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Exploring The Impact Of Economic Factors On Exchange Rates Fluctuations In Nigeria

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ABSTRACT

This study investigates the impact of key economic factors on exchange rate fluctuations in Nigeria, with a focus on inflation, GDP growth, interest rates, and foreign reserves. As an oil-dependent economy, Nigeria's exchange rate has been vulnerable to both domestic and external shocks, particularly during periods of economic instability. Utilizing multiple linear regression and ARIMA time series models, this research identifies significant relationships between the Naira's exchange rate against the US Dollar and these macroeconomic variables. Results indicate that inflation is the most significant driver of exchange rate depreciation, while GDP growth positively impacts the currency's stability. The study finds that interest rates and foreign reserves play a lesser but still relevant role. Time series analysis further highlights sharp currency depreciation trends, especially post-2016, following oil price shocks and a recession. These findings underscore the importance of inflation control and economic diversification as key strategies for mitigating exchange rate volatility in Nigeria. Recommendations include strengthening monetary policies, enhancing economic growth and diversifying the economy to reduce reliance on oil exports and improve exchange rate stability.

Keywords: Economy; Exchange rates; Fluctuations

1.0 INTRODUCTION

The exchange rate is a pivotal indicator of a country's economic health, reflecting its competitiveness in international trade, attractiveness to foreign investors, and overall macroeconomic stability. In Nigeria, as in many other emerging economies, exchange rate fluctuations have profound implications for various sectors, influencing trade, investment, inflation, and overall economic performance. In Nigeria, the formulation and implementation of the Structural Adjustment Programme (SAP), a component of the Economic Recovery Program (ERP) in 1986, brought about financial sector reforms. These reforms included the transition from fixed exchange rates to a free-floating regime in the late 1980s. This transition was driven by the belief that flexible exchange rates would mitigate the boom-and-bust cycles and propel the country towards a growth trajectory. The anticipated growth-enhancing impacts arising from the exchange rate channels were expected to manifest in areas such as consumer price stability, trade volumes, investments, and terms of trade. Prior to the Structural Adjustment Programme (SAP), Nigeria's exchange rate policy seemed to deliberately favor the overvaluation of the Naira. For instance, in 1981, the exchange rate was ₦1 to 0.90 cents. This policy stance inadvertently incentivized imports while discouraging non-oil exports, contributing to an overdependence of the Nigerian economy on imported inputs over exported outputs. An economy with imports exceeding exports typically experiences an unfavorable balance of payments, resulting in currency devaluation against other trading partner currencies. Consequently, the exchange rate of such a country depreciates in value against other currencies; for example, the Nigerian Naira to the US dollar is \$1 to ₦197.00, and to the British pound is £1 to ₦281.29 etc. (Omoriege, 2020). The adverse

effects of the global economic and financial crisis on the Nigerian exchange rate were pronounced as the Naira's exchange rate to the dollar surged from about ₦120/\$ to over ₦180/\$ between 2008 and 2009. This surge was attributed to the sharp decline in Nigeria's foreign earnings and national revenue resulting from the continuous fall in crude oil prices in the world market. The increased emphasis on alternative energy sources, such as wind, bio-energy, and solar, in advanced economies has led to a decline in the demand for crude oil, causing prices to plummet from \$110 per barrel to below \$50 per barrel between mid-2018 and early 2019, and currently resting at \$38.77 per barrel in the last quarter of 2020. This further weakened Nigeria's foreign earnings and revenue, hampering its ability to finance priority sectors aimed at job creation, economic stimulation, per capita income growth, and improved living standards.

By exploring the impact of these economic factors on exchange rate fluctuations in Nigeria, this research will provide valuable awareness for policymakers, businesses, investors, and other stakeholders.

