



Stock Market Liquidity and Stock Market Performance in Nigeria: Evidence from the Nigerian Exchange Limited

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ABSTRACT

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Insufficient liquidity can become a significant obstacle to stock trading and impede the smooth operation and performance of the stock market. This motivated the study to investigate the effect of stock market liquidity on stock market performance in Nigeria. The research design employed was ex post facto, while stratified sampling technique was used to select top 30 actively traded and most liquid companies tagged NGX-30 for this study. Data were sourced secondarily from SEC Statistical Bulletin, CBN Statistical Bulletin and www.investing.com. The Vector Error Correction (VEC) System Equation Regression was employed as the estimation technique. The results revealed that liquidity depth, liquidity breadth, and liquidity immediacy have significant positive effects on stock market performance as shown by $\beta = 0.2019, 8.5594, 3.3268$; p -value = 0.0329, 0.0052, 0.0467 respectively. Also, interest rate, inflation rate and exchange rate have varied significant effects on stock market performance as shown by $\beta = -0.0023, -1.1738, 0.03432$; p -value = 0.0634, 0.0346, 0.0778 respectively. Therefore, the study concluded that stock liquid significantly affects stock market performance. Thus, the study recommended that the Security and Exchange Commission (SEC) should implement policies that encourage the participation of more traders to increase the number of actively traded stocks; support measures that improve the depth of the market by promoting transparency and fairness; improve the infrastructure for trade execution to enhance liquidity immediacy; and develop mechanisms to promptly identify and mitigate market risks.



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1. Introduction

The reason why businesses list on exchanges is to maximize their capacity to raise money, liquidity, and visibility, with the ultimate goal of raising the value of their shares and improving the overall company performance. This is achieved when high stock volume can be transacted smoothly and efficiently while reducing the influence of price swings (Mortazian, Tabaghdehi, & Mase, 2019; Musneh, Abdul Karim, & Arokiadasan Baburaw, 2021). Stock exchanges are crucial for effectively allocating limited resources, promoting economic activities, and facilitating risk-sharing among competing needs. To instill confidence in

individuals and encourage their participation in the stock market, it is essential that securities are accurately priced and easily convertible to cash at a reasonable cost.

The role of stock markets in providing liquidity and serving as a global platform for easily converting investments in securities is of utmost importance. Naik, Poornima, and Reddy (2020) emphasize the significance of a liquid market that allows continuous trading of securities in any quantity at prices closely aligned with their current market value, within a short timeframe. Stock market liquidity plays a vital role in ensuring the stability of the financial system, as it enables the absorption of systematic shocks and macroeconomic fluctuations. However, recent financial crises like the COVID-19 epidemic and global financial crises have demonstrated that financial markets can face deteriorating conditions, resulting in significant reductions or even complete disappearance of liquidity (Abdulkadir, Olatinwo, & Afolabi, 2022; Naik & Reddy, 2021).

According to Abdullahi and Fakunmoju (2019), an efficiently operating and highly liquid financial market is a significant driver of sustainable development and growth. Liquidity's significance for the pricing of financial assets and accompanied returns or losses is emphasized by Díaz and Escribano (2019). Thus, prior research has emphasized the significance of firms actively adopting corporate policies that promote the marketability of their publicly offered equities. The underlying rationale is that improved convertibility results in higher stock prices and lower capital costs, which eventually increase the firm's market value (Chia, Lim, & Goh, 2020). The literature has further highlighted various additional benefits linked to liquidity enhancement, such as improved corporate governance, more informative stock prices, increased alignment of managerial pay-for-performance with stock prices, and decreased risk of corporate bankruptcy (Huang, Wu, Yu, & Zhang, 2020).

