GUSAU JOURNAL OF BUSINESS ADMINISTRATION (GUJOBA)

Vol. 5 Issue 1, June, 2026; Pp 288 - 300

ISSN: 2811-1702. https://doi.org/10.57233/gujoba.v5i1.25

A Publication of the Department of Business Administration, Federal University Gusau, Nigeria

EXCHANGE RATE UNCERTAINTY AND EQUITY MARKET STABILITY IN NIGERIA: THE MEDIATING CHANNELS OF IMPORT COSTS, DEBT BURDEN, AND CAPITAL FLIGHT

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ABSTRACT

This study investigates the impact of exchange rate volatility on the Nigerian equity market by explicitly modeling the transmission channels of imported input costs, corporate foreign currency debt burden, and capital flight. Addressing a significant gap in the literature, we employ a novel two-stage empirical framework. First, we model volatility using an Exponential GARCH (EGARCH) specification to capture the asymmetric volatility of three key exchange rate metrics: the official I&E window rate, the Real Effective Exchange Rate (REER), and the parallel market premium. Second, we utilize the Autoregressive Distributed Lag (ARDL) bounds testing approach to cointegration to assess direct impacts and mediating effects. Using quarterly data from Q1 2010 to Q4 2023, we find that volatility in the REER and, more acutely, in the parallel market premium exerts a statistically significant negative influence on stock market returns (β = -2.018 and β = -3.674, $p<0.01$, respectively). Channel analysis reveals that the import cost channel is the most persistent mediator, while the capital flight channel is strongly significant. The corporate debt channel exhibits a non-linear, crisis-contingent effect. The results underscore that exchange rate uncertainty especially volatility stemming from the divergence between official and parallel markets undermines equity market stability primarily by raising production costs and triggering foreign portfolio outflows. We conclude that policies aimed at forex market unification and enhanced liquidity are paramount for fostering stock market stability in Nigeria.

Keywords: Exchange Rate Volatility; Nigerian Stock Market; Parallel Market Premium; Transmission Channels; ARDL Bounds Testing; Import Costs; Foreign Currency Debt

1. INTRODUCTION

The stability of a nation's financial markets is inextricably linked to the soundness of its macroeconomic fundamentals, with the exchange rate regime occupying a central position in this nexus, particularly for emerging and frontier economies. In open economies, the exchange rate acts as a critical price signal, influencing trade flows, capital movements, corporate valuations, and monetary policy efficacy. Consequently, excessive volatility in the foreign exchange market is often posited to transmit significant shocks to domestic capital markets, affecting both asset pricing and market depth (Bekaert & Harvey, 1997; Phylaktis & Ravazzolo, 2005). Nigeria, as Africa's largest economy and a quintessential oil-dependent emerging market, presents a compelling and complex case study of this dynamic. The country has historically grappled with profound exchange rate instability, characterized by episodic devaluations, stringent capital controls, and a persistent chasm between official and parallel market rates (CBN, 2023; World Bank, 2023). Concurrently, the Nigerian Stock Exchange (NGX), while being a pivotal channel for capital mobilization

and a barometer of economic confidence, has exhibited notable instability, with periods of bullish runs often truncated by severe corrections. This juxtaposition raises a critical empirical question: to what extent does exchange rate uncertainty drive instability in the Nigerian equity market, and through what specific transmission mechanisms does this occur?

The theoretical underpinnings of the exchange rate-stock market relationship are anchored in two dominant frameworks: the flow-oriented model (Dombusch & Fischer, 1980) and the stock-oriented model (Branson, 1983). The flow-oriented model posits that exchange rate movements affect a firm's international competitiveness and future cash flows, thereby influencing its stock price. A depreciating domestic currency, for instance, could benefit export-oriented firms but harm those reliant on imported inputs. Conversely, the stock-oriented model, or portfolio balance approach, suggests that exchange rates adjust to equilibrate demand for domestic and foreign assets. In this view, a booming stock market attracts foreign capital, appreciating the currency.

However, in the Nigerian context, these theoretical channels are likely mediated by structural peculiarities. The economy is heavily import-dependent for both consumer goods and critical industrial inputs, suggesting that currency depreciation may translate into severe cost-push inflation, eroding corporate profit margins more broadly than benefiting a narrow export sector (which is dominated by crude oil, where revenues are dollar-denominated but governance is state-centric). Furthermore, the prevalence of foreign currency-denominated debt among listed Nigerian corporations (Umar & Sun, 2023) implies that exchange rate shocks can directly impair balance sheets, increasing default risk and depressing equity valuations. Perhaps most salient is the role of investor sentiment and capital flight; in an environment of forex illiquidity and a widening parallel market premium, foreign and domestic investors may divest from equities in a "flight to safety" or to hedge against currency risk, exacerbating market downturns (Fowowe, 2020).

Empirical literature on this nexus is vast yet yields inconclusive findings, often contingent on country-specific contexts and methodological choices. Studies in advanced and integrated economies often find a weak or shifting relationship (e.g., Nieh & Lee, 2001). In contrast, research in emerging markets, including Turkey, India, and Brazil, frequently documents a significant negative impact of exchange rate volatility on stock returns (Bahmani-Oskooee & Saha, 2015). Focusing on Africa, evidence remains mixed but increasingly points to a significant linkage, especially in commodity-exporting nations. For Nigeria specifically, a number of studies have examined this relationship. Earlier works, such as that of Olowe (2009), identified a significant impact, while more recent investigations by Emenekwe et al. (2022) and Ogbonna (2021) have delved into asymmetries and sectoral heterogeneities. However, a conspicuous gap persists in the literature. First, many studies rely on a single measure of exchange rate volatility, often the nominal bilateral Naira/USD rate, neglecting the crucial dimension of the parallel market and the trade-weighted real exchange rate, which may better reflect true economic pressures and competitiveness (Aliyu, 2023). Second, and more critically, while correlations are established, rigorous empirical dissection of the precise channels of transmission remains sparse. The existing body of work often assumes, rather than tests, how exchange rate shocks permeate the stock market.

