EXCHANGE RATE AND FOREIGN DIRECT INVESTMENT IN NIGERIA

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ABSTRACT

The study investigated the impact of exchange rates and foreign direct investment (FDI) in Nigeria from 1986 to 2020. To achieve this onerous task, the researchers collected data on exchange rates, exports, imports, and FDI from the Central Bank of Nigeria's statistical bulletin and used multiple regression analysis to analyze the data. The results showed that there was no significant link between exchange rates and FDI in Nigeria, nor was there a significant connection between exports and imports with FDI. However, the study found that exchange rates had a positive influence on FDI in Nigeria. Overall, the study concluded that the combination of exchange rates, exports, and imports had a significant negative effect on FDI in Nigeria. The researchers recommended that monetary authorities maintain a stable and favorable exchange rate to boost foreign direct investment in Nigeria
Keywords: foreign direct investment, exchange rate, import, export
JEL: F0, F2, F3, O2, O4, O55

INTRODUCTION

The stability of exchange rates and the promotion of Foreign Direct Investment (FDI) in both developed and developing economies, such as Nigeria, are crucial for driving economic growth and development. This is because FDI can combine capital, technology, investment, and services to achieve economic development. FDI refers to an investment made by foreigners in a company to earn a return and establish a lasting management interest or share in the company's ownership. According to Mwillima (2008), a lasting management interest involves having at least 10% equity shares in a corporation operating in a country other than that of the investor's home country.

According to Asiedu (2001), developing countries in Africa, including Nigeria, rely heavily on Foreign Direct Investment (FDI) for their development because it brings various benefits such as job creation, infrastructure development, technical expertise, private sector growth, wealth creation, and improved living standards. Other researchers have also highlighted the importance of FDI in improving capital investment (Sjoholm, 1999; Obwona, 2004). However, many developing economies, including Nigeria, are facing a shortage of capital for investment, which hinders their economic development. To address this issue, these countries have turned to foreign investment, particularly FDI. Adegbite and Ayadi (2010) agree that FDI helps fill the gap in domestic revenue generation and address the lack of investment capital in developing countries (Asiedu, 2001; Funke and Nsouli, 2003; Obwona, 2004).

Given that Nigeria is a developing economy it is pertinent on the stakeholders (policy makers) to channel the investment policies towards attracting foreign investments, ergo, benefitting from its cross-border resources of technology, marketing and managerial know-how in addition to accelerating capital. Furthermore, given the nature and scalability of the Nigeria market, vaunted as the giant of Africa, the country is qualified to be a major benefactor of FDI in Africa. However, according to Asiedu (2001), Nigeria's ability to attract FDI is somewhat limited compared to its vast resources and potential.

The exchange rate, which is the rate at which a country's currency is traded for another, has a significant impact on the amount of foreign direct investment (FDI) that takes place and, in turn, affects economic development. When a country's currency depreciates, or loses value relative to another currency, it can have important implications for FDI. Specifically, the reduction in currency value can lead to lower wages and production costs for foreign investors, making it more attractive for them to invest in the country (Goldberg, 2006). However, this increased attractiveness comes at the cost of potentially higher inflation rates. As a result, the exchange rate depreciation can improve the overall return on investment for foreign investors considering a project abroad (Goldberg, 2006).

Nigeria has been plagued by persistent exchange rate fluctuations, driven by the consistent depreciation of its currency, the Naira. The exchange rate has steadily declined across all segments of the foreign exchange market, including the official, bureau de change, and parallel markets. According to data from the Central Bank of Nigeria (CBN), the Naira has depreciated significantly over the years. For example, in the official market, the exchange rate fell from N8.04 per US dollar in 1990 to N472 per dollar in July 2020. The exchange rate has also experienced significant declines in other periods, from ₦8.04 per US dollar in 1990 to ₦81.02 per dollar in 1995, ₦129.22 in 2003 to ₦133.00 in 2004, and increased further to ₦158.55 in 2014, ₦193.27 in 2015 and ₦253.49 in 2016. Similarly, it depreciated from ₦305.79 and ₦305.76 per dollar in 2017 and 2018, in 2019 to ₦360.50

