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Foreign Exchange Management Regime and Stock Market Capitalisation in Nigeria

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Abstract

Exchange rate continue to be a significant macroeconomic factors in any economy. The exchange rate has consistently become more volatile despite multiple attempts to stabilise the Naira's value, mostly through monetary policy tools. Therefore, the study examined the effect of foreign exchange management regimes on stock market capitalization (SMC) in Nigeria from 1986 to 2022. An ex-post factor research design was adopted while the estimation techniques for the study was Autoregressive Distributed Lag (ARDL). Findings revealed that during the floating exchange rate period, exchange rate, balance of payments, external reserves, and inflation rate have negative effect on stock market capitalization, though insignificantly. However, foreign direct investment (FDI) and foreign portfolio investment (FPI) positively and significantly influence market capitalization. Conversely, under the fixed exchange rate regime, exchange rate, balance of payments, external reserves, and inflation have negative effect on market activity. This study concluded that under floating exchange rate regime, FDI continue to be a catalyst to stock market capitalisation. The study recommends targeted policies to attract foreign investments, including incentives and infrastructure improvements, along with a continuous evaluation of foreign exchange policies to support a stable, growth-oriented stock market environment.

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1. Introduction

The stock market in Nigeria has been characterized by mixed fortunes due to unstable macro-economic environment, uncertain investment climate and poor equity culture among the citizenry. For instance, the performance of the Nigerian stock market in the period following the last global financial crisis of 2007 - 2009 created an atmosphere of fear among domestic investors due to losses suffered during period of the crisis. Indeed, the persistent apathy and waning investor confidence which followed has destroyed the equity culture among majority of Nigerians especially the retail investors.

The stock market in the economy has kept lagging when compare to other developing economy. The Johannesburg Stock Exchange (JSE), for instance, has a market capitalisation of just under $1 trillion in equity, representing over 280 percent of South Africa's GDP and over 380 listed companies. Also, the New York Stock Exchange (NYSE), on the other hand, has a market capitalisation of about $21 trillion and over 2000 listed companies. However, there is high gap when comparing to other major international markets, with a total market capitalisation of about N13 trillion (32.5Billion US dollars) (Central Bank of Nigeria, 2020)

According to Ogbebor and Siyanbola (2018) the stock market reflects investors' degree of trust in different economic sectors. It reflects the strength of the producing sector and suggests expectations on the stability of the financial system. Increased loans and advances from banks for direct stock market investment as well as other economic sectors would be encouraged by sustained gains in stock indexes. Higher returns on investment in the stock market are advantageous to foreign investors. There is a direct influx of foreign

portfolio investments into the economy, which will strengthen banks' capital bases and encourage more lending, which will spur economic growth and development.

One of the most significant macroeconomic factors in both developed and developing nations is the exchange rate. It has an impact on inflation and modifies imports and exports, which in turn influences the price of traded commodities. This implies that variations in a nation's foreign exchange market have effects on its investment and commerce (Musa, 2021). For example, decisions on household consumption and incomes, business investments, employment, and imports, as well as government debt and fiscal, monetary, and trade balance, would all benefit from a stable exchange rate. Exchange rate stability, according to Otieno, Mose, and Thomi (2022) may deter speculation on the foreign exchange market and lessen capital flight.

According to Ismail and Oluwafunmilayo (2022) Nigeria boasts the largest economy in Africa, with a gross domestic product (GDP) of $448 billion. On the other hand, its stock market value is too low for that size of economy. Even though many emerging economies are doing significantly better than Nigeria, the country's stock market is valued at an estimated $63 billion (N29 trillion), or only 15% of its GDP. As an illustration, consider South Africa, which has the second-biggest economy on the continent ($418 billion). With a $1.36 trillion stock market valuation, it is among the top twenty global performers. Brazil's market capitalisation is $988.37 billion, whereas the United Arab Emirates' (UAE) is $910.131 billion. Malaysia's stock market capitalisation is $362.96 billion, whereas Thailand's is $563.90 billion, making it another emerging market. It is, however, disheartening that the Nigeria stock market continues to witness low performance (Nigerian Stock Exchange, 2020). In recent times and amid the continued exit of subsidiaries of multinational corporations (MNCs) from Nigeria due to the inclement investment climate and macro-economic uncertainties, there is a growing spate of companies delisting from stock exchanges in Nigeria when the reverse should be the case as countries continue to attract foreign direct investments. Why is this so? Why is Nigeria's case opposite of what is the expectations of investors? Can it, therefore, be argued that the well acclaimed theoretical postulations by Shaw (1973) and McKinnon (1973) other developmental economists that stock markets spur economic development is not relevant to Nigeria? For instance, Ogbebor and Okolie (2018) posited that the link between financial development and economic growth has gravitated towards one direction: economic growth and development are not invariant to disequilibrium from the stock market.

