country at a steady and constant rate, every nation in the world experiences the same steady growth rate in its economy (Solow and Trevor, 1956).

On the total outlook, the model is of the opinion that richer countries continue to accumulate wealth due to their high investment in shared GDP over a long period of time. This model also stated that for poor countries aspiring to become wealthy, the basic thing required of them is increasing the shared GDP of their investments, which will positively impact their economic growth and sustainability, which in turn will lead to the wealth of such countries in terms of productivity and economic stability. This theory further emphasized that it is obtainable for poor nations to meet up with wealthy ones if only they could increase their investment rate and encourage more savings and actual spending and also by adopting the same level of technological knowhow with the so-called wealthy nations and at the long run they will be able to attain the desired outcome in their economy.

This theory of economic growth proposed by some scholars is considered an exogenous growth model because the model does not give a clear description as to how and why nations of the world engage in different forms of shared GDP investment in the form of their capital, nor does the model explain the reasons for technological advancement across various time frames. The Solow–Swan model explanation of the measures of investment and process in technology is more exogenous in nature than it

is endogenous. The importance of this model is that, through the steady state rate of investment and technological progress, economic growth can be easily predicted and determined. The model is good for predicting economic growth when there is stability in investment rates and the rate of technological progress and success.

Lucas, (1990) explained that according to the Solow-Swan model, poor countries that are equipped with low capital and labor experience a greater return on investment because of the diminishing effects on capital. The researcher further explained that if this is so as the model portrays, the repercussion is that capital per labor and output per labor in the global capital market should equate at the same rate among all nations of the globe. This illustration of the model was considered to have a fault because, since time immemorial, countries with lower capital per worker have never experienced any form of financial capital flow as predicted by the Solow-Swan model.

Hirofumi Uzawa, a Japanese economist, proposed a two-sector economic model in the early 1960s (Uzawa 1963). Both consumer and capital items are produced by the first sector. The model is stable when the branch generating capital products has a lower labor-to-capital ratio than the component producing consumer products. Frank Ramsey's studies on the topic of the optimum amount of savings serve as the foundation for another model of neo-classical development (Ramsey 1928). This is frequently referred to as the Ramsey, Cass, and Koopmans model because Cass and Koopmans later developed it (Cass 1965; Koopmans 1965). According to the Ramsey model, consumer choices determine the endogenous savings rate. Ramsey omits the "Robinson Crusoe" economy, in which families create and consume things simultaneously. The Ramsey-Cass-Koopmans model yields the same steady state growth rate results as the Solow-Swan model.

Diamond offered a study of the finite horizons in another neoclassical model. There are two phases in a household's life. The first period is when households get paid. They use them for both savings and immediate consumption. Households don't make any money during the second period. The first period's collected savings are used to pay for current spending. An economy eventually achieves stability, as in the Solow-Swan model (Diamond 1965).

#### *2.2.2.4 Kaldor-Pasinetti Growth Model*

By including the functional distribution of earnings between profits and salaries into their models, L. Pasinetti and N. Kaldor demonstrated the feasibility of economic development with full employment. While they continued to base their decisions on the constant ratio of capital, they did away with the sustained interest rate assumption. Additionally, Pasinetti and Kaldor established several savings rates that were characteristic of each socioeconomic class. The capitalists were able to save more money than the workers did. Finding the path of sustainable development was made possible by the endogenous character of the savings rate, which they discovered did not follow a "knifeedge." If employee savings are zero, the rate of capitalist profit drives the growth of the country's economy, according to Kaldor's model (Kaldor 1963). Luigi Pasinetti, an economist from Italy, improved Kaldor's model in 1962. Pasinetti contends that the presence of savings in the economy is correlated with a higher rate of profit. This implies that employees' savings generate interest, which serves as their source of income. Similar to Kaldor's model, Pasinetti's concept hinges on the level of profit achieved by the capitalists for the economy to flourish. Pasinetti did not have to make the assumption that employees have zero savings that Kaldor did in order to reach this assumption (Pasinetti 1962).

The quote from Kaldor that "workers spend what they earn and capitalists earn what they spend" is an excellent distillation of the thoughts based on the Kaldor and Pasinetti model (Kaldor, 1955–1966).

Neoclassical theories presuppose that the economy eventually reaches equilibrium. Additionally, they attest to convergence, which suggests that poorer countries are developing more quickly than wealthier ones. According to the convergence theory, the only way that nations differ from one another is in their ratios of capital and labor, and they are all in the same stable condition. As an outcome, economies with smaller per-capita incomes will rise quicker.

#### *2.2.2.5 Exogenous and Endogenous Growth Model*

Exogenous growth models and endogenous growth models are diametrically opposed. They went out to describe events in the world economy that they had observed. The first question that endogenous growth models attempt to address is: what reason do the economies of different nations have to make significantly more things today than they did a century ago? For instance, P. Romer claims that this



circumstance is brought about by the rising return on work (Romer 1990). Second, endogenous growth models attempt to explain how human capital contributes to economic expansion. Thirdly, they try to explain the causes of the widening gap between nations.

The primary factors influencing economic growth are created within endogenous models. Investment choices influence the economy's technological level. Returns on production inputs are, at the very least, constant. Endogenous models employ the AK production function, which is a linear combination of technologies (Rebelo 1991). In the simple AK model, per capita variables rise at a steady pace regardless of capital level. As a result, there is no stable state and no phenomenon of strong incentives.

The earliest endogenous growth models were developed by Kenneth Arrow and Marvin Frankel. Frankel attempted to keep the AK production function and production function of neoclassical compatible in his model. The production function of neoclassical, according to Frankel, relates to specific businesses. The macroeconomic landscape, however, evolves in accordance with the AK function. This presumption is based on the addition of the component of externalities, which represents the country's level of economic development, to the production function (Frankel 1962).

Kenneth Arrow, neoclassical models' conclusions, on the contrary hand, have been called into doubt. He believes it is not very satisfying to condition economic progress on exogenous factors. Arrow assumes that knowledge was acquired through a method known as "learning by doing." However, Sala-i-Martin pointed out, "learning by investing" would have been a better name for Arrow's method (Sala-i-Martin, 2000). Despite using a production function with economics of scale, Arrow's model doesn't really require long growth dependent just on the amount of money saved (Arrow, 1962). Much like the Solow-Swan model, external factors control economic growth in a steady state.

T.W. Schultz concurred with Arrow's assessment of the significance of human resources in the advancement of economics. Schultz challenged academics who don't think the topic of human capital investment is pertinent to economic study in his paper. Additionally, Schultz claims that expenses for health care, education, and professional advancement are investments in human resources (Schultz, 1961).

One more endogenous growth model was provided by Paul Romer. In the neoclassical production function, he added capital externalities. Because of this operation, the production function exhibits growing returns to scale for all factors of

production and constant returns to scale for capital, which establishes the presence of endogenous growth. Romer's model, however, stipulates that certain requirements must be met in order for the economy to grow in accordance with the AK production function. Externalities must be substantial to begin with; otherwise, the economy will expand according to the Cobb-David function. Romer's model also makes the "scaling effect" prediction, which is refuted by evidence from other economies (Romer, 1986).

### **2.2.3. Economic Growth Theories**

The name Joseph Schumpeter is where the study of economic growth theory begins. Contrary to conventional wisdom, Schumpeter did not view capital accumulation as the key source of economic expansion. He gave the idea of the innovator-entrepreneur a lot of weight and referred to him as a "hero of development." He believed that entrepreneurial innovation and creativity were what drove economic growth. Schumpeter was convinced that economic expansion was imbalanced, and he explained that process as being caused by the "jump's" character. (1934 Schumpeter).

According to Schumpeter's theory of economic growth, the creation of new inventions is supported by the existence of a free market, private property, and efficient fiscal markets. However, in countries without even a system of democracy, these conditions are typically not satisfied. Therefore, Schumpeter's theory is aimed for democratic and developed economies.

Arthur Lewis established a different concept of economic expansion. He discussed the dilemma of emerging countries with affluent laborers in his essay (Lewis, 1954). Lewis agreed with the general vision of classical economics but did not always agree with its diagnosis and methods. Lewis' concept is predicated on the short-term maintenance of a low level of life. The capital stock will rise as a result of the savings, which will eventually manifest as an increase in income. Lewis' model therefore predicts that in order for income levels to equalize in the long run, there must be an increase in short-term country differences (Lewis, 1956).

The Lewis hypothesis has a theoretical pillar known as "Kuznets' curve," devised by Simon Kuznets (Kuznets, 1955). The existence of economic inequalities in the early phases of expansion was proven by empirical investigations. Initial contrasts were biggest as labor started to switch from agricultural to industry. The distinctions tended to vanish, though, as the factors of production gathered in industrial hubs. Additionally, Kuznets observed a strong correlation between the pattern of economic

expansion and the population's increased proportion of urban dwellers (Kuznets, 1976).

Lewis' theory does, however, make some very bold claims. Poverty is an issue that cannot be put off until an indefinite time in the future. After all, decreasing consumption would be necessary to improve wealth accumulation, which would primarily affect the poorest individuals.

A few years prior, Walt Rostow created a brand-new theory of economic growth. Economic growth, according to Lewis and Rostow, is dependent on the formation of capital, and they both defined five phases of growth (Rostow, 1960). Getting to the third stage, referred to as "take off," is the toughest challenge for developing nations, claims Rostow. The breaking up of the "vicious circle" that has developed over time is problematic for developing nations. Rostow suggested doing so by acquiring money. But he understood that external help would be required if there were no prospects to increase internal accumulation. Additionally, Rostow claimed that shifting the economy from a rural to an industrial one would enable the spread of economic expansion across the whole nation. Rostow added the term "quality" as the sixth phase of economic expansion in 1971. This stage is distinguished by the ongoing enhancement of product and service quality (Rostow, 1971).

#### **2.2.4 Relationship between Economic Growth and International Trade**

Growing economic growth has been largely attributed to international commerce. The comparative advantage theory of David Ricardo, which advises countries to manufacture goods at lower opportunity costs than other countries, best explains the relationship between neoclassical growth and international commerce. This took place during the neoclassical trade regime, in which nations were expected to raise their GDP through changes in labor and capital after implementing technology. The neoclassical production function, which includes imports and exports as extra production factors in addition to labor, capital, and technology, can be used to quickly analyze studies on economic development. This is summarized in the following production function:

$$\mathbf{Y = f (L, C, XPORT, IPORT)}$$

The variables Y, C, L, XPORT, and IPORT in the abovementioned function stand for the GDP level, capital stock, labor force, and exports and imports,

respectively. Numerous studies suggest that the volume of global trade (imports and exports) should have a positive impact on GDP, assuming no changes.

### **2.2.5 Effect of Trade Policy on Nigeria economy**

Nigeria's Trade Policy is a brave move in acknowledging the need to be proactive in trade discussions at both the regional and multinational levels. The document's provisions have been created to remove trade distortions in addition to emphasizing the provision of trade support infrastructure necessary for international standard support services to producers and exporters. The argument here is that it would be challenging for the nation to achieve its goal of diversifying and raising the value of exports unless it adopted a strategic trade policy posture.

Nigeria's trade policy encourages the growth of a private sector-led economy as well as the production and supply of goods and services for both domestic and international markets in an effort to hasten development and growth. In NV20:2020, most of the objectives of Nigeria's trade strategy that were listed in the 2002 Trade Policy of Nigeria (TPN) publication are still mentioned. The ongoing goals of tariff reform, which aims to lessen the unpredictability, ambiguity, and lack of transparency of Nigeria's tariff system, as well as the need to broaden, drive, and encourage more economic benefits in the many sectors of the Nigerian economy, particularly in those in which the country has a comparative advantage, are to drive and encourage more economic growth. The most recent version of TPN, which was created in 2009 and is awaiting implementation, was the result of efforts to examine the current trade policy and make it more practical and action-oriented.

Prior to the implementation of the SAP (Structural Adjustment Program), Nigeria's trade strategy was primarily focused on resolving issues related to a deteriorating balance of payments (BOP) position and on ensuring an increase in and easy collection of government revenue (Obadan 1993).

Demand and supply also place further restrictions on a country's ability to import and export due to trade policy, which also dictates the pricing structure (Ndubuisi, et al., 2016). Nigeria's trade policies are based on corruption, they only apply to a specific group of people, and they cause uncertainty for international organizations. The trade policy implemented by the current president regarding the importation of goods has an impact on many importers; for example, the ban on rice imports because Nigeria is unable to produce the amount of rice required each year. The policy prohibited the

import of overseas rice in to boost the utilization of domestically sourced rice in Nigeria, however the policy caused significant harm as some international businesses were forced to shut down. Policy implications remain divided among public sector need and import substitution options on only one side, and increased trust on the other.

Furthermore, if Nigeria's economy is to regain its international self-reliance, recent initiatives aimed at increasing openness and transparency in administration, as well as combating claims of deception and dishonesty should be closely watched. Nigeria's trade policy needs to be changed to comply with international standards, which will enhance the nation's international trade operations. The necessity to amend the policy will also aid in boosting economic development as many foreigners will be interested in trading imports or exports alongside Nigerian merchants, which will help to reduce tribalism and ethnic violence (Liargovas & Skandalis, 2012).

## **2.3 Literature Review**

### **2.3.1 International Trade**

Trade is the continuous exchange of things through market transactions (Ezirim, 2005). If there are exchanges that take place outside of a sovereign political authority's jurisdiction, they are referred to as "international trade."

Because of resource limitations and disparities, international commerce is predicated on the fact that no nation can produce what its population requires to thrive on its own (Mannur, 1995). An exchange of products and services among the inhabitants of one nation and those of other countries is what is referred to as international trade (Mannur, 1995). As a result, it serves as an instrument for bridging international gaps through the movement of factors, commerce in products, and service flows.

International trade is a means of exchange and transaction of goods, services, and capital among various countries and across international borders because of demands for commodities and services. Countries engaging in international trade have a significant shared domestic gross product (GDP) and remarkable economic growth. International trade has been around for a very long time throughout the history of the globe and has continuously helped the world as a whole advance, connect nations, and build mutual relationships between nations.

