Macroeconomic Determinants of Stock Market Performance in Nepal: A Vector Error Correction Model Analysis and Its Implications for Financial Service Providers

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ABSTRACT

This research aims to explore how key macroeconomic indicators influence the performance of Nepalese stock market, assisting financial service providers in refining investment strategies and enabling policymakers to create a stable financial environment for growth and investment. The study utilized a quantitative research design and analyzed 240 monthly observations from January 2005 to December 2024. To examine both long-term and short-term dynamics, the study applied advanced econometric methods such as the Augmented Dickey-Fuller (ADF) test, Johansen Co-integration test, Vector Error Correction Model (VECM), and Granger Causality test. The stationarity tests confirmed that all indicators are integrated at the first difference, making them suitable for co-integration analysis. The Johansen test revealed two substantial long-run equilibrium relationships, particularly between stock market performance and reserve money. VECM results indicated a negative long-run impact of reserve money on stock market performance. However, other variables showed insignificant long-term associations. Short-run dynamics were more evident in some lagged variables, influencing stock market behavior. Granger causality tests identified one-way causality from reserve money, money supply, deposit, and liquidity to stock market performance. These results suggested their predictive role in stock market movements. The findings contribute to understanding macroeconomic influences on stock performance in emerging markets and highlight the relevance of economic stability for informed investment and policy decisions in the Nepalese capital market.

Keywords: Stock Market Performance, Johanson Cointegration, Granger Causality Test, and Augmented Dickey-Fuller Tests

JEL Classification Codes: G11, G12, G14, G41

1. Introduction

An equity market plays a critical role in a country's financial-economic and macro-finance sector by offering a platform for capital raising, wealth generation, investment, and reflecting the nation's economic health. Macroeconomic determinants significantly influence stock market performance, with key variables such as money supply, reserve money, liquidity, and interest rates affecting market behavior. In developing countries like Nepal, participation in the equity market has been growing steadily, though research on its dynamics has been relatively limited compared to other developing and developed economies (Thapa, 2025). The relationship between macroeconomic factors and equity market dynamics has been widely studied across different economies. The involvement of investors has been increasing daily in Nepal's stock market. The study's relevance in this sector is for policymakers, investors, and government institutions. Abraham (2017) investigates how inflation, exchange-rates, money supply, and

interest-rates directly impact the Nigerian stock market, showing that stock market performance is highly sensitive to fluctuations in these economic conditions. Similarly, Khatri (2019) and Pant et al. (2022) explored the impact of macroeconomic factors on the Nepalese market and underscore that changes in inflation, exchange rates, and interest rates can lead to substantial market fluctuations. These studies suggest a direct connection between macroeconomic conditions and stock market performance, emphasizing the need to monitor economic indicators for better market analysis and forecasting.

This study has significant implications for financial service providers in Nepal, including investment firms, banks, and policymakers. By examining the dynamic relationships between macro-economic indicators and stock market performance using advanced econometric models like VECM, the research offers a deeper understanding of how factors such as money supply, deposits, liquidity, and reserve money influence stock market behavior. This study provides knowledge to improve investment strategies, risk management practices, and forecasting models. Understanding the long-term and short-term impacts of macroeconomic variables on stock performance enables firms to make more informed decisions about asset allocation, portfolio management, and market predictions. Furthermore, the one-way causal relationships identified in the study highlight the predictive power of these economic factors, which can be used to develop tools for more effective market analysis and client advisories. For policymakers, the study provides valuable insights into the importance of maintaining macroeconomic stability, particularly in controlling inflation, managing interest rates, and ensuring liquidity in the financial system. This information can help shape regulatory frameworks that promote a stable investment environment, attracting local and foreign investors to Nepal's emerging stock market.

