

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The exchange rate reflects a country's worldwide competitiveness. The exchange rate between two currencies defines how much the first currency is worth in comparison to the second currency. The exchange rate, as is customary, specifies how much the foreign currency is worth in relation to the native currency. The exchange rate is determined by examining how foreign currency demand and supply interact in the interbank market for foreign exchange.

The foreign exchange market is comparable to the stock exchange in that investors can make or lose money by buying at the right time or selling at the wrong time. (Sheffrin & O'Sullivan, 2013). According to Benita and Lauterbach (2014), the economic consequences fluctuation in the exchange rate have a major impact on business profitability and economic stability. Changes in the environment have resulted in in the foreign currency market, a country's economy that is largely reliant on capital will have significant cost repercussions.

This study takes into account three exchange rate theories: purchasing power parity (PPP), competitive advantage theory, and pricing theory. The drivers of national prices are proportionate changes in nominal exchange rates between the applicable currencies, in terms of purchasing power parity. Econometric challenges linked to panel and univariate unit root testing of the key parameters have strongly affected recent research on the topic of PPP (Coakley, Flood, Fuertes & Taylor, 2005). According to the comparative advantages' theory, the distinction between proportionate production costs is a necessary

condition for international trade to continue. This discrepancy, on the other hand, reflects differences in production procedures. On a practical level, the use of the arbitrage pricing theory can demonstrate its efficacy in increasing the long-term value of a stock portfolio. When current prices are at a low level, for example, using APT would result in a simple approach that would give a good outcome while also protecting the portfolio. The Nigerian Central Bank employs monetary policy to protect the economy from inflation while also maintaining price, exchange rate, and interest rate stability.

It also helps to smooth out unanticipated exchange rate volatility, which aids in the maintenance of systematic market conditions that are critical for the naira's stability. Finally, the Central Bank of Nigeria maintains the purchasing power of the Nigerian naira and supports economic growth through these measures (Ndung'u, 2011). Exchange rate volatility is a source of worry since currency values influence the price paid or received for output/goods, affecting producers' and consumers' earnings and welfare (Akhtar and Spence, 1984). As a result, exchange rate volatility can have an impact on the number of goods moved globally by making pricing and profits uncertain. According to theory, depending on the role performed by market agents, exchange rate volatility can affect exports unfavorably or positively (Doyle, 2001 and Baak, 2004). The impacts of exchange rate fluctuation on exports will be negative if economic actors are modestly risk averse (Cushman, 1983 and Koray and Lastrapes, 1989). This negative impact may manifest itself directly as uncertainty and adjustment costs, or indirectly as an impact on resource allocation and government policy (Cote, 1994). Both positive and negative connections are theoretically possible, according to Secru and Uppal (2000), and Baccheta and Wincoop (2000). A theoretical model demonstrating no link between these variables was depicted. Numerous studies demonstrating the significant volatility of

exchange rate movements have prompted policymakers and scholars to look into the nature and extent of such movements' impact on trade volume, both exports and imports.

A large number of researches, both theoretical and empirical, have looked at the impact of exchange rate volatility on trade volume (in this case, exports). Cote (1994), McKenzie (1999), Clark, Tamirisa, and Wei (2004), and Ozturk (2004) have given a comprehensive literature review on the consequences of exchange rate fluctuation on trade (2006). A country's exports of goods and services give foreign exchange and allow it to import its necessities, such as intermediate goods, consumer goods, capital goods, and so on. According to Nguyen (2011), a country that engages in both imports and exports benefits from both; imports of intermediate and capital products support economic growth through technical diffusion. For export, it makes foreign exchange available for a country, and it also stimulates local manufacturing, particularly in more technologically advanced countries like as China. In place of this, Awokuse (2007) points out that exports enable for capital development, which in turn drives output growth by allowing for the exchange of foreign currency and the import of intermediate products. It is commonly acknowledged that exports have a significant impact on economic development in developing and growing nations such as Nigeria and China. Export activities, in theory, stimulate growth through a variety of mechanisms, including production and demand linkages, economies of scale due to larger international markets, increased efficiency, adoption of superior technologies, human capital development, and increased productivity through specialization and job creation. (Fosu 1990; Basu 2000; Santos-Paulino 2000; Giles & Williams, 2000).

When compared to other African countries in the Sub-Saharan region, such as Kenya, South Africa, and Egypt, Nigeria has witnessed economic progress in terms of greater revenue generation, expanded budgeting, and so on throughout the past decades with little economic transformation. Nigeria has had limited economic transformation as a result of reasons such as its heavy reliance on the oil sector, increased government spending on recurrent expenditure projects, and so on. According to Kumari and Malhotra (2014), the rate at which an economy may transition is determined by a number of criteria including production and investment efficiency, good employment structure, and, most crucially, export performance. Nigeria's growth rate is also slower than that of several other countries, according to Hausman and Klinger (2006). Nigeria's GDP growth rate, for example, was 5.3 percent in 2000, 7.8 percent in 2005, and then fell to 2.7 percent within ten years (2015); meanwhile, China's GDP growth rate was 8.5 percent in 2000, 10.6 percent in 2010, and 6.9 percent in 2015. (World Bank, 2016).

Around three decades ago, Nigeria, like other nations in Sub-Saharan Africa, focused on Import Substitution Industrialization (ISI), which supported expanded manufacturing of primarily imported goods as a means of reaching high levels of economic growth. Given Nigeria's largely agrarian economy, ISI's strategy was to boost the agriculture sector's productive capacity, recognizing that exports drive economic growth. The growth of Nigeria's economy was positive, as export volumes of products such as groundnuts, cocoa, rubber, and other agricultural products increased as the naira's exchange rate against other currencies of Nigeria's trading partners appreciated. The Bretton Woods system, on the other hand, encouraged various developing countries, including Nigeria, to devalue their currencies as part of the Structural Adjustment Programme (SAP), which was recommended by the International Monetary Fund (IMF) and the World Bank

(IBRD) as one of the best, if not the best, economic policies for economic growth. The uncertain nature of exchange rate volatilities, oil prices, and commodity prices on international markets were the repercussions of this evolution, implying low export profitability. As a result of price swings, both the agricultural and oil sectors have had poor results, which are thought to be driven by constant exchange rate volatility on the international market. The following are some of the growing research questions that this study will investigate in light of these issues: What is the magnitude of the naira's exchange rate volatility? Is there any evidence of volatility clustering in the Nigerian naira/dollar exchange rate parity's behavior? What is the current state of Nigeria's oil and non-oil export performance? What is the current state of the naira's exchange rate in reference to the US dollar?

1.2 Statement of Research problem

Nigeria's economy, both before and after independence, was heavily reliant on non-oil sources of growth and development. Since the discovery and commercial export of crude oil in the late 1960s, Nigeria's economy has been a monoculture economy reliant on oil as its primary source of foreign exchange revenues, leading to the question of "whether oil is a blessing or a curse to Nigeria." The economy is dependent on crude oil earnings and oil producing economies' crises. The implication of these dynamics is that the economy is subject to the vagaries of oil prices and crises in oil-producing economies, which have been unpredictable in the past and have determined Nigeria's boom and bust (Enoma and Mustafa, 2011). The primary problem with this monoculture oil economy is that the oil sector, which accounts for about 90% of export earnings, is controlled by expatriates and members of the political class, who control both production and proceeds. Worse, the sector is separated from the economy's other tiers and sectors, providing little or no link

and multiplier effect to the overall economy. In the real world, it neither creates jobs nor relieves poverty. (2013, Onodugo) The better the economy would have been if the management of the economy had realized this truth earlier and devised appropriate policies to build the non-oil export industry as it was shortly before and after independence. This period has been deemed the most prosperous and prosperous in Nigeria's history.

Crude oil is a major energy source in Nigeria and around the world. Because oil is such a crucial element of Nigeria's economy, it has a significant impact on the country's economic and political future. Crude oil has brought Nigeria a lot of money, but its impact on the Nigerian economy's growth in terms of returns and productivity is still debatable (Odularu 2007). Nigeria has disregarded its strong agriculture and light industry roots in favour of an unhealthy dependence on crude oil from the 1970s to the present. New oil income has sparked a downturn in other sectors of the economy, driven significant migration to cities, and resulted in an increase in poverty, particularly in rural areas.

Nigeria's job market has seen a high rate of unemployment, low pay, and deplorable working conditions (Adedipe, 2004 and Odularu 2007). Nigeria's poverty rate climbed from 36% to just under 70% between 1970 and 2000, and it is thought that oil wealth did not help to raise the standard of living at the time, but rather lowered it (Martin and Subramanian, 2003). Oil price changes have gotten a lot of attention because of their alleged impact on macroeconomic indicators. Higher oil costs may slow economic growth, cause stock market panic, and cause inflation, all of which can lead to monetary and financial instability. It will also result in high interest rates and maybe a recession

(Mckillop, 8 2004). Sharp increases in international oil costs, as well as volatile currency rates, are widely seen as factors that stifle economic progress (Jin, 2008). During the global financial crisis, the price of oil fell by over two-thirds from its peak of \$147.0 per barrel in July 2008 to \$41.4 per barrel at the end of December 2008. Before the crises, oil prices were high and the exchange rate was stable, but as the global financial crisis (GFC) unfolded, oil prices plummeted and the exchange rate collapsed, devaluing by more than 20%. Because oil price volatility has a direct impact on foreign exchange inflows into the country, it's important to see if it also has a direct impact on Naira exchange rate volatility (Englama et al, 2010) The oil market has always been, and will continue to be, a dynamic one. This is due to the fact that oil is so important to the global economy, that it is present in everyone's everyday lives, and that its market is genuinely global (El-Badri, 2011). Thus, the purpose of this study is to determine the impact of oil price volatility on exchange rate volatility and its repercussions on the Nigerian economy, as well as to recommend techniques for reducing the negative effects it can have on the economy as a whole.

The need and urgency to look inward and find a possible way to diversify Nigeria's economy away from oil lead export and toward non-oil lead export trade in order to cure this gross consequence of dependence on monocultured crude oil economy is the need and urgency to look inward and find a possible way to diversify Nigeria's economy away from oil lead export. The proponents of this theory argue that the non-oil-led export trade has enormous potential to move the Nigerian economy to the required level of growth and development. The value chain approach to non-oil export, according to Onwualu (2012), has the potential to open up the economy and generate various activities capable of creating jobs, stabilizing the exchange rate, and enhancing industrialization, making the

non-oil sector to hold the aces for immediate Nigerian sustainable economic growth and development, as it did in the early 1960s. If the home economy's exchange rate is excessively volatile, these potential profits will not be realized. As a result, exchange rate stability is critical in determining the performance of Nigeria's non-oil exports.

1.3 Aim and objective of the study

The main aim of this study is to examine the relationship between exchange rate volatility and export trade performance in Nigeria over the study period 1970-2019. In specific, three objectives are examined as follows:

1. Investigate the effect of exchange rate volatility on non-oil export trade performance in Nigeria.
2. Examine the impact of exchange rate volatility on oil export trade performance in Nigeria.
3. Investigate the causal direction of exchange rate volatility on non-oil export and oil export trade in Nigeria

1.4 Research questions

1. What is the effect of exchange rate volatility on non-oil export trade performance.
2. What is the effects of exchange rate volatility on oil export trade performance in Nigeria.
3. What is the causal direction among exchange rate volatility, non-oil export and export trade performance.

1.5 Research Hypothesis

In line with the three research questions and objectives, the three-research hypothesis formulated are:

Ho₁: There is no relationship between exchange rate volatility and export trade

H₀₂: Exchange rate volatility has no impact in oil export trade performance

H₀₃: There is no causal direction among exchange rate volatility, non-oil export trade performance in Nigeria.

1.6 Significance of the Study

The study will review the effects of exchange rate volatility and export trade performance in Nigeria. The study will provide recommendations to policymakers that could assist in appraising the effectiveness of exchange rate regimes. This study serves as added advantage to the government, revealing ways in which effective management of exchange rate can aid the development of Nigerian economy. The study covers the exchange rate volatility and export trade performance in Nigeria for the period 1970 to 2019. This study is limited to the Nigerian context, and the scope of the study was determined by data availability.

1.7 Scope of the Study

This study covers the causal relationship and causal direction between exchange rate volatility and export trade performance in Nigeria. In addition, the study ranges from 1970- 2019.

1.8 Organization of the study

The study is organized into five chapters. Chapter one presents the background to study, statement of the problem, aim and objectives of the study and scope of the study. Chapter two deals with the conceptual review, empirical review and gap in the literature. Chapter three discusses the research methodology adopted for the study and relevant justifications. It outlines the research design, source of the secondary data, model specification and estimation techniques. Chapter four will present the findings on the exchange rate

volatility and export trade performance in Nigeria. Chapter five presents the summary and conclusions drawn from the research findings for recommendations.

