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Effect of the Stock Market on Economic Growth in Nepal

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Abstract

Background: This study examines the influence of stock market performance on Nepal's economic growth from 1994 to 2024. Stock market variables, such as paid-up capital, the number of listed companies, market capitalisation, and turnover, are critical to understanding their role in the country's long-term economic performance. Previous literature suggests a potential relationship between financial market development and economic growth; nevertheless, the level of this relationship in the context of Nepal remains underexplored.

Method: The analysis employs the Autoregressive Distributed Lag (ARDL) approach to measure the short- and long-term relationships between key stock market variables and Gross Domestic Product. This method is suitable given the mixed-order of integration in the data, covering the period from 1994 to 2024. Additionally, Granger causality tests are conducted to examine potential causal relationships between stock market performance and economic growth.

Results: The study finds a significant long-term relationship between stock market performance, specifically paid-up capital and the number of listed companies, and Nepal's GDP. This highlights the importance of capital accumulation and market development in fostering sustained economic growth. Equally, market capitalisation, turnover, and government expenditure on education show limited or no significant effect on long-term economic growth. In the short run, real market capitalisation is found to negatively impact GDP. At the same time, turnover has no significant effect, suggesting that short-term market fluctuations do not directly contribute to economic growth. Diagnostic tests confirm the robustness and stability of the econometric model.

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Conclusion: The study stresses the importance of strengthening capital formation, promoting market listings, and encouraging investor participation to support economic growth in Nepal. Policy interventions should focus on improving market efficiency, investor protection, and integrating financial and human capital growth. The findings suggest that these measures can help align Nepal's stock market with its broader economic goals, promoting sustainable and inclusive growth.

Novelty: This research offers new insights into the specific stock market variables that most significantly affect economic growth in Nepal, emphasising paid-up capital and the number of listed companies. By employing a robust econometric methodology and examining short-term and long-term relationships, this study contributes to the literature on financial market development. It suggests actionable policy recommendations for Nepal's economic policymakers.

Keywords: ARDL, Economic Growth, Error Correction Model (ECM), Market Capitalisation, NEPSE Index, Stock Market Development.
JEL Classification; B22, C87, E44, F42, O11, O16

Introduction

The stock market plays an essential role in fostering economic growth by facilitating capital formation, resource allocation, and investment (Levine & Zervos, 1998). In developing economies like Nepal, where the financial sector is still evolving, the stock market is crucial for financial deepening and long-term economic growth. Over the past three decades, the Nepal Stock Exchange (NEPSE) has seen significant growth, marked by increases in market capitalisation, paid-up capital, trading volume, and the number of listed companies. However, the precise impact of this development on Nepal's broader economic outcomes remains underexplored, with limited empirical evidence connecting stock market performance to GDP growth.

This study aims to examine the relationship between stock market development and economic growth in Nepal, focusing on Gross Domestic Product (GDP) as the dependent variable. Key stock market variables (market capitalisation, paid-up capital, number of listed companies, total turnover, and the NEPSE index) are considered alongside government expenditure on education, which plays a vibrant role in human capital development. This research seeks to assess whether these stock market indicators influence economic growth.

While existing literature highlights the potential for stock markets to enhance liquidity and reduce investment risks (Bencivenga & Smith, 1991) and the role of education in nurturing growth (Lucas, 1988), few studies have empirically explored the impact of stock market development on Nepal's GDP. By using time-series data from 1994 to 2024, this research addresses this gap, applying econometric techniques such as ARDL and Granger causality to uncover both short-term and long-term relationships.

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The findings will provide valuable insights for policymakers, investors, and regulators, informing future financial sector reforms and public investment in education, intended for promoting sustainable economic growth in Nepal.

Literature Review

Theoretical Literature

The relationship between financial development and economic growth has been dominant to economic theory for decades. Early contributions, such as Schumpeter (1911), highlighted the role of financial intermediaries in facilitating innovation and economic development by mobilising savings for productive investments. McKinnon (1973) and Shaw (1973) further emphasised financial liberalisation, arguing that a well-functioning financial system enhances resource allocation, mobilises savings, and promotes capital formation, central to growth.

