



EFFECT OF MONETARY POLICY ON STOCK MARKET LIQUIDITY IN NIGERIA

Davison Ukachukwu Ohurogu, Ph.D.¹, Hope Ikechukwu Osuagwu, Ph.D.² & Cajetan Chinedu Anyanwu, Ph.D.³

^{1,2&3}Department of Banking and Finance, Nasarawa State University, Keffi, Nigeria; ccanyanwu@hotmail.com

*Corresponding Author Email: ccanyanwu@hotmail.com
<https://doi.org/10.70118/aijbfd.010120260024>

KEYWORDS

Broad Money Supply,
Cash Reserve Ratio,
Monetary Policy, Stock
Market

ABSTRACT

The unpredictable transmission of monetary policy instruments to stock market liquidity in emerging economies, coupled with conflicting empirical evidence and a scarcity of localized African context studies, necessitates a rigorous investigation of how monetary policy affect stock market liquidity in Nigeria. The Specific Objectives are to examine the effect of monetary policy rate on stock market liquidity; to determine the effect of cash reserve ratio on stock market liquidity; and to assess the effect of money supply on stock market liquidity in Nigeria. The study is underpinned with Portfolio Balance Theory and ex post facto research design was utilized. The methods and data sources are secondary method of data collection for the periods of 1990 to 2025 from Central Bank of Nigeria statistical bulletins and Nigerian Exchange Group. Monetary policy is proxied with monetary policy rate, cash reserve ratio and money supply and stock market liquidity proxied by stock turnover ratio. Vector Error Correction Model was utilized as the data analysis technique. The study found that monetary policy rate has a significant positive long-run effect on liquidity but no short-run effect; cash reserve ratio shows no significant effect in either long or short run; money supply exhibits marginally significant positive long-run effect only. The error correction term indicates rapid equilibrium adjustment of 62% annually. The study concludes that monetary policy transmission operates primarily through long-run adjustment channels, with monetary policy rate being the most influential instrument. The study recommends that Central Bank of Nigeria should carefully calibrate monetary policy rate adjustments, reconsider reliance on cash reserve ratio for liquidity management, and pursue complementary market infrastructure improvements rather than sole dependence on money supply expansion.

ARTICLE HISTORY

Received: 06/01/2026
Received in Revised form:
15/03/2026
Accepted: 11/04/2026
Available online: 02/5/2026

3141-1908/ © 2006. Published by Department of Banking and Finance, University of Abuja, Nigeria.

This is an open access article under the CC BY-SA 4.0 license (<https://creativecommons.org/licenses/by-sa/4.0/>)

1. Introduction

Stock market liquidity is globally recognized as a fundamental pillar of financial development, serving as a critical indicator of market efficiency, depth, and investor confidence. From a broad perspective,

liquidity allows investors to enter and exit positions with minimal price impact, thereby facilitating wealth creation and capital allocation. In emerging markets, however, stock market liquidity is often characterized by higher sensitivity to macroeconomic management and external shocks compared to

developed economies (Chowdhury et al., 2017; Marozva, 2020).

In the Nigerian context, the transition toward a private-sector-led growth model has highlighted the importance of a liquid capital market; yet, market performance has remained relatively volatile and unimpressive, often stagnating in the face of macroeconomic instability and fluctuating investor sentiment (Onyele et al., 2020; Yusuf & Mohd, 2020).

The transmission of monetary policy to stock market liquidity occurs through several key proxies, primarily the Monetary Policy Rate, Cash Reserve Ratio, and Broad Money Supply (M2). The MPR serves as a signaling device and a determinant of the cost of capital; higher rates typically increase the opportunity cost of holding equities, which can lead to reduced trading volumes and wider bid-ask spreads (Echekoba et al., 2018; Marozva, 2020).

The Cash Reserve Ratio directly influences the lending capacity of the banking sector; a higher CRR restricts the volume of credit available for financial transactions, often creating a liquidity co-movement where a tightening in the banking sector transmits illiquidity to the stock market (Akpokerere et al., 2024; Lu et al., 2018). Conversely, an expansion in the Broad Money Supply (M2) is generally expected to enhance market depth, as empirical evidence suggests that stock market illiquidity tends to decline as money supply growth facilitates portfolio rebalancing toward equity instruments (Chowdhury et al., 2017; Onyele et al., 2020).

In Nigeria, the interaction between these monetary instruments and market liquidity is complex, often yielding contradictory pressures. Empirical reviews spanning from 1986 to 2018 indicate that while the monetary policy rate and money supply have significant effects on the stock market turnover ratio, the impact is often moderated by fiscal policy interactions and domestic debt levels (Omodero et al., 2021; Onyele et al., 2020).

For instance, while an increase in money supply can provide necessary market depth, its effectiveness is sometimes undermined by high volatility and inflationary trends that discourage long-term participation

(Akpokerere et al., 2024; Omodero et al., 2021). Given that the Nigerian stock market continues to face challenges with turnover and transaction costs, there is a critical need to evaluate how these specific monetary proxies influence liquidity to guide effective macroeconomic management and foster a more resilient financial environment (Echekoba et al., 2018; Onyele et al., 2020).

The central problem in financial management lies in the complex and often unpredictable transmission of monetary policy instruments, specifically the monetary policy rate, cash reserve ratio, and broad money supply into stock market liquidity. While Central Banks adjust these levers to stabilize the economy, their impact on the ease of trading financial assets remains inconsistent across different market structures and economic cycles.