CHAPTER TWO

LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Concept of Exchange Rate Volatility

The Nixon shock, the collapse of the Bretton Woods Gold Standard in 1971, meant that governments could no longer redeem gold for dollars. This resulted in Fiat money, which derives its worth on investors' faith in the economy or monetary system of the country in question. In comparison to gold, which has a relatively steady value, this meant that the value of a currency would fluctuate significantly in the years to come. The exchange rate is the most significant price in the economy, according to Frieden et al. (2006), and it has a rippling impact on all other costs. In his study, McKenzie (1999) noted that a controversy arose following the collapse of the Bretton Woods treaty; laissez-faire economists praised it, while others warned that risk-averse exporters would lower output if faced with exchange rate risk generated by a floating exchange rate. Von Hagen and Zhou (2005) discovered that a country's exchange rate regime is influenced by factors such as its degree of development, inflation, foreign reserves, and financial market development, to name a few.

A country's exchange rate policy has an impact on the volume of trade it conducts with its neighbors and the rest of the globe. The de facto classification of exchange regimes is as follows, according to the IMF Annual Report on Exchange Arrangements and Exchange Restrictions (2016).

2.1.2 Fixed or Pegged Exchange Rates

The fixed exchange rate is a phenomenon which occurs when the rate of a currency against other currencies is fixed. All exchange transactions in a pegged exchange rate system take place at an exchange rate set by the monetary authorities (Adetifa, 2005).

This indicates that a currency's exchange rate with other currencies is stable. If the country's trade balance is favorable, this allows for a growth in reserve. International commerce is supported because product prices are more predictable, and long-term capital movements may be encouraged in a more orderly manner.

A fixed exchange rate is a method of stabilizing a currency's exchange rate by fixing its value in a predetermined ratio to a different, more stable, or more widely used currency (or currencies) to which the currency is tied. Unlike in a floating (flexible) exchange regime, the exchange rate between the currency and its peg does not alter based on market conditions. This facilitates and predicts commerce and investment between the two currency sectors, which is especially beneficial to tiny economies that borrow predominantly in foreign currency and rely heavily on external trade.

A fixed exchange rate system can also be used to govern a currency's behavior, for as by restricting inflation rates. The pegged currency, on the other hand, is then governed by its reference value. As a result, when the reference value rises or falls, the value(s) of any pegged currencies rise or fall in comparison to other currencies and commodities with which the pegged currency can be traded. To put it another way, a pegged currency is reliant on its reference value to determine how it is defined at any given time.

Furthermore, according to the Mundell–Fleming model, a fixed exchange rate hinders a government from employing domestic monetary policy to create macroeconomic stability when capital mobility is perfect. In a fixed exchange rate system, a country's central bank often employs an open market mechanism and is committed to buying and/or selling its currency at a fixed price at all times in order to maintain its pegged ratio and, as a result, the currency's stable value in regard to the reference.

To maintain a desired exchange rate, the central bank during a time of private sector net demand for the foreign currency, sells foreign currency from its reserves and buys back

the domestic money. This creates an artificial demand for native currency, causing its exchange rate value to rise. In the event of an impending appreciation of local currency, the central bank purchases foreign currency and thereby adds domestic currency to the market, restoring market equilibrium at the targeted fixed exchange rate.

2.1.3 Flexible or Fluctuating Exchange Rates

This occurs when the currency of a country against other currencies is not stable. The rates are determined by market forces. suggests that the market is unpredictable, resulting in economic instability, high risk, and the likelihood of a loss on a foreign exchange investment. If there is an excess supply of a currency in a freely changing exchange rate environment, the value of that currency in the foreign exchange market will plummet. The exchange rate will depreciate as a result of this. For example, in Nigeria, the exchange rate of the Nigerian naira to the US dollar was N158 to \$1 in December 2012, but had changed to N168 to \$1 in the open market by December 2013. is due to a combination of high dollar demand and excess naira supply. On the other side, a currency shortage will cause the exchange rate to appreciate, restoring balance in the exchange market. These market forces operate automatically without any actions on the part of authorities in charge of money (Adetifa, 2005). A floating exchange rate (sometimes called a fluctuating or flexible exchange rate) is an exchange rate regime in which the value of a currency is permitted to fluctuate in response to changes in the foreign exchange market.

A floating currency is one that uses a variable exchange rate, as opposed to a fixed currency, the value of which is determined by material items, another currency, or a group of currencies (the idea of the last being to reduce currency fluctuations).

The most commonly traded currencies in the modern world are the US dollar, the euro, the Swiss franc, the Indian rupee, the pound sterling, the Japanese yen, and the Australian dollar, which are all floating currencies.

However, Central banks frequently participate in markets to try to affect the value of floating exchange rates, even in the case of floating currencies. Because the Canadian central bank has not intervened in its pricing since it officially started doing so in 1998, the Canadian dollar most closely resembles a pure floating currency. The US dollar is a close second, with its foreign reserves barely changing. Japan and the United Kingdom, on the other hand, intervene more heavily, while India's central bank, the Reserve Bank of India, engages in medium-term intervention.

The Bretton Woods system made fixed currencies the standard from 1946 to the early 1970s; however, in 1971, the US government opted to stop keeping the dollar exchange rate at 1/35 of an ounce of gold, and so its currency was no longer fixed. Most of the world's currencies followed suit after the Smithsonian Agreement expired in 1973. However, some countries, such as the majority of Arab governments in the Persian Gulf region, pegged their currencies to the value of another currency, which has been linked to slower growth in recent years.

When the value of a currency fluctuates, the quantity of that currency fluctuates as well. quantities other than the exchange rate itself are used to administer monetary policy.

2.2 Concept of Export Trade

One of the most important functions of international trade is to ensure that items produced in one country are transferred to another for sale or trade in the future. Each sale contributes to the gross domestic product of the producing country. As a result, exports are commodities and services that one country sells to another.

Exports are one of the first kinds of economic transfer, and they take place on a big scale between countries with less trade barriers, such as tariffs or subsidies. “The term export stems from the goods and services that leave a country's port,” according to Lequiller and Blades (2006). An exporter is a seller of such goods and services, whereas an importer is a customer based in another country.

Exports are defined as transactions in products and services (sales, barter, gifts, or grants) from residents to non-residents, according to national accounts. Smuggled items must be counted as part of the export calculation.” Any direct purchases by non-residents in the country's economic territory are recorded as service exports in national accounts; as a result, all expenditures by foreign visitors in the country's economic region are considered part of that country's export services. International flows of unlawful services must also be taken into account. Exports also include the distribution of information that can be delivered via e-mail, fax, or shared over the phone (Ojukwu, 2011). In economics, an export is any good or commodity that is legally carried from one country to another, usually for commercial purposes. Many countries participate in international trade.

2.3 Theoretical Review

Theories of foreign exchange rate. There are three main theories of the determination of foreign exchange rate. They are as follows

2.3.1 Exchange Rate Theories

The Purchasing Power Parity Theory

This Theory states that spot exchange rate between currencies will change to the differential in inflation rate between countries. The theory states that the equilibrium exchange rate between two inconvertible paper currencies is determined by the equality

of their purchasing power. The exchange rate between two countries is influenced by the respective price levels of the two countries (Obadan, 2006).

Purchasing power parity is both an exchange rate theory and a method for making more accurate data comparisons across countries. Because it performs badly as a theory, it is presumably more essential in the latter role. Its poor performance stems largely from the fact that its simple form is based on several assumptions that are unlikely to hold in the real world, as well as the fact that the amount of foreign exchange activity driven by importer and exporter demands is far less than that driven by investor demands.

Nonetheless, The theory is still relevant because it provides the context for its application as a tool for cross-country comparisons of income and wages, which is utilized by international organizations like the World Bank to provide much of their international statistics.

2.3.2 The Balance of Payment Theory

This theory stipulates that under free exchange rates, the exchange rate of the currency of a country depends upon its balance of payment. A positive balance of payments boosts the exchange rate, while a negative balance of payments lowers it, according to Jhingan (2004). The demand for and supply of foreign exchange, according to this hypothesis, determines the exchange rate. The balance of payments (BOP), often known as the balance of international payments, summarizes all transactions between individuals, corporations, and government organizations within a country and individuals, companies, and government bodies outside the country. Imports and exports of products, services, and capital, as well as transfer payments like foreign aid and remittances, are all included in these transactions.

The international accounts of a country are comprised of its balance of payments and net international investment position. The current account and the capital account are the two

accounts that the balance of payments divides. The capital account is sometimes referred to as the financial account, and there is a distinct capital account that is usually quite modest. Goods, services, investment income, and current transfers are all included in the current account. Financial instruments and central bank reserves are included in the capital account, which is defined widely. Only transactions in financial instruments are included in a narrow definition.

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If a country cannot support its imports through capital exports, it will have to deplete its reserves. Using a restricted definition of the capital account that excludes central bank reserves, this scenario is commonly referred to as a balance of payments deficit. In actuality, the widely defined balance of payments must, by definition, equal zero.

In practice, statistical discrepancies arise due to the difficulty of accurately counting every transaction between an economy and the rest of the world, including discrepancies caused by foreign currency translations.

2.3.3 Export Trade Theories

Exportation theories are merely alternative explanations. The exchange of products and services between people or entities from other countries is then referred to as globalization. People and organizations trade because they believe it will benefit them.

They might be in need of or interested in the goods or services. While this may appear to be a simple notion, it is not exportation encompasses a significant lot of philosophy, legislation, and commercial strategy.

2.3.4 Mercantilism Trade Theories

Mercantilism was one of the first attempts to construct an economic theory, appearing in the sixteenth century. The value of gold and silver assets determine a country's wealth. Mercantilists believed that increasing exports and limiting imports would increase a country's gold and silver assets. Alternatively, if other countries buy more from you (exports) than they sell to you (imports), they must reimburse you in gold and silver.

Each country's goal was to have a trade surplus, or a situation in which the value of exports exceeded the value of imports, and to avoid a trade deficit, or a situation where the value of imports is greater than the value of exports.

A closer look at world history from the 1500s to the late 1800s helps explain why mercantilism flourished. The 1500s marked the rise of new nation-states, whose rulers wanted to strengthen their nations by building larger armies and national institutions. By increasing exports and trade, these rulers were able to amass more gold and wealth for their countries. One way that many of these new nations promoted exports was to impose restrictions on imports. Protectionism is the name for this technique, and it is still in use today.

In order to dominate more trade and collect more wealth, nations used their colonies around the world to expand their wealth. One of the more successful instances was the British colonial empire, which attempted to enhance its wealth by importing raw materials from locations like the Americas and India. France, the Netherlands, Portugal, and Spain were also successful in establishing enormous colonial empires that brought significant income to their respective governments.

Mercantilism is one of the oldest trading philosophies, but it is still relevant today. Countries like Japan, China, Singapore, Taiwan, and even Germany continue to favour exports over imports through a sort of neo-mercantilism that combines protectionist policies, limitations, and domestic-industry subsidies. To protect critical industries in their economies, nearly every country has imposed some type of protectionist policy at some point. While export-oriented businesses tend to support measures that benefit their industry or businesses, protectionism hurts other businesses and consumers. Higher taxes are paid by taxpayers to cover government subsidies for certain exports.

Consumers pay more for goods or services made in other countries as a result of the restrictions. Free-trade proponents emphasize how free trade benefits all members of the global society, whereas mercantilism's protectionist policies benefit only a few industries, at the expense of customers and other businesses both inside and outside the industry.

2.3.5 Absolute Advantage Theory

The *Wealth of Nations*, published in 1776, challenged the dominant mercantile theory of the day. *An Inquiry into the Nature and Causes of Nation-State Wealth*, by Adam Smith (London: W. Strahan and T. Cadell, 1776). Recent scholars and economists revised the final texts. Absolute advantage was a novel trade theory proposed by Smith, which focused on a country's capacity to manufacture an item more effectively than another. Government policy or action, Smith reasoned, should not control or restrict commerce between countries. According to him, commerce should flow organically as a result of market forces. If Country A could manufacture an item cheaper or faster (or both) than Country B in a hypothetical two-country scenario, then Country A would have the edge and could focus on manufacturing that commodity.

Similarly Country B may focus on specialization if it was stronger at producing another good. Countries would gain efficiency via specialization since their labor force would

grow more competent by performing the same activities. Manufacturing would become more efficient as a result of the increased motivation to develop quicker and better production processes in order to enhance specialization. People in both nations would profit from improved efficiency, according to Smith's thesis, and trade should be encouraged.

According to this idea, a country's wealth should be measured by its people's living conditions rather than how much gold and silver it has.

2.3.6 Comparative Advantage

The absolute advantage idea was challenged by the fact that certain nations are better at manufacturing both products and, as a result, enjoy a competitive advantage in several sectors. Another country, on the other hand, could not have any absolute advantages that are beneficial. In 1817, English economist David Ricardo proposed the idea of comparative advantage as a response to this issue.

Ricardo Even if Country A had an absolute advantage in the manufacture of both items, he reasoned, specialization and commerce between the two nations might still occur. When a country cannot manufacture a product more efficiently than another country, but it can make it better and more effectively than it produces other commodities, it is said to have comparative advantage. These two hypotheses differ just little. The relative productivity disparities are the emphasis of comparative advantage, whereas the absolute productivity is the focus of absolute advantage. Let's look at a simple hypothetical case to see how these concepts vary.

Miranda is a Wall Street lawyer who bills at \$500 per hour. Miranda turns out to be faster at typing than the \$40-per-hour administrative assistants at her workplace. Should Miranda do both professions, despite having an obvious edge in both skill sets? No. Miranda would lose \$460 in salary for every hour she chooses to type rather than conduct

legal work. Her productivity and revenue will be highest if she focuses on the higher-paying legal services and employs the most qualified administrative assistant, who can type quickly but not as quickly as Miranda.