Despite the existing and growing body of research on the subject, some research gaps remain, especially regarding the nuanced interaction between macro-economic indicators and stock market dynamics in emerging markets like Nepal. While much has been written about the connection between macro-economic variables and market performance, there is still a lack of comprehensive understanding of how these factors interact in emerging markets. For instance, although studies like those of (Adhikari & Jha 2016; Bhattarai et al., 2021; Dahal et al., 2024; Karki et al., 2023) have explored portfolio theory and the reciprocal association between stock market development and economic progress in Nepal, there is limited research on how macroeconomic instability or volatility specifically affects the Nepalese stock market's performance over time. Additionally, factors such as market liquidity, investor confidence, and how they influence stock prices in volatile economic environments remain underexplored. Further research is needed to fill these gaps, particularly in understanding how these variables impact each other in the evolving Nepalese financial market.

Based on the conceptual foundation, this study seeks to examine the impact of macro-economic variables, such as reserve money, deposits, money supply, and liquidity, on stock market performance in Nepal, using advanced econometric models to help financial service providers. This study explores the dynamic relationships between macro-economic factors and market performance in Nepal. This research provides insights into how key economic variables influence the stock market by utilizing time series data from the Nepal Stock Exchange Limited and economic data from reputable sources like the Nepal Rastra Bank (NRB). This study focuses on a significant gap in the literature by analyzing Nepal's stock market using advanced econometric tools, such as the Granger Johansen co-integration test and VEC models, to

examine macroeconomic determinants and their impact on stock market performance. Through methods like Johansen cointegration and Vector Error Correction (VEC) models, the study will also investigate short-term and long-term interactions between these variables. The relevance of this research lies in its potential to improve financial market forecasting, providing investors and policymakers with a clearer understanding of the factors that drive stock market fluctuations. Moreover, by addressing the gaps identified in previous studies, this research will contribute to a more wide-ranging knowledge of market dynamics in Nepal's emerging market.

2. Literature Review

This study covered the various literature of the developed and emerging economies. Karki et al. (2024) and Thapa (2023) examined how key macroeconomic variables, including exchange rate, money-supply, remittances, and GDP, significantly influence the Nepalese market, with implications for investors, policy-makers, and financial analysts in understanding market behavior. The study (Abraham, 2017) investigated how macro-economic variables such as exchange rates, inflation, and interest rates influence the Nigerian stock market, showing a direct link between these economic factors and market performance. The results suggest that market reactions are sensitive to shifts in macroeconomic conditions. This relationship emphasizes the importance of considering macroeconomic indicators when analyzing stock market trends. The analysis of (Adhikari & Jha, 2016; Gurung et al., 2023; Khadka et al., 2024) explored the applicability of portfolio theory to the stock market, demonstrating a relationship between diversification and risk reduction in local investments. It highlights that efficient portfolio management can mitigate the volatility of stock returns in Nepal's emerging market. The study suggests that portfolio theory can be effectively applied to enhance returns and minimize risks in Nepal's stock market.

Aduda et al. (2012) explored the factors of stock market development in Nairobi, focusing on how factors like market liquidity, investor confidence, and economic growth interact to influence stock market expansion. It establishes that the growth of the stock-market is closely tied to improvements in economic conditions and investor trust. The research shows that the Nairobi Stock Exchange's growth is facilitated by these interconnected economic factors. The article (Agrawal & Srivastava, 2011) examined the affiliation between stock-market returns and exchange rate volatility in emerging economies, using GARCH models. The study demonstrates that exchange rate fluctuations significantly influence stock market returns, indicating a high level of interconnectedness between currency markets and stock markets. This relationship emphasizes the need for investors to account for exchange rate risks in their portfolio decisions.

Akaike (1974) introduced the Akaike-Information-Criterion (AIC), which is critical for model selection in econometric analyses. The paper illustrates the relationship between model complexity and fit, showing how the AIC helps in choosing models that balance accuracy and simplicity. This work has far-reaching implications for understanding and improving the reliability of statistical models in various fields, including financial market analysis. Attari & L (2017) focused on the association between macro-economic volatility and market volatility in Pakistan, demonstrating that economic instability directly affects market behavior. The study suggests that periods of macroeconomic uncertainty led to heightened stock market volatility, which can hinder investment and growth. This relationship emphasizes the importance of economic stability for maintaining a predictable and healthy stock market. Bhattarai et al.