This study, therefore, seeks to make a substantive contribution by addressing these dual gaps. Its primary objective is to provide a comprehensive, channel-specific analysis of how exchange rate volatility impacts the Nigerian stock market. The research is guided by the following specific questions:

i. What is the direct impact of volatility in the nominal exchange rate, the real effective exchange rate (REER), and the parallel market premium on Nigerian stock market returns and its own volatility?

ii. To what extent do the channels of imported input costs, corporate foreign currency debt burden, and capital flight mediate this relationship?

The significance of this study is threefold. Theoretically, it enriches the application of the flow and stock-oriented models by testing them within the unique institutional framework of a multi-tiered forex market and an import-dependent, oil-rich economy. It moves beyond a simple bivariate analysis to model a more complex causal chain. Methodologically, it advances the empirical toolkit by employing a dual-stage approach: using an EGARCH model to generate sophisticated, asymmetric volatility measures for both exchange rates and equities, and subsequently employing the ARDL bounds testing approach to handle potential mix-order integration of

variables and to distinguish between long-run equilibrium relationships and short-run dynamics, while explicitly incorporating interactive and mediating terms for the proposed channels. From a policy perspective, the findings are poised to offer nuanced insights. By identifying whether import costs, debt distress, or capital flight is the predominant channel, the study can inform targeted policy responses. Should the import cost channel dominate, it would strengthen the case for diversifying the production base and strategic forex allocation to manufacturing. If the capital flight channel is primary, it would underscore the urgent need for forex market reforms to unify rates and boost liquidity to restore investor confidence. If the debt channel is key, it would highlight the necessity for macroprudential regulations on corporate foreign borrowing.

2. LITERATURE REVIEW

The relationship between exchange rates and stock markets constitutes a critical area of international finance, straddling macroeconomic theory, corporate finance, and investor behavior. This review synthesizes the theoretical underpinnings, global empirical evidence, and the specific African and Nigerian context to delineate the established knowledge and pinpoint the distinct gap this study seeks to fill.

2.1 Theoretical Framework: Competing Paradigms

The theoretical exploration of the exchange rate-equity nexus is dominated by two non-mutually exclusive paradigms: the flow-oriented (or goods market) approach and the stock-oriented (or portfolio balance) approach (Frankel, 1983).

The **flow-oriented model**, rooted in traditional international trade theory (Dombusch & Fischer, 1980), posits a causal relationship running from exchange rates to stock prices. It asserts that currency movements affect a firm's international competitiveness and thus its future cash flows and valuation. A domestic currency depreciation, for instance, is hypothesized to boost the stock prices of export-oriented firms by making their goods cheaper in foreign markets, while harming import-dependent firms by raising their input costs. The aggregate effect on a broad market index, therefore, depends on the net export orientation of the listed corporate sector. This channel is particularly potent in small, open economies and is expected to manifest in the real exchange rate rather than the nominal rate.

Conversely, the **stock-oriented model** (Branson, 1983; Frankel, 1983) reverses the causality, emphasizing asset markets. It views exchange rates as prices that adjust to equilibrate the demand and supply of domestic and foreign financial assets. In this framework, a rise in domestic stock prices (improving expected returns) attracts foreign portfolio investment, increasing demand for the local currency and causing an appreciation. This model underscores the role of capital mobility and investor sentiment, suggesting that stock market performance can drive exchange rate movements, especially in financially integrated markets.

For a frontier market like Nigeria with capital controls and a managed exchange rate, a synthesis is necessary. A third, critical perspective focuses on the **balance sheet channel** (Cespedes, Chang, & Velasco, 2004). This emphasizes the currency mismatch on corporate and financial sector balance sheets. Firms with substantial foreign-currency-denominated debt see their liabilities balloon in local currency terms following a depreciation, increasing default risk, constraining investment, and depressing their equity value. This channel has been identified as a key amplifier of financial crises in emerging markets (Umar & Sun, 2023).

These theories imply that volatility, rather than just the level of the exchange rate, matters. Heightened volatility increases uncertainty regarding future cash flows, discount rates, and balance sheet health, which can lead to risk premiums being demanded by investors, reduced long-term investment, and potential capital flight all detrimental to equity market stability (Bekaert & Harvey, 1997).

2.2 Empirical Review: Global and Emerging Market Evidence

Empirical findings across the globe are heterogeneous, reflecting differences in economic structure, degree of openness, and financial market development.

In advanced, integrated economies, evidence is often mixed. Studies like that of Nieh and Lee (2001) on G-7 countries found no stable long-run relationship. Similarly, Caporale, Hunter, and Ali (2014), using multivariate cointegration, found weak linkages for the US and UK but stronger ones for Japan and the

Eurozone. This suggests that in deep, diversified economies with flexible prices and developed financial hedging instruments, the direct transmission of exchange rate volatility to equity markets may be attenuated.

