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The Effect of Exchange Rate on Export in Nigeria: An Econometric Analysis

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ABSTRACT

The study's objectives are to assess other important factors that influence export promotion and explore the impact of exchange rates on export performance. To accomplish the research goals, the study uses both the theories of foreign exchange and international trade. Data from the CBN Bulletin from 2010 to 2021 were used in the analysis. Multiple regression analysis was used to analyze the study. The results show that the link between the exchange rate, FDI, and export value in Nigeria is both positive and insignificant. The outcome further demonstrates that FDI and export value in Nigeria have a favorable and significant relationship. This suggests that export encouragement increases with FDI levels. The findings indicate that Nigeria's export performance is negatively and insignificantly correlated with inflation. More specific policies should be implemented by the government to support export promotion in Nigeria.

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1. INTRODUCTION

a. Background and Significance

International trade, which provides consumers in other nations with a wider range of goods and services, obligates each trading party to exchange their good for a certain currency at a specific rate [1]. Numerous indices and trade policies influence and control this rate. Before the Structural Adjustment Programme, there were several factors cited in Nigeria for the fluctuation in the value of the Naira, including overvaluation of the currency, strong demand for foreign cash, widespread corruption, and excessive demand for foreign goods [1].

Management of the exchange rate is still a crucial macroeconomic policy instrument [2]. Its use in every economy, however, either improves or impairs the external balance. Nigeria has used various fixed, managed float, and more

recently flexible exchange rate regimes to maintain a comparatively stable currency rate [2]. In light of this, this series examines and discusses Nigeria's currency rate management particularly a number of currency rate-related ideas. The main macroeconomic effects of currency rates were clarified, as well as an outline of the system for managing exchange rates.

It is evident that fluctuations in exchange rates have a significant and adverse impact on the quantity of imports, leading to a decrease in import volume [3]. The Nominal Effective Exchange Rate (NEER) has a positive and linear correlation with the quantity of imports, but the Real Effective Exchange Rate (REER) does not demonstrate the same relationship, a dropping REER merely signals an increase in the NEER. As a result, import prices rise, which in turn causes a decline in local demand for imported items. Therefore, it is advised that the foreign exchange rate be depreciated, as this will lower Nigeria's import volume.

Nigeria uses a system of numerous exchange rates, which has detrimental effects on investment. The widening disparity between the official and parallel market exchange rates of the naira reached its highest level in six years due to the persistent imbalance between the demand and supply of foreign currency [4]. Nevertheless, the official market experienced a little appreciation of the Naira against the US dollar, rising 0.04 percent to N436.33. However, the currency dropped to N715 versus the US dollar on the black market, widening the disparity between the two markets to 64%, the most since 2016 [4]. This will have a huge impact on the export and import of goods in Nigeria economy.

Promotion of exports and the SAP was important as was the case under the previous administration. The major goal was to revive the economy and eliminate economic sovereignty for Nigeria, where export income would come from a variety of other sources as well as from oil, whose vagaries on the global market had become a nightmare for everyone involved in economic planning. The Naira's depreciation played a major role in driving up export prices since foreign currencies converted to naira were worth more. Consumption of these commodities and services is now available even in locations or nations where they are not produced thanks to the transportation of goods and services over long distances. The idea is that this will raise many people's standard of living. However, both exporting and importing countries can identify the major issues or fluctuations in exchange rates.

For instance, in 1989, Nigeria's non-oil exports included cocoa, which made up roughly 50% of total exports. In order to promote export growth, ensure wise investment planning, and attract substantial foreign investment, it is crucial to maintain a stable exchange rate for exporters, independent of trade and international exchange rate systems. FEM and the interbank foreign exchange market (IFEM) were created with the advent of the sound tier foreign exchange market (SFEM)

in 1986. As a result of the findings above, this study aims to carry out the effect of exchange rate on export in Nigeria.

b. Problems statements

The continuous depreciation of the naira against the US dollar and other prominent currencies in recent years has provided an opportunity for scholars to analyse the impact of exchange rate variations on Nigeria's economic growth [5]. Exchange rate regimes have had a significant impact on emerging economies with the onset of globalization, particularly those that primarily rely on the importation of basic goods. A country's economy can be affected by exchange rate fluctuations in both good and negative ways [6]. Regarding this, this study will attempt to illustrate some of the ways that various exchange rate adjustments and other macroeconomic factors have impacted Nigeria's export growth.

Before SAP, Nigeria used the US dollar in parity exchange (1967–1972), switched to fixed parity with the British pound in 1973, and by 1974 had parity to both the US dollar and the pound [7]. This was done to lessen the impact of the devaluation on each individual currency. However, the economy is based on a managed floating exchange rate under the current administration.

Nigeria's exchange rate strategy is to preserve the value of the domestic currency, maintain a robust foreign reserve position, and achieve external equilibrium while safeguarding the need for internal equilibrium and the overarching objective of macroeconomic stability [8]. The cost of a country's goods and services rises as its exchange rate rises in comparison to that of another one. Costs for imports decrease. In the long run, this can result in a decline in exports and an increase in imports. The depreciation of the Nigerian currency has led to a significant rise in the cost of imported consumer products and raw materials, causing significant worry for both importers and consumers [9]. One of the main reasons for Nigeria's high inflation rate is the low exchange rate (currency depreciation) issue since the nation imports a lot of consumer goods and raw materials each year at higher rates. A low exchange rate means that more local currency (in this case, the naira) can be obtained for just one unit of foreign currency, such as the US dollar. In a country with a currency of low value, such as Nigeria, a diminished exchange rate leads to a reduction in the prices of exported products and services, while simultaneously increasing the costs of imported goods and services for consumers.