Among numerous definitions of international trade, Samuelson and Nordhaus (2002) referred to trade as the organized system where countries are enabled with the

ability to import and export commodities and services among other countries. The researchers further distinguished between domestic trade and international trade by highlighting three key elements, which are exchange rates, which denote the value placed on commodities and services in terms of their sellable amount, which is often regulated by international bodies. A seller cannot sell beyond the exchange rate, nor can a buyer buy below or above the set exchange rate.

Two, sovereign nations; trade; authorities are involved in the passage of commodities and services to be exchanged and transacted. A nation cannot involve in trade with another nation without the authority from the appointed channel of government of the partnering nation. The third point that differentiates domestic trade from international trade is expanded trading opportunities. In international trade, there is a wide variety of space to trade; opportunities exist on preferences, and a country can trade to its taste.

There are no limitations or restrictions on trading. All these elements have been stated to have an impact on the economic and practical success of nation-building. Among the numerous influences of international trade is that it allows for the division of labor and specialization. A country does not necessarily have to produce all the commodities and services needed by the nation solely by themselves, as they can import some and even export part of their production to other nations in need of them. Specialization in an aspect a country is good at leads to diversity, which facilitates productivity in every aspect of a country (Ezirim et al. 2011).

International trade is a prominent aspect of the economy in Nigeria. The Nigerian government engages deeply in foreign trade, as most of the commodities and services in the country are imported from other countries across the globe. Also, in transacting international trade, the Nigerian government keeps tabs on every transaction it engages in with other countries. Keeping records of transactions that happen in international markets is a common practice among countries, and these countries engage in record keeping through a medium known as balance of payment accounts. The terms "balance of payments" and "international trade" are intimate and very important among countries involved in trade relationships on the global level.

Trade is an important force in economic development; it enables growth in every factor that surrounds economic growth, such as increased commerce, enhanced cultural values, technological advancement, diversification in the industrial realm, increased productivity levels, globalization, and quenching of activities that enable war

among nations. International trade brings about unity and reunites nations to respect, love, and establish refined mutual relationships with each other.

In international trade various concepts exist to help in understanding international trade optimally. Among the concepts of international trade are terms of trade, balance of payments, exchange control, balance of trade, importation, and exportation.

#### *2.3.1.1 Importation and Exportation*

These two concepts make up the essence of international trade. What is international trade without importation and exportation? Importing and exporting are the key ingredients in trade. Importation entails the buying of commodities, capital, and services from a country by another country. With importation, countries purchase resources they need from countries with abundance; although importation provides immediate gratification to the country importing goods, in the long run it could be detrimental to the economy of such a nation. This is so because too much involvement with importation can weaken a country's domestic goods and services.

Exportation, on the other hand, entails the selling of commodities, capital, and services from one country to other countries in need of the product and services. Exportation has a good impact on a country's economy because it enables cash flow. Countries that engage in the exportation of goods, services, and capital more than they import them experience stable economies and economic growth. Such countries invest greatly in domestic resources and encourage their citizens to patronize them over imported ones, which makes them more industrialized and advanced in their economies than nations that deal more in imports than exports. Exportation has a healthy effect on economic growth, and in the long run, it is profitable for countries that practice more exportation.

#### *2.3.1.2. Terms of Trade*

Jhingan (2012) defined terms of trade as the proportion of trade between nations in goods, capital, and services. This indicates the rate at which a country exchanges its commodities and services for those of another country. Terms of trade are used to gauge a nation's purchasing power in relation to its level of exports over imports. This measures how often a country exports goods and services to other nations compared to the number of times they import goods from other countries. When a country's

exports exceed its imports, it can be said that the country has high purchasing power and a stable, healthy economy, which impact economic growth. Nigeria is weak in terms of trade because its imports exceed its exports, which is a bad indicator for her economy. A country is said to have stable or improved terms of trade when its exports are equal to or greater than its imports. More opportunity to trade is open to a country that has equal or higher exporting power compared to the country that is into more of import than export.

#### *2.3.1.3. Balance of Trade*

When trying to differentiate between the values of imported goods and exported ones, the balance of trade is the technique adopted for this differentiation. The balance of trade is very useful in knowing the worth of the commodities and services placed for importation and exportation. The balance of trade is found in the first two items that are contained in the balance of payments account. It is located on the balance of payments account's credit and debit sides.

#### *2.3.1.4. Balance of Payments*

The balance of payments is a measure of the relationships between countries' economies. It is the statistical analysis of the relationship of a country's economy with other countries across the globe. A balance of payments is an accurate account of a nation's economy and its interactions with the world in general over the course of a year. Cohen (1969) stated that the balance of payments allows a country to showcase their trading position in the world, the changes that occur in their net position in the international market as a foreign borrower or lender, and the fluctuations that surface in their international reserve holdings. Balance of payments enables a country to list both the receipts and payments they made in the international trade with other countries.

The transactions made by a country with other countries in international trade are recorded on the balance sheet in the balance of payments, and they show on either the credit side or the debit side depending on the nature of the transaction. A given equation form and formula of balance of payments is  $Y=C + I + G + (X -M)$ , this formula represents all the transactions engaged by a country which equates their national income within a given year. As for the equation, each letter represents how transactions evolve: Y represents the national income of a country, C means the



country's consumption expenditure; I is equal to the amount of investment expenditure the country is involved in; G refers to government expenditure, X is the amount of exports made on goods and services; and M indicates the number of imports of goods and services. The letter in brackets (X-M), which is export minus import, is what indicates the balance of trade. In a situation where the export and import equate to zero, the conclusion is that there is a balance in the balance of trade; otherwise, if one is greater than the other, the interpretation will either be favorable, which means that export is greater than import or unfavorable which indicates that the import is greater than export, (Elias et al. 2018).

#### *2.3.1.5. Exchange Control*

In international trade, one of the important tools to measure and control trade and payments is exchange control. Exchange control helps to bring balance in international trade receipts and payments using adjustable currency rates in both direct and indirect foreign exchange control. Exchange control is therefore a means of controlling foreign trade receipts and payments, which are usually in the form of foreign currencies that are governed by the governments of the countries engaging in trade. According to Jhingan (2012), exchange control is a state of regulation that allows free play of the economic forces involved in the international market. Exchange control resolves the issue involved in the balance of payments by eliminating any form of market influence and providing the government with the authority to make market decisions. With exchange control, international trade payments and import decisions are based on a country's needs rather than on international price comparisons.

#### *2.3.1.6. Importance of International Trade*

International trade is highly important to every economy's growth, and there are different ways in which this relevance can be formed. Trade plays a major role in the global economy's growth. In many countries, the state of their economies is all thanks to international trade. International trade has liberated many nations from their poverty level and raised their status in the world due to the enormous growth in their economies. International trade became very popular in the 19th and 20th century, as many countries of the world realized the importance of trading their commodities and services with other countries for capital and other resources needed by them. There is no doubt that one of the key aspects of economic growth is international trade.

International trade is indeed the engine of growth to various economic growths in the world and among the nations of the world, (Elias et al. 2018).

International trade allows for the expansion of exports, which will enable the growth of a country's economy by stimulating technical change and investment rates. Export expansion can also be achieved by the spillover of demands for a country's produce across various sectors. International trade in Nigeria has helped the economy but looking at the rate at which the country is engrossed in importation rather than exportation, it is safe to state that international trade has a bad influence on Nigeria's economy. The country's local products are experiencing difficulties in the market due to the overhauling of international products that have flooded the market, which has deteriorated the state of the economy. International trade has caused both the good and the bad to the economic growth of Nigeria. The popularity of Nigeria in the global realm and market is due to her heavy indulgence in international trade, The nation has benefitted greatly from international trade in the past, but in recent times this cannot be stated to be true, international trade has eaten so deeply into Nigeria's economy that it has become a parasite where no symbiotic relationship can coexist between the two. For international trade to be beneficial to the economic growth of Nigeria, the government must change their tactics and approach of transactions in international market.

Nigeria must engage more in exports than imports; this is the only way to save the nation's economy from rummaging. Nigeria needs to encourage and promote the use of her domestic products rather than having her citizens deeply immersed in foreign products. When the tables turn and Nigeria improves on its domestic products and services while limiting its importation power, the country will experience a turnaround in its economy. International trade at this point will become a strength rather than a weakness for the economic growth of Nigeria.

### **2.3.2 Economic Growth**

Sustainable development is sometimes used simultaneously with economic growth, which is defined as an increase in economic expansion that serves the requirements of the current generation without sacrificing the aspirations of the future (WCED, 1987; Ikeme, 2000; and Ite, 2003).

According to USAID (2022), the economic growth of Nigeria is faced by many challenges, obstacles, and barriers, such as structural problems, bad and inadequate

infrastructure, issues with international trade such as the tariff and non-tariff issues associated with trade, insufficient investment, a lack of confidence in the evaluation of the naira, and limited foreign exchange ability, among the rest. For any sustainable economic country there is a need for broad based economy development and measures towards poverty reduction. In Nigeria, a lot of issues impede economic growth, issues beyond international trade's impact. Nigeria as a country faces many internal problems that have been neglected by governments past and present. The economy has been severely impacted by these internal problems and rendered the growth stunted. Issues such as poor budget towards education and infrastructures, lack of enough industries and poor attitude to industrialization, corruption in the system of government, unemployment of youths and high rise in poverty has led to the worsen condition of Nigeria economy.

In recent times, the Nigerian government has tried to alleviate poverty in the country by improving the agricultural sector, which will reduce the rate of agricultural produce importation into the country. By encouraging agriculture and spending to revive the agricultural sector, this will produce a dramatic shift in the state of the country's economy. Other sectors the Nigeria government are working on to improve the economic growth of the country is provision of employment to the youths both in the rural and urban areas, supply of basic infrastructure such as good hospitals, power supply, good roads, education, and clean water access. Reduction of trading obstacles experienced in the local market of local products, with stable electricity supply in the country. When all these factors are considered and policies are geared towards making them a reality, the country is bound to experience progressive change and growth in her economy. Nigeria can change her gross domestic product (GDP) fate by changing the current state of the country through curbing corruption, which is the root of the experience in the entire government sector in Nigeria. Engaging in decision making and policies that will enable a smooth government, an easy life for the citizen, easy access to quality education, good health, a stable job, and amenities is the way out for economic growth and success of Nigeria as a nation.

Concerning international trade, the Nigerian government should enforce policies that facilitate more exportation than importation. Local industries in Nigeria should be well spent on to enable more Nigeria products in the market, also the citizens should be encouraged in the use of Nigeria products than foreign products and making them to stop labelling Nigeria products as fake. The Nigerian government should only allow

the importation of goods and services that are of the utmost priority into the country and ban every irrelevant product and service that can impact adversely on the country's economic growth and development. To also encourage economic growth, the Nigerian government needs to invest more in manpower, discover people with rare potentials, and invest in them. This measure will lead to economic growth in Nigeria.

### **2.3.3 Review of International Trade and Economic Growth**

Nigeria has an open economy in which it engages in various forms of trade, including trade on the global market, all of which have over time increased the nation's overall output. Nigeria is renowned for its robust economic growth, which is attributed to the country's active participation in international trade among other African nations (Mike and Okojie 2012). International trade serves as the foundation of every prosperous economy, though it has the potential to hurt the economies of some countries if the strategies used to adapt to it are poorly planned. Due to their active involvement in global trade, many countries have advanced over time and reached new heights of development. International trade provides a means for countries that lack certain resources to buy from those that have an abundance of them. Over the years, many economists have demonstrated a strong interest in comprehending the factors that cause countries to develop at varying rates and speeds and to reach varying levels of wealth.

Numerous economists have examined the effects of international trade on economic growth from a variety of angles. International trade is described as a key driver of economic expansion in the literature on economics. Owolabi et al. (2015)

Owolabi et al. (2015), in their study on "an investigation into the impact of international trade on the growth of the Nigerian economy," Using data from 1971 to 2012, the study reveals a long-term association between foreign commerce and economic development in Nigeria using the Johansen Cointegration test. Least Squares in Regular Form findings reveal that exports and economic growth are positively correlated, but imports are not. The Granger causality test identifies that GDP and imports have a one-way causal association. However, the test was unable to uncover a link between exports and economic development.

Adeleye et al. (2015) "conducted research on how international trade affects economic growth in Nigeria, using net export and the balance of payments as stand-ins for international trade and GDP as a measure of economic growth." The study

employed regression analysis to assess the long-term relationship between economic success and global commerce, utilizing error correction and co-integration modeling approaches with data from 1988 - 2012. It is also argued that Nigeria operates a monoculture economy in which oil is the main pillar of the economy with no obvious help from several other fields such as agriculture and manufacturing. Overall, exports remain favorable and significant, while others are negligible. They recommended that the government implement aggressive policies and incentives to diversify the economy.

Yusuf et al. (2020), in their study “the impact of international trade and economic growth in Nigeria,” recommended that, government should maintain a good exchange rate strategy that is driven by the market, according to a Nigerian economic report, to support local production. As a result, there will be an increase in global competition, which will boost economic growth. The document also advocated for the government to implement effective macroeconomic policies with a focus on enhancing a secure business climate. The reserve bank of Nigeria's statistics bulletin was used to estimate the various variables utilizing the dynamic ordinal least square (DOLS) multiple regression analysis approach, which particularly spans the period between 1980 and 2018. All explanatory variables aside from exchange rate were shown to be positively correlated with economic growth, according to the findings. Additionally, every explanatory factor other than net export was positively significant with respect to economic growth. According to the Durbin-Watson statistic value of 1.81, the explanatory variables in the model do not appear to be serially related.

However, according to Elias et al. (2018), who also evaluated the influence of international trade on economic growth in Nigeria, the multiple regression analysis approach was used to quantify multiple aspects of international commerce. The data for the research, which spanned the period 1980 to 2012, was obtained from the CBN statistics bulletin for 2012. The study's findings indicated a considerable influence of exports on economic expansion in Nigeria. The article also showed that the growth of the economy is not much impacted by import trade. They also advised the Nigerian government to create an atmosphere that will encourage foreign commerce by increasing export activity and reducing import activity. Smuggling, kidnapping, drug trafficking, and other associated illegal activities need to be closely observed.