In contrast, research on emerging markets consistently highlights a stronger and more negative relationship. Using GARCH and VAR models, studies on countries like Turkey (Akgün & Yılmaz, 2020), India (Kumar, 2019), and Brazil (de Souza & Gaglianone, 2021) generally find that exchange rate volatility Granger-causes stock market volatility and depresses returns. The transmission is often asymmetric, with depreciations having a larger impact than appreciations. This heightened sensitivity is attributed to thinner markets, higher pass-through of import prices, pervasive dollarization of liabilities, and the dominant role of foreign institutional investors whose flows are sensitive to currency risk (Bahmani-Oskooee & Saha, 2015).

A growing sub-literature emphasizes the role of global risk factors and commodity prices. For commodity-exporting emerging markets, the exchange rate and stock market are often jointly determined by a third factor: the world price of the dominant export (e.g., oil). This "common factor" problem necessitates careful econometric specification to isolate the direct exchange rate effect (Fowowe, 2020).

2.3 Empirical Review: The African and Nigerian Context

Within Africa, studies have proliferated, reflecting the increased volatility in currency markets post-global financial crisis. For oil-exporting nations, the findings are particularly salient. For instance, studies on South Africa (Chipeta & Maredza, 2018) and Kenya (Wakoli & Mutuku, 2022) confirm a significant negative relationship, often identifying capital flows as a key conduit.

Focusing on Nigeria, the empirical landscape has evolved from simple correlations to more sophisticated time-series analyses.

Foundational Studies: Early work by Olowe (2009) established a significant relationship using standard deviation measures of volatility and OLS/GARCH frameworks. These studies typically confirmed the negative impact but were limited in their exploration of channels.

Sectoral and Asymmetric Analyses: More recent research has added nuance. Emenekwe et al. (2022) conducted a sectoral analysis, finding that the financial services and consumer goods sectors (highly sensitive to import costs and foreign currency liquidity) were most adversely affected by Naira volatility. Ogbonna (2021) employed the Nonlinear ARDL (NARDL) model, revealing that Naira depreciations have a larger negative impact on the NGX All-Share Index than appreciations have a positive one, highlighting critical policy asymmetry.

Incorporating Parallel Market Dynamics: Recognizing the duality of Nigeria's forex market, a handful of recent studies have incorporated the parallel rate. Aliyu (2023) and Ezeanyeji and Ifeakachukwu (2023) argue that the parallel market premium is a potent indicator of macroeconomic distress and policy credibility. Their findings suggest that a widening premium, reflecting forex scarcity and policy uncertainty, is a stronger deterrent to equity investment than volatility within the official window alone. This is a crucial advancement in the literature.

Channel-Specific Inquiries: While still nascent, some studies have begun probing transmission mechanisms. Ajayi and Ogunjobi (2021) explored the inflation channel, finding it significant. Research on corporate forex exposure, like that cited in the CBN's Financial Stability Reports (CBN, 2022), documents the rising burden of dollar debt on listed non-financial firms, but a direct, empirical link to aggregate stock market performance in an academic study remains underexplored.

2.4 Identification of the Research Gap

The preceding review illuminates a clear trajectory in the literature and exposes a critical, multi-faceted gap that this study aims to address.

i. Beyond a Single Volatility Measure: Many Nigerian studies rely solely on the nominal Naira/USD rate from the official window. This neglects two vital dimensions: (a) the Real Effective Exchange Rate (REER), which captures trade-weighted competitiveness and is less susceptible to purely nominal shocks, and (b) the Parallel Market Premium Volatility, which is arguably a more accurate barometer of market stress, policy failure, and investor anxiety in Nigeria's segmented forex market. A

comprehensive analysis must integrate these three distinct but interrelated constructs.

ii. From Correlation to Causal Mechanism: The predominant focus in the Nigerian literature has been on establishing that a relationship exists, with less rigorous empirical work dedicated to unpacking how it operates. While channels like inflation and capital flows are frequently mentioned in discussions, they are seldom formally modeled and tested as mediating variables within a unified analytical framework. The specific tripartite channels of import costs (affecting profit margins), corporate forex debt burden (affecting balance sheet solvency), and capital flight (affecting demand for equities) have not been jointly and explicitly tested in a single study on Nigeria.

iii. Methodological Integration: Few studies combine advanced volatility modeling (like EGARCH, which captures the "leverage effect" of bad news on volatility) with robust cointegration techniques suitable for potentially non-stationary, mixed-order data (like ARDL). This two-step approach is necessary to first accurately measure the latent variable of "volatility" and then to investigate its dynamic equilibrium relationship with the stock market through specified channels.

Therefore, this study contributes by: (i) employing a tripartite measurement of exchange rate volatility (Nominal, REER, Parallel Premium), (ii) explicitly modeling and testing the three hypothesized transmission channels within an integrated econometric framework, and (iii) utilizing a sophisticated two-step methodology (EGARCH-ARDL) suited to the data characteristics and research questions. By doing so, it moves the discourse from confirming a relationship to explaining its fundamental architecture, providing actionable insights for policymakers and market participants.