By Miranda and her assistant's total productivity as a team is greater when they both focus on their separate duties. This is referred to as comparative advantage. A individual or a country will specialize in doing something comparatively better than the rest of the world. In actuality, the global economy is far more complicated, encompassing many more nations and products. There may be trade barriers in place, and products must be transported, stored, and dispersed. This simplified example, on the other hand, shows the comparative advantage theory's foundation.

2.3.7 Heckscher-Ohlin Theory (Factor Proportions Theory)

The theorise which products would give a country an advantage. Free and open markets, according to ideas, would allow governments and producers to choose which commodities they might manufacture most effectively. Two Swedish economists, Eli Heckscher and Bertil Ohlin, focused their attention in the early 1900s on how a country may achieve comparative advantage by creating goods that utilised abundant resources in the country. Their approach is based on the production elements of a country: land, labor, and money, which offer cash for plant and equipment investment. They discovered that the price of any factor or resource is based on supply and demand.

That were in high supply compared to demand would be less expensive; elements that were in high demand compared to supply would be more expensive. Their hypothesis, also known as the factor proportions theory, predicted that nations would manufacture and export items that needed abundant resources or factors, resulting in lower production costs. Countries, on the other hand, would import items that needed resources that were

scarce but in great demand. China and India, for example, have enormous pools of inexpensive labour.

Hence these countries have become the optimal locations for labour-intensive industries like textiles and garments.

2.3.8 Leontief Paradox

Wassily W. Leontief, a Russian-born American economist, analysed the US economy thoroughly in the early 1950s and concluded that the US had an abundance of capital and, as a result, should export more capital-intensive items. His analysis, based on real data, revealed the opposite: the US was importing more capital-intensive commodities. According to the factor proportions hypothesis, the United States should have imported labour-intensive products but instead exported them. The Leontief Paradox is named after his work, which contradicted the factor proportions hypothesis. In the years afterwards, economists have noted that because labour in the United States was both plentiful and productive compared to labour in many other countries at the time, exporting labour-intensive products made sense.

Many economists have utilized theories and statistics to explain and mitigate the paradox's impact over the years. What is evident, however, is that international trade is complex and is influenced by a variety of constantly changing circumstances. Trade isn't easily explained by a single theory, and our understanding of the ideas is always changing.

2.3.9 Modern or Firm-Based Trade Theories

In contrast to classical, country-based trade theories, modern, firm-based trade theories emerged after WWII and were largely established by business school professors rather than economists. With the expansion of multinational corporations, firm-based theories arose (MNC). The rise of MNCs and intra-industry trade, which refers to commerce

between two countries of items produced in the same industry, were not fully addressed by country-based theories. Japan, for example, sends Toyota cars to Germany and imports Mercedes-Benz cars from the country.

Firm-based theories, unlike country-based theories, incorporate other product and service elements into the analysis of trade flows, such as brand and customer loyalty, technology, and quality.

2.4 Trend in Exchange Rate Volatility and Export Trade in Nigeria

The foreign exchange market was created to make the international money system run more smoothly. It is the process by which one can transfer purchasing power, obtain credit for foreign trade transactions, and escape the risk of exchange re-volatility.

According to David Eiteman and Arthur Sotne (1983), 'transfer of purchasing power is necessary because international trade and capital transactions usually involves parties resident in countries with different national currencies, that each party eventually would like to hold its own currency, although the trade could be involve in any continent currency'. For instance, a Nigerian, an exporter might sell palm oil to an American firm in the Nigeria naira on the U.S. Dollars. The exact currency to be used is to be agreed upon by both parties beforehand. Whether Naira or Dollars were to be used the important thing is that one of the parties would need to transfer purchasing power to or from his own national currency. If dollars were to be used, the American importer would need to transfer purchasing power from Dollars to Naira to effect payment; it is the responsibility of the foreign exchange market to carry out these forms of purchasing power transfer transaction. Export growth strategy, on the other hand, is an industrialization and trade strategy that promotes export production. However, this does not inherently mean a pro-export bias. It is a policy with no preference for export-oriented or domestic-oriented

development. The term "export" refers to a system in which the incentives for export and import substitution activities are equalized. It enables a country to develop a sizeable economy and sustain long production runs. The growth of exports allows a country to reap the benefits of foreign specialization based on comparative advantage. As a result of the exposure of foreign exchange competition technology and the prospect of a global demand for product, it stimulates productivity. Export growth helps to achieve the goals of increased surplus labour opportunities and improved income distribution by increasing import substitution. Furthermore, no discussion of export financing is complete without including foreign exchange, which is critical to any international transaction. And, by engaging in export, one risks losing money unnecessarily if he does not protect himself from fluctuations in the foreign exchange rate (the price of currency), which are primarily caused by fluctuations in demand for a specific currency. Inflation, interest rates, political events, and economic indicators are only a few of the factors that contribute to volatility. Foreign exchange rates, whether spot or forward, are crucial in the foreign exchange market. Spot rate is a rate of exchange used for day-to-day currency trade in which foreign currency is purchased or sold for distribution. The forward rate is a rate that is quoted now for the purchase or selling of a given sum of foreign currency at a future date, regardless of how the spot rate changes in the interim. Depending on the interest rate in the economy, banks arrive or apply a discount to the spot. Forward rates are used by banks that sell forward foreign exchange contracts.

2.5 Empirical Review

Klaassen (2004) found little evidence of a major influence of exchange rate volatility on trade. Caporale and Doroodian (1994) employed a Generalized Autoregressive Conditional Heteroscedasticity (GARCH) technique to quantify exchange rate volatility and discovered that volatility has a considerable negative impact on import trade.

McKenzie and Brooks (1997) and McKenzie (1999) employed Autoregressive Conditional Heteroscedasticity (ARCH) modelling to simulate German–US and Australian trade flows, respectively, and included an exchange rate volatility element. Their findings were statistically significant, however they demonstrated that volatility has a beneficial impact on trading, whereas McKenzie (1999) found mixed results.

Exchange rate volatility, according to Anderton and Skudelny (2001), reduces extra-euro area imports by about 10%. Another set of empirical research examines the impact of exchange rate volatility on bilateral trade using a gravity-type trade model.

Aliyu (2008) used a gravity model to study bilateral trade between Nigeria and India and discovered that the exchange rate coefficient in the import model for the Indian economy is theoretically consistent and statistically significant, but not for the Nigerian economy.

Short-run variations in the availability of foreign exchange profits, relative prices, and real output (income) strongly influenced the growth in total imports in Nigeria, according to Egwaikhide (1999) in his dynamic specification model of import determinants in Nigeria from 1953 to 1989.

Aliyu (2007) showed that exchange rate significantly affects imports more than exports largely due to the monocultural nature of Nigeria's exports and inexhaustible and multifarious nature of its import.

Danmola (2013) used the Correlation Matrix, Ordinary Least Square (OLS), and Granger Causality test to investigate the impact of exchange rate volatility on full-scale financial indicators in Nigeria. The study's findings demonstrate that exchange rate volatility has a positive impact on Gross Domestic Product, Foreign Direct Investment, and Trade

Openness, but has a negative impact on the country's inflation rate. The author suggests that the country's income base should be improved by increasing the number of commodities available for export and decreasing reliance on the petroleum sector.

Aloba and Abogan (2013) examined exchange rate volatility in Nigeria from the perspective of a parametric measure to determine the trend and potential causes of volatility from 1986 to 2009. The study discovered exchange rate volatility in Nigeria, since the standard deviation of the exchange rate was oddly high and shockingly low within that time period. A significant degree of volatility was also corroborated by the parametric measure of exchange rate, indicating a larger risk to a risk-averse economic agent. As a result, the study suggests that the government should always keep watch of the frequent fluctuations in the exchange rate in order to manage it. Both domestic and foreign investors may be put off by the higher risks associated with a high level of volatility.

2.6 Trend in Exchange Rate and Export in Nigeria

In international trade, the rate at which one country's currency is traded against that of another has a common denominator that affects the quantity of export revenues and total imports. This refers to the rate at which one currency note is exchanged for another. The exchange rate is never fixed. The supply and demand for major currencies change over time. Currency rate volatility is defined as the tendency for foreign currencies to rise or fall in value, affecting the profitability of foreign exchange trades. Okechuku and his colleagues. The Nigerian stock market returns were determined to be volatile and persistent (2019). The number of rate changes and the frequency with which they occur are both measured by volatility. Exchange rate volatility can arise in a variety of

situations, including international business transactions and investments between parties from different nations. It's tough to avoid volatility in such a situation.

The term "exchange rate volatility" describes how a country's currency fluctuates. The exchange rate in Nigeria has been volatile for some time. Interest rates, inflation, the balance of payments, and government intervention are all important factors that influence the currency rate. The trends of exchange rates are shown in figure1 below:

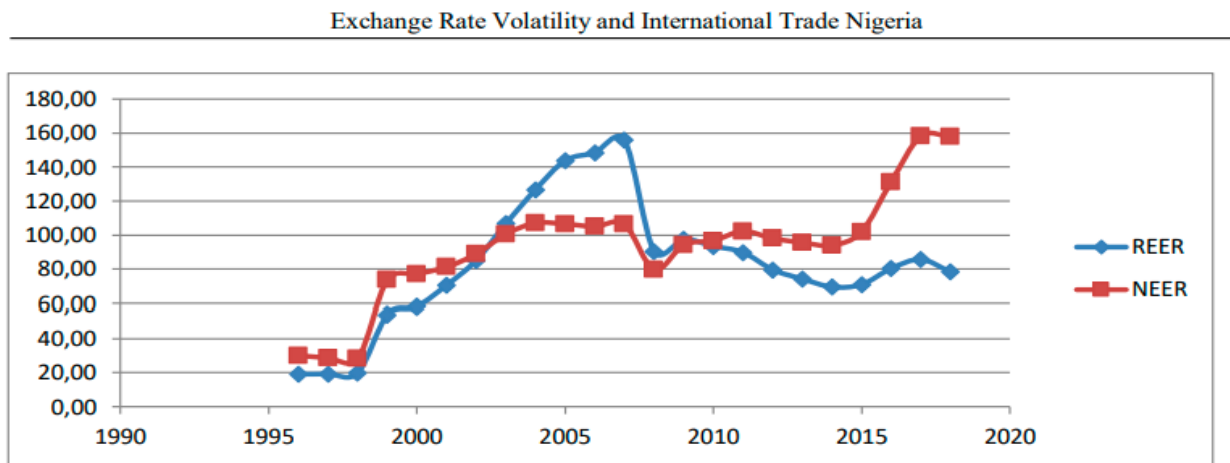


Figure1: Source: CBN Statistical Bulletin.

The variation of the exchange rate is visible: The volatility of exchange rates increased dramatically in 1998. This can be linked in part to the restoration to democracy, as there was a considerable transition from a fixed to a flexible exchange rate. The CBN attempted to deflate the naira in response to the shifting exchange rate by devaluing the currency.

Between 2000 and 2006, both the nominal and real exchange rates climbed dramatically. Both reached their apex around 2007 and then began to drop. Volatility rates have been extremely variable from 2010 to 2018. Despite the fact that Nigeria has been involved in international trade for decades, she has remained marginalized, and her degree of

involvement and contribution in global trade is inadequate (Osuegbu, 2013). This could be linked to our low-level output, reliance on primary products, and currency volatility. As a result, the goal of this study is to figure out how exchange rate fluctuation affects Nigerian international commerce.