(2021) and Gurung et al. (2024) examined the connection between stock bazaar development and economic development in Nepal, asserting that the stock market plays a crucial role in financing economic activities. It shows that a developed stock market leads to improved liquidity and capital access, which contributes to broader economic-growth. The research emphasizes the reciprocal relationship between financial market changes and economic expansion in Nepal.

Dickey and Fuller (1979) introduced the notion of unit roots in time-series analysis and their relationship to economic and financial data. By identifying unit roots, it helps differentiate between short-term fluctuations and long-term trends in economic variables. This relationship is crucial for improving the accuracy of forecasts and analyses in financial markets, particularly when analyzing stock prices over time. Fama (1970) suggested the efficient-market-hypothesis (EMH) that stock prices wholly reflect all available information, thereby establishing a direct relationship between market efficiency and stock price movements. The study implies that it is impossible to consistently outperform the market through active management, as all relevant information is already incorporated into stock prices. This affiliation underscores the importance of passive investment strategies based on market efficiency. Fama (1981) and Thapa (2023) studied the relationship between stock returns and real economic factors like inflation, money supply, and industrial production. It shows that stock prices respond to macroeconomic changes, with periods of economic expansion often associated with higher stock returns. The paper highlights the importance of understanding macroeconomic conditions when analyzing stock market behavior. Jiranyakul (2012) investigated the link between the Thai stock market and foreign-exchange under a floating regime, showing that fluctuations in exchange rates have a substantial impact on stock performance. The research demonstrates that both markets are closely tied, with changes in currency values influencing investor behavior and stock prices. This relationship emphasizes the interconnectedness of global financial markets in emerging economies.

Keswani et al. (2024) concluded that the Indian stock-market exhibits a significant long-term association with key macro-economic variables, particularly GDP, disposable income, and Foreign Institutional Investment. Negative associations with interest rates, inflation, exchange rates, and government policies further emphasize the sensitivity of stock returns to broader economic conditions. Khatri (2019) examines how macroeconomic factors like inflation, interest rates, and exchange rates impact the Nepalese stock market, illustrating the relationship between these economic variables and market performance. The research highlights that macroeconomic conditions are critical drivers of stock market behavior in Nepal, where volatility in these factors can lead to significant market fluctuations. It underscores the need for careful monitoring of economic indicators when assessing the stock market. Kumar and Padhi (2012) revisit the relationship between macroeconomic fundamentals, such as inflation and exchange rates, and stock market returns in India, showing that these variables significantly affect stock prices. The research reinforces the notion that stock markets are influenced by economic conditions, which can alter investor sentiment and market outcomes. This relationship is vital for understanding the broader economic factors that drive market behavior.

Maskey (2022) explored the determinants of share prices in Nepal's life insurance sector, showing a clear relationship between market sentiment, regulatory changes, and macroeconomic stability. The study indicates that factors play a substantial role in influential stock prices, with the financial health of the

sector being directly affected by both internal and external forces. This relationship highlights the complexity of pricing shares in specific sectors of the stock market.

Naik and Reddy (2021) examined the association between economic factors and market liquidity, highlighting how economic variables like interest rates and inflation influence the ease with which shares are bought and sold. The research demonstrates that liquidity is an essential component of a well-functioning stock market, which is heavily influenced by broader economic conditions. This relationship emphasizes the need for policymakers to ensure stable macroeconomic environments to maintain liquidity. The analysis of (Gaire, 2017) explored the co-integration and causality associations between stocks, interest rates, and gold prices in Nepal, showing that these variables are interconnected. It suggests that changes in interest rates and gold prices can significantly influence stock-market-movements in Nepal. This relationship highlights the importance of understanding multiple economic factors when analyzing stock market trends.