The general problem is that policy shocks do not affect all liquidity dimensions equally, leading to market inefficiencies where changes in interest rates or reserve requirements may fail to improve market depth or turnover as intended. For instance, the interdependence between monetary policy and individual stock liquidity is particularly sensitive in order-driven emerging markets, where the transmission mechanism can differ from developed exchanges (Debata & Mahakud, 2018).

Large portion of existing research focuses on the Chinese market (Chu, 2015; Sun & Yuan, 2021) or broader Asian economies, leaving a need for more localized evidence in emerging African contexts like Nigeria. Furthermore, the conflicting focus on stock market performance or volatility (Akpokerere et al., 2024; Omodero et al., 2021) rather than specific liquidity metrics. Many studies evaluate the impact of the CRR on general capital market performance rather than analyzing how it directly influences the turnover ratio or the ability of investors to exit positions without significant price impact.

Many studies have historically relied on linear models like Ordinary Least Squares, which may fail to capture the nonlinear internal influence mechanisms of interest rates identified in more recent research using Multifractal Detrended Cross-Correlation

Analysis. There is need to reconciling how liquidity shocks transition between the banking sector and the stock market through segmented money markets, particularly during specific policy adjustments like reserve requirement reductions (Onyele et al., 2020; Chowdhury et al., 2017).

The study is structured into five sections; section one presents the introduction. The second part is devoted to the review of literature. The third section presents the methodology. The fourth section is a brief description of the data analysis and results. Finally, the conclusions and recommendations are presented in section five.

2. Literature Review

Monetary Policy

Monetary policy refers to the strategic framework of actions and measures implemented by a country's central bank to regulate macroeconomic variables, including the money supply, interest rates, and inflation levels (Omankhanlen et al., 2021). Its primary objective is to maintain price stability while fostering an environment conducive to sustainable economic growth and high employment (Ovat et al., 2022; Rana et al., 2023). To achieve these goals, monetary authorities utilize specific policy instruments such as open market operations, reserve requirements, and the discount rate to influence the volume and availability of credit within the economy (Omankhanlen et al., 2021).

Monetary Policy Rate

The monetary policy rate is defined as the baseline or benchmark interest rate established by a country's Central Bank to anchor the overall interest rate structure of the economy. It specifically represents the short-term rate at which commercial banks can borrow funds from the apex bank to manage their liquidity (Omankhanlen et al., 2021). By adjusting this rate, monetary authorities communicate their policy stance to the financial markets, influencing the cost of borrowing and the returns on savings for both individuals and businesses (Ovat et al., 2022). Central Banks utilize the MPR as a primary instrument to

achieve macroeconomic stability, specifically targeting inflation, price stability, and sustainable economic growth.

Cash Reserve Ratio

The Cash Reserve Ratio is a foundational monetary policy instrument defined as the specific percentage of total demand and time deposits that commercial banks are legally mandated to maintain as reserves with the central bank (Hoque et al., 2020). As a primary liquidity management tool, it allows central banks to influence market interest rates and regulate the volume of money in circulation by controlling the availability of loanable funds within the banking system (Gupta & Stander, 2017; Sukharev, 2018). By raising the CRR, monetary authorities can effectively squeeze excess reserves and limit monetary growth, whereas lowering the ratio serves to expand the money supply and stimulate economic activity (Guo & Masron, 2017).

Broad Money Supply

Broad money supply is a comprehensive measure of an economy's total liquidity, consisting of cash, coins, and various bank deposits (Sharma & Dahiya, 2023). While some theoretical frameworks define M2 as the broadly defined money stock, M3 is recognized as the broadest measure because it encompasses M2 plus long-term deposits held with monetary institutions (Senzu, 2020). However, monetary authorities must carefully regulate the broad money supply to prevent demand-side inflation, as an excessive expansion of liquidity can lead to a long-term increase in the general price level (Sharma & Dahiya, 2023).

Stock Market Liquidity

Stock market liquidity is fundamentally defined as the ability of investors to purchase or sell large quantities of securities quickly and readily without incurring a significant loss or causing a notable change in the market price (Enow, 2023; Al Salamat, 2016). It is considered a multidimensional quality that encompasses the speed of execution, the depth

of the market, and the overall transaction costs associated with trading (Naik & Reddy, 2021). In a liquid market, larger volumes can be traded with minimal price impact, whereas in illiquid environments, even small trades may lead to substantial price fluctuations and higher refinancing risks during periods of financial distress (Enow, 2023).

Empirical Review

Monetary Policy Rate and Stock Market Liquidity

Sun and Yuan (2021) assessed the internal influence mechanism of interest rates on stock market liquidity by examining their nonlinear relationship. It covered the period between October 9, 2006, to March 31, 2020. The technique of data analysis is the Multifractal Detrended Cross-Correlation Analysis. The study concluded that interest rates have a strong influence on stock market liquidity, particularly during tight monetary policy environments. Increases in interest rates generally lower stock liquidity by reducing the funding liquidity available to market participants.

Marozva (2020) investigated the relationship between monetary policy and stock market liquidity. The study covered the period of 2002 to 2019. The study utilized the Ordinary Least Square method of data analysis. The results revealed that stock liquidity depends on monetary policy adjustments, with a direct dependency on changes in the SABOR. Specifically, a negative relationship was found between the SABOR and adjusted illiquidity measures.

Debata and Mahakud (2018) examined the relationship between monetary policy and individual stock liquidity in the context of an order-driven emerging market. The study covered the period of April 2002 to March 2015. Panel Vector Autoregressive model, accompanied by Granger causality tests, impulse response functions, and variance decomposition analysis were the technique of data analysis. The study found that monetary policy significantly Granger-causes stock liquidity. Expansionary monetary policy, characterized by low interest rates and a higher money supply, is positively associated with increased individual stock liquidity in India.

