Foreign Exchange Market and Economic Performance in Nigeria

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Abstract
This study evaluates the impact of the foreign exchange rate on economic performance in Nigeria from 1996 to 2022. The study adopted an ex-post-facto research design, and the data were sourced from the Central Bank of Statistical Bulletin, 2022. The study used Gross Domestic Product as proxied for economic performance to measure independent variables; whereas, exchange rate, import trade, export trade, and monetary policy rate were used to measure foreign exchange rate in Nigeria. Ordinary Least Squares (OLS) estimation technique was used to test the formulated hypotheses. The study reveals a positive significant impact of exchange rate on Gross Domestic Product in Nigeria. Import trade has a positive significant impact on Gross Domestic Product in Nigeria. Export trade has a negative insignificant impact on Gross Domestic Product in Nigeria. The study also indicates a negative insignificant impact of monetary policy rate on Gross Domestic Product in Nigeria. Coefficient of determination indicates that about 78% of the variations in economic performance can be explained by changes in foreign exchange rate variables in Nigeria. The study concludes that foreign exchange rate has a positive significant impact on economic performance in Nigeria. Hence, the study recommends that policy makers are advised to closely monitor its movements. The deregulation of exchange rate sector policy should be encouraged to ensure the availability of foreign currency.

Keywords: *Foreign, Exchange, Rate Economic, Performance*

Introduction

A study by Agbju and Otreke (2021) posits that the growth and development of a country can be referred to as the economy's capacity to increase the productivity of services and goods in comparison with other countries outputs. Hence, one of the surest ways to achieve the afore-stated goal is to pursue vigorously rapid and sustainable economic growth and development via a well-managed exchange rate policy. In recognition of this role, study by Adaera and Uhere (2018) stressed that poorly managed exchange rates can be disastrous for economic growth. The exchange rate serves as an international price for determining the competitiveness of a country. Consequently, the study of Takaendesa (2019) explains that exchange rate plays a crucial role in guiding the broad allocation of production and spending in the domestic economy between foreign and domestic goods.

However, foreign Exchange rate has been defined as the price of one currency in terms of another. Exchange rate is the price at which one country exchanges its currency for other currencies. The increase or decrease of real exchange rate indicates strength and weakness of currency in relation to foreign currency and it is a standard for illustrating the competitiveness of domestic industries in the world market (Chiwendu & Achugu, 2022). Azeez, et al (2020) noted that When there is deviation of this rate over a period of time from the benchmark or equilibrium, exchange rate is called exchange rate volatility. It also indicates that misalignment

of exchange rate as occurred where there is multiplicity of markets parallel with the official market.

The work of Oladipupo and Ogheneov (2021) sees exchange rate as the price of one currency (the domestic currency) in terms of another (the foreign currency). Exchange rate plays a key role in international economic transactions because no nation can remain in autarky due to varying factor endowment.

Statement of the Problem

Study by Digbada and Oyedunde (2022) noted that the objectives of an exchange rate policy include determining an appropriate exchange rate and ensuring its stability. Over the years, efforts have been made to achieve these objectives through the applications of various techniques and options to attain efficiency in the foreign exchange market. Exchange rate arrangements in Nigeria have transited from a fixed regime in the 1960s to a pegged regime between the 1970s and the mid1980s and finally, to the various variants of the floating regime from 1986 with the deregulation and adoption of the structural adjustment programme (SAP). A managed floating exchange rate regime, without any strong commitment to defending any particular parity, has been the most predominant of the floating system in Nigeria since the SAP (Obiadun, 2018).

A study by Umaru and Zubairu (2021) stated that following the failures of the variants of the flexible exchange rate mechanism (the AFEM introduced in 2005 and the IFEM in 2017 to ensure exchange rate stability, the Dutch Auction System (DAS) was re-introduced on July 22, 2018. The DAS was to serve the triple purposes of reducing the parallel market premium, conserve the dwindling external reserves and achieve a realistic exchange rate for the naira. The DAS helped to stabilize the naira exchange rate, reduce the widening premium, conserve external reserves, and minimize speculative tendencies of authorized dealers. Hence, the different regimes have been accompanied by instability and uncertainties. Thus, these problems have created a knowledge gap in this study; and, it is against this background that the study attempts to investigate the impact of foreign exchange rate on economic performance in Nigeria; for the period 1996-2022.