2.6.1 Trend of Export Trade Volume in Nigeria

International trade has existed since the dawn of civilisation. International commerce has long been considered a driver for industrial productivity and general economic growth and development by authors and academics. Because no country is a pariah, everyone relies on each other for commodities and services that could be supplied more efficiently elsewhere (Analogbei 1987). Import and export trades make up international trade. Essentially, Nigeria's export volume revolves around a single product, crude oil. Nigeria's export output increased gradually but steadily beginning in 1996. By mid-2008, the price of oil had risen to an all-time high of 115 USD a barrel (IFS, 2015). Following the installation of a democratic dispensation in 1999, this trend continued unabated until it peaked in 2012. After 2012, there was a declining trend that continued until around 2015. It increased again after 2015, and has made continuous leaps that have lasted till 2018 and beyond. The above scenarios are shown in figure 2 below:

Trend in export trade in Nigeria (1990-2020)

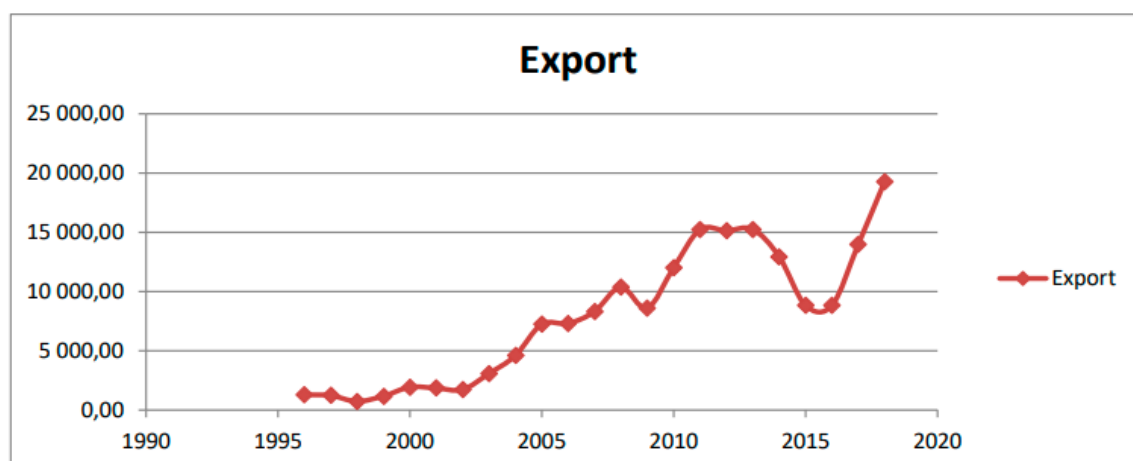


Figure 2: trend in Export Trade in Nigeria between 1990-2020

Source: CBN Statistical bulletin (2021)

2.7 Gaps in the literature

Despite these studies, it was observed that most studies on exchange rate volatility focused on developed countries and Asian economies (Akinlo & Adejuwon, 2014) and so, there is only little or rudimentary empirical evidences on volatility of exchange rate that exist for Nigeria. For instance, Akinlo and Adejumo, (2014) seems to be the existing study that considered non-oil export in their examination of the impact of exchange rate volatility on trade volume in Nigeria. This study will add value to literature by embarking on a robust analysis by expanding its scope (1970-2019), and also more unlike other studies like Akinlo and Adejumo that spanned only from 1986-2008. This is necessary because various issues before the SAP period of 1986 and other post 2008 issues in exchange rate dynamics and export performance could be examined within the chosen period for the study. Thus, the findings of this study are hoped to be more revealing and significant as it will reveal important policy implications of exchange rate volatility on both oil and non-oil export.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The purpose of the study is to examine the exchange rate volatility on export trade performance in Nigeria. This chapter covers the Theoretical framework, research design, data collection techniques, data analysis techniques and model specification.

3.2 Research Design

To ascertain the exchange rate volatility on export trade performance in Nigeria, an ex-post facto research design was employed using data set culled from the CBN statistical bulletin. While the Augmented Dickey-Fuller unit root is used for preliminary analysis; ordinary least square (OLS) regression analysis was used for short-run estimates. A Long run estimate is done using a mix of Johansen Co-integration test, Vector Auto Regression analysis, and Granger causality test, as well as Variance Decomposition, Impulse Response testing, and ARCH / GARCH modeling approaches. All of the experiments confirmed the model's integrity, i.e., if exchange rate volatility had a clustering impact on international trade proxies.

3.3 Model specification

Exchange rate volatility on export trade performance in Nigeria

$$NEXP = f(ERV, ER, RGDP, FSD(M2/GDP), INF, CAPEXP, OPN)$$

This model was adapted from the work of Hammed, Hallimah & Hammed

$$OEXP = f(ERV, ER, INFR, INT, INF, POLS, FDI Oil)$$

3.4 Data source

The study employs annual series data covering the period from 1970 to 2019. The type of data used in this study is secondary and are sourced from the Central Bank of Nigeria

(CBN) statistical bulletin. Trade openness is measured by the sum of non-oil export and import divided by the GDP. Terms of trade was proxy by the ratio of Nigeria's consumer price index and the US's producer price index. While exchange rate volatility is a measure of the rate of change of real effective exchange rate, exchange rate volatility is computed using standard deviation.

3.5 Theoretical Framework

Theoretically, the volatility–trade link is ambiguous according to Baldwin et al. (2005). (2005). Dornbusch (1987) observed that the effect of an appreciated exchange rate on trade would be to make production of tradable unprofitable and non-tradable goods more profitable. To put it another way, imports will be high, and exports will be discouraged. Misalignment, according to Cottani et al. (1990), was substantially linked to poorer per capita GDP growth, as well as low productivity, sluggish export growth, and slow agricultural expansion.

Holding other macroeconomic variables constant, Loayza et al. (2007) discovered a negative link between overvaluation and growth. The preceding evaluation shows that there is no onsize-fits-all strategy to studying the impact of exchange rate volatility on trade. The choice of a particular technique or methodology, as well as the expected outcomes, are determined by the economy, as well as the nature and availability of data. The PPP technique and fundamental analysis, according to Gala and Lucinda (2006), are the two main methods for dealing with exchange rate misalignment. On the one hand, the PPP approach is based on relative pricing and uses high international price levels as a proxy for exchange rate overvaluation for a particular level of GDP per capita. Fundamental analysis, on the other hand, models exchange rate misalignment using economic fundamentals. TOT, BOP financial condition, fiscal policy stance (surplus or

deficit expenditure), degree of openness (OPN), and GDP per capital are just a few of them.

A decrease in exchange rate volatility has also been shown in the literature to boost trade volume in two ways that are not mutually exclusive: by producing more exports and by increasing the number of enterprises that export. This theory explains why there is a negative correlation between volatility and trading (Baldwin et al., 2005). In general, exchange rate volatility can harm non-oil exports in Nigeria through both supply and demand channels. The supply side implications are connected to the possibility of input price fluctuations due to exchange rate volatility. This causes some producers to reduce output, making exports less competitive in the face of a variable exchange rate. Consumer confidence in importing countries may be affected by exchange rate volatility, resulting in weaker demand. It also has an indirect negative impact on investment by raising production costs. In light of this, the purpose of this article is to examine the relationship between the exchange rate and Nigeria's non-oil export trade performance. Other variables would be put into the model as well.

3.6 Estimation Technique

To assess the volatility of the exchange rate, the Autoregressive Conditional Heteroskedasticity (ARCH) approach and its extensions such as GARCH, TGARCH, and EGARCH were utilized. Breusch-Pagan proposed the ARCH-LM test, which is also congruent with Engle. The ARCH-LM test was performed to detect the presence of volatility in the naira-dollar exchange rate and to test for the ARCH impact.

3.7 Justification of the Variables

The variables for the analysis were selected based on the date and purposes of the research. Each section describes the study's dependent and independent variables as follows:

3.7.1 Dependent Variables

The variable includes oil export trade (OEXP) and non-oil export trade (NEXP) which is based on the gross net product.

3.7.2 Independent Variables

These variables include exchange rate volatility, exchange rate, infrastructure, interest rate, inflation, political stability, real gross domestic product, money supply, capital expenditure, trade openness, foreign direct investment on oil.

3.7.3 Definition of variables

Figure 1:

VARIABLES	MEASUREMENT	TYPES
ERV	Exchange Rate Volatility	Independent
ER	Exchange Rate	Independent
RGDP	Real Gross Domestic Product	Independent
POLS	Political Stability	Dummy
FSD(M2/GDP)	Money Supply	Independent
OPN	Degree of Openness	Independent
INFR	Infrastructure	Independent
INF	Inflation	Independent
CAPEXP	Capital Expenditure	Independent
OEXP	Oil Export	Dependent
NEXP	Non-oil Export	Dependent

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The main objective of this chapter is to present the empirical results of the model developed in chapter three. To achieve this objective, the following results are presented such as descriptive statistics, pre-econometric tests (unit root and cointegration tests), econometric estimations (OLS regression and causality test) and post-estimation tests in each sub-sections in this study.

4.2 Data Presentation

Table 4.1 Data Presentation for Exchange Rate Volatility and Export trade Performance in Nigeria (1970-2019)

Year	ER	ERV	OEXP	INF	NEER	POL S	FDI_OIL	INFR	RGDP	M2GDP	OPN	NEXP
1970	0.714286	NA	0.52	13.75707992	0.714286	0	1.634006584	0.19	1.43061E+13	10.92785806	18.32478603	0.37
1971	0.712855833	-0.188789503	0.98	15.99911485	0.712856	0	3.114867861	0.17	1.6343E+13	10.04202248	36.25662625	0.34
1972	0.657894999	0.922900492	1.19	3.457649752	0.657895	0	2.484843267	0.45	1.68928E+13	10.91284765	30.02179488	0.25
1973	0.657894999	1	2.01	5.402664454	0.657895	0	2.459956251	0.57	1.78038E+13	11.18302916	35.11208332	0.35
1974	0.630282046	0.958028329	5.67	12.67439318	0.630282	0	1.034345032	1.22	1.97908E+13	13.22281167	48.20369822	0.43
1975	0.615501553	0.976549399	4.77	33.96418832	0.615502	0	1.692361519	3.21	1.87562E+13	17.58565987	49.94791984	0.35
1976	0.626601004	1.01803318	5.92	24.3	0.626601	0	0.933655816	4.04	2.04522E+13	19.94904129	51.72012554	0.42
1977	0.644701062	1.028886099	7.45	15.08783406	0.644701	0	1.222448337	5	2.16842E+13	22.85335715	63.64295965	0.52
1978	0.635271994	0.985374512	6	21.70924574	0.635272	0	0.577458572	5.2	2.04343E+13	20.86095471	62.30586359	0.63
1979	0.604007374	0.950785458	9.44	11.70973062	0.604007	0	0.655098278	4.22	2.18156E+13	22.95115585	58.29888143	0.67
1980	0.546780892	0.905255325	13.63	9.97226199	0.546781	0	-1.150855803	10.16	2.27329E+13	28.62522373	66.39690458	0.55
1981	0.617708175	1.129717926	10.68	20.81282291	0.617708	0	0.329731934	6.57	1.97485E+13	10.93880198	23.54275767	0.34
1982	0.673461262	1.090257971	8	7.697747247	0.673461	0	0.301613208	6.42	1.8405E+13	11.19984163	19.78435663	0.2
1983	0.724409835	1.075651849	7.2	23.21233155	0.724410	0	0.375338495	4.89	1.63944E+13	11.99003359	23.28752309	0.3
1984	0.766527449	1.058140565	8.84	17.82053329	0.766527	0	0.257421832	4.1	1.62115E+13	12.80805676	28.87689318	0.25
1985	0.893774083	1.166004015	11.22	7.435344828	0.893774	0	0.65845266	5.46	1.71701E+13	12.3265321	29.05249364	0.5
1986	1.754523004	1.963049765	8.37	5.717151454	1.754523	0	0.352544297	8.53	1.71805E+13	11.91440736	16.76645754	0.55
1987	4.016037344	2.28896249	28.21	11.29032258	4.016037	0	1.159069795	6.37	1.77303E+13	11.80945506	21.40821441	2.15
1988	4.536966667	1.12971227	28.44	54.51122478	4.536967	0	0.762696402	8.34	1.90307E+13	12.1685472	23.34815131	2.76
1989	7.364735	1.623272892	55.02	50.46668812	7.364735	0	4.282087862	15.03	1.9396E+13	10.45432437	32.2409388	2.95
1990	8.038285	1.091456108	106.63	7.364400306	8.038285	0	1.08795099	24.05	2.16802E+13	11.63537176	35.57456657	3.26
1991	9.909491667	1.232786803	116.86	13.0069731	9.909492	0	1.450317769	28.34	2.17579E+13	13.39988058	43.26278076	4.68
1992	17.298425	1.745642015	201.38	44.58884272	17.29843	0	1.87601773	39.76	2.27655E+13	14.24738427	42.18230211	4.23
1993	22.0654	1.27557276	213.78	57.16525283	22.0654	0	4.847790004	54.5	2.23022E+13	15.78771658	62.75537539	4.99
1994	21.996	0.996854804	200.71	57.03170891	21.996	0	5.790847305	70.92	2.18975E+13	15.09193641	47.37380556	5.35
1995	21.89525833	0.995420001	927.57	72.8355023	21.89526	0	0.762195576	121.14	2.18816E+13	10.28191272	46.67010715	23.1
1996	21.884425	0.99950522	1286.22	29.26829268	21.88443	0	0.977520982	212.93	2.27997E+13	9.063328818	44.23032693	23.33
1999	21.88605	1.0000742	1212.5	8.5298742	21.8860	0	0.8622763	269.65	2.34693E+13	9.7252694	45.370881	29.16