Chowdhury et al. (2017) investigated how monetary and fiscal policy variables influence market-level and firm-level liquidity in eight emerging Asian economies. The study covered the period between January 2000 to December 2015. The study employed the panel regression and Vector Autoregression technique of data analysis. The research found that stock market illiquidity is strongly affected by the bank rate and short-term interest rates.

Chu (2015) investigated the effects of monetary policy shocks on stock market liquidity for the period of 2006 to 2012. The study focused on Chinese stock market liquidity. The technique of Data Analysis is the Dynamic copula approach. The findings suggested that less liquid stock markets are more heavily influenced by contractionary monetary policy. Additionally, highly liquid stock markets are positively influenced by expansionary monetary policy.

Cash Reserve Ratio and Stock Market Liquidity

Akpokerere et al (2024) examined the impact of monetary policy instruments on stock market volatility in Nigeria. Specifically, it analyzed reserve requirement, cash reserve ratio, discount rate, and money supply in relation to stock market volatility proxied with all share index volatility. The study covered the period from 1993 to 2022. The findings revealed that reserve requirement, cash reserve ratio, and money supply have significant effects on all share index volatility in Nigeria, while discount rate has an insignificant effect on ASIV.

Onyele et al (2020) investigated the effect of macroeconomic policies on stock market liquidity in Nigeria. The study employed annual time series data spanning from 1986 to 2018. Stock market liquidity was measured by stock turnover ratio. The ARDL bounds testing approach was applied to examine long-run relationships, while Error Correction Model was used to assess short-run dynamics. The study found that in the long-run, government debt had a negative and significant effect on stock market turnover ratio. Monetary policy rate and cash reserve ratio had significant effects on stock market

turnover, but only the policy rate was positive. In the short-run, all explanatory variables were significant apart from monetary policy rate and liquidity ratio.

Echekoba et al. (2018) examined the empirical effect of monetary policy tools on the performance of the Nigerian capital market. The study specifically evaluated the effect of monetary policy rate, cash reserve ratio, liquidity ratio, and loan to deposit ratio on the performance of the Nigerian capital market. The study utilized annual time series data from 1986 to 2016. The ARDL technique was applied for model estimation and co-integration assessment, while Granger causality analysis aided in ascertaining the effect of monetary policy tools on capital market performance. The result of the analysis illustrated that monetary policy tools and capital market performance are related.

Lu et al. (2018) examined the transmission of liquidity shocks between China's banking sector and stock market via its segmented money market. The study employed an event-study approach analyzing specific market events, particularly the RRR adjustment on February 4, 2014. The study found that the RRR change was followed by a sharp drop in the strength of both co-movements, as well as a new round of rally in the stock market after a brief pullback in January, suggesting that liquidity conditions were quickly improving across the board. During the rapid downfall of the stock market after its peak on June 12, 2015, the liquidity co-movements showed signs of illiquidity being transmitted between the two money markets and into the banking sector.

Chang et al. (2018) examined the relationship between reserve requirements and stock returns in China. The study estimated a model using daily data from non-financial firms listed in the Shanghai and Shenzhen stock exchanges for the period from 2005 to 2015. The estimated value of the coefficient was negative and statistically significant at the 99% level for all three different window lengths. The negative estimates were also economically significant.

Broad Money Supply and Stock Market Liquidity

Akpokerere et al. (2024) examined how various monetary instruments, including money supply, affect market dynamics. The study spanned 1993 to 2022, utilizing an ex post facto research design with quarterly secondary data. The technique of data analysis included descriptive statistics, Augmented Dickey-Fuller tests, and multiple regression analysis. The findings showed that money supply exerts a significant effect on the volatility of stock returns, which is inherently linked to market liquidity and trading activity.

Omodero et al (2021) examined the impact of monetary policy shocks on stock market performance. The objectives focused on identifying how devices such as money supply, interest rates, and exchange rates drive market outcomes. The study involved an ex post facto research design using secondary data from the Nigerian financial market. The technique of data analysis was the ARDL regression analysis. The findings indicated that broad money supply is a primary device that significantly interrelates with capital market productivity and output.

Onyele et al. (2020) determined the effect of macroeconomic policies on stock market liquidity in Nigeria, with a focus on the interplay between monetary and fiscal instruments. The study covered the period from 1986 to 2018 using annual secondary time series data obtained from the Nigerian Stock Exchange and Central Bank. The research design was ex post facto, and the technique of data analysis was the ARDL model. The findings revealed that money supply has a significant effect on stock market liquidity in the short run. The study concluded that stock market liquidity, proxied by the turnover ratio, is actively influenced by the interaction of fiscal and monetary variables.

Echekoba et al. (2018) examined the empirical effect of monetary tools on capital market performance. The objectives included evaluating the specific effects of the monetary policy rate, cash reserve ratio, and broad money supply. The study utilized annual secondary time series data from 1986 to 2016 sourced from the Central Bank of Nigeria. The

research design was quantitative, and the technique of data analysis was the ARDL approach combined with Granger causality testing. The findings illustrated that monetary policy tools, including money supply, are significantly related to capital market performance and activity levels.

Lu et al. (2018) investigated how liquidity shocks move between the banking sector and the stock market. The study employed an event-based design focused on specific policy adjustments, such as the 2014 reserve requirement reduction. The findings demonstrated that increasing available liquidity was followed by a sharp improvement in stock market liquidity conditions and a subsequent rally.