Furthermore, while numerous theories of stock market development transmission predict that the mechanism is heavily influenced by the exchange rate regime (Baxter & Stockman, 1989). One of the empirical implication of these theories is that if the sources of exogenous shocks and associated stochastic methods remain constant, the variances and covariances of economic aggregates will be determined by the exchange rate system. While significant consideration have made on macroeconomic indicators and the primary drivers of stock market performance, only a few prior studies have related stock market performance to various exchange rate regimes. For instance, Okoli (2012) examined the effects of interest rates and currency rates on the Nigerian Stock Market using the All-share index. Exchange rates' short- and long-term effects on the expansion of the Nigerian stock market was examined by Olugbenga (2012) and Zubair (2013) looked into the causal relationship between the stock market index and the exchange rate. Erdem and Özmen (2015) studied the how internal and external factors of exchange rate regimes on business cycles transmission. However, majority of these studies failed to consider the combined effect of exchange rate regime by utilizing both the fixed and floating regime on stock market performance in Nigeria. This study intends to fill this void by examining both the fixed and floating exchange regime on stock market performance in Nigeria. This study is structured in five sections. Section one is the introduction, section two investigated literature review, section three looked into the methodology while section four and five was dedicated to result and conclusion respectively.

2. Literature Review

In accordance with the degree of fixity of the exchange rate, the exchange rate regime can be defined as a range that creates hard drives, intermediate regimes (crawling pegs, bands, and peg basketball), autonomous floating, standard fixed peg, and managed floating (Mochammad, 2019). All country's unique conditions determine the optimal exchange rate system. Although an exchange rate regime restricts the options available in other policy areas, it encompasses a few significant economic policy decisions that directly affect economic performance (Adenekan, Sanni, & Itodo, 2019). It influences economic well-being both immediately and potentially over time. As seen by the multiple regime changes that have occurred in many nations over time, most governments struggle to decide on an exchange rate regime. The global biggest traded market is the foreign exchange market, where speculators can profit from opportunities for arbitrage due to the enormous volume of transactions and the minute-by-minute fluctuations in currency prices. Market expectations drive this kind of speculation, which frequently affects how the exchange rate behaves. Nigeria made the shift from a fixed or pegged currency rate regime and policy to a float or floating system in the 1980s (Eneh & Amakor, 2021). A floating or controlled floating system replaced the previous exchange rate regime in 1985 following the implementation of the structural adjustment program (SAP).

Market capitalisation describes the multiplication of the number of shares with the closing price of the market (Kumar & Kumara, 2021). In terms of stock market capitalisation, Nigeria is ranked third largest stock market on the continent of Africa (Obubu, Okoye, & Ali, 2018). Market capitalisation plays an important role

in determining the size of a company. It gives investors insights to the future prospects of the company in order to decide whether or not to invest, continue to invest or liquidate such investments. It also lets us know how much an investor is willing to pay for the shares of the company (Kumar & Kumara, 2021).

2.1. Acceleration Theory

Theoretically, the acceleration theory of investment is rooted in the accelerator principle initially developed by Carver (1903); Aftalion (1909); Bickerdike (1914) and Clark (1917) who observed that capital investment is largely driven by output levels. The authors suggested that, rather than increasing prices, companies should typically invest more when faced with high demand to match capital with output, aiming to maximize profit by expanding production capacity. This theory, predating Keynesian economics, posits that heightened demand or income leads to increased investment expenditure as firms seek to satisfy demand. Companies often prioritize production expansion such as adding fixed capital like machinery over price increases to control demand, resulting in what is known as the "accelerator effect," where production capacity is amplified in response to rising demand (Alan, 2018).

The accelerator theory operates on the assumption that demand growth will persist long-term, emphasizing sustained investment in economically viable products. For example, rising oil and gas prices may lead to greater demand and investment in renewable energy like wind turbines, reflecting the accelerator effect (Kumar, 2015). However, critics argue that the theory overlooks price adjustments as a way to balance demand and instead focuses solely on expansion as a response to excess demand, advocating for long-term growth rather than short-term price hikes (Ganti, 2020).

In practical terms, the accelerator theory guides business decisions related to capital investment, highlighting that favourable economic conditions and steady demand growth encourage capital investment, which subsequently raises output. Yet, capital investment typically lags demand increases, as companies first aim to maximize output using existing resources. Only if demand appears sustainable will businesses consider substantial capital investment in expansion.

2.2. Hypothesis Development

Empirically, Muhammad and Victor (2013) investigated the impact of exchange rate volatility on Nigerian stock market performance (SMP) using a Vector Error Correction Model, showing that long-term exchange rate volatility negatively affects SMP with a unidirectional causality from exchange rate to stock performance. The authors recommend supporting fiscal policies, economic diversification, and improvements in the business environment to reduce vulnerability to external shocks, particularly given Nigeria's reliance on oil. Aigbovo and Aigbovo-Omoruyi (2015) found foreign portfolio investment significantly impacts Nigeria's stock market, unlike exchange rate, inflation, and interest rates, while Muhammad, Muhammad, Shamila, and Shujahat (2017) examined cross-market volatility spillovers and the effects of SMP and inflation on foreign portfolio investments in European and Chinese markets, respectively, highlighting bidirectional spillovers and sensitivity to economic events.