Esther et al. (2017) stated in “International trade and economic growth in Nigeria, “using data from 1988 to 2015, that the unit root test, the Johansen co-

integration test, and the vector error correction model (VECM) were the statistical tests used to assess the variables' stationary, their long-term relationship, and the rate of adjustment of the variables. The findings demonstrate the existence of a long-term connection between international commerce and economic expansion. Export and trade balance are relevant in both the short- and long-term timeframes but import and trade openness are respectively inconsequential in the short term and large in the long term. The test that Granger causality revealed is that economic development is unidirectional with trade openness, it is independent of imports, exports, and the trade balance.

Babatunde et al. (2017), in their study “International trade and economic growth in Nigeria between 1981 and 2014,” utilized time series secondary data from the National Bureau of Statistics, International Financial Statistics, and Central Bank of Nigeria for the study. To ascertain the characteristics of the normality of the data, the unit root test was performed using the Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) tests. Using the ordinary least square (OLS) method, it was determined whether there was a significant association between the rate of economic growth, as measured by GDP, and the import, exchange rate, foreign direct investment, government spending, interest rate, and export, which served as the independent variables. The outcome showed that government spending, imports, interest rates, and exports are all positively significant factors for the growth of the Nigerian economy, while foreign direct investment and the exchange rate are negligible.

Emehelu (2021) analyzed the “effect of international trade on the economic growth of Nigeria.” The real Gross Domestic Product (GDP) of Nigeria was regressed using secondary information gotten from the Central Bank of Nigeria Statistical Bulletin 2018, which included independent variables including policy changes as a dummy, currency rates, and openness. The variables were integrated in order of 1 according to the findings of the econometric diagnostics for the presence of unit roots in the series using the Augmented Dickey-Fuller approach. The Johansen co-integration test, which was used to ascertain the co-integration between the variables in the different equations, was used to establish the absence of long-run equilibrium. The paper's findings demonstrated that the association between the country's exchange rates, and economic growth was negative and insignificant. However, because they showed a negative and positive influence on growth of GDP, Nigeria's various trade policies have been observed to slow growth in economic prosperity.

In their 2013 study, Adenugba & Dipo examined the impact of non-oil exports on Nigeria's economic growth between 1981 and 2010. The outcome showed that exportation has a great influence on the economic growth of Nigeria. The non-oil export performance tested generated results below the researcher's expectations. This made the researchers conclude that export promotion ideas implemented has impacted highly in the economic growth of the nation. The researchers also opined that their results pinpointed that the economy in Nigeria is miles away from focusing on the exportation of crude oil, and therefore the subsector areas of crude oil remain the single most important source of revenue generation for the Nigerian economy.

By calculating the actual gross domestic product, Edoumiekumo & Opukri (2013) examined the contributions of foreign commerce to economic growth in Nigeria (RGDP). The researchers adopted a time series data between the periods of 27years and analysed the data collected employing the Granger Causality test, Johansen co-integration test, Augmented Dickey-Fuller (ADF) test, and Ordinary Least Square (OLS) data analysis. The study's results revealed a favorable association between trade with other countries and economic growth, as well as a co-integration relationship between trade with other countries and economic growth in Nigeria. Additionally, the researchers found a unidirectional association between RGDP Granger import and export using the Granger Causality Test. The Granger RGDP has an impact on import, export, and both in the opposite direction.

Arodoye and Iyoha (2014) conducted a study on "the relationship between international trade and economic growth in Nigeria" Utilizing data from quarterly time series for the years 1981 through 2010. The study's findings revealed a stable and long-term link among foreign trade and Nigeria's economic expansion. Researchers concluded by saying that policies favourable to the expansion of export in Nigeria should be encouraged and policies that will lead to reduction in import should be implemented. This they stated because exports are believed to be a great ingredient to economic growth, it is the engine and driver of economic development of any and every nation. Policies that allow favourable exchange rate in trade which will allow expansion of export power in Nigeria should be encouraged and facilitated.

Ogbaji and Ebebe (2013), like every other researcher interested in "the impact of international trade on economic growth in Nigeria," stated that just as every nation in the world believes so much in global trade as a bedrock of every economic growth, Nigeria is no exception, as the nation believes that the main engine for her economic

growth and general development is trade. Among the numerous opportunities provided by trade to a country's growth are the creation of jobs, increasing the people's standard of living in a country, leading to an increase in income, the expansion of the market, an avenue for knowledge and idea dissemination, and above all, trade facilitates competition among nations, which pushes them to do better in terms of productivity. Trade possesses numerous significant influences on nation building, but it is without its negative side also. When a nation does not employ the use of trade tools effectively, it could bounce back and impact negatively on such nation's economy.

Globally, international trade has the power to yield economic growth and other areas of development for nations, but the issue remains that international trade does not give assurance that the cumulative advantage will be distributed equally among the trading nations and their partners. In international trade, there are two sides to trading: one party is at the benefiting end, while the other party is at the receiving end. Like a game of chess, there is a winner and a loser in trading relationships. But this does not indicate that there is only a win-lose relationship, in most cases, both parties in a trade benefit from various angles in the process of trading. According to Eravwoke and Oyovwi (2012), in trade, there are various determinants as to how trading nations benefit from their trading experiences.

Among the numerous dynamic factors responsible for a win-win relationship in trade are the terms and conditions set down by the trading partners and their reciprocity effect. Also, the exchange rate set by the international trading force is another important factor to be considered in a trading relationship. There is a standard exchange rate on commodities traded among nations that trading partners cannot exceed. The market features of a nation's exportable commodities are also necessary factors to be considered during the trading process. A study conducted by Olaifa et al. (2013) investigated "the effect of trade liberalization on economic growth in Nigeria." In order to investigate the likelihood of a long-term link between trade liberalization and economic development and to take into consideration the structural changes that emerged after the adoption of the free trade system in 1986, data were taken between 1970 and 2012. The ordinary least squares model was the research methodology utilized to approximate the link between trade liberalization and economic development. The result reveals that trade liberalization and economic growth in Nigeria have a long-term association. Also, researchers found strong evidence that supports the structural change that occurred in the year 1986 with the adoption of



liberalization policies in the economic development of Nigeria. Researchers concluded by giving a suggestion on how to promote economic growth. They stated that for economic growth to be on the rise in Nigeria, policies that give room for an accommodating environment that will enable further growth should be implemented. Policies such as developing the infrastructure of the country, providing financial support for export practices, and developing the institutional sector will enable economic development in Nigeria.

International trade has for a long time been an area of concern and interest to various people in the economic sectors, from scholars in the field of economics to decision-makers in trade to policymakers in the system of government. International trade is a marker for all, from the wealthiest nation to the poorest; there is no discrimination as to who is eligible to trade or not. Different nations of the world are enabled with the opportunity to trade their domesticated goods to countries in need of them and vice versa. Nigeria is not excluded from this category; locally made products in Nigeria are traded in the global market for resources needed by the nation, and this has had an immense influence on the economic development of Nigeria.

International trade is a platform where nations engage in the exchange of goods, buying and selling, and a variety of other transactions across international space. The opportunity has been given to people to trade whatever commodities, services, and the like they want with other people from different parts of the globe. In Zahoor et al. (2012)'s opinion as to the term "international trade," they regarded it as a podium of interaction where commodities and services are displayed, exhibited, advertised, sold, bought, and exchanged among various countries using the media of importation and exportation as the channel of the transaction. The influence of international trade on economies globally cannot be underestimated; many nations have attained unimaginable heights in their economies because of the faith and transactions they engage in in foreign markets. Nigeria is popular and prominent among other African nations due to her great indulgence in foreign trade.

A study conducted by Nwosa (2012) on the relative influence of international trade liberalisation on Nigeria's trade taxes collected adopting a simplified regression estimate for the years between 1970 and 2009, trade liberalisation, the public debt, the gross domestic product, and the labour force all had a favourable influence on economic tax revenue in Nigeria while the exchange rate had a negative effect. The researcher concluded the study by stating that the Nigerian government needs to

engage in macroeconomic policies to improve trade liberalization and economic development in Nigeria.

#### **2.3.4 Trade Openness and Economic Growth**

In the different studies that have been undertaken to establish a connection between the development of an economy and trade openness, numerous metrics have been used to gauge trade openness. (Yanikkaya, 2003). The fact that all these measures indicate free trade as a percentage of national income or GDP is one thing they have in common.

Levine & Renelt (1992) measured the level of openness using both imports and exports as a percentage of GDP, but they did not include both variables at the same time in their regressions, making it impossible to directly compare the effects of the two measures. However, given that the two measures' respective coefficients were of comparable size, it appeared that they were highly associated in the sample of nations used by Levine & Renelt. Again, as imports and exports across nations are probably highly correlated, imports and exports may depend on the use of aggregated cross-country statistics. The outcomes of the econometric calculations also revealed that exporting and importing businesses had comparatively high levels of productivity. Furthermore, export growth and increases in productivity were positively correlated. This revealed how involvement in exporting boosted productivity development. Although there were suggestions of a positive growth benefit from imports, the finding was dependent on modifications in the description of the factors and analysis equation.

Another study conducted by Adelowokan and Maku (2013) examined “the effect of international trade and financial investment openness on economic growth in Nigeria” using studies between 1960 and 2011. The researchers discovered that foreign investment and trade openness had both positive and negative effects on economic growth; this study adopted the use of the dynamic regression model technique. They further stated that, on a partial adjustment term, inflation, lending rate, and fiscal deficit enable economic development. Therefore, it was determined that trade openness and foreign investment had a long-term impact on the economic development of Nigeria.

De Gregorio (1992) examined the factors that influenced growth between 1950 and 1985 in the Latin American region. His research showed that while macroeconomic stability and human capital had a discernible effect on GDP per capita,

other openness indices had no effect on that figure. He concluded that tools like learning-by-doing, encouraged by protectionist policies, have a favorable impact on economic performance.

### **2.3.5 Foreign Direct Investment (FDI) and Economic Growth**

Findings regarding the relationship between FDI and growth are not conclusive. According to several studies, FDI and growth are positively correlated. This point of view affirms the importance of advances in technology, effectiveness, and productivity.

For instance, Borensztein et al. (1998) found that foreign direct investment is a catalyst for technology transfer and boosts growth more than domestic investment. He arrived at the assumption that a significant amount of the development rate in emerging nations may be attributed to a process of technical convergence. The flow of FDI flowed to industries with cutting-edge technical innovation, and nations saw greater growth rates as they increased their levels of education.

Economics scholars and founding fathers are not left behind in the same way, as many of these scholars were greatly involved in the impact of international trade, which they exhibited in theory, literature, and practice. A prominent and most referenced theories and economists who showed deep interest in trade and its affluence in economy are the classical and neoclassical economists of both past and present. To these theorists, international trade is seen as the backbone and the engine of economic progression, growth, and development. International trade is also a bridge that connects people around the world, especially economic scholars, to globalization and the understanding of the relationship between the two.

Studies on international relations have shown that trade between nations fosters their development of mutually beneficial economic ties. International trade is one of the oldest ways in which countries establish cordial relationships with each other and grow economically. On a global scale, international trade is paramount and prominent in the growth of the global economy and mutual relationships. In the long run, international trade has impacted immensely on the growth and development of every aspect in many countries. Foreign trade contributes to a nation's growth and the overall global economy's development and progress. In Nigeria, international trade has been the pillar for economic growth; exportation especially has strengthened her economy and caused diverse growth in various sectors. It is true that importation has caused

hindrances in the growth of the Nigerian economy, due to more investment in importation than exportation. Overall, it is accurate to state that international trade has only brought bad luck to the economy of Nigeria because the country has attained the level it is at globally due to its involvement in international trade.

International trade has a greater influence on a country's economic development and growth than just its quantitative advantages. International trade impacts the cash flow of a country on a global scale and causes a structural change and revolution in the economy of a nation. This is the case for Nigeria economy also; the country has enjoyed numerous changes due to international trade impact on her economy. Nigeria's economy has undergone fundamental transformation, and she has seen foreign capital flow. International trade has helped Nigeria become more productive in terms of products and services produced, which has decreased the rate of importation and boosted exports in the nation. As International trade is known for its influence on production of commodities and services that encouraged competitiveness among nations and devote to more productive activities, trade also allocate countries with comparative influence and advantage over others the resources to abet their productivity level.

This study aims to systematically analyze the various factors that can mitigate the effects of global trade on the economic development of Nigeria. Factors of international trade such as export, import, trade balance, balance of payments, and exchange control have been well examined in the literature review aspect of the project. The study has well explained how international trade impacts the economy of Nigeria both negatively and positively. It was understood that more importation than exportation leads to economic retardation rather than growth, not only in the case of Nigeria but for every nation that engages in more importation than exportation of commodities and services. As a result, for a nation's economic growth and the global boom in economy and economic stability, nations should be encouraged to participate in exportation rather than importation, so that the global trade balance remains stable and favorable across nations.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

The research approach used for the study is thoroughly described in this chapter. It outlines the exact steps taken to complete this study in detail. Particular topics covered include the study area, research design, data gathering techniques, sample tactics, model formulation, analysis of data, and constraints.

#### **3.2 Descriptive of the Study Area**

Nigeria serves as the research location, and this study's whole data set originates there. Nigeria is located at 9.0820° N and 8.6753° E longitude. According to these coordinates, Nigeria is located in both the northern and eastern hemispheres. Water and land both encircle Nigeria. Nigeria and Niger share a border to the north. Benin, Cameroon, and Chad are all located to the west, east, and northeast, respectively, of Nigeria. Nigeria's southern boundary is formed by the Gulf of Guinea and the Atlantic Ocean. Nigeria covers 356,669 square miles of land and water as a nation made up of 36 separate states. Based on total land area, Nigeria is the 32nd-largest nation on the planet. (World population review, 2022). The current population of Nigeria is 216,547,535 based on World Meter elaboration (United Nations data, 2022).