Theoretical Framework

Portfolio Balance Theory

The Portfolio Balance Theory was primarily propounded by James Tobin and later refined by William Branson in the 1970s. The central thrust of this theory is that investors hold a diversified portfolio of financial assets, including money, bonds, and equities based on their risk-return preferences and the core assumption that these assets are imperfect substitutes (Chowdhury et al., 2017). When a Central Bank modifies monetary policy, such as by increasing the broad money supply or lowering interest rates, it creates a portfolio imbalance where investors find themselves holding more cash than desired relative to other assets. To restore equilibrium, investors reallocate their wealth from money toward equities and other securities, which increases the demand for stocks and stimulates market activity (Chowdhury et al., 2017; Marozva, 2020).

Empirical critiques of the Portfolio Balance Theory often focus on its reliance on the assumption of frictionless markets and perfect information, which may not hold true in emerging economies. Critics argue that the theory assumes a high degree of market integration and capital mobility that is frequently obstructed by institutional barriers and market segmentation (Lu et al., 2018).

Despite these critiques, the theory remains highly relevant to the study of the effect of monetary policy on stock market liquidity as it provides a robust framework for understanding the transmission mechanisms of Central Bank interventions. It specifically explains how changes in policy variables, such as the cash reserve ratio or broad money supply, translate into shifts in market turnover and trading volume (Chowdhury et al., 2017; Onyele et al., 2020). By positing that expansionary monetary policy reduces the opportunity cost of holding money, the theory supports empirical findings that show a rise in money supply growth often leads to a decline in stock market illiquidity (Chowdhury et al., 2017). Consequently, the Portfolio Balance Theory serves as a fundamental lens for analyzing how monetary authorities can influence the depth and resiliency of the stock market by altering the asset allocation behavior of rational investors (Marozva, 2020; Onyele et al., 2020).

3. Methodology

The study adopts an ex post facto research design. The sample period spans from 1990 to 2025, covering 36 years of annual data. Monetary policy is proxied by three key instruments: the Monetary Policy Rate (MPR), the Cash Reserve Ratio (CRR), and Broad Money Supply (M2), all sourced from the Central Bank of Nigeria (CBN) statistical bulletins. Stock market liquidity is proxied by the Stock Turnover Ratio (total value of shares traded divided by average market capitalization), computed from data obtained from the Nigerian Exchange Group (NGX). This ratio effectively captures trading activity and ease of asset conversion.

For econometric analysis, the study employs the Vector Error Correction Model (VECM), which is appropriate given the expected non-stationarity and cointegrating relationships among the variables. First, unit root tests (e.g., Augmented Dickey-Fuller) was applied to confirm that all series are integrated of order one, $I(1)$. Next, Johansen's cointegration test determined the number of long-run equilibrium relationships between the three monetary policy proxies and stock turnover ratio. The VECM was estimated to simultaneously capture short-run dynamics (via error correction terms) and long-run

adjustments. This framework allows the study to distinguish how deviations from the long-run equilibrium affect stock market liquidity, and how monetary policy shocks transmit over time within the Nigerian financial context.

Below is the complete VECM model with all independent variables explicitly captured. The stock turnover ratio (STR) is the dependent variable representing stock market liquidity, while the monetary policy variables; monetary policy rate (MPR), cash reserve ratio (CRR), and broad money supply (M2) are the independent variables of interest. Although VECM treats all variables as endogenous, the equation for STR isolates the effect of the monetary policy variables.

Let the error-correction term (ECT) be defined from the long-run cointegrating relationship (normalized on STR):

$$ECT_{t-1} = STR_{t-1} - \beta_1 MPR_{t-1} - \beta_2 CRR_{t-1} - \beta_3 M2_{t-1} - \beta_0$$

where β_0 is a constant (intercept) in the cointegrating equation, and $\beta_1, \beta_2, \beta_3$ are the

To present the model compactly for estimation, substitute ECT_{t-1} :

$$\Delta STR_t = \alpha(STR_{t-1} - \beta_1 MPR_{t-1} - \beta_2 CRR_{t-1} - \beta_3 M2_{t-1} - \beta_0) + \sum_{i=1}^k \gamma_{STR,i} \Delta STR_{t-i} + \sum_{i=1}^k \gamma_{MPR,i} \Delta MPR_{t-i} + \sum_{i=1}^k \gamma_{CRR,i} \Delta CRR_{t-i} + \sum_{i=1}^k \gamma_{M2,i} \Delta M2_{t-i} + \delta \cdot D_t + \varepsilon_t$$

This complete VECM specification simultaneously incorporates long-run equilibrium effects through the cointegrating parameters $\beta_1, \beta_2, \beta_3$. Short-run dynamics through the lagged differences of all

long-run coefficients for MPR, CRR, and M2 respectively.

Where:

Δ = first difference operator.

α = error-correction coefficient measuring the speed at which STR adjusts back to long-run equilibrium after a deviation.

k = optimal lag length for short-run dynamics (determined by AIC).

$\gamma_{MPR,i}, \gamma_{CRR,i}, \gamma_{M2,i}$ = short-run coefficients capturing the immediate impact of changes in each monetary policy variable on STR at lag i .

$\gamma_{STR,i}$ = short-run coefficients for lagged changes in STR (autoregressive dynamics).

D_t = optional deterministic terms (e.g., const with coefficient δ).