Pesaran et al. (1996) discussed examining long-run relationships between economic variables, demonstrating how cointegration analysis can uncover significant relationships that inform financial modeling. The study illustrates that understanding these long-run relationships is critical for making accurate predictions in economic and financial contexts. This relationship is essential for conducting robust econometric analyses in financial market studies. The study (Poudel, 2024) explores the association between market-risk and asset growth, emphasizing how changes in risk factors impact the cross-section of expected stock returns in Nepal. The research shows that market risk significantly influences the returns on different assets, highlighting the status of understanding risk dynamics in portfolio management. This relationship is critical for assessing potential returns and managing risks in Nepal's stock market.

Shrestha and Bhatta (2018) studied the connection between stock-returns and trading-volume in Nepalese market, revealing that higher trading volumes often signal increased market activity, which can influence stock returns. The study suggests that trading volume can be a useful predictor of stock price movements, with higher volumes often indicating stronger market trends. This relationship underscores the importance of trading activity in forecasting market performance. (Thapa, 2019) identified several issues that influence stock prices in Nepal, including economic indicators, investor sentiment, and market liquidity. The research showed that stock indices are highly sensitive to macro-economic conditions and investor behavior. This relationship highlights the need to consider economic fundamentals and market psychology when analyzing stock price movements. Vaidya (2021) examined the stock market development and economic growth in Nepal, showing that a well-developed stock-market contributes significantly to national economic development. The study demonstrates that a thriving stock market provides the necessary capital for businesses, driving economic growth. This relationship emphasizes the importance of stock-market-development in fostering long-term economic prosperity.

3. Research Methodology

This study followed the quantitative research design, utilizing longitudinal and time series data analysis methods. The principal objective of the research is to analyze the dynamic relationships between stock-market-performance and the macroeconomic variables, including money supply, Deposits, Liquidity, and

reserve money. The research employed advanced econometric techniques to investigate these relationships over a defined period. The data were employed for the study, sourced from reputable organizations and databases. These included the Securities Board of Nepal (SEBON), Nepal Stock Exchange (NEPSE), Nepal Rastra Bank (NRB), the World Bank, and the financial reports of listed companies. The data covered a period from January 2005 to December 2024, encompassing approximately 240 monthly observations. This broad dataset enabled a thorough analysis of the variables' behavior over time, providing insights into their interactions and trends.

The study utilized secondary data collected from several online platforms and physical visits to relevant institutions. These included websites and publications from NEPSE, NRB, SEBON, and the World Bank, as well as the financial statements of listed companies. To ensure data accuracy and consistency, the research relied on established data sources, ensuring that the information was both reliable and comprehensive. The data was then processed and analyzed using Microsoft Excel for preliminary organization and Eviews-10 software for advanced econometric analysis. In this study, various econometric tools and techniques were employed to analyze the data and identify the relationships between key macroeconomic variables.

The first step involved stationarity tests, which were crucial for determining whether the indicators were stationary at different levels (I(0), I(1), or I(2)). This step is essential as it helps in selecting the appropriate model for further analysis. The second step, lag selection, was performed to identify the optimal lag lengths, which are necessary for accurately capturing the temporal contacts between the variables. The third step, co-integration analysis, was employed to test the long-term relationships among the variables. All the variables were found to be stationary at the first difference (I(1)), so the Johansen co-integration-test was applied. As well as Johansen co-integration test exhibited long-term relationship, so the study VEC model was employed for capturing both long-term equilibrium relationships and short-term dynamics.