Shamim, Perveen, and Hassan (2021) investigated the impact of foreign portfolio investment (FPI) on stock market performance in Pakistan from 1984 to 2015, using market capitalization as a measure. Employing unit root, cointegration tests, and regression analysis, the authors found that FPI positively affects stock market capitalization, with both long-and short-term relationships present, and a bidirectional causality between FPI and market capitalization. Similarly, Ogbebor and Siyanbola (2018) investigated the effects of stock market performance on economic growth in Nigeria adhering to liberalisation, finding shows that a long-run relationship exist between GDP growth and stock capitalisation and turnover ratio as resultant from the causality tests of bidirectional causality. The study revealed that Nigeria's economic growth is susceptible to stock market fluctuations.

Lyndon and Philomena (2019) used data secondary data sourced from the Central Bank of Nigeria to examined the influence of macroeconomic determinants on market capitalisation In Nigeria between 2001 and 2018. The results revealed that GDP had a positive effect on market capitalisation, while exchange rate had a significant but negative effect. Interest rates and inflation had a negative effect on market capitalisation. The study found that increase in output raise market capitalisation, hence promoting Nigerian economic growth and development. Onisanwa and Adaji (2020) examined the relationship between stock market performance and investment growth in Nigeria, using an ARDL approach to establish cointegration based on the neoclassical growth theory with modifications from Levine (2003) specification. The authors found that market capitalization ratio negatively affected gross capital formation, though significant only in the short run, while turnover ratio had a significant negative impact on investment growth. In contrast, the total value traded ratio positively impacted gross capital formation in both the short and long run, with a significant negative error correction term indicating long-term equilibrium adjustments.

Chan and Patricia (2023) evaluated the effect of macroeconomic factors on stock market performance between 2015 and 2021. Using the Johansen Cointegration Test and regression analysis, they discovered that the real effective exchange rate has a positive effect on the Kuala Lumpur Composite Index (KLCI) index, although inflation and short-term interest rates have long-term positive effect. Conversely, the

M2 money supply has a long-term negative impact on the KLCI index, revealing insight into macroeconomic implications on developing markets. Dennis, Thompson, and Patel (2022) used data from the World Development Indicator (WDI) and World Federation Exchanges Database to examined the role of exchange rate on market capitalisation in Nigeria between 1993 and 2020. Their findings revealed a long-term association between market capitalisation and real effective exchange rate highly influencing market size and the real interest rate and inflation having significant negative effects on market capitalisation. The Granger causality test revealed a one-way causal relationship between real interest rates and market capitalisations.

Oke, Adegoke, and Akosile (2023) delved into how foreign direct investment affected Nigeria's capital market capitalisation. The research used 34 periods of secondary data (1986-2020). The Johansen co-integration, error correction model, and ordinary least square (OLS) were used in the investigation. The study's findings showed that every variable, with the exception of FDI, had a positive and direct association with the dependent variable (MC). Only the money supply (M2) had a negative association with market capitalisation (MC), according to the long-run model, whereas FDI, GDP and INF all had positive relationships with MC.

Grounded on a review of previous studies in the literature, it is clear that a number of authors, including Oke et al. (2023); Chan and Patricia (2023) and Ogbebor and Siyanbola (2018) have studied on the related studies on exchange rate management regime and stock market capitalization. While the discussion on the debate is still ongoing, some conclusions can be drawn. One of the major gaps of the discussion stem from the lack of study that utlised both fixed and floating exchange regime to determine the effect of stock market performance on the same model which have resulted in conflicting result.

3. Methodology

3.1. Research Design

The study adopted an *ex-post facto* design. It employed this research design on the premise that the variables have already occurred and cannot be changed or manipulated. *Ex-post facto* design is a quasi and non-experimental design that investigates the influence of independent variables that existed before the study (Akinlu, 2019). This is the defining characteristic of the ex-post facto design procedure, which is post-event analysis. Besides, the design is suitable for the study because it is retrospective, tracing the past events that occurred to explain the causes or actions. These listed characteristics of the design method are suitable for the research, thus its adoption. Additionally, the method is less time-consuming and will enable us to analyse the causes with requisite conclusions.

3.2. Measurement of Variables

Stock Market Capitalisation is measured through the returns of the stock market, expressed in billion U.S. dollars. The Exchange Rate refers to the price of the Nigerian Naira in terms of another currency, such as the value of the Naira expressed in U.S. dollars, denoted as ₦1 = 1US$. Inflation Rate captures the continuous rise in prices over time in Nigeria, measured by the Consumer Price Index (CPI) and expressed as a percentage. The Balance of Payment encompasses all international transactions conducted by the country within a specific timeframe, measured in U.S. dollars. External Reserves include total holdings of monetary gold, special drawing rights, IMF reserves, and foreign exchange controlled by monetary authorities, measured in current U.S. dollars. Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI) are both quantified in billion U.S. dollars. Lastly, the Dummy Variable represents regime periods using a binary format, with values ranging from 0 to 1, where 1 indicates the regime period and 0 otherwise.