According to the National Bureau of Statistics (NBS), overall exports were N7.10 trillion; including N115.80 billion in re-exports, and total imports were N5.90 trillion. Increased import costs and excessive inflation in the domestic market are the results of rising global prices and the naira's depreciation issue. Significant component that has an impact on both the real economy of any nation and international trade is the exchange rate [10]. The expansion of global trade produces circumstances where

exchange rate volatility is present. According to this study, several exchange rate stabilization measures should be implemented by policymakers in order to promote economic growth.

c. Objectives of the Study

The main aim of this study is to examine the influence of currency exchange rate changes on the export performance in Nigeria. The study aims to analyse the correlation between exchange rate and export performance, as well as identify the primary factors influencing export performance in Nigeria.

d. Research Questions

The research questions that this study will address are as follows:

1. What is the relationship between exchange rate and export performance in Nigeria?
2. What are the other key determinants of export performance in Nigeria?

e. Hypotheses

Based on the research questions, the following hypotheses are formulated:

H1: There is a significant relationship between exchange rate and export performance in Nigeria.

H2: There is a significant relationship between key determinants such as GDP growth rate and foreign direct investment and export performance in Nigeria.

H3: There is a significant relationship between key determinants such as inflation, and foreign direct investment and export performance in Nigeria.

H3: There is a significant relationship between key determinants such as FDI and foreign direct investment and export performance in Nigeria.

f. Scope and Limitations

The study focuses on Nigeria's export performance and its relationship with exchange rate fluctuations. The study will cover a ten-year period from 2010 to 2019. However, due to data availability limitations, the study will not consider some critical determinants of export performance, such as political instability and corruption. The study will only consider quantitative approach. Future research could look at the mixed mode or triangulation method.

The fact that there weren't enough pertinent journals, books, etc. for the literature evaluation was a significant flaw in this study. Online access to several journals was difficult, and buying them proved to be impossible. Additionally, it was restricted to Nigerian imports only, and obtaining data on imports from CBN was challenging. The expense of purchasing things via the internet and traveling to locations like CBN to purchase materials was another restriction.

g. Operational definitions

1. **Foreign Exchange Rate:** This is the rate at which one currency is converted into another. This rate is determined by a number of variables, including the country's trade balance, the strength of its economy, and local demand and supply for foreign currencies [7].
2. **Export:** This is the sale of a good from a domestic source

into a jurisdiction, oftentimes across a national border. It also refers to the exchange of goods and services from a resident to a non-resident of the jurisdiction [7].

3. **Real Effective Exchange Rate (REER):** This is used to calculate the value of a country's currency in relation to the other main currencies in the index after adjusting for the impacts of inflation [7]).
4. **Nominal Effective Exchange Rate (NEER):** This is the value of the native currency in relation to foreign currencies, weighted by the country's proportion of international commerce or payments [7].
5. **Real Gross Domestic Product (RGDP):** This refers to a macroeconomic indicator that accounts for changes in prices and measures economic output (i.e. inflation or deflation) [7].
6. **Exchange Rate Volatility:** The volatility of foreign currencies, which impacts the profitability of foreign currency trading [7]. The volatility of these rates is defined as the quantity and frequency with which they move.

2. LITERATURE REVIEW

2.1 Overview

The success of a nation's exports is significantly impacted by exchange rate variations. A good exchange rate can boost export earnings and boost the nation's overall economic expansion. In contrast, a negative exchange rate can lower export revenues, which will slow down the economy of the nation. This component of the study 2.2 will focus on the theoretical framework and empirical research. The section 2.3 will look at Exchange rate in Nigeria. Section 2.4 will consider export promotion. Section 2.5 look at the empirical relationship between exchange rate and export; section 2.6 assess the research framework; section 2.7 assess the hypothesis development and section 2.8 look at the chapter summary.

2.2 Exchange Rate Volatility

An exchange rate refers to the numerical value assigned to one currency in relation to another country's currency [5]. The phrase "exchange rate" is a combination of the words "rate" and "exchange" and refers to the rate at which the International Monetary Fund (IMF) sets the value of a currency in relation to the US dollar. Exchange is the act of selling and/or purchasing currencies or commodities, whereas rate is the specific price or value at which a transaction occurs [5].

Volatility is referred to as a latent or unobservable variable that might be stochastic or deterministic [11]. Short-term changes in expectations, monetary policy, and political events all have a significant impact on exchange rates' volatility. Exchange rates are ultimately influenced by the relative costs of goods in various nations. The abolition of fixed exchange rates, which led to a huge amount of foreign exchange transactions, has increased exchange rates' volatility in recent years. These transactions have expanded more quickly than both international trade and money flows for overseas investments. The danger involved in trading and transacting in foreign currencies on the foreign exchange market has increased.

Numerous macro-variables, including supply and demand for goods, services, and investments, varying growth and inflation rates

across nations, shifts in relative rates of return, and so on, have a direct impact on exchange rate volatility [11]. Recent real and monetary disturbances have an impact on the floating rate. Expectations regarding recent and upcoming events are crucial components as well because they have a significant impact on exchange rate volatility.

