EXCHANGE RATE FLUCTUATIONS AND MONEY MARKET PERFORMANCE IN NIGERIA (1990 – 2024)

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Abstract
This study investigated the effects of exchange rate fluctuations on money market performance in Nigeria for the period 1990 - 2024. Exchange rate was pictured using Naira to Dollar, Naira to British Pound and Naira to Swiss Franc exchange rates while money market performance was gauged using outstanding value of money market instruments. Adopting a quasi-experimental research design, secondary data on the aforementioned variables were used for the study and these data were sourced from Central Bank of Nigeria (CBN) statistical bulletin, 2023 and 2025(Q1) editions. The data set so assembles was first subjected to descriptive analysis, and subsequently to Augmented Dickey Fuller (ADF) unit root test, Johansen cointegration test, granger causality test, ECM estimation and a set of post estimation (diagnostic) tests. Results basically revealed that Naira-US Dollar exchange rate has a positive insignificant effect on value of outstanding money market instruments while Naira-British pound and Naira-Swiss Franc exchange rates have negative insignificant influences on value of outstanding money market instruments. Subsequently, the study showed that there is a long run equilibrium relationship between the variables to the extent that in event of any shock, the speed of adjustment is about 10.98% per annum. The study therefore concluded that exchange rate movements have a long run insignificant effect on money market performance in Nigeria. Hence, there is need to strengthen the naira by taking drastic and proactive measures that will discourage importation and encourage exportation; there is need to encourage more investments into the Nigerian money market by arresting the deteriorating security situation in the country as investment tends to flow away from environments where there is instability, uncertainty and insecurity; and there is urgent need for serious publicity and education about the existence and benefits of patronizing the money market. These moves will reposition the Nigerian capital market and enable it to attract more funds.
Keywords: *Exchange Rate, Exchange Rate Fluctuations, Money Market, Money Market Performance*

Introduction

The financial market is a special market where financial assets are traded. This market is an essential market because it is a catalyst of economic growth. The financial market makes funds available for business firms and the government. Such funds are used for business expansion or for capital projects. Basically, the financial market consists of the capital market and the money market. The former is a market that provides medium and long term funds while the latter is a market that makes short term funds available for business firms and the government. The money market according to Owoeye and Ogunmakin (2023) is an arrangement of structures and institutions for the purpose of fund mobilization, fund acquisition and fund dispensing in the short term. Fund mobilization involves all arrangements put in place to generate the funds; acquisition involves the actual procurement of the funds while dispensing involves the lending activities of the institutions. It is imperative to state here that the money market like the capital market does not have a fixed location; rather the name is a description referring to all structures and institutions that deal on the purchase, sale and transfer of short term credit instruments (Yuorkuu, Kamasa & Forson, 2024). Short term here refers to a period ranging from one day to one year, or a

period less than three or five years as the case may be.

Accordingly, instruments traded in this market have a short life span. Such instruments include treasury bills, treasury certificates, certificates of deposit, commercial papers, bankers' acceptance, bankers unit funds, call money, eligible development stocks, stabilization securities and the likes. Deposit money banks constitute the major vehicles for the effective operation of the money market. In Nigeria, the CBN is at the apex of the Nigerian money markets. The establishment of the CBN in 1959 facilitated the establishment of the Nigerian money market in April 1960, when the first tranche of treasury bills worth about #8 million was issued based on the Treasury Bill Ordinance No. 1 of 195 (Ukeje, 2023).

However, just like the capital market, investors in the money market of a country consist of local and foreign investors. This accounts for why the operation of the money market is affected by so many factors including foreign exchange rate. In essence, foreign exchange rate is the rate at which the currency of the host country exchanges with those of foreign investors' countries. A very strong exchange rate is a signal that shows how strong and viable an economy is, while a very weak currency is a reflection of a very vulnerable and weak economy. Exchange rate instability has real economic shocks because it negatively affects price level, profit level of firms and even the entire activity in an economy (Bala-Sani & Hassan, 2018). This accounts for one of the reasons why foreign exchange rate stability is also a major macroeconomic objective. In Nigeria, the value of the naira in terms recognized foreign currencies like the United States Dollar, British Pound Sterling and the Euro has never been stable. For instance, a pound which exchanged for ₦1.2495 in 1981 rose to ₦1048.65 (AFEM/DAS rates) in 2023. Within the same period, a dollar rose from ₦0.6100 to ₦843.91 (AFEM/DAS rates) (CBN, 2023). However, the strength of a country's currency is a pointer to her level of foreign investment in the stock market. This is because exchange rate and stock market price are interconnected directly and/or indirectly. For instance, foreign investors are busy investing their capital in the stock markets world over and in this process, international investment is booming rapidly and capital is moving across all over the world. The benefits of these investors are being determined by foreign exchange rate. Moreover, instability in the exchange rate may bring about uncertainty or otherwise in these investments. Thus, exchange rate is one of the important determinants of money market performance (Khan & Ali, 2015). In other words, a country's value and volume of outstanding money market instruments are directly or indirectly influenced by fluctuations in her exchange rate with foreign currencies.