The recent surge in exchange rates has created a challenging operating environment in Nigeria, which has hindered the country's ability to attract foreign investment and encourage domestic investment. Despite the vast investment opportunities in various sectors such as industry, forestry, agriculture, commerce, infrastructure, and oil and gas, Nigeria has only attracted a small amount of foreign investment compared to other developing countries and regions. This has led to a question: Does exchange rate have an impact on foreign direct investment (FDI)? This study aims to investigate this question by reviewing existing literature and conducting a descriptive and regression analysis of secondary data on exchange rates, imports, exports, and FDI sourced from the Central Bank of Nigeria's Statistical Database. The findings of this research will contribute to the existing body of knowledge on FDI and help bridge the current knowledge gap.

LITERATURE REVIEW
Conceptual framework
Exchange rate refers to the value of one country's currency compared to the value of another country's currency. In other words, it is the rate at which one currency can be traded for another. It is the most significant macroeconomic variable in an open economy (household, business, government and export/import) which affects other macroeconomic parameters like trade,

inflation, money inflow and FDI (Blonigen, 1997).

The relationship between exchange rates and foreign direct investment (FDI) is complex and can be influenced by various factors, including the destination of goods produced. Under this framework, the direction of this relationship depends on whether the goods are exported or imported. The exchange rate between two countries can impact FDI, with a higher exchange rate in the export country's currency being a significant factor. According to Harrison (1993), an increase in exports can lead to increased production, reduced production costs, and higher productivity, which can attract foreign investors to undertake FDI. This is because a strong export sector can create a demand for domestic enterprises and promote exports, making it more attractive for foreign investors to invest in the country.

From the perspective of importing goods and services, a high exchange rate can attract foreign direct investment (FDI) companies in the host country, as they can import necessary inputs and capital that are not available locally. However, if these companies rely on locally sourced raw materials and inputs, a change in the exchange rate may not have a significant impact on their imports. In fact, a depreciation in the host country's exchange rate can actually increase FDI inflows by reducing the cost of capital investment (Adelegan, 2000). Companies seeking to maximize their profits will consider the exchange rate between the host country and their source country when making investment decisions. Ultimately, a depreciation in the host country's exchange rate can boost FDI by making it more attractive for companies to invest and export from the host country.

Exchange rate and FDI in Nigeria
Nigeria is a country with an abundance of natural resources, including mineral deposits, agricultural land, and waterpower, which makes it an attractive location for foreign investment. However, despite its potential, Nigeria has not received significant amounts of foreign investment. According to World Bank data, the country's share of foreign direct investment (FDI) flows has been declining over the years. In 1990, Nigeria received only 2.4% of the total $25 billion FDI flowing into developing countries. By 1993, the total FDI inflow had increased to $67.6 billion, but Nigeria's share had dropped to just 1.9%. According to UNCTAD (2020) FDI flows to Nigeria totalled to US $3.3 billion with exchange rate of ₦360.50 in 2019, showing a 48.5% decrease compared to the previous year (US $6.4 billion with exchange rate of ₦305.50 in 2018) under the effect of austerity measures associated with deficiencies in macroeconomics variables. This decline is attributed to the rising exchange rate in Nigeria, which made it less attractive for foreign investors to invest in the country.

According to Jerome and Ogunkola (2004), several factors contributed to the decline in foreign direct investment (FDI) in Nigeria, including the instability of macroeconomic variables, such as rising inflation, interest rates, and exchange rate volatility. This view is supported by other studies, which identify factors such as exchange rates, changes in domestic investment and output, interest rates, and changes in economic openness and market size as key determinants of FDI in Nigeria (Anyanwu 1998; Imran 2017). Specifically, exchange rates are seen as a significant factor. However, other constraints and deficiencies that hinder FDI inflows into the country include issues such as insecurity, political instability, poor infrastructure, inadequate communication services, frequent disruptions in power supply, and a lack of access to water and transportation.

