Fluctuating Exchange Rate Regime as The Driving Force for Economic Growth in Nigeria

Amara Priscilia OZOJI, PhD[1*] & Beatrice O. EZECHUKWU, PhD[2]

[1]Department of Accountancy, University of Nigeria Enugu Campus, Enugu, Nigeria.

[2]Department of Accountancy, Federal Polytechnic, Oko, Nigeria.

***Corresponding Author**

DOI: https://doi.org/10.51244/IJRSI.2025.12020017

Received: 06 January 2025; Revised: 23 January 2025; Accepted: 27 January 2025; Published: 28 February 2025

ABSTRACT

The recent incessant increase in economic hardship among Nigerians, has created much doubts on the effectiveness of the type of fluctuating system of exchange rate currently in operation in Nigeria, in achieving its main purpose of maintaining the exchange rate at levels in line with economic growth prospects. To clear the doubts, this study investigated the effect of exchange rate fluctuation system on economic growth in Nigeria, with focus from 2003 to 2023. The study specifically aimed at: determining the effect of fluctuating exchange rate on growth rate of real gross domestic product in Nigeria (GDPGR); and determining the nature and the direction of causality between exchange rate and economic growth in Nigeria. It employed secondary data. The real effective exchange rates prevailing during the fluctuating exchange rate regime, inflation rate and lending interest rate were used as the independent variables; and economic growth was used as the dependent variable, which was measured with the annual value of real GDP growth rate in Nigeria's fluctuating exchange rate regime. Employing the ordinary least square regression method and Granger causality test, the study discovered among others that the fluctuating exchange rate has a significant and negative effect on GDPGR. While fluctuating exchange rate was found to has Granger cause GDPGR, and GDPGR does not Granger cause the exchange rate. It was thus concluded that the fluctuating exchange rate system, currently in operation in Nigeria (managed float), is not a bad policy option to boost Nigeria's GDP, but needs to be strengthened by the central bank through high degree of the country's external reserves' management. This would aid maintenance of large amounts of foreign reserves necessary for intervening in the foreign exchange market to reduce excess exchange rate volatility and reduce sustained increase in Naira exchange rate (Naira depreciation), which in turn would stimulates Nigeria's economic growth.

Keywords: Exchange rate, Fluctuating exchange rate regime, economic growth, gross domestic product.

INTRODUCTION

An exchange rate could be defined as the cost of one currency expressed in terms of another. Roy (2021) has explained two currencies exchange rate as the rate at which one currency is worth another. According to CBN (2021), two major conventions exist in describing exchange rate, including the indirect and direct conventions. The direct technique expresses the exchange rate as the price of the home currency in relation to one unit of foreign currency, e.g., ₦406 = $1, while the foreign currency price in terms of a unit home currency is how exchange rate is being expressed under the indirect convention, for instance, ₦1 = $0.005. The exchange rate definition in regards to the two major conventions above aids in determining the appreciation and depreciation of the currency of a country. For instance, in Nigeria, under the direct convention, when the quantity of naira units decreases relative to one unit of the foreign currency, the exchange rate is said to have appreciated; and vice versa. Mordi (2006) as cited by CBN (2021) maintained that exchange rate remains an important price element in an economy and has duality role of anchoring domestic prices and a means of maintaining global competitiveness.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue II February 2025

Exchange rate regimes have two extreme cases, namely fixed and floating systems. When the value of one nation's currency is fixed in proportion to the value of another nation's currency, or a basket of other nations' currencies, or another indicator of worth, such as gold, the system of fixed exchange rate is said to have been in operation in the country (Mishkin, 2007). An important prerequisite of maintaining the regime of fixed exchange rate is the maintenance of adequate external reserve by the apex bank for prompt interference in the currency exchange market if need arises. A flexible or floating or fluctuating exchange rate regime is a regime where supply and demand of a currency, in respect to other currencies in the currency market determines a country's currency price (Mitchell, 2023). In fluctuating or flexible exchange rate regime, two variations including the managed floating and the floating or independent exchange rate regimes, exist. Managed floating is a hybrid between a fixed and pure float. It allows currencies to move within a limited range. The central bank is the main player in the foreign exchange market in a managed floating system. It intervenes by buying and selling both foreign and local currency to maintain the exchange rate around an explicit range of goal values or an implicit target value. An independent or floating exchange rate system allows the currencies in a country to move freely in relation to their supply and demand, with no intervention from the government or central bank.