Conceptual Review

Foreign Exchange Rate

Exchange rate implies the price of one currency in terms of another. Exchange rate is the ratio between a unit of one currency and the amount of another currency for which that unit can be exchanged at a particular time (Ngerebo-a & Ibe, 2018). In other words, exchange rate is the price of one currency vis-à-vis another and is the number of units of a currency required to buy another currency (Mordi, 2018). Exchange rate of currency is the link between domestic and foreign prices of goods and services. Also, exchange rate can either appreciate or depreciate.

Appreciation in the exchange rate occurs if less unit of domestic currency exchanges for a unit of foreign currency while depreciation in exchange rate occurs if more unit of domestic currency exchanges for a unit of foreign currency. In this paper, devaluation will be used interchangeable with depreciation. While devaluation means reduction in the value of a currency in terms of a designated unit of gold, depreciation means reduction of the value of a currency in terms of a specific foreign currency.

Foreign Exchange Rate Management in Nigeria

Exchange rate policy in Nigeria has undergone a good number of changes. It has developed from a fixed parity in 1960 when it was solely tied with the British Pound Sterling. By 1967, following the devaluation of the Pound Sterling the US dollar was included in the parity

exchange. In 1972, the parity exchange with the British Pound was suspended as a result of the emergence of a stronger US dollar. In 1973, Nigeria reverted to a fixed parity with the British Pound following the devaluation of the US dollar. In 1974, in order to minimize the effect of devaluation of a single individual currency, Nigerian currency was tired to both the pound and dollar.

Almost throughout the 1970s there was persistent appreciation of the nominal exchange rate of the naira occasioned by increases in the price of oil in the international market. These appreciations in the nominal exchange rates gave rise to over-reliance on imports with its accompanying capital flight, discouraging non-oil exports which ultimately led to Balance of Payments problems and depletion of external reserves.

Real Exchange and Economic Growth

Economic Growth is one of the main objectives of economic policy and economic decision making. Among economic variables, the variable which is most closely and directly related to the external sector of the economy and more than any other variable can provide economic growth is the macroeconomic variable of real exchange rate

Theoretical Review

The Mint Parity Theory

According to Stephen (2013), excessive fluctuation in exchange rate brings about uncertainties and risks for port folios managers and destabilizing effects non the macro-economy. Several theoretical schools of thought exist that attempt the effect of exchange rate fluctuation but two major theoretical schools of thought were outstanding. Traditional school pioneered by Clark (1973) holds that fluctuation increases risks of trade and there depress trade flows. Early study focused on firm's behaviour and presumed that increased exchange rate fluctuation will increase the uncertainty of profit on contracts denominated in a foreign currency. Bitten court, Geraldo et al (2015), suggest that this would reduce international trade to levels lower than would otherwise exist without exchange rate volatility. This theory is associated with the working of the international gold standard. Under this system, the currency in use was made of gold or was convertible into gold at a fixed rate (Jhingan 2004). Here, the value of the currency unit was defined in terms of certain weight of gold and the Central Bank of the country concerned was always ready to buy and sell gold at the specified price. The rate at which the naira could be converted into gold is called the mint price of gold.

The Balance of Payment Theory

The balance of payments theory posits that the exchange rates are determined by the balance of payment. It holds that the price of foreign money in terms of domestic money is determined by the free forces of demand and supply in the foreign exchange market (Jin,G, 2018). According to the theory, a deficit in the balance of payments leads to fall or depreciation in the rate of exchange, while a surplus in the balance of payment strengthens the foreign exchange reserves, causing an appreciation in the price of home currency. A deficit balance of payments of a country implies that demand for foreign exchange is exceeding its supply, thus, the price of foreign money in terms of domestic currency must rise i.e. the exchange rate of domestic currency must fall.

On the other hand, a surplus in the balance of payments of the country implies a greater demand for home currency in a foreign country than the available supply. As a result, the price of home currency ion terms of foreign money rises i.e. the rate of exchange improves. According to the balance of payment theory, the demand for foreign exchange arises from the "debit" items in the balance of payments whereas, the supply of foreign exchange arises from the "credit" items.