Nigeria became extremely susceptible to the COVID-19-induced world economic upheaval in 2020, in part because of the drop in oil prices. In 2018, 25% of Nigerians were vulnerable, and 40% of the population lived in poverty. In the years 2019 to 2023, a 12 million increase is anticipated. The ongoing increase in levels of income and opportunity disparity has hampered attempts to combat poverty. The lack of work opportunities is the main factor contributing to the high levels of poverty, regional inequality, and social and political unrest. Rising costs have also had a severe influence on household well-being, and it is anticipated that by 2020, an additional 7 million Nigerians will be living in poverty because of high prices. Nigeria's Gross Domestic Product (GDP), which amounts to 440.78 billion US dollars in 2021, is equal to 0.05 percent of the global economy. Based on macroeconomic measures, in 2021, the inflation rate will be 17.0 percent, the unemployment rate will be 9.8 percent, and the value of the naira relative to the US dollar will be approximately N435 The nation's yearly per capita GDP, which measures living standards, is currently \$2,085; foreign

direct investment as of 2020 is 0.6 percent of GDP. (World Bank, 2021). The value of imports reached its greatest level since 2017 in the third quarter of 2020, while the value of exports fell to its lowest level since 2017 in the third quarter of 2020, based on the Foreign Trade Report of the National Bureau of Statistics. The trade balance showed a deficit of NGN2.38 trillion during the third quarter of 2020 as a result of fewer exports and greater imports compared to 2019. The merchandise trade imbalance is also at its highest level since 2017.

### **3.3 Approach and Research Design**

The research design refers to the technique that provides a proper structure for the study to answer the research topic. This is a strategic framework for action that serves as a bridge between the research topics and their implementation (MacMillan & Schumacher, 2001). The effects of imports, foreign direct investment, exports, and currency rate on economic development in Nigeria from 1981 to 2020 were investigated using a multivariate time series statistical research design. Data on the same variable(s) will be gathered repeatedly as part of this approach (Bryman & Bell, 2007). The layout was chosen because it had been determined to be the best foundation for achieving the goal.

Research methodology, based on Igwenagu (2006), is defined as a group of specific techniques utilized in research by outlining the methodologies that were employed for data collection and analysis. Quantitative research was done to achieve the study goal since the characteristics of the study necessitated evaluating numerical data, verifying hypotheses, and drawing conclusions about the whole population. As a result, a quantitative research approach was used to conduct the scientific calculations of the time-series data that was acquired from 1981 to 2020.

### **3.4 Data Collection and Method**

In order to examine the link between global commerce and economic growth, this study used secondary time series data covering the years 1981 to 2020; the variables of interest in this study included GDP (measurement for economic growth), exports, imports, foreign direct investment, and exchange rate.

GDP per capita (constant 2015 US dollars), exports of goods and services (constant 2015 US dollars), Imports of goods and services (constant 2015 US dollars), the official exchange rate (LCU per US dollar, period average), and foreign direct investment, and net inflows (% of GDP) data that was used in the study were retrieved from World Bank data and the International Monetary Fund. The units of measurement for all of this data are millions of US dollar currency units. To make data analysis easier, all the data will be downloaded and put into a single Excel file using Microsoft Excel. EViews12 is the name of the application used to calculate the regression estimations (Econometric Views). For data analysis, macroeconomic studies, including panel and cross-section analysis techniques, and time series modeling and forecasting, the statistical software EViews is often used. EViews Version 12 software was used to import organized data encompassing GDP, exports, imports, exchange rate, labor, and foreign direct investment for analysis and interpretation. The technique of vector Auto-regressions (VARs) was adopted with a slight modification to estimate the determinants of economic growth. In order to evaluate the static interconnections between variables in the VAR system, the Forecast Variance Decomposition is employed, along with the Augmented Dickey Fuller (ADF) test and the Unit Root Test, to find the stationary values for all of the variables.

### **3.5 Model and Variable Description**

In keeping with the foregoing discussion, finding the long-run relationship between international trade and economic growth using the Vector Auto-regression technique, this research focuses on factors influencing global commerce and economic growth. Real Gross Domestic Product is used to measure economic growth. The exchange rate, exports, imports, and foreign direct investment (net inflows as a percentage of GDP) are indicators of international trade. To ascertain whether there is a connection between economic growth and global commerce, an econometric model was suggested.

According to the aforementioned framework, thus, using a modified version of Mogue and Mongale's (2014) and Iyoha and Okim's (2017) models as a foundation, the researcher created an econometric model. I evaluate the econometric analysis for this study in accordance with the following goals: Trade's role in Nigeria's economic development

$$RGDP = F \{XPORT, IPORT, EXRT, FDI\}. \quad (1)$$

The model's mathematical formulation is as follows:

$$RGDP = \beta_0 + \beta_1 XPORT_t + \beta_2 IPORT_t + \beta_3 EXRT_t + \beta_4 FDI_t + \mu_t \quad (2)$$

This is in this form because, according to mathematicians, all of the dependent variables that comprise the model can be explained by the independent variables. Economists assert that not all variations in the dependent variables can be attributed to the independent variables. As a result, to account for the additional variables not included in the models, they include a standard error (also known as a stochastic disturbance term).

This model may be justified by using logarithms instead of the levels' actual data on the basis of both statistical and economic theory. Since the distribution of time-series data grows with the degree of the series, the variance of the series is related to the degree of the series, and data reported in terms of logarithms are also trimmed and clear.

The log and econometric form of the model is given as:

$$\ln RGDP = \beta_0 + \ln \beta_1 XPORT_t + \ln \beta_2 IPORT_t + \ln \beta_3 EXRT_t + \beta_4 FDI_t + \mu_t \quad (3)$$

In which:

RGDP= real gross domestic product;

XPORT = Total export trade;

IPORT = Total import trade

EXRT = Exchange rate of the naira to the US dollar

FDI = Foreign direct investment

$\beta_0$  = Intercept

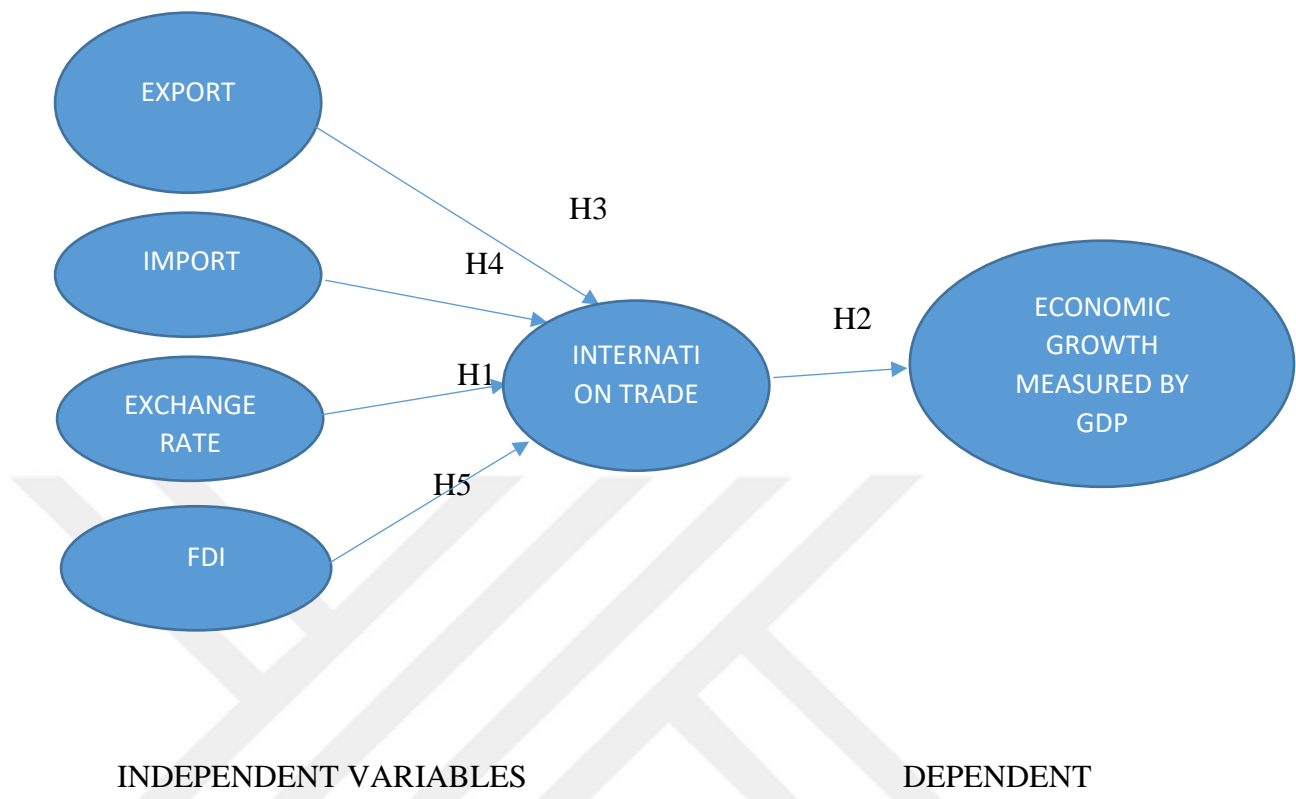
Where  $\beta_1, \beta_2, \beta_3, \beta_4$ , represents the value of the independent variables respectively

$\mu$  = Stochastic error term



The variables utilized in this model are as follows:

International trade



**Figure 1:** Conceptual research model

VARIABLE

- Dependent variable gross domestic product

Real gross domestic product is the main dependent variable in the study. The metric is used as a proxy for economic growth in this empirical study, building on the work of Uernadu (2011), Saibu, et al. (2011), Falki (2009). The real GDP is calculated by multiplying the gross national product by the index of consumer prices according to Saibu et al. (2011).

- Independent variable

Export is the actual amount of domestically produced goods and services that foreign nations have bought. Exports stimulate the economy, increase competitiveness, allow for the development of factor endowments, and contribute to a country's favorable balance of payments. It is therefore anticipated that this investigation will be positive.

Imports are products and services that residents of a nation purchase but that were made overseas. Whatever the goods or services are or the way they are offered are unimportant. A negative impact is anticipated since imports signal a retreat from the economy. For a country to achieve economic development and a good balance of payments, its imports must be less than its exports.

Exchange rate: the naira's value in relation to the dollar is another independent variable. It is a macroeconomic stability indicator that is employed to assess the danger of currency movements in Nigeria's global commerce. Data from the World Bank was used.

Foreign direct investment: "Foreign is the phrase used to describe net investments made to acquire a long-term management position (10 percent or more of voting shares) in a business that does business outside of the investor's home nation. The balance of payments indicates that it is the sum of equity capital, earnings reinvested, other long-term capital, and short-term capital. This information, which is split down by GDP, shows net inflows of international investment into the current fiscal year (new investment less withdrawals).

### **3.5.1 Priori expectation**

Economic theory has established the following a priori expectations for the parameters of this study:

$\beta_1 > 0$  suggesting that exports increase GDP

$\beta_2 > 0$  suggesting that imports increase GDP

$\beta_3 > 0$  suggesting that exchange increase GDP

$\beta_4 > 0$  suggesting that FDI increase GDP

### **3.6 Data Analysis and Estimation Method**

To carry out an economic analysis, we used the econometric measures that enable us to figure out whether exports, imports, exchange rates, and foreign direct investment are related, and the EViews 11 program was used to calculate economic growth in this study as the gross domestic product. The technique of vector

autoregressions (VARs) will be adopted with a slight modification to estimate the determinants of economic growth. The Augmented Dickey-Fuller (ADF) test was performed to find the stationary values for all the variables using the unit root test. The Granger test of causality investigates the links that exist between Nigeria's real GDP, domestic product logarithms, imports, exports, trade openness, foreign direct investment, and currency value. We looked at the short-run dynamic properties of the variables using forecast error variance decomposition.

### **3.6.1 Unit Root (Stationary) test**

Testing for stationary before estimation is thought vital to ascertain the relationship between time-series data as most time series variables might not be stationary, and any prediction using such non-stationary series may yield erroneous findings. I'll be utilizing Augmented Dick Fuller to check if all the variables included in this investigation are stationary. Dickey and Fuller improved the Dickey-Fuller (DF) test, which was created in late 1979, to make it more beneficial for assessing more sophisticated and large time-series models (Econstor, 2005).

In the stationary test, the null hypothesis is examined.

$H_0: \rho = 0$  (This confirms the presence of a unit root or indicates that the series is not steady)

$H_1: \rho \neq 0$  (Which contradicts  $H_0$  and confirms the absence of stationary)

After calculation, the crucial value is compared to the ADF-test statistic. If somehow the absolute amount of the ADF statistical test is larger than the exact amount of the critical threshold, the null hypothesis is accepted, and the series is presumed to be stationary quite the reverse. If the absolute value of the ADF test statistic is greater than the absolute amount of the critical threshold, the null hypothesis is accepted, indicating that perhaps the series has a unit root and is hence non-stationary. When it comes to probabilities, if the estimated likelihood is less than the critical probability, the null hypothesis is rejected, and vice versa.

Each variable's stationary test is performed using the EViews 12 program. A variable was evaluated at a level that was also written as I (0). It is encouraging to learn from these discoveries if they are level and steady. It will be tested again at the

first difference if it is not stationary at level, but that does not indicate it is not stationary (1). With several levels, including the initial difference represented by the letters I (1), the second difference represented by the letters I (2), and so on, the variable may remain stationary but at distinct levels. The formula to estimate ADF follow as;

$$y_t = \alpha_0 + \beta_t + \phi y_{t-1} + \sum_{j=1}^p \varphi_j \Delta y_{t-j} + \mu_t \quad (4)$$

Where:

Y = vector of time series variable ( RGDP, XPORT, IPORT, EXRT, FDI ) called vector of matrix.