A nation may choose to implement multiple or dual foreign exchange rate regime, which involves the country having both the floating and fixed exchange rates in the market for the same currency, during the same period. As some specific components of the market (essential imports and export) attract fixed rates, other segments attract a market-driven exchange rate,

In Nigeria, the sole responsibility of exchange rate policy formulation rested with the Central Bank. According to CBN (2021), exchange rate policy in Nigeria has its main objective in maintaining exchange rate stability at levels in line with responsible reserve management and economic growth prospects.

Nigeria has continued to vary its exchange rate regimes ever since the post-colonial era (post 1914-1960), in line with the developments in the economy, mindful of the aim of the exchange rate management policy. For instance, Nigeria witnessed the operation of a fixed exchange rate system during the early post-independence period, when the country introduced its own currency, the Nigerian pound (NGP) and issued by the CBN. In this period, the value of the Nigerian pound was pegged to a foreign currency, initially the British pound and later to the US dollar. A managed float exchange rate system was witnessed in Nigeria, following the introduction of Nigerian naira to replace the Nigerian pound (NGP). This system allowed naira's value to fluctuate within a specified range, determined by the CBN. In the late 1973, fixed exchange rate system came back in Nigeria. In the 1980s, Nigeria signed agreements with global financial organizations, such as the World Bank and the International Monetary Fund (IMF), to execute Structural Adjustment Programs (SAP) for exchange rate liberalization. Following the establishment of the second-tier foreign currency market under the SAP in 1986, the nation transitioned from a fixed exchange rate system to a more dynamic one.

The flexible system, currently in operation in Nigeria, allows the CBN to intervene in the market when necessary, aiming to ensure the prevention of excessive volatility of the exchange rate, as flexible exchange rate system is sustained. This aim has received achievements, notably after the CBN reintroduction of the Retail Dutch Auction System (RDAS) in year 2002, to address the growing premium, alleviate demand pressures, retain external reserves, curtail capital flight, and assure market transparency. Specifically, relative exchange rate stability was achieved in the country from 2003, with the resultant exchange rate appreciation, evident in Nigeria's exchange rate as recorded by the World bank indicator (2024) from 129.22235 Nigeria's local currency, in 2003 to 118.56667 Nigeria's local currency, in 2008 per USD. Additionally, Ufoeze (2018) has documented evidence showing the floating exchange rate era to be more effective in explaining economic trends in Nigeria, than the fixed exchange era.

Against the advantages of the flexible regime outlined above, many people opined that ever since the operation of flexible system, Nigeria has been experiencing frequent exchange rate fluctuations which in turn has resulted to persistent naira depreciation – increase in the units of naira to be exchanged per unit of USD. The incessant naira depreciation has recently triggered persistent public outcry as regards the deteriorating economic activities it has brought to Nigerians. To many people, the weaker naira has increased the cost of imports and domestic prices, resulting to the less competitiveness of Nigeria's locally produced goods and services with that from other countries. Agénor (1995) as cited by Mordi (2006) states that naira depreciation could increase the cost of

imported goods and services, leading to inflation and potentially eroding purchasing power for consumers and businesses. Ojo and Alege (2014) as cited by Ighoroje (2022), added large output contraction and increase inflation to the adverse effects that may be generated by the current high variability of exchange rate fluctuations in Nigeria.