Empirically speaking, studies on exchange rate volatility and money market performance are in short sully as emphasis has been on the capital market (Yuorkuu, Kamasa & Forson, 2024; Qabhobho, Mishi, Kleynhans, Vengesai & Mtimka, 2024; Duruechi, Ojiegbe & Ekweozor, 2023; Gbadebo, 2023; Javangwe & Takawira, 2022; Amewu, Owusu & Amenyitor, 2022). However, the very few observed studies that focused on the money market concentrated on deposit money banks. Put different, with respect to the money market, emphasis has been on exchange rate volatility and the performance of deposit money banks or commercial banks as the case may be (Aliyu & Iheonkhan 2025; Owoeye & Ogunmakin, 2023; Njagi & Nzai, 2022; Abubakar, 2020; Keshtgar, Pahlavani & Mirjalili, 2020). Now considering that bank performance does not constitute tell the performance of the money market, the question that readily calls to mind is: what is the effect of exchange rates movements on the outstanding value of money market instruments in Nigeria?

REVIEW OF RELATED LITERATURE

Conceptual Review

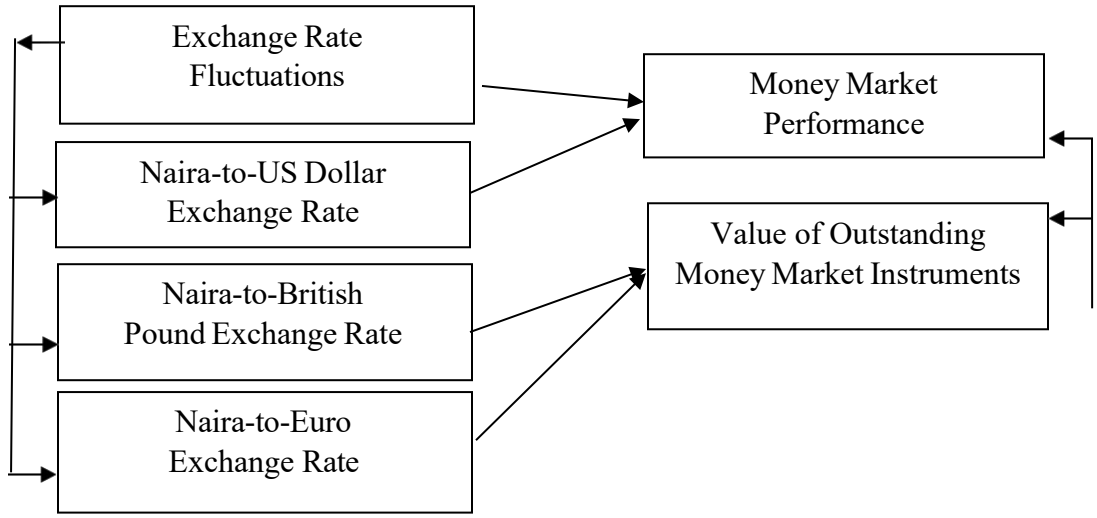

Fig. 1: Operational Conceptual Framework

Exchange Rate Fluctuations

Exchange rate fluctuation is synonymous with exchange rate volatility or movement. It refers to up and down movements in the prevailing exchange rates of a country typically due to the forces of demand and supply of currencies at different times (Gay, 2016).

According to Tamunowariye and Anaele (2022), exchange rate fluctuation is defined as the risk associated with unexpected movements in the exchange rate. Fluctuations in exchange rates are caused by monetary flows regarding changes in trade balances (deficit or surplus), budgets, interest rate and inflation. Thus, domestic currency appreciates whenever credit transactions exceed debit transactions. Also, domestic currency depreciates whenever debit balance exceeds credit balance. Increases in interest rates provide higher rates to lenders which attract more foreign exchange, thereby, causes a rise in exchange rate and appreciation of the domestic currency (Ezenwakwelu, Okolie, Attah, Lawal & Akoh, 2019). Exchange rate volatility or fluctuation also refers to the tendency for foreign currencies to appreciate or depreciate in value, thus affecting the profitability of foreign exchange trades. Volatility is seen as an unobservable or latent variable, deterministic or stochastic. They are never static. The supply and demand of significant currencies fluctuate over time.

There have however been studies that try to make the exchange rate volatility an observable variable, with varied results (Bauwens & Sucarrat, 2015). Exchange rates are highly volatile in the short run and are very responsive to political events, monetary policy and changes in expectations. In the long run, exchange rates are determined by the relative prices of goods in different countries (Samuelson & Nordhaus, 2021).