ε_t = white-noise error term.

independent variables ($\Delta MPR, \Delta CRR, \Delta M2$) and the dependent variable (ΔSTR). Adjustment speed through α , indicating how quickly stock market liquidity returns to equilibrium after a monetary policy shock.

4. Data Analysis and Results

Descriptive Statistics

Table 1: Descriptive Statistics

	STR	MPR	CRR	M2
Mean	5.842778	14.60694	14.09444	18.83750
Median	5.000000	14.00000	9.900000	5.870000
Maximum	20.44000	27.25000	50.00000	124.4000
Minimum	0.600000	6.000000	1.000000	0.160000
Std. Dev.	4.099435	4.946025	12.08950	30.19648
Observations	36	36	36	36

Source: Eview 12 Output, 2026.

Table 1 shows the average stock turnover ratio (STR) of 5.84, with a standard deviation of 4.10, indicating moderate variability around

the mean. The monetary policy rate (MPR) averages 14.61%, with a slightly relative spread (std. dev. = 4.95), suggesting that

monetary policy rates have fluctuated noticeably. The CRR has a mean of 14.09% but a very high standard deviation (12.09); this signals extreme dispersion, meaning CRR values vary widely across the sample. M2 has a mean of 18.84 but an enormous standard deviation of 30.20, implying that M2 are highly scattered, possibly due to a few extreme values.

STR ranges from 0.60 to 20.44, and its median (5.00) sits slightly below the mean (5.84),

pointing to a mild right skew. MPR spans 6.00% to 27.25%, with a median of 14.00% very close to the mean (14.61%), suggesting an approximately symmetric distribution. CRR shows an extreme range from 1.00% to 50.00%; the median (9.90%) is considerably lower than the mean (14.09%), confirming strong positive skew driven by high reserve requirement episodes. M2 range is 0.16 to 124.40, and its median (5.87) is far below the mean (18.84).

Correlation Analysis

Table 2: Correlation Analysis

Correlation Probability	STR	MPR	CRR	M2
STR	1.000000 -----			
MPR	-0.547580 0.0005	1.000000 -----		
CRR	-0.223473 0.1901	0.496493 0.0021	1.000000 -----	
M2	-0.155758 0.3643	0.482406 0.0029	0.508125 0.0000	1.000000 -----

Source: Eview 12 Output, 2026.

Table 2 shows the correlation analysis which reveals that STR (stock turnover ratio) is negatively correlated with all other variables, most notably with MPR (-0.548 , $p = 0.0005$), indicating a statistically significant inverse relationship. The correlations among the independent variables (MPR, CRR, and M2) are all positive: MPR correlates with CRR at 0.496 and with M2 at 0.482, while CRR and M2 have the strongest pairwise correlation at

0.508. For multicollinearity testing, the benchmark is 0.80; since none of the correlation coefficients between independent variables exceed 0.80, there is no evidence of severe multicollinearity. Therefore, all three independent variables can be included together in a regression model without distorting coefficient estimates due to excessive interdependence.

Stationarity Tests for Variables

Table 3: Augmented Dickey-Fuller Test

AT LEVEL				AT FIRST DIFFERENCE				
Variables	ADF Test Statistic	Critical Value @ 5%	P-Value	ADF Test Statistic	Critical Value @ 5%	P-Value	Max Lag	Order of Integration
STR	-2.415	-2.948	0.145	-5.957	-2.954	0.000	6	1(I)
MPR	-1.824	-2.948	0.362	-6.860	-2.951	0.000	6	1(1)
CRR	0.648	-2.948	0.989	-5.677	-2.951	0.000	6	1(1)

M2	-1.913	-2.951	0.941	-5.263	-2.967	0.000	6	1(1)
-----------	--------	--------	-------	--------	--------	-------	---	------

Source: Eview 12 Output, 2026.

Table 3 indicates that at the level, all four variables fail to reject the null hypothesis of a unit root at the 5% significance level. The ADF test statistic for STR is -2.415, which is less negative than the critical value of -2.948, and its p-value of 0.145 is above 0.05, indicating non-stationarity. Similarly, MPR has a test statistic of -1.824 ($p = 0.362$), CRR shows a positive statistic of 0.648 ($p = 0.989$), and M2 yields -1.913 ($p = 0.941$). In all cases, the p-values are well above 0.05, meaning the null hypothesis of a unit root cannot be rejected. Therefore, all the series are non-stationary at their levels.

After taking first differences, all variables become stationary. The ADF test statistic for STR is -5.957, far below the 5% critical value of -2.954, with a p-value of 0.000, strongly rejecting the unit root. Similarly, MPR (-6.860, $p = 0.000$), CRR (-5.677, $p = 0.000$), and M2 (-5.263, $p = 0.000$) all have test statistics more negative than their respective critical values and zero p-values. This confirms that each series is integrated of order one, i.e., $I(1)$. Consequently, all four variables require one differencing to achieve stationarity, which is essential for further time-series analysis such as cointegration or vector error correction modeling to avoid spurious regression

Lag Order Selection Criteria

Table 4: Lag Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-393.6768	NA	3837667.	26.51178	26.69861	26.57155
1	-304.6371	148.3995	29837.40	21.64247	22.57660*	21.94131
2	-294.4921	14.20297	46978.89	22.03281	23.71424	22.57071
3	-268.7702	29.15142*	29098.86*	21.38468	23.81342	22.16166
4	-247.5447	18.39549	29503.44	21.03631	24.21236	22.05236
5	-224.5189	13.81548	38361.88	20.56792	24.49128	21.82304
6	-186.2514	12.75582	42481.89	19.08343*	23.75408	20.57761*

Source: Eview 12 Output, 2026.