These assertions above have created doubts on the effectiveness of fluctuating exchange rate regime in achieving the main aim of exchange rate management policy in Nigeria, as regards the stabilization of the exchange rate at levels consistent with growth prospects of the economy. Hence, it is imperative to clear these doubts by empirically ascertaining the validity of the assertions. Therefore, this study primarily aimed at determining the effect of fluctuating exchange rate on Nigeria's economic growth (measured with real GDP growth rate); and determining the nature and direction of causality between exchange rate fluctuation system and economic growth in Nigeria. Generally, this study contributes to the ongoing debates on the association between exchange rate and macroeconomic variables. It offers significant contributions by providing valuable insight into the efficacy of the system of fluctuating exchange rate in driving economic growth, particularly within the context of Nigeria. The study's focus on only Nigeria, over a long period, 2003 to 2023 aid a detailed analysis of the fluctuating exchange rate system and economic growth nexus, with which its results would serve as a useful and reliable resource for exchange rate policy formulation by the CBN. By examining data from 2003 to 2023, this study made an important different contribution to the documented literature on the subject matter in Nigeria, as the time horizon captures, also, the period of most recent significant adverse shocks experience in the economy (2020, the period of COVID -19 pandemic), in addition to the pre-adverse shocks period, with which it's analytical results would reveal the actual behavior (behavior based on data and facts) of the fluctuating exchange rate policy action towards the recovery of the country's adverse shocks induced economic recession. This will help to validate (or otherwise) the statement of CBN (2021), that the flexible exchange rate system offers an automatic means of responding to adverse shocks without any overt policy action. Unlike other previous studies (Adeniran, Yusuf and Adeyemi, 2014; Ufoeze, 2018; Iheanachor and Ozegbe, 2021; Eze and Okpala, 2014) that focused only on the periods before the COVID – 19 era, while examining the effect of exchange rate fluctuation on economic growth in Nigeria.

The rest of this work is arranged in a manner that the second part supplied the literature review, with the third section showing the methodology. Part four disclosed the study's findings, while the conclusion was given in the fifth section.

LITERATURE REVIEW

Conceptual Review

Exchange Rate Fluctuation

A currency's exchange rate is its value stated in relation to another currency. In the words of Kalu et al. (2019) as cited by Odoh, Ugwoke and Onyeanu (2023), the rate at which a foreign currency is converted into a local currency is referred to as the exchange rate. The two extreme cases in exchange rate - fixed and floating systems, can emanate devaluation (or revaluation) and appreciation (or depreciation) respectively, of a nation's currency. According to the direct convention, revaluation (devaluation) occurs when the value of the home currency declines (increases) in relation to other foreign currencies in the context of a fixed exchange rate system. In contrast, in a floating or flexible exchange rate system, appreciation (depreciation) is the decrease (increase) in the value of the home currency when stated in relation to a foreign currency.

Exchange rate fluctuations is the changes in the worth of one currency in relation to another currency. Ighoroje (2022) noted that the changes in exchange rate results from the demand and supply forces that acts on currency valuation. Therefore, fluctuation of exchange rate emerged due to the adoption of flexible exchange rate regime. In flexible exchange rate regime, the foreign exchange market is characterized by uncertainty and volatility which makes it difficult to predict future prices. The volatility brings critical challenges to exporters and importers transacting in international business as currency risks awaits them (Allayannis, Ihuing & Weston, 2016). Exchange rate fluctuation also triggers depreciation of domestic currency, which in turn raises the imported capital goods costs the cost, resulting to the domestic investment fall. However, the proponents of

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue II February 2025

flexible exchange rates maintained that it is more advantageous since it offers an automatic means of responding to adverse shocks without any overt policy action. Hence the need to ascertain which of the views is empirically valid.

Economic Growth Overview

Economic growth refers to an increase in the production of goods and services in a country over a specified period. An economy grows when there is an increase in the output of goods and services within the economy for a specific time. It focuses primarily on the quantitative expansion of economic activities and the overall increase in production and income levels. In contrast, economic development encompasses a broader set of factors beyond mere economic expansion, including improvements in living standards, education, healthcare, infrastructure, and institutional quality. Economic growth is a necessary component of economic development, as the latter involves a more comprehensive and holistic approach that considers social, environmental, and institutional dimensions alongside economic progress.

One of the primary benefits of economic growth is the creation of employment opportunities. As the industries expand and new businesses emerge, due to strong economic growth, they require a larger workforce to meet the increasing demand for goods and services. This leads to lower unemployment rates and reduced poverty levels as more individuals find gainful employment. In support of this view, Wimalaratana (2024) states that strong economic growth raises standard of living and expands opportunities. While the poverty rate is substantially reduced with the growth in the economy (Barro & Sala-i-Martin, 2004).