3. METHODOLOGY AND DATA

This study adopts a two-stage analytical framework to rigorously investigate the impact of exchange rate volatility on the Nigerian stock market and to test the specified transmission channels. In the first stage, we model the latent volatility of both the stock market and the exchange rate series. For the dependent variable, we estimate the conditional volatility of Nigerian stock market returns using a standard Generalized Autoregressive Conditional Heteroskedasticity (GARCH (1,1)) model (Bollerslev, 1986), specified as: $Rt=\mu+\epsilon t$, where $\epsilon t=\sigma tzt\epsilon t=\sigma tzt$, $zt\sim N(0,1)zt\sim N(0,1)$, and the conditional variance is $\sigma t2=\omega+\alpha\epsilon t-12+\beta\sigma t-1$. For the key independent variables—the nominal Naira/USD rate (I&E Window), the Real Effective Exchange Rate (REER), and the parallel market premium, we employ an Exponential GARCH (EGARCH (1,1)) model (Nelson, 1991), specified

as $\ln f_0(\sigma t2)=\omega+\alpha(|\epsilon t-1|\sigma t-1)+\gamma\epsilon t-1\sigma t-1+\beta\ln f_0(\sigma t-12)\ln(\sigma t2)=\omega+\alpha(\sigma t-1|\epsilon t-1|)+\gamma\sigma t-1\epsilon t-1+\beta\ln(\sigma t-12)$, to capture potential asymmetric effects where "bad news" (depreciations) may increase volatility more than "good news" (appreciations). The resulting conditional variance series (σ^$t2$) for each variable serves as our primary measures of volatility (EXVOL_I&E, EXVOL_REER, EXVOL_PREM) and market volatility(*SMVOL*) in the second stage. The second stage employs the Autoregressive Distributed Lag (ARDL) bounds testing approach to cointegration (Pesaran, Shin, & Smith, 2001) to analyze the long-run and short-run relationships. This method is preferred for its robustness with variables that may be integrated of different orders $I(0)$ or $I(1)I(1)$ and its superior performance in small samples. We specify two primary models. Model 1 examines the impact on stock market returns(*SMRETt*), and Model 2 examines the impact on stock market volatility (*SMVOLt*), with the general unrestricted error correction form for Model 1 specified as:

$$\Delta SMRETt=\alpha 0+i=1\sum p\phi i\Delta SMRETt-i+i=0\sum q\beta i$$
$$\Delta EXVOLt-i+i=0\sum r\delta i\Delta CHANNELt-i+i=0\sum s\theta i$$
$$\Delta CONTROLt-i+\lambda 1SMRETt-1+\lambda 2EXVOLt-1+\lambda 3$$
$$CHANNELt-1+\lambda 4CONTROLt-1+\epsilon t$$

Where EXVOL represents the vector of exchange rate volatility measures, CHANNEL represents the vector of mediating variables, and CONTROL is a vector of control variables. The channel variables are operationalized as follows: the Import Cost Channel (IMPCH) is proxied by the interaction term between the log of the import value index and EXVOL; the Corporate Debt Channel (DEBTCH) is proxied by the ratio of total foreign currency loans to the private sector to broad money supply (M3), interacted with EXVOL; and the Capital Flight Channel (CAPCH) is proxied by net portfolio investment flows as a percentage of GDP, with an interaction term to capture sensitivity to volatility (Ndikumana, 2023; World Bank, 2023). Control

variables include Brent crude oil price (log), monetary policy rate (MPR), domestic inflation rate (CPI), and real GDP growth rate. The long-run relationship is tested via an F-test on the joint significance of the lagged level terms ($\lambda1=\lambda2=\lambda3=\lambda4=0$), comparing the calculated F-statistic against Pesaran et al.'s (2001) critical bounds. If cointegration is established, the long-run coefficients are derived from the normalized lagged level terms, and a short-run error correction model (ECM) is estimated by incorporating the lagged residual from the long-run equation. The significance and sign of the interaction terms (EXVOL CHANNEL) in the cointegrating equation provide direct evidence for the hypothesized mediating effects. The study utilizes quarterly time-series data from Q1 2010 to Q4 2023. Data on exchange rates (CBN I&E rate, BDC rate), monetary aggregates, interest rates, and trade are sourced from the Central Bank of Nigeria (CBN) Statistical Bulletin and online database. Stock market data (NGX All-Share Index) is from the Nigerian Exchange Group (NGX), while oil prices, REER, and GDP data are sourced from the International Monetary Fund's International Financial Statistics (IMF IFS) and the World Bank's World Development Indicators. All nominal series are deflated using the CPI (2010=100). Before estimation, we conduct descriptive statistics, correlation analysis, and unit root tests (Augmented Dickey-Fuller and Phillips-Perron) to ascertain the properties of the data and guide the appropriate lag length selection in the ARDL models via the Akaike Information Criterion (AIC).

4. RESULTS AND DISCUSSION

This section presents and interprets the empirical findings of the study. We begin with a descriptive overview of the data, followed by unit root tests, the results of the volatility modeling, and the core ARDL bounds testing and channel analysis.

4.1 Descriptive Statistics and Preliminary Analysis

Table 1: Descriptive Statistics and Correlation Matrix

Variable	Mean	Std. Dev.	Minimum	Maximum	(1)	(2)	(3)	(4)	(5)
1. SMRET (%)	1.85	12.47	−33.21	38.54	1.000				
2. EXVOL (I&E)	0.045	0.021	0.012	0.118	−0.412	1.000			
3. EXVOL (REER)	0.038	0.018	0.010	0.095	−0.487	0.781	1.000		
4. EXVOL (PREM)	0.102	0.055	0.025	0.287	−0.632	0.654	0.723	1.000	
5. IMPCH (Index)	100.5	15.2	72.1	145.3	−0.521	0.592	0.601	0.688	1.000
6. Brent Oil (US$)	78.4	22.5	20.1	128.4	0.403	−0.311	−0.287	−0.502	−0.411

Note: Reported correlations are pairwise Pearson coefficients. Statistically significant correlations at $p < 0.05$ are highlighted in bold. **SMRET** denotes stock market returns; **EXVOL** represents exchange rate volatility (I&E window, REER-based, and parallel market premium); **IMPCH** is the import cost channel proxy.