A significant progression came with Endogenous Growth Theory in the 1980s, which shifted away from the Neoclassical Growth Model by assigning long-term growth to factors such as human capital, innovation, and financial development (Romer, 1986; Lucas, 1988). According to this theory, financial deepening nurtures growth by enhancing access to capital and stimulating innovation. Pagano (1993) and Bencivenga and Smith (1991) projected that efficient financial intermediation, capital accumulation, and innovation financing are key mechanisms through which financial systems support economic growth. Additionally, King and Levine (1993) found strong correlations between financial development, capital accumulation, and productivity growth.

Endogenous growth models, exemplified by the equation, $Y=A\cdot K$ suggest that investment in human and physical capital, along with continuous innovation, leads to sustained economic growth. This framework supports the idea that financial development directly influences growth by fostering technological progress and capital accumulation, supporting long-term economic performance.

Empirical Literature

Empirical studies globally show a largely positive relationship between stock market development and economic growth. Levine and Zervos (1998) found that stock market development positively affects long-term growth, capital accumulation, and productivity. Beck and Levine (2004) further emphasised that both stock markets and banks independently and jointly contribute to GDP growth.

In South Asia, studies have shown the significant impact of market indicators like market capitalisation on GDP. Pradhan et al. (2014) reconfirmed the positive causal link between stock market development and economic growth in India and Bangladesh, with market capitalisation and turnover ratio emerging as central indicators.

Country-specific studies

Malaysia: Hoque and Yakob (2017) found a long-run relationship between stock market development and GDP using the ARDL model. Their study emphasised that stock market development promotes economic growth, however it did not support the supply-leading

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hypothesis, signifying that stock market development does not always lead to economic growth but may be a result of it.

Pakistan: Khan et al. (2017) recognised market capitalisation as a key driver of economic growth, with indicators like liquidity and the number of listed companies also contributing significantly.

Nigeria: Ukamaka (2021) found a long-term association between financial deepening and economic growth, noting the roles of market capitalisation and financial sectors such as banking and insurance in boosting growth.

Global Evidence: Månsson and Nykvist (2021) presented that stock markets are effective predictors of economic growth in the ten largest global economies, with mixed findings between country-specific and panel data approaches.

Nepal-specific Studies:

Research in Nepal has been more limited. Studies by Adhikari (2010) and Joshi (2010) found a positive correlation between the NEPSE index and economic growth, however, the latter part of Joshi's study showed stronger results, indicating developing dynamics in Nepal's capital market. Mainali (2011) emphasised Nepal's underdeveloped stock market, but highlighted its potential to contribute to economic growth if further developed. Similarly, Bista (2017) and Koirala (2019) supported the view that market capitalisation positively influences economic growth; however, limited research has examined the inclusion of existing financial indicators, such as education expenditure, into these models.

Research Gap

While global and regional literature point to a positive relationship between stock market development and economic growth, Nepal-specific studies remain scarce, outdated, or fragmented. Remarkably, no study has integrated financial indicators such as market capitalisation, paid-up capital, turnover, and the number of listed companies with government investment in education to assess their combined effect on Nepal's economic growth. This study aims to fill this gap by applying recent data and a comprehensive econometric model, contributing to a more nuanced understanding of the relationship between stock market performance and economic growth in Nepal.

Conceptual Framework and Hypothesis

This study is based on the premise that stock market growth contributes to economic development by enhancing capital formation, improving liquidity, and efficient resource allocation. In addition, government expenditure on education is included as a key control variable, acknowledging the role of human capital in driving long-run economic growth (Lucas, 1988).