Moreover, economic growth fosters business opportunities and entrepreneurship. A growing economy presents a favourable environment for the establishment and expansion of businesses. Increased economic activity creates new market opportunities and attracts both domestic and foreign investment. Entrepreneurs are encouraged to innovate and take risks, leading to the emergence of new industries and the diversification of the economic landscape. This dynamism promotes competition, enhances productivity, and drives overall economic performance (Acemoglu & Robinson, 2012). Furthermore, government revenues also benefit from economic growth. As the economy expands, individuals and businesses generate more income, leading to increased tax collections. The additional revenue can be used to invest in public infrastructure, education, healthcare, social welfare programs, and other essential public services (Mankiw, 2021). This supports the development and improvement of critical sectors, positively impacting society as a whole (Barro & Sala-i-Martin, 2004). Moreover, a growing economy with favourable prospects offers a higher return on investment, attracting both domestic and foreign capital. The influx of investment contributes to capital formation, where funds are allocated towards the creation of physical infrastructure, research and development, technology adoption, and human capital development. These investments enhance productivity, efficiency, and competitiveness, fostering long-term economic growth (Solow, 1956). Technological advancement is often closely linked to economic growth. As economies expand, there is an increased emphasis on research and development efforts. This focus on innovation leads to the creation of new inventions, processes, and technologies. Technological advancements can drive productivity gains, improve efficiency, and open up new avenues for economic activity.

In addition to the domestic benefits, economic growth enhances a nation's international competitiveness, as a growing economy usually attracts international investors, leading to increased foreign direct investment. This, in turn, can result in the expansion of exports, contributing to a favourable balance of trade. Rodrik (2008) maintains that economic growth enables countries to invest in infrastructure, education, and healthcare, allowing them to develop a skilled workforce and enhance their position in the global market.

Gross Domestic Product (GDP) has been identified as one of the best measures of economic growth. In the words of Onuoha et al. (2022), GDP is one of the primary indicators used to measure the healthiness of a country's economy. GDP could be defined as the total monetary value of all final goods and services produced within a country's borders in a specific time period, usually a year. A rising GDP suggests economic growth, potentially signifying factors like increasing production, employment, and overall well-being. Conversely, a declining GDP indicates economic contraction. GDP can be measured in real or nominal terms. Real GDP is the inflation adjusted GDP; while the latter is the non-inflation adjusted GDP. Since real GDP controls for inflation, reflecting more accurately the actual economic growth, it is considered the best measure of growth in an economy.

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue II February 2025

Theoretical Review

The study was anchored on the balance of payment theory. This theory stipulates that the balance of payment of a country is the key determinant of the exchange rate of the country's currency, under the free exchange rate system. An unfavourable balance of payments reduces the exchange rate, as the exchange rate is raised with a favorable balance of payments (Jhingan, 2004). Therefore, this theory implies that the demand and supply of foreign exchange determines the exchange rate. The automatic changes in the exchange rate due to changes in the demand and supply of foreign exchange, may cause uncertainty and discourage trade, resulting to decline in an economy's growth rate. In other words, when the fluctuating exchange rates take the path of increasing the exchange rates, currency depreciation could be resulted, which increases the costs of the country's imported raw materials for domestic production and reduces the country's returns on exported goods. This scenario reduces the gross domestic product of the country. In response to the issues raised above, this theory's proponents state that the system of fluctuating exchange rate allows for the successful use of monetary policy to pursue domestic economic objectives such as full employment, low inflation and economic growth without worrying about depleting official reserves of foreign exchange.

As Nigeria currently operates the system of flexible exchange rate, this theory is relevant to this study as it would help to explain the transactions between Nigeria and its trading partners; as well as emphasizes the need for taking care of the country's balance of trade (export and import), balance of current account (balances of services, trade and remittance) and capital account (borrowing and investing) that will facilitate an equilibrium BOP, necessary for the growth of Nigerian economy. A country's BOP is in equilibrium when the sum of its current and capital accounts is equal to zero while a country's BOP is in disequilibrium when its imports exceed its exports or when the country has surplus or deficit BOP.

Empirical Review

In Nigeria, Iheanachor and Ozegbe (2021) studied the effect of ongoing exchange rate fluctuations on Nigeria's economic performance, with focus from 1986 to 2019. The long-run and short-term effects of fluctuations in exchange rate on economic growth were tested with the use of autoregressive distribution lag (ARDL) technique. Their findings disclosed a significant adverse impact of the exchange rate, net direct foreign direct investments, and inflation rate on Nigeria's economic growth in the long run.