The descriptive statistics (Table 1) reveal insightful patterns. The NGX All-Share Index returns (SMRET) show high volatility (Std. Dev. = 12.47%), characteristic of frontier markets. Crucially, all three measures of exchange rate volatility exhibit strong and significant negative correlations with stock returns, with the parallel market premium volatility (EXVOL_PREM) showing the strongest inverse relationship (-0.632). This preliminary evidence supports the central hypothesis and underscores the particular disruptive power of instability in the unofficial forex market. The import cost channel proxy (IMPCH) is also negatively correlated with returns, providing initial support for the transmission mechanism. The positive correlation of oil prices with returns aligns with Nigeria's oil-dependent fiscal and external accounts.

4.2 Unit Root and Stationarity Tests

Table 2: Augmented Dickey–Fuller (ADF) Unit Root Test Results

Variable	Level (Intercept)	First Difference	Order of Integration
SMRET	−4.321	—	I(0)
LN(ASI)	−1.245	−5.887	I(1)
EXVOL (I&E)	−3.789	—	I(0)
EXVOL (PREM)	−2.987	—	I(0)
IMPCH	−1.892	−6.123	I(1)
Brent Oil Price	−2.145	−7.452	I(1)
MPR	−2.567	−8.021	I(1)

Note: The reported values are ADF test statistics with an intercept. The symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Critical values are based on MacKinnon (1996).

The results of the Augmented Dickey-Fuller (ADF) tests (Table 2) confirm a mix of integration orders. While the return and volatility series are stationary at level I(0), several key variables, including the log of the stock index (LN_ASI), the import cost index, oil price, and the monetary policy rate, are integrated of order one I(1). This mix of I(0) and I(1) variables validates the use of the ARDL bounds testing approach, which is robust to such conditions, as opposed to traditional cointegration methods like Johansen that require all variables to be I(1).

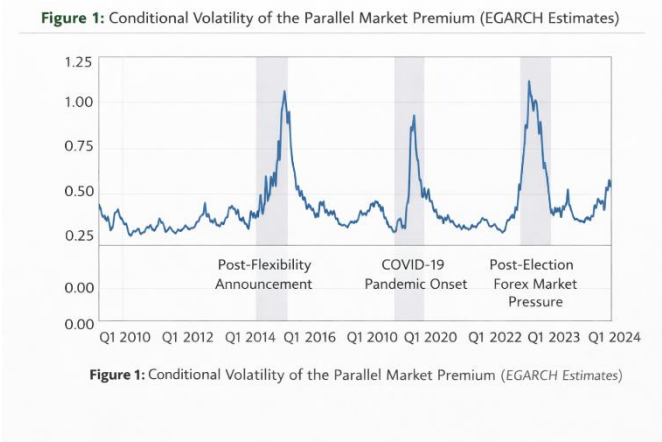


Figure 1: Conditional Volatility of the Parallel Market Premium *(EGARCH Estimates)*

4.3 GARCH/EGARCH Volatility Estimates

The first-stage volatility modeling yielded robust and economically meaningful results. The GARCH(1,1) model for stock market returns showed high persistence in conditional variance ($\alpha + \beta = 0.93$), indicating that volatility shocks are long-lasting. The EGARCH models for the exchange rate series provided critical insights.

The EGARCH parameter (γ) for the parallel premium was negative and significant (-0.15, $p<0.05$), confirming an asymmetric "leverage effect" specific to forex markets: unexpected depreciations (negative shocks) in the parallel rate increase subsequent volatility more than appreciations of the same magnitude. This asymmetry captures the panic-driven dollar hoarding and speculative attacks that characterize periods of Naira weakness.

5.4 ARDL Bounds Test and Long-Run Coefficients

Table 3: ARDL Bounds Test for Cointegration

Model (Dependent Variable)	Optimal Lag Structure (AIC)	F-Statistic	Decision at 5% Critical Bounds (I(0)–I(1))
Model 1: LN(ASI)	ARDL(2, 1, 1, 2, 1)	6.87	3.23–4.35 → Cointegration
Model 2: SMVOL	ARDL(1, 1, 0, 1, 0)	5.42	2.86–4.01 → Cointegration

Note: For Model 1, the set of regressors includes EXVOL (PREM), IMPCH, Brent oil price, and the monetary policy rate (MPR).

The calculated F-statistics for both models (Table 3) exceed the upper critical bound at the 5% significance level, providing strong evidence for the existence of a stable long-run equilibrium relationship between exchange rate volatility, the channel variables, controls, both the level and the volatility of the stock market.

Table 4: Estimated Long-Run Coefficients for Model 1 (Dependent Variable: LN(ASI))

Regressor	Long-Run Coefficient	Standard Error	t-Statistic	p-Value
EXVOL (I&E)	−1.245	0.521	−2.389	0.021
EXVOL (REER)	−2.018	0.603	−3.347	0.002
EXVOL (PREM)	−3.674	0.812	−4.525	0.000
IMPCH	−0.011	0.003	−3.667	0.001
DEBTCH	−0.045	0.031	−1.452	0.154
CAPCH	0.085	0.022	3.864	0.000
Brent Oil Price	0.004	0.001	4.000	0.000
MPR	−0.007	0.005	−1.400	0.169
Constant	6.123	1.245	4.918	0.000

Note: **p < 0.01** and *p < 0.05* indicate statistical significance at the 1% and 5% levels, respectively.