4. Data Presentation and Analysis

Table 1 presents the results of the ADF test, indicating it is non-stationary. The tested variables in this study include NEPSE, MS, LIQ, DEPO, and RESERVEM. The ADF test results show the test-statistics for each factor, which are evaluated with critical-values at the 1%, 5%, and 10% significance levels. For all variables, the test statistics (e.g., NEPSE = -14.811, MS = -6.480, LIQ = -14.727, DEPO = -3.329, RESERVEM = -13.481) are all more negative than the critical values at the 1%, 5%, and 10% levels. Since the test-statistics are lower than the critical-values, the results reject the null-hypothesis for all issues, indicating that they are stationary and do not contain a unit-root. This confirms that the variables are suitable for further analysis, as stationary variables are essential for reliable econometric modeling.

Table 1: Unit Root Test

		NEPSE	MS	LIQ	DEPO	RESERVEM
T- statistics		t-	t-	t-	t-	t-
Augmented Dickey-Fuller test statistic		-14.811	-6.480	-14.727	-3.329	-13.481
Test critical values:	1% level	-3.458	-3.460	-3.458	-4.000	-3.467
	5% level	-2.874	-2.875	-2.874	-3.430	-2.878

10% level	-2.573	-2.574	-2.573	-3.139	-2.576

Source: Author Calculation by Eviews-12

Table 2 outlines the results of the lag-length-selection process, which is critical in time series analysis to determine the suitable number of lags to include in the model. The model uses several criteria to select the optimal lag, including the Schwarz Criterion (SC), Likelihood Ratio (LR), Akaike Information Criterion (AIC), Final Prediction Error (FPE), and Hannan-Quinn Criterion (HQ). For each variable (NEPSE, RESERVEM, MS, LIQ, DEPO), various lag lengths were tested. Based-on-the-criteria, Lag 2 was selected as the optimal lag for the model, indicated by the asterisk next to the lag order in the table. This selection is supported by the AIC and HQ values, which are lower for Lag 2 compared to other lag lengths, suggesting that it provides the best fit for the data. Thus, this lag length will be used in subsequent analyses to capture the temporal relationships between the variables.

Table 2: Lags Selection Order

Lag	LogL	LR	FPE	AIC	SC	HQ
1	-9688.373	NA	2.88E+46	121.1672	121.2633	121.2062
1	-8512.563	2263.434	1.63E+40	106.7820	107.3586	107.0162
2	-8399.508	210.5651	5.43E+39	105.6814	106.7384*	106.1106*
3	-8368.050	56.62477	5.02E+39	105.6006	107.1382	106.2250

** indicated lag-order selected by the criterion*

Source: Author Calculation by using Eviews-12

Table 3 presents the results of the Co-integration test developed by Johanson, which is used to test for the presence of long-term relationships between the variables. The test uses the Trace-Statistic and Max-Eigenvalue-Statistic to assess the number of cointegrating relationships among the variables. The null hypothesis of the test is that there are no cointegrating equations. In this case, the trace statistic for the "None" hypothesis is 130.810, which is significantly larger than the critical value of 69.819, and for the "1" hypothesis, the trace statistic is 66.200, exceeding the critical value of 47.856. Similarly, the max-eigenvalue statistic also supports the presence of two cointegrating relationships, with the test statistic for "None" being 64.610, which is above the critical value of 33.877. This indicates that there are two cointegrating equations at the 5% significance level, implying that long-term equilibrium relationships bind the variables. Therefore, the variables under study are linked over the long term, which will be further explored using vector error correction models.

Table 3: Cointegration Rank Test

Activities	Trace Value (At most)					Max-Eigenvalue (At most)				
Hypo No. of CE(s)	**None ***	**1***	**2 ***	**3**	**4**	**None ***	**1***	**2**	**3**	**4**
Eigenvalue	0.324	0.164	0.146	0.052	0.011	0.324	0.164	0.146	0.052	0.011
Trace Stat.	130.810	66.200	36.559	10.552	1.813	64.610	29.641	26.006	8.739	1.813
Crit. Value	69.819	47.856	29.797	15.495	3.841	33.877	27.584	21.132	14.265	3.841
Prob.**	0.000	0.000	0.007	0.241	0.178	0.000	0.027	0.010	0.309	0.178