The time index is  $t$ ,

Drift is the name given to the intercept constant which is  $\alpha$

The time trend's coefficient is  $\beta$

The focus of the test, the coefficient presenting process root is  $\phi$

The first-differences autoregressive process' lag order is  $p$

An independently distributed, same error term is  $\mu_t$

In these conditions, the following is a statement of the null hypothesis:

H<sub>0</sub>:  $\phi = 0$  (demonstrating that Y<sub>t</sub> is non-stationary and exhibits a stochastic trend).

H<sub>1</sub>:  $\phi \neq 0$  (showing that Y is stationary)

### 3.6.2 Vector Autoregression (VAR)

Evaluating how effectively the model estimates' explanatory power functions in relation to the macroeconomic unit is the purpose of econometrics (Koutsoyiannis, 1973). This supported the justification for utilizing econometric techniques in this research.

Recent years have seen the beginning of study of the connection between trade and growth, employing the potent tool of vector autoregressions developed by Sims (1986). VARs have been shown to be useful in a variety of applications, including the

analysis of short- and long-run dynamics, the research of impulse response functions, and the forecast error variance decomposition.

Equations that make up a VAR model, depends on how many economic variables there are. So, the model in this study consisted of a system of five equations. The VAR model treats each endogenous variable in the system as a function of the lagged values of each endogenous variable in the system.

The method used by Pesaran et al. (2001) which was modified somewhat to build the VAR model for the current investigation. Thus, the definition of the model in this manner will be done using the Vector Autoregressions (VARs) approach;

$$Y_t = \alpha + \phi_1 Y_{t-1} + \phi_2 Y_{t-2} + \dots + \phi_p Y_{t-p} + \mu_t \quad (5)$$

Where;

$Y_t = (\text{RGDP}, \text{XPORT}, \text{IPORT}, \text{FDI}, \text{EXRT})$ , real GDP as a function of exports, imports, foreign direct investment, trade openness, and exchange rate

$\alpha$  = vector of intercept or constant

$\Phi$  = matrix containing all the model's variable coefficients

$Y_{t-1}$  = the lagged variables' vector

$\mu_t$  = the stochastic error term vector

Therefore, the variables will be transformed logarithmically to get more insightful results. As a result, the constrained VAR model mentioned is:

$$Y_t = \alpha + \sum_{i=1}^k A_i Y_{t-i} + \mu_t \quad (6)$$

Where;

$Y = \text{vector of time series variable ( LGDP, LXPORT, LIPORT, LEXRT, LFDI )}$  called vector of matrix.

$\alpha$  = constant term

$A_i$  = matrix of the estimated coefficient of a VAR parameter with lags  $i$

$\mu$  = error term vector

As was said earlier, the system's variables should all be in a stationary process. Additionally, the number of lags in each equation should be the same and equal to  $i$ .

The lag length ( $t$ ) of the Y variables in the system of equations was calculated using two test methods: the Akaike information criterion (AIC) and the Schwarz information criterion (SIC), also known as the Schwarz Criterion (SC). The maximum amount of the likelihood function serves as the foundation for both the AIC and SC, which also include a second penalizing element based on the quantity of estimated parameters. The penalty for introducing additional lags that causes a rise in parameter estimation differs between the two criteria in terms of its severity (AIC and SC). The rationale is to determine the test criteria for various values of the  $t$  statistic and then choose the value of ( $t$ ) that corresponds to the least value.

The null hypothesis for the VAR model is the presumption that the computed coefficients are equal to zero. That is:

$H_0: \beta_j = 0$  (that is, variables are not co-integrated).

A non-zero value for at least one of the coefficients is the alternative theory. All of the equations' coefficients are included in the null hypothesis. simply because an unrestricted VAR model was used in this investigation. The model's coefficients were calculated by testing each equation with the ordinary least squares (OLS) approach.

The VAR model was estimated by ordinary least squares (OLS) because VAR does not have a probability value but does have a T-statistic; we cannot know how significant the T-statistics are in the VAR method, so OLS is the best estimation method that has a probability value, which makes it easy to estimate the VAR method.

### **3.6.3 Research Quality Assurance**

It is necessary to do residual diagnostic test guidelines for VAR estimation results to be trustworthy. If not, the findings may show spurious regression, which may interfere with future decision-making. Consequently, it is essential to look at the type of time series data (Gujarati & Dawn, 2010). Therefore, the stability and diagnostic tests performed on the time series used in this study to verify the accuracy of the features are as follows.

### *3.6.3.1 Test for Autocorrelation*

The serial correlation test, which seeks to explain the link between observations of the same variable over certain intervals, was carried out using the VAR residual serial correlation LM test. The null hypothesis for this test is that, up to order  $p$  of lag, there is no serial correlation.

H0: There is no serial autocorrelation.

H1: The existence of serial autocorrelation.

The non-existence of autocorrelation in the model is confirmed if the findings demonstrate that the probability is higher than the 5% essential value up to the most recent lag.

### *3.6.3.2 Heteroskedasticity Test*

The heteroscedasticity test is used to determine if the residual variance is stable. A heteroscedasticity test was carried out using the VAR residual to assess whether error terms from prior periods have an impact on future periods. The test's hypotheses are as follows:

H0: Heteroskedasticity absent.

H1: Heteroskedasticity is present.

If the critical  $p$ -value is exceeded by the Chi-square. The simple theory is rejected. This indicates that heteroscedasticity is absent. Otherwise, heteroskedasticity exists.

### **3.6.4 Granger Causality Test**

To examine the direction of causation between the two variables, the Granger causality test is used. Theoretically, this econometric strategy is founded on the principle that the past cannot affect the future but that it can cause the present or the future (Granger 1980). In Observing the direction and causality between variables, the Granger causality test is done based on VAR estimation. This test only determines whether a modification inside the current value of that other variable would be implied or explained by the previous values of one variable. In that regard, one may forecast

the present values of other variables by observing changes in the previous values of one variable. In theory, it is possible to claim that X caused Y if changes in the X variable were noticed before changes in the Y variable occurred. In other words, it is claimed that X determinants cause Y if past X values improve the forecasting or prediction of the Y variable. The following are the assumptions for the pairwise Granger causality test:

H<sub>0</sub>: Y<sub>t</sub> does not cause X<sub>t</sub>

H<sub>1</sub>: Y<sub>t</sub> causes X<sub>t</sub>

If the p-value of F- statistics is less than 0.05 and the time series X<sub>t</sub> and Y<sub>t</sub> are random, the null hypothesis should be rejected. These are some of the components of the Granger causality formula:

$$Y_t = \alpha_0 + \sum_{i=1}^{k_1} \alpha_i Y_{t-i} + \sum_{i=1}^{k_2} \beta_i X_{t-i} + \mu_t \quad (7)$$

$$X_t = \alpha_0 + \sum_{i=1}^{k_3} \theta_i X_{t-i} + \sum_{i=1}^{k_4} \delta_i Y_{t-i} + \mu_t \quad (8)$$

Where:

$\alpha_0$  = Constant terms;

$\alpha_i, \beta_i, \theta_i$  and  $\delta_i$  = Lagged variable estimation coefficient in the bivariate regression form.

K<sub>1</sub>-k<sub>4</sub> = the optimal lag for the Y and X series.

$\mu$  = error term

In this case, the null hypothesis is that all of the coefficients for the lag Xs in equation Eq. 8 are equal to zero. ( $\beta_1 = \beta_2 = \dots = \beta_i = 0$ ) and that the lagged Ys' coefficients in equation Eq. 9 are all equal to zero. ( $\delta_1 = \delta_2 = \dots = \delta_i = 0$ ).

If the null hypothesis is rejected by the F-test, it will be evidence that X Granger-causes Y in equation Eq. 8 and that Y Granger-causes X in equation Eq. 9. This approach was used to assess the Granger causation between GDP and the other study's macroeconomic variables.

### 3.6.5 Forecast Error Variance Decomposition

The movement in a sequence brought on by its own shocks may be compared to shocks to other variables using the forecast error variance decomposition (Enders, 1995). The forecast error is the discrepancy between the actual value and the value



anticipated by the model. A variable should be considered exogenous if, at any time throughout the forecast period, the variation of its prediction error cannot be accounted for by the variations of the other variables. If not, it can be assumed that the variable is endogenous. Variables typically have higher proportions in short horizons and smaller proportions in long horizons, which explains their forecast error variance. Comparing the variables in a certain variable can help determine their relative importance.

Forecast error variance decompositions are related tools. Impulses, innovations, or shocks enter the reduced form VAR model (6) through the residual vector. Forecast error variance decompositions are related tools. Impulses, innovations, or shocks enter the reduced form VAR model (6) through the residual vector  $\mu$ . Deterministic notions must be disregarded because they have no bearing on impulse response analysis.

### **3.7 Limitation of this Chapter**

Since in this study, secondary data will be used, they might have certain flaws, like an uncertain sample size that the study may be unable to determine and potential accuracy issues

## CHAPTER FOUR

### DATA ANALYSIS AND INTERPRETATION

#### 4.1 Introduction

The information below includes descriptive statistics as well as unit root tests, VAR Granger Causality Tests, and Forecast Error Variance Decomposition. The unit root test, which sheds light on the variables' stationary characteristics, was carried out using the Augmented Dickey- Fuller (ADF) test. The Granger causality test investigates the causative relationships among Nigeria's GDP domestic product, exports, imports, foreign direct investment, and exchange rate logarithms. We looked at the short-run dynamic properties of the variables using generalized forecast error variance decomposition.

#### 4.2 Descriptive Statistics of Data

In order to complete this study, common descriptive statistics were employed. The analysis of the data (1981–2020) yielded relevant data on the mean, median, minimum, and other metrics of the statistical sample.

**Table 1:** Descriptive Statistics

	<b>XPORT</b>	<b>IPOINT</b>	<b>EXRT</b>	<b>FDI</b>	<b>GDP</b>
<b>Mean</b>	313115877...	659252385...	100.76014...	1.49568256...	1882.38823...
<b>Median</b>	221389768...	574498312...	106.46429...	1.12351039...	1687.04121...
<b>Maximum</b>	722947161...	166075951...	358.81079...	5.79084730...	2679.55476...
<b>Minimum</b>	128578158...	195374686...	0.61770817...	0.18382151...	1408.20893...
<b>Std. Dev</b>	181062949...	355243415...	100.728336...	1.24552277...	459.040506...
<b>Skewness</b>	0.71939635...	0.96811409...	0.8887170...	1.72923102...	0.50854427...
<b>Kurtosis</b>	2.02289699...	3.23625175...	2.2362517...	6.04465632...	1.62187011...

<b>Jarque-bera</b>	5.04142452...	6.34132411...	5.26549859...	35.3848197..	4.88951851...
<b>Probability</b>	0.08040231...	0.04197579...	0.07188056...	2.07149558...	0.08674701...
<b>Sum</b>	125246351...	263700954...	4030.4056...	59.8273027...	75295.5293...
<b>Sum Sq-Dev</b>	1.27856787...	4.92171748...	395701.70...	60.5017518...	8218009.26...
<b>Observation n</b>	40	40	40	40	40

**Source:** Author's Computations with Eviews 12

The statistics of Skewness and Kurtosis can be used to gain useful understanding of the symmetry of the information's probability and, consequently, the extent of its dispersion. The measure of normality for skewness is that if the value is positive, it is a right-tail normal distribution, and if the value is negative, it is a left-tail normal distribution, while the measure of normality for kurtosis is that the mesokurtic curve is 3, and the platykurtic curve is 3.

All the variables in the skewness value are tailed toward the right tail of the normal distribution. XPORT, EXRT, and GDP have a platykurtic curve, while IPORT and FDI have a leptokurtic curve. Jarque-Bera statistics were used to test the series' normalcy or asymptotic properties, and this could be calculated using these two statistics.

H0: distribution is normal

H1: distribution is not normal

$P < 0.05$ , reject Null hypothesis

XPORT, EXRT, FDI, and GDP are normal distributions and Null hypothesis is accepted while IPORT are not normal distribution and Null is rejected. This data needs to be log-transformed to make it as "normal" as possible because of the aforementioned assumption. The skewness of our initial data is reduced or eliminated by the log transformation, allowing statistical analysis to yield more trustworthy results. The data set contains a total of 40 observations.

### **4.3 Unit Root Test**

Before performing VAR estimates and establishing causation between model variables, it is necessary to conduct unit root testing on stationary time series. In light of this, we employ the Augmented Dickey-Fuller unit root test and also examine if the model's variables require level, first-order difference, or second-order difference. In other words, this stage reveals whether or not the variables have a unit root. First, to calculate the number of lags, Akaike's Information Criterion (AIC) was utilized. In addition, before performing the unit root test, which evaluates the stability of the time series, it is possible to look for a trend in the time series chart. In Graph 1, time series are created that are related to all of the variables.

#### **4.3.1 Trends of all the variable before stationary**

In the case of Nigeria the micro economic trends was summarized from 1981-2020, The data indicate a movement in Exchange rate (EXRT), Foreign direct investment (FDI), Gross domestic product (GDP), import (IMPORT) and export (XPORT). Even while several economic factors during this time showed some signs of growth, they fluctuated during the period under review. Despite the fluctuations the EXRT, GDP and XPORT Showed the overall increase during the period 2000-2020, while IPORT showed a consistent rising trend from 2000 - 2012. Also FDI, and reduce drastically during the period of 1995.