With the use of futures to lock in exchange rate, it can reduce the effects of price change even though this volatility is quite difficult to avoid in such circumstances. Volatility can occur in any security that rises or falls in value. The term is most often used in conjunction with the stock market, but foreign currencies can be volatile as well. When exchange rates are floating exchange rates, as opposed to fixed exchange rates, they are likely to go up and down in value depending upon the strength of the economies involved. As a result, volatility is something that affects any business undertaking involving two different countries.

Money Market

Money market refers to a collection or group of financial institutions or exchange system set up for dealing in short term credit instruments of high quality like treasury bills, treasury certificates, call money, commercial paper, bankers' Unit Fund, ways and means advances, as well as the dealing in gold and foreign exchange (Orji & Ladiba, 2014). According to them, these short term instruments involve a small risk due to loss, because they are issued by obligors of the highest credit rating and they mature within one year. The existence of a well-developed and a sensitive money market is necessary for the smooth operation of monetary policy of the central bank of a country. This is because, through the money market, the central bank can influence the short and term structure of interest rates, and thus make an impact on other rates as well (Orji & Ladiba, 2014). The existence of an efficient money market equally enables banks to conduct their operations with smaller cash reserve ratios. That is, the money market impacts an element of efficiency to the working of banks (Ifionu & Omejefe, 2023). With the existence of a bill market, the money market helps in financing trade and business activities and hence promotes competition and trade generally.

In Nigeria, the Central Bank of Nigeria (CBN), as said earlier, is at the apex of the money market. Its establishment in 1959 facilitated the establishment of the Nigerian Money Market in April 1960 when the first batch of Treasury Bills (TBs) worth about eight million naira (₦8,000,000) was issued based on the Treasury Bills Ordinance No. 1 of 1959 (Yuorkuu, Kamasa & Forson, 2024). The Nigerian money market is structured into two components: the primary market and the secondary market. The former is at the center of the market and it is the first segment, which existed at inception. Until 1992, this was the only market that constituted the money market. It provides short term funds of varying maturities at varying interest rates (Orji & Ladiba, 2014). The aforementioned are instruments traded in the primary market. On the other hand, the secondary market was established in 1992, more than 32 years after the establishment of the primary market. Prior to this time, the CBN performed the functions of this market. The major function of the secondary market is to provide liquidity to various money market instruments. This makes it possible to trade eligible instruments or discount them before maturity. According to Udo, Nwezeaku and Kanu (2021), the financial instruments traded in the secondary market are risk-free and are usually issued by high net-worth borrowers with a very high level of creditworthiness. Participants in the secondary market are mainly the discount houses, who are statutorily authorized to trade in securities such as treasury bills, commercial papers, treasury certificates etc.

Accordingly, there are majorly seven outstanding money market instruments in Nigeria. Federal Government Bonds is the newest of them all. Treasury bill and treasury certificates use to be the most popular money market instrument in the country until FGN bonds were introduced in 2003. The money market in Nigeria has indeed grown in leaps and bounds as shown in terms of total outstanding values of instruments. In 1981, the total monetary value of outstanding money market instruments in the country was ₦11.70 billion, this figure rose to ₦ 20,898.15 billion in 2022. Thus, showing an increase of ₦20,886.45 billion, which is about 178,416.67 percent increase within a space of 42 years (CBN, 2024).

Theoretical Review

The Purchasing Power Parity (PPP) Theory

The purchasing power parity theory was advanced by Menon and Viswanathan (2015). The theory explains that the value of homogenous goods is similar in different countries based on the currency of each country. According to Menon and Viswanathan (2015), when purchasing power is similar in different countries then the exchange rates between the countries' currencies will be at equilibrium. Muller and Verschoor (2019) postulated that ratio of commodities price levels should equal the country's currency. According to Ross (2018), a country's currency may be incorrectly valued whereby money has no purchasing power against the country's commodities level. This theory is based on the

assumptions that there are no transactional costs, no barriers to trade and the commodities being traded are homogeneous. If the trading currency is exchanged at the spot exchange rate, the price of a homogenous commodity should be identical across borders. The theory suggested use of price indexes to determine the exact price of a homogenous commodity between countries. The main challenge of this belief is in measuring Purchasing Power Parity constructed from price indexes given that different countries use different goods to determine their price level (Ibi, Joshua, Eja & Olatunbosun, 2018).