The independent variables (market capitalisation, paid-up capital, NEPSE index, number of listed companies, and total turnover) serve as proxies for different features of stock market performance. Meanwhile, government education expenditure represents investment in human capital. The dependent variable is Gross Domestic Product (GDP), which captures overall economic growth.

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The conceptual linkage is based on the belief that a well-functioning stock market fosters investor confidence, improves risk-sharing mechanisms, and channels savings into productive sectors, thereby stimulating economic growth (Levine & Zervos, 1998; Beck & Levine, 2004). Simultaneously, public spending on education increases the productive capacity of the labour force, creating a collaborative effect.

Hypothesized Relationships

- H1: There is a positive relationship between market capitalisation and economic growth.
- H2: Paid-up capital has a significant effect on economic growth.
- H3: NEPSE index positively influences GDP growth.
- H4: The number of listed companies is positively related to GDP growth.
- H5: Total turnover in the stock market positively affects GDP growth.
- H6: Government expenditure on education contributes positively to GDP growth.

Research Methodology

This study uses secondary time-series data spanning 30 years, from 1994 to 2024, to observe the relationship between stock market performance and economic growth in Nepal. The dependent variable in this analysis is Gross Domestic Product (GDP), which serves as a measure of economic growth. The explanatory variables include market capitalisation (MCAP), paid-up capital (PUC), the Nepal Stock Exchange (NEPSE) index, the number of listed companies (NLC), total turnover (TT), and government expenditure on education (TEDEx). These variables are chosen because they collectively reflect the depth, size, performance, and activity level of Nepal's stock market, as well as the government's investment in human capital development. Data for GDP and MCAP are sourced from the Nepal Rastra Bank's Economic Research Department (2024). Stock market data on PUC, NEPSE, NLC, and TT are collected from the Nepal Stock Exchange (NEPSE,2024) and the Securities Board of Nepal (SEBON,2024), while TEDEx data comes from various bulletins of the Ministry of Finance (MoF) of Nepal (Ministry of Finance, 2022).

Model Specification

This study assumes a quantitative, explanatory approach, utilizing econometric techniques to assess both short-run and long-run relationships between stock market performance and economic growth. The main aim is to explore how changes in stock market indicators affect GDP, with the model formulated as follows:

$$GDP_t = \alpha+\beta_1 MCAP_t+\beta_2 PUC_t+\beta_3 NEPSE_t+\beta_4 NLC_t+\beta_5 TT_t+\beta_6 TEDEx_t+\epsilon_t$$

In this equation, GDP_t represents the dependent variable (GDP), while MCAP, PUC, NEPSE, NLC, TT, and TEDEx are the independent variables capturing various dimensions of financial development and human capital investment. The ARDL (Autoregressive Distributed Lag) bounds testing approach is employed to test for both short-term and long-term relationships between the variables. The ARDL model is appropriate here as it can handle variables with

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different orders of integration (I(0) and I(1)) and is suitable for small-sample settings like Nepal (Pesaran et al., 2001).

Estimation Procedure

The estimation procedure starts with unit root testing using the Augmented Dickey-Fuller (ADF) test to check for stationarity in the time-series data. The ADF test determines the order of integration of each variable by testing the null hypothesis that the series has a unit root (Dickey & Fuller, 1979). Following the unit root tests, the ARDL bounds testing approach is applied to examine the occurrence of long-term relationships between the variables. The ARDL model allows for robust estimation even when the independent variables are of mixed integration orders (I(0) or I(1)) and is suitable for small-sample settings similar to Nepal (Pesaran et al., 2001). If the ARDL test confirms a long-run equilibrium relationship, an Error Correction Model (ECM) is estimated to capture short-term deviations from this long-term equilibrium while maintaining the long-run relationship (Engle & Granger, 1987).

Additionally, a Granger causality test is conducted to discover the direction of causality between stock market performance and economic growth. This test supports determining whether stock market development drives economic growth or whether economic growth influences stock market performance (Granger, 1969).