Alasha (2020) used the exchange rate, interest rate, inflation rate, and trade balance as independent variables to investigate the relationship between exchange rate variations and their effects on Nigeria's economic growth. The ordinary least square method (OLS), the conventional least regression model, and additional methods like the Granger Causality test, Cointegration, and the Augmented Dickey Fuller test are the analytical tools used. The results showed that while interest rates had a positive effect on GDP, inflation and exchange rates had a negative effect.

Odoh, Ugwoke and Onyeanu (2023) examined the nexus between exchange rate fluctuation and economic development while using GDP and export value in Nigeria as proxies of economic development. Covering the period 2003 to 2022, the study employed the regression method of model estimation in data analysis. Findings showed that exchange rate fluctuations have significant negative impact on gross domestic product in Nigeria.

Ufoeze (2018) compared the fixed and floating exchange rate eras, to know the exchange rate system that is fairly better in relation to the systems' effects on Nigerian economy. With focus from 1970 to 2012, the study utilized the ordinary least square (OLS) multiple regression technique for data analysis. Findings disclosed about 85% of the variations in macroeconomic indices to be explained by the exchange rate, in the fixed exchange era. In the floating exchange era, 99% was explained; thus, the study concludes that the floating era is better than the fixed exchange rate era, in explaining economic trends in Nigeria. Specifically, a significant positive effect of exchange rate on Nigeria's GDP was found to had existed during the era of fixed exchange rate, while negative effect was found to exist among exchange rate and GDP in the floating exchange era in Nigeria.

Eze and Okpala (2014) tested the impact of the fixed and flexible exchange rate systems in Nigeria on economic growth, with focus on the period, 1980-2012, which was split in the manner of before and after SAP's

introduction in Nigeria. Utilising a chow test, results showed that there is non-significant impact of exchange rate on economic growth in both systems, suggesting the management of the policies (fixed and flexible) as what matters most.

Also, Jibrin, Jelilov, and Gayypov (2017) carried out a study including other countries in addition to Nigeria. Specifically, they investigated how changes in exchange rates affected the ECOWAS region's GDP and other macroeconomic parameters. Focusing on the period, 1990 – 2014, the paper discovered from the results of OLS used for data analysis, that the exchange rates significantly impacted on the GDP of Nigeria, Liberia, Benin and Guinea-Bissau.

Adeniran, Yusuf and Adeyemi (2014) carried out an empirical examination of the effect of exchange rate fluctuation on economic growth in Nigeria, focusing on the period 1986 to 2013. Using OLS analytical tool, the result from the study disclosed among others, non-significant positive effect of exchange rate on Nigeria's economic growth

Outside Nigeria, Sibanda, Ncwadi and Mlambo (2013) have investigated the real exchange rates impact on economic growth in South Africa, while using quarterly data from 1994 to 2010. Employing the analytical tool, Vector Error Correction Model (VECM), results disclosed a negative impact of real exchange rates on South African economic growth, in the long run.

In China, the link between exchange rate fluctuations and economic growth was examined by Ferrando (2011). Annual data from 1987 - 2008 were analyzed using the Generalized Method of Moment (GMM) technique. The result revealed a negative effect of exchange rate and import on economic growth in China.

A close evaluation of the empirical literatures reviewed on the effect of exchange rate fluctuation system on economic growth in Nigeria, disclosed that the previous studies lack the inclusion of data points covering the period of the most recent and significant adverse shock's experience (the period of COVID -19 pandemic of 2020) in the world, Nigeria inclusive. Thereby ignoring focus on the efficacy of the flexible exchange rate regime in the recovery of most recent and significant adverse shock induced economic downturn. This creates a gap in the scope, which this study tries to fill by including data points on the periods during and after COVID – 19 pandemic adverse shock in Nigeria, in addition to the pre-pandemic adverse shock era, as was studied by prior studies in Nigeria (see, Adeniran, Yusuf and Adeyemi, 2014; Ufoeze, 2018; Iheanachor and Ozegbe, 2021; Eze and Okpala, 2014). This aids the provision of the analytical results that would reveal the actual behavior (behavior based on data and facts) of the fluctuating exchange rate policy action towards the recovery of the country's COVID - 19 adverse shocks induced economic recession. This will help to validate (or otherwise) the statement of CBN (2021), that the flexible exchange rate system offers an automatic means of responding to adverse shocks without any overt policy action.