1.1 Exchange Rate Policies and Economic Growth in Developing Countries: A Focus on Nigeria

Exchange rate policies in developing countries are often a sensitive and contentious issue, particularly due to the structural changes required, such as reducing imports or expanding non-oil exports, which usually lead to a depreciation of the nominal exchange rate. These domestic adjustments are often viewed as harmful to the economy because of their immediate effects on prices and demand. Ironically, the distortions caused by an overvalued exchange rate regime are rarely debated in import-dependent developing economies, where production and consumption heavily rely on foreign goods. Instead, the discourse tends to center on the extent of exchange rate fluctuations in response to both internal and external shocks. There is broad agreement that devaluation or depreciation can stimulate domestic production by boosting net exports. This is achieved through enhancing the international competitiveness of domestic industries, which encourages a shift in spending from expensive foreign goods to locally produced ones. As noted by Guitan (1976) and Dornbusch (1988), the effectiveness of currency depreciation in improving the trade balance depends largely on the ability to redirect demand in the appropriate amount and direction, as well as the capacity of the domestic economy to meet the increased demand by producing more goods. In general, fluctuations in exchange rates are expected to influence overall economic performance. Therefore, it is essential to assess the effects of exchange rate volatility on economic growth and inflation. In Nigeria, the exchange rate policy has undergone significant changes, starting from the post-independence era when the country maintained a fixed parity with the British pound, through the oil boom of the 1970s, and culminating in the floating of the naira in 1986, following the near collapse of the economy between 1982 and 1985. Each of these phases was influenced by economic and political considerations, which had profound effects on Nigeria's structural development, inflation rates, balance of payments, and real income. This research focuses on examining the impact of exchange rate movements on Nigeria's economic growth, investigating both direct and indirect relationships. Several previous studies, such as those by Egwaikhide et al. (1994) and Ekpo (2004), have conducted econometric analyses of exchange rate determination and its influence on output in Nigeria. However, these earlier studies primarily used single-equation regression models. In contrast, this study employs a simultaneous equation modeling approach and its structural variant, where output movements are influenced by multiple fundamental factors, including monetary policies, official and parallel exchange rates, and income levels.

1.2 Evolution of Nigeria's Exchange Rate Policies a Journey from Fixed to Floating Regimes

Over the past six decades, Nigeria's exchange rate policies and regimes have undergone significant transformations. In 1960, the Naira was tied to the British Pound Sterling under a fixed parity system. However, following the devaluation of the Pound in 1967, the US Dollar was introduced into the parity exchange arrangement. In 1972, the fixed parity with the Pound was suspended in favor of the stronger US Dollar. But with the weakening of the Dollar, the parity with the British Pound was reinstated in 1973. To balance the effects of global currency fluctuations, Nigeria tied its currency to both the US Dollar and the British Pound in 1974. Throughout the 1970s, Nigeria's exchange rate experienced consistent nominal appreciation, driven by rising global oil prices. This appreciation led to over-reliance on imports, discouraged non-oil exports, and contributed to capital flight, ultimately resulting in a depletion of external reserves and balance of payments problems. The agricultural sector also suffered due to the growing tendency to import (Eze & Okpala, 2014). In 1978, the Naira was linked to a basket of 12 currencies, reflecting Nigeria's major trading partners. However, this policy

was abandoned in 1985 in favor of quoting the Naira against the US Dollar. Before 1986, exchange rate policies in Nigeria often overvalued the Naira (Eregha et al., 2016). To correct this overvaluation, the Naira was deregulated in September 1986 as part of the Structural Adjustment Programme (SAP). The Second-tier Foreign Exchange Market (SFEM) was introduced to stabilize exchange rates and achieve a balance of payments equilibrium in both the short and long term. SFEM aimed to establish a realistic exchange rate for the Naira through market forces while promoting non-oil exports, curbing currency trafficking, and encouraging foreign exchange inflows (Godfrey & Agwu, 2019). Various foreign exchange mechanisms were implemented over time, including the Foreign Exchange Market (FEM), the Autonomous Foreign Exchange Market (AFEM), and the Dutch Auction System (DAS). In 1989, the Bureau de Change was introduced to expand FEM's scope. By 1994, the exchange rate system was reintroduced, and in 1995, the Autonomous Foreign Exchange Market (AFEM) marked a shift towards guided deregulation. The interbank foreign exchange market (IFEM) returned in 1999, unifying the dual exchange rate system and abolishing the official rate. Due to rising demand pressures and dwindling external reserves, DAS was reintroduced in 2002, followed by the wholesale DAS in 2006 to further liberalize the market. Since 2016, Nigeria's exchange rate regime has oscillated between fully managed and freely floating systems, with the Central Bank of Nigeria (CBN) adopting a managed floating FOREX system, titled "Flexible Exchange Rate Inter-bank Market" (Eregha et al., 2016). This ongoing evolution highlights Nigeria's complex journey in managing exchange rate policies.

