Analysis of The Impact of Exchange Rates on Imports in Nigeria

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Abstract
This study investigated the impact of the exchange rate on imports in Nigeria using data sourced from the Central Bank of Nigeria (CBN) statistical Bulletin. The Autoregressive Distributive Lag (ARDL) model was used to determine the impact of the exchange rate on imports and the results revealed that the Exchange Rate has a significant negative impact on imports both in the long run and short run. This means that an increase in the exchange rate will lead to reduction in imports. Based on the findings, the study recommends that the government should support import substations by encouraging the local production of imported products.

Introduction
Exchange rate fluctuations wield significant influence over a nation's import activities, profoundly affecting its economic landscape. Within the Nigerian context, where imports play a vital role in meeting domestic demand and supporting various sectors, understanding the ramifications of exchange rate movements is paramount. Nigeria, as one of Africa's largest

economies, heavily relies on imported goods to sustain consumption, facilitate production, and fuel economic growth. The country's import spectrum encompasses a diverse array of products, ranging from capital goods and raw materials to consumer goods and petroleum products. However, the volatility of exchange rates, particularly the fluctuation of the Nigerian naira against major international currencies, introduces uncertainty and complexity into the import landscape (Okoro & Egharevba, 2019). These fluctuations influence the cost, availability, and competitiveness of imported goods, shaping consumption patterns, trade balances, and overall economic performance.

Nigeria's import sector is a vital component of its economy, serving as a gateway for accessing goods and services not readily available domestically. The nation's import profile spans a diverse range of commodities, including machinery, consumer goods, raw materials, and capital equipment. However, the volatility of exchange rates, particularly the Nigerian naira relative to major international currencies, presents a significant challenge to the stability and affordability of imports (Okafor & Adewale, 2020). Fluctuations in exchange rates can affect the purchasing power of importers, alter the competitiveness of imported goods, and impact inflationary pressures within the economy

The discourse surrounding the impact of exchange rates on imports in Nigeria is marked by ongoing debates and divergent viewpoints. Some argue that exchange rate depreciation can foster import substitution by making domestically produced goods relatively more competitive (Ajao & Okunola, 2018). Conversely, others contend that currency devaluation may lead to higher import costs, inflationary pressures, and adverse effects on consumers' purchasing power, thereby constraining consumption and economic growth (Ekwueme & Iyke, 2021). Moreover, the effectiveness of policy interventions, such as import tariffs or currency stabilization measures, in mitigating the adverse effects of exchange rate volatility on imports remains a subject of debate.

While existing literature has examined specific aspects of the relationship between exchange rates and imports in Nigeria, significant gaps persist in terms of comprehensive analyses that encompass diverse dimensions of exchange rate dynamics and their implications for the import economy. This research paper aims to address these gaps by providing a holistic examination of the complex interplay between exchange rates and imports, thereby contributing to a more nuanced understanding of this critical relationship. This research is motivated by the imperative to generate actionable insights that can inform policy interventions, guide strategic decision-making, and foster sustainable growth in Nigeria's import sector.

Understanding the intricate relationship between exchange rates and imports holds immense significance for policymakers, businesses, and stakeholders involved in Nigeria's trade ecosystem. Insights gleaned from this research can inform evidence-based policy formulation, guide strategic decision-making by import-dependent industries, and facilitate the development of interventions aimed at enhancing Nigeria's import competitiveness on the global stage. Additionally, this research contributes to broader discussions on trade policy reform, economic development, and sustainable growth in Nigeria.

Conceptual clarifications:
Nigeria's exchange market evolved due to trade, institutional, and production shifts, notably after the Central Bank's establishment in 1958 (Obadan, 2014). The concept of "exchange rate is seen differently by different authors. According to Madura (2010), an exchange rate is defined as the price of one currency in terms of another, reflecting how much of one currency is exchanged for a unit of another. This definition is clear and straightforward, providing a basic understanding of the exchange rate as a price. However, it is somewhat simplistic, as it does not account for the complex factors influencing exchange rates, such as market dynamics, economic conditions, and policy interventions. This definition may be useful for introductory purposes but lacks depth in capturing the full spectrum of factors that affect exchange rates. Krugman and Obstfeld (2009) describe the exchange rate as the value at which one currency can be exchanged for another, taking into account influences like interest rates, inflation, and