Diagnostic Tests

To ensure the reliability of the estimated models, numerous diagnostic tests are performed. These include tests for serial correlation using the Breusch-Godfrey test (Breusch, 1978), heteroskedasticity using the Breusch-Pagan or White test (Breusch & Pagan, 1979; White, 1980), and normality of residuals using the Jarque-Bera test (Jarque & Bera, 1980). Furthermore, the stability of the regression model is measured using the CUSUM (Cumulative Sum) and CUSUMSQ (Cumulative Sum of Squares) tests. These tests check for the stability of the regression coefficients over time, confirming that the model's estimates are robust and reliable for policy recommendations (Brown et al., 1975).

Data Analysis and Interpretation

Unit Root Test

Time series data pose challenges for researchers conducting experiments. The time series data should be tested to determine whether it exhibits stationary behavior. Using non-stationary data, it is impossible to forecast the variable. Nonstationary data should be converted to static data to obtain optimal results from time-series data. If non-stationary data is used to make a prediction, the prediction could be incorrect, or the results could be unreliable. There is a possibility that such a result would be less dependable and that these results may not be valid or consistent. This information may be used in the Autoregressive Distributed Lag Model if none of the variables is stable at I (0). Suppose there is a substantial change in economic variables, such as earthquakes, blockades, natural disasters, or epidemics. In that case, the data can be converted to second-order differentiation to make it more stable. However, this may conceal a great deal of vital information.

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Unit Root Result from the ADF Technique

All variables must be tested to confirm they are not constant at the I (2) level value. When the variables are fixed at I(2), ARDL cannot be applied. This research used the Augmented Dickey-Fuller (ADF) unit root test procedures, explained further below. Summarised results from a unit root test are shown below in Table 1.

Table 1

Unit Root Test Result at Level and First Difference

Variables	At Level			At First Difference		
	t-statistics	P-value	Order of integration	t-statistics	P-value	Order of integration
LN_RGDP	-2.318636	0.411	No	-4.4871	0.0015	I(1)
LN_R_TED_EXP	-2.76835	0.2195	No	-7.7276	0	I(1)
LN_RMC	-2.67856	0.252	No	-3.7793	0.0005	I(1)
LN_RPAIDUP	-2.16652	0.4887	No	-5.1967	0.0002	I(1)
LN_TERNOVER	-1.97844	0.5873	No	-6.0501	0	I(1)
LN_NEPSE_I	-4.5122	0.0071	I(0)			
LN_LC	-1.77376	0.6902	No	-4.4978	0.0014	I(1)

Source: *Author's calculation by using E-Views 10*

Table 1 presents the results of the unit root test, indicating that the NEPSE Index is stationary at the level I(0), whereas all other variables become stationary after first differencing I(1). The columns in Table 1 are now clearly labelled as "At Level" and "At First Difference," which follow the standard convention for presenting unit root test results (Dickey & Fuller, 1979; Breusch, 1978). All variables are non-stationary at the level and become stationary after first differencing (I(1)). NEPSE, on the other hand, is stationary at level (I(0). This mixed order of integration (I(0) for NEPSE and I(1) for the other variables; necessitates the use of the ARDL bounds testing approach, as the Johansen co-integration test is not suitable for datasets with variables of different integration orders (Pesaran et al., 2001).

Long Run Co-integration

The long-run relationship between the key variables influencing economic growth in Nepal is examined through the Auto-Regressive Distributed Lag (ARDL) model. This approach, selected using the Schwarz Information Criterion (Schwarz, 1978), allows the identification of both short-run and long-run dynamics, mainly in datasets with variables of mixed orders of integration. The ARDL bounds test reveals a significant long-run relationship among the variables, with an F-statistic of 9.70, exceeding the critical bounds. The analysis indicates that in the long run, paid-up capital and the number of listed companies have a positive, statistically significant impact on GDP, underscoring their importance in driving economic growth. However, variables such as education expenditure, market capitalisation, and the NEPSE Index do not show significant effects on GDP, suggesting their limited role in the long-term growth

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in Nepal. Remarkably, although turnover is statistically significant, it shows an adverse effect on GDP, implying that excessive turnover may not contribute to sustainable economic growth.