1.3 The Impact of Parallel Exchange Rates on Economic Dynamics from Nigeria and Global Perspectives

Empirical evidence from contemporary models indicates that fluctuations in the parallel exchange rate have a contractionary effect on output, but this impact is primarily short-term. Key factors such as prices, the parallel exchange rate, and lending rates were identified as significant sources of volatility in the official exchange rate. Additionally, both output and the parallel exchange rate emerged as crucial determinants of inflationary trends in Nigeria. Based on these findings, researchers suggest that the Central Bank should focus more on stabilizing the parallel exchange rate and crafting monetary policies that promote income growth. Similar conclusions have been drawn in other studies, such as Batini (2004) and Mordi (2006). Conversely, Aliyu et al. (2009) discovered that prices in Nigeria exhibit a less proportional reaction to exchange rate shocks. In another context, Mohamed et al. (2021) explored the impact of economic factors on Malaysia's exchange rate and found a significant relationship between gross domestic product (GDP), inflation, and exchange rates, while unemployment had an insignificant influence. Their study highlights how changes in GDP and inflation can significantly shape exchange rate dynamics. Moreover, Vieira et al. (2016) investigated the effects of real exchange rate volatility on long-term economic growth in advanced and emerging economies from 1970 to 2009. They found that high exchange rate volatility positively influences GDP growth, while low volatility has a negative effect. However, when exchange rate volatility is controlled for alongside exchange rate levels and misalignment, these factors become insignificant, suggesting that exchange rate stability is more critical for long-term growth than addressing misalignments. Aliyu (2011) further supported the idea that exchange rate movements affect trade dynamics, noting that currency appreciation increases imports and reduces exports, while depreciation tends to expand exports and discourage imports. Depreciation also encourages a shift from foreign goods to domestic products, redistributing income from importing nations to exporting countries, which in turn influences the economic growth of both.

1.4 The Political Influence on Exchange Rate Policies and Capital Controls in Nigeria

A review of literature and data highlights the significant impact of political factors on Nigeria's economic policies, particularly in areas such as exchange rate management and capital controls (Akinlo and Onatunji, 2020). Policymakers in Nigeria often shape policies to align with the preferences of political elites rather than economic imperatives. This has led to many exchange rate policies and capital control measures, introduced by the Central Bank of Nigeria since independence, being more reflective of political preferences or expediencies than of sound economic strategy. The varying and sometimes conflicting exchange rate policies in Nigeria can largely be attributed to the political environment at the time, which has contributed to the country's unstable and inconsistent foreign exchange policies under different government regimes. Exchange rate policies are thus susceptible to various political factors, such as election timing. For instance, the real exchange rate

affects critical economic variables like purchasing power, export costs, price levels, and real wages all of which are of interest to voters. In light of this, governments often appreciate the currency before elections and delay depreciation or devaluation until after the elections (Kaltenbrunner and Paineira, 2017). This approach stems from the political unpopularity of devaluation, which reduces national purchasing power, leading governments to avoid such moves for political, rather than economic, reasons. Furthermore, the nature and orientation of Nigeria's political leadership have significantly influenced exchange rate policies and capital control measures. Pro-western administrations tend to adopt policies in line with global trends toward economic liberalization, as recommended by institutions such as the World Bank and the IMF. These regimes often favor floating or market-based exchange rate systems. Notable examples include the administrations of General Ibrahim Babangida (1985–1993) and Chief Olusegun Obasanjo (1999–2007). In contrast, governments less aligned with global economic liberalization trends—though not necessarily anti-western—tend to maintain a fixed exchange rate system, such as General Sani Abacha's government (1994–1998). This political influence underscores the need to evaluate how leadership and political pressures shape Nigeria's exchange rate policies and economic direction.