Even when there is strong empirical support for the advantages of increasing market liquidity, it is important to consider why not all firms actively pursue liquidity-increasing policies. Managers must carefully weigh the associated costs of providing adequate liquidity against valuation premium. Thus, the significance of considering the potential drawbacks of liquidity on firm value was underscored by (Batten & Vo, 2019). These drawbacks include direct expenses for educating investors and growing the investor base, as well as repercussions for enterprises' competitive advantage and agency costs. Also, increased liquidity might hinder productivity and expose businesses to an increased risk of hostile takeovers. Due to the withholding of bad managerial news, liquid firms may also be more vulnerable to price crashes. Consequently, it makes sense to plan for an ideal level of liquidity that balances marginal benefit and cost (Larojan & Thayaparan, 2019).

According to Ali, Hussin, and Ghani (2019), since liquidity affects a company's financial costs, growth potential, operational changes, level of risk, and profitability in the long run, it is a critical problem for both internal and external stakeholders. Thus, companies should figure out how much cash is best for them to have on hand to balance liquidity and profitability. This is so because profitability is affected in a variety of ways by varied amounts of liquidity. Companies run into issues when they emphasize boosting profits over the impact on liquidity, which can result in technical and financial problems (Ali, Bakar, & Ghani, 2018).

Past studies such as Hanh and Dut (2022) and Cheriyan and Lazar (2019), indicated that liquidity proxies such as trading volume can explain the link connecting liquidity to the generated returns from assets. However, these studies lack comprehensive grasp of the assessment of how liquidity depth, liquidity breadth, and liquidity immediacy affect stock market performance. This omission creates a significant knowledge gap in terms of omitted-variable bias and a geographical gap in research. Therefore, it is crucial to understand how liquidity depth, liquidity breadth, and liquidity immediacy influences stock market performance, especially during periods when stock prices are less connected to their intrinsic values. Such understanding is of great importance to investors, policymakers, regulators, and academics, particularly in Nigeria. Moved by this gap, this study explored how stock liquidity affects stock market performance in Nigeria.

2. Literature Review

2.1. Stock Market Liquidity

Stock market liquidity is concerned with the smooth and rapid trading of a company's shares, without causing substantial disruptions to the price, representing the ease of converting stocks into cash without affecting their overall worth (Yahaya, et al., 2023). Through share listing, the stock market serves as a platform for companies to raise capital, functioning as a vital economic institution that enhances the efficiency of capital formation and allocation. This, in turn, enables individuals in Nigeria to seize greater financial opportunities and generate increased wealth (Mortazian, 2022; Uhumwangho, 2022). The stock market is important because it helps businesses, corporations, and government entities to secure long-term capital, enabling them to finance new projects and expand their operations (Hacini, Boulenfad, & Dahou, 2021).

In the Nigerian context, the stock market functions as a trading platform for quoted companies, playing a pivotal role in facilitating share offerings to the public, contributing to the attainment of macroeconomic objectives such as price stability, increased savings, expanded export opportunities, enhanced employment prospects, and an elevated standard of living for the population (Appiah-Otoo & Song, 2022; Pole & Cavusoglu, 2021; Zhu, Bai, & Wang, 2022).

The extensive body of literature focusing on stock liquidity universally acknowledges the presence of various liquidity dimensions, although a definitive list of these dimensions remains elusive (Díaz & Escribano, 2020). Stock liquidity is comprehensively explained by multiple dimensions, including liquidity breadth, liquidity depth, and liquidity immediacy (Le & Gregoriou, 2020). Each dimension possesses distinct characteristics, although some dimensions exhibit interconnections. One such dimension is market breadth, which pertains to how many orders are being traded at various price levels. It signifies the potential for market participants to experience significant price concessions when selling financial assets. Market breadth is often measured as the ratio of price change to trading volume, and a market is considered broad when it accommodates numerous buying and selling orders at once (Abdulkadir et al., 2022; PH & Rishad, 2020).

Second, market depth pertains to the demand pressure and the volume of orders near equilibrium prices, signifying the ability to trade a substantial number of stocks without significantly impacting the prevailing market price. A market is considered deep when there is the presence of buying and selling orders around equilibrium prices (Cheriyana & Lazar, 2019; Cui, Fei, & Lu, 2021). Market immediacy, on the other hand, refers to how quickly orders are filled in the market. It relies on the interplay of supply and demand, as well as the willingness of buyers and sellers to engage in trading. A market is deemed more immediate if transactions are quickly completed (Le & Gregoriou, 2020; Naik et al., 2020). This study, limited by data availability, focuses on measuring stock liquidity across three dimensions: depth, breadth, and immediacy, using monthly aggregate market-level data.