3.3. Models

The theoretical framework for this study is the Arbitrage Pricing Theory (APT) which was introduced by Ross (1976) serves as a foundational model for understanding the relationship between macroeconomic factors and asset returns. It provides a multi-factor framework to analyze how various economic variables impact stock market performance, particularly in emerging markets like Nigeria. The APT model can be expressed as:

$$ER(x) = Rf + \beta_1 \cdot RP_1 + \beta_2 \cdot RP_2 + \cdots + \beta n \cdot RPn$$

Where:

$ER(x)$ represents the expected return on an asset, Rf denotes the riskless rate of return, βn (Beta) is the asset's price sensitivity to the nth factor, RPn represents the risk premium associated with the nth factor.

In line with the APT framework, the study adapts the work of Dennis et al. (2022) whose study express the express the role of exchange rate in driving market capitalisation in Nigeria. The linear regression for this study is indicated below.

$$SMC_t = (EXCH_t, BOP_t, EXTR_t, INFR_t, FPI_t FDI_t, DUM)$$

The corresponding econometric model of the study is specified as:

$$SMC_t = \beta_0 + \beta_1 EXCH_t + \beta_2 BOP_t + \beta_3 EXTR_t + \beta_4 INFR_t + \beta_5 FPI_t + \beta_6 FDI_t + \beta_7 DUM_t + \mu_t$$

In other to avoid heteroskedasticity issue, the model shall be rescale to accommodate a unified scalling,, therefore, the model shall be restated in a log linear form:

$$lnSMC_t = \beta_0 + \beta_1 EXCH_t + \beta_2 lnBOP_t + \beta_3 lnEXTR_t + \beta_4 INFR_t + \beta_5 lnFPI_t + \beta_6 lnFDI_t + \beta_7 DUM_t + \mu_t$$

Where: SMC= Stock Market Capitalisation, EXCH = Exchange Rate, BOP = Balance of Payment, EXTR = External Reserves, INFR = Inflation Rate, FPI = Foreign Portfolio Investment, FDI = Foreign Direct Investment, DUM= Dummy Variable, ln= Natural logarithm, β_0= Intercept, $\beta_{1,2,3,4,5}$= Parameters to be estimated, μ= Stochastic term.

The study will identify both the key variables and the control variables. The key variables are the principal variables of focus: the exchange rate being the measurement of Naira in terms of United States Dollars, the FPI and FDI to augment the supply side of foreign exchange. The control variables: interest rate and inflation rate, have the potential to influence international trade financing. To minimise the threat of endogeneity (Adubofour, 2021) the two control variables will be measured and analysed to forestall the threat of endogeneity.

3.4. Statistical Analysis

This study employs the Autoregressive Distributed Lag (ARDL) modeling approach, which is widely utilized for analyzing both short-term and long-term relationships between variables in time series data. The ARDL model was applied because of the mixed stationarity of I(0) or I(1) (Pesaran, Shin, & Smith, 2001). Once the ARDL model is estimated, the study applies the Error Correction Model (ECM) to understand the adjustment speed towards equilibrium after a shock. The ECM term, also known as the error correction term, indicates the rate at which deviations from the long-term equilibrium are corrected in subsequent periods, providing insights into the stability of the relationships among variables. Diagnostic tests, such as serial correlation and heteroscedasticity tests, are conducted to verify model adequacy and ensure reliable inference.

Table 1. Descriptive statistics.

Variables	Mean	Maximum	Minimum	Std. dev.
SMC	5741.614	27915.07	7.088	7215.128
EXCH	13.744	26.900	6.130	4.417
BOP	-879875	6074639.0	-574524	2071194.0
EXTR	2.17E+10	5.36E+10	9.33E+08	1.81E+10
INFR	19.772	76.759	0.223606	17.931
FPI	451.310	3209.708	-1284.07	905.590
FDI	435378.0	1360308.	-794810	447854.8

Note: SMC is stock market capitalisation, VST is value of share traded, STR is stock turnover ratio, ASI is all shares index, EXCH is exchange rate, BOP is balance of payment, EXTR is external reserves, INFR is inflation rate, FPI is foreign portfolio investment, FDI is foreign direct investment.
Source: Author's computation (2024).

4. Result and Analysis

Table 1 presents the descriptive statistics for the variable used in the study of foreign exchange rate management and stock market performance in Nigeria. The statistics indicate notable variability in key economic indicators in Nigeria. Stock Market Capitalization (SMC) averages 5,741.614, but ranges widely from 7.088 to 27,915.07, with a high standard deviation of 7,215.128, suggesting diverse company sizes within the market. The Exchange Rate (EXCH) shows a mean of 13.744, fluctuating from 6.13 to 26.9 with a standard deviation of 4.417, highlighting currency instability. The Balance of Payments (BOP) reflects a persistent deficit with a mean of -879,875 and high volatility, as indicated by its range from -5,745,239 to 6,074,639 and a standard deviation of 2,071,194. External Reserves (EXTR) average 2.17 billion but also display significant variation, impacting foreign exchange management. The Inflation Rate (INFR) is a critical concern, averaging 19.77 with high variability from 0.22 to 76.76. Foreign Portfolio Investment (FPI) and Foreign Direct Investment (FDI) also show considerable volatility, with FPI averaging 451.31 and FDI at 435,378, both with high standard deviations, reflecting challenges in maintaining stable capital inflows and investor confidence in Nigeria's economy.