economic stability. This definition offers a more comprehensive view by recognizing the impact of various economic factors on exchange rates. It provides a nuanced understanding of how exchange rates are influenced by broader economic conditions. However, this definition might be complex for those without a background in economics, as it assumes some familiarity with concepts like interest rates and inflation. Pilbeam (2006) defines the exchange rate as the rate at which one currency can be converted into another, determined by the foreign exchange market and influenced by supply and demand dynamics. This definition highlights the market-based nature of exchange rate determination and the role of supply and demand. While it effectively captures the operational aspect of exchange rates, it is somewhat narrow in its focus. It does not fully address the broader economic factors that also impact exchange rates, which may limit its explanatory power. After evaluating the definitions, the one by Krugman and Obstfeld (2009) is adopted. This definition provides a balanced perspective by incorporating both the value of currencies and the economic factors that influence exchange rates. It offers a comprehensive understanding of exchange rates, making it suitable for an in-depth analysis while still being accessible to those familiar with basic economic concepts.

The concept of Import also has slightly varying views from authors. According to Krugman and Obstfeld (2009), "Imports are goods and services purchased from abroad that are brought into a country for domestic consumption, production, or investment purposes." This definition underscores the role of imports in fulfilling domestic needs for products and services that may not be available or are more costly to produce locally. Madura (2010) defines imports as "the process of buying goods and services from other countries and bringing them into the domestic economy, which plays a significant role in international trade and affects the balance of payments." This definition highlights the broader economic impact of imports, including their role in international trade and their influence on a country's balance of payments. For this study, Imports refer to the acquisition and entry of goods and services into a country from international markets for the purposes of domestic consumption, production, or investment. This process involves purchasing products from abroad to satisfy domestic demand, diversify available resources, or complement local production capabilities. Imports are influenced by factors such as trade policies, tariffs, exchange rates, and global market conditions, and they play a critical role in shaping a country's economic landscape, affecting trade balances, industrial growth, and overall economic integration into the global market.

Theoretical Literature
Marshall-Lerner Condition: Proposed by Alfred Marshall and Abba Lerner in the 1920s and 1930s, the Marshall-Lerner Condition states that a depreciation of a country's currency will improve its trade balance only if the sum of the price elasticities of demand for exports and imports is greater than one. This means that for a depreciation to be beneficial, the responsiveness of demand for exports and the reduction in import volumes must be significant enough. While the Marshall-Lerner Condition provides insights into the effectiveness of currency depreciation, it may oversimplify the relationship by not accounting for other variables such as economic growth rates, trade barriers, or structural changes in the economy. Moreover, the condition's applicability can vary depending on the time frame and economic context, making it a more complex tool in practice than in theory.

Interest Rate Parity (IRP) Theory: Developed in the 1930s by John Maynard Keynes and further refined by economists such as Fischer and Mundell, the Interest Rate Parity (IRP) theory asserts that differences in interest rates between two countries are offset by changes in the forward exchange rate compared to the spot exchange rate. This balance ensures that returns on investments are equalized across currencies, after adjusting for exchange rate changes. The IRP theory assumes perfect capital mobility and no transaction costs, which is often not the case in practice. In reality, factors such as market frictions, capital controls, and differing levels of risk and liquidity can prevent the idealized conditions predicted by the IRP theory, leading to discrepancies between theoretical and actual returns.

Purchasing Power Parity (PPP) Theory: Introduced by Gustav Cassel in the 1920s, the Purchasing Power Parity (PPP) theory posits that exchange rates should adjust to equalize the price of a basket of goods and services between two countries. According to this theory, if the exchange rate deviates from the PPP level, it will eventually correct itself as price levels between countries adjust. While PPP provides a fundamental understanding of how exchange rates and prices are related, it often fails to account for short-term fluctuations and market imperfections. Real-world deviations from PPP can persist due to factors such as transportation costs, tariffs, and differences in product quality. Hence, while PPP is useful for long-term analysis, its application in short-term or volatile environments can be limited.

Empirical literature review
There are a number of empirical studies on the impact of exchange rates on trade.
Eje & Ugwu (2022) examined the impact of real effective exchange rate on Nigeria's import of goods and services from 1986 to 2020. They employed an Error Correction Model to estimate the multiple regression model. Results revealed a significant negative effect of the real effective exchange rate on imports. The error correction term (ECT) was negative and significant, indicating past deviations from equilibrium influence short-run dynamics, with a correction speed of 56% annually. The study suggests devaluing/depreciating Nigeria's currency to enhance import focus, as it is highly responsive to changes in the real exchange rate.