Furthermore, Obadan (2004) notes that a significant external debt burden can significantly impact foreign investors' perception of the economy's overall health. However, Ebekozien, Ugochukwu and Okoye (2015) posited that to solve these deficiencies and improve foreign direct investment (FDI) inflows, the Nigerian government has established various institutions, including the Economic and Financial Crimes Commission (EFCC), the Independent Corrupt Practices and other related offences Commission (ICPC), National Economic Empowerment and Development Strategy (NEEDS) and the Nigerian Investment Promotion Commission (NIPC). However, their research finds that despite these efforts, the industrial sector has a positive correlation with FDI, but has yet to attract substantial FDI into the country. This suggests that exchange rate fluctuations between countries may be a significant factor contributing to Nigeria's mediocre level of FDI inflows.

Empirical review

Studies on exchange rate and FDI in Nigeria has yielded diverse outcomes. One study by Kenny, (2009) examined the influence of foreign direct investment and exchange rate on economic growth in Nigeria between 1971 to 2013. Using trend lines and percentages to analysis the data, the study found that exchange rates have a greater impact on economic growth than FDI in Nigeria. Another study by Osinubi and Amaghionyeodiwe, (2009) analyzed the effects of exchange rate volatility on FDI in Nigeria from 1970 to 2004 and discovered a positive correlation between real inward FDI and exchange rates. However, the study also found that Nigeria's structural adjustment program introduced in 1986 had a negative impact on FDI, possibly due to increased exchange rate volatility. As a result, the Central Bank of Nigeria faces a significant challenge in maintaining a stable and realistic exchange rate to promote domestic production, boost FDI, and maintain economic balance.

Petr and Václava (2010) conducted a study on the impact of exchange rate fluctuations on foreign direct investment (FDI) in central European countries. Their research found that FDI flows are influenced by exchange rate movements, as investors believe that they can purchase foreign assets and technologies at a lower cost when the currency is weak. The study also employed panel data techniques to analyze the data from four central European countries. Hosein and Maryam (2012) examined the effects of exchange rate volatility on FDI in Iran, using data from 1980 to 2006. The study found that gross domestic product, openness, and exchange rate have a positive correlation with FDI, whereas world crude oil prices and exchange rate volatility have a negative impact on FDI.

Birgül and Sevcan (2016) analyzed the relationship between exchange rates and foreign direct investment (FDI) in Turkey, using time series data from 2007 to 2015. They found that there is a long-term relationship between exchange rates and FDI inflows in Turkey, using a bound test cointegration approach based on the Autoregressive Distributed Lag Model (ARDL). Imran (2017) analyzed the relationship between Foreign Direct Investment (FDI) and exchange rate in Pakistan, using a time series dataset covering 2003-2013. The dataset included variables such as foreign direct investment, exchange rate, GDP, imports, exports, and inflation. The study employed multiple regression, descriptive statistics, and correlation analysis to test the results. The findings suggest that there is a significant association between FDI and Rupee depreciation (exchange rate).

Murtala (2017) examined the determinants of foreign direct investment in Nigeria from 1990 to
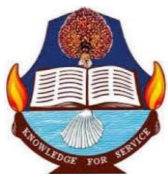
2015. Using data from the Central Bank of Nigeria, he found that there is a strong positive relationship between FDI and exchange rates, and a weak positive relationship between FDI and GDP. The study concluded that exchange rates, FDI, and GDP are positively correlated and recommended that the Nigerian government liberalize its exchange rate regime to attract more FDI. One of the gaps from these studies appears to be in the time period as no study was conducted to cover 2020.

RESEARCH METHODOLOGY
In this study, an ex-post facto research design was used, which involves analyzing data that has already been collected and is available after the events have occurred. This approach allows researchers to make inferences about the relationship between exchange rates and FDI in Nigeria, using data from secondary sources such as the Central Bank of Nigeria's statistical bulletin, covering the period from 1986 to 2020.