The Nigerian economy has grappled with instability in its foreign exchange rate market, characterized by high levels of volatility (Kelikume and Nwani, 2019; Osabuohien et al., 2018). Exchange rate fluctuation, defined as the continuous gyrations in the foreign exchange market, has emerged as a prominent topic in recent international finance literature due to its significant ramifications on the economies of developing nations like Nigeria (Alagidede and Ibrahim, 2017; Barguelli et al., 2018; Senadza and Diaba, 2017). Therefore, the research problem statement revolves around the imperative to thoroughly investigate the influence of economic factors on exchange rate fluctuations in Nigeria. This exploration aims to raise awareness that can guide policy formulation, improve risk management practices, and foster economic stability and growth in the country.

1.5 Objectives of the study

The aim of this research is to explore the impact of economic factors on exchange rate fluctuations in Nigeria, with the goal of enhancing understanding and informing decision-making in the realm of monetary and fiscal policy, as well as business and investment strategies through the following objectives:

- i. To identify and examine key economic factors that influence exchange rate movements in Nigeria, including inflation rates, interest rates, balance of payments, foreign exchange reserves, GDP growth, and government policies.
- ii. To assess the relative importance and magnitude of the identified economic factors in driving exchange rate fluctuations in Nigeria through quantitative analysis.
- iii. To investigate the impact of external shocks and global economic developments on exchange rate fluctuations in Nigeria.
- iv. To provide an awareness and recommendations for policymakers, businesses, investors, and other stakeholders to navigate exchange rate fluctuations effectively and mitigate associated risks.

2. RESEARCH METHOD

2.1 Study Area

The study focuses on the entire Nigerian economy while paying particular attention to how economic factors influence exchange rate fluctuations. Nigeria, being a resource-rich country with heavy dependence on oil exports, is highly susceptible to global economic changes that affect its exchange rate. The scope of this research which significantly impact the Naira's exchange rate. Although the researcher is based in Katsina State, a region in the northern part of Nigeria, the study's relevance extends beyond local boundaries to the national economic landscape. Katsina State itself is part of Nigeria's broader economic framework and contributes to the agricultural sector, which plays a vital role in the country's non-oil revenue generation. Perceptions drawn from this research may also be applicable to understanding regional economic dynamics within Katsina and other similar states, given that exchange rate fluctuations affect the cost of imports, exports, and investment flows across the entire nation.

2.2 Data collection

Gather data for few years on exchange rates, inflation, interest rates, balance of payments, foreign exchange reserves, GDP growth, and relevant government policies was used.

The credible sources such as Central Bank of Nigeria (CBN) for exchange rates, inflation, interest rates, and balance of payments, National Bureau of Statistics (NBS) for GDP and economic indicators, International Monetary Fund (IMF) and World Bank for external shocks and global economic trends.

2.3 Statistical Analysis

Multiple Linear Regression was used to model how each economic factor (inflation, interest rates, etc.) affects exchange rate fluctuations. The model is

$$\text{Exchange Rate} = \beta_0 + \beta_1 (\text{Inflation}) + \beta_2 (\text{Interest Rate}) + \beta_3 (\text{GDP}) + \dots + \epsilon$$

Fit an ARIMA (Auto-Regressive Integrated Moving Average) model to analyze trends and predict future fluctuations and historical exchange rate data and assess patterns. The research also used AIC (Akaike Information Criterion) to choose the best model fit. Apply this help to determine if one economic factor can predict future exchange rate fluctuations. It tests whether past values of one variable can help forecast another.