Banik & Roy (2021) examine, empirically, the effect of exchange rate uncertainty on bilateral trade performance, focusing on eight SAARC member economies using the popular modified gravity model of trade. The paper includes eight SAARC members – Afghanistan, Bangladesh, Bhutan, Maldives, Nepal, Pakistan and Sri Lanka panel data set over the period 2005–2018. The authors consider both standardized value (standard deviation) and conditional variance model to determine volatility of exchange rate. Primarily, ordinary least squares, random effects and fixed effects estimation techniques were employed to investigate the impact of exchange rate volatility. Endogeneity and robustness were tested using the simultaneity-adjusted model and dynamic panel data two-step system GMM estimation techniques. The findings of the study endorsed the view that exchange rate volatility lowers trade flows in the SAARC regions. However, this adverse effect of exchange rate uncertainty on trade was pretty small. The negative correlation between exchange rate volatility and bilateral trade remains consistent and significant after controlling of simultaneous causality, autocorrelation, year effects, country-pair heterogeneity and endogeneity irrespective of panel data estimation techniques and different measures of volatility.

Carrel and Wilfried (2021) examined the impact of exchange rate on trade in the case analysis of Congolese Partners using the GARCH model. The data used evaluates a series of exchange rates from January 2000 to December 2019, where export and import volumes were considered from the point of their determinants, including exchange rate volatility. The results for this Congolese case show that short run dynamics negatively discouraged both export and import. This implies that Congolese should opt for direct domestic currency when trading with partners.

The impact of the Ethiopian exchange rate and its volatility on foreign trade was explored by Nguse, Oshora, Fekete-farkas & Tangl (2021). The research was based primarily on secondary time-series data from 1992 to 2019. The study investigated the long-term link between exchange rate level, volatility, and international trade performance using the Autoregressive Distributive Lag (ARDL) model. In the near term, an error correction model was utilized to estimate the variables. Foreign Direct Investment (FDI), Gross Domestic Product (GDP), and inflation were employed as control variables in the regression study. The study's findings suggest that the exchange rate level has a negative and considerable impact on international trade in the short run. Exchange rate volatility, on the other hand, has a positive and considerable impact on international trade in the short and long term. Furthermore, the gross domestic product, foreign direct investment, and inflation all have a favorable short- and long-term impact on international trade.

Mehtiyev, Magda and Vasa (2021) examined exchange rate impacts on international trade using correlation and multiple regression techniques. The research analyzes the correlation

between inflation and devaluation and clearly states their impacts on trade balance. The case study about devaluation of the currency of Azerbaijan elaborates the impacts of currency volatility on exports which is illustrated and analyzed in this research. Moreover, inflation and devaluation correlations and their impacts on import level of a country were studied through correlation and multiple regression analyses based on the data exported from OECD and World Bank. The results conclude that exchange rate volatility significantly impacts the trade balance in terms of imports and exports. Given the results, exchange rate is a non-trade barrier and affects foreign trade

From 2004 to 2018, Tarasenko (2021) studied the effects of currency rate volatility on exports and imports of a variety of items between Russia and its 70 trading partners. The products in question are divided into eight categories: I agricultural raw materials; ii) chemicals; iii) food; iv) fuels; v) manufactured goods; vi) ores and metals; vii) textiles; viii) machinery and transportation equipment The standard deviation of the initial difference in the logarithmic daily nominal exchange rate is used to calculate exchange rate volatility. The report concludes that exchange rate volatility harmed agricultural raw materials, manufactured goods, and machinery   The impact of exchange rate volatility on India's international trade was explored by Arora and Rakhyani (2020). To investigate the impact of exchange rate volatility, inflation, and economic output on India's foreign trade, four models were built independently for exports of goods, imports of products, exports of services, and imports of services. The Auto Regressive Distributed Lag (ARDL) bounds test, which was done on monthly data from 2011 to 2020, found that growth in output had a positive long-term influence on trade in goods and services. The impact of rising prices on goods exports was negative. A spike in volatility causes a drop in goods imports in the near term, but it has a beneficial influence on goods exports in the long run. The influence of a volatile exchange rate on service trade was negligible. Inflation causes a rise in goods imports in the short run, but it causes a drop in service trade in the long run.