Flow Oriented Model

According to Zubair and Aladejare (2017), this model was developed on the premise that a causal association flows from exchange rate to the prices of stock in the stock market. The flow-oriented model is based on microeconomic foundations. The model maintains that a causal relationship runs from the exchange rate to market capitalization. In other words, exchange rate movements affect the market capitalization. Flow oriented model considers capital flows to have an impact on international competitiveness of enterprises and profits of firms. The profits and international competitiveness of firms will have an influence on stock market. In other words, the model suggests that fluctuation of exchange rate influences the share value of domestic and multinational firms. Saleh (2019) argued that the flow-oriented model implies that currency movements affect international competitiveness and balance of trade positions and consequently the real output of the country, which in turn affects the current and future expected cash flow of firms and their stock prices. This is because many companies conduct their business on the international market and changes in the exchange rate will have either positive or negative effects on the business operations.

Stock Oriented Model

The stock oriented approach to the relationship between exchange rate and the prices of stock in the stock exchange market was as result of some limitations of the flow oriented model. According to Pilbeam (1998), the obvious limitation of the flow oriented approach to the stated relationship is that it has nothing to say about international capital movements although it is known that international capital movements are very large and dominate the foreign currency market. This shortfall in flow models led to the development of fundamentalist models that stressed the role of the capital account of the balance of payments (often known as stock oriented models or asset models of exchange rate determination). Stock oriented models put much emphasis on the role of the financial (formerly capital) account in the exchange rates determination (Pilbeam, 1998).

Adjasi and Biekpe (2017) held that in the stock oriented model, "the exchange rate equates demand and supply for assets (bonds and stocks). Therefore, expectations of relative currency movements have a significant impact on price movements of financially held assets. Thus market capitalization movements may influence or be influenced by exchange rate movements". These models can be divided into two: the monetary model and portfolio balance model. The monetary model considers the supply and demand for currencies to be determined by stock equilibrium in the money market. The model implies that since the exchange rate is the price of one currency in terms of another, the relative supplies of, and demands for, the two currencies must determine it (Moosa, 2020).

Theoretical Framework

Theories on exchange rate fluctuations and capital market performance are not lacking in the literature but there is a dearth of theories linking foreign exchange rate volatility and money market performance. However, the theoretical underpinning of this study is the flow oriented model/theory. This theory suggests that there is a unidirectional relationship between exchange rate movements and performance of the money market. The causality between the stock exchange market and the money market is such that activities in the former affect activities in the later. Simply put, the

flow oriented model provides a valuable framework for analyzing financial markets, helping investors and analysts understand both markets and to make informed decisions in terms of arbitraging and managing risk properly.

In other words, the model simplifies and focuses on the flow of funds into and out of a country's financial market with respect to exchange rate appreciation and depreciation. Given that the Nigerian money market is a developing one saddled with so many market imperfection, and given that the bulk of investors in the Nigerian financial market are foreigners, it is pertinent to state that exchange rate movements, holding other factors constant, goes a long way in explaining the inflow and outflow of funds into and out of the Nigerian market. Again, this is so in the light that investors are generally arbitrageurs; who take advantage of market imperfections to maximize profit.

Empirical Review

Aliyu and Iheonkhan (2025) examined the impact of exchange rate volatility on the performance of commercial banks in Nigeria between 2015 and 2024. Secondary data from the Central Bank of Nigeria (CBN) and bank financial statements were analyzed using descriptive and inferential statistics, with a multivariate regression model validating the results. Thus, using a quantitative research approach and explanatory design, they studied how exchange rate fluctuations influence key metrics such as return on equity (ROE) and non-performing loan (NPL) ratios. Basically, findings revealed a significant negative effect of exchange rate volatility on profitability and a positive link to loan defaults. The study also highlights that GDP growth positively impacts profitability and reduces loan defaults, while inflation has mixed effects.

Qabhobho, Mishi, Kleynhans, Vengesai and Mtimka (2024) investigated the risk synchronization between stock returns, exchange-rate returns, geopolitical risk (GPR), and global economic policy uncertainty (GEPU) of countries within the Southern African Development Community (SADC) between February 2005 and August 2021 by using the wavelet techniques to address the study's objectives. The bivariate results showed that there is a positive interdependence between the stock market and the currency market in Botswana and Mauritius from 2007 to 2012. In South Africa, there was a significant co-movement between the two markets. The partial wavelet showed that while both increasing geopolitical risk and global economic policy uncertainty influence the correlation between stock returns and exchange-rate returns, geopolitical risk has a greater impact than global economic policy uncertainty. Finally, the wavelet multiple correlations analysis revealed that the Botswana exchange rate reaction to shocks is indeterminate, with the ability to lead or lag in terms of how the Southern African Development Community (SADC) economies respond to shocks across all-time scales.