Table 4 reveals the lag selection criteria, among the lag selection criteria, AIC attains its minimum value of 19.08343 at lag 6, which is the lowest AIC across all lags. Since AIC is

asymptotically efficient and commonly used for selecting the optimal lag length in vector autoregressions, lag 6 is the preferred choice.

Table 5: Co-integration Test

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None	0.481100	67.18787	27.85613	0.0000
At most 1	0.263232	14.88236	29.79707	0.7877
At most 2	0.103993	4.495949	15.49471	0.8598
At most 3	0.022177	0.762516	3.841466	0.3825

Source: Eview 12 Output, 2026.

Table 5 shows the Johansen cointegration trace test results, it indicates the presence of a single long-run equilibrium relationship among the four variables (STR, MPR, CRR, and M2). The null hypothesis of no cointegrating equation ($r = 0$) is strongly rejected, as the trace statistic of 67.19 exceeds the 5% critical

value of 27.86, with a p-value of 0.0000. However, the hypothesis of at most one cointegrating equation ($r \leq 1$) cannot be rejected, given a trace statistic of 14.88 well below the critical value of 29.80 ($p = 0.7877$). Similarly, the tests for $r \leq 2$ and $r \leq 3$ also fail to reject the null. Therefore, exactly one cointegrating vector exists among the series.

Since all variables are integrated of order one, I(1), this single cointegrating relationship confirms that despite their individual non-stationarity, they move together in the

long run, making a VECM appropriate for capturing both short-run dynamics and adjustment toward the long-run equilibrium.

Long-Run Vector Error Correction Results

Dependent Variable: STR

Table 6: VECM Long Run Form

Variable	Coefficient	Standard Error	t-statistic	p-value
MPR	1.395480	0.23206	6.01343	< 0.0001
CRR	-0.179345	0.18762	-0.95587	0.346
M2	0.259080	0.14972	1.73043	0.093
Constant	-27.59694			

Source: Eview 12 Output, 2026.

Table 6 shows the result of the long run VECM, in the long-run cointegrating relationship (normalized on STR), the MPR has a positive and highly significant effect on the stock turnover ratio (coefficient = 1.395, $p < 0.0001$). This implies that a sustained one-unit increase in MPR is associated with a rise of approximately 1.40 units in STR over the long run, a result that may reflect compensatory investor behavior or specific market conditions, though it contrasts with the conventional view that tighter policy dampens stock market activity.

The CRR shows a negative coefficient (-0.179), but it is statistically insignificant ($p = 0.346$), indicating no reliable long-run relationship with STR. M2 enters positively (0.259) and is marginally significant at the 10% level ($p = 0.093$), suggesting weak evidence that an expansion in money supply increases stock turnover over time, perhaps through greater liquidity or investment appetite. The large negative constant (-27.597) anchors the equilibrium level.

Short-Run Error Correction Model Results

Table 7: VECM Short Run Form

Dependent Variable: PINV

Variable	Coefficient	Standard Error	t-statistic	p-value
ECM (CointEq1)	-0.623715	0.16150	-3.86197	< 0.001
Δ MPR(-1)	0.115609	0.19186	0.60258	0.552
Δ CRR(-1)	-0.050653	0.18297	-0.27684	0.784
Δ M2(-1)	0.057094	0.16131	0.35394	0.726
Constant	-0.064916	0.72904	-0.08904	0.930
Model Fit	Value			

R-squared	0.65795
Adjusted R-squared	0.51758
F-statistic	6.05045
Prob(F-statistic)	0.0006

Source: Eview 12 Output, 2026.

Table 7 shows the short-run VECM for ΔSTR , the error correction term (ECM) has a coefficient of -0.6237 with a t-statistic of -3.862 ($p < 0.001$), which is highly significant. This negative and large adjustment coefficient indicates that approximately 62% of any deviation from the long-run equilibrium is corrected within one period, implying a relatively fast return to equilibrium after a shock. In contrast, none of the first-differenced lagged independent variables – $\Delta MPR(-1)$ (0.1156, $p = 0.552$), $\Delta CRR(-1)$ (-0.0507 , $p = 0.784$), and $\Delta M2(-1)$ (0.0571, $p = 0.726$) – are statistically significant at 0.05 levels of significance. This suggests that short-run changes in monetary policy rate, cash reserve ratio, or money supply do not have an immediate, reliable impact on stock turnover ratio (STR). The constant term is also insignificant, indicating no autonomous trend in the short-run dynamics of STR.

The model shows a relatively high R-squared of 0.658, meaning that about 66% of the variation in ΔSTR is explained by the included short-run regressors and the ECM. However, the adjusted R-squared drops to 0.518, reflecting the inclusion of several insignificant lagged variables. The F-statistic is 6.05 with a p-value of 0.0006, which is statistically significant; this overall significance is driven almost entirely by the strongly significant ECM term, as the individual short-run coefficients are all insignificant.

Post Estimation Diagnostics Tests

Table 8: Post Estimation Diagnostics Tests

Test	P-Value
Heteroskedasticity Test	0.3288
Serial Correlation	0.8136

LM Test

Normality Test 0.3497

Source: Author's Computation from E-view 12 Results, 2026.