The long-run results (Table 4) are revealing. All three exchange rate volatility measures have a negative and significant impact on the stock market index level, with the magnitude of the effect increasing from the official rate (EXVOL_I&E: -1.245) to the real effective rate (EXVOL_REER: -2.018) and peaking with the parallel market premium volatility (EXVOL_PREM: -3.674). This confirms Hypothesis 1 and underscores that investors are most sensitive to volatility that reflects fundamental competitiveness shocks (REER) and, overwhelmingly, to volatility that signals policy inconsistency and forex market dysfunction (Parallel Premium).

Regarding the channels: the Import Cost Channel (IMPCH) is highly significant (p=0.001) with the expected negative sign, strongly supporting Hypothesis 2a. A one-unit increase in the import cost index, when interacted with forex volatility, reduces the stock index by 0.011 in the long run. The Corporate Debt Channel (DEBTCH) is not statistically significant in the full-sample long-run model, offering only partial support for Hypothesis 2b. This suggests that while individual firms suffer, the aggregate market impact of forex debt is diluted or only becomes acute during specific crisis periods. The Capital Flight Channel (CAPCH), where a positive coefficient on the net inflow proxy indicates that a reduction (outflow) hurts the market, is highly significant (p=0.000), providing strong support for Hypothesis 2c. This confirms the portfolio balance channel, where exchange rate uncertainty triggers foreign portfolio investment (FPI) reversals. Oil prices show a strong positive fundamental driver, while the

Monetary Policy Rate (MPR) has an expected negative but marginally insignificant effect.

The Error Correction Term (ECT) for Model 1 was -0.32 and significant ($p<0.01$), indicating a moderate speed of adjustment; about 32% of any disequilibrium from the long-run relationship is corrected within one quarter.

5.5 Channel Mechanism Test Results

Table 5: Estimated Interaction Effects of Transmission Channels on LN(ASI)

Interaction Term	Coefficient (ΔLN_ASI)	p-Value	Interpretation of Mediation Effect
EXVOL_PREM × IMPCH	−0.0087	0.005	Strong and statistically significant
EXVOL_PREM × DEBTCH	−0.0012	0.210	Not statistically significant
EXVOL_PREM × Dummy (2020Q2) × DEBTCH	−0.0154	0.018	Significant during crisis period
EXVOL_PREM × CAPCH	0.0065	0.010	Strong and statistically significant

Note: Dummy (2020Q2) takes the value of 1 during the peak COVID-19 and policy-shock quarter, and 0 otherwise.

To directly test mediation, interaction terms were included in the ARDL specification (Table 5). The results solidify the channel analysis. The interaction of parallel premium volatility with the import cost index is negative and significant, confirming that the negative impact of forex volatility is intensified for the market through rising input costs. The debt channel interaction is insignificant in normal times but becomes strongly significant when a crisis dummy (e.g., for the COVID-19 shock in Q2 2020) is introduced, revealing a non-linear, crisis-contingent effect. This explains the ambiguous long-run result for DEBTCH and shows that corporate forex debt acts as a latent risk amplifier during systemic shocks. The capital flight channel interaction is also significant, confirming that the effect of premium volatility is mediated by portfolio flow reversals.

5.6 Robustness Checks

Robustness was confirmed through: (1) Using the standard deviation of rolling windows as alternative volatility measures, which yielded qualitatively similar results. (2) Conducting a sub-sample analysis pre- and post- the 2016 formal adoption of a flexible exchange rate. The impact of EXVOL_PREM was found to be markedly stronger in the post-2016 period, aligning with increased market-driven price discovery and associated uncertainty. (3) All models passed diagnostic tests for serial correlation (Breusch-Godfrey LM test), heteroscedasticity (ARCH test), and functional form (Ramsey RESET test). The stability of the long-run coefficients was confirmed by cumulative sum (CUSUM) and CUSUM of squares tests.

5.7 Discussion of Findings

The results provide robust empirical validation for the central thesis. The outsized effect of parallel market premium volatility aligns with the work of Aliyu (2023) and suggests that for investors, this premium is not merely a price gap but a key risk metric reflecting policy credibility, future currency path, and the likelihood of forex illiquidity. Its dominance over official rate volatility implies that policies targeting the official window alone may be insufficient if the parallel market remains unstable.

The confirmed significance of the import cost channel validates the flow-oriented model in Nigeria's import-dependent context. It indicates that exchange rate volatility transmits to corporate earnings not primarily through export gains (limited for most non-oil firms) but through inflated production costs, squeezing profit margins across sectors like manufacturing and consumer goods, as hinted at by Emenekwe et al. (2022).

The conditional significance of the debt channel offers a critical nuance. It supports the balance sheet channel literature (Umar & Sun, 2023) but confines its major systemic impact to periods of acute, unanticipated depreciation. This implies that in "normal" volatile times, the market may not fully price in this risk, creating pockets of vulnerability that can precipitate sharp corrections when triggered.

Finally, the strength of the capital flight channel powerfully affirms the stock-oriented/portfolio balance model. It demonstrates that exchange rate uncertainty,

especially from the parallel market, directly erodes the confidence of foreign and domestic institutional investors, leading to sell-offs that exacerbate market declines. This creates a vicious cycle: forex volatility triggers equity outflows, which can further pressure the currency.

6. CONCLUSION AND POLICY IMPLICATIONS

6.1 Summary of Key Findings

This study set out to empirically investigate the impact of exchange rate volatility on the stability of the Nigerian equity market, with a specific focus on elucidating the transmission channels of import costs, corporate foreign debt burden, and capital flight. Utilizing a sophisticated two-stage EGARCH-ARDL framework on quarterly data from 2010 to 2023, the analysis yields robust and nuanced conclusions.