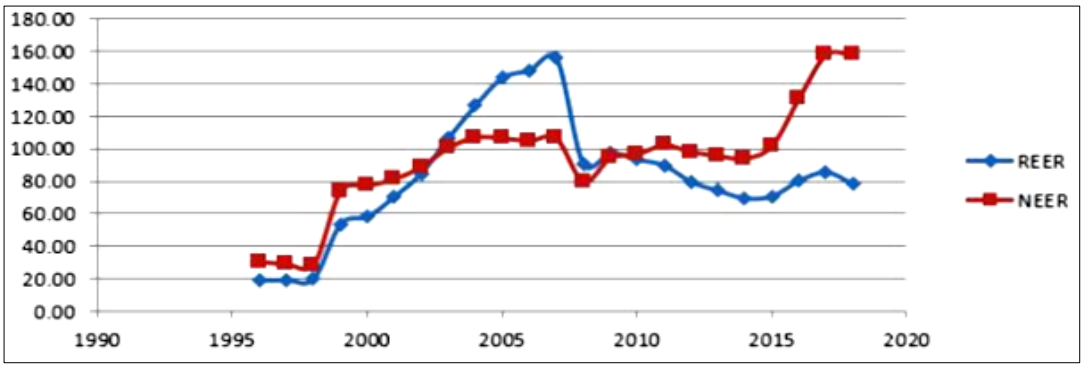

Figure 1. Exchange Rate Volatility 1990-2020
Source: Adopted from [12]

The fluctuation of the currency rate is evident. The level of fluctuation in exchange rates had a substantial rise in 1998. This phenomenon can be partially attributed to the restoration of democratic governance, since it involved a significant shift from a pegged exchange rate to a floating exchange rate [12]. The CBN attempted to discount the naira in response to the fluctuating exchange rate, thereby stabilizing exchange rate movement. Between 2000 and 2006, both nominal and real exchange rates climbed dramatically. Both peaked about 2007 before falling off. Volatility rates were highly unexpected from 2010 to 2018. Although Nigeria has engaged in overseas commerce for several decades, it has consistently faced marginalisation, resulting in insufficient participation and share in global trade [13].

2.3 Theories of International Trade

International commerce has a lengthy history and has gone through several stages, each of which has been characterized by discussions regarding the advantages and disadvantages of trade for the nation in question.

a. Comparative and Absolute Advantage

The mercantilist theories of controlling international trade by promoting exporters and opposing imports provoked vehement criticisms from economists and political philosophers later on. Among them were notable thinkers David Hume and John Locke. However, Adam Smith, who personified the individualism that ruled in the middle of the eighteenth century, offered the most persuasive reply. He masterfully disproved the mercantilist philosophy of controlled commerce and showed how free trade based on the international division of labor might be advantageous to all trading partners.

A nation possesses a comparative advantage in producing a thing when its opportunity cost of production is lower. According to the idea of comparative advantage, a nation would profit by exporting the good in which it has a

comparative advantage and importing the good in which it has a disadvantage (higher opportunity costs). Keep in mind that there must be at least two nations and at least two items for the concept of comparative advantage to have any real relevance.

It is important to realize that the benefits Adam Smith mentions are based on variations in manufacturing costs. Adam Smith and other classical economists believed in the labor theory of value, which explains how costs are directly translated into price variations. Therefore, absolute cost disparities must result in absolute price differences, which are the cornerstone of profitable commerce. Costs are production-related labor expenses. This suggests that other production elements like capital and land are employed in a predetermined ratio to labor so that their identities can be combined with that of labor (as a single input).

2.4 Theories of Foreign Exchange Rate

a. The Theory of Balance of Payments (BOP)

This theory gives a market analysis of the determination of the exchange rate in terms of the BOP's current account credit and debit items [7]. Credit items represent the effective supply of foreign exchange, whereas debit items indicate the effective demand. According to this theory of free exchange rates, the value of a currency is established based on its balance of payments. An excess in the balance of payments leads to an appreciation of the exchange rate, whilst a deficit in the balance of payments results in a depreciation of the currency rate. According to this concept, the exchange rate is determined by the interplay between the demand for and supply of foreign exchange.

The balance of payment theory of exchange rate revealed that the rate of exchange of one country's currency with another is influenced by variables independent of domestic price level and money supply [14]. It stresses that a country's balance of payments position has a substantial effect on the currency rate.

b. The Theory of Purchasing Power Parity

Gustav Cassel created the Purchasing Power Parity (PPP) theory in 1920 to assess the exchange rate between countries using inconvertible paper currencies [7]. The idea states that the equilibrium exchange rate between two paper currencies that cannot be converted into each other is determined by the equality of relative price movements in the two nations. Put simply, the exchange rate between countries is determined by the respective price levels. The Purchasing power parity theory is an attempt to explain and, more significantly, quantitatively assess the equilibrium rate of exchange and its variations through price levels and their variations in different nations.

The purchase power of two non-convertible paper currencies is equal, the exchange rate is said to be in equilibrium [14]. The exchange rate between two non-convertible paper currencies is determined by the domestic price levels of the two countries. The Relative version of exchange rate determination states that the exchange rate in

the current period (R1) is determined by the equilibrium exchange rate in the base period (R1) and the ratio of the price indices of the current and base periods in one country to the ratio of the price indices of the current and base periods in the other country. In simpler terms, the exchange rate is the ratio of the cost to purchase a specific set of goods domestically compared to what it would cost in a foreign country.

2.5 *The Nigerian Exchange Rate History*

The naira's value was determined independently in terms of the US dollar and the British pound sterling, based on the relative strength of the two convertible currencies. They also stated that from February 1978 to the implementation of SAP in 1986, the naira exchange rate was based on an import weighted basket of currencies supplemented by factors such as reserve level, cross-rate considerations, relative of inflation, and discretionary judgement on the perceived relative strengths of various trading partners' currencies.

The free market's second-tier rate is established by market forces during the auctioning of foreign exchange to authorized dealers. This applied to all private sector transactions as well as the remainder of official transactions. However, with the introduction of SFEM and the emergence of first-tier and second-tier markets in 1987, the country's currency experienced a massive devaluation unprecedented in Nigerian history.