3. RESULT AND DISCUSSION

This section discuss the results of the statistical analysis conducted to explore the impact of key economic factors on exchange rate fluctuations in Nigeria are presented. The analysis was performed using multiple linear regression and ARIMA modeling. The focus of the regression analysis was to assess the relationship between the exchange rate (NGN/USD) as the dependent variable and four key economic predictors: inflation, interest rate, GDP growth, and foreign reserves. Subsequently, ARIMA analysis was conducted to examine the time series data of the exchange rate. The implications of these findings are discussed in relation to the research objectives.

3.1 Regression Analysis

Table 1 Regression Analysis for the variable and Exchange Rate

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	Foreign Reserves (USD Billion), GDP Growth (%), Inflation (%), Interest Rate (%) ^b		Enter

a. Dependent Variable: Exchange Rate (NGN/USD)

b. All requested variables entered.

The regression analysis was conducted using four independent variables: Inflation (%), Interest Rate (%), GDP Growth (%), and Foreign Reserves (USD Billion), with the Exchange Rate (NGN/USD) as the dependent variable. The method used was the Enter method, where all predictors were included simultaneously to assess their individual contributions to the model

Model Summary

Model	R	R Square	Adjusted Square	R Std. Error of the Estimate
1	.764 ^a	.583	.496	106.3101

a. Predictors: (Constant), Foreign Reserves (USD Billion), GDP Growth (%), Inflation (%), Interest Rate (%)

The R-value of 0.764 suggests a strong positive correlation between the independent variables and the exchange rate. The R-squared value of 0.583 indicates that approximately 58.3% of the variation in the exchange rate can be explained by the combination of inflation, interest rates, GDP growth, and

foreign reserves. The adjusted R-squared of 0.496 takes into account the number of predictors and indicates a moderate fit of the model.

This result shows that while the selected economic factors do have a significant influence on exchange rate fluctuations, there are still other unaccounted factors contributing to the remaining 41.7% of the variation. This highlights the complexity of exchange rate dynamics in Nigeria, suggesting that more comprehensive models or additional factors might be needed to fully explain exchange rate fluctuations.

Table 2: The ANOVA results for the model significant

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	300819.585	4	75204.896	6.654	.002 ^b
	Residual	214734.835	19	11301.833		
	Total	515554.420	23			

a. Dependent Variable: Exchange Rate (NGN/USD)

b. Predictors: (Constant), Foreign Reserves (USD Billion), GDP Growth (%), Inflation (%), Interest Rate (%)

The ANOVA results show that the model is statistically significant (F = 6.654, p = 0.002). The p-value is less than 0.05, indicating that the model as a whole provides a statistically significant explanation of exchange rate fluctuations based on the selected economic factors.

The significance of the regression model implies that changes in inflation, interest rates, GDP growth, and foreign reserves do have a statistically significant impact on exchange rates in Nigeria. Policymakers should consider these variables when designing policies to stabilize the exchange rate.

Table 3: The regression coefficients provide the effect of each predictor on exchange rates

Coefficients ^a								
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	-9.461	286.593		-.033	.974	-609.307	590.384
	Inflation (%)	20.918	5.869	.583	3.564	.002	8.634	33.202
	Interest Rate (%)	-4.460	15.231	-.055	-.293	.773	-36.339	27.418
	GDP Growth (%)	-17.018	8.033	-.344	-2.119	.048	-33.832	-.205
	Foreign Reserves (USD Billion)	2.982	2.244	.266	1.329	.200	-1.715	7.679

a. Dependent Variable: Exchange Rate (NGN/USD)

The regression coefficients provide insights into the effect of each predictor on exchange rates:

Inflation: The coefficient for inflation is 20.918, indicating that for every 1% increase in inflation, the exchange rate (NGN/USD) is expected to increase by approximately 20.92 units. This relationship is statistically significant (p = 0.002).