Table 2

Long Run Co-integration Result

Levels Equation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LN_R_TED_EXP	-0.022783	0.026926	-0.846125	0.4086
LN_RMC	-0.040348	0.11127	-0.362608	0.7211
LN_RPAIDUP	0.217107	0.094299	2.302332	0.0335
LN_TERNOVER	-0.036798	0.018878	-1.949299	0.067
LN_NEPSE_I	0.174835	0.123212	1.418979	0.173
LN_LC	0.441458	0.190263	2.320255	0.0323
C	9.686348	0.337499	28.70034	0

Table 2 presents the long-run results from the ARDL model, which shows the relationships between various variables and GDP. In the long run**,** paid-up capital (LN_RPAIDUP) has a positive and statistically significant effect on GDP, with a coefficient of 0.2171 and a p-value of 0.0335. This proposes that a 1% increase in paid-up capital is associated with a 0.2171% increase in GDP, indicating that greater paid-up capital contributes to economic growth in Nepal. Similarly, the number of listed companies (LN_LC) has a positive and significant effect on GDP, with a coefficient of 0.4415 and a p-value of 0.0323. This implies that a 1% increase in the number of listed companies is associated to a 0.4415% increase in GDP, highlighting the importance of a more developed stock market in nurturing economic growth.

In contrast, education expenditure (LN_R_TED_EXP)**,** market capitalization (LN_RMC)**,** and the NEPSE Index (LN_NEPSE_I**)** do not show a statistically significant impact on GDP in the long run, as their p-values exceeded 0.05. This indicates that, while these variables may influence GDP in other contexts or at different levels, they do not have a significant influence on long-term economic growth in Nepal based on the data analyzed in this study.

The turnover (LN_TURNOVER), although slightly significant with a p-value of 0.067, shows an adverse effect on GDP with a negative coefficient of -0.0368. This shows that a 1% increase in turnover is associated with a 0.0368% decrease in GDP, signifying that higher turnover may not be conducive to sustainable growth in Nepal's stock market. This negative relationship could suggest inefficiencies or speculative trading that do not translate into long-term economic benefits.

In conclusion, the long-run analysis reveals that paid-up capital and the number of listed companies are the key drivers of GDP growth in Nepal; at the same time, education expenditure, market capitalization, and the NEPSE Index do not significantly affect GDP. The negative relationship between turnover and GDP suggests that turnover may not support sustainable growth and may reflect underlying market inefficiencies.

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Short-run Analysis

The Error Correction Model coefficient is statistically significant and negative (–0.497257), representing that approximately 50% of any disequilibrium in the system is corrected within a year. The model accounts for 61% of the variation in GDP growth. While real market capitalisation is significant in the short run, its effect on GDP growth is adverse, and turnover remains statistically insignificant.

Table 3

Short Run Analysis of the Model

ECM Regression

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LN_RMC)	-0.129839	0.02538	-5.11574	0.0001
D(LN_TERNOVER)	0.002554	0.005886	0.433955	0.6695
CointEq(-1)*	-0.497257	0.047897	-10.3818	0
R-squared	0.61731	Adjusted R-squared		0.58669

Table 3 presents the short-run results from the Error Correction Model (ECM), which highlights the direct impact of stock market development on Nepal's economic growth. In the short run, paid-up capital and the number of listed companies continue to support long-term growth, while the short-term effects are limited and mixed. The coefficient for D(LN_RMC), on behalf of the change in market capitalization, is -0.12 and statistically significant with a p-value of 0.0001. This negative coefficient indicates that a 1% increase in market capitalization in the short run is associated with a 0.12% decrease in GDP, signifying that short-term increases in market capitalization might not directly translate into positive economic growth. This could reflect short-term volatility or market inefficiencies.