Model specification
This study examined the relationships between various variables, with a focus on the impact of each on the others. The dependent variable is foreign direct investment (FDI), which is the outcome being measured. The independent variables, which are the factors that influence FDI, include the exchange rate, as well as imports and exports.

Functional relationship is:
FDI = f (IMP, EXP, EXR) …………………………………………………………i

The following is the main linear regression model, which will be used for analysis:
$Y = \alpha + \beta_1 (EXR) + \beta_2 (IMP) + \beta_3 (EXP) + \mu$…………………………………..ii

Where:
Y = foreign direct investment; **EXR** = Exchange rate; **IMP** = Import; **EXP** = export; **μ** = error term; **α** = constant; **β1 - β3** = the parameter.

Apriori expectation is expressed mathematically as: $\beta_1 - \beta_3 > 0$.

To analyze the data, the study employed descriptive statistics to examine the characteristics and patterns of the data, as well as multiple regression analysis to quantify the effect of each independent variable on the dependent variable.

ANALYSIS AND DISCUSSION
Descriptive statistics
The results of the descriptive statistics are presented in Table 4.1. The analysis shows that foreign direct investment (FDI) had a mean value of 3.180 and a standard deviation of 2.607, with a minimum value of 0.380 in 2006 and a maximum value of 8.840 in 2018. The total value of exchange rate (EXCR) had a minimum value of 4.020 in 2006 and a maximum value of 305.790 in 2018, with a mean value of 105.044 and a standard deviation of 85.442. The analysis also revealed that the total value of exports (EXPT) had a minimum value of 4.580 in 2010 and a maximum value of 144.920 in 2018, with a mean value of 41.496 and a standard deviation of 38.673. Finally, the total value of imports (IMPT) had a mean value of 29.101 and a standard

deviation of 25.819, with a minimum value of 2.870 in 2009 and a maximum value of 88.88 in 2018.

Table 1*:* Result of descriptive statistics

	FDI	**EXCR**	**EXPT**	**IMPT**
Mean	3.180000	105.0444	41.49687	29.10156
Median	1.880000	119.5750	26.32000	15.95000
Maximum	8.840000	305.7900	144.9200	88.88000
Minimum	0.380000	4.020000	4.580000	2.870000
Std. Dev.	2.607026	85.44244	38.67305	25.81972
Skewness	0.848634	0.634694	1.137850	0.641877
Kurtosis	2.430861	2.902348	3.343566	2.025366
Jarque-Bera	4.139322	2.161176	7.062468	3.463912
Probability	0.126229	0.339396	0.029269	0.176938
Sum	98.58000	3361.420	1327.900	931.2500
Sum Sq. Dev.	203.8976	226312.8	46363.76	20666.39
Observations	33	33	33	33

Source: E-views 12.0 statistical software

The analysis revealed that the skewness of the data showed that EXPT had a positively skewed distribution, while FDI, EXCR, and IMPT had negatively skewed distributions. The kurtosis coefficients indicated that EXPT had a peaked distribution, whereas FDI, EXCR, and IMPT were flatter. The Jarque-Bera test was used to evaluate the normality of the data by comparing its skewness and kurtosis to those of a normal distribution. The results showed that EXPT had a normal distribution, with a JB value of 7.062 and a probability of less than 0.05%, indicating that the data is suitable for generalization and free from outliers.

Analysis of regression results
The results of the OLS multiple regression analysis, presented in Table 4.2, examined the relationship between exchange rate and foreign direct investment (FDI) in Nigeria. The findings indicate that if all other factors (exchange rate, exports, and imports) are held constant, a 1.15% decrease in FDI is expected in Nigeria. The analysis also revealed that the estimated coefficient for exchange rate (EXCR) is 0.160, which suggests that a 1% change in EXCR will lead to a corresponding 0.160% increase in FDI in Nigeria. This relationship is statistically significant, implying that a change in EXCR will have a positive impact on FDI in Nigeria, ceteris paribus.