Ikechi & Nwadiubu (2020) used the ARCH modeling approach, the VAR model, and the granger causality test to assess the influence of currency rate volatility on foreign commerce in Nigeria. The study is based on the assumption that exchange rate fluctuations have an impact on the amount of export and import trading activity. The study found a mixed result when it came to the variables under consideration. While some of the experiments didn't provide enough information to anticipate the relationship between exports, imports, and the real effective exchange rate, others did. In the current time, the VAR model estimates show an inverse association between Export, Import, and REER. In a given year, a unit increase in export and import results in a 0.9 percent and 0.4 percent fall in REER, respectively. According to a variance decomposition analysis, the shocks only explain a portion of the variation in REER, as well as exports and imports. Throughout the ten periods, the impulse response analysis shows a negative relationship between export and real effective exchange rate, but a substantial positive relationship for imports. Imports cause exports, but exports do not cause imports, according to the causal effect. According to the ARCH modeling method, there is a first-order Arch effect and a large GARCH term. Though the GARCH Coefficient in a mean term is negative, it produced a singular covariance that is not unique in and of itself. The findings demonstrate that REER clustering is volatile in Nigerian import and export trading activity. This might have major consequences for Nigerian growth, as a decrease in export growth would diminish the foreign exchange profits available to fund economic initiatives. A drop in imports, on the other hand, could have an impact on domestic production and consumption. It could also have a detrimental impact on Nigeria's balance of payments.

METHODOLOGY
Source of data
The study used Secondary data sourced from the Central Bank of Nigeria (CBN) statistical bulletin. The which is time series in nature was collected for the years the study cover only.

Model Specification

To investigate if Exchange Rate Fluctuation impacts significantly on Imports in Nigeria, the study adopted a model from the study of Oloyede and Essi (2017) on the effect of exchange rate on imports and exports in Nigeria. The model revealed that export and import are functions of exchange rate. After adopting the model, some control variables were introduced such as inflation rate, foreign direct investment, and financial developments which according to empirical studies (e.g Suleiman and Dangiwa (2021)) have significant impact on export and import as shown below in the following pairs of equations

$$IMPT = f(EXCR, INFR, FDI, FDP)\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots(3.2)$$
Where:
IMPT=Import
EXCR=Exchange Rate
INFR=Inflation Rate
FDI= Foreign Direct Investment
FDP= Financial Development (Measured byCredit to Private Sector)

The above model is equally expressed in econometric form as follows:

$$IMPT_t = \lambda_0 + \lambda_1 EXCR_t + \lambda_2 INFR_t + \lambda_3 FDI_t + \lambda_4 FDP_t + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots(3.4)$$

Where: μ_t = is the Error term, and t= time trend, $\lambda_0 - \lambda_4$= parameters to be estimated, others as in equation 3.1 and 3.2

Table 3.2 On Summary of variables for objective three

Variables	Measurement	Expected Sign
	Dependent Variable	
Import	₦Billion	
	Independent Variables	
Exchange Rate	Par USD	Negative
Inflation Rate	Percentage	Positive
Foreign Direct Investment	Percentage of GDP	Negative
Financial Development (Measured by Credit to Private Sector)	Percentage of GDP	Negative

Source: Author's computation, 2021

Measurement and Justification of Variables
Dependent Variable
Import: This is the value monetary value of goods and services produced and imported to other countries which is expressed in billions of naira. Data was sourced from Central Bank of Nigeria Statistical Bulletin (2022)

Iindependent Variables
i.   Exchange Rate: Exchange rate is the rate at which a currency is exchanged for another currency and it is expressed in percentage. Studies by Anoke, Codo, and Ogbonna (2016), Oloyede and Essi (2017have shown that the balance of payments position of a country depend on the level of exchange rate. Data was sourced from World Bank Development Indicators (2022)
ii.   Inflation Rate: Inflation is measured by comparing the price in two different periods, of a fixed basket of goods and services and it is expressed in percentage. A country with high level of inflation may likely experience challenges in export but a fall in inflation will encourage a country to increase her level of import (Anthony, Peter and Richard,

2012). Data was sourced from World Bank Development Indicators (2022)

iii. Foreign Direct Investment: Foreign direct investments are the net inflows of investment to acquire a lasting management interest in an enterprise operating in an economy other than that of the investor. Data was obtained from World Development Indicator (2022)

iv. Financial Development: Financial development measured the strength of the financial market toward the development of the economy. Mehdi, Arezoo and Alireza (2014) has pointed out that that Financial Development has positive effect on export and economic

Technique of Data Analysis

Unit Root Test

Gujarati and Porter (2009) pointed out that care should be taken when regressing non stationary variable on another because it will generate spurious result. In order to avoid this kind of scenario, this study will conduct stationarity test by using both the Augmented Dickey Fuller and Phillips-Perron unit root test method in order to discover if the variables used for the analysis of objective three are integrated of order one I(1) or mixed order.