The Error Correction Model (ECM) term, with a coefficient of -0.49, is significant and correctly interpreted. This suggests that 49% of any disequilibrium in the short run is corrected in the following period, indicating the model's capacity to restore equilibrium in the long term.

Diagnostic test

Diagnostic tests confirm the model's robustness. The Breusch-Godfrey test for autocorrelation produces an F-statistic of 0.042039 with a p-value of obs *R squared 0.07927, reflecting no evidence of autocorrelation in the residuals. The R-squared value of 0.079 suggests that the model explains a modest portion of the variation in GDP. Additionally, the Breusch-Pagan-Godfrey test for heteroskedasticity returns a p-value of 0.0521, which exceeds the 5% significance level, highlighting that the residuals are homoscedastic.

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Table 4:

Serial Correlation and Heteroskedasticity Test Result

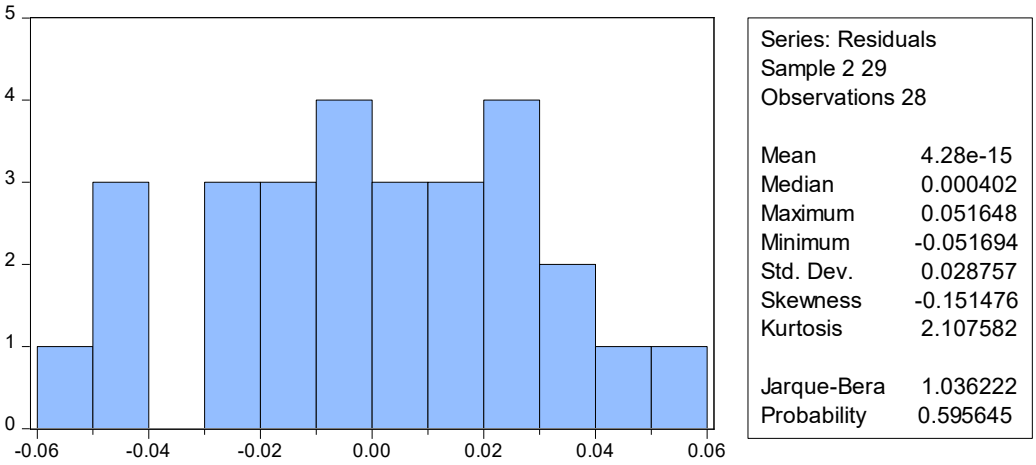
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.042039	Prob. F(1,17)	0.84
Obs*R-squared	0.06907	Prob. Chi-Square(1)	0.7927
Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	2.995946	Prob. F(9,18)	0.0227
Obs*R-squared	16.79091	Prob. Chi-Square(9)	0.0521

Normality Test Result

This measure determines whether the residual's skewness and kurtosis differ considerably from what would be expected from a normal distribution. Jarque-Bera follows a Chi-square pattern; Skewness and kurtosis comprise two parts of this metric. The skewness of a normal distribution is a symmetrical measure with a predicted value of zero. Kurtosis measures the skewed distribution towards its peak or flatness; a kurtosis of 3 is typical for normal distributions.

Figure 1

The Residual's Normality Result



As shown in **Figure 1**, the P value for the Jarque-Bera test is 0.595645, corresponding to a probability of 59%. Since the P-value is more than 5%, if the model is acceptable and the null hypothesis of regularly distributed error terms is not rejected, then the residuals must follow this distribution.

Stability Test

The research uses stability tests based on the cumulative sum (CUSUM) and the cumulative sum of squares (CUSUMSQ) of recursive residuals. Figure 2 and Figure 3, each with an explanatory caption, are provided below.