Duruechi, Ojiegbe and Ekweozor (2023) examined the association between movements in foreign exchange rates and performance of the Nigerian stock market between 1995 and 2021. Naira-U.S Dollar, Naira-British Pounds, Naira-Euro, and Naira-Swiss Franc exchange rates were used to capture exchange rate movements while stock market capitalization represented the performance of the Nigerian stock market for the said period. Johansen cointegration test, Vector Error Correction Mechanism (VECM) and Pairwise Granger Causality tests were the major analytical tools employed for data analysis. Results showed that a long run insignificant association subsists between movements in foreign exchange rates and performance of the Nigerian capital market. The study equally showed that there is a unidirectional causality (relationship) between stock market capitalization and Naira-US dollar exchange rate, and the causality runs from the former to the later.

Gbadebo (2023) evaluated the impact of exchange rate volatility on stock market development in Nigeria for the period 1985 to 2020. The study centered on exchange rate volatility and stock market indicators like market returns, market capitalization, liquidity, and transaction volume. The study employed a simple static regression model of stock market indicators with

autoregressive adjustment component which absorb autocorrelation. Findings from the study revealed that exchange rate volatility has negative impact on stock market development. It further revealed that other correlated controls factors impinge different impacts on the stock market indicators.

Ihenyen, Epekele and Owonaro (2023) examined the association between currency depreciation and capital market performance in Nigeria for a period of 10 years (2012-2022). The study adopted a quantitative approach whereby secondary data gathered from the Nigerian Stock Exchange and the Central Bank of Nigeria were used. The study employed purposive sampling technique and the sample size consisted of all the publicly listed companies on the Nigerian Stock Exchange. The Ordinary Least Square (OLS) multiple regression analysis was used for data analysis and from the results, depreciation of a currency was found to correlate negatively with the performance of capital markets even after controlling for other variables in the model.

Owoeye and Ogunmakin (2023) examined exchange rate volatility and bank performance in Nigeria with emphasis on the impact of unstable exchange rate on loan loss to total advances ratio and capital deposit ratio respectively. The Ordinary Least Square (OLS) multiple regression approach was adopted for data analysis and the study found that the impact of exchange rate on bank performance is sensitive to the type of proxy used for bank performance. Specifically, the first model showed that fluctuating exchange rate affect the ability of lenders to manage loans resulting into high level of bad loans while the second model revealed that capital deposit ratio does not have a significant relationship with exchange rate.

Amewu, Owusu and Amenyitor (2022) examined the co-movement of Ghana's equity index and exchange rate with international equity markets and further determined whether these co-movements are driven by global uncertainties. They also determine how the COVID-19 pandemic altered the dynamics of these relationships. The study employed the wavelet technique to data from January 19, 2012 to March 1, 2021 to the split between pre-COVID-19 and COVID-19 periods. The results revealed that the dynamics of co-movement of exchange rate and Ghana Stock Exchange composite index has evolved over time and across frequencies. Besides, the cone of influence, as shown by the wavelet spectrum, it does not cover the entire data frequency which suggested that long-term forecast of exchange rate and equity index in Ghana beyond four years could be misleading since significant levels of interdependences are concentrated around the mid-team scales. In addition, they found evidence to support low-medium term lead-lag connections between exchange rate and Ghana Stock Exchange Composite Index in 2013 to 2014 and 2016.

Njagi and Nzai (2022) examined the effect of the risk associated with exchange rate volatility on the profitability of commercial banks in the East African Community between 2000 and 2020.. The study employed a panel estimation procedure since the data was collected in panel series. The study revealed that volatility exists as a risk to the profitability of commercial banks in the East African Community. It also revealed that Uganda performed better than Tanzania. As a result, Tanzania and Kenya saw greater currency rate volatility than Uganda. Further, the results showed that the volatility influenced commercial banks' performance proxied by ROA for the said period and the relationship was weak and negative.

Javangwe and Takawira (2022) examined the relationship between the stock market and exchange rate in South Africa for the period 1980 to 2020. The dependent variable was JSE- stock market index; while the independent variables were exchange rate, consumer price index (measuring inflation) and interest rate. Using quarterly data, the study adopted the popular Autoregressive Distributed Lag (ARDL) model approach given the order of integration of the variables. The empirical results revealed that there is a long-term relationship between the variables of interest. The results also revealed that there is a negative relationship between the stock market

and exchange rate movement. The results also showed that there is a negative relationship between the stock market and interest rate as well as inflation as measured by CPI..

Abubakar (2020) examined the effects of exchange rate volatility on financial performance of five selected deposit money banks in Nigeria with return on capital employed and return on assets serving as proxies for financial performance of the selected banks. The study made use of ex-post facto research design and secondary data used were collected from these banks and Central Bank of Nigeria statistical bulletin. Adopting the multivariate Ordinary Least Square (OLS) multiple regression techniques, the study revealed that exchange rate has no significant effect on return on capital employed and return on assets of DMBs in Nigeria.