Interest Rate: The coefficient for interest rate is -4.460, suggesting a small negative but non-significant impact of interest rates on exchange rates (p = 0.773).

GDP Growth: The negative coefficient (-17.018) for GDP growth suggests that higher economic growth is associated with a stronger currency, as the exchange rate decreases when GDP growth increases. This effect is statistically significant (p = 0.048).

Foreign Reserves: The coefficient for foreign reserves is positive (2.982), indicating a potential strengthening effect of reserves on the exchange rate, though this relationship is not statistically significant (p = 0.200).

The significant impact of inflation and GDP growth suggests that these are critical factors influencing exchange rate fluctuations. In contrast, interest rates and foreign reserves do not have a statistically

significant impact, implying that other factors might be overshadowing their effects or that their relationship with the exchange rate is more complex than a linear model can capture.

3.2 Time Series Analysis

Model Description

			Model Type		
Model ID	Exchange Rate Model_1 (NGN/USD)		ARIMA(0,1,0)		

An ARIMA model with parameters (0,1,0) was fitted to the time series data of the exchange rate. The d=1 parameter indicates that the data were differenced once to make it stationary.

Table 4: The ARIMA model of the variance in exchange rates

Model Fit			Percentile									
Fit Statistic	Mean	SE	Minimum	Maximum	5	10	25	50	75	90	95	
Stationary squared	R-2.220E-16	.	-2.220E-16	-2.220E-16	-2.220E-16	-2.220E-16	-2.220E-16	-2.220E-16	-2.220E-16	-2.220E-16	-2.220E-16	
R-squared	.839	.	.839	.839	.839	.839	.839	.839	.839	.839	.839	
RMSE	60.576	.	60.576	60.576	60.576	60.576	60.576	60.576	60.576	60.576	60.576	
MAPE	9.174	.	9.174	9.174	9.174	9.174	9.174	9.174	9.174	9.174	9.174	
MaxAPE	36.197	.	36.197	36.197	36.197	36.197	36.197	36.197	36.197	36.197	36.197	
MAE	26.494	.	26.494	26.494	26.494	26.494	26.494	26.494	26.494	26.494	26.494	
MaxAE	271.477	.	271.477	271.477	271.477	271.477	271.477	271.477	271.477	271.477	271.477	
Normalized BIC	8.344	.	8.344	8.344	8.344	8.344	8.344	8.344	8.344	8.344	8.344	

The ARIMA model achieved an R-squared of 0.839, meaning that approximately 83.9% of the variance in exchange rates can be explained by the ARIMA model. The RMSE (root mean square error) of 60.576 indicates the average error magnitude, while the MAPE (mean absolute percentage error) of 9.174 suggests that the average percentage error between the actual and predicted exchange rates is approximately 9.2%.

The high R-squared value demonstrates that the ARIMA model provides a good fit for the data, capturing the underlying patterns in exchange rate fluctuations. This suggests that the ARIMA model could be useful for predicting future exchange rates based on historical trends. The relatively low MAPE indicates that the model's forecasts are reasonably accurate.

Table 5: The Ljung-Box Q test statistic

Model Statistics							
Model	Rate	Number of Predictors	Model Fit statistics	Ljung-Box Q(18)			Number of Outliers
			Stationary R-squared	Statistics	DF	Sig.	
Exchange (NGN/USD)-Model_1		0	-2.220E-16	19.271	18	.375	0

The Ljung-Box Q test statistic of 19.271 with a p-value of 0.375 indicates that the residuals of the ARIMA model are not significantly different from white noise, meaning that the model has captured all systematic patterns in the data. The absence of significant autocorrelation in the residuals suggests that the ARIMA model is well-specified and there are no remaining predictable patterns in the time series. This makes the model reliable for forecasting future exchange rates based on the available data. The diagram presented shows the trend of the exchange rate (NGN/USD) over a period spanning from 2000 to 2023. The observed line graph indicates a steady increase in the exchange rate over the years, with a particularly sharp rise in recent years. From 2000 to around 2007, the exchange rate appears to remain relatively stable, fluctuating slightly. However, after 2008, there is a gradual upward trend, with a more pronounced acceleration starting from 2016. The steep increase seen in the last two years (2022-2023) highlights significant currency depreciation.