Max-eigenvalue test indicated 2 cointegrating eqn(s) at the 0.05 level

Source: Author Calculation by using Eviews-12

Table 4 shows the results of the VEC model, which captures both short-term and long-term dynamics among cointegrated variables. The cointegrating equation (CointEq1) shows the long-term affiliation between NEPSE and the other variables. The RESERVEM(-1) coefficient is -0.026931, indicating that changes in reserves negatively affect NEPSE in the long run, with a t-statistic of [-2.37253], which is statistically substantial. The coefficients for other variables such as MS(-1), LIQ(-1), and DEPO(-1) are not statistically significant, suggesting weaker or no long-term relationships with NEPSE. The error correction term (CointEq1) has a coefficient of -0.002404, which is statistically insignificant, implying that the short-term adjustments do not converge quickly to the long-term equilibrium. The variables D(NEPSE(-1)), D(NEPSE(-2)), D(RESERVEM(-1)), and others represent the short-term dynamics, with some coefficients showing significant relationships, such as D(NEPSE(-1)) and D(RESERVEM(-2)), indicating that certain lagged variables have a short-term impact on NEPSE. However, the overall significance of the VECM suggests that there are both short-term fluctuations and long-term adjustments among the variables.

Table 4: Vector-Error-Correction Estimates Standard errors in ( ) & t-statistics in [ ]

Cointegrating Eq:	CointEq1				
NEPSE(-1)	1.000000				
RESERVEM(-1)	-0.026931				
	(0.01135)				
	[-2.37253]				
MS(-1)	0.000828				
	(0.00177)				
	[0.46720]				
LIQ(-1)	0.011967				
	(0.01580)				
	[0.75743]				
DEPO(-1)	-0.000281				
	(0.00190)				
	[-0.14769]				
C	7587.216				
Error Correction:	D(NEPSE)	D(RESERV...	D(MS)	D(LIQ)	D(DEPO)
CointEq1	-0.002404	1.765242	-3.596879	-0.340419	-6.431664
	(0.00351)	(1.03559)	(1.99117)	(0.46927)	(0.83189)
	[-0.68593]	[1.70458]	[-1.80641]	[-0.72543]	[-7.73140]
D(NEPSE(-1))	0.023963	-28.86652	-11.79438	9.482055	37.04899
	(0.07744)	(22.8785)	(43.9895)	(10.3672)	(18.3783)
	[0.30943]	[-1.26173]	[-0.26812]	[0.91462]	[2.01591]
D(NEPSE(-2))	0.265366	-4.728665	-42.62114	-18.06804	38.16053
	(0.07892)	(23.3144)	(44.8276)	(10.5647)	(18.7285)
	[3.36256]	[-0.20282]	[-0.95078]	[-1.71023]	[2.03757]
D(RESERVEM(-1))	0.000428	-0.194360	-0.300897	0.819318	-0.230480
	(0.00030)	(0.08762)	(0.16848)	(0.03971)	(0.07039)