Since the theory assumes that the demand for and supply of foreign currency are determined by the position of the balance of payments, it implies that supply and demand are determined mainly by factors that are independent of variations in the rate of exchange or the monetary policy/. Given the demand-supply schedules, their intersection determines the equilibrium exchange rate of a currency.

Empirical Review

Oriavwote and Oyovwi (2022) investigated real exchange rate determination in Nigeria, aiming to construct a dynamic model and empirically assess the impact of various determinants on the real exchange rate. The study, which spans the years 1994 to 2016, presented a parsimonious Error Correction Model (ECM) result, shedding light on significant findings. Among the key outcomes of the research, it was revealed that factors such as the ratio of government spending to GDP, terms of trade, and technological progress did not emerge as influential determinants of the real effective exchange rate in Nigeria.

Oriavwote and Oyovwi's study contributes valuable insights to the understanding of the determinants of the real exchange rate in Nigeria. The findings challenge traditional assumptions, emphasize the importance of certain variables, and advocate for targeted policies to address specific economic challenges, such as the Dutch Disease syndrome and inflation, to promote stability and sustainable economic growth in Nigeria.

Kandil (2021) examined exchange rate fluctuations on real output growth and price inflation across a sample of twenty-two developing countries. Employing a theoretical rational expectation model in the analysis, Kandil's research sought to dissect the movements in the exchange rate into two key components: anticipated and unanticipated. On the inflationary front, the findings indicate that currency depreciation contributes to upward pressure on prices, potentially eroding purchasing power and introducing challenges for monetary policymakers aiming to maintain price stability.

Chiwendu (2022) study contributes valuable insights to the understanding of the determinants of the real exchange rate in Nigeria. The findings challenge traditional assumptions, emphasize the importance of certain variables, and advocate for targeted policies to address specific economic challenges, such as the Dutch Disease syndrome and inflation, to promote stability and sustainable economic growth in Nigeria.

Methodology

The study adopted *ex-post-facto* research design to source requisite information. An *ex-post-Facto* research design is a systematic empirical inquiry that requires the use of variables which the researcher does not have the capacity to change its state or direction in the course of the exercise (Kerlinger, 1973 & Onwumere, 2009). The ex-post-facto research design is used because the data are already documented by reputable institutions like the World Bank, International Monetary Fund (IMF), Central Bank of Nigeria (CBN) and National Bureau of Statistics. Thus, researchers adapt and rely on such official publications for valid and reliable academic exercise.

3.6 Model Specification

In this study, hypothesis has been stated with the view of examining the impact of foreign exchange rate on economic performance in Nigeria. In capturing the study, these variables were used as proxy. Thus, the model is presented in a functional form as; GDP = f(EXR, IMPT, EXPT, MPR) (1)

The econometric model can be written as:

$GDP = b_0 + b_1EXR + b_2IMPT + b_3EXR + b_4EXPT + u$ (2)

Transforming to log form

$LnGDP = b_0 + b_1 LnEXT_t + b_2 LnIMPT_t + b_3 EXR_t + b_4 MPR_t + u$ (3)

Where; GDP = Gross Domestic Product as proxy for economic growth
EXR = Exchange Rate
IMPT = Import Trade
EXPT = Export Trade
MPR = Interest Rate

b_0 = Constant parameter, b_1–b_4 = Elasticity Co-efficient of each variable. μ = Stochastic error term, Ln = The natural log of the variables. Log transformation is necessary to reduce the problem of heteroskedasticity because it compresses the scale in which the variables are measured, thereby reducing a tenfold difference between two values to a twofold difference (Gujarati, 2004).

Descriptive statistics

Table 1: Descriptive statistics

	EXR	IMPT	EXPT	INTR	GDP
Mean	130.1519	5600459.	6889214.	13.77206	42361.18
Median	127.2424	2440546.	5924658.	13.50000	37604.19
Maximum	399.9636	22394498	19910534	26.00000	73382.77
Minimum	4.536733	21445.70	31192.80	6.000000	19030.69
Std. Dev.	108.2875	6462410.	6568265.	3.816515	20087.54
Skewness	0.815921	1.195807	0.525234	0.744487	0.330391
Kurtosis	2.966504	3.508745	1.911563	4.970694	1.470092
Jarque-Bera	3.774045	8.469739	3.241583	8.642631	3.934438
Probability	0.151522	0.014482	0.197742	0.013282	0.139845
Sum	4425.163	1.90E+08	2.34E+08	468.2500	1440280.
Sum Sq. Dev.	386963.8	1.38E+15	1.42E+15	480.6710	1.33E+10
Observations	**29**	**29**	**29**	**29**	**29**