Keshtgar, Pahlavani and Mirjalili (2020) examined the impact of exchange rate volatility as a determinant of banks' performance in Iran for the period 2007 – 2017 using 14 selected Iranian banks. The study derived exchange rate fluctuations using are GARCH method and the effect of its fluctuations on bank performance were examined using panel data collected from these fourteen countries. Bank performance was measured using liquidity and profitability indicators. Estimation of the formulated econometric models using panel data by random effects indicated that exchange rate volatility has a negative and statistically significant effect on banks' capital return ratio. Also, exchange rate volatility is a determinant in increasing the ratio of lending to total bank deposits, as it increases the financial gap and creates the credit risk that the gap entails.

Gap in Literature

The novelty of this study lies in the fact that it ranks amongst the first that centered on the cause-effect relationship exchange rate fluctuations and the outstanding market value of money market instruments. Also, the study was able to disaggregate Nigeria's exchange rate into naira-US dollar, naira-British pound and naira-Swiss Franc. Finally, the currency of this study is not in doubt.

Methodology

This study adopted the quasi-experimental research design. This is because the nature of the topic did not allow for real experiments. In addition, there was the need to establish the cause-effect relationship between the dependent variable (money market performance) and the independent variable (exchange rate volatility) in Nigeria.

Secondary data was used in this study and they were time series in nature. These data were sourced from the an annual publication of the Nigerian apex bank called Central Bank of Nigeria (CBN) statistical bulletin, 2024

For preliminary data analysis, the stationarity process of each of the economic time series utilized in this work was captured using the Augmented Dickey Fuller (ADF) approach to unit root test as proposed by Dickey and Fuller (1981). This stationarity approach was applied in testing the null hypothesis of a unit root against the alternative hypothesis of no unit root at the conventional 5 percent level. For each of the variables included in the unit root model, it is expected to be I(0) or I(1), but not I(2).

After the unit root test, the researcher delved into co-integration analysis because all the variables used in the study were stationary at first difference, I(1). According to Granger and Newbold (2012), to test for co-integration, we must ensure that the variables involved are stationary at first difference only. The essence of this analysis is to find out if there is co-integration among variables, to determine the number of co-integration equations and to define normalization of equations (Emanakuku, 2010). According to Obaseki (1989), co-integration technique arose from the need to integrate short-run dynamics with long run equilibrium through the inclusion of an Error Correction Mechanism (ECM) in the dynamic formulation of the model for estimation. The test procedure adopted for the co-integration analysis was Johansen-Juselius (JJ) technique, which is used to find a possible correlation between time series processes in the long term. In other words, the choice of the Johansen-Juselius (JJ) technique for co-integration analysis was because it allows for more than one co-integrating relationship and it

is subject to asymptotic properties (large sample size), since a small sample size will produce unreliable results (Engel & Granger, 1999). This technique utilizes two test statistics to determine the number of co-integrating vectors. These are trace and maximum eigenvalue test statistics. To test for co-integration, we compare the value of likelihood ratio to the critical value at 5 percent (Engel & Granger, 1999).

Model Specification

To depict the relationship between exchange rate volatility and money market performance in Nigeria, a multiple regression model was specified. This model is functionally given as:

VOMI = F (NDER, NPER, NSER).....(1)

Where:

VOMI = Value of outstanding money market instruments

NDER = Naira-US Dollar Exchange Rate

NPER = Naira-British Pound Exchange Rate

NSER = Naira- Swiss Franc Exchange Rate

F = Functional Notation

The econometric version of the above model is given as:

$VOMI = \beta_0 + \beta_1 NDER + \beta_2 NPER + \beta_3 NSER + \mu$.....(2)

Where:

β_0 = The constant term of the model

β_1, β_2 and β_3 = The slopes of the model

μ = Error term

A priori Expectations: $\beta_1, \beta_2, \beta_3 > 0$.

INTERPRETATION OF RESULTS

Descriptive Analysis

	VOMI	NDER	NPER	NSER
Mean	5282.559	174.5241	252.3629	168.5162
Median	1897.360	130.5350	232.6950	106.6800
Maximum	20898.15	843.9100	1048.650	952.300
Minimum	66.91000	9.000000	16.89000	5.020000
Std. Dev.	6413.009	161.5029	195.8380	186.0454
Skewness	1.155409	2.338895	2.062815	2.450765
Kurtosis	3.158093	9.845760	9.196925	10.38404
Jarque-Bera	7.600234	97.39037	78.51549	111.2778
Probability	0.022368	0.000000	0.000000	0.000000
Sum	179607.0	5933.820	8580.340	5729.550
Sum Sq. Dev.	1.36E+09	860744.8	1265633.	1142225.
Observations	35	35	35	35

Source: E-Views Output (2026)

The above table contains the descriptive attributes of the variables used in the study. Amongst others, it contains the mean, maximum and minimum values, standard deviation, skewness and kurtosis of the variables. Accordingly, for the period 1990 - 2024, average value (mean) of outstanding money market instruments is ₦5282.559 billion with minimum and maximum values of ₦66.91 billion and ₦20898.15 billion respectively and a standard deviation of ₦6413.009 billion. Similarly, Naira-Dollar, Naira-Pound and Naira-Swiss franc exchange rates have average values of ₦174.52, ₦252.36 and ₦168.5162 respectively. Also, the table shows that all the variables are skewed to the right (positively skewed) with leptokurtic kurtosis values that are greater than 3. Thus, the variables are not normally

distributed as the probability values of their Jarque-Bera statistic are less than 5% (0.05).