ADRL Bounds test to Cointegration

Pesaran and Shin (2001) have shown that the ARDL Bounds test to cointegration has the capacity to determine long run cointegration on variables that are purely I(1) or even variables that have the combination of I(1) and I(0). This study shall apply ADRL Bounds test to Cointegration approach if the variables used for the analysis are all I(1) or mixed order.

Autoregressive Distribution lag (ARDL) Model.

One of the advantage of the ARDL Model estimation technique over others is that it has the capacity to estimate both the short-run and long coefficients on variables that are purely I(1) or even variables that have the combination of I(1) and I(0) (Pesaran and Shin, 2001). This study shall apply the ARDL approach on the account that the variables used for the analysis are all I(1) or mixed order. The equation below represents the model specification for objective three in ARDL Model form.

$$\Delta IMPT_t = \beta_0 + \sum_{i=1}^{n} \beta_{1i} \Delta IMPT_{t-i} + \sum_{i=1}^{n} \beta_{2i} \Delta EXCR_{t-i} + \sum_{i=0}^{n} \beta_{3i} \Delta INFR_{t-i} + \sum_{i=0}^{n} \beta_{4i} \Delta FDI_{t-i}$$
$$+ \sum_{i=0}^{n} \beta_{5i} \Delta FDP_{t-i} + \gamma_1 EXPT_{t-i} + \gamma_2 EXCR_{t-i} + \gamma_3 INFR_{t-i} + \gamma_4 FDI_{t-i} + \gamma_{5i} FDP_{t-i}$$
$$+ \varepsilon_t \dots\dots.3.6$$

Where: β_1- β_5= Short-Run Coefficients, γ_1- γ_5=Long-Run Coefficients, Δ=Difference, others equation 3.2 and 3.4

Results and Discussions

Summary of Descriptive Statistics of the Variables used for the analysis

The study estimates the descriptive statistics of the variables and presents the results in terms of the unit of measurement, maximum value, average value, and minimum value as shown in Table 4.1

Table 4.1 : On Descriptive Statistics of the Variables used for the analysis

Variables	Source	Unit of Measurement	Maximum	Average	Minimum
Import	CBN (2023) Microtrend and Statistica (2023)	₦ Billion	24153674	4628210	5983.6
Exchange Rate	WDI (2023) Microtrend and Statistica (2023)	Par USD	358.8108	119.7279	0.72441
Inflation Rate	WDI (2023) Microtrend and Statistica (2023)	Percentage	72.8355	19.18153	5.388008
Foreign Direct Investment	WDI (2023) Microtrend and Statistica (2023)	Percentage of GDP	5.790847	1.557141	-0.190000
Gross Domestic Product Par Capital	WDI (2023) Microtrend and Statistica (2023)	Constant 2010 USD	3098.986	1349.610	270.224

Source: Author's Computation, 2023 using EVIEWS 9. Where: CBN=Central Bank of Nigeria, WDI=World Development Indicators

The above Table 4.1 indicates that Export has a maximum value of 23,516,824 which was obtained in the year 2019 and a minimum value of 7,502.5which was obtained in the year1983 while the average value stood at 6272786. Similarly, the maximum value of Import stood at 24,153,674 which was realized in the year 2019 and a minimum value of 5,983.6 which was realized in the year 1986 while the average value stood at 4628210. For Exchange Rate, it has a maximum value of 358.8108 which was recorded in the year 2020 and a minimum value of 0.72441 which was recorded in the year 1983 while the average value stood at 119.7279.

For Inflation Rate, it has a maximum value of 72.8355 which was recorded in the year 1995 and a minimum value of 5.388008 which was recorded in the year 2017 while average value realized was 19.18153. Foreign Direct Investment over the study period has a maximum value of 5.790847 which was obtained in the year 1994 with a minimum value 0.195183 which was obtained in the year 2018 while the average value realized was 1.557141.   For Gross Domestic Product Par Capital, the maximum value stood at 3,098.986 which was realized in year the 2014 and a minimum value of 270.224 which was obtained in year 1993 while average value realized over the study period stood at 1349.610

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Results of Unit Root Test of the Variables used for the analysis
The study applied Augmented Dickey-Fuller (ADF) unit root test for the analysis and presents the results in Table 4.2