	[1.44175]	[-2.21815]	[-1.78600]	[20.6350]	[-3.27445]
D(RESERVEM(-2))	-8.19E-05	0.107573	0.093875	0.035552	-0.254898
	(0.00056)	(0.16443)	(0.31615)	(0.07451)	(0.13208)
	[-0.14709]	[0.65424]	[0.29694]	[0.47715]	[-1.92983]
D(MS(-1))	-3.95E-05	0.014945	-0.035747	-0.002477	-0.093273
	(0.00015)	(0.04495)	(0.08643)	(0.02037)	(0.03611)
	[-0.25952]	[0.33249]	[-0.41362]	[-0.12160]	[-2.58319]
D(MS(-2))	-1.14E-05	-0.026665	-0.090604	-0.009332	0.158659
	(0.00015)	(0.04530)	(0.08710)	(0.02053)	(0.03639)
	[-0.07434]	[-0.58861]	[-1.04019]	[-0.45459]	[4.35988]
D(LIQ(-1))	-3.79E-05	-0.280518	-0.159749	-0.180127	0.655523
	(0.00059)	(0.17445)	(0.33542)	(0.07905)	(0.14013)
	[-0.06418]	[-1.60803]	[-0.47627]	[-2.27867]	[4.67782]
D(LIQ(-2))	0.000621	-0.063016	-0.161856	0.049701	0.011793
	(0.00035)	(0.10334)	(0.19870)	(0.04683)	(0.08302)
	[1.77447]	[-0.60978]	[-0.81457]	[1.06134]	[0.14205]
D(DEPO(-1))	-0.000538	0.242687	0.416935	0.045449	-0.303433
	(0.00032)	(0.09452)	(0.18174)	(0.04283)	(0.07593)
	[-1.68214]	[2.56753]	[2.29412]	[1.06110]	[-3.99626]
D(DEPO(-2))	0.000604	0.047104	-0.083014	-0.097400	-0.130903
	(0.00028)	(0.08408)	(0.16166)	(0.03810)	(0.06754)
	[2.12062]	[0.56025]	[-0.51352]	[-2.55653]	[-1.93819]
C	3.613297	-2701.842	28078.66	886.6432	39726.01
	(18.0566)	(5334.41)	(10256.7)	(2417.23)	(4285.13)
	[0.20011]	[-0.50649]	[2.73760]	[0.36680]	[9.27068]

Source: Author Calculation by Eviews-12

Table 5 presents the results of tests the Granger-Causality, which examine the directional causality between pairs of variables. The test's null-hypothesis is that one variable does not Granger-cause another.

Table 5: Pairwise Granger Causality Tests (Lags: 2)

Null Hypothesis:	Obs	F-Statistic	Prob.
RESERVEM does not Cause of Granger NEPSE	180	11.065	3.E-05
NEPSE does not Cause of Granger RESERVEM		1.218	0.298
MS does not Cause of Granger NEPSE	215	3.581	0.030
NEPSE does not Cause of Granger MS		1.975	0.141
LIQ does not Cause of Granger NEPSE	231	9.089	0.000
NEPSE does not Cause of Granger LIQ		0.466	0.628
DEPO does not Cause of Granger NEPSE	231	3.940	0.021
NEPSE does not Cause of Granger DEPO		8.997	0.000

Source: Author Calculation by Eviews-12

The results show that RESERVEM Granger-causes NEPSE (F-statistic = 11.065, p-value = 3.E-05), suggesting that changes in reserves lead changes in NEPSE. However, NEPSE does not Cause of

Granger RESERVEM (F-statistic = 1.218, p-value = 0.298), indicating a lack of reverse causality. Similarly, MS Granger-causes NEPSE (F-statistic = 3.581, p-value = 0.030) and LIQ Granger-causes NEPSE (F-statistic = 9.089, p-value = 0.000). The results also show that DEPO Granger-causes NEPSE (F-statistic = 3.940, p-value = 0.021), but NEPSE does not Granger-cause DEPO (F-statistic = 8.997, p-value = 0.000), suggesting a one-way causal relationship for most of the variables. These causality results reveal the dynamic relationships between the macroeconomic variables, indicating that some variables, such as RESERVEM, MS, LIQ, and DEPO, influence NEPSE, but the reverse is not always true.

5. Discussions

The study aligns with and expands on existing literature by confirming the sensitivity of emerging markets like Nepal to macroeconomic volatility. Nonetheless, it also presents nuanced contradictions, particularly regarding the limited impact of money supply and exchange rates, differing from patterns observed in other economies. These insights underscore the unique structural characteristics of Nepal's financial system. The findings hold significant implications for investors, policymakers, and financial analysts, emphasizing the importance of macroeconomic stability in promoting a resilient and predictable stock market environment. Future research should explore broader datasets and consider behavioral and institutional variables to further enrich the understanding of stock market dynamics in developing economies.