As regards the multicollinearity problems, the highest positive correlation was between LEXR and LFPI with the correlation coefficient of 0.646, since the value is less 0.90, it was concluded that the existence of multicollinearity is less concerned in the analysis.

Table 2. Correlation matrix.

Variables	LNSMC	EXCH	LBOP	LEXTR	INFR	LFDI	LFPI
LNSMC	1.000						
EXCH	-0.182	1.000					
LBOP	-0.065	-0.111	1.000				
LEXTR	0.942	-0.281	-0.062	1.000			
INFR	-0.463	0.280	-0.082	-0.638	1.000		
LFDI	0.261	-0.114	0.066	0.305	-0.225	1.000	
LFPI	0.893	-0.143	-0.058	0.646	-0.425	0.212	1.000

Note: SMC is stock market capitalisation, VST is value of share traded, STR is stock turnover ratio, ASI is all shares index, EXCH is exchange rate, BOP is balance of payment, EXTR is external reserves, INFR is inflation rate, FPI is foreign portfolio investment, FDI is foreign direct investment.

Table 2 presents the multicollinearity test, the highest positive correlation was between LEXR and LFPI with the correlation coefficient of 0.646, since the value is less 0.90, it was concluded that the existence of multicollinearity is less concerned in the analysis.

The unit root test was ascertain using Augmented Dickey-Fuller (ADF) test to detect if variables are stationary at level of at other level of differences. This test is presented in Table 3.

Table 3. Augmented Dickey-Fuller test.

Variables	ADF			ADF
	Level	First diff.	Critical	
LNSMC	-1.944	-5.178	-2.946	I(1)
EXCH	-3.596	-	-2.946	I(0)
LBOP	-6.008	-	-2.946	I(0)
LEXTR	-1.458	-5.420	-2.946	I(1)
INFR	-2.893	-7.263	-2.946	I(1)
LFDI	-2.851	7.115	-2.946	I(1)
LFPI	-0.871	-6.982	-2.946	I(1)

Note: SMC is stock market capitalisation, VST is value of share traded, STR is stock turnover ratio, ASI is all shares index, EXCH is exchange rate, BOP is balance of payment, EXTR is external reserves, INFR is inflation rate, FPI is foreign portfolio investment, FDI is foreign direct investment.

Source: Author's computation (2024).

Table 3 presents the ADF test results of the variables in the study. At level, the variables exchange rate (EXCH) and balance of payments (LBOP) are stationary, as their ADF statistics (-3.5959 and -6.0079, respectively) exceed the critical value of -2.9458, implying they are integrated at level I(0). In contrast, variables like stock market capitalization (LNSMC), external reserves (LEXTR), inflation rate (INFR), foreign direct investment (LFDI), and foreign portfolio investment (LFPI) are non-stationary at level but stationary at first differencing, with statistical value in first difference form surpassing the critical threshold, indicating they are integrated at order I(1). These findings suggest a mix of variables with different levels of integration, as some are stationary in their original form while others require differencing to achieve stationarity. For instance, variables such as LNSMC, LEXTR, INFR, LFDI, and LFPI only achieve stationarity in their first-differenced form, with significant ADF values like -5.1784 for LNSMC and -6.9818 for LFPI. This mixed order of integration among the variables enabling the use of Autoregressive Distributed Lag Modelling (ARDL) with it Bound testing cointegration.

Table 4. Model on exchange management regime and stock market capitalisation.

Panel A: Long run estimates				
Dependent variable: D(SMRR)				
Variable	**Coefficient**	**Std. error**	**t-statistic**	**Prob.**
EXCH	-0.022	0.035	-0.640	0.530
LBOP	-0.020	0.023	-0.835	0.415
LEXTR	-0.086	0.363	-0.238	0.815
INFR	-0.017	0.013	-1.273	0.219
LFDI	1.189	0.392	3.035	0.007
LFPI	0.597	0.190	3.133	0.006
Dummy (FIXEDREG)	-1.458	0.599	-2.431	0.026
Panel B: Short run estimates				
Variable	**Coefficient**	**Std. error**	**t-statistic**	**Prob.**
D(EXCH)	-0.041	0.008	-5.101	0.000
D(EXCH(-1))	-0.017	0.009	-1.970	0.064
D(LEXTR)	0.012	0.076	0.163	0.872