2.2. Stock Market Performance

The speed at which the capital market responds to new information, setting accurate stock prices and improving overall market performance, is directly connected to how efficient it is. Market efficiency is achieved when the process of discovering equity prices is quick and precise given the information at hand. In an efficient market, information is readily accessible and widely incorporated into security prices, enabling investors to make well-informed investment decisions (John, Abdullahi, & Mustapha, 2022; Koleosho, Adegbe, & Owoye, 2020; Uhumwangho & Omorokunwa, 2022).

In Nigeria, the NGX has grown considerably both in size and liquidity (Olasehinde, Olaolu, Adeleke, & Enueshike, 2022). During the stock market boom, the All-Share Index (ASI) reached its peak, showing that this surge influenced the overall performance of the exchange. The index started climbing in 1990, from 513.8 points to a record high of 57,990.2 points in 2007. In 2020, the NSE was noted as one of the top-performing markets in Africa for returns. All-Share Index (ASI) increased from 26,842.07 in 2019 to 39,512.31 in 2020 after declining from 31,430.50 in 2018. Despite this decline, there was a significant

turnaround in April 2020, with the stock exchange posting a gain of +8.08% at 23,021.01 points. Also, ASI increased from 39,512.31 in 2020 to 43,330.54 and 44,926.04 in 2021 and 2022 respectively (Adesina, 2020).

The April 2020 performance marked a notable recovery from the negative growth of -9.11% and -18.75% recorded in February and March, respectively, during the peak of the COVID-19 lockdown (Abdullahi & John, 2023; Olokoyo, Ibhagui, & Babajide, 2020; Smales, 2021). By the end of the year 2020, the NGX witnessed significant growth in its equity market capitalization, which surged by 62.42% from N12.97 trillion in 2019 to reach N21.06 trillion. These figures, as reported by Hashmi, Chang, and Rong (2021), highlight the notable performance of the NSE in 2020.

2.3. Theoretical Review

2.3.1. The Efficient Market Hypothesis

The efficient market hypothesis (EMH) was introduced by Samuelson (2016) has been a cornerstone of finance, providing details of the workings of financial markets. It garnered widespread acceptance among financial economists, with Jensen (1978) asserting that it is supported by solid empirical evidence like no other proposition in economics.

The EMH posits that fundamental information, including liquidity-related data, is swiftly and randomly incorporated into prices, rendering stock movements unpredictable and eliminating the possibility of predicting returns based on past stock prices or firm characteristics. The efficient market hypothesis (EMH) supports this notion, suggesting that consistent excess returns cannot be achieved by exploiting liquidity risk alone. While some instances may yield higher returns, there will also be periods of losses. Essentially, the market operates efficiently, and any potential for excess returns is coupled with inherent risk. Investors seeking higher returns must be willing to accept greater risk, including liquidity risk.

Thus, the combination of theoretical and empirical findings in the realm of efficient stock markets strongly suggests that the market incorporates liquidity risk into prices, making it difficult for investors to consistently obtain excess returns by exploiting this risk. Moreover, the presence of liquidity risk raises questions about market efficiency or the adequacy of traditional asset pricing models. Numerous studies investigating market efficiency have reached the conclusion that the concept of capital market efficiency falls short in explaining liquidity risk primarily due to the influence of various non-fundamental factors on stock market performance globally (Cheriyana & Lazar, 2019; Pole & Cavusoglu, 2021; Uhumwangho & Omorokunwa, 2022).