General Sani Abacha, the head of state, declared a shift in policy regarding the nation's exchange rate system in his 1995 budget speech. The official naira exchange rate was likewise set at N22.00 to the US dollar. However, the introduction of the Structural Adjustment Programme (SAP) in 1986 increased imports to N70.66 billion between 1986 and 1990. The current administration currently adopts managed floating exchange rate. This has affected the exchange rate system and bring rate of naira to other currencies to around 700 naira per dollar. This has had huge effect on the Nigeria export system.

2.6 *Empirical Studies on Exchange Rate and Export Performance in Nigeria*

Several empirical studies have investigated the relationship between exchange rate and export performance in Nigeria. The studies have revealed mixed results, with some studies showing a positive relationship between exchange rate and export performance, while others show a negative relationship.

Seeks to ascertain how the country's export performance changed between 1961 and 2011 [15]. According to the economic technique of regression analysis, changes in the value of the naira have a greater impact on industrial and agricultural exports than on oil exports. The monetary authorities in Nigeria should stabilize the naira exchange rate through monetary and fiscal policies, exporters should use futures contracts to offset the negative effects of these fluctuations on export income and performance, and the government should implement fiscal and monetary policies to increase local production to meet local consumption, decreasing foreign exchange demand for exports.

Used monthly data covering the years 1997 through 2016 to examine the effects of currency rate volatility on trade flows in Nigeria [16]. The series of nominal exchange rate volatility was created using a GARCH model. The ARDL bounds testing method was used to find the long-term connection between the variables. The Granger causality test was also used to determine the causal

relationship between the variables. The study discovered that, while it had no long-term impact, exchange rate volatility had a detrimental short-term impact on Nigeria's trade flows. In light of this, the Central Bank of Nigeria would profit from stabilizing the foreign currency market as soon as possible in order to prevent further instability.

Using a descriptive methodology, [17] investigates Nigeria's export performance and exchange rate developments from 1970 to 2015. The study places a special emphasis on the effects of exchange rate fluctuation on the nation's export demand. The decision to choose this time frame is further supported by the fact that it begins before the SAP era, which is frequently referred to as the "good days" when agricultural and non-oil exports rose dramatically. Once more, this day falls during a time when foreign commerce and the currency rate were liberalized. Results from descriptive analysis reveal that exchange rate volatility significantly impacted Nigeria's export performance over the studied period, particularly the amount of export demand. This was true notwithstanding policy announcements.

In Nigeria, the continent's largest economy and most populous country, the study examined the causal link between currency exchange rate (EXR) and export growth (EXP). For the analysis, which was based on statutory yearly statistics for the years 1970 through 2014, Aro-Gordon (2017) employed econometric techniques. It is demonstrated that EXR and EXP are not co-integrated, and as a result, there may not be a long-run equilibrium connection between them. The Granger causality test clearly demonstrates that there is no short-run nexus between EXR and EXP, but there is a unidirectional, feedback-free causality that runs from EXR to EXP. The implication is that whereas EXP in a country like Nigeria that depends only on one product (crude oil) may have relatively little influence on EXR.

The subject of variable currency rates and how they affect export results [18]. This study examined experimentally the effects of factors like Nigeria's gross domestic product (GDP), exchange rate volatility (EXCt), and foreign direct investment on export performance (Xt). All of the statistics were secondary data that were pulled from the Central Bank of Nigeria's Statistical Bulletin between 1982 and 2015. The data was analyzed using the Ordinary Least Square approach, and it was found that the gross domestic product (GDP), exchange rate fluctuation (EXCt), and foreign direct investment have positive relationships with Nigeria's export performance (Xt). It was suggested that in order to keep a positive trade balance, the government should support export promotion efforts.

Through the use of an error correction model, the impact of exchange rates on export in relation to Nigeria's degree of financial growth from 1983 to 2020 [19]. According to the interaction model's findings, Nigeria's degree of financial development has little of an impact on how exchange rates affect exports. The results of the marginal impacts, however, showed that at the greatest and average levels of financial development in Nigeria throughout the research period, the exchange rate had a considerable positive influence on export. However, the exchange rate had a negligible beneficial influence on export in Nigeria at the lowest level of financial development.

Inflation and the exchange rate had a detrimental effect on economic growth [14]. This conclusion suggests that rising prices and the exchange rate are harmful to the expansion of the Nigerian economy. There is proof that interest rates have a large beneficial impact on GDP growth. This conclusion explains the situation in Nigeria, where firms and people frequently borrow despite rising interest rates, but often economize by lowering the quality of their goods and services or raising prices to cover rising borrowing costs.

2.7 Other Factors (Inflation Rate, FDI and GDP growth Rate)

a. Inflation Rate

Since years, Nigeria's inflation rate has consistently above that of African and Sub-Saharan nations; it even reached 16 percent in 2017; and a true, meaningful decline is not in the offing [20]. But its instability is the main issue: A faltering economy would often have an inflation rate like this one, which will cause prices to vary and increase unemployment and poverty. Nigeria's economy, which is a so-called "mixed economy" in which the state regulates the market economy, at least in part, is not wholly in disrepair, though. The country's services sector, telecommunications, and financial industry together provide more than half of its GDP, while oil accounts for a sizeable portion of its state revenue.