Table 4.2 Result of Unit Root Test of the Variables used for the analysis

	Augmented Dickey-Fuller Unit Root Test at Trend and Intercept						
Variables	Test Statistics at Level	5% Critical Value at Level	P Value at Level (5%)	Test Statistics at First Difference	5% Critical Value at First Difference	P Value at First Difference (5%)	Order of Integration
log(IMPT)	-5.005414	-2.963972	0.0003	-	-	-	I(0)
log(EXCR)	1.682979	-3.610453	0.9994	-4.574248	-2.941145	0.0007	I(1)
log(INFR)	-2.908960	-2.938987	0.0534	-	-	-	I(0)
log(FDI)	-4.431744	-2.938987	0.0011	-	-	-	I(0)
Log(FDP)	--1.035425	-2.938987	0.7310	-5.814188	-2.843427	0.0000	I(1)
Log(EXCR*FDP)	-2.177296	-3.536601	0.4876	-5.520089	-3.540328	0.0003	I(1)
log(TOT)	-1.798399	-3.544284	0.6840	-7.357065	-3.544284	0.0000	I(1)
log(GDPCC)	-4.896692	-2.941145	0.0003	-	-	-	I(0)

EXCR=Exchange Rate, INF=Inflation Rate, FDI= Foreign Direct Investment, FDP= Financial Development (Measured by Credit to Private Sector), EXCR*FDP=Interaction Term, TOT=Terms of Trade, GDPPC=Gross Domestic Product Par Capital

The results indicate that Export, Exchange Rate, Financial Development and Terms of Trade are stationary at level using 5 percent significance level because their critical values at level are less than their test statistic values at level in absolute term. In the same vein, the P- values of the variables at level are less than 5 percent which also indicate that the variables are stationary at level.

However, import, inflation, Foreign Direct Investment, and Gross Domestic Product Par Capital after taking the first difference became stationary at first difference because the critical values of the variables at first difference are less than their respective test statistic values in absolute term. In the same manner, the P-values of the variables at first difference are less than 5 percent which also suggests that most of the variables are stationary at first difference. Therefore, the variables considered for the analysis are integrated both at levels I (0) and at order one I (1).

Effect of Exchange Rate on Import in Nigeria

ARDL Bounds Test to Cointegration
The result of the ARDL Bounds test to cointegration is presented in Table 4.3 below

Table 4.3: On ARDL Bounds Test to Cointegration for Objective Three

Computed F- Statistic	K	5% critical Bound Test value	
		Lower Bound	Upper Bound
12.33603	4	2.86	4.01

Source: Author's Computation, 2023 using EVIEWS 9.

From the above Table 4.3, the value of the estimated F. Statistic is greater than both the lower and the upper critical Bound value at 5 percent significant level. This suggests that the variables considered for the analysis such as; Import, Exchange Rate, Inflation Rate, Foreign Direct Investment, and Financial Development have long run cointegration.

ARDL Long-Run Estimates
The results of the ARDL long run estimates are presented in Table 4.4

Table 4.4: On ARDL Long-Run Estimate

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Log(EXCR)	-1.037869	0.066962	-15.499401	0.0000
log(INFR)	-0.618784	0.129655	-4.772530	0.0002
log(FDI)	0.138643	0.087494	1.584606	0.1326
log(FDP)	-1.172268	0.778210	-1.506191	0.1620
C	6.122454	0.825541	7.416294	0.0000

Source: Author's Computation, 2023 using EVIEWS 9.Log=Logarithms, IMPT= Import, EXCR=Exchange Rate, INF=Inflation Rate, FDI= Foreign Direct Investment, FDP= Financial Development

a) Result of   the long run effect of Exchange Rate on Import in Nigeria
The results revealed that Exchange Rate has significant negative impact on Import in the long run using 5 per cent level. The coefficient explained that a unit increase in Exchange Rate will bring about 1.037869 percent significant reductions in Import in Nigeria. The coefficient of Inflation Rate showed significant negative sign at 5 percent level which implied that Inflation Rate has significant negative effect on Import in the long run. To be specific, a unit increase in Inflation Rate will bring about 0.618784 percent significant reduction in Import in Nigeria.