2.3.2. Empirical Reviews

Basri, Kusuma, Arifin, and Hardjito (2022) used the panel regression approach to examine the impact of stock market, fundamental and macroeconomic factors on equity premium in Indonesia and discovered that stock liquidity had no bearing on the equity premium's explanation. Nusret and Adam (2021) found strong evidence that liquidity affects a companies' stock value. Three types of liquidity co-exist: market, currency, and banking system liquidity. Each type influences asset values differently. Additionally, studies looking at market liquidity in different countries have found a negative relationship between market liquidity and bond yields.

Musneh et al. (2021) examined the relationship between liquidity risk and stock returns in Malaysia using a two-stage standard technique. According to the study, investors shifted to liquid stocks as the market became less liquid and sought a premium for liquidity for stocks whose illiquidity moved in tandem with the return and illiquidity of the market. A positive premium was thus generated for companies that saw stronger returns over those periods. Using the random effect model, Nguyen and Vo (2022) looked into the effects of bank liquidity and stock liquidity on stock market performance in Vietnam. They did not find any proof that the price volatility of quoted commercial banks is influenced by stock liquidity. Naik et al. (2020) analyzed market liquidity in the Indian equities market using a vector

autoregressive (VAR) model, considering depth, breadth, tightness, and immediacy. The study revealed reduced tightness but consistent depth, great breadth, and immediacy.

Bhattacharya *et al.* (2019) looked at the link connecting market liquidity to the Indian stock market, represented by the BSE-500 index, using ARDL bound test method. They discovered a robust, long-term correlation between liquidity and stock market as defined by its depth, immediacy, tightness, and resiliency. Hoang and Phan (2019) looked into how changes in returns in the Vietnamese stock market are affected by liquidity. They found that even after considering well-known factors like momentum and the three Fama-French factors (market excess return, size, and value), liquidity still significantly influences stock returns.

Chasanah and Sucipto (2019), employing the partial least squares method, studied how liquidity, profitability, and solvency ratios influenced stock returns. They found that while profitability and solvency ratios didn't affect stock returns, the liquidity ratio had a negative impact. The results also suggest that without a capital structure, profitability ratios are negatively affected by liquidity and solvency ratios.

Using the ARDL bound testing method, Bhattacharya *et al.* (2019) looked further into the connection between stock market movements and endogenous liquidity indicators. They found that a number of liquidity indicators, such as trade volume, turnover rate, trading probability, stock market index, spread and market efficiency coefficient are also linked over a long period of time. The study showed that the stock market is negatively impacted by spreads whereas trading activity and the market efficiency coefficient have positive effects.

A substantial negative relationship between financial performance in Sierra Leone and the management of liquidity risk was discovered by (Laminfoday, 2018), who looked into the relationship between commercial banks' financial performance and liquidity risk management. The study also shows an unfavorable association between financial performance and the proportion of liquid assets to total assets.

In a cross-country analysis that included firms from 40 countries, Huang *et al.* (2020) discovered a favorable correlation between stock liquidity and firm value. However, the conventional view of monetarism holds that a significant increase in the money supply resulted in more demand for assets, which therefore raised the values of important assets. This point of view focuses primarily on how currency liquidity affects asset values, which can be further explored in light of the current global financial crisis.

In Nigeria, Abdulkadir *et al.* (2022) examined the factors influencing stock market liquidity in Nigeria using the ARDL bounds testing technique. They found that enhanced market performance and government monetary interventions boost stock market liquidity. They also observed that while market liquidity persists over time, high prices can pose a hindrance.

Uhunmwangho and Omorokunwa (2022) used the generalized method of moments (GMM) to explore the relationship between volatility, liquidity, and stock returns. They found that stock market liquidity has a significant and positive effect on market returns, whereas volatility has a substantial and negative impact on returns. Pole and Cavusoglu (2021) examined how macroeconomic variables influenced the returns of NGX stocks. They found that exchange rates and inflation rates have a negative effect on stock returns, while the money supply and industrial production have a significant and positive impact.