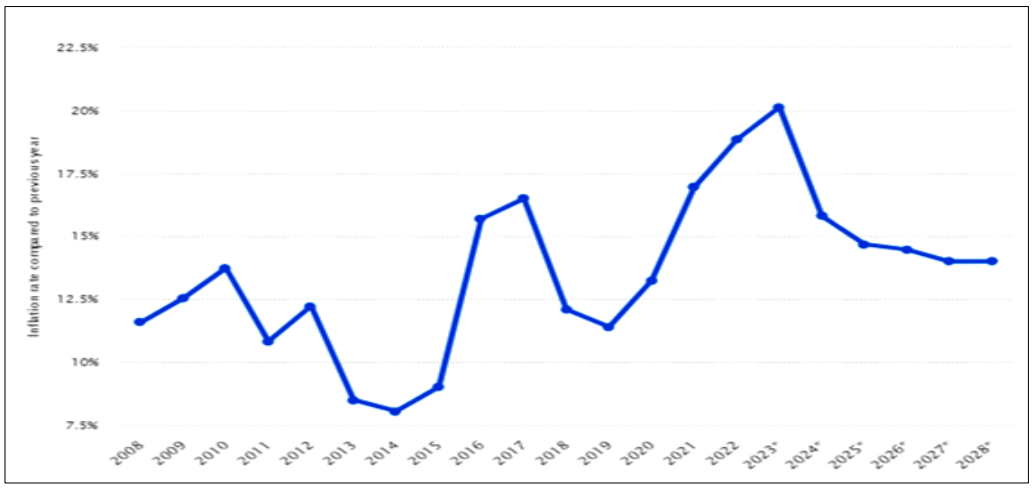

Figure 2. Nigeria: Inflation Rate From 2008 to 2028
(Compared to the previous year)

The limits testing technique to co-integration to explore the dynamics of the inflationary process in Nigeria between 1981 and 2015 [21]. According to empirical findings, the CPI-proxied inflation rate in Nigeria displayed a high degree of inertia. According to the econometric findings, Nigeria's inflationary process throughout the research period seems to have been mostly determined by prior inflation and average rainfall. We also discovered compelling evidence for the role played by the money supply in the inflation process, supporting the monetarist theory's domination of the dynamics of inflation in Nigeria. Thus, the central bank should continuously moderate the expansion of the money supply and include consumer

expectations of inflation into the monetary policy process.

Using annual time series data ranging from 1986 to 2015, Aidi et al. (2015) analyzed the link between exchange rate, inflation, and the balance of payments in Nigeria. For analysis, the researchers used the multiple regression method known as Ordinary Least Squares (OLS). The study found, among other things, that the dependent variable, balance of payments, is negatively impacted statistically over the study period by the study's main variables, exchange rate and inflation. The outcome also revealed that domestic credit, the money supply, and the GDP are statistically important determinants of Nigeria's balance of payments. The Nigerian government, economic planners, and policymakers are recommended to (urgently) implement measures that would increase productivity and enhance/promote greater exports of commodities and services in light of the findings.

The effect of the currency rate on inflation in Nigeria from 1981 to 2015 is investigated [22]. The study used the Vector Error Correction Mechanism (VECM), and the analysis's findings indicate that the country's persistent inflation has been considerably influenced by the shifting exchange rate. Due to the fact that high exchange rates have caused imported inflation, the monetary authority should not only rely on this weapon to manage inflation but rather use it to supplement other macroeconomic policies instead. According to the study, efforts should be made to export more goods other than oil in order to offset any potential increases in demand for foreign currency brought on by the devaluation of the naira.

b. Foreign Direct Investment

Direct investment equity flows in the reporting economy are referred to as foreign direct investment [23]. The total of equity capital, reinvested profits, and other capital makes up this amount. A resident of one economy having control over or a sizable amount of influence over the management of a business that is based in another economy is referred to as direct investment. The requirement for establishing the presence of a direct investment relationship is ownership of 10% or more of the voting stock's common shares. Data are presented in current US dollars. $3.31 billion, or a 38.9% increase from 2020, was invested abroad in Nigeria in 2021.Nigeria received $2.39 billion in foreign direct investment in 2020, up 3.48% from 2019 (See Fig. Below).

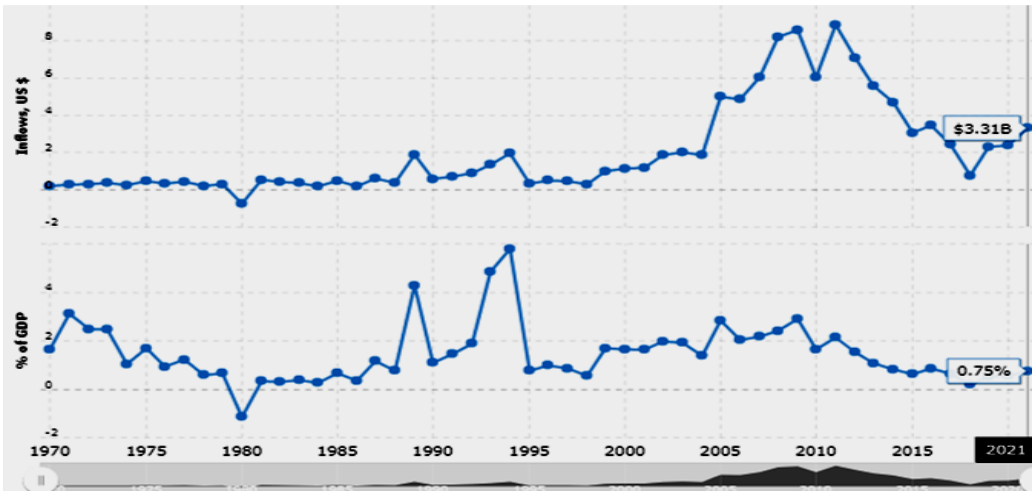

Figure 3. Nigeria Foreign Direct Investment 1970-2023

The empirical link between foreign direct investment and economic growth in Nigeria is examined in this study. The study used annual data from the Central Bank of Nigeria's statistics bulletin for the years 1981 through 2009. Throughout the research period, FDI had a favorable but little influence on the expansion of the Nigerian economy [24]. Economic growth is positively and significantly impacted by GFCF, which was utilized as a stand-in for domestic investment. Therefore, by addressing the security issues in the nation, creating an investment-friendly climate through enhanced regulatory framework, and encouraging domestic investment, the government should create an atmosphere that would entice international investors to participate in Nigeria's economy.