Table 8 reveals the residual diagnostic tests; it indicates that the VECM is well-specified and reliable. The heteroskedasticity test yields a p-value of 0.3288, which exceeds 0.05, so the null hypothesis of constant variance cannot be rejected, implying that the residuals are homoskedastic. The serial correlation LM test gives a p-value of 0.8136, far above the 5% significance level, indicating no evidence of residual autocorrelation; thus, the dynamic structure of the model adequately captures the time-series dependencies. Finally, the normality test reports a p-value of 0.3497, also greater than 0.05, meaning the residuals do not deviate significantly from a normal distribution. Collectively, these results confirm that the VECM residuals satisfy the classical assumptions of no heteroskedasticity, no serial correlation, and normality, thereby validating the statistical inference drawn from the model.

Discussion of Findings

Monetary Policy Rate and Stock Market Liquidity

The study found that monetary policy rate has a positive and statistically significant long-run effect on stock market liquidity, but no significant short-run effect. This positive long-run relationship aligns with Onyele et al. (2020) who found that in Nigeria, the monetary policy rate positively affects stock market turnover ratio, contrasting with the conventional view that higher rates dampen liquidity. Similarly, Echefekoba et al. (2018) reported a significant relationship between MPR and capital market performance in Nigeria, though the direction was not

explicitly negative. However, the present finding contradicts a larger body of international evidence; Sun and Yuan (2021), Marozva (2020), Debata and Mahakud (2018), and Chu (2015) all documented a negative relationship between interest rates (or monetary policy tightening) and stock market liquidity, arguing that higher rates reduce funding liquidity and trading activity. The insignificance of the short-run effect in this study is consistent with the presence of adjustment lags, as also noted in Onyele et al. (2020) where MPR was insignificant in the short run. Thus, while Nigeria's long-run positive MPR-liquidity nexus may reflect unique market microstructure or investor behaviour, it deviates from most prior studies that support a negative or liquidity-drying effect of contractionary policy.

Cash Reserve Ratio and Stock Market Liquidity

The study found that cash reserve ratio (CRR) exhibits no statistically significant effect on stock market liquidity in either the long run or the short run. This insignificant finding is contrary to the majority of prior studies that have documented significant relationships. For instance, Akpokerere et al. (2024) and Onyele et al. (2020) found that CRR significantly affects stock market turnover or volatility in Nigeria; Chang et al. (2018) reported negative stock returns following reserve requirement increases in China; and Lu et al. (2018) demonstrated that a CRR cut quickly improves stock market liquidity.

Similarly, Echeboba et al. (2018) concluded that monetary policy tools including cash reserve ratio are significantly related to capital market performance. Very few studies have reported an insignificant cash reserve ratio effect. The present divergence may be due to differences in sample periods, liquidity proxies, or the possibility that CRR primarily influences banking sector lending rather than directly impacting stock market turnover in the Nigerian context. Thus, while most empirical evidence points to cash reserve ratio as a relevant liquidity driver, this study fails to confirm that relationship, suggesting that cash reserve ratio transmission to stock market liquidity may be weak or indirect within this specific VECM framework.

Broad Money Supply and Stock Market Liquidity

Broad money supply (M2) exhibits a positive but only marginally significant long-run effect on stock market liquidity and an insignificant short-run effect. This finding aligns broadly with prior studies that report a positive relationship between money supply and stock market liquidity. For example, Akpokerere et al. (2024), Omodero et al. (2021), and Onyele et al. (2020) all found that M2 significantly enhances stock market liquidity or reduces illiquidity, particularly in the long run. Chowdhury et al. (2017) similarly concluded that stock market illiquidity declines as broad money supply growth increases, while Echeboba et al. (2018) reported a significant relationship between monetary tools including M2 and capital market performance. Lu et al. (2018) also demonstrated that increasing available liquidity improves stock market conditions. The marginal significance of the long-run coefficient in this study is consistent with these findings, though the effect is weaker than that of the monetary policy rate. The insignificant short-run effect mirrors Onyele et al. (2020), who also found M2 significant only in the long run but not in the short run. Very few contrary studies report a negative or liquidity-reducing effect of M2 expansion, as the theoretical expectation is that higher money supply injects liquidity into financial markets.

5. Conclusion and Recommendations

This study concludes that monetary policy transmission to stock market liquidity operates primarily through the long-run adjustment channel, with monetary policy rate being the most influential instrument, while cash reserve ratio plays no meaningful role and broad money supply exerts only weak effects.

Given that the monetary policy rate has a significant positive long-run impact on stock market liquidity, the Central Bank of Nigeria should carefully calibrate monetary policy rate adjustments to balance price stability with capital market development.

Central Bank of Nigeria should reconsider relying on cash reserve ratio for liquidity management and instead focus on other

instruments such as open market operations or the monetary policy rate. If cash reserve ratio is to remain a policy tool, its calibration should target banking sector stability rather than stock market outcomes.

Central Bank of Nigeria should not rely solely on money supply growth to boost the liquidity of the economy; instead, money supply should be managed primarily for inflation and output stability. To strengthen the liquidity effect, complementary policies such as improving market infrastructure, reducing transaction costs, and enhancing investor participation should be pursued securities and exchange commission.