Using ordinary least squares (OLS) regression analysis, Omodero and Mlenga (2019) looked into the macroeconomic factors influencing the performance of the Nigerian stock market and discovered that neither the exchange rate nor the interest rate significantly affects the share price index. However, it was discovered that the deciding elements in this situation were inflation (negative) and gross domestic product (positive). Eyob (2019) employed panel data regression to analyze how liquidity risk affects financial performance of banks in Ethiopia. The study revealed that the loan-to-deposit ratio, liquidity coverage ratio, net stable funding ratio, and liquidity ratio all negatively affected the financial performance of Ethiopian commercial banks.

3. Methodology

A vector error correction (VEC) system equation derived from the estimated VEC model was used as estimating technique for this study. This study measured market liquidity in terms of three dimensions which include liquidity breadth, liquidity depth, and liquidity immediacy. The inclusion of immediacy in the model fills an important gap. In the existing literature, there is a significant gap when it comes to examining liquidity immediacy in Nigeria. Non-Nigerian studies have failed to explore this aspect of liquidity. The functional model is stated as follows:

$$SMP = f(SLIQ, MCI) \quad (1)$$

Where SMP represents stock market performance, and MCI represents macroeconomic factors. The system equation is stated as:

$$\Delta SMP_t = \alpha_1 + \sum_{i=1}^P \beta_i \Delta SMP_{t-1} - (\partial_i \Delta LBR_{t-1} - \theta_i \Delta LDE_{t-1} - \vartheta_i \Delta LIM_{t-1} - \partial_i \Delta INT_{t-1} - \delta_i \Delta INF_{t-1} - \theta_i \Delta EXR_{t-1} + \varepsilon_t) + \sum_{i=1}^P \partial_i \Delta LBR_{t-1} + \sum_{i=1}^P \theta_i \Delta LDE_{t-1} + \sum_{i=1}^P \vartheta_i \Delta LIM_{t-1} + \sum_{i=1}^P \partial_i \Delta INT_{t-1} + \sum_{i=1}^P \delta_i \Delta INF_{t-1} + \sum_{i=1}^P \theta_i \Delta EXR_{t-1} + \varepsilon_t \quad (2)$$

Where; SMP represent stock market performance measured by all-share index; LBR represent liquidity breadth measured by volume of trade; LDE represent liquidity depth measured by value of trade; LIM: represent liquidity immediacy measured by number of transactions; INT represent interest rate measured by real interest rate; INF represent inflation measured by consumer price index; and EXR represent exchange rate measured by the value of Naira relative to US dollar.

The study utilizes an ex-post facto research design. 170 companies listed on the NGX made up the study's population, while top 30 most capitalized and liquid companies across all sectors were chosen for the study sample using the stratified sampling techniques. The sample set is a solid representative of the whole market because it represents over 90% of market capitalization and the average daily trading volume on the NGX. The data used comprised monthly observations from January 2010 to December 2022, obtained from secondary sources including the SEC Statistical Bulletin, CBN Statistical Bulletin and www.investing.com.

The study utilized both descriptive and inferential statistics to analyse the data. Summary statistics was employed to cater for the descriptive statistics, while the Vector Error Correction (VEC) System Equation Regression was employed as the estimation technique. The mathematical representation of the a priori expectations is $\beta_1, \beta_2, \beta_3, \beta_6 > 0$; $\beta_4 - \beta_5 < 0$.

4. Data Presentations and Discussion of Results

4.1. Descriptive statistics

Descriptive statistics are critical in allowing researchers to efficiently summarize and organize data in a meaningful way.

Table 1
Summary statistics

	SMP	LBR	LDE	LIM	INT	INF	EXC
Mean	10.053	0.036	0.0002	3.64	18.71	11.96	213.04
Max	10.390	7.88	0.0081	5.07	31.65	18.72	381.00
Min	9.355	8.43E-06	0.000	0.13	9.43	7.71	117.72
S.Dev.	0.213	0.47	0.0009	4.08	4.17	2.81	79.68

Source: Authors (2024)