The analysis found that the estimated coefficient for exports (EXPT) is 0.282, indicating that a 1% change in EXPT will lead to a corresponding 0.282% increase in foreign direct investment in Nigeria. However, this relationship was found to be statistically insignificant, meaning that it may

not be reliable or accurate. Similarly, the estimated coefficient for imports (IMPT) is 0.013, suggesting that a 1% change in IMPT will lead to a corresponding 0.013% increase in foreign direct investment in Nigeria. However, this relationship was also found to be statistically insignificant, implying that the association between IMPT and FDI may not be strong or reliable.

Table 2*:* OLS multiple regression result

Dependent Variable: LFDI

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LEXCR	0.160519	0.105003	1.528713	0.1380
LEXPT	0.282058	0.229407	1.229510	0.2295
IMPT	0.013950	0.007688	1.814488	0.0807
C	-1.154092	0.440297	-2.621169	0.0142
R-squared	0.797291	Mean dependent var		0.798398
Adjusted R-squared	0.774768	S.D. dependent var		0.895344
S.E. of regression	0.424918	Akaike info criterion		1.246073
Sum squared resid	4.874992	Schwarz criterion		1.431103
Log likelihood	-15.31413	Hannan-Quinn criter.		1.306388
F-statistic	35.39864	Durbin-Watson stat		1.949986
Prob(F-statistic)	0.000000			

Source: E-views 12.0 statistical software

The R^2 value of 0.7972, or approximately 73%, indicates that the independent variables (EXPT, EXCR, and IMPT) collectively account for about 73% of the variation in the dependent variable (FDI). This suggests that the model has a good fit and is able to explain a significant portion of the variation in FDI. Additionally, the f-statistic (35.39) is greater than the critical f-value (3.25), which allows us to reject the null hypothesis that the overall model is not significant. This implies that the independent variables are simultaneously significant and contribute to the overall explanation of FDI. Furthermore, the Durbin-Watson test was performed to check for autocorrelation in the model. The calculated value of 1.94 indicates the absence of positive autocorrelation, which is considered a good fit. This suggests that the model does not suffer from autocorrelation and can be safely interpreted as providing reliable results.

Discussion of findings
The analysis of the regression results reveals that changes in the exchange rate have no significant impact on foreign direct investment (FDI) in Nigeria. This means that fluctuations in the exchange rate do not have a significant effect on FDI activity, and any changes in the exchange rate do not lead to a significant increase in FDI. This finding is consistent with the research by Usman and Adejare (2012), which found a positive and significant relationship between macroeconomic variables and international trade in Nigeria. Additionally, the study found that there was a significant increase in FDI from 2005 to 2018, which coincided with an increase in the exchange rate. This supports the conclusion by Murtala (2007) that exchange rate is positively related to FDI, and an increase in the exchange rate leads to an increase in FDI.

Furthermore, the study found that the activities of exports and imports had no significant impact on FDI in Nigeria, suggesting that international trade interactions did not significantly boost the expected level of FDI. This is in line with the findings of Odior (2013), which concluded that exchange rate has no significant effect on FDI in Nigeria.

CONCLUSION AND RECOMMENDATIONS

The study examined the impact of exchange rate on foreign direct investment (FDI) in Nigeria, with a specific focus on the relationships between exchange rate (EXCR), exports (EXPT), imports (IMPT), and FDI. The findings revealed that exchange rate has a positive effect on FDI in Nigeria, aligning with the initial hypothesis. However, exports and imports were found to have a negative impact on FDI. Despite the statistical significance of these findings, the relationships between the variables were found to be insignificant. The analysis revealed that the combination of the variables (exchange rate, exports, and imports) had a significant negative impact on FDI in Nigeria. In conclusion, exchange rate has a significant negative impact on FDI.

Based on these findings, it is recommended that monetary authorities take steps to stabilize and maintain a favorable exchange rate that fosters foreign direct investment and boosts the Nigerian economy. Additionally, the country should focus on developing its production base to strengthen domestic investment and reduce reliance on imports.

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