7		54		14	5		25		13	19	73	
1998	21.886	0.9999977 15	717.79	9.9963781 24	21.886	0	0.5486161 88	309.02	2.40751E+ 13	10.939034 69	34.916823 83	34.07
1999	92.3381	4.2190487 07	1169.48	6.6183733 95	92.3381	1	1.6925575 14	498.03	2.42158E+ 13	12.763394 41	37.801940 46	19.49
2000	101.69733 33	1.1013583 05	1920.9	6.9332921 56	101.697 3	1	1.6417393 29	239.45	2.54304E+ 13	14.669631 37	42.759584 64	24.82
2001	111.23125	1.0937479 51	1839.95	18.873646 21	111.231 3	1	1.6082841 85	438.7	2.69353E+ 13	15.900967 71	40.025468 21	28.01
2002	120.57815 83	1.0840313 16	1649.45	12.876579 2	120.578 2	1	1.9647267 97	321.38	3.10643E+ 13	13.526997 43	26.756597 76	94.73
2003	129.22235	1.0716895 31	2993.11	14.031783 61	129.222 4	1	1.9114634 74	241.69	3.33466E+ 13	13.026586 47	33.250740 95	94.78
2004	132.88802 5	1.0283671 9	4489.47	14.998033 82	132.888	1	1.3740861 75	351.3	3.64314E+ 13	11.758785 96	38.709990 76	113.31
2005	131.27433 33	0.9878567 56	7140.58	17.863493 37	131.274 3	1	2.8288300 19	519.5	3.8777E+1 3	11.300513 81	40.435671	105.96
2006	128.65166 67	0.9800214 82	7191.09	8.2252215 2	128.651 2	1	2.0560237 61	552.39	4.11267E+ 13	11.728970 99	36.106548 95	133.59
2007	125.80810 83	0.9778972 29	8110.5	5.3880079 69	125.808 1	1	2.1899342 96	759.32	4.38374E+ 13	19.291085 26	36.802085 41	199.26
2008	118.56666 67	0.9424405 81	9861.83	11.581075 17	118.566 7	1	2.4312191 41	960.89	4.68028E+ 13	23.811871 41	40.418589 4	525.86
2009	148.88	1.2556648 86	8105.46	12.554960 39	148.88	1	2.9313361 71	1152.8	5.05643E+ 13	25.144156 42	31.056576 86	500.86
2010	150.2975	1.0095210 91	11300.5	13.720201 84	150.297 5	1	1.6672133 59	883.87	5.46123E+ 13	21.355847 39	35.477286 1	710.95
2011	153.8625	1.0237196 23	14323.1	10.840027 54	153.862 5	1	2.1830128 13	918.55	5.7511E+1 3	22.479045 98	42.469807 55	913.51
2012	157.5	1.0236412 38	14259.9	12.217781 74	157.5	1	1.5521152 06	874.83	5.99438E+ 13	24.928230 94	36.377485 27	879.34
2013	157.31166 67	0.9988042 33	14131.8	8.4758272 85	157.311 7	1	1.0935590 63	1108.3 9	6.39428E+ 13	25.448045 11	28.810109 63	1130.1 7
2014	158.55264 17	1.0078886 39	12006.9	8.0624858 24	158.552 6	1	0.8586119 41	783.12	6.79775E+ 13	22.689611 02	29.523865 95	953.53
2015	192.44033 33	1.2137314 86	8184.48	9.0093871 83	192.440 3	1	0.6294470 34	818.37	6.97807E+ 13	22.366826 54	19.497813 79	660.68
2016	253.492	1.3172498 49	8178.82	15.675340 55	253.492	1	1.0994026 56	653.61	6.86524E+ 13	27.378788 36	17.010749 76	656.79
2017	305.79010 92	1.2063106 89	12913.2	16.523539 98	305.790 1	1	0.9322773 24	1242.3	6.92057E+ 13	24.781417 86	20.157474 86	1074.9
2018	306.08368 82	1.0009600 67	17845.8	12.094731 55	306.083 7	1	0.5029035 8	1682.1	7.05363E+ 13	25.362462 73	26.071621 56	1434.1 7
2019	306.92095 15	1.0027354 06	18657.5	11.396794 97	306.921	1	0.7362051 07	1888.1 5	7.20941E+ 13	23.929608 6	26.284898 53	1762.4 6

Source: World Development Index (WDI) 2020; CBN Statistical Bulletin, 2020.

4.3 Descriptive Statistics Results

4.3.1 Descriptive Statistics for Exchange Rate Volatility and Export Trade performance (1970-2019)

Table 4.2 Descriptive Statistics for each variable in this study (1970-2019)

	ER	ERV	OEXP	INF	POLS	FDI_OIL	INFR	RGDP	M2GDP	OPN	NEXP
Mean	73.57282	1.162567	3829.625	18.29492	0.420000	1.504512	362.3838	3.26E+13	16.37077	36.53363	243.2844
Median	21.88603	1.023720	465.7850	12.77549	0.000000	1.190759	96.03000	2.27E+13	13.46344	35.84056	12.42000
Maximum	306.9210	4.219049	18657.55	72.83550	1.000000	5.790847	1888.150	7.21E+13	28.62522	66.39690	1762.460
Minimum	0.546781	-0.188790	0.520000	3.457650	0.000000	-1.150856	0.170000	1.43E+13	0.063329	16.76646	0.200000
Std. Dev.	90.62339	0.550451	5515.017	15.61761	0.498569	1.209569	476.5422	1.86E+13	5.845422	12.68776	432.3330
Skewness	1.124063	3.556162	1.257698	1.938259	0.324176	1.355345	1.385861	1.054448	0.574742	0.536870	1.844913
Kurtosis	3.394842	21.50207	3.264602	5.954505	1.105090	5.881367	4.284978	2.573999	1.799739	2.773011	5.529038
Jarque-Bera	10.85411	802.1951	13.32757	49.49269	8.356342	32.60441	19.44503	9.643574	5.754045	2.509251	41.68928
Probability	0.004396	0.000000	0.001276	0.000000	0.015327	0.000000	0.000060	0.008052	0.056302	0.285183	0.000000
Sum	3678.641	56.96579	191481.2	914.7461	21.00000	75.22562	18119.19	1.63E+15	818.5386	1826.681	12164.22
Sum Sq. Dev.	402417.3	14.54383	1.49E+09	11951.58	12.18000	71.68974	11127532	1.70E+28	1674.279	7887.983	9158680.
Observations	50	49	50	50	50	50	50	50	50	50	50

Source: Researcher's computation from EViews 10, 2021

Table 4.2 above shows the descriptive statistics for eleven variables used in this study. The eleven variables consist of oil export trade performance (OEXP), non-oil export trade performance (NEXP), nominal exchange rate (ER), nominal exchange rate volatility (ERV),

inflation rate (INFL), degree of openness (OPN), foreign direct investment oil (FDI_a uncausal direction exists between oil export trade and non-oil export trade performance over the study periods, 1970-2019 in Nigeria. This suggests that only exchange rate, non-oil export trade and oil export trade are the main change agents and no attention for exchange rate volatility in this study. Oil), political stability (POLST), real gross domestic product (RGDP), money supply to gross domestic product (M2GDP), and infrastructure (INFR) for the study period 1970 to 2019. Each of the descriptive results is discussed below:

Mean: The mean is used to measure the average value for each variable. Here, we have a minimum and maximum observations of 49 and 50, hence, this study is large sample, which spans from from 1970-2019. The highest and lowest average values of 3829.62 and 1.16 are oil export trade and exchange rate volatility in this study.

Skewness: Skewness is the measure of deviation from symmetry distribution. Table 4.2 revealed that all the variables are away from the symmetry value of zero, hence, none of the variables exhibit symmetrical distributions. All the variables are positively skewed distributions in this study.

Jarque-Bera (JB): The Jarque-Bera test the pattern of distribution for a variable, if it is normally distributed or not. A variable could be normally or abnormally distributed. The Jarque-Bera test is used to test against the null hypothesis of a normal distribution existence, if the probability value is above either 10% or otherwise stated, hence the null hypothesis and vice versa. Table 4.2 revealed that all the variables except ratio of money supply to gdp (M2GDP) and degree of openness (OPN) are not normally distributed; hence, the null hypothesis of a normal distributed cannot be accepted in this study.

4.3.2 Graph Analysis of Exchange Rate, Exchange Rate Volatility in Nigeria (1970-2019)

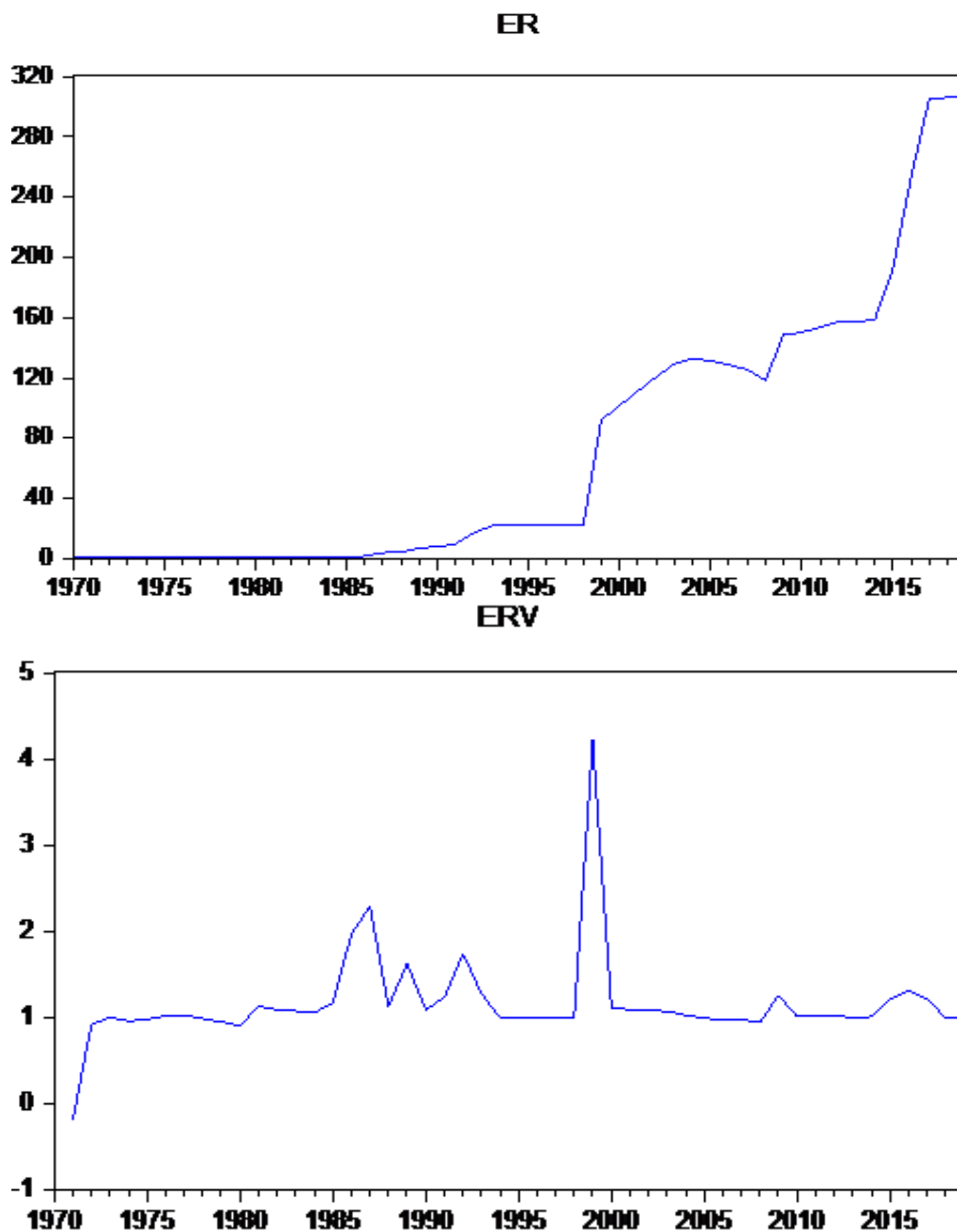


Figure 4.1: Trends in Exchange rate and Exchange rate volatility in Nigeria (1970 – 2019)

Figure 4.1 exhibits trend in exchange rate and exchange rate volatility over study period 1970 to 2019 in Nigeria. In specific, the exchange rate trend since 1985 witnessed a persistent rising exchange rate till 2019 in this study. On the other hand, the exchange rate volatility rate exhibits more of low volatility than high volatility within the study periods, 1970-2019 in

Nigeria. The highest exchange rate volatile periods are between 1998-2000, followed by between 1986-1994, also between 2008-2011 and between 2014-2018 respectively in Nigeria. Further, the exchange rate volatility between 1994-1997; 2001-2008; and 2010 - 2014 exhibited low exchange rate volatility respectively in this study.

4.3.3 Correlation Matrix

Table 4.3: Correlation matrix results for the variables

	OEXP	NEXP	ER	ERV	FDI_OIL	INF	INFR	M2GDP	OPN	POLS	RGDP
OEXP	1.000000	0.953266	0.898422	-0.117129	-0.031879	-0.281075	0.954251	0.657225	-0.305504	0.783194	0.949036
NEXP	0.953266	1.000000	0.866155	-0.100692	-0.114775	-0.239150	0.929382	0.684808	-0.344645	0.651171	0.920861
ER	0.898422	0.866155	1.000000	-0.001481	-0.019855	-0.266794	0.922963	0.594676	-0.387383	0.873765	0.934633
ERV	-0.117129	-0.100692	-0.001481	1.000000	-0.014451	-0.025103	-0.018606	-0.111983	-0.159700	0.085746	-0.084511
FDI_OIL	-0.031879	-0.114775	-0.019855	-0.014451	1.000000	0.387562	-0.026271	-0.166220	0.165687	0.079984	-0.056869
INF	-0.281075	-0.239150	-0.266794	-0.025103	0.387562	1.000000	-0.284081	-0.213908	0.258479	-0.365188	-0.272878
INFR	0.954251	0.929382	0.922963	-0.018606	-0.026271	-0.284081	1.000000	0.630078	-0.323325	0.794323	0.916971
M2GDP	0.657225	0.684808	0.594676	-0.111983	-0.166220	-0.213908	0.630078	1.000000	0.121488	0.480739	0.712942
OPN	-0.305504	-0.344645	-0.387383	-0.159700	0.165687	0.258479	-0.323325	0.121488	1.000000	-0.296371	-0.343489
POLS	0.783194	0.651171	0.873765	0.085746	0.079984	-0.365188	0.794323	0.480739	-0.296371	1.000000	0.809008
RGDP	0.949036	0.920861	0.934633	-0.084511	-0.056869	-0.272878	0.916971	0.712942	-0.343489	0.809008	1.000000

Source: Researcher's computation, 2021

Table 4.3 presents the degree of associations between the variables in this study. The first column shows the degree of correlation coefficients between oil export trade and other variables, while the second column shows the degree of associations between non-export trade and other variables used in this study. All variables have a positive associations between oil export trade , non-oil export trade and other variables except exchange rate volatility (ERV), FDI oil, inflation rate (INF), and degree of openness (OPN) respectively in this study. In specific, exchange rate volatility has a negative correlation between oil export trade and non-oil export trade respectively but exchange rate has a positive association between oil export trade and non-oil export trade respectively over the study periods, 1970-2019 in Nigeria.