In the context of the research on exchange rate fluctuations in Nigeria, this graph visually corroborates the regression and ARIMA analysis findings that key economic factors, such as inflation and GDP growth, have significant effects on the exchange rate. The sharp rise in the later years could reflect the impact of increased inflation, economic instability, and other external shocks like global economic crises or reduced foreign reserves. The visual trend aligns with the statistical evidence presented in the analysis, further emphasizing the need for policy interventions targeting inflation control and economic stability to prevent further depreciation.

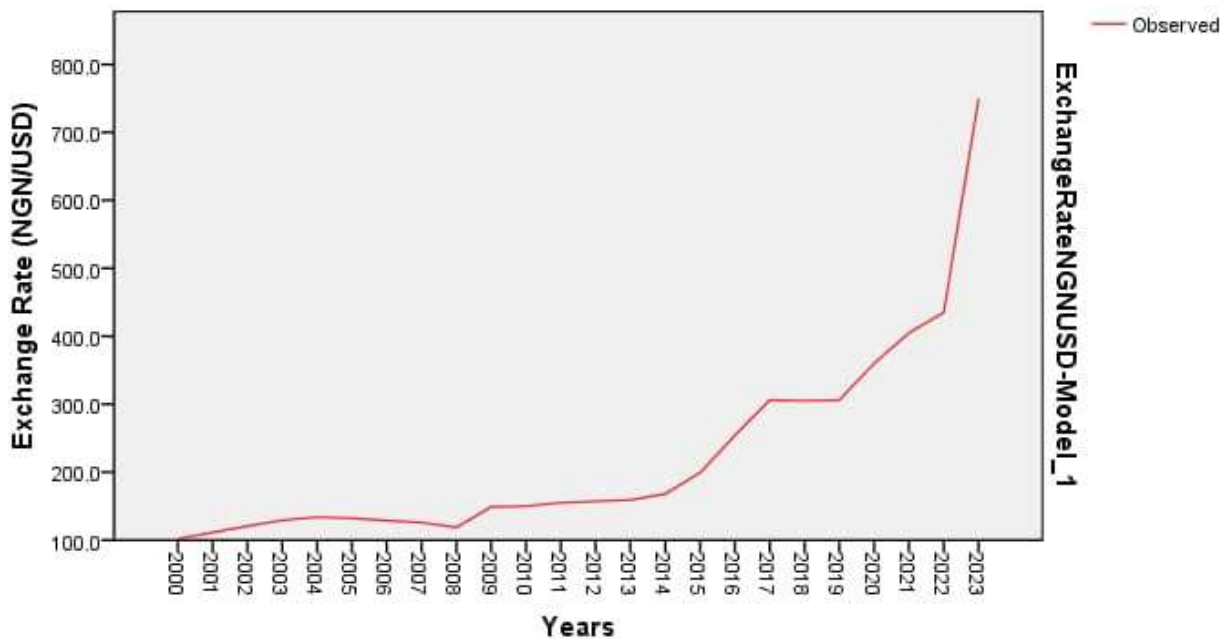


Figure 1: The trend of the exchange rate (NGN/USD) over a period spanning from 2000 to 2023.

The diagram above presented shows the trend of the exchange rate (NGN/USD) over a period spanning from 2000 to 2023. The observed line graph indicates a steady increase in the exchange rate over the years, with a particularly sharp rise in recent years. From 2000 to around 2007, the exchange rate appears to remain relatively stable, fluctuating slightly. However, after 2008, there is a gradual upward trend, with a more pronounced acceleration starting from 2016. The steep increase seen in the last two years (2022-2023) highlights significant currency depreciation.