The impact of foreign direct investment on Nigeria's economic growth from 1990 to 2012 is experimentally investigated. FDI has caused a rise in export in Nigeria [25]. The result indicates that export assumes a positive sign, which suggests that there is a positive association between economic growth and export.

c. Gross Domestic Products

Economic growth is the advancement of an economy as a result of advantageous conditions, such as the advancement of the United Kingdom during the Industrial Revolution [14]. Economic growth is defined as an increase in an economy's capacity to produce goods and services when comparing one time period to the next. It can be stated in real or nominal terms, with real terms accounting for inflation. Although other metrics are also used, gross national product (GNP) or gross domestic product (GDP) is generally used to measure aggregate economic growth [14]. The economic growth rate is the percentage change in the amount of goods and services produced from one year to the next. The actual GDP growth rate is the same.

Nigeria is the eighth-largest oil exporter in the world and has the second-largest economy in Africa, which explains why there is a positive correlation between the value of

oil exports and GDP [26]. 80% of government revenue comes from oil exports, which is then used to boost other economic sectors. If Nigeria's export is greater than her import, she will gain from international commerce.

2.8 Research Framework

The conceptual framework will illustrate the relationship between exchange rate and export performance in Nigeria, taking into account other factors that may influence the relationship.

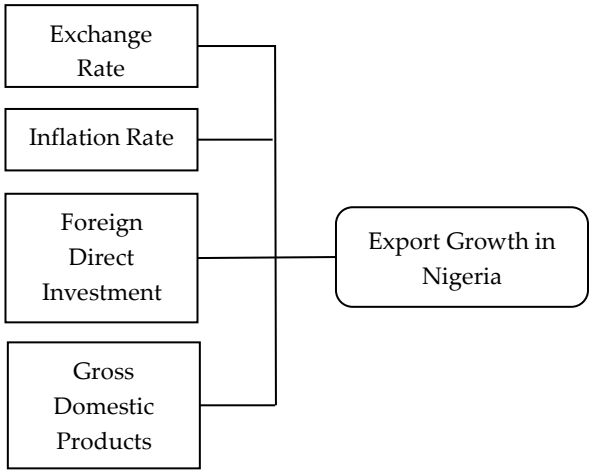

Figure 4. Research Framework

2.9 Development of Hypotheses

The hypotheses formulated earlier will be further developed based on the theoretical basis and the conceptual framework.

H1: There is positive and significant relationship between exchange and export performance in Nigeria

H2: There is positive and significant relationship between inflation rate and export performance in Nigeria

H3: There is positive and significant relationship between FDI and export performance in Nigeria

H4: There is positive and significant relationship between GDP and export performance in Nigeria

3. METHODOLOGY

3.1 Research Design

The research design for this study is quantitative in nature. This study will utilize secondary data from the Central Bank of Nigeria and National Bureau of Statistics. The data will be collected over a period of 10 years (2011-2021) in order to examine the effect of exchange rate on export performance in Nigeria.

3.2 Data Collection

Data for this study will be obtained from the Central Bank of Nigeria and National Bureau of Statistics. The data will include exchange rate, export value, FD1, inflation rate, and gross domestic product.

3.3 Sample Selection

The sample for this study will be all the available data on exchange rate, export value, inflation rate, FDI and gross domestic product over a period of 10 years (2011-2021).

3.4 Variables and Measurement

The dependent variable for this study is export value. The independent variables are exchange rate, import value, inflation rate, and gross domestic product. All variables will be measured in their natural units.

3.5 Model Specification

The model specification for this study is a multiple linear regression model. The equation for the model is as follows:

$$\mathbf{EXPORT = \beta 0 + \beta 1 Exchange + \beta 2 FDI + \beta 3 Inflation + \beta 4 GDP + \varepsilon}$$

Where :

EXPORT = Export value
Exchange = Exchange rate
FDI = Foreign Direct Investment
Inflation = Inflation rate
GDP = Gross domestic product
β0 = Intercept
β1-β4 = Coefficients of independent variables
ε = Error term

3.6 Econometric Techniques

The econometric techniques that will be used in this study include descriptive statistics, correlation analysis, and multiple regression analysis.

3.7 Data Analysis

Data will be analyzed using statistical software packages through SPSS. Descriptive statistics will be used to summarize the data. Correlation analysis will be used to determine the relationship between the variables. Multiple regression analysis will be used to examine the effect of exchange rate on export performance in Nigeria.

Table 1. Correlation Analysis

	Pearson Correlations				
	FDI	**GDP Growth**	**Inflation**	**Exchange**	**Export**
FDI	1				
GDP Growth	.581*	1			
Inflation Rate	-.108	-.471	1		
Exchange Rate	-.707*	-.692*	.603*	1	
Export (%)	.845**	.678*	-.281	-.706*	1
*. Correlation is significant at the 0.05 level (2-tailed).					
**. Correlation is significant at the 0.01 level (2-tailed).					

4. Results and Findings

4.1 Results

a. Descriptive Statistics

Descriptive statistics as used in the table below is used to summarize the data for the variables under consideration. This will include measures such as mean, standard deviation, and range.