D(LEXTR(-1))	-0.324	0.089	-3.645	0.002
D(LFDI)	-0.206	0.115	-1.797	0.089
D(LFDI(-1))	-0.341	0.151	-2.266	0.036
D(FIXEDREG)	-0.308	0.117	-2.640	0.017
ECT(-1)*	-0.502	0.053	-9.479	0.000
Panel C: Diagnostic tests		Statistics	Prob.	
Bound test		5.991	0.000	
R-squared		0.729	-	
Adjusted R-squared		0.659	-	
F-statistic		10.167	0.000	
Serial correlation LM test		1.210	0.324	
Heteroskedasticity test:		0.567	0.870	
Normality test		0.382	0.826	
		CUSUM	CUSUMSQ	
Stability test		Stable	Stable	

Note: SMC is stock market capitalisation, EXCH is exchange rate, BOP is balance of payment, EXTR is external reserves, INFR is inflation rate, FPI is foreign portfolio investment, FDI is foreign direct investment. "*" indicates Significance.

$$Long\ run\ Effect$$
$$D(SMRR) = \beta 0 - 0.0222 \cdot EXCH - 0.0195 \cdot LBOP - 0.0863 \cdot LEXTR - 0.0172 \cdot INFR + 1.1895 \cdot LFDI + 0.5966 \cdot LFPI - 1.4580 \cdot FIXEDREG$$
$$FLOATING\ EXCHANGE\ RATE\ REGIME$$
$$D(SMRR) = \beta 0 - 0.0222 \cdot EXCH - 0.0195 \cdot LBOP - 0.0863 \cdot LEXTR - 0.0172 \cdot INFR + 1.1895 \cdot LFDI + 0.5966 \cdot LFPI$$
$$FIXED\ EXCHANGE\ MANAGEMENT\ REGIME$$
$$D(SMRR) = \beta 0 - 1.4802 \cdot EXCH - 1.4775 \cdot LBOP - 1.5443 \cdot LEXTR - 1.4752 \cdot INFR + -0.2685 \cdot LFDI - 0.8614 \cdot LFPI$$

Table 4 presents the estimated result on exchange management regime and stock market capitalisation in Nigeria. The result were discussed in the subsection below:

4.1. Bound Test

The Bound Test result, with a statistic of 5.990569 and the upper bound test is 3.15 at 5% significant level, indicates the rejection of the null hypothesis of no long-run relationship. This result suggests that there is a long-run equilibrium relationship among the variables in the model. The significant Bound Test result confirms the existence of cointegration, meaning that variables like the exchange rate (EXCH), balance of payments (LBOP), external reserves (LEXTR), inflation rate (INFR), foreign direct investment (LFDI), foreign portfolio investment (LFPI), and the foreign exchange management regime (dummy variables for FIXEDREG and FLOATREG) move together over time and influence stock market capitalization (SMRR) in the long run.

4.2. Long Run Estimates (Panel A)

4.2.1. Floating Exchange Management Regime

The long-run estimates provide a detailed analysis of various variables influencing stock market capitalization (SMRR) during the floating exchange management regime. During the floating exchange rate regime, the foreign exchange rate (EXCH) shows a negative coefficient of -0.022191, with a p-value of 0.5299, indicating that it does not have a statistically significant effect on market capitalization during floating exchange management regime. Similarly, the balance of payments (LBOP) also demonstrates a negative effect (-0.019526, p = 0.4146), suggesting that LBOP does not significantly influence SMRR during floating exchange management regime in Nigeria. Similarly, the external reserves (LEXTR) have a negative coefficient of -0.086294 with a p-value of 0.8146, further confirming the insignificance of LEXTRT on market capitalization during floating exchange management regime. The inflation rate (INFR) shows a negative effect with a coefficient of -0.017238 and a p-value of 0.2191, indicating an insignificant effect on market capitalisation during floating exchange management regime.

In contrast, foreign direct investment (LFDI) presents a positive and significant relationship with a coefficient of 1.189452 and a p-value of 0.0071, suggesting that increased foreign direct investment correlates with a rise in stock market capitalization during floating exchange management regime. Likewise, foreign portfolio investment (LFPI) also exhibits a positive and significant impact (0.596628, p = 0.0057) on market capitalisation indicating its vital role in enhancing market value during floating exchange management regime.

4.2.2. Fixed Exchange Rate Management Regime

The model for the foreign management on stock market turnover ratio (SMRR) under the fixed exchange management regime was reflected from the coefficient of dummy on all independents variables which reflect the effect during the fixed exchange management regime. The coefficient for the exchange rate (EXCH) is -1.4802, indicating that as the exchange rate increases, the stock market turnover ratio declines during the fixed exchange management regime. This suggests that fluctuations or depreciation in the currency within a fixed exchange regime leads to reduced stock market turnover ratio, likely due to investor concerns about currency risks and declining returns on investments. Similarly, the balance of payment (LBOP) has a negative coefficient of -1.4775, indicating that decreasing in balances of payments negatively affect stock market turnover ratio. A decrease in balance of payment further decreases foreign investment flows, further diminishing the stock market's liquidity.