METHODOLOGY

The researcher adopted the ex-post facto research design. Annual secondary data collected from the World bank data bank (World Development Indicator, 2024), from 2003 to 2023 were used. The study's period started from 2003 since year 2003 marked the beginning of significant currency stability that resulted to naira appreciation after the shift from fixed exchange rate regime to fluctuating exchange rate system in 1986. Availability of data is the reason for using 2023 as the study's end period. The dependent variable, economic growth was proxied with real GDP growth rate (GDPGR). While real effective exchange rates prevailing during the operation of flexible exchange rate in Nigeria (denoted with REER) remain the major independent variable of this study. To limit (if not eliminate) the noise or irrelevant relationship which may be captured as a result of the use of one independent variable, the study included two more price variables, namely, inflation rate (IFR) and lending interest rate (LIR) to the study's major independent variable, REER. Data analysis was done using Ordinary Least Square Regression. The relationship between the study's explanatory and explained variables is specified in an output model wherein real Gross Domestic Product growth rate (GDPGR) is expressed as a function of real effective exchange rate, lending interest rate and inflation rate. The model is specified as shown below:

$$GDPGR = F(REER_t, LIR_t, IFR_t) \quad (1)$$

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue II February 2025

In an econometric term, the output model in equation 1 above is expressed as:

$$GDPGR_t = \beta_0 + \beta_1 REER_t + \beta_2 LIR_t + \beta_3 IFR_t + \mu \quad (2)$$

Where, GDPGR is the total growth rate of real gross domestic products in Nigeria for the study's period (% as unit of measurement). REER denotes the real effective exchange rate in Nigeria over the study's period (% as unit of measurement). LIR and IFR represent lending interest rate and inflation rate respectively in Nigeria, for the study's period (% as both variables unit of measurement). βo is the constant term, while $\beta_1 - \beta_3$ represent the coefficients of the independent variables. μ is the error term.

The study also employs the Granger causality test to determine the nature and direction of causality between exchange rate and GDP in Nigeria. Equations 3 and 4 below were used to present the models which the performance of the Granger causality test was based on

$$GDPGR_t = \sum_{i=1}^{n} \beta_1 REER_{t-i} + \sum_{i=1}^{n} \beta_2 GDPGR_{t-j} + \mu_{1t} \quad (3)$$

$$REER_t = \sum_{i=1}^{n} \vartheta_1 REER_{t-i} + \sum_{i=1}^{n} \vartheta_2 GDPGR_{t-j} + \mu_{2t} \quad (4)$$

Furthermore, to ensure a well-specified model, we analyzed the statistical features of the estimated output model presented in Equation (1). This includes the descriptive analysis of the variables in the model and the Augmented Dickey-Fuller unit root test (pre-test); as well as the diagnostic tests - the Durbin-Watson test of serial correlation, the test of goodness of fit (R^2), the test of overall significance of multiple regression (F-Test), the autoregressive conditional heteroscedasticity (ARCH) test, Breuch-Godfrey serial correlation Langrange Multiplier (LM) test and Jarque-Bera normality test.

RESULTS AND DISCUSSIONS

Pre-tests

Descriptive Statistics

Table 1**:** Descriptive statistics

	GDPGR	IFR	LIR	REER
Mean	4.52381	13.15238	16.39524	105.4429
Maximum	9.3	24.7	20.7	133.2
Minimum	-1.8	5.4	11.5	73.7
Std. Dev.	3.088188	4.405862	2.201244	16.33027
Skewness	-0.54936	0.61355	-0.46931	-0.34584
Kurtosis	2.46127	3.544226	3.162412	2.278175
Jarque-Bera	1.310223	1.576712	0.793952	0.874522
bservations	21	21	21	21

Source: Authors' computation (2025)

Table 1 shows the result of the descriptive statistics of the individual variables. It displays among others, the skewness, kurtosis, standard deviation, and mean of the study's variables. According to the Table 1, the GDPGR, IFR, LIR and REER arithmetic mean are 4.52381, 13.15238, 16.39524 and 105.4429 respectively. The standard deviation shows a moderate departure from the mean scores.

From the Table 1, the inflation rate shows a positive skewness of 0.61355, revealing a positive skewness from the mean. On the other hand, gross domestic product growth rate, lending interest rate and the real effective

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue II February 2025

exchange rate individually, showed a negative skewness of -0.54936, -0.46931 and -0.34584 respectively, revealing negative departures from the mean. All variables demonstrate a positive value for kurtosis. These revealed that the degree of tailedness of all variables have heavier tail called leptokurtic distribution.