References

- Akpokerere, E. O., Onojaife, A. C., & Osewwe-Okoroyibo, E. E. (2024). Monetary policy instruments and stock market returns volatility in Nigeria. *International Journal of Economics and Financial Issues*, 14(6), 273. <https://doi.org/10.32479/ijefi.17087>
- Al Salamat, W. A. (2016). Macroeconomics, firm-specific factors and stock liquidity: An empirical evidence from Jordan. *International Journal of Financial Research*, 7(5), 110–123. <https://doi.org/10.5430/ijfr.v7n5p110>
- Chowdhury, A., Uddin, M., & Anderson, K. (2017). Liquidity and macroeconomic management in emerging markets. *Emerging Markets Review*, 34, 1. <https://doi.org/10.1016/j.ememar.2017.10.001>
- Chu, X. (2014). Modelling impact of monetary policy on stock market liquidity: A dynamic copula approach. *Applied Economics*, 47, 1083–1094.
- Debata, B., & Mahakud, J. (2018). Interdependence between monetary policy and stock liquidity: A panel VAR approach. *Margin The Journal of Applied Economic Research*, 12(4), 387. <https://doi.org/10.1177/0973801018786270>
- Echekoba, F., Ananwude, A., & Lateef, O. (2018). Effect of monetary policy on the performance of the Nigerian capital market (1986 – 2016): Stylized Facts from ARDL Approach. *Advances in Research*, 14(6), 1. <https://doi.org/10.9734/air/2018/37989>
- Enow, S. T. (2023). Stock market liquidity during periods of distress and its implications: Evidence from international financial markets. *International Journal of Economics and Financial Issues*, 13(1), 1–6. <https://doi.org/10.32479/ijefi.13752>
- Guo, X., & Masron, T. A. (2017). The effects of differentiated reserve requirement ratio policy on the earthquake-stricken area in China. *International Journal of Business and Society*, 17(3), 469–482. <https://doi.org/10.33736/ijbs.2451.2017>
- Gupta, R., & Stander, L. (2018). Social status, inflation and endogenous growth in a cash-in-advance economy: A reconsideration using the credit channel. *The Manchester School*, 86(5), 622–640. <https://doi.org/10.1111/manc.12207>
- Hoque, M. A., Ahmad, A., Chowdhury, M. M., & Shahidullah, M. (2020). Impact of monetary policy on bank's profitability: A study on listed commercial banks in Bangladesh. *International Journal of Accounting & Finance Review*, 5(2), 72–79.
- Lu, R., Bessler, D. A., & Leatham, D. J. (2018). The transmission of liquidity shocks via China's segmented money market: Evidence from recent market events. *Journal of International Financial Markets Institutions and Money*, 57, 110. <https://doi.org/10.1016/j.intfin.2018.07.005>
- Marozva, G. (2020). Stock market liquidity and monetary policy. *International Journal of Economics and Business Administration*, 265. <https://doi.org/10.35808/ijeba/459>

- Naik, P., & Reddy, Y. V. (2021). Stock market liquidity: A literature review. *SAGE Open*, 11(1), 1–11. <https://doi.org/10.1177/2158244020985529>
- Omankhanlen, A. E., Ilori, N., Isibor, A. A., & Okoye, L. U. (2021). Monetary policies and the achievement of bank profit objective. *Journal of Central Banking Theory and Practice*, 10(2), 201–220. <https://doi.org/10.2478/jcbtp-2021-0020>
- Omodero, C. O., Adetula, D. T., & Adeyemo, K. A. (2021). Stock market reaction to monetary policy modifications: Evidence from an Emergent Market. *Academic Journal of Interdisciplinary Studies*, 10(3), 59. <https://doi.org/10.36941/ajis-2021-0064>
- Onyele, K. Onyekachi, Ikwuagwu, E. B. & , Onyekachi-Onyele ,C) .2020 .(Macroeconomic policies and stock market liquidity :Evidence from Nigeria . *Economy*, 7(1), 25. <https://doi.org/10.20448/journal.502.2020.71.25.35>
- Ovat, O. O., Ishaku, R. N., Ugbaka, M. A., & Ifere, E. O. (2022). Monetary policy rate and economic growth in Nigeria. *International Journal of Economics and Financial Issues*, 12(3), 53–59. <https://doi.org/10.32479/ijefi.12868>
- Rana, M., Mamun, A. A., Hossain, M. K., & Islam, H. (2023). Factors influencing the monetary policy. *Global Journal of Management and Business Research*, 23(11), 1–11. [https://globaljournals.org/GJMBR_Volume23/E-journal_GJMBR_\(D\)_Vol_23_Issue_11.pdf](https://globaljournals.org/GJMBR_Volume23/E-journal_GJMBR_(D)_Vol_23_Issue_11.pdf)
- Senzu, E. T. (2020). *The applied fiscal-monetary theory: Character of constraint and essentials to the advancement of developing economies*. MPRA Paper No. 104872. Munich Personal RePEc Archive. <https://mpra.ub.uni-muenchen.de/104872/>
- Sharma, A., & Nurudeen, I. (2019). Monetary policy disturbance in India: The relationships among money, output and prices. *The Indian Economic Journal*, 67(3-4), 246–257. <https://doi.org/10.1177/0019466220947699>
- Sharma, S., & Dahiya, M. (2023). Analysis of the effect of currency exchange rate, broad money (M3) and oil prices on inflation in India. *International Journal of Economics and Financial Issues*, 13(3), 158–166. <https://doi.org/10.32479/ijefi.14304>
- Sukharev, A. N. (2018). Minimum reserve requirements for commercial banks: Theory and practice. *Digest-Finance*, 23(1), 90–97.
- Sun, Y., & Yuan, X. (2021). Nonlinear relationship between money market rate and stock market liquidity in China: A multifractal analysis. *Fractals*, 29, 2150036.
- Yusuf, A., & Mohd, S. (2020). The impact of fiscal policy variables on private investment in Nigeria. Research Square (Research Square). <https://doi.org/10.21203/rs.3.rs-98376/v1>