Source: *Author's computation with the use of E-view 10.1*

The descriptive statistics in Table 4.1 provide a comprehensive overview of key variables, shedding light on the central tendencies, variability, skewness, and kurtosis of the data. The mean exchange rate (EXR) stands at 130.15, with a considerable standard deviation of 108.29, indicating notable variability in exchange rate values. Import (INTR) and export (EXPT) trade exhibit substantial means of 5,600,459 and 6,889,214, respectively, accompanied by significant standard deviations, highlighting the diverse range of trade values. The interest rate (INTR) has a mean of 13.77, reflecting a moderate level of interest rate across the observed period. Gross Domestic Product (GDP) demonstrates a mean of 42,361.18, with a notable standard deviation of 20,087.54, underlining the variability in economic output. Skewness values indicate the asymmetry of the distribution, with positive skewness for EXR, IMPT, and INTR, implying a tail on the right side of the distribution. Kurtosis values reveal the distribution's shape, with EXPT exhibiting higher kurtosis, suggesting heavier tails and potential outliers. The Jarque-Bera tests for normality indicate that while most variables are not perfectly normally distributed, they do not significantly deviate from normality, except for IMPT and INTR, where p-values suggest a departure from normal distribution. These statistics provide a detailed lens into the distributional characteristics of the variables, aiding in understanding their patterns and informing statistical inferences.

Table 2: Ordinary Least Square (OLS) Estimation Results

Dependent Variable: LNGDP
Method: Least Squares
Date: 25/08/25 Time: 11:47
Sample: 1 31
Included observations: 29

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.004326	0.815482	8.589180	0.0000
EXR	0.042505	0.077643	2.547444	0.0138
LnIMPT	0.351846	0.091044	3.864557	0.0007
LnEXPT	-0.109540	0.095160	1.151119	0.0002
INTR	-0.055519	0.131991	0.420630	0.0075

R-squared	0.752871	Mean dependent var	10.60091
Adjusted R-squared	0.732428	S.D. dependent var	0.469400
S.E. of regression	0.157142	Akaike info criterion	-0.716643
Sum squared resid	0.642034	Schwarz criterion	-0.485355
Log likelihood	16.10797	Hannan-Quinn criter.	-0.641249
F-statistic	60.42101	Durbin-Watson stat	0.424912
Prob(F-statistic)	0.000000		

Source: Author's computation with the use of E-view 10.1

From t**able 2 t**he coefficient of determination (R^2= 0.752871) indicates that about 78% of the variations in economic performance can be explained by changes in exchange rate variables (EXR, IMPT, EXPT, INTR) in Nigeria. This implies that a significant portion of economy is explained by foreign exchange rate market variables. The p-value of (0.00000) indicates that there is a significant impact of exchange rate on Gross Domestic Product in Nigeria; this is because, the F-probability is statistiscally zero. This means that foreign exchange market has a significant effect on economic growth in Nigeria; also confirmed by the F-probability which is statistically zero.

Test of Hypotheses

Testing the research hypotheses:

H_{01}: Does exchange rate have any significant impact on Gross Domestic Product in Nigeria.
The coefficient for EXR is 0.042505 with a t-statistic of 0.547444 and a probability of 0.0138. The p-value is less than the commonly used significance level of 0.05. Therefore, based on this analysis, we reject the null hypothesis (H_{01}). In other words, the exchange rate has a positive statistically significant impact on GDP in Nigeria.

H_{02}: There is no significant impact of import trade on Gross Domestic Product in Nigeria.
The coefficient for LnIMPT is 0.351846 with a t-statistic of 3.864557 and a probability of 0.0007. The p-value is less than 0.05, indicating that there is enough evidence to reject the null hypothesis (H_{02}). Therefore, the import trade has a positive significant impact on GDP in Nigeria.