Unit Root Test

Table 2: Result of Augmented Dickey-Fuller unit root test.

Variables	ADF Stat.	Critical Values			Order of Integration
		1%	5%	10%	
GDPGR	-5.13589 PV (0.0007)	-3.83151	-3.02997	-2.65519	I(1)
IFR	-3.72934 PV (0.0124)	-3.83151	-3.02997	-2.65519	I(1)
LIR	-4.41036 PV (0.003)	-3.83151	-3.02997	-2.65519	I(1)
REER	-4.58954 PV (0.0021)	-3.83151	-3.02997	-2.65519	I(1)

Source: Authors' computation (2025).

Table 2 shows the ADF unit root test results of which the ADF stat. values for all the variable are lesser than the critical values at 5% level of significance, therefore the variables are stationary at this level. The p-values are all less than 5% level of significance. The result also shows that all the variables are stationary at first difference I(1).

Main Test: Ordinary Least Square (OLS) Regression Analysis

With assurance of the stationarity of all the variables, we would proceed to the OLS regression analysis. But before this, it is imperative that we determine the optimum lag length. While employing vector auto-regressive lag order selection technique, using Schwarz information criterion, lag one (1) was found to be appropriate for the study's model in Equation 1. Therefore, we perform the OLS regression analysis at lag 1.

Table 3: OLS regression result of fluctuating exchange rate system (including other macroeconomic variables) driving economic growth in Nigeria. Dependent Variable: GDPGR.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IFR	-0.163377	0.141582	-1.153934	0.2645
LIR	-0.05413	0.422147	-0.128226	0.8995
REER	-0.113546	0.05463	-2.078475	0.0531
C	19.53273	12.61537	1.548328	0.14
R^2 = 0.396072			Akaike info criterion = 4.920908	
F-statistic = 3.716354			Schwarz criterion = 5.119864	
Prob(F-statistic) = 0.031945			Durbin-Watson stat = 1.116825	

Source: Authors' computation (2025).

Note: The variables are as defined in Equation 1 and 2 under methodology section. C = Intercept; R^2 = coefficient of determination.

The OLS result for the study's output model in Equation 1 is shown in Table 3. From the Table 3, the coefficient of determination (R-square), which measures the model's goodness of fit, indicates that the independent variables collectively explained 40% of the variations observed in the dependent variable. The remaining 60% shows that other variables (that the model did not account for) other than the study's independent variables affect the study's dependent variable. Furthermore, as demonstrated by the statistically significant value of the F-test statistic, the F-Statistic indicates that the overall relationship in the model is significant. As the Durbin-Watson Statistic indicates the existence of serial correlation in the residuals of the estimated model, there is need to

ISSN No. 2321-2705 | DOI: 10.51244/IJRSI |Volume XII Issue II February 2025

confirm this result by conducting further diagnostic test (see Table 4) before final decision is taken on the existence of serial correlation in the residuals of the estimated model.

Table 3 also reveals that, the fluctuating exchange rate (REER) has a negative coefficient of -0.113546 and probability value of 0.0531, indicating that the REER significantly affected the growth rate of real gross domestic product (GDPGR) negatively, for the period studied. This implies that 1 percentage point rise in the fluctuating exchange rate (depreciation of Naira) in relation to other currencies such as dollar will result in a 0.113546 percentage decrease in GDPGR. It is thus concluded that exchange rate fluctuation regime significantly and negatively affected the economic growth in Nigeria. This result conforms to the priori expectation. However, a similar result has also been obtained by previous studies such as Iheanachor and Ozegbe (2021) and Ufoeze (2018).

The inflation rate and lending interest rate individually has a negative and non-significant effect on economic growth in Nigeria, as disclose with their respective negative coefficient values of -0.163377 and -0.05413; as well as their respective p-values of 0.2645 and 0.8995.

Diagnostic Tests

Table 4: ARCH heteroskedasticity test, Breusch-Godfrey Serial Correlation LM Test and Jarque-Bera normality test.