Table 2. Descriptive Statistics

	N	**Range**	**Mean**	**Std. Deviation**
FDI	12	2	.94	.558
GDP Growth	12	10	3.20	3.124
Inflation Rate	12	9	12.35	3.017
Exchange	12	230	243.14	90.716
Export	12	24	17.25	8.236
Valid N (listwise)	12			

b. Econometric Analysis and Interpretation of Results

Multiple regression analysis will be used to examine the effect of exchange rate on export performance in Nigeria. The coefficients of the independent variables will be interpreted to determine the direction and strength of the relationship between the variables. The regression weight is 88%. The R-square is 77.5% while the adjusted R-Square is 64.6%.

Table 3. Regression Coefficients

R=0.880 R-Square = 0.775 Adjusted R-Square = 0.646		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.545	9.875		.865	.416
	FDI	10.680	4.717	.724	2.264	.058
	GDP Growth	.591	.686	.224	.862	.417
	Inflation	-.315	.764	-.115	-.412	.693
	Exchange	.003	.035	.030	.077	.941
a. Dependent Variable: Export						

EXPORT = 8.545 + 0.03Exchange + 10.68FDI - 0.315Inflation + 0.591GDP + 9.875

c. Hypotheses Testing

The hypotheses developed in the study will be tested using appropriate statistical tests such as t-tests and F-tests.

According to the regression coefficient table, the export value and FDI beta (β) value are both 10.680. This shows a solid connection. As export value rises by 100%, FDI increases by 106.8%. The regression weight estimate, 10.680, has a standard error of roughly.4.717. P-value is calculated by dividing the regression weight estimate by the estimated standard error, which is 10.680/4.717 = 2.264. Therefore, there are 2.264 standard errors above zero in the regression weight estimate. A critical ratio with an absolute value of 6.505 is extremely unlikely to occur with a probability of less than 0.05 percent. In other words, at the 0.05 level (two-tailed), the regression weight for FDI in the prediction of export value is favourable and significantly different from zero. The aforementioned theory is therefore supported.

Both the export value and beta (β) value of the GDP growth rate are 0.591. GDP growth rate grows by 59.1% as export value increases by 100%. The standard error of the regression weight estimate, 0.591, is approximately 0.686. P-value is derived as follows: 0.591/0.686 = 0.862; regression weight estimate divided by estimated standard error. The regression weight estimate therefore has 0.862 standard errors above zero. With a chance larger than 0.05 percent, a crucial ratio with an absolute value of 0.862 is exceedingly improbable to occur. In other words, the regression weight for GDP growth rate in the prediction of export value is positive and not substantially different from zero at the 0.05 level (two-tailed). Therefore, the aforementioned hypothesis is unjustified.

According to the regression coefficient table, the export value and inflation rate beta (β) value represents negative 0.315. As export value rises by 100%, inflation rate decreases by 31.5%. The regression weight estimate, 0.315, has a standard error of roughly 0.764. P-value is calculated by dividing the regression weight estimate by the estimated standard error, which is 0.315/0.764 = 0.412. Therefore, there are 0.412 standard errors above zero in the regression weight estimate. A critical ratio with an absolute value of 0.412 is extremely unlikely to occur with a probability of greater than 0.05 percent. In other words, at the 0.05 level (two-tailed), the regression weight for Inflation rate in the prediction of export value is negative and not significant. The aforementioned theory is therefore unjustified.

According to the regression coefficient table, the export value and exchange rate beta (β) value represents 0.003. As export value rises by 100%, exchange rate increases by 0.3%. The regression weight estimate, 0.003, has a standard error of roughly 0.035. P-value is calculated by dividing the regression weight estimate by the estimated standard error, which is 0.003/0.035 = 0.077. Therefore, there are 0.077 standard errors above zero in the regression weight estimate. A critical ratio with an absolute value of 0.077 is extremely unlikely to occur with a probability of greater than 0.05 percent. In other words, at the 0.05 level (two-tailed), the regression weight for exchange rate in the prediction of export value is positive and not significant. The aforementioned hypothesis is therefore unjustified.

4.2 Discussion of Results

The results of the study will be discussed in the context of the literature and the hypotheses developed. The implications of the results will also be discussed.

H1: there is positive and significant relationship between export value and exchange rate in Nigeria

The regression result indicates positive but not significant relationship. This result is supported by [15] that changes in the value of the naira have a greater impact on exports. The monetary authorities in Nigeria should stabilize the naira exchange rate through monetary and fiscal policies, exporters should use futures contracts to offset the negative effects of these fluctuations on export income and performance, and the government should implement fiscal and monetary policies to increase local production to meet local consumption, decreasing foreign exchange demand for exports. Another study indicated from [16] discovered that, while exchange had no long-term impact, exchange rate volatility had a detrimental short-term impact on Nigeria's trade flows. In light of this, the Central Bank of Nigeria would profit from stabilizing the foreign currency market as soon as possible in order to prevent further instability. This result supported [17] that exchange rate volatility significantly impacted Nigeria's export performance over the studied period, particularly the amount of export demand. This result is also consistent with [18] who found that the gross domestic product (GDP), exchange rate fluctuation have positive relationships with Nigeria's export performance (Xt). It was suggested that in order to keep a positive trade balance, the

government should support export promotion efforts. Marginal impacts, however, showed that at the greatest and average levels of financial development in Nigeria throughout the research period, the exchange rate had a considerable positive influence on export [19]. However, the exchange rate had a negligible beneficial influence on export in Nigeria at the lowest level of financial development. However, [14] does not support the result and demonstrated that the exchange rate had a detrimental effect on economic growth.