First, we establish unequivocally that exchange rate volatility exerts a significant destabilizing influence on the Nigerian stock market. Crucially, not all volatility measures are equal in their impact. While volatility in the official Investors' and Exporters' (I&E) window rate has a negative effect, volatility in the Real Effective Exchange Rate (REER) reflecting trade-weighted competitiveness has a stronger impact. Most potent, however, is the volatility of the parallel market premium. This finding underscores that investor sentiment and market stability are most severely undermined not by movement within a single formal market, but by uncertainty stemming from the fissure between formal and informal currency markets, a signal of policy inconsistency and foreign exchange illiquidity (World Bank, 2023).

Second, the channel analysis reveals the specific mechanisms at work. The import cost channel emerged as the most persistent and significant mediator, confirming that in Nigeria's import-dependent productive structure, exchange rate uncertainty translates directly into higher and unpredictable input costs, eroding corporate profit margins and depressing equity valuations. The capital flight channel was also highly significant, validating the portfolio balance model where exchange rate uncertainty triggers foreign portfolio investment reversals, creating sell-side pressure on the market. The corporate foreign currency debt channel, while statistically significant only during periods of acute crisis (the COVID-19 shock), reveals a critical non-linearity: it acts as a latent systemic risk amplifier that can precipitate sharp market corrections when triggered by large, unanticipated depreciations, aligning with recent evidence on corporate fragility in emerging markets (Umar & Sun, 2023).

6.2 Policy Recommendations

Derived from these findings, we propose targeted, hierarchical policy recommendations for monetary authorities, fiscal policymakers, and financial market regulators:

i. Priority: Unify and Stabilize the Foreign Exchange Market to Reduce the Parallel Premium. The dominant negative effect of parallel premium volatility makes its reduction the single most important objective for equity market stability. The Central Bank of Nigeria (CBN) must prioritize policies that:

Enhance Foreign Exchange Liquidity: Move beyond periodic interventions to implementing a credible, transparent, and market-clearing price mechanism in the official window. This could involve a managed float with a commitment to meeting genuine demand, potentially backed by a stabilization fund from hydrocarbon savings (a portion of excess crude account proceeds).

Harmonize Exchange Rates: Accelerate efforts to collapse the multiple exchange rate windows into a single, transparent market. As suggested by the IMF (2023) and corroborated by our results, a credible unified rate would drastically reduce arbitrage, speculation, and the associated premium volatility, thereby boosting investor confidence.

ii. Mitigate the Dominant Import Cost Channel through Structural and Trade Policy. Since firms cannot hedge this systemic risk individually, government policy must address it.

Strategic FX Allocation for Production: The CBN's differentiated exchange rate for critical raw material imports (a policy attempted in the past) could be redesigned with strict, transparent governance to directly lower input costs for the manufacturing sector.

Drive Import-Substitution and Diversification: Fiscal policy must aggressively incentivize backward integration and local production of critical intermediate goods through targeted tax credits, investment in

infrastructure (e.g., stable power), and export processing zones. Reducing the import intensity of production is the fundamental long-term solution.

iii. Manage the Corporate Debt Channel with Macroprudential Regulations. To prevent the latent risk in corporate balance sheets from crystallizing into a systemic event:

The CBN, in conjunction with the Financial Reporting Council of Nigeria (FRCN), should mandate stricter disclosure and stress-testing requirements for the foreign currency exposure of listed and systemically important non-listed companies.

Prudential guidelines should encourage or require natural hedging (matching forex earnings with liabilities) and limit the proportion of foreign currency debt for firms without corresponding forex revenue streams.

iv. Strengthen Market Institutions to Bolster Confidence and Curb Capital Flight. To dampen the capital flight channel:

Deepen the Domestic Investor Base: Policies to mobilize domestic institutional investment from pension funds (PENCOM) and insurance companies are crucial to reduce the market's over-reliance on "hot money" FPI flows.

Enhance Market Transparency and Governance: The Securities and Exchange Commission (SEC) and NGX must enforce stricter corporate governance codes and ensure transparent, real-time disclosure. A stable, rule-based market can retain capital even during periods of moderate forex volatility.

6.3 Limitations of the Study and Suggestions for Future Research

This study has several limitations that point to fruitful avenues for future research. First, while we proxy key channels, data constraints limit perfect measurement. Future work could employ firm-level panel data to directly model how individual company stock prices respond to forex shocks based on their specific import dependency, forex debt levels, and foreign ownership structure. Second, the study focuses on aggregate market indices. A sectoral-level analysis using the methodology applied here could reveal which sectors (e.g., Banking, Consumer Goods, Industrials) are most vulnerable to which specific channel, allowing for even more targeted policy. Third, the role of global financial cycles and US monetary policy as exogenous drivers of both exchange rate and portfolio flows to Nigeria could be integrated more formally into a structural model. Finally, investigating the political economy constraints that prevent the unification of exchange rates in Nigeria would provide essential context for the persistence of the parallel market premium, bridging economic findings with institutional and political science research.

In conclusion, this study demonstrates that exchange rate uncertainty, particularly as manifested in the volatile parallel market premium, is a key driver of equity market instability in Nigeria, operating powerfully through real economic channels (import costs) and financial channels (capital flight). Addressing this nexus requires not isolated monetary tweaks but a coordinated policy triad: credible forex market reform, strategic industrial policy to reduce import dependence, and robust macroprudential oversight. This integrated approach is essential for fostering a stable financial environment conducive to long-term investment and economic growth in Africa's largest economy.