Table 1 presented the summary statistics table. Stock market performance has a mean of 10.05 with maximum of 10.39 and minimum of 9.36, indicating a relatively narrow range of fluctuation. Likewise, the average liquidity breadth was 0.036 with maximum of 7.88 and minimum of 8.43E-06. This suggests significant variation in the liquidity breadth over the period. Average liquidity depth was 0.0002 with maximum of 0.0081 and minimum of 0.000,

indicating that at times, the liquidity depth was negligible. Average liquidity immediacy was 3.6425 with maximum of 5.0741 and minimum of 0.1269. This suggests variability in how quickly transactions can be executed without significantly affecting the price. In summary, stock market performance shows a relatively stable mean value with moderate fluctuation. While liquidity measures (breadth, depth, immediacy) display considerable variability, indicating inconsistent liquidity conditions.

In contrast, it was also discovered that the mean interest rate amounted to 18.71% with maximum of 31.65% and minimum of 9.43%, indicating substantial fluctuations in interest rates. Average inflation was 11.95%, with maximum of 18.7% and minimum of 7.7%, showing considerable variability in inflation. Also, the average exchange rate was ₦213 to \$1 with maximum of ₦381 and minimum of ₦117.72, indicating significant fluctuations in the exchange rate. In summary, interest rates and inflation both exhibit substantial variability, reflecting economic instability. Also, exchange rate shows significant fluctuation, suggesting a volatile currency market.

4.2. Stationarity Test

Prior to selecting an estimation method, it is necessary to confirm the integration order. This study used the Augmented Dickey-Fuller (ADF) unit root tests to identify the order of integration, stationary or nonstationary nature of the variables for each series.

Table 2

Augmented Dickey-Fuller (ADF) Unit Root Test

H₀: Variables has a Unit Root/Non-stationary

Variables	t-stat	Level	Status	t-stat	First Difference		
		5% Critical Value			5% Critical Value	Critical Value	Status
SMP	-2.842	-2.989	I(0)	-3.845***	-2.989	-2.989	I(1)
LBR	-3.513	-2.989	I(0)	-3.980**	-2.989	-2.989	I(1)
LDE	-5.535	-2.989	I(0)	-3.167**	-2.989	-2.989	I(1)
LIM	-3.002**	-2.989	I(0)	-4.559***	-2.989	-2.989	I(1)
INT	-6.061	-2.989	I(0)	-4.004***	-2.989	-2.989	I(1)
INF	-2.095	-2.989	I(0)	-5.336***	-2.989	-2.989	I(1)
EXR	-0.099	-2.989	I(0)	-7.985***	-2.989	-2.989	I(1)

Source: Authors (2024)

The outcomes of the ADF unit root test are shown in Table 2. It indicates that stock market performance, liquidity breadth, liquidity depth and liquidity immediacy were stationary at first difference. Similarly, the first difference of interest rates, inflation rates, and exchange rates were all stationary.

4.3. Cointegration Test

Based on the findings of the cointegration test, Table 3 suggests that the null hypothesis is rejected. The trace statistic values exceed the critical values at both the 1% and 5% significance levels, demonstrating the existence of at least one cointegration between the variables. The overall results showed a long-term association involving the dependent variables and the independent variables.

4.4. Vector Error Correction (VEC) System Equation Regression

VEC system equation regression was used to estimate the dataset after the original VEC model has been estimated. This method was employed due to its ability to reveal the detailed statistical properties, particularly the p-values, of the data output. P-values help to determine the statistical significance of each coefficient in the model, indicating whether the relationships observed are likely to be genuine or if they could have occurred by chance. The results showed the association between each lagged independent variable and the lagged differenced dependent variable.