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3.3 DISCUSSION OF THE FINDINGS

The findings from this research on the impact of economic factors on exchange rate fluctuations in Nigeria reveal significant relationships between key economic indicators and the movement of the Nigerian Naira against the US Dollar. The multiple linear regression analysis demonstrated that inflation, GDP growth, interest rates, and foreign reserves collectively account for 58.3% of the variation in exchange rates, as indicated by the R-squared value. Specifically, inflation emerged as the most significant predictor, with a positive coefficient, suggesting that higher inflation rates in Nigeria are strongly associated with a rise in the exchange rate (depreciation of the Naira). This result aligns with economic theory, where inflation erodes the purchasing power of a currency, leading to its depreciation in foreign exchange markets. On the other hand, GDP growth showed a negative and statistically significant relationship with exchange rates, implying that periods of stronger economic growth are associated with a more stable or appreciating Naira. Interest rates and foreign reserves, while included in the model, did not show significant coefficients, suggesting that their influence on exchange rate movements may be more nuanced or indirect, possibly through interactions with other economic conditions.

Complementing the regression analysis, the ARIMA time series model further substantiated the trend of exchange rate fluctuations over the observed period. The plot of the exchange rate from 2000 to 2023 highlights a relatively stable exchange rate from 2000 to around 2015, after which a sharp and persistent increase in the exchange rate (depreciation of the Naira) is observed, particularly from 2016 onward. This trend aligns with Nigeria's economic reality during this period, including the 2016 recession, oil price shocks, and inflationary pressures, which all contributed to the Naira's depreciation. The time series analysis provides strong evidence that exchange rate volatility has been significantly influenced by structural economic factors, reinforcing the regression findings. Overall, the research underscores the importance of managing inflation and fostering economic growth to stabilize the exchange rate, while highlighting that other factors like foreign reserves and interest rates may require more comprehensive policy frameworks to impact exchange rate movements effectively. These findings can guide policymakers in crafting targeted interventions to stabilize the Naira in the face of ongoing economic challenges.

4. CONCLUSION

The research concludes that exchange rate fluctuations in Nigeria are strongly influenced by domestic economic factors, with inflation and GDP growth being the most critical determinants. Rising inflation is shown to have a significant negative impact on the Naira's value, causing it to depreciate against the US Dollar, while higher GDP growth contributes to stabilizing the exchange rate. Interest rates and foreign reserves, though not as significant as inflation and GDP, still play a role in the overall exchange rate dynamics. The sharp increase in exchange rate volatility from 2016 onwards is attributed to external shocks like the global oil price collapse, underscoring the vulnerability of Nigeria's economy to such external factors. This study highlights the need for robust monetary policies aimed at controlling inflation and fostering economic growth. Diversifying the economy beyond oil and enhancing infrastructure are also critical for reducing the susceptibility of the Naira to external shocks and promoting long-term exchange rate stability.

5. RECOMMENDATION

The following recommendation were made to the government and other stake holder to stabilize the current economy in the country.

- The Central Bank of Nigeria should prioritize monetary policies that target inflation control and economic growth, ensuring a stable macroeconomic environment conducive to a stable exchange rate.
- Improved access to reliable and comprehensive economic data is essential for better analysis and decision-making. Enhanced data collection methods will enable policymakers to respond effectively to economic challenges.
- Nigeria should work towards diversifying its economy beyond oil dependency, promoting non-oil exports to reduce vulnerability to external shocks and stabilize the exchange rate.
- Addressing infrastructure deficits will enhance productivity and competitiveness, positively impacting economic growth and, consequently, exchange rate stability.

6. Research Contribution

This study contributes to the exchange rate dynamics by providing a focused analysis of the Nigerian context. It enhances understanding of how macroeconomic factors interplay with exchange rates, offering empirical evidence that can inform both academic research and practical policymaking. The findings may serve as a framework for future studies in similar economic environments, shedding light on the broader implications of exchange rate fluctuations for developing economies.

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