Unit Root Test

Variables	ADF Statistics	5% Critical Value	P-values	Integration
Log_VOMI	-6.214522	-2.957110	0.0000	I(1)
Log_NDER	-5.695592	-2.957110	0.0000	I(1)
Log_NPER	-5.983590	-2.957110	0.0000	I(1)
Log_NSER	-6.352955	-2.957110	0.0000	I(1)

Source: Extract from E-Views Output (2026)

Unit root test shows that all the variables were cointegrated at first difference as the probability values of their ADF statistic are less than 0.05 (5%). This implies that the variables were all stationary at first point of differencing; hence, the suitability of the Johansen cointegration technique.

Co-integration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.628032	56.49555	47.85613	0.0063
At most 1	0.361728	24.84927	29.79707	0.1669
At most 2	0.255227	10.48159	15.49471	0.2455
At most 3	0.032339	1.051944	3.841466	0.3051

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.628032	31.64628	27.58434	0.0142
At most 1	0.361728	14.36768	21.13162	0.3356
At most 2	0.255227	9.429641	14.26460	0.2521
At most 3	0.032339	1.051944	3.841466	0.3051

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: E-Views Output (2026)

Johnson cointegration test rest revealed that there is at least one co-integrating equation at both ends of the result (Trace statistic and Maximum Eigenvalue approaches), which implies that the variables are cointegrated. In essence, there is a long run relationship between exchange rate volatility and money market performance in Nigeria.

Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
LOG_NDER does not Granger Cause LOG_VOMI	32	5.95016	0.0072
LOG_VOMI does not Granger Cause LOG_NDER		1.83610	0.1788
LOG_NPER does not Granger Cause LOG_VOMI	32	8.56598	0.0013
LOG_VOMI does not Granger Cause LOG_NPER		1.83614	0.1788
LOG_NSER does not Granger Cause LOG_VOMI	32	6.62113	0.0046
LOG_VOMI does not Granger Cause LOG_NSER		1.86347	0.1745
LOG_NPER does not Granger Cause LOG_NDER	32	2.98460	0.0674
LOG_NDER does not Granger Cause LOG_NPER		3.34003	0.0506
LOG_NSER does not Granger Cause LOG_NDER	32	1.74237	0.1942
LOG_NDER does not Granger Cause LOG_NSER		36.7301	2.E-08
LOG_NSER does not Granger Cause LOG_NPER	32	3.17838	0.0576
LOG_NPER does not Granger Cause LOG_NSER		21.4094	3.E-06

Source: E-Views Output (2026)

Pairwise granger causality test result as reported in table 5 above revealed that there is a unidirectional causality (relationship) between Naira-US Dollar exchange rate and total value of outstanding money market instruments; Naira-British Pound exchange rate and total value of outstanding money market instruments; Naira-Swiss Franc exchange rate and total value of outstanding money market instruments; Naira-US Dollar exchange rate and Naira-Swiss Franc exchange rate; and Naira-British Pound exchange rate and Naira-Swiss Franc exchange rate.

ECM Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.208907	0.028681	7.283730	0.0000
D(LOG_NDER)	0.569785	0.336736	1.692083	0.1017
D(LOG_NPER)	-0.661753	0.340329	-1.944452	0.0619
D(LOG_NSER)	-0.180579	0.090019	-2.006015	0.0546
ECM(-1)	-0.109819	0.040952	-2.681675	0.0121

R-squared	0.440178	Mean dependent var	0.174063
Adjusted R-squared	0.360204	S.D. dependent var	0.161170
S.E. of regression	0.128916	Akaike info criterion	-1.120591
Sum squared resid	0.465338	Schwarz criterion	-0.893847
Log likelihood	23.48974	Hannan-Quinn criter.	-1.044298
F-statistic	5.503980	Durbin-Watson stat	2.051013
Prob(F-statistic)	0.002127		

Source: E-Views Output (2026)

The table above revealed that the intercept of the model is 0.208907, which shows the value of outstanding money market instruments when naira-dollar, naira-pounds and naira-Swiss franc exchange rate are held constant. It also shows that Naira-US Dollar exchange rate has a positive insignificant effect on the outstanding value of money market instruments while Naira-British Pounds and Naira-Swiss Franc exchange rates have negative insignificant effects on the outstanding value of money market instruments in Nigeria. However, these exchange rates have a

joint significant effect of about 44.02% on the outstanding value of money market instruments in Nigeria. In addition, the table shows that the ECM equation has the desired negative and significant signs of -0.109819 and 0.0121 respectively, which implies that in an event of any shock to the established long run equilibrium relationship between the variables, the speed of adjustment is about 10.98% per annum.