External reserves (LEXTR) have a negative coefficient of -1.5443, suggesting that in a fixed exchange rate regime, even increased reserves do not improve the stock market turnover ratio. Inflation (INFR), have a negative coefficient of -1.4752, exacerbates the stock market turnover ratio, indicating that growing inflation in this regime erodes investor buying power, resulting in a drop-in trading activity as investors seek more stable assets. Foreign direct investment (LFDI) has a negative effect with a value of -0.2685. While FDI generally benefits the economy, its low effect under this regime may indicate that the fixed exchange regime's restrictions prohibit FDI from considerably increasing stock market activity. Foreign portfolio investment (LFPI), with a coefficient of -0.8614, has a negative impact. This suggests that under a fixed system, foreign portfolio investors are prevented from engaging in stock market operations, presumably due to concerns about currency risks and liquidity challenges.

4.3. Short Run Estimates (Panel B)

The short-run estimates reveal distinct dynamics compared to the long-run findings. The variable D(EXCH) shows a strong negative impact on stock market capitalization, with a coefficient of -0.041200 and a highly significant p-value of 0.0001, indicating that immediate changes in the exchange rate have a substantial detrimental effect on market value. The lagged variable D (EXCH (-1)) also presents a negative coefficient (-0.016800, p = 0.0644), suggesting that there may be a lagged impact of exchange rate changes on stock market capitalization that approaches significance. On the other hand, the variable D(LEXTR) appears to have no significant effect, as indicated by a p-value of 0.8719.

Interestingly, the lagged variable for external reserves (D (LEXTR (-1))) reveals a significant negative impact (-0.324272, p = 0.0019), highlighting the importance of past external reserve levels in influencing current market performance. The variable D(LFDI) exhibits a negative coefficient of -0.205821, with a p-value of 0.0891, indicating a marginally significant relationship, while its lagged counterpart (D (LFDI (-1))) shows a stronger negative impact (-0.341219, p = 0.0360), suggesting delayed effects of foreign direct investment on market capitalization. Furthermore, the dummy variable for the fixed exchange rate regime (D(FIXEDREG)) displays a significant negative coefficient (-0.307860, p = 0.0166), emphasizing the constraining effects of a fixed regime on market performance.

The error correction term (ECT (-1)) is highly significant (-0.501769, p = 0.0000), indicating that the system rapidly adjusts to return to long-term equilibrium after deviations occur. This suggests that any short-term fluctuations in stock market capitalization due to changes in foreign exchange management will eventually correct at the speed of 50.177%. The adjusted R-squared of 0.659345 indicate that about 73% of the variability in stock market capitalization is explained by the model, this shows a reasonably good fit of the model.

To test the hypothesis of no significant effect of foreign exchange management regime on stock market capitalization in Nigeria, the F-statistics 10.16746 and it probability of 0.0000 indicated that null hypothesis is rejected. Thus, show that the foreign exchange management regimes have a statistically significant effect on stock market capitalization Nigeria. Hence, the alternative hypothesis is accepted.

4.4. Diagnostic Tests

To ascertain the level of validity and acceptability of the result, the diagnostic test of serial correlation, Heteroskedasticity Test, normality test, and stability test were used. The diagnostic tests suggest that the model is well-specified and free from common econometric problems. The Serial Correlation LM Test with a p-value of 0.3240 shows that there is no autocorrelation in the residuals, while the Heteroskedasticity Test with a p-value of 0.8700 confirms that the model does not suffer from heteroskedasticity. The Normality Test (p-value = 0.8261) indicates that the residuals are normally distributed.

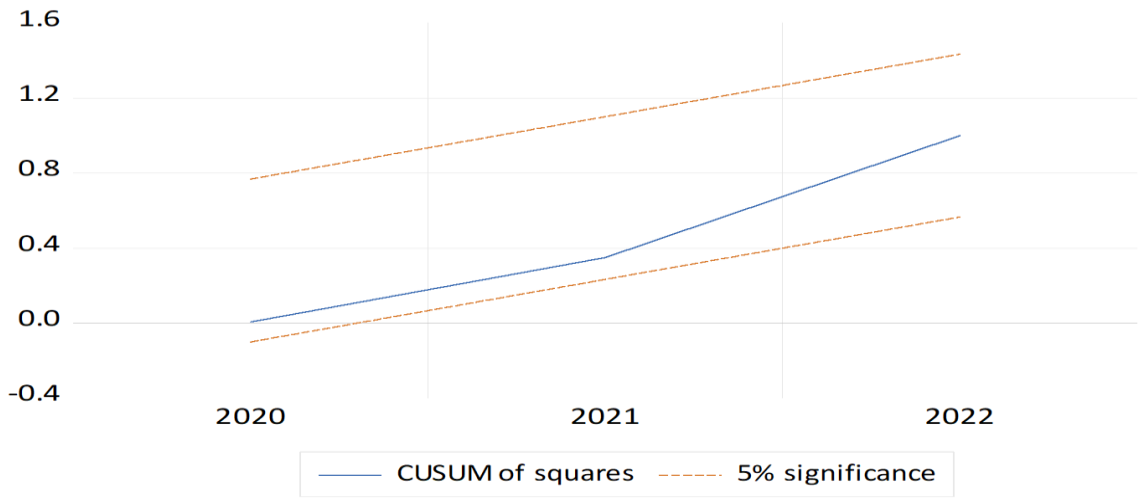

Figure 1. Cumulative sum of squares for stability square.