The results also revealed that Foreign Direct Investment has insignificant positive impact on Import at 5 percent level. The coefficient explained that a unit increase in Foreign Direct Investment will result in about 0.138643 percent increase in Import in Nigeria. For Financial Development, the coefficient showed insignificant negative sign at percent level which implied that Financial Development has insignificant negative effect on Import in the long run. The coefficient explained that a unit increase in Financial Development will bring about 1.172268 percent insignificant reductions in Import

ARDL Short-Run Estimates
In order to estimate the short-run model, the study used Akaike Information Criterion for an optimal lag selection and automatically selects ARDL (2, 3, 4, 0, 4). The variables were logged during the estimation so as to minimize the effect of outliers in the data and present the results in Table 4.5 below.

Table 4.5: On ARDL Short-Run Estimates

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(log(IMPT(-1)))	0.534955	0.111276	4.807461	0.0002
D(log(EXCR))	-0.379972	0.149146	-2.547656	0.0215
D(log(EXCR(-1)))	-0.344336	0.230304	-1.495140	0.1543
D(log(EXCR(-2)))	-0.133384	0.115497	-1.154863	0.2651
D(log(INFR))	-0.032094	0.079091	-0.405792	0.6903
D(log(INFR(-1)))	0.152774	0.099846	1.530096	0.1455
D(log(INFR(-2)))	0.355693	0.117721	3.021488	0.0081
D(log(INFR(-3)))	-0.202983	0.129416	-1.568461	0.1363
D(log(FDI))	-0.095074	0.057489	-1.653769	0.1177
D(log(FDP))	-0.441566	0.194183	-2.273967	0.0371
D(log(FDP(-1)))	-1.247501	0.255704	-4.878684	0.0002
D(log(FDP(-2)))	0.130376	0.333709	0.390687	0.7012
D(log(FDP(-3)))	-0.475548	0.235237	-2.021567	0.0603
ECT(-1)	-0.685743	0.135394	-5.064809	0.0001
R-squared=0.977987, Prob(F-statistic)= 0.0000				

Source: Author's Computation, 2023 using EVIEWS 9.**Where:** D=Difference, Log=Logarithms, IMPT= Import, EXCR=Exchange Rate, INF=Inflation Rate, FDI= Foreign Direct Investment, FDP= Financial Development

b) Result of the short run effect of Exchange Rate on Import in Nigeria
The coefficient of lagged dependent variable (IMPT(-1)) showed significant positive sign at 5 percent level. This result implied that previous information on Import significantly influence the current level of Import in Nigeria. The results also revealed that Exchange Rate at lag 0 (EXCR) has significant negative effect on Import in the short run at 5 percent level. The coefficient explained that that a unit increase in Exchange Rate at lag 0 will results in about 0.379972 percent significant reduction in Import in Nigeria.

The results also showed that Inflation Rate at lag 2 (INFR(-2) has significant negative effect on Import in the short run at 5 percent level. Specifically, a unit increase in Inflation Rate at lag 2 will result in about 0.355693 percent significant increase in Import in Nigeria. The results also revealed that Foreign Direct Investment at lag 0 (FDI) has insignificant negative impact on Import at 5 percent level. Precisely, a unit increase in Foreign Direct Investment at lag 0 will bring about 0.032094 percent insignificant reduction in Import in Nigeria

For Financial Development, the coefficient at lag 1 (FDP(-1)) and lag 2 (FDP(-2)) showed significant negative signs which implied that Financial Development at lag 1 and 2 have significant negative effect on Import in the short-run. The coefficient explained that a unit increase in Financial Development at lag 1 and 2 will bring about 0.441566 percent and 1.247501 percent significant reduction in Import in Nigeria respectively

For the Error Correction Term, the coefficient showed significant negative value (-0.685743) at 5 percent level which implied that long run relationship exists among the variables such as; Import, Exchange Rate, Inflation Rate, Foreign Direct Investment and Financial Development over the study period. The coefficient of the ECT Term explains that about 68 percent of the disequilibrium in the long run will be adjusted annually.

Furthermore, the model has an R Square value of 0.977987 which implied that the model has a good fit. The value of the R-square explained that about 97 percent of Import is being explained by Exchange Rate, Inflation Rate, Foreign Direct Investment and Financial Development while remaining 3 per cent is being explained by other variables not captured in the model. Similarly, the F statistics showed significant probability value which suggests that Exchange Rate, Inflation Rate, Foreign Direct Investment and Financial Development have significant joint effect on Import in Nigeria

Diagnostic Checks
The diagnostic test results are presented in Table 4.6 below

Table 4.6: On Diagnostic Check for Objective three

Test	Statistic	P-Values
Jarque-Bera Sta.	0.822550	0.662804
Breusch-Godfrey Serial Correlation LM	3.122501	0.2099
Heteroskedasticity: Breusch-Pagan-Godfrey	15.84825	0.5346
Durbin-Watson stat	1.934496	
CUSUM Test	See Figure 4.2 below	