4.4 Time Series Econometric Result

To avoid spurious regression, the time series econometrics results are tested using unit root test and the cointegration test to ascertain individual stationary level and the long-run co-movement of the included non-stationary variables respectively. These estimation techniques are performed using Eviews 7.0 econometric software in this study.

4.5 Objective One Result

4.5.1 Pre-Tests Estimations

4.5.1.1 Unit Root Test Result

Table 4.4: Unit Root test using Augmented Dickey Fuller (ADF) and Phillip-Perron (PP)

Variable	Unit Root @ Level		Unit @ 1 st Difference		Unit Root @ Level		Unit @ 1 st Difference		Order of Integration
	ADF value	Prob.	ADF Value	Prob.	PP Value	Prob.	PP Value	Prob.	
OEXP	-2.125	0.24	-6.413***	0.00	1.823	0.99	-4.17***	0.002	I(1)
NEXP	3.111	1.00	0.70	0.99	3.11	1.00	-4.15***	0.002	I(1)
ER	2.10	0.99	2.10	0.99	2.20	0.99	-4.66***	0.00	I(1)
ERV	-6.69***	0.00	-	-	-6.69***	0.00	-	-	I(0)
FDI_OIL	-4.19***	0.00	-	-	-4.19***	0.002	-	-	I(0)
INF	-3.44***	0.01	-	-	-3.27**	0.02	-	-	I(0)
INFR	4.38	1.00	-0.77	0.82	3.34	1.00	-6.51***	0.00	I(1)
M2GDP	-2.06	0.26	-7.28***	0.00	-2.06	0.26	-7.39***	0.00	I(1)
POLS	-0.828	0.80	-6.93***	0.00	-0.83	0.80	-6.93***	0.00	I(1)
RGDP	1.35	0.99	-3.55***	0.01	-1.73	0.99	-3.61***	0.01	I(1)
OPN	-2.99	0.04**	-8.12	0.00	-3.14	0.03**	-8.14	0.00	I(0)

Note: ***, ** and * denote 1%, 5% and 10% level of significance. The null hypothesis is rejected if the ADF statistics value is greater than critical values of 1%, 5% and 10% significant values respectively.

Table 4.4 reports the Augmented Dickey Fuller (ADF) and Phillip-Perron unit root tests for all the included variables. In ADF unit root test, all variables are stationary at level and first difference except non-oil export trade (NEXP), and infrastructure (INFR) that are stationary at 2nd difference while in Phillip-Perron (PP), all variables are stationary at level and first difference in this study. Importantly, the both ADF and PP unit root tests established a mixed integrate order of zero, I(0) and integrate order of one I(1) for all the variables, hence, the use of ARDL Co-integration Bounds test is justified in this study.

4.5.1.2 ARDL Cointegration Bounds Test

Table 4.5: ARDL Cointegration Bounds Test

Variable	F-statistic	Degree of freedom (k)	Upper Critical Values		
			10%	5%	1%
All variables	3.70	6	3.23	3.61	4.41

Source: EViews 10 output

Note: The null hypothesis is rejected if the F statistic value is less than critical values of 1%, 5% and 10% significant values respectively.

Table 4.5 found that all the variables in this model have a long-run relationship because the F-statistics value is greater than the the critical values of 10%, and 5% and not 1% respectively within the study periods, 1970-2019. Therefore, the null hypothesis of no cointegration relationship among the variables cannot be accepted in this study.

4.5.2 Ordinary Least Squares ARDL Estimates

Table 4.6 ARDL OLS SHORT RUN AND LONG RUN ESTIMATE

ARDL Cointegrating And Long Run Form				
Dependent Variable: OEXP				
Selected Model: ARDL(1, 1, 1, 1, 1, 1, 1)				
Date: 09/04/21 Time: 07:23				
Sample: 1970 2019				
Included observations: 48				
Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ER)	-36.649875	14.765608	-2.482111	0.0182
D(ERV)	25.459472	708.873054	0.035915	0.9716
D(FDI_OIL)	22.900783	171.419253	0.133595	0.8945
D(INF)	-0.441015	14.173069	-0.031116	0.9754
D(POLS)	1984.028046	2460.460073	0.806365	0.4256
D(INFR)	2.399736	1.511600	1.587546	0.1216
CointEq(-1)	-0.345844	0.111949	-3.089297	0.0040
Cointeq = OEXP - (74.9455*ER + 359.8967*ERV + 310.4764*FDI_OIL -14.2615*INF -2559.5495*POLS + 3.0645*INFR -850.3966)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
ER	74.945462	36.297551	2.064753	0.0466
ERV	359.896734	2034.660329	0.176883	0.8606
FDI_OIL	310.476443	607.443976	0.511119	0.6126

INF	-14.261454	47.599334	-0.299615	0.7663
POLS	-2559.549540	2913.978945	-0.878369	0.3859
INFR	3.064488	4.311244	0.710813	0.4820
C	-850.396565	2668.455162	-0.318685	0.7519

Source: EViews 10 output, 2021

Table 4.6 results confirmed the long-run existence among the variables in this model with the expected error correction term (ECT) that is negative and statistically significant at 1% significant level. All the changes in the regressors except change in exchange rate are not statistically significant at 10%, 5% and 1% levels. Although, the increase changes in the regressors except exchange rate and inflation rate have a positive increase change in oil export trade performance over the study period 1970-2019 in Nigeria. Importantly, a positive change in exchange rate volatility leads to a positive change in oil export trade performance by 25.5% but not statistically significant over the study periods, 1970-2019 in Nigeria . On the other hand, the Long run coefficients from the ARDL cointegration result revealed that all the regressors except exchange rate have no significant impact on oil export trade performance in the long run over the study period, 1970-2019 in Nigeria. This suggests that the exchange rate has a positive significant impact on the long run oil export trade performance over the study periods, 1970-2019 in Nigeria.

4.6 Objective Two Result

4.6.1 Unit Root Test

As shown in Table 4.4, the Augmented Dickey Fuller (ADF) and Phillip-Perron unit root tests for all the included variables are stationary at level and first difference in this study. Hence, the unit root tests established a mixed integrate order of zero, I(0) and of one, I(1), thus, ARDL cointegration method is appropriate to determine the long run cointegration among the variables.

4.6.2 ARDL Cointegration Bounds Test

Table 4.7: ARDL Cointegration Bounds Test

Variable	F-statistic	Degree of freedom (k)	Upper Critical Values		
			10%	5%	1%
All variables	4.57	7	3.13	3.5	4.26

Source: EViews 10 output

Note: The null hypothesis is rejected if the F statistic value is less than critical values of 1%, 5% and 10% significant values respectively.

Table 4.7 found that all the variables in this model have a long-run relationship because the F-statistics value is greater than the critical values of 10%, and 5% and 1% respectively within the study periods, 1970-2019. Therefore, the null hypothesis of no cointegration relationship among the variables cannot be accepted in this study.

4.6.3 Ordinary Least Squares ARDL Estimates

Table 4.8 ARDL OLS SHORT RUN AND LONG RUN ESTIMATE

ARDL Cointegrating And Long Run Form				
Dependent Variable: NEXP				
Selected Model: ARDL(1, 1, 1, 1, 1, 1, 1, 1)				
Date: 09/04/21 Time: 07:40				
Sample: 1970 2019				
Included observations: 48				
Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ER)	-2.766871	1.313933	-2.105792	0.0432
D(ERV)	13.467329	36.632135	0.367637	0.7156
D(RGDP)	-0.000000	0.000000	-1.705556	0.0978
D(M2GDP)	1.875128	5.115023	0.366592	0.7163
D(INF)	-0.382613	0.958453	-0.399199	0.6924
D(INFR)	0.414915	0.100794	4.116454	0.0003
D(OPN)	1.774825	1.808810	0.981212	0.3338
CointEq(-1)	-0.331885	0.109972	-3.017908	0.0050
Cointeq = NEXP - (1.3921*ER + 34.3466*ERV -0.0000*RGDP + 42.5702 *M2GDP + 1.9607*INF + 0.9383*INFR -10.4718*OPN -150.2183)				
Long Run Coefficients				

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ER	1.392057	1.859463	0.748634	0.4595
ERV	34.346592	126.190443	0.272181	0.7872
RGDP	-0.000000	0.000000	-0.685532	0.4979
M2GDP	42.570184	16.590200	2.565984	0.0152
INF	1.960663	2.925728	0.670146	0.5076
INFR	0.938342	0.342894	2.736533	0.0100
OPN	-10.471801	4.735961	-2.211125	0.0343
C	-150.218265	306.047711	-0.490833	0.6269

Source: EViews 10 output, 2021

Table 4.8 results confirmed the long-run existence among the variables in this model with the expected error correction term (ECT) value of -33.18% at 1% significant level. All the changes in the regressors except changes in exchange rate(ER), infrastructure (INFR), and real GDP(RGDP) are not statistically significant at 10%, 5% and 1% levels. This suggests that changes in real gdp, and infrastructure have positive and significant changes in non-oil export trade performance, except a positive change in exchange rate that leads to a negative change in non-oil export trade performance by -2.76 in this study. Further, a positive change in exchange rate volatility leads to a positive change in non-oil export trade by 34.35, implying that high exchange rate volatility contributes to increase in non-oil export trade performance in the short-run over the study period 1970-2019 in Nigeria. On the other hand, the Long run coefficients from the ARDL cointegration result revealed that all the regressors except money supply to gdp (M2GDP), infrastructure, and degree of openness have no significant impact on oil export trade performance in the long run over the study period, 1970-2019 in Nigeria. Specifically, the result found that money supply to gdp (M2GDP) and infrastructure (INFR) have a positive and significant impact on non-oil export performance in the long run by 42.57 and 0.94 respectively within the study periods in Nigeria. This suggests that the financial sector development (M2GDP) has a higher positive multiplier impacts on long run non-oil export trade performance than infrastructure within the study periods in

Nigeria. Also, the study revealed that degree of openness (OPN) significantly retards the long run non-oil export trade performance within the study period 1970-2019 in Nigeria.

4.7 Objective Three Result

4.7.1 Granger Causality Test for exchange rate, exchange rate volatility, oil-export trade and Non-oil export trade in Nigeria (1970-2019)

Table 4.9 Pairwise Granger Causality Tests

Pairwise Granger Causality Tests			
Date: 09/04/21 Time: 08:24			
Sample: 1970 2019			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
ERV does not Granger Cause ER	47	0.80933	0.4520
ER does not Granger Cause ERV		0.64183	0.5314
OEXP does not Granger Cause ER	48	7.48942	0.0016
ER does not Granger Cause OEXP		18.9191	1.E-06
NEXP does not Granger Cause ER	48	4.34673	0.0191
ER does not Granger Cause NEXP		9.25816	0.0005
OEXP does not Granger Cause ERV	47	0.86610	0.4280
ERV does not Granger Cause OEXP		0.23246	0.7936
NEXP does not Granger Cause ERV	47	0.35533	0.7030
ERV does not Granger Cause NEXP		0.04632	0.9548
NEXP does not Granger Cause OEXP	48	0.18011	0.8358
OEXP does not Granger Cause NEXP		2.43988	0.0992

Source: EViews 10 output, 2021

Table 9 displays the causal direction among exchange rate, exchange rate volatility, oil export trade and non-oil export trade performance within the study periods, 1970-2019 in Nigeria. In specific, the result in table found a bicausal direction between exchange rate and oil export

trade performance as well as exchange rate and non-oil export trade performance in this study. Further, a unicausal direction exists between oil export trade and non-oil export trade performance over the study periods, 1970-2019 in Nigeria. This suggests that only exchange rate, non-oil export trade and oil export trade are the main change agents and no attention for exchange rate volatility in this study.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 SUMMARY OF THE FINDINGS

The summary of findings of this study is drawn from the empirical results of three hypotheses are discussed in sequences as follows:

Hypothesis one investigated the effect of exchange rate volatility on non oil export trade performance in Nigeria from 1970-2019. It employed both descriptive statistic and econometric methodology. In the descriptive statistics, the correlations matrix found that all variables have a positive association between oil export trade, non-oil export trade and other variables except exchange rate volatility (ERV), FDI oil, inflation rate (INF), and degree of openness (OPN) respectively in this study. In specific, exchange rate volatility has a negative correlation between oil export trade and non-oil export trade respectively but exchange rate has a positive association between oil export trade and non-oil export trade respectively over the study periods, 1970-2019 in Nigeria. On the other hand, the econometric time series methodology employed unit root test, cointegration test, long run and short run ordinary least square and OLS error correction model respectively. The results found that all the variables in this model have a long-run relationship because the F-statistics value is greater than the the critical values of 10%, and 5% and not 1% respectively within the study periods, 1970-2019. Therefore, the null hypothesis of no cointegration relationship among the variables cannot be accepted in this study. Further, the result also confirmed the long-run existence among the variables in this model with the expected error correction term (ECT) that is negative and statistically significant at 1% significant level. All the changes in the regressors except change in exchange rate are not statistically significant at 10%, 5% and 1% levels.