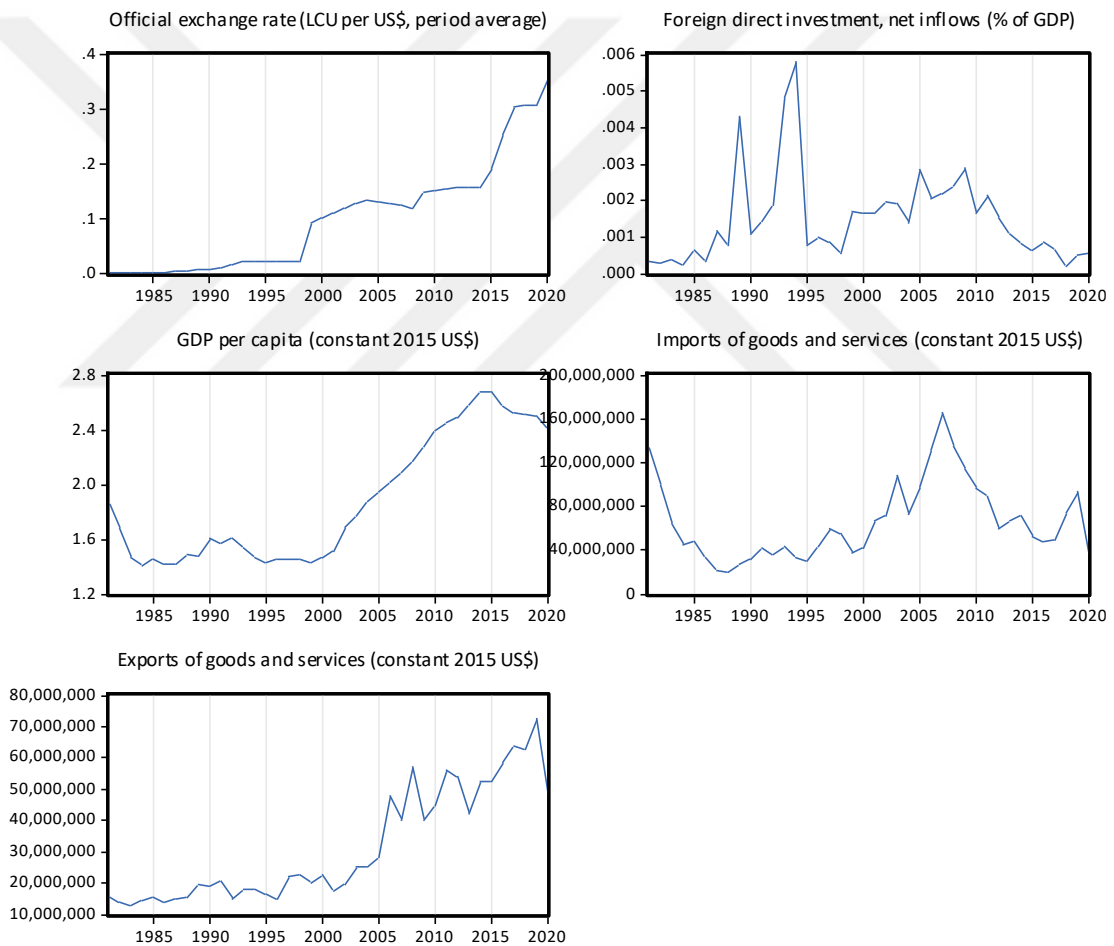
This sparked an intriguing discussion about the impact of international trade on Nigeria's economic development, given that the country's economy is well known for its reliance on export earnings and overdependence on imports.

It is challenging to conclude that series are stationary in terms of the first difference in value with reference to graph 1. However, a variable's time series charts make it challenging to determine whether it is stationary or not. It has been shown that advanced econometric tools must be used in any relevant investigation of the intricate In the case of Nigeria, there is a connection between international trade and economic growth. Most empirical research on the connection between global trade and economic growth has used outdated econometric techniques, such as the dynamic ordinary least squares method (Yusuf et al., 2020), co-integration and error correction modeling (Adeleye et al., 2015), and the multiple regression analysis technique (Elias et al.,

2018), among others. It is challenging to conclude that series are stationary in terms of the first difference in value with reference to graph 1.

However, a variable's time series charts make it challenging to determine whether it is stationary or not. Showed that advanced econometric tools must be used in any relevant investigation of the intricate link between international trade and economic growth in the case of Nigeria. To minimize the potentially erroneous conclusions that might be generated from conventional methodologies approaches, additional new research has instead employed Vector Auto-Regression (VAR) to evaluate the co-integration of macroeconomic components.

**Graph 1: All variables in time series**



**Source:** Author's Computations with Eviews 12

### 4.3.2 Augmented Dickey-Fuller Unit Root Analysis

All variables (in logarithms) are stationary, according to the findings of the Augmented Dickey-unit Root Test in Table 2 (computed from Appendix Table 2). LXPORT, LIPORT, LEXRT, FDI, and LGDP are stationary in the first difference at a 5% significance level. As can be observed, for the initial levels of variables, the null hypothesis is not disproved. Consequently, we must first consider differences in the variables LXPORT, LIPORT, LEXRT, FDI, and LGDP to determine if they are stationary at the first difference level or not.

**Table 2:** Augmented Dickey-Fuller unit root tests

Variables	Stationary order	ADF test statistic	Critical 1%	Values			Pvalue
				5%	10%		
LXPORT	1(1)	-8.708395	-3.615588	-2.941145	-2.609066	0.0000***	
LIPORT	1(1)	-4.716551	-3.615588	-2.941145	-2.609066	0.0005***	
LEXRT	1(1)	-5.304640	-3.615588	-2.941145	-2.609066	0.0001***	
FDI	1(1)	-8.124215	-3.615588	-2.941145	-2.609066	0.0000***	
LGDP	1(1)	-3.519142	-3.615588	-2.941145	-2.609066	0.0128**	

**Notes:** 1%, 5%, and 10% level of significance is denoted by asterisk \*\*\*, \*\*, and \* respectively.

**Source:** Author's Computations with Eviews 12

This allows us to see that the null hypothesis is approved at the first differences for all variables. The findings shown in the table suggest that all series are stationary, indicating that LXPORT, LIPORT, LEXRT, FDI, and LGDP consist of a unified order one, I (1). On Akaike's Information Criterion (AIC), the lag length is based. The stationary test permits the estimation of the intended regression model and the VAR.

#### 4.4 Vector Autoregression Analysis

**Table 3:** Defining the number of lags for VAR Model

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-428.1871	NA	3057.629	22.21472	22.42800	22.29125
1	-252.6794	297.0130*	1.376177*	14.49638*	15.77604*	14.95551*

**Source:** Author's Computations with Eviews 12

There are currently no set guidelines for choosing the amount of lags, however as the data is annual, 1 or 2 lags should be utilized. Based on the Akaike's Information Criterion (AIC), the number of lags is specified in this study as 1. Table 3 provides more information on how the amount of lags for the VAR model was determined.

**Table 4:** Vector Autoregression Estimates

		coefficient	Std. Error	T. statistic	p.value
LXPORT(-1)	LXPORT	0.282	0.167	1.686	0.0936*
	LIPORT	-0.384	0.272	-1.411	0.7501
	LEXRT	0.451	0.255	1.770	0.0016***
	FDI	-1.139	1.116	-1.020	0.8719
	LGDP	34.320	70.640	0.486	0.0016***
LIPORT(-1)	LXPORT	0.0195	0.061	0.319	0.1601
	LIPORT	0.793	0.099	7.989	0.0000***
	LEXRT	-0.112	0.093	-1.201	0.0021***
	FDI	0.031	0.408	0.076	0.5754
	LGDP	9.515	25.803	0.369	0.7926
LEXRT(-1)	LXPORT	0.083	0.026	3.217	0.0786*
	LIPORT	0.131	0.042	3.126	0.2316
	LEXRT	0.944	0.039	24.040	0.0000***
	FDI	0.273	0.172	1.585	0.0606*
	LGDP	26.597	10.899	2.244	0.0682*
FDI(-1)	LXPORT	-0.004	0.025	-0.162	0.3093
	LIPORT	-0.022	0.040	-0.561	0.9397
	LEXRT	-0.071	0.037	-1.890	0.1148
	FDI	0.342	0.164	2.086	0.0385**
	LGDP	6.993	10.359	0.675	0.9399
LGDP(-1)	LXPORT	0.000	0.000	3.206	0.6277
	LIPORT	7.244	0.000	0.263	0.7128
	LEXRT	-0.000	0.000	-1.836	0.0157**
	FDI	8.531	0.001	0.076	0.5006
	LGDP	0.881	0.071	12.330	0.0000***

**Notes:** 1%, 5%, and 10% level of significance is denoted by asterisk \*\*\*, \*\*, and \* respectively. The decision is to reject or accept the hypothesis at 5%.

**Source:** Author's Computations with Eviews 12

According to Table 3, the system experienced one lag (according to AIC and SIC criteria). According to the F-test suggests that at the 5% level of significance, It is necessary to reject the null hypothesis (suggesting no co-integration between macro - economic variables), indicating that all the variables are in long-term equilibrium. It is clear that a steady state is feasible over the long run.

Table 4 displays the findings of the VAR estimation for the years 1981 through 2020. Since the VAR analysis does not have probability value we cannot know how significance is T. statistics, so OLS was used to estimate the VAR model. In the first lag of LEXPORT growth rate solely depends on its growth rate, increasing the LEXPORT growth rate to 0.3% for the current year at 10% significance and also have impact on the growth rate of LEXRT and LGDP by 0.5% and 34% respectively. The growth rate of LEXPORT in the first lag depended on itself which increase its growth rate to 0.8% and on LEXRT which reduced its growth rate to 0.1% at 5% significance level. The growth rate of LEXRT depended on its growth rate in the first lag which increase its growth rate to 1% also LEXPORT, FDI and LGDP have impact on its growth rate by 0.08%, 0.3% and 26.6% respectively at 10% significance. The FDI have positive significance on itself growth rate increased by 0.3%. LGDP growth rate also significantly depend on itself by 0.9% and LEXRT decrease its growth rate 0%.

The results are provided in Table 4. Note that LGDP, FDI, LEXRT and Estimates of LEXPORT coefficients are elasticities. The analysis of the data reveals that each variable's one-period lagged value is its most crucial factor.

The findings suggest that the null hypothesis (suggesting no co-integration) should be rejected at the 5% level of significance. This confirms the earlier findings that trade and GDP in Nigeria have a long-term equilibrium connection.

This finding indicates that there is a significant relationship between international trade and economic growth in Nigeria.

#### **4.5 Testing Model**

The VAR-model was found to be trustworthy after we tested it for stability, autocorrelation, and residual heteroskedasticity. Since there is no autocorrelation in the residuals and no heteroskedasticity at the 5% significant level, the residuals are also not connected to one another (for more information on the testing, see Appendix, Tables 6-7-8).



#### 4.6 Granger-causality Analysis

The outcomes of the paired Granger causality test are shown in Table 5, the result shows that bi-directional causality exist only with LEXPORT and LGDP. Uni-directional causality exist with LEXRT and LEXPORT, LIPOST and LEXRT, LEXRT and LGDP. Independent causality exist with LIPOST and LEXPORT, FDI and LEXPORT, FDI and LIPOST, LGDP and LIPOST, LEXRT and FDI, which means that the variables can not cause each other.

Then, using the actual level of information from the time series, the Granger-causality test was run on all other variables.

The following formulations can be used to establish the null hypotheses for these tests:

- LEXRT does not Granger-cause LGDP and vice versa.
- LEXPORT does not Granger-cause LGDP and vice versa.
- LIPOST not Granger-cause LGDP and vice versa.
- FDI does not Granger-cause LGDP and vice versa.

The first null hypothesis, which claims that exchange rates do not cause gross domestic product, should be rejected at the 5% level of significance, according to Table 4. The null hypothesis's opposite, which claims that gross domestic exports do not cause exports, however, could not be rejected.

The results also indicate that the second null hypothesis, which claims that export do not granger- cause gross domestic product, export should be rejected at the 5% level of significance. However, the null hypothesis' converse, which claims that gross domestic product does not Granger cause export should be rejected. The third null hypothesis (proposing that trade import do not Granger- cause government gross domestic product) could not be rejected; similarly, the converse of the null hypothesis (proposing that gross domestic product does not Granger cause import) could not be rejected. The fourth null hypothesis which claims that foreign direct investment do not granger-cause gross domestic product should be rejected and gross domestic product do not granger-cause foreign direct investment should not be rejected.

**Table 5: Pairwise Granger Causality Test**

<b>NULL HYPOTHESIS:</b>	<b>causality</b>	<b>F-stat.</b>	<b>Prob.</b>
<b>LIPORT does not Granger Cause LXPORT</b>	NO	0.16364	0.6882
<b>LXPORT does not Granger Cause LIPORT</b>		0.31593	0.5775
<b>LEXRT does not Granger Cause LXPORT</b>	YES	4.95114	0.0324**
<b>LXPORT does not Granger Cause LEXRT</b>		0.15939	0.6921
<b>FDI does not Granger Cause LXPORT</b>	NO	0.00770	0.9306
<b>LXPORT does not Granger Cause FDI</b>		0.69290	0.4107
<b>LGDP does not Granger Cause LXPORT</b>	YES	5.29196	0.0273**
<b>LXPORT does not Granger Cause LGDP</b>		7.53153	0.0094***
<b>LEXRT does not Granger Cause LIPORT</b>	YES	5.79643	0.0213**
<b>LIPORT does not Granger Cause LEXRT</b>		1.25899	0.2693
<b>FDI does not Granger Cause LIPORT</b>	NO	0.24630	0.6227
<b>LIPORT does not Granger Cause FDI</b>		0.20701	0.6519
<b>LGDP does not Granger Cause LIPORT</b>	NO	0.09801	0.7560
<b>LIPORT does not Granger Cause LGDP</b>		0.206673	0.6521
<b>FDI does not Granger Cause LEXRT</b>	NO	2.41142	0.1292
<b>LEXRT does not Granger Cause FDI</b>		0.05139	0.8219
<b>LGDP does not Granger Cause LEXRT</b>	YES	0.17790	0.6757
<b>LEXRT does not Granger Cause LGDP</b>		17.0162	0.0002***
<b>LGDP does not Granger Cause FDI</b>	YES	0.73633	0.3965
<b>FDI does not Granger Cause LGDP</b>		3.98592	0.0535*

**Notes:** 1%, 5%, and 10% level of significance is denoted by asterisk \*\*\*, \*\*, and \* respectively. The decision is to reject or accept the hypothesis at 5%.