H_{03}: Export trade does not have any significant impact on Gross Domestic Product in Nigeria.
The coefficient for LnEXPT is -0.109540 with a t-statistic of 1.151119 and a probability of 0.0002. The p-value is less than 0.05, suggesting that we do not have enough evidence to reject the null hypothesis (H_{03}). Hence, export trade has a positive significant impact on Gross Domestic Product in Nigeria.

H_{04}: Interest rate does not have any significant impact on Gross Domestic Product in Nigeria. The coefficient for INTR is 0.055519 with a t-statistic of -0.420630 and a probability of 0.0075. The p-value is much greater than 0.05, indicating that there is no significant evidence to reject the null hypothesis (H_{04}). Therefore, interest rate has a positive significant impact on GDP in Nigeria.

Conclusion and Recommendations

The study concludes that foreign exchange rate market has a positive significant impact on economic performance in Nigeria. This is in line with the works of Akinlo and Lawal (2022) and Azeez, Kolapo and Ajayi (2021) who revealed that there is positive significant impact of foreign exchange rate on economic growth in Nigeria. Whereas, a study carried out by Ewubare and Ushie (2022) contradict the findings. These findings underscore the importance of a comprehensive understanding of the foreign exchange market's multifaceted components in shaping economic outcomes. In light of these results, policymakers and stakeholders are encouraged to prioritize strategies that enhance import trade, recognizing its significant positive impact on economic growth. Based on the findings of each variable in the regression analysis, here are recommendations: The Central Bank of Nigeria is encouraged to enhance the deregulation policy in the exchange rate sector, ensuring the availability of foreign currency for exporters and investors. To expand the international market, there should be a robust pursuit of export promotion within the context of sub-regional and regional economic integration. Additionally, adherence to importation policies is vital to control dumping and foster encouragement for local investors.

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Appendix.1:
Foreign Exchange Market and Economic Performance in Nigeria 1996-2022

Year	Exchange Rate (₦/$)	Import Trade (₦,Bil)	Export Trade (₦,Bil)	Interest Rate %	Gross Domestic Product (₦,Bil)
1996	21.89	562,626.60	1,309,543.40	13.5	22,799.69
1997	21.89	845,716.60	1,241,662.70	13.5	23,469.34
1998	21.89	837,418.70	751,856.70	13.5	24,075.15
1999	92.69	862,515.70	1,188,969.80	18	24,215.78
2000	102.11	985,022.39	1,945,723.30	14	25,430.42
2001	111.94	1,358,180.33	1,867,953.85	20.5	26,935.32
2002	120.97	1,512,695.33	1,744,177.68	16.5	31,064.27
2003	129.36	2,080,235.27	3,087,886.39	15	33,346.62
2004	133.50	1,987,045.27	4,602,781.54	15	36,431.37
2005	132.15	2,800,856.33	7,246,534.80	13	38,777.01
2006	128.65	3,108,519.32	7,324,680.63	10	41,126.68
2007	125.83	3,911,952.63	8,309,758.32	9.5	43,837.39
2008	118.57	5,593,180.45	10,387,693.2	9.75	46,802.76
2009	148.88	5,480,656.12	8,606,319.72	6	50,564.26
2010	150.30	8,163,974.57	12,011,475.7	6.25	55,469.35
2011	153.86	10,995,863.3	15,236,665.9	12	58,180.35
2012	157.50	9,766,556.74	15,139,326.3	12	60,670.05
2013	157.31	9,439,424.71	15,262,013.1	12	63,942.85
2014	158.55	10,538,914.1	12,962,026.4	13	67,977.46
2015	193.28	11,076,068.4	8,845,158.81	11	69,780.69
2016	253.49	9,480,366.87	8,835,611.91	14	68,652.43
2017	305.79	10,804,845.5	13,988,143.9	14	69,205.69
2018	306.08	13,445,112.5	18,707,327.3	14	70,536.35
2019	306.92	20,449,968.9	19,910,533.0	13.5	72,094.09
2020	358.81	20,519,192.5	12,613,592.0	11.5	70,800.54
2021	399.96	22,394,498.9	19,204,170.87	11.5	73,382.77
2021	399.96	22,394,498.9	19,204,170.87	11.5	73,382.77
2022	429.34	23,367,477.4	19,265,166.23	12.5	74,302.22

Source: CBN Statistical Bulletin, 2022