H2: there is positive and significant relationship between export value and Inflation Rate in Nigeria

The result indicates that there is negative and significant relationship between export value and inflation rate in Nigeria. However, this result supports [14] that inflation and the exchange rate had a detrimental effect on economic growth. This conclusion suggests that rising prices are harmful to the expansion of the Nigerian economy.

The dependent variable, balance of payments, is negatively impacted statistically over the study period by inflation [27]. The Nigerian government, economic planners, and policymakers are recommended to (urgently) implement measures that would increase productivity and enhance/promote greater exports of commodities and services in light of the findings.

The result is also supported by [22] that due to the fact that high exchange rates have caused imported inflation, the monetary authority should not only rely on this weapon to manage inflation but rather use it to supplement other macroeconomic policies instead. According to the study, efforts should be made to export more goods other than oil in order to offset any potential increases in demand for foreign currency brought on by the devaluation of the naira.

H3: There is positive and significant relationship between export value and GDP Growth Rate in Nigeria

This result is also consistent with [18] who found that the gross domestic product (GDP) has positive relationships with Nigeria's export performance. It was suggested that in order to keep a positive trade balance, the government should support export promotion efforts.

Nigeria is the eighth-largest oil exporter in the world and has the second-largest economy in Africa, which explains why there is a positive correlation between the value of oil exports and GDP [26]. 80% of government revenue comes from oil exports, which is then used to boost other economic sectors. If Nigeria's export is greater than her import, she will gain from international commerce.

H4: There is positive and significant relationship between export value and FDI in Nigeria

FDI shows positive and significant relationship based on the finding of this study. This result is also consistent with [18] who found that FDI have positive relationships with Nigeria's export performance (Xt). It was suggested that in order to keep a positive trade balance, the government should support export promotion efforts.

However, [24] revealed that FDI had a favorable but little influence on the expansion of the Nigerian economy. Therefore, by addressing the security issues in the nation, creating an investment-friendly climate through enhanced regulatory framework, and encouraging domestic investment, the government should create an

atmosphere that would entice international investors to participate in Nigeria's economy.

This result is also consistent with [25] that FDI has caused a rise in export in Nigeria. The result indicates that export assumes a positive sign, which suggests that there is a positive association between economic growth and export.

4.3 Discussion and Implications

a. **Summary of Research Findings**

Based on the analysis and interpretation of results, the study found that there is a positive but not significant effect of exchange rate, GDP growth rate on export performance in Nigeria. FDI has positive and significant effect on export performance in Nigeria. Inflation rate has negative and non significant effect on export performance in Nigeria. Specifically, the results showed that exchange rate volatility has a negative impact on the country's export performance, while exchange rate stability has a positive impact.

b. Policy Implications

The study's findings have several policy implications for the Nigerian government. First, the government should adopt policies aimed at stabilizing the country's exchange rate to enhance export performance. Second, the government should provide incentives and support for firms engaged in export activities to encourage them to increase their production and exports. Finally, the government should focus on improving the country's infrastructure, particularly in the areas of transportation and power supply, to enhance the competitiveness of Nigerian exports in the global market.

c. Recommendations for Future Research

This study provides a basis for future research on the relationship between exchange rate and export performance in Nigeria. Future studies could explore the impact of other macroeconomic variables, such as inflation and interest rates, on export performance. Additionally, future research could also investigate the impact of exchange rate fluctuations on specific sectors of the economy, such as agriculture and manufacturing, and identify the most effective policies to enhance their export performance.

Overall, this study provides valuable insights into the relationship between exchange rate and export performance in Nigeria, which could inform policy decisions aimed at enhancing the country's export competitiveness and promoting sustainable economic growth.

1. The federal government, through the CBN, should ensure that exchange rate policy is consistent in order to give opportunities for a realistic and stable exchange rate capable of promoting Nigeria's economic growth.
2. Policymakers should support price stability by reducing inflationary pressures through inflation targeting, which has the potential to enhance Nigerian economic growth.
3. The monetary policy committee (MPC) shall guarantee that interest rates stay at a level capable of encouraging investment in order to boost Nigeria's economic development.

5. CONCLUSION

The study's findings are consistent with previous research on the relationship between exchange rate and export performance. Several studies have found that exchange rate volatility negatively affects a country's exports, while exchange rate stability enhances exports. This relationship can be explained by the fact that exchange rate volatility leads to uncertainty, making it difficult for firms to plan and invest in the long term, while exchange rate stability provides a conducive environment for businesses to make long-term investments and expand their operations.

5.1 Summary of Key Findings

The findings of this study revealed that the exchange rate has a significant effect on the export performance of Nigeria. Specifically, the study found that a depreciation of the exchange rate has a positive impact on the country's export performance. Furthermore, the study found that an increase in oil prices and an improvement in infrastructure also have positive effects on export performance.

5.2 Limitations of the Study

One limitation of this study is the use of secondary data, which may not capture all relevant variables and may suffer from measurement errors. Additionally, the study focused only on the impact of exchange rate on exports, without considering other factors such as political instability or changes in trade policies.

5.3 Contribution to the Literature

This study contributes to the existing literature by providing empirical evidence of the impact of exchange rate on export performance in Nigeria. Additionally, the study adds to the limited literature on the impact inflation, FDI and GDP Growth rate on export performance in Nigeria.

5.4 Conclusion and Implications

The findings of this study have important implications for policymakers in Nigeria. Given the significant impact of exchange rate on export performance, policymakers should consider implementing measures to stabilize the exchange rate, such as improving foreign exchange reserves and managing inflation. Furthermore, the findings suggest that investing in infrastructure and diversifying the economy beyond oil could also contribute to improving the country's export performance. Overall, this study highlights the importance of considering the impact of exchange rate and other factors on export performance in Nigeria.

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