**Source:** Author's Computations with Eviews 12

The aggregate findings in Table 5 demonstrated a substantial correlation between international trade and Nigeria's economic expansion. This lends credence to the idea that the international trade is crucial to the nation's overall progress and expansion of its economy. The findings of the recent research suggest that the international trade is one of key contributor to the expansion of most economic aspect in Nigeria since causality analysis revealed that it have a favorable influence on the majority of the relative elements of economic activity.

#### **4.7 Forecast Error Variance Decomposition Analysis**

Variance decomposition analysis is conducted to each study variable for a brief period of time to see whether there is any significant influence from shocks. A five-year span is being discussed. Table 9 reveals that most of the variables are caused by their own shock while other variables barely make a difference on them. LGDP Own shock makes for 90% of the total contribution at the first year and drops to 81% by the conclusion of the 5-period year. The largest contribution on LGDP in the fifth period comes from LIPORT at 4%, and LXPORT at 4%. LFDI Own shock makes for 90% of the first period's contribution before dropping to 86% for the fifth period while others have a weak significance impact on it.

Despite accounting for 82% of total variation in the first period, LEXRT's own shocks' contribution drops to 50% in the fifth, LIPORT shocks are responsible for 18% of the variation in the first year and it increase to 33% while FDI shocks increase from 0 to 10% and LXPORT shocks increase from 0 to 5%.

LIPORT shocks are responsible for 91% of the variability in the initial period before dropping drastically to 88% in the last decade, LXPORT shock account for 9% at the first period and drop to 4% at the 5th period.

LXPORT shocks are responsible for 100% of the variability in the initial period before dropping drastically to 79% in the last decade, LEXRT shock account for 0% at the first period and increase to 7% at the 5th period.

In conclusion, I found that the major causes of variation in all variables were primarily caused by their own shocks and innovation whereas others variable have little impact on them. From the short-run period into the future, LGDP is seen to have a significant impact while other variable in the model has a substantial exogenous

impact, which means that they have little effect on LGDP. Import also have significance influence in predicting exchange rate. Gross domestic product, foreign direct investment import and export have a significance impact on import.

**Table 6:** Forecast Error Variance Decomposition Test

<b>Variance Decomposition of LXPORT</b>						
<b>Period</b>	<b>S.E.</b>	<b>LXPORT</b>	<b>LIPORT</b>	<b>LEXRT</b>	<b>FDI</b>	<b>LGDP</b>
1	0.171882	100.0000	0.000000	0.000000	0.000000	0.000000
2	0.185831	94.60560	0.045996	1.055328	0.232951	4.060121
3	0.194797	88.46518	0.041910	2.884314	0.502546	8.195547
4	0.202637	83.15872	0.106515	5.055716	0.814861	10,86418
5	0.209983	78.62025	0.358456	7.335556	1.190131	12.49561

<b>Variance Decomposition of LIPORT:</b>						
<b>Period</b>	<b>S.E.</b>	<b>LXPORT</b>	<b>LIPORT</b>	<b>LEXRT</b>	<b>FDI</b>	<b>LGDP</b>
1	0.279672	9.224985	90.77502	0.000000	0.000000	0.000000
2	0.344234	6.093362	92.88011	0.473231	0.532135	0.021161
3	0.374376	5.280316	92.08967	1.240235	1.294776	0.095000
4	0.389862	4.938422	90.24996	2.148868	2.171665	0.491088
5	0.399079	4.731211	87.89447	3.077737	3.070824	1.225760

<b>Variance Decomposition of LEXRT</b>						
<b>Period</b>	<b>S.E.</b>	<b>LXPORT</b>	<b>LIPORT</b>	<b>LEXRT</b>	<b>FDI</b>	<b>LGDP</b>
1	0.262018	0.526316	17.91707	81.55662	0.000000	0.000000
2	0.369287	1.222617	23.87091	70.19259	3.929952	0.783936
3	0.456324	2.634665	27.85275	61.00747	7.070637	1.434486
4	0.528679	3.817221	30.78233	54.73925	8.891094	1.770107
5	0.588831S	4.696574	33.07260	50.47469	9.870187	1.885939

<b>Variance Decomposition of FDI</b>						
<b>Period</b>	<b>S.E.</b>	<b>LXPORT</b>	<b>LIPORT</b>	<b>LEXRT</b>	<b>FDI</b>	<b>LGDP</b>
1	1.148729	0.759317	0.009360	8.384088	90.84724	0.000000
2	1.231866	2.408058	0.027150	9.386121	88.17638	0.002292
3	1.247220	3.096417	0.139881	9.738607	86.89729	0.127805
4	1.252724	3.247405.	0.317624	9.828733	86.17327	0.432973
5	1..256743	3.264661	0.504353	9.820083	85.52597	0.784934

<b>Variance Decomposition of LGDP</b>						
<b>Period</b>	<b>S.E.</b>	<b>LXPORT</b>	<b>LIPORT</b>	<b>LEXRT</b>	<b>FDI</b>	<b>LGDP</b>
1	72.68335	3.942593	4.167010	0.040285	1.386705	90.46341
2	98.18172	6.153963	3.966970	1.039848	0.760097	88.07912
3	115.3655	7.185023	3.534654	2.719480	0.551832	86.00901
4	127.9068	7.936840	3.023948	4.869531	0.479200	83.69048
5	137.9896	8.638956	2.598552	7.332878	0.557627	80.87199

**Source:** Author's Computations with Eviews 12

## CHAPTER FIVE

### CONCLUSION AND RECOMMENDATION

#### 5.1 Conclusion

This research examines the impact of global trade on economic growth in Nigeria. This study's objectives are to evaluate the most recent impacts of exchange rates on international trade, To establish the direction of causation, ascertain the link between international trade and economic growth in Nigeria. Examine the impact of trade net export on Nigeria's economic growth and offer a process to follow when utilising global trade to boost economic growth.

Based on an econometric analysis of time series from 1981 to 2020, the study was conducted. The study employed VectorAutoregression analysis, the result of Augmented Dick Fuller unit root test shows that LEXRT, LFDI, LGDP, LIPORE, and LXPORT are stationary at the first difference. Vector autoregression was checked if stable or not by performing a diagnostic test to examine the model's normality, serial correlation, and heteroscedasticity. The outcomes demonstrate that serial correlation and conditional heteroscedasticity are absent. Additionally, it was discovered that the model was normally distributed. Granger causality and Forecast Error Variance Decomposition was test based on the framework of Vector Autogression model (VAR). Finally, an examination of international trade and its effects on Nigeria's economic growth from 1981 to 2020 was conducted using some descriptive statistic.

We concluded using the descriptive statistics to analyze the Nigeria economic growth using the duration between 1981to 2019. All the variables in the skewness value are tailed toward the right tail of the normal distribution. Kurtosis shows that XPORT, EXRT, and GDP have a platykurtic curve, while IPORE and FDI have a leptokurtic curve. Jarque-bera statistics shows that XPORT, EXRT, FDI, and GDP are normal distributions and Null hypothesis is accepted which means they impact economic growth while IPORE are not normal distribution and Null is rejected which has no effect on economic growth.

The trends of all the variables in their log form shows that Despite the fluctuations the EXRT, GDP and XPORT Showed the overall increase during the period 2000-2020, while IPORE showed a consistent rising trend from 2000 - 2012.

Also, FDI, and reduce drastically during the period of 1995 demonstrating that Nigeria's economic growth is favorably impacted by international trade.

The result of Vector Autoregression analysis support the Nigeria`s economic development does not depend on the rise of import, export, and foreign direct investment but it is depended on its growth rate and exchange rate. Export have impact on economic growth, the hypothesis is accepted. Import does not have any significance on economic growth, the hypothesis is rejected. Exchange rate have significance impact on economic growth, the hypothesis is accepted, and foreign direct investment do not necessarily boost economic growth, we cannot accept this assumption. Exchange rate also have positive effect on all other variable except import only. Which suggest that the government must establish efficient exchange rate regulations to avoid naira been excessively depreciate especially when conduct international trade and increase export and reduce import to make the trade balance.

Also, the result from pairwise granger causality shows that import does not Granger cause economic expansion while export, exchange rate and foreign direct investment drive economic development. It also demonstrates the existence of bi-directional causality exit only with LXPORT and LGDP. Uni-directional causality exit with LEXRT and LXPORT, LIPORT and LEXRT, LEXRT and LGDP. Independet causality exit with LIPORT and LXPORT, FDI and LXPORT, FDI and LIPORT, LGDP and LIPORT, LEXRT and FDI, which means that the variables can not cause each other.

Regarding to the objective that stated to ascertain the impact of the exchange rate the VAR result support the pairwise granger causality, it`s revealed that there is currently significant causality among exchange rate, export, and economic development but there are no present of significant causality between import, foreign direct investment and economic growth of Nigeria. Therefore, the null hypothesis of exchange rate and export can be accepted that supported increase in economic growth.

The hypothesis of a favorable correlation between international trade and economic growth in Nigeria is accepted because of the forecast error variance decomposition analysis, which revealed that innovation in the variables is primarily described by their own shocks.

## 5.2 Recommendation

1. According to the findings, since the availability and use of the US dollar typically determine Nigeria's naira exchange rate, it is nevertheless advised that the federal government keep up commercial ties with a number of additional nations, including Taiwan, China, Japan, and perhaps other booming Asian economies. As a result, the emphasis on the currency devaluation of the Nigerian's economy would be lessened, and the excessive desire for dollars to boost the value of the naira will be reduced.
2. The study's findings indicate that trade openness hurts economic growth; as a result, it is highly urged that the authorities impose limits and boost customs barriers to stop the importing that arises from trade openness.
3. To raise the growth of the Nigerian economy, the government should pursue effective macroeconomic policies aimed at enhancing a secure business climate that would draw more foreign investment.
4. In light of the fact that exports are a major contributor to economic growth, encouraging trade policies that stimulate export growth. As a result, it is suggested that Nigeria adopt an exchange rate policy that encourages export development and is compatible with the country's status as a free market economy. Additionally, it became clear that the nominal exchange rate could be used as a flexible and strategic element to affect economic growth.
5. Nigeria must continually raise its financial commitments in both domestic and international markets (i.e., while keeping in mind the global economy's dynamic character); this will enable us to realize our full economic potential and maintain our worldwide level of competition. The economic growth of our resource base will be aided by such an investment and people resources, increasing our production and commerce, increasing citizen income, and removing barriers to technological access.

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## APPENDIX

**Table 1:** GDP, and international trade in dollars

Series Code	Exports of goods and services (constant 2015 US\$)	Foreign direct investment, net inflows (% of GDP)	GDP per capita (constant 2015 US\$)	Imports of goods and services (constant 2015 US\$)	Official exchange rate (LCU per US\$, period average)
1981	15552061442	0.329731934	1856.070351	1.33411E+11	0.617708175
1982	13926104748	0.301613208	1680.33637	98635073048	0.673461262
1983	12857815837	0.375338495	1459.737978	63850262421	0.724409851
1984	14178860929	0.257421832	1408.208938	44123247812	0.766527449
1985	15379098856	0.65845266	1451.369294	47588276664	0.893774083
1986	14008781541	0.352544297	1414.697911	33279291391	1.754523004
1987	14766977764	1.159069795	1422.825764	20918359658	4.016037344
1988	15211563526	0.762696402	1488.1771	19537468636	4.536966667
1989	19749037706	4.282087862	1477.612246	26717997807	7.364735
1990	18871176974	1.08795099	1608.779886	31943183208	8.038285
1991	20392744317	1.450317769	1573.702566	41700461450	9.909491667
1992	14984887479	1.87601773	1605.548461	35456726804	17.298425
1993	17779299818	4.847790004	1533.183995	42844853948	22.0654
1994	18181364373	5.790847305	1467.092218	33590341195	21.996
1995	16622082196	0.762195576	1429.012361	29601804413	21.89525833
1996	14813924131	0.977520982	1451.819865	44049998359	21.884425
1997	21910384369	0.862276325	1457.228191	59391245454	21.88605
1998	22367569299	0.548616188	1457.701404	55508417004	21.886
1999	19962454321	1.692557514	1429.405881	36800645947	92.3381
2000	22608080797	1.641739329	1462.536292	41428379660	101.6973333
2001	17268154405	1.635526231	1508.553895	66653814668	111.23125
2002	19275989148	1.971583402	1693.746069	70888573854	120.5781583
2003	25321172738	1.914620097	1769.882595	1.08775E+11	129.22235
2004	25079426811	1.38037404	1882.182366	72646550659	132.888025
2005	28182890604	2.836294592	1950.122762	97069605465	131.2743333
2006	48016777381	2.035753057	2013.274418	1.31982E+11	128.6516667
2007	39877353295	2.169195666	2088.604852	1.66076E+11	125.8081083
2008	57199056578	2.413739613	2170.059255	1.34917E+11	118.5666667
2009	40029182333	2.900249401	2281.386807	1.1356E+11	148.88
2010	44610787545	1.642073195	2397.32403	96202887773	150.2975
2011	56117121177	2.133118402	2455.74699	88666964890	153.8625
2012	54103093457	1.523782396	2490.213614	59502935803	157.5
2013	42342965161	1.069539399	2585.647719	66771698970	157.3116667
2014	52541281282	0.817478379	2677.494122	70757460187	158.5526417
2015	52587763138	0.621501511	2679.554765	52587923981	192.4403333
2016	58651948830	0.853395904	2570.960278	47139128157	253.492
2017	63777956929	0.64218292	2527.00012	49379014627	305.7901092
2018	62878282829	0.183821514	2512.080983	73654576003	306.0836882
2019	72294716151	0.514393407	2505.462745	93730899825	306.9209515
2020	48183320158	0.551893461	2401.1839	35671154742	358.8107973