Source: Author's Computation, 2023 using EVIEWS 9.
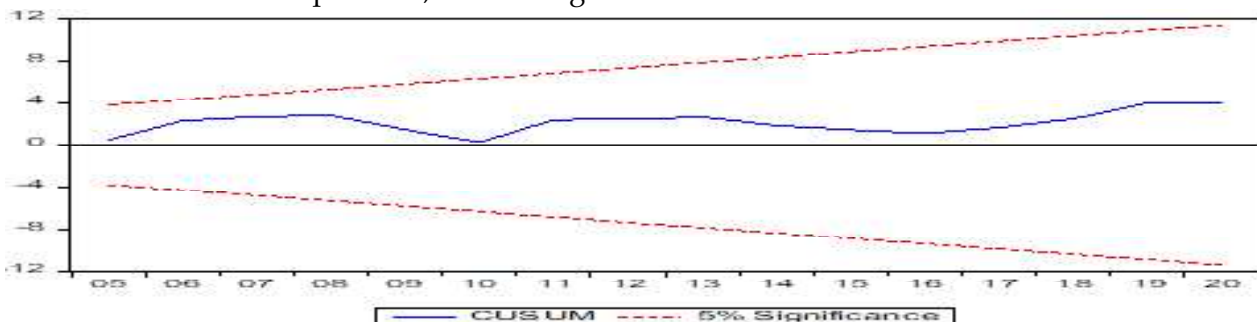

Figure 4.2: CUSUM Test
Source: Author's Computation, 2023 using EVIEWS 9

The Jarque-Bera Statistic has p-value that is greater than 5 percent which implied that the mode has residual that is normally distributed. The Breusch-Godfrey Serial Correlation test and Breusch-Pagan-Godfrey heteroscedasticity test also have p-values that are greater than 5 percent which implied that the model does not have the problem of heteroscedasticity and serial autocorrelation. In addition, the parameters of the model were found to be stable because the CUSUM plot in Figure 4.2 above falls within the 5 percent critical bound.

Discussion of Results
It is expected theoretically that an increase in exchange may discourage import. This study affirmed this assertion because the results of the ARDL long run estimate in Table 4.8 revealed that a unit increase in Exchange Rate will bring about 1.037869 percent significant reductions in Import in Nigeria which is consistent with study of Alam and Ahmed (2010) Samimi et al (2012) and Alam (2009).

Inflation rate is theoretically expected to encourage import. The estimated ARDL short run model in Table 4.4 agreed with this theoretical claim because it revealed that Inflation Rate has positive impact on import which is also consistent with the study of Iran, Oloyede and Essi (2017) on effect of exchange rate on imports and exports in Nigeria. The results in Table 4.4 also revealed that Financial Development has insignificant negative impact on import in Nigeria which is in line with the apriori expectation of the study and consistent with study of Aghion, Bacchetta, Ranciere and Rogoff, (2006) on exchange rate volatility and productivity growth: the role of financial development.

It is expected theoretically for Foreign Direct Investment to have a negative impact on import. This study disagreed with this assertion because the results in of the long run model in Table 4.4 revealed that Foreign Direct Investment has insignificant positive effect on import in Nigeria.

Conclusion and Recommendations
This study investigates the impact of exchange rate on trade in Nigeria over the period 1983 to 2020. Based on the results of the analysis, the study concludes that Exchange, Rate has a significant negative impact on imports both in the long run and short run. The study thus makes the following recommendations:
i.   Diversify Export Base: Encourage the diversification of Nigeria's export base to earn more foreign exchange. Reducing dependence on a few commodities can help stabilize foreign exchange earnings.
ii.   Foreign Exchange Reserves: Build and maintain healthy foreign exchange reserves to provide stability in times of currency fluctuations. This can be achieved through prudent fiscal and monetary policies.
iii.   Import Substitution: Promote import substitution industries by supporting domestic production of goods that can be manufactured locally. This reduces reliance on imports, conserving foreign exchange.
iv.   Trade Policies: Review and adjust trade policies and tariffs to balance the need for foreign exchange with the necessity of protecting domestic industries. Tariffs can be used strategically to encourage or discourage specific imports.
v.   Export Promotion: Support export-oriented industries and provide incentives for non-oil exports. This can help generate more foreign exchange income.

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