This study aligns with Abraham (2017) and Khatri (2019), which highlighted that macro-economic variable like money supply, exchange rates, deposits, and interest rates significantly affect stock market performance. The findings corroborate the sensitivity of Nepalese stock markets to these economic indicators, supporting the idea that macroeconomic factors are crucial drivers of market behavior. The relationship between market liquidity and economic growth, as identified by Bhattarai, Gautam & Chettri (2021), is evident in our findings. A developed stock market in Nepal enhances liquidity, providing capital for businesses and supporting broader economic expansion. This supports the view that a robust financial market positively influences economic growth. The study's findings about macroeconomic volatility leading to increased stock market volatility resonate with the work of Attari & L (2017), who demonstrated that periods of economic instability contribute to heightened market fluctuations. This alignment underscores the vulnerability of Nepal's stock market to broader economic shifts.

One key contradiction arises between the money supply (MS) and stock returns. While studies like Agrawal & Srivastava (2011) found significant links between money supply and stock-prices, our analysis suggests a weaker or insignificant relationship. This could be due to Nepal's emerging market characteristics, where other factors may outweigh the influence of money supply. Contrary to the findings of Jiranyakul (2012), which highlighted a strong linkage between exchange rate fluctuations and stock market performance, our study found that exchange rate volatility had a more moderate effect on Nepal's stock market. This discrepancy may reflect Nepal's relatively lower exposure to global currency fluctuations, as its economy is more insulated from international markets than other emerging economies. Previous studies, including Aduda, Masila & Onsongo (2012), suggested that investor confidence is pivotal in stock market development. While our research acknowledges the importance of investor confidence, it highlights that macroeconomic stability, particularly inflation control and interest rate management, emerges as a more decisive factor in Nepal's market performance. These results suggest that

macroeconomic policies may have a more direct impact on investor sentiment in Nepal than market confidence alone.

6. Conclusions

This study provides valued understandings into the relationship between macro-economic determinants and equity market performance in Nepal, aligning with and contradicting several findings from previous research. It examined the dynamic association between the Nepalese stock market (NEPSE) and key macro-economic variables—money supply (MS), deposits (DEPO), liquidity (LIQ), and reserve money (RESERVEM)—through the quantitative methodology based on time series data from January 2005 to December 2024. By employing advanced econometric models such as Vector Error Correction Model (VECM), the Johansen Co-integration Test, and Granger Causality Tests, the research identified both long-term equilibrium relationships and short-term interactions among the selected variables. The findings reveal that all indicators are stationary at their first-difference, validating their suitability for co-integration analysis. The Johansen Co-integration test confirmed the existence of at least two significant long-term equilibrium associations among the variables, highlighting that macro-economic indicators influence stock market movements in a structured and persistent manner. Specifically, the VECM results show a significant negative long-run association between reserve money and stock performance, while other variables, such as MS, DEPO, and LIQ, exhibited statistically insignificant long-run linkages. However, short-run dynamics were more pronounced for some lagged variables, particularly D(NEPSE(-2)), D(RESERVEM(-1)), and D(DEPO(-2)), indicating notable immediate effects on stock market movements. The Granger causality analysis further supports directional relationships from macroeconomic indicators to stock market performance, with reserve money, deposits, liquidity, and money supply all Granger-causing stock market performance. These one-way causality relationships underscore the projecting power of macro-economic indicators in forecasting stock market trends in Nepal, while reverse causality was less prevalent. The results of this study offer valuable insights for financial service providers in Nepal, helping them refine investment strategies and risk management by understanding the impact of macro-economic variables on stock-market performance. Policymakers can use these insights to create a stable financial environment, promoting growth and attracting local and foreign investments.

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