**Source:** from World Bank data

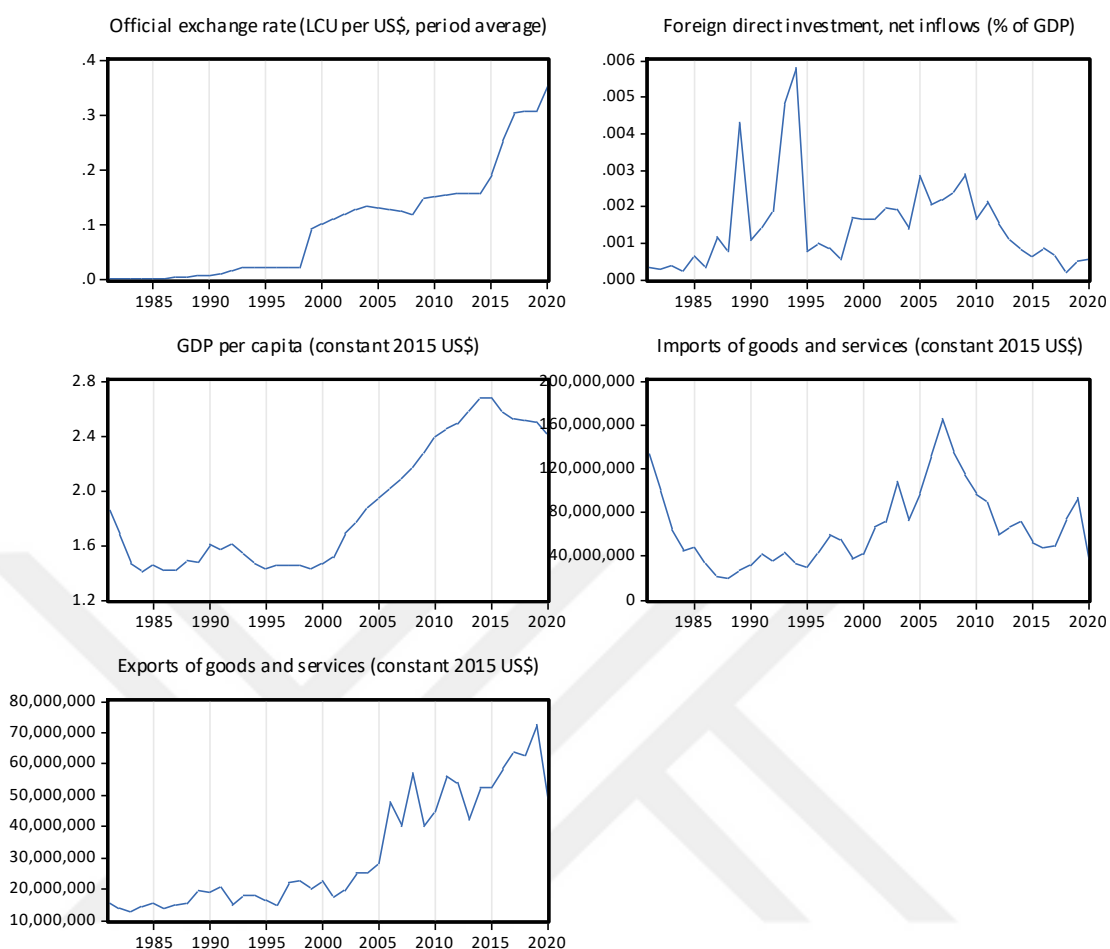


**Table 2:** Augmented Dickey-Fuller unit root tests

Variables	Stationar y order	ADF test statistic	Critical 1%	Values			Pvalue
				5%	10%		
LXPORT	1(1)	-8.708395	-3.615588	-2.941145	-2.609066	0.0000	
LIPORT	1(1)	-4.716551	-3.615588	-2.941145	-2.609066	0.0005	
LEXRT	1(1)	-5.304640	-3.615588	-2.941145	-2.609066	0.0001	
FDI	1(1)	-8.124215	-3.615588	-2.941145	-2.609066	0.0000	
LGDP	1(1)	-3.519142	-3.615588	-2.941145	-2.609066	0.0128	

**Source:** Author's Computations with Eviews 12

**Graph 1: Shows Trend of all Variables in their First Difference**



**Source:** Author's Computations with Eviews 12

**Table 3: Defining the number of lags for VAR Mode**

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-428.1871	NA	3057.629	22.21472	22.42800	22.29125
1	-252.6794	297.0130*	1.376177*	14.49638	15.77604*	14.95551*

**Source:** Author's Computations with Eviews 12

**Table 4:** VAR estimation result

		coefficient	Std. Error	T. statistic	p.value
LXPORT(-1)	LXPORT	0.282	0.167	1.686	0.0936*
	LIPORT	-0.384	0.272	-1.411	0.7501
	LEXRT	0.451	0.255	1.770	0.0016***
	FDI	-1.139	1.116	-1.020	0.8719
	LGDP	34.320	70.640	0.486	0.0016***
LIPORT(-1)	LXPORT	0.0195	0.061	0.319	0.1601
	LIPORT	0.793	0.099	7.989	0.0000***
	LEXRT	-0.112	0.093	-1.201	0.0021***
	FDI	0.031	0.408	0.076	0.5754
	LGDP	9.515	25.803	0.369	0.7926
LEXRT(-1)	LXPORT	0.083	0.026	3.217	0.0786*
	LIPORT	0.131	0.042	3.126	0.2316
	LEXRT	0.944	0.039	24.040	0.0000***
	FDI	0.273	0.172	1.585	0.0606*
	LGDP	26.597	10.899	2.244	0.0682*
FDI(-1)	LXPORT	-0.004	0.025	-0.162	0.3093
	LIPORT	-0.022	0.040	-0.561	0.9397
	LEXRT	-0.071	0.037	-1.890	0.1148
	FDI	0.342	0.164	2.086	0.0385**
	LGDP	6.993	10.359	0.675	0.9399
LGDP(-1)	LXPORT	0.000	0.000	3.206	0.6277
	LIPORT	7.244	0.000	0.263	0.7128
	LEXRT	-0.000	0.000	-1.836	0.0157**
	FDI	8.531	0.001	0.076	0.5006
	LGDP	0.881	0.071	12.330	0.0000***

**Notes:** 1%, 5%, and 10% level of significance is denoted by asterisk \*\*\*, \*\*, and \* respectively. The decision is to reject or accept the hypothesis at 5%.

**Source:** Author's Computations with Eviews 12

**Table 5 :** VAR Stability Test

Roots of Characteristic Polynomial  
 Endogenous variables: LXPORT LIPORT  
 LEXRT FDI LGDP  
 Exogenous variables: C  
 Lag specification: 1 1  
 Date: 01/12/23 Time: 22:18

Root	Modulus
0.974050	0.974050
0.827772 - 0.101240i	0.833940
0.827772 + 0.101240i	0.833940
0.410372	0.410372
0.202152	0.202152

No root lies outside the unit circle.  
 VAR satisfies the stability condition.

**Source:** Author's Computations with Eviews 12

**Table 6: VAR residual serial correlation LM test**

VAR Residual Serial Correlation LM Tests

Date: 01/12/23 Time: 22:20

Sample: 1981 2020

Included observations: 39

Null hypothesis: No serial correlation at lag h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	25.96441	25	0.4095	1.049374	(25, 90.7)	0.4163

Null hypothesis: No serial correlation at lags 1 to h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	25.96441	25	0.4095	1.049374	(25, 90.7)	0.4163

\*Edgeworth expansion corrected likelihood ratio statistic.

**Source:** Author's Computations with Eviews 12**Table 7: VAR residual heteroskedasticity Test**

VAR Residual Heteroskedasticity Tests (Levels and Squares)

Date: 01/12/23 Time: 22:20

Sample: 1981 2020

Included observations: 39

Joint test:

Chi-sq	df	Prob.
175.1029	150	0.0787

Individual components:

Dependent	R-squared	F(10,28)	Prob.	Chi-sq(10)	Prob.
res1*res1	0.194721	0.677058	0.7360	7.594136	0.6684
res2*res2	0.400332	1.869252	0.0937	15.61296	0.1113
res3*res3	0.460915	2.393983	0.0336	17.97567	0.0554
res4*res4	0.598084	4.166638	0.0014	23.32529	0.0096
res5*res5	0.300829	1.204745	0.3299	11.73235	0.3034
res2*res1	0.186402	0.641502	0.7661	7.269668	0.6998
res3*res1	0.167459	0.563200	0.8293	6.530919	0.7689
res3*res2	0.424272	2.063409	0.0641	16.54661	0.0850
res4*res1	0.532134	3.184625	0.0075	20.75324	0.0229
res4*res2	0.227649	0.825296	0.6082	8.878321	0.5437
res4*res3	0.526699	3.115895	0.0086	20.54125	0.0245
res5*res1	0.347752	1.492849	0.1940	13.56235	0.1939
res5*res2	0.286743	1.125653	0.3787	11.18297	0.3434
res5*res3	0.132185	0.426495	0.9213	5.155222	0.8806
res5*res4	0.291608	1.152613	0.3615	11.37270	0.3292

**Table 8:** Pairwise Granger Causality Test

<b>NULL HYPOTHESIS:</b>	<b>causality</b>	<b>F-stat.</b>	<b>Prob.</b>
<b>LIPORT does not Granger Cause LEXPORT</b>	NO	0.16364	0.6882
<b>LEXPORT does not Granger Cause LIPORT</b>		0.31593	0.5775
<b>LEXRT does not Granger Cause LEXPORT</b>	YES	4.95114	0.0324**
<b>LEXPORT does not Granger Cause LEXRT</b>		0.15939	0.6921
<b>FDI does not Granger Cause LEXPORT</b>	NO	0.00770	0.9306
<b>LEXPORT does not Granger Cause FDI</b>		0.69290	0.4107
<b>LGDP does not Granger Cause LEXPORT</b>	YES	5.29196	0.0273**
<b>LEXPORT does not Granger Cause LGDP</b>		7.53153	0.0094***
<b>LEXRT does not Granger Cause LIPORT</b>	YES	5.79643	0.0213**
<b>LIPORT does not Granger Cause LEXRT</b>		1.25899	0.2693
<b>FDI does not Granger Cause LIPORT</b>	NO	0.24630	0.6227
<b>LIPORT does not Granger Cause FDI</b>		0.20701	0.6519
<b>LGDP does not Granger Cause LIPORT</b>	NO	0.09801	0.7560
<b>LIPORT does not Granger Cause LGDP</b>		0.206673	0.6521
<b>FDI does not Granger Cause LEXRT</b>	NO	2.41142	0.1292
<b>LEXRT does not Granger Cause FDI</b>		0.05139	0.8219
<b>LGDP does not Granger Cause LEXRT</b>	YES	0.17790	0.6757
<b>LEXRT does not Granger Cause LGDP</b>		17.0162	0.0002***
<b>LGDP does not Granger Cause FDI</b>	YES	0.73633	0.3965
<b>FDI does not Granger Cause LGDP</b>		3.98592	0.0535*

**Notes:** 1%, 5%, and 10% level of significance is denoted by asterisk \*\*\*, \*\*, and \* respectively. The decision is to reject or accept the hypothesis at 5%.

**Source:** Author's Computations with Eviews 12

**Table 9: Forecast Error Variance Decomposition Test**

<b>Variance Decomposition of LXPORT</b>						
<b>Period</b>	<b>S.E.</b>	<b>LXPORT</b>	<b>LIPORT</b>	<b>LEXRT</b>	<b>FDI</b>	<b>LGDP</b>
1	0.171882	100.0000	0.000000	0.000000	0.000000	0.000000
2	0.185831	94.60560	0.045996	1.055328	0.232951	4.060121
3	0.194797	88.46518	0.041910	2.884314	0.502546	8.195547
4	0.202637	83.15872	0.106515	5.055716	0.814861	10,86418
5	0.209983	78.62025	0.358456	7.335556	1.190131	12.49561

<b>Variance Decomposition of LIPORT:</b>						
<b>Period</b>	<b>S.E.</b>	<b>LXPORT</b>	<b>LIPORT</b>	<b>LEXRT</b>	<b>FDI</b>	<b>LGDP</b>
1	0.279672	9.224985	90.77502	0.000000	0.000000	0.000000
2	0.344234	6.093362	92.88011	0.473231	0.532135	0.021161
3	0.374376	5.280316	92.08967	1.240235	1.294776	0.095000
4	0.389862	4.938422	90.24996	2.148868	2.171665	0.491088
5	0.399079	4.731211	87.89447	3.077737	3.070824	1.225760

<b>Variance Decomposition of LEXRT</b>						
<b>Period</b>	<b>S.E.</b>	<b>LXPORT</b>	<b>LIPORT</b>	<b>LEXRT</b>	<b>FDI</b>	<b>LGDP</b>
1	0.262018	0.526316	17.91707	81.55662	0.000000	0.000000
2	0.369287	1.222617	23.87091	70.19259	3.929952	0.783936
3	0.456324	2.634665	27.85275	61.00747	7.070637	1.434486
4	0.528679	3.817221	30.78233	54.73925	8.891094	1.770107
5	0.588831S	4.696574	33.07260	50.47469	9.870187	1.885939

<b>Variance Decomposition of FDI</b>						
<b>Period</b>	<b>S.E.</b>	<b>LXPORT</b>	<b>LIPORT</b>	<b>LEXRT</b>	<b>FDI</b>	<b>LGDP</b>
1	1.148729	0.759317	0.009360	8.384088	90.84724	0.000000
2	1.231866	2.408058	0.027150	9.386121	88.17638	0.002292
3	1.247220	3.096417	0.139881	9.738607	86.89729	0.127805
4	1.252724	3.247405.	0.317624	9.828733	86.17327	0.432973
5	1..256743	3.264661	0.504353	9.820083	85.52597	0.784934

<b>Variance Decomposition of LGDP</b>						
<b>Period</b>	<b>S.E.</b>	<b>LXPORT</b>	<b>LIPORT</b>	<b>LEXRT</b>	<b>FDI</b>	<b>LGDP</b>
1	72.68335	3.942593	4.167010	0.040285	1.386705	90.46341
2	98.18172	6.153963	3.966970	1.039848	0.760097	88.07912
3	115.3655	7.185023	3.534654	2.719480	0.551832	86.00901
4	127.9068	7.936840	3.023948	4.869531	0.479200	83.69048
5	137.9896	8.638956	2.598552	7.332878	0.557627	80.87199

Source: Author's Computations with Eviews 12