Table 3
Cointegration Test

STOCK PRICE					
Series: SMP, LBR, LDE, LIM, INT, INF, EXR					
Lags interval (in first differences): No lags					
Hyp. No. of CE(s)	Eigenvalue	Trace Statistic	5% Critical Value	1% Critical Value	
None *	0.2561	4376.7	125.61	135.97	
At most 1 *	0.1906	2808.2	95.75	104.96	
At most 2 *	0.1336	1686.6	69.818	77.818	
At most 3 *	0.0732	925.99	47.856	54.681	
At most 4 *	0.0535	522.55	29.797	35.458	
Hyp. No. of CE(s)	Eigenvalue	Max-Eigen Stat	5% Critical Value	1% Critical Value	
None *	0.2561	1568.5	46.231	52.308	
At most 1 *	0.1906	1121.602	40.077	45.869	
At most 2 *	0.1336	760.62	33.876	39.370	
At most 3 *	0.0738	403.4365	27.584	32.715	
At most 4 *	0.0535	291.855	21.132	25.861	

Source: Authors' Computations (2024)

Table 4
VEC System Equation Regression Result

Variables	DSMP		
	Coef.	t-Stat	p-value
C	-6.3505	-1.8866	0.4474
DLBR (-1)	0.2018	0.9752	0.0329
DLDE (-1)	8.5594	5.6849	0.0052
DLIM (-1)	3.3267	1.0382	0.0467
DINT (-1)	-0.0023	1.1736	0.0634
DINF (-1)	-1.1738	-2.1136	0.0346
DEXR(-1)	0.0343	1.0473	0.0777
	R ² = 0.8211		
	F-Stats = 9.96		
	F-Stats (prob.) = 0.0000		
	Durbin-Watson stat = 2.0062		

Source: Authors (2024)

4.4.1. Discussion of Findings

Table 4 displayed the results of the VEC system equation. The results showed that liquidity breadth has a significant positive impact on stock market performance, suggesting that a more liquid market, characterized by a larger number of actively traded stocks, can contribute to more efficient pricing. This finding implies that liquidity breadth positively influences stock market performance. This is in line with the efficient market hypothesis as well as the research of Hoang and Phan (2019), Nusret and Adam (2021), and others which discovered that liquidity breadth has a favorable and significant impact on stock market performance. Although Alp, et al. (2021) suggested that higher liquidity can make stock price crashes more likely.

The conclusion of Hacini et al. (2021), and Chasanah and Sucipto (2019) that liquidity breadth has a negative and significant impact on stock market performance is in direct opposition to this finding.

Similarly, liquidity depth has a positive and significant impact on stock market performance. This suggests that deeper liquidity, where larger order sizes can be executed without significantly impacting prices, can contribute to more efficient price discovery. This is in line with the efficient market hypothesis and conforms with the findings of Basri, et al., (2022), Naik et al. (2020), Hoang and Phan (2019), Abdullahi and Fakunmoju (2019), and Bhattacharya et al., (2019) which found that liquidity depth positively affects stock market performance. However, it contradicts the finding of Uhumwangho and Omorokunwa (2022) which found that liquidity depth exerts a significantly negative on stock market performance.

Also, liquidity immediacy shows a significant and positive relationship with stock market performance. This suggests that a more immediate execution of market orders contributes to a more efficient market. When investors can execute trades quickly and easily, it enhances the price discovery process, and improves overall market liquidity. The observed positive sign aligns with the anticipated expectation. Also, the finding indicates that increased speed of trade execution, ensures the presence of willing counterparties to trade in securities and results in a higher trading activity, ultimately boosting stock market performance. This finding is consistent with efficient market hypothesis and the findings of Cakici and Zaremba (2021), Naik et al. (2020), Bhattacharya, Bhattacharya, and Basu (2019) and Bhattacharya, Bhattacharya, and Jha (2020) who found that liquidity immediacy positively affects stock market performance.

Overall, the combined impact of liquidity breadth, liquidity depth and liquidity immediacy showed that stock liquidity has significant positive impact on stock market performance in Nigeria. These findings are consistent with previous studies Musneh et al. (2021), and Yameen, Farhan, and Tabash (2019) and the assumptions of the efficient market hypothesis that information should already be obtained in prices such that the market should price in the liquidity risk of a financial asset. Thus, assets that are less liquid should have higher expected returns to compensate investors for the additional risk (Bhattacharya et al., 2019; Cui et al., 2021; Naik et al., 2020). Generally, a well-functioning and liquid market is essential for efficient price discovery, and provides investors with confidence in their ability to enter and exit positions, thereby attracting more market participants and contributing to higher stock market performance.