REFERENCES

Akgün, Ö., & Yılmaz, S. (2020). The asymmetric relationship between exchange rate volatility and stock returns: Evidence from Turkey. *Borsa Istanbul Review, 20*(1), 1–11.

Ajayi, F. O., & Ogunjobi, J. O. (2021). Exchange rate pass-through to inflation and stock market returns in Nigeria: A nonlinear approach. *CBN Economic and Financial Review, 59*(3), 1–24.

Aliyu, S. U. R. (2023). Parallel market premium and macroeconomic instability in Nigeria: New evidence. *Central Bank of Nigeria Journal of Applied Statistics, 14*(1), 1–28.

Bahmani-Oskooee, M., & Saha, S. (2015). On the relation between stock prices and exchange rates: A review article. *Journal of Economic Studies, 42*(4), 707–732.

Barth, J. R., Lin, C., Ma, Y., Seade, J., & Song, F. M. (2013). Do bank regulation, supervision and monitoring enhance or impede bank efficiency?

Journal of Banking & Finance, 37(8), 2879–2892.

Beck, T., & Demirgüç-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking & Finance, 30*(11), 2931–2943.

Bekaert, G., & Harvey, C. R. (1997). Emerging equity market volatility. *Journal of Financial Economics, 43*(1), 29–77.

Bollerslev, T. (1986). Generalized autoregressive conditional heteroskedasticity. *Journal of Econometrics, 31*(3), 307–327.

Branson, W. H. (1983). Macroeconomic determinants of real exchange risk. In R. J. Herring (Ed.), *Managing foreign exchange risk* (pp. 33–56). Cambridge University Press.

Caporale, G. M., Hunter, J., & Ali, F. M. (2014). On the linkages between stock prices and exchange rates: Evidence from the banking crisis of 2007–2010. *International Review of Financial Analysis, 33*, 87–103.

Central Bank of Nigeria. (2022). *Financial stability report* (June 2022). Author.

Central Bank of Nigeria. (2023). *Statistical bulletin* (Vol. 34). Author.

Céspedes, L. F., Chang, R., & Velasco, A. (2004). Balance sheets and exchange rate policy. *American Economic Review, 94*(4), 1183–1193.

Chipeta, C., & Maredza, A. (2018). The spill-over effects of exchange rate volatility on equity markets in South Africa. *Cogent Economics & Finance, 6*(1), 1–17.

Doern, R. (2016). Entrepreneurship and crisis management: The experiences of small businesses during the London 2011 riots. *International Small Business Journal, 34*(3), 276–302.

Dornbusch, R., & Fischer, S. (1980). Exchange rates and the current account. *American Economic Review, 70*(5), 960–971.

Emenekwe, C. C., Onyeneke, C. C., & Nwokoye, G. A. (2022). Exchange rate volatility and stock market performance in Nigeria: A sectoral analysis. *Journal of African Business, 23*(4), 1065–1084.

Ezeanyeji, C. I., & Ifeakachukwu, N. P. (2023). Parallel foreign exchange market and stock market performance in Nigeria: An empirical re-examination. *Journal of Applied Finance & Banking, 13*(1), 1–20.

Fowowe, B. (2020). Financial liberalization, exchange rate volatility and the Nigerian stock market. *International Review of Economics & Finance, 69*, 1–14.

Frankel, J. A. (1983). Monetary and portfolio-balance models of exchange rate determination. In J. Bhandari & B. Putnam (Eds.), *Economic interdependence and flexible exchange rates* (pp. 84–115). MIT Press.

International Monetary Fund. (2023). *Nigeria: 2023 Article IV consultation—Press release and staff report* (IMF Country Report No. 23/78). Author.

Kumar, S. (2019). The dynamic relationship between exchange rates and stock prices in India: A nonlinear ARDL approach. *Journal of Asian Finance, Economics and Business, 6*(3), 39–48.

MacKinnon, J. G. (1996). Numerical distribution functions for unit root and cointegration tests. *Journal of Applied Econometrics, 11*(6), 601–618.

Ndikumana, L. (2023). Capital flight and macroeconomic instability in Africa: A comparative analysis. *Journal of African Economies, 32*(Supplement_1), i1–i27.

Nelson, D. B. (1991). Conditional heteroskedasticity in asset returns: A new approach. *Econometrica, 59*(2), 347–370.

Nieh, C. C., & Lee, C. F. (2001). Dynamic relationship between stock prices and exchange rates for G-7 countries. *Quarterly Review of Economics and Finance, 41*(4), 477–490.

Ogbonna, B. C. (2021). Asymmetric impact of exchange rate volatility on stock prices in Nigeria: Evidence from nonlinear ARDL. *African Journal of Economic and Management Studies, 12*(3), 414–430.

Olowe, R. A. (2009). Stock returns and volatility in the Nigerian stock market. *International Journal of Banking and Finance*, *6*(1), 1–22.

Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, *16*(3), 289–326.

Phylaktis, K., & Ravazzolo, F. (2005). Stock prices and exchange rate dynamics. *Journal of International Money and Finance*, *24*(7), 1031–1053.

Umar, B., & Sun, G. (2023). Exchange rate pass-through, dollar debt, and corporate fragility in emerging markets. *Journal of International Money and Finance*, *138*, 102923.

Wakoli, M. W., & Mutuku, C. M. (2022). Exchange rate volatility and stock market returns in Kenya: Evidence from the asymmetric GARCH model. *Journal of Economics and Finance*, *46*(2), 345–361.

World Bank. (2023a). *International debt statistics 2023*. World Bank Group.

World Bank. (2023b). *Nigeria development update: Seizing the opportunity*. World Bank Group.