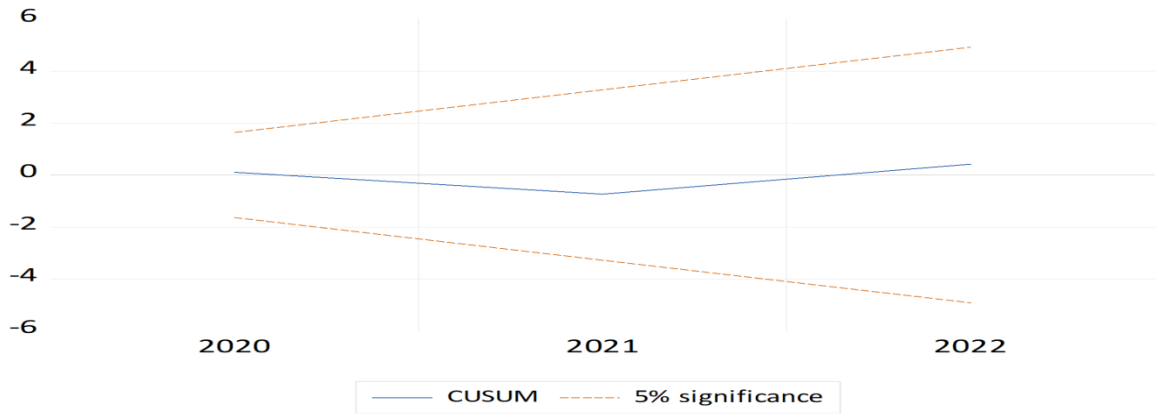

Figure 2. Cumulative test of stability.

Figure 1 and Figure 2 presents cumulative sum of square test and cumulative test for stability test respectively. The result showed that the model is stable over time, further confirming the reliability of the model's estimates.

5. Conclusion and Findings

The study investigated the effects of foreign exchange management regimes (floating and fixed exchange management regimes) on stock market capitalization in Nigeria between the period of thirty-seven years. Data were sources secondarily from world development indicators and Central Bank of Nigeria Bulletin. The study applies Autoregressive Distributed Lag Modelling (ARDL) and using bound test cointegration to ascertain the existence of long run effect. Findings from the study depicts that under the floating exchange regime, exchange rate, balance of payments, external reserves, and inflation show negative but statistically insignificant effect on stock market capitalization. In contrast, foreign direct investment (FDI) and foreign portfolio investment (FPI) have significant positive effects, indicating that increased foreign investments boost market capitalization. Conversely, in the fixed exchange regime, key variables like exchange rate, balance of payments, external reserves, and inflation have negative effects on stock market turnover ratio, which reflect how currency risks, external imbalances, and inflation reduce market activity. Additionally, both FDI and FPI show negative effect, suggesting that the rigidity of the fixed regime discourages foreign investments and weakens stock market liquidity. The findings from the study resonates with the findings of Makoni (2021) who also reported a positive relationship between FDI and stock market development in nine African countries. This similarity suggests that increased foreign investments play a crucial role in enhancing market capital growth across different contexts. Conversely, Dedi (2020) found significant negative relationships between trading volume, market capitalization, and returns in selected Indonesian companies, indicating a divergence from the Nigerian context, where foreign investments positively influence market capitalization. Additionally, while Sukesti, James, and Yemi (2021) identified a significant positive effect of the Net Profit Margin (NPM) on stock prices, the Nigerian study highlighted the adverse impacts of both fixed and floating exchange rate regimes on market capitalization, which contradicts the notion that stock performance and

capital accumulation are universally bolstered by market factors. Furthermore, the findings of Dennis et al. (2022) concerning the real effective exchange rate positively influencing market capitalization diverge from the Nigerian study, which indicated negative impacts of both exchange rate regimes on stock market capitalization. This inconsistency underscores the complexity of exchange rate effects on stock markets, contingent on local economic conditions and policies. While Oke et al. (2023) confirmed a direct positive relationship between foreign investments and capital market capitalization in Nigeria, it raises questions about the negative influence of exchange rate regimes, reinforcing the idea that local factors may modulate the effects of broader economic trends.

5.1. Recommendations

The following recommendations were proposed:

1. Regular review of foreign exchange management policies is crucial. Regular reviews may assist identify areas for improvement, ensure that policies stay relevant to changing market conditions, and contribute to a stable economic climate that promotes stock market growth.
2. Foreign portfolio investors should have better access to Nigeria's stock market. This involves increasing openness in market operations, expediting investment processes, and offering training materials to help international investors better understand local market dynamics. Increased FPI can greatly increase the market liquidity and turnover ratios.

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