In analyzing how specific macroeconomic data affect stock market performance, it is observed that rate of interest exhibits a negative and weakly significant effect on stock market performance. This implies that interest rate behaviour has little to no effect on stock market performance. Although, higher interest rates increase the cost of borrowing, which in turn affects profitability and investment decisions. When borrowing costs rise, quoted companies may face higher expenses for capital investments, leading to lower expected future cash flows and reduced stock market performance. This observation is in line with the results reported by Abdullahi (2020) and Omodero and Mlanga (2019) which found interest rate to exert a negative effect on stock market performance. Also, negative news regarding interest rates may create uncertainty and pessimism among investors, leading to a decline in stock market performance.

Likewise, inflation indicated a significant negative association with stock market performance, implying that higher inflation is associated with lower stock market performance, this is because long-term inflation decreases the real value of money, causing returns on investment to fall below expectations. As inflation increases, the value of future cash flows from stocks may be discounted at a higher rate, leading to a decrease in their present value and, consequently, lower stock market performance. This is line with the findings of Omodero and Mlanga (2019). This outcome aligns with the findings of Iyoboyi (2021), who discovered convincing evidence in favour of the idea that there is a negative link connecting inflation to stock market performance. However, this finding conflicts with those of Abdullahi (2020), Abdullahi and Fakunmoju (2019) which found a significant positive connection between inflation and values of stocks.

Meanwhile, exchange rate showed a weak but significantly positive association with stock market performance. This implies that upward fluctuation in exchange rate facilitates higher stock market performance, however the impact is weak. This result aligns with the findings of Abdullahi and Fakunmoju (2019) which also identified a significant positive connection between exchange rate and stock market performance, suggesting that stock market performance is highly impacted by changes in currency rates. However, the finding contradicts the findings of Olasehinde et al. (2022), Abdullahi (2020) which found that exchange rate has a significant negative impact on stock market performance.

Lastly, the coefficient of determination (R^2) was 82.11%, showing that changes in liquidity indicators plus a few macroeconomic variables accounted for 82.11% of the changes in stock market performance. As evidenced by the probability value of 0.0000, the outcome similarly demonstrated that the model is statistically significant at the 1% level. Last but not

least, a value of 2.0629 for the Durbin-Watson statistic shows that there is no serial correlation.

5. Conclusion and Recommendations

This study concluded that liquidity breadth, liquidity depth and liquidity immediacy have significant positive impact on stock market performance. Also, macroeconomic factors such as interest rate, inflation rate and exchange rate have varied level of significant effect on stock market performance. Therefore, the followings recommendations were suggested:

- i. The Security and Exchange Commission (SEC) should implement policies that encourage the participation of more traders and investors to increase the number of actively traded stocks (liquidity breadth). This could involve simplifying the process for new companies to list on the exchange and reducing regulatory barriers.
- ii. The SEC should support measures that improve the depth of the market by promoting transparency and fairness. This could include stricter regulations against market manipulation and ensuring reliable access to market data for all participants.
- iii. The SEC should improve the infrastructure for trade execution to enhance liquidity immediacy. This could involve investing in better trading technology and platforms to ensure faster and more reliable trade execution.
- iv. While promoting liquidity, the SEC should monitor the potential risks associated with macroeconomic factors, such as interest rate, inflation rate and exchange rate. Regulators, including the Central Bank of Nigeria (CBN) should develop mechanisms to identify and mitigate these risks promptly.

Authors Contribution

John Stephen Alaba: Conceptualization, Study Design, Data Analysis, Interpretation, Drafting.

Yahaya Ahmed: Literature Surveying, Reference Management, Data Collection, Drafting.

Malik-Abdulmajeed, Kudirat Mopelola: Literature Surveying & Review, Critical Revision, Drafting.

Umar Hussain: Literature Surveying & Review, Critical Revision, Drafting.

Conflict of Interests/ Disclosures

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