Hypothesis two investigated the impact of exchange rate volatility on export trade performance in Nigeria over the study period 1970-2019 using descriptive and econometric methodology. The descriptive statistic result reviewed The descriptive statistic reviewed all variables have a positive associations between oil export trade , non-oil export trade and other variables except exchange rate volatility (ERV), FDI oil, inflation rate (INF), and degree of openness (OPN) respectively in this study. In specific, exchange rate volatility has a negative correlation between oil export trade and non-oil export trade respectively but exchange rate has a positive association between oil export trade and non-oil export trade respectively over the study periods, 1970-2019 in Nigeria. on the other hand, the econometric time series methodology, the econometric time series methodology employed unit root test, cointegration test, long run ordinary least square and OLS error correction model respectively.

The unit root tests established a mixed integrate order of zero, $I(0)$ and of one, $I(1)$, thus, ARDL cointegration method is appropriate to determine the long run cointegration among the variables. The result also found that all the variables in this model have a long-run relationship because the F-statistics value is greater than the critical values of 10%, and 5% and 1% respectively within the study periods, 1970-2019. Therefore, the null hypothesis of no cointegration relationship among the variables cannot be accepted in this study. The results confirmed the long-run existence among the variables in this model with the expected error correction term (ECT) value of -33.18% at 1% significant level. All the changes in the regressors except changes in exchange rate(ER), infrastructure (INFR), and real GDP(RGDP) are not statistically significant at 10%, 5% and 1% levels. This suggests that changes in real gdp, and infrastructure have positive and significant changes in non-oil export trade performance, except a positive change in exchange rate that leads to a negative change in non-oil export trade performance by -2.76 in this study. The Long run coefficients from the ARDL cointegration result revealed that all the regressors except money supply to gdp

(M2GDP), infrastructure, and degree of openness have no significant impact on oil export trade performance in the long run over the study period, 1970-2019 in Nigeria.

Hypothesis three investigate the causal direction among exchange rate volatility, non oil export trade and oil export trade within the study periods, 1970-2019 in Nigeria. The result in table found a bicausal direction between exchange rate and oil export trade performance as well as exchange rate and non-oil export trade performance in this study. A unicausal direction exists between oil export trade and non-oil export trade performance over the study periods, 1970-2019 in Nigeria.

5.2 CONCLUSION

Based on the empirical result from the three hypotheses and research objectives, the study concluded that exchange rate volatility has impact on export trade performance within the study period 1970-2019 in Nigeria. In specific, exchange rate volatility has a positive impact on oil export trade and non-oil export trade respectively but exchange rate has a negative impact on oil export trade and non-oil export trade respectively over the study periods, 1970-2019 in Nigeria.

5.3 RECOMMENDATION OF THE STUDY

Based on the outcomes of this study, the study recommended that the monetary authority should place more emphasis on exchange rate policies rather than the exchange rate volatility which positively enhances oil and non-export trade performance in the country. Further, this study recommends that Government and other stakeholders should use more of oil export trade performance to stimulate the non-oil export trade performance as well as the exchange rate in the country, Nigeria. Lastly, the study recommends adequate financial sector

development and provision of infrastructure as a catalyst to stimulate non-oil export trade performance in the country, Nigeria.

5.4 LIMITATION OF THE STUDY

This study was constrained due to the following factors

- Scope of the study: The study is limited to the time frame of 1970-2019.
- Use of a single country study is another limitation to this study, when compared with other studies.
- Similarly, the linear time series econometrics methodology such as OLS ARDL also contributes to the limitation of the study.

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APPENDIX

EViews Results

Data presentation

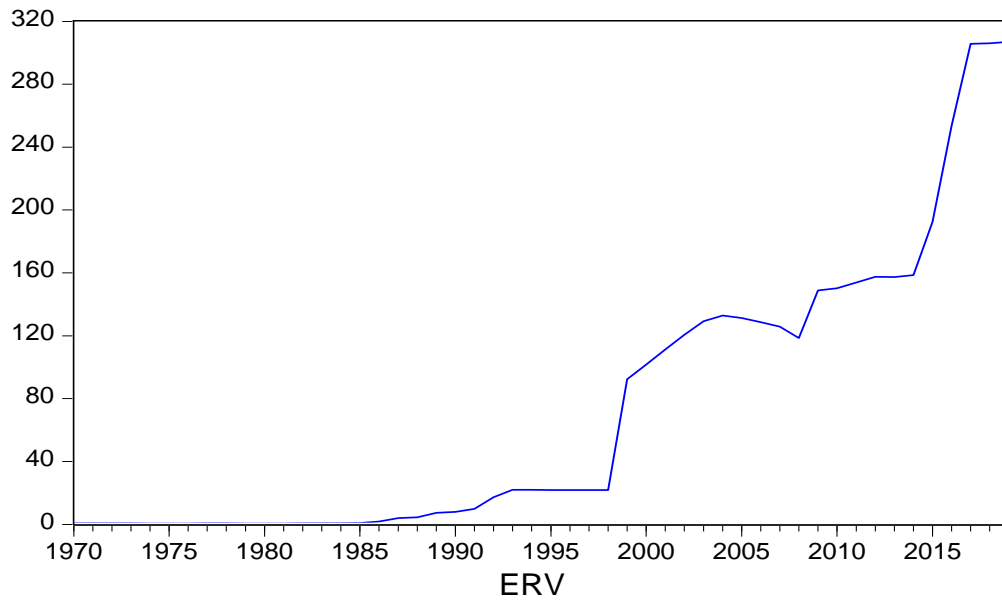
Year	ER	ERV	OEXP	INF	NEER	POLS	FDI_OIL	INFR	RGDP	M2GDP	OPN	NEXP
1970	0.714286	NA	0.52	13.75707992	0.714286	0	1.634006584	0.19	1.43061E+13	10.92785806	18.32478603	0.37
1971	0.712855833	-0.188789503	0.98	15.99911485	0.712856	0	3.114867861	0.17	1.6343E+13	10.04202248	36.25662625	0.34
1972	0.657894999	0.922900492	1.19	3.457649752	0.657895	0	2.484843267	0.45	1.68928E+13	10.91284765	30.02179488	0.25
1973	0.657894999	1	2.01	5.402664454	0.657895	0	2.459956251	0.57	1.78038E+13	11.18302916	35.11208332	0.35
1974	0.630282046	0.958028329	5.67	12.67439318	0.630282	0	1.034345032	1.22	1.97908E+13	13.22281167	48.20369822	0.43
1975	0.615501553	0.976549399	4.77	33.96418832	0.615502	0	1.692361519	3.21	1.87562E+13	17.58565987	49.94791984	0.35
1976	0.626601004	1.01803318	5.92	24.3	0.626601	0	0.933655816	4.04	2.04522E+13	19.94904129	51.72012554	0.42
1977	0.644701062	1.028886099	7.45	15.08783406	0.644701	0	1.222448337	5	2.16842E+13	22.85335715	63.64295965	0.52
1978	0.635271994	0.985374512	6	21.70924574	0.635272	0	0.577458572	5.2	2.04343E+13	20.86095471	62.30586359	0.63
1979	0.604007374	0.950785458	9.44	11.70973062	0.604007	0	0.655098278	4.22	2.18156E+13	22.95115585	58.29888143	0.67
1980	0.546780892	0.905255325	13.63	9.97226199	0.546781	0	-1.150855803	10.16	2.27329E+13	28.62522373	66.39690458	0.55
1981	0.617708175	1.129717926	10.68	20.81282291	0.617708	0	0.329731934	6.57	1.97485E+13	10.93880198	23.54275767	0.34
1982	0.673461262	1.090257971	8	7.697747247	0.673461	0	0.301613208	6.42	1.8405E+13	11.19984159	19.78435663	0.2
1983	0.724409851	1.075651849	7.2	23.21233155	0.72441	0	0.375338495	4.89	1.63944E+13	11.99003359	23.28752309	0.3
1984	0.766527449	1.058140565	8.84	17.82053329	0.766527	0	0.257421832	4.1	1.62115E+13	12.80805676	28.87689318	0.25
1985	0.893774083	1.166004015	11.22	7.435344828	0.893774	0	0.65845266	5.46	1.71701E+13	12.3265321	29.05249364	0.5
1986	1.754523004	1.963049765	8.37	5.717151454	1.754523	0	0.352544297	8.53	1.71805E+13	11.91440736	16.76645754	0.55
1987	4.016037344	2.28896249	28.21	11.29032258	4.016037	0	1.159069795	6.37	1.77303E+13	11.80945506	21.40821441	2.15
1988	4.536966667	1.12971227	28.44	54.51122478	4.536967	0	0.762696402	8.34	1.90307E+13	12.1685472	23.34815131	2.76
1989	7.364735	1.623272892	55.02	50.46668812	7.364735	0	4.282087862	15.03	1.9396E+13	10.45432437	32.2409388	2.95
1990	8.038285	1.091456108	106.63	7.364400306	8.038285	0	1.08795099	24.05	2.16802E+13	11.63537176	35.57456657	3.26
1991	9.909491667	1.232786803	116.86	13.0069731	9.909492	0	1.450317769	28.34	2.17579E+13	13.39988058	43.26278076	4.68
1992	17.298425	1.745642015	201.38	44.58884272	17.29843	0	1.87601773	39.76	2.27655E+13	14.24738427	42.18230211	4.23
1993	22.0654	1.275572776	213.78	57.16525283	22.0654	0	4.847790004	54.5	2.23022E+13	15.78771658	62.75537539	4.99
1994	21.996	0.996854804	200.71	57.03170891	21.996	0	5.790847305	70.92	2.18975E+13	15.09193641	47.37380556	5.35
1995	21.89525833	0.995420001	927.57	72.8355023	21.89526	0	0.762195576	121.14	2.18816E+13	10.28191272	46.67010715	23.1
1996	21.884425	0.99950522	1286.22	29.26829268	21.88443	0	0.977520982	212.93	2.27997E+13	9.063328818	44.23032693	23.33
1997	21.88605	1.000074254	1212.5	8.529874214	21.88605	0	0.862276325	269.65	2.34693E+13	9.725269419	45.37088173	29.16
1998	21.886	0.999997715	717.79	9.996378124	21.886	0	0.548616188	309.02	2.40751E+13	10.93903469	34.91682383	34.07
1999	92.3381	4.219048707	1169.48	6.618373395	92.3381	1	1.692557514	498.03	2.42158E+13	12.76339441	37.80194046	19.49
2000	101.6973333	1.101358305	1920.9	6.933292156	101.6973	1	1.641739329	239.45	2.54304E+13	14.66963137	42.75958464	24.82
2001	111.23125	1.093747951	1839.95	18.87364621	111.2313	1	1.608284185	438.7	2.69353E+13	15.90096771	40.02546821	28.01
2002	120.5781583	1.084031316	1649.45	12.8765792	120.5782	1	1.964726797	321.38	3.10643E+13	13.52699743	26.75659776	94.73
2003	129.22235	1.071689531	2993.11	14.03178361	129.2224	1	1.911463474	241.69	3.33466E+13	13.02658647	33.25074095	94.78
2004	132.888025	1.02836719	4489.47	14.99803382	132.888	1	1.374086175	351.3	3.64314E+13	11.75878596	38.70999076	113.31
2005	131.2743333	0.987856756	7140.58	17.86349337	131.2743	1	2.828830019	519.5	3.8777E+13	11.30051381	40.435671	105.96
2006	128.6516667	0.980021482	7191.09	8.22522152	128.6517	1	2.056023761	552.39	4.11267E+13	11.72897099	36.10654895	133.59
2007	125.8081083	0.977897229	8110.5	5.388007969	125.8081	1	2.189934296	759.32	4.38374E+13	19.29108526	36.80208541	199.26
2008	118.5666667	0.942440581	9861.83	11.58107517	118.5667	1	2.431219141	960.89	4.68028E+13	23.81187141	40.4185894	525.86
2009	148.88	1.255664886	8105.46	12.55496039	148.88	1	2.931336171	1152.8	5.05643E+13	25.14415642	31.05657686	500.86
2010	150.2975	1.009521091	11300.52	13.72020184	150.2975	1	1.667213359	883.87	5.46123E+13	21.35584739	35.4772861	710.95
2011	153.8625	1.023719623	14323.15	10.84002754	153.8625	1	2.183012813	918.55	5.7511E+13	22.47904598	42.46980755	913.51
2012	157.5	1.023641238	14259.99	12.21778174	157.5	1	1.552115206	874.83	5.99438E+13	24.92823094	36.37748527	879.34
2013	157.3116667	0.998804233	14131.84	8.475827285	157.3117	1	1.093559063	1108.39	6.39428E+13	25.44804511	28.81010963	1130.17
2014	158.5526417	1.007888639	12006.97	8.062485824	158.5526	1	0.858611941	783.12	6.79775E+13	22.68961102	29.52386595	953.53
2015	192.4403333	1.213731486	8184.48	9.009387183	192.4403	1	0.629447034	818.37	6.97807E+13	22.36682654	19.49781379	660.68
2016	253.492	1.317249849	8178.82	15.67534055	253.492	1	1.099402656	653.61	6.86524E+13	27.37878836	17.01074976	656.79