Diagnostic (Post Estimation) Test

Test	Criterion	Test Statistic Value	P-value
Autocorrelation	Q-Statistic	-	> 0.05
Normality	Jarque-Bera	0.055507	0.972628
Heteroscedasticity	Breusch-Pagan-Godfrey	1.847971	0.1477
RESET	Ramsey	1.695824	0.2038

Source: Extract from E-Views 10 Output (2026)

The above table shows that there is no correlation between successive values of the error terms of the model. Secondly, the errors of the model are normally distributed. In other words, the errors of the model mirror a normal distribution. Thirdly, there is absence of heteroscedasticity and presence of homoscedasticity. Thus, the errors of the model have constant variances as anticipated. Finally, the Ramsey RESET test result demonstrated that the model adopted for this study was well and adequately specified.

Discussion of Findings

A couple of findings emanated from this study. The first is that Naira-US Dollar exchange rate has a positive insignificant effect on the total value of outstanding money market instruments in Nigeria. Accordingly, the study anticipated a positive association between both variables because the more the value of a host country's currency depreciates, the more the value of money market instruments traded ceteris paribus (Yuorkuu, Kamasa & Forson, 2024). However, the observed insignificant, which was not anticipated, can be attributed to the underdeveloped state of the Nigerian money market where only three out of the seven instruments captured by the Central Bank of Nigeria are actively traded. These three instruments are treasury bills, bankers' acceptance and commercial papers.

Second, Naira-British Pound exchange rate has a negative insignificant influence on the outstanding value of money market instruments in Nigeria. This study though expected a positive effect because an increase in the rate at which the naira exchanges for the British Pound simply means naira depreciation and/or devaluation which is advantageous to investors with British Pounds as with the same amount of British Pounds they can buy more financial assets in the Nigerian money market and increase in the number of outstanding money market instruments translated to increased value of these instruments (Njagi & Nzai, 2022; Abubakar, 2020). This undesired negative and insignificant outcome can be adduced to poor publicity about the existence of the Nigerian money market and the disturbing Nigerian business climate which is characterized by structural imbalances, economic, and social challenges.

Third, a negative insignificant association subsists between Naira-Swiss Franc exchange rate and the total value of outstanding money market instruments in Nigeria. This ugly outcome does not spell well for the Nigerian space as it implies even in the face of naira depreciation and devaluation, investment in the Nigerian money market keeps declining. This negative trend can be attributed to the desire of foreign investors to investment more in the capital market than in the money market (Aliyu & Iheonkhan, 2025). The relative popularity of the capital market over the money market pushes investors to the former over the latter.

Fourth, Naira-US Dollar, Naira-British Pound and Naira-Swiss Franc exchange rates have a combined significant effect of about 44.02% on the total value of outstanding money market

instruments in Nigeria. While the effects of these rates on individual level were insignificant, they collectively have a significant effect and this may be because foreign investments into the Nigerian money market come in different currencies (Moussa & Delhoume, 2021; Abubukar, 2020). Thus, different nationals have stakes in the Nigerian business environment.

Fifth, there is a unidirectional relationship between Naira-US Dollar, Naira-British Pound and Naira-Swiss Franc exchange rates and the value of outstanding money market instruments in Nigeria. As such, causality runs from exchange rate to outstanding value of money market instruments. In other words, exchange rate granger causes money market performance. It dictates the pace of its relationship with money market performance.

Finally, the study revealed that there is a long run equilibrium relationship between exchange rate volatility and money market performance in Nigeria. However, in event of any dis-stabilization in the relationship, the speed of convergence is about 10.98 percent per annum

Conclusion and Recommendations

Conclusion

Given that ECM estimates revealed that the various exchange rates considered have insignificant effects on the value of outstanding money market instruments and Johansen cointegration analysis revealed that there is a long run equilibrium relationship between the variables, the study concluded that exchange rate movements have a long run insignificant effect on money market performance in Nigeria.

Recommendations

i. There is need to strengthen the naira by taking drastic and proactive measures that will discourage importation and encourage exportation.

ii. There is need to encourage more investments into the Nigerian money market by arresting the deteriorating security situation in the country as investment tends to flow away from environments where there is instability, uncertainty and insecurity.

iii. There is urgent need for serious publicity and education about the existence and benefits of patronizing the money market. Such an act will reposition the Nigerian capital market and enable it to attract more funds.

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