Tests	P-value for the F-Statistics
Autoregressive Conditional Heteroscedasticity (ARCH) test	0.7783
Breuch-Godfrey serial correlation Langrange Multiplier (LM) test.	0.0606
Prob (Jarque-Bera) = 0.421006	

Source: Authors' computation (2025).

The result of ARCH test and Breuch-Godfrey serial correlation LM test in table 4 above revealed no issues of heteroskedasticity or serial correlation respectively, in the estimated output model (see equation 1). This is because of lack of sufficient evidence to rule out the null hypotheses of no heteroscedasticity and no serial correlation of the residuals, as disclosed with the p- value of the F-statistics of 0.7783 and 0.0606 respectively. Thus, any previous result on the existence of serial correlation of the residuals (Durbin-Watson statistics result) is invalidated with this result of Breuch-Godfrey serial correlation Langrange Multiplier (LM) test. Also, the normality test results, using the Jacque-Bera approach, shows that the residuals are normally distributed, since its p-value of 0.421006 is more than 5% significant level.

Granger Causality Results

Table 5: Pairwise Granger causality test results

Null Hypothesis:	Obs	F-Statistic	Prob.
GDPGR does not Granger Cause REER	20	0.00589	0.9397
REER does not Granger Cause GDPGR		5.25997	0.0348

Source: Authors' computation (2025).

Based on the Granger results in Table 5, we accept the null hypothesis that GDPGR does not Granger cause REER., This is because the obtained F-statistic value is not significant at 5% significant level. However, we reject the null hypothesis that REER does not Granger cause GDPGR, with the disclosed significant value (p-value) of the F-statistics of 0.0348, which is lees 5% level of significance. Therefore, we conclude that GDPGR does not Granger cause REER; while REER can Granger cause GDPGR.

CONCLUSION AND RECOMMENDATIONS

Nigeria shifted from fixed to fluctuating (flexible) exchange rate regime in 1986, with the introduction of second-tier foreign exchange market, under the SAP. The flexible system, currently in operation in Nigeria is the one that allows the CBN to intervene in the foreign exchange market only in the event of wide and unexpected fluctuations in the value of the currency. The recent public outcry regarding the incessant increase in naira depreciation and inflation rate, resulting to more economic hardship among Nigerians, have prompted this study to assess the operation of fluctuating exchange rate regime practices in Nigeria, currently, in order to determine its effect on the country's economic growth. The results from this study empirically agreed with the assertions of some people, that the constant changes and sustained increase in Nigeria's exchange rate, resulting to Naira depreciation, that characterized the fluctuating exchange rate regime, is a significant cause of Nigerian's hardship and/or economic downturn. Thus, the study concludes that the existing flexible exchange rate system practices in Nigeria although lacks the capacity to boost Nigeria's economic growth, but is not a bad policy option in that regards. Its impotency in driving economic growth could be due to the fact that Nigeria currently practices managed float in principle but not in practice, which can be linked back to the extent to which the CBN intervenes in the currency market when necessary to stabilize the exchange rate, while the flexible system is maintained. In practice, Nigeria's currently practices managed float is one that allows the exchange rate volatility to increase freely with its resultant effect of sustained naira depreciation. Thus, the benefit of the type of fluctuating exchange rate regime currently in operation in Nigeria (Managed float) in relation to driving growth of the economy, is not witnessed in the country.

Based on the findings, the study recommended high degree of the fluctuating exchange rate (Managed float as currently in operation in Nigeria) policy management in Nigeria by the CBN. This will help to strengthen the managed float system of exchange rate currently in use, to reflect in practice, the characteristics of managed float system. This recommendation is actionable with the CBN applying more efforts in the management of the country's external reserves in order to maintain large amounts of foreign reserves necessary for intervening in the foreign exchange market, to reduce excess volatility of the exchange rate, and in turn, reduce the sustained increase in the exchange rate of Naira in relation to other currencies. This will help to appreciate the Nigeria's currency and stimulate the economic growth.

In addition to the strengthen of the fluctuating exchange rate system currently in use in Nigeria, this study recommended high degree of monetary policy management. This will aid to guarantee that, as the goal of price stability is accomplished, the exchange rate is in line with the external balance. This recommendation is actionable in Nigeria since the flexible exchange rate regime currently in operation allows monetary policy to successfully be utilized to achieve domestic economic goals, such as low inflation and/or full employment, without concern about depletion of official foreign exchange reserves.

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