2017	305.7901092	1.206310689	12913.24	16.52353998	305.7901	1	0.932277324	1242.3	6.92057E+13	24.78141786	20.15747482	1074.9
2018	306.0836882	1.000960067	17845.87	12.09473155	306.0837	1	0.50290358	1682.1	7.05363E+13	25.36246273	26.07162156	1434.17
2019	306.9209515	1.002735406	18657.55	11.39679497	306.921	1	0.736205107	1888.15	7.20941E+13	23.9296086	26.28489853	1762.46

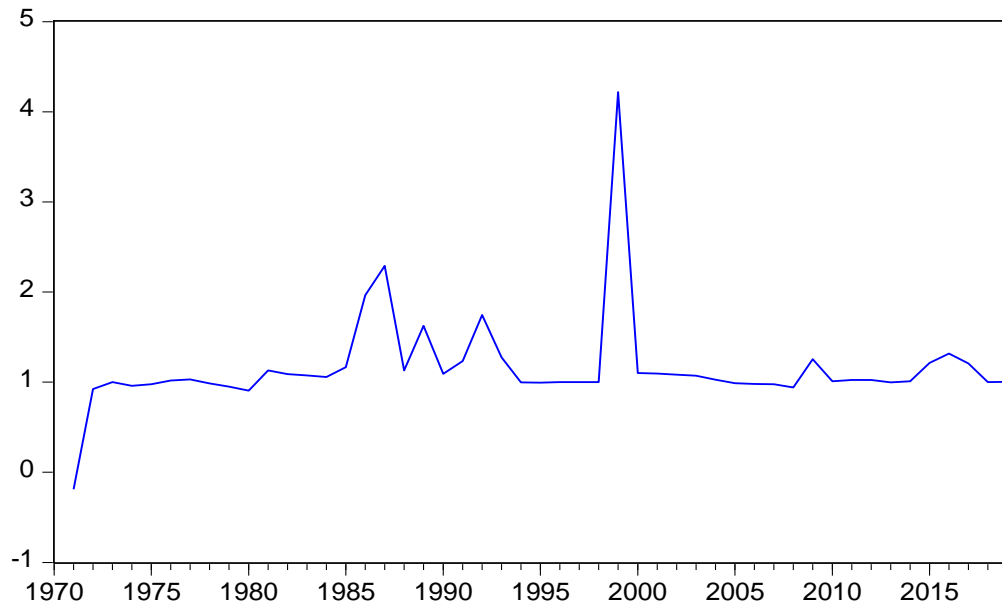
Descriptive statistics

	ER	ERV	OEXP	INF	POLS	FDI_OIL	INFR	RGDP	M2GDP	OPN	NEXP
Mean	73.57282	1.162567	3829.625	18.29492	0.420000	1.504512	362.3838	3.26E+13	16.37077	36.53363	243.2844
Median	21.88603	1.023720	465.7850	12.77549	0.000000	1.190759	96.03000	2.27E+13	13.46344	35.84056	12.42000
Maximum	306.9210	4.219049	18657.55	72.83550	1.000000	5.790847	1888.150	7.21E+13	28.62522	66.39690	1762.460
Minimum	0.546781	-0.188790	0.520000	3.457650	0.000000	-1.150856	0.170000	1.43E+13	9.063329	16.76646	0.200000
Std. Dev.	90.62339	0.550451	5515.017	15.61761	0.498569	1.209569	476.5422	1.86E+13	5.845422	12.68776	432.3330
Skewness	1.124063	3.556162	1.257698	1.938259	0.324176	1.355345	1.385861	1.054448	0.574742	0.536870	1.844913
Kurtosis	3.394842	21.50207	3.264602	5.954505	1.105090	5.881367	4.284978	2.573999	1.799739	2.773011	5.529038
Jarque-Bera	10.85411	802.1951	13.32757	49.49269	8.356342	32.60441	19.44503	9.643574	5.754045	2.509251	41.68928
Probability	0.004396	0.000000	0.001276	0.000000	0.015327	0.000000	0.000060	0.008052	0.056302	0.285183	0.000000
Sum	3678.641	56.96579	191481.2	914.7461	21.00000	75.22562	18119.19	1.63E+15	818.5386	1826.681	12164.22
Sum Sq. Dev.	402417.3	14.54383	1.49E+09	11951.58	12.18000	71.68974	11127532	1.70E+28	1674.279	7887.983	9158680.
Observations	50	49	50	50	50	50	50	50	50	50	50

ER



ERV



Correlation Matrix

Table 4.3: Correlation matrix results for the variables

	OEXP	NEXP	ER	ERV	FDI_OIL	INF	INFR	M2GDP	OPN	POLS	RGDP
OEXP	1.000000	0.953266	0.898422	-0.117129	-0.031879	-0.281075	0.954251	0.657225	-0.305504	0.783194	0.949036
NEXP	0.953266	1.000000	0.866155	-0.100692	-0.114775	-0.239150	0.929382	0.684808	-0.344645	0.651171	0.920861
ER	0.898422	0.866155	1.000000	-0.001481	-0.019855	-0.266794	0.922963	0.594676	-0.387383	0.873765	0.934633
ERV	-0.117129	-0.100692	-0.001481	1.000000	-0.014451	-0.025103	-0.018606	-0.111983	-0.159700	0.085746	-0.084511
FDI_OIL	-0.031879	-0.114775	-0.019855	-0.014451	1.000000	0.387562	-0.026271	-0.166220	0.165687	0.079984	-0.056869
INF	-0.281075	-0.239150	-0.266794	-0.025103	0.387562	1.000000	-0.284081	-0.213908	0.258479	-0.365188	-0.272878
INFR	0.954251	0.929382	0.922963	-0.018606	-0.026271	-0.284081	1.000000	0.630078	-0.323325	0.794323	0.916971
M2GDP	0.657225	0.684808	0.594676	-0.111983	-0.166220	-0.213908	0.630078	1.000000	0.121488	0.480739	0.712942
OPN	-0.305504	-0.344645	-0.387383	-0.159700	0.165687	0.258479	-0.323325	0.121488	1.000000	-0.296371	-0.343489

POLS	0.783194	0.651171	0.873765	0.085746	0.079984	-0.365188	0.794323	0.480739	-0.296371	1.000000	0.809008
RGDP	0.949036	0.920861	0.934633	-0.084511	-0.056869	-0.272878	0.916971	0.712942	-0.343489	0.809008	1.000000

Unit Root Test for all Variables

Table 4.4: Unit Root test using Augmented Dickey Fuller (ADF) and Phillip-Perron (PP)

Variable	Unit Root @ Level		Unit @ 1 st Difference		Unit Root @ Level		Unit @ 1 st Difference		Order of Integration
	ADF	Prob. value	ADF	Prob. Value	PP	Prob. value	PP	Prob. Value	
OEXP	-2.125	0.24	-6.413***	0.00	1.823	0.99	-4.17***	0.002	I(1)
NEXP	3.111	1.00	0.70	0.99	3.11	1.00	-4.15***	0.002	I(1)
ER	2.10	0.99	2.10	0.99	2.20	0.99	-4.66***	0.00	I(1)
ERV	-6.69***	0.00	-	-	-6.69***	0.00	-	-	I(0)
FDI_OIL	-4.19***	0.00	-	-	-4.19***	0.002	-	-	I(0)
INF	-3.44***	0.01	-	-	-3.27**	0.02	-	-	I(0)
INFR	4.38	1.00	-0.77	0.82	3.34	1.00	-6.51***	0.00	I(1)
M2GDP	-2.06	0.26	-7.28***	0.00	-2.06	0.26	-7.39***	0.00	I(1)
POLS	-0.828	0.80	-6.93***	0.00	-0.83	0.80	-6.93***	0.00	I(1)
RGDP	1.35	0.99	-3.55***	0.01	-1.73	0.99	-3.61***	0.01	I(1)
OPN	-2.99	0.04**	-8.12	0.00	-3.14	0.03**	-8.14	0.00	I(0)

ARDL Cointegration Bound Test

Table 4.5: ARDL Cointegration Bounds Test

Variable	F-statistic	Degree of freedom (k)	Upper Critical Values		
			10%	5%	1%
All variables	3.70	6	3.23	3.61	4.41

ARDL Cointegrating And Long Run Form

Dependent Variable: OEXP

Selected Model: ARDL(1, 1, 1, 1, 1, 1)

Date: 09/04/21 Time: 07:23

Sample: 1970 2019

Included observations: 48

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ER)	-36.649875	14.765608	-2.482111	0.0182
D(ERV)	25.459472	708.873054	0.035915	0.9716
D(FDI_OIL)	22.900783	171.419253	0.133595	0.8945
D(INF)	-0.441015	14.173069	-0.031116	0.9754
D(POLS)	1984.028046	2460.460073	0.806365	0.4256
D(INFR)	2.399736	1.511600	1.587546	0.1216
CointEq(-1)	-0.345844	0.111949	-3.089297	0.0040

$$\text{Cointeq} = \text{OEXP} - (74.9455*\text{ER} + 359.8967*\text{ERV} + 310.4764*\text{FDI_OIL} - 14.2615*\text{INF} - 2559.5495*\text{POLS} + 3.0645*\text{INFR} - 850.3966)$$

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.

ER	74.945462	36.297551	2.064753	0.0466
ERV	359.896734	2034.660329	0.176883	0.8606
FDI_OIL	310.476443	607.443976	0.511119	0.6126
INF	-14.261454	47.599334	-0.299615	0.7663
POLS	-2559.549540	2913.978945	-0.878369	0.3859
INFR	3.064488	4.311244	0.710813	0.4820
C	-850.396565	2668.455162	-0.318685	0.7519

ARDL Cointegration Bounds Test

Variable	F-statistic	Degree of freedom (k)	Upper Critical Values		
			10%	5%	1%
All variables	4.57	7	3.13	3.5	4.26

ARDL Cointegrating And Long Run Form

Dependent Variable: NEXP

Selected Model: ARDL(1, 1, 1, 1, 1, 1, 1)

Date: 09/04/21 Time: 07:40

Sample: 1970 2019

Included observations: 48

Cointegrating Form

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ER)	-2.766871	1.313933	-2.105792	0.0432
D(ERV)	13.467329	36.632135	0.367637	0.7156
D(RGDP)	-0.000000	0.000000	-1.705556	0.0978
D(M2GDP)	1.875128	5.115023	0.366592	0.7163
D(INF)	-0.382613	0.958453	-0.399199	0.6924
D(INFR)	0.414915	0.100794	4.116454	0.0003
D(OPN)	1.774825	1.808810	0.981212	0.3338
CointEq(-1)	-0.331885	0.109972	-3.017908	0.0050

$$\text{Cointeq} = \text{NEXP} - (1.3921*\text{ER} + 34.3466*\text{ERV} - 0.0000*\text{RGDP} + 42.5702*\text{M2GDP} + 1.9607*\text{INF} + 0.9383*\text{INFR} - 10.4718*\text{OPN} - 150.2183)$$

Long Run Coefficients

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ER	1.392057	1.859463	0.748634	0.4595
ERV	34.346592	126.190443	0.272181	0.7872
RGDP	-0.000000	0.000000	-0.685532	0.4979
M2GDP	42.570184	16.590200	2.565984	0.0152
INF	1.960663	2.925728	0.670146	0.5076
INFR	0.938342	0.342894	2.736533	0.0100
OPN	-10.471801	4.735961	-2.211125	0.0343
C	-150.218265	306.047711	-0.490833	0.6269

Pairwise Granger Causality Tests

Pairwise Granger Causality Tests

Date: 09/04/21 Time: 08:24

Sample: 1970 2019

Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
ERV does not Granger Cause ER	47	0.80933	0.4520
ER does not Granger Cause ERV		0.64183	0.5314
OEXP does not Granger Cause ER	48	7.48942	0.0016
ER does not Granger Cause OEXP		18.9191	1.E-06
NEXP does not Granger Cause ER	48	4.34673	0.0191
ER does not Granger Cause NEXP		9.25816	0.0005
OEXP does not Granger Cause ERV	47	0.86610	0.4280
ERV does not Granger Cause OEXP		0.23246	0.7936
NEXP does not Granger Cause ERV	47	0.35533	0.7030
ERV does not Granger Cause NEXP		0.04632	0.9548
NEXP does not Granger Cause OEXP	48	0.18011	0.8358
OEXP does not Granger Cause NEXP		2.43988	0.0992