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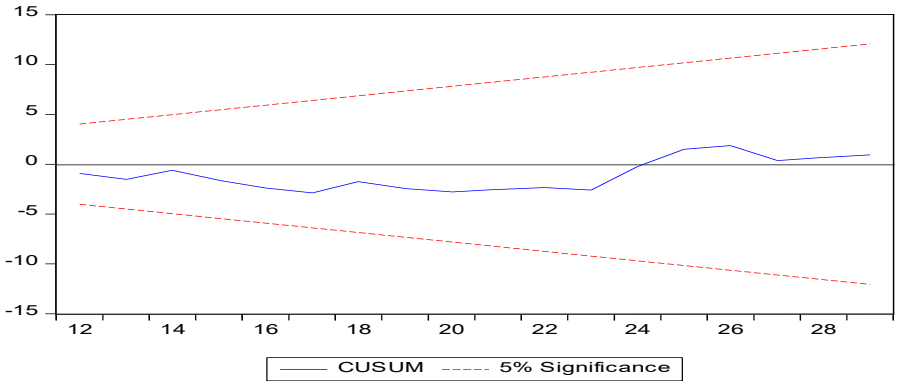
Figure 2

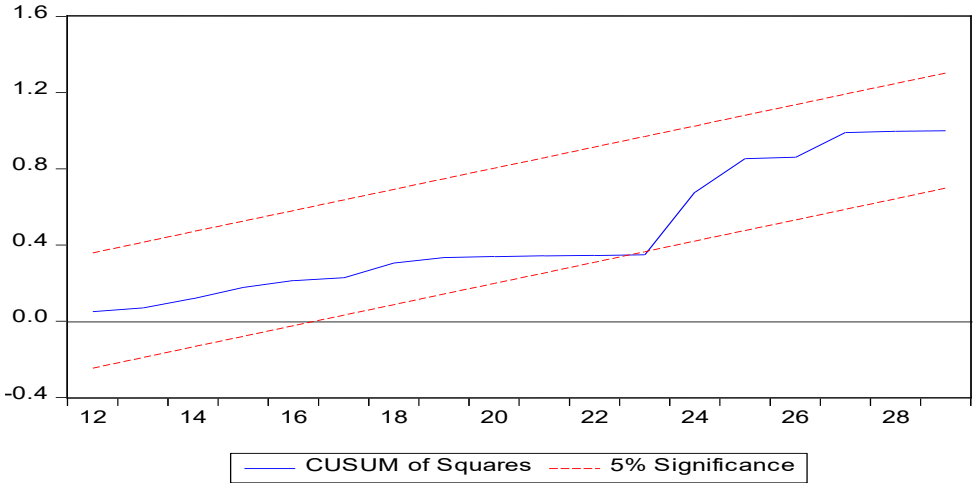
CUSUM Test Result



In **Figure 1**, the Jarque-Bera test shows a p-value of 0.595645, signifying that the error terms are normally distributed. Furthermore, in **Figures 2 and 3**, both CUSUM and CUSUMSQ tests show that the model is structurally stable, with all values lying within the 5% critical bounds. This approves that the model's coefficients are stable over the study period (1994–2024) and reliable for short-run and long-run analysis. In conclusion, the model passes all key diagnostic tests, validating its use for economic forecasting in Nepal.

Figure 3

CUSUM Q Test Result



Granger Causality test

The Granger causality test was conducted on various economic and financial variables, using data spanning 30 observations and a lag length of 1. The purpose of the test is to determine whether one time series can predict or "Granger cause" another, suggesting a causal relationship.

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Table 5:

Granger Causality Test Result

Lags: 1			
Null Hypothesis:	**Obs**	**F-Statistic**	**Prob.**
LN_R_TED_EXP does not Granger Cause LN_R_GDP	30	5.13120	0.0324
LN_R_GDP does not Granger Cause LN_R_TED_EXP		0.05954	0.8092
LN_RMC does not Granger Cause LN_R_GDP	30	10.7553	0.0031
LN_R_GDP does not Granger Cause LN_RMC		2.43417	0.1313
LN_RPAIDUP does not Granger Cause LN_R_GDP	30	16.6125	0.0004
LN_R_GDP does not Granger Cause LN_RPAIDUP		0.02909	0.8659
LN_TERNOVER does not Granger Cause LN_R_GDP	30	0.07624	0.7847
LN_R_GDP does not Granger Cause LN_TERNOVER		5.43182	0.0281
LN_NEPSE_I does not Granger Cause LN_R_GDP	30	2.71225	0.1121
LN_R_GDP does not Granger Cause LN_NEPSE_I		5.16025	0.032
LN_RPAIDUP does not Granger Cause LN_RMC	30	2.12355	0.1575
LN_RMC does not Granger Cause LN_RPAIDUP		14.6820	0.0008
LN_LC does not Granger Cause LN_RMC	30	5.10366	0.0328
LN_RMC does not Granger Cause LN_LC		1.28157	0.2683
LN_TERNOVER does not Granger Cause LN_RPAIDUP	30	1.41646	0.2452
LN_RPAIDUP does not Granger Cause LN_TERNOVER		5.40997	0.0284
LN_NEPSE_I does not Granger Cause LN_RPAIDUP	30	8.43494	0.0076
LN_RPAIDUP does not Granger Cause LN_NEPSE_I		4.40775	0.046
LN_LC does not Granger Cause LN_RPAIDUP	30	0.27959	0.6016
LN_RPAIDUP does not Granger Cause LN_LC		4.66251	0.0406
LN_LC does not Granger Cause LN_NEPSE_I	30	5.90824	0.0226
LN_NEPSE_I does not Granger Cause LN_LC		0.01099	0.9174

Key Findings

a) **Economic Growth (LN_R_GDP) and Variables**

1 LN_R_TED_EXP (Total Education Expenditure) Granger-causes GDP (LN_R_GDP) with a p-value of 0.0324, indicating a statistically significant causal relationship.

2 LN_RPAIDUP (Paid-up Capital) Granger-causes GDP at a highly significant level (p = 0.0004), suggesting that changes in paid-up capital have a substantial impact on economic growth.

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3 LN_RMC (Real Market Capitalization) Granger-causes GDP with a p-value of 0.0031, confirming its significant effect on GDP growth.
4 LN_TERNOVER (Turnover) does not Granger-cause GDP (p = 0.7847), indicating no significant predictive relationship.

b) **Reciprocal Causality**
LN_R_GDP does not Granger-cause LN_R_TED_EXP, LN_RMC, or LN_RPAIDUP, as indicated by p-values of 0.8092, 0.1313, and 0.8659, respectively, suggesting that these variables do not have a significant reverse causal effect on GDP in the short run.

c) **Stock Market and Capitalization**
1 LN_RMC Granger-causes LN_RPAIDUP (p = 0.0008), highlighting the role of market capitalization in influencing paid-up capital.
2 LN_NEPSE_I (Nepal Stock Exchange Index) Granger-causes LN_RPAIDUP (p = 0.0076), indicating a significant relationship between stock market performance and capital accumulation.
3 LN_LC (Number of Listed Companies) Granger-causes LN_NEPSE_I with a p-value of 0.0226, suggesting that the number of listed companies has an impact on the stock market index.

d) **Lack of Significant Causality**
Several pairs, such as LN_RPAIDUP and LN_LC and LN_RMC and LN_LC, did not show significant Granger causality, with p-values exceeding the common significance threshold of 0.05.

e) **Other Variables**
There are several instances where one variable does not Granger-cause another, such as LN_TERNOVER does not Granger-cause LN_RMC (p = 0.2452) and LN_LC does not Granger-cause LN_RPAIDUP (p = 0.6016), suggesting a weak or no causal relationship between these variables in the short run.

The results demonstrate clear, significant causal relationships between economic growth and key financial variables, including paid-up capital, real market capitalization, and total education expenditure. While some variables, such as turnover and the number of listed companies, did not show significant Granger causality, the overall findings highlight the crucial role of financial market variables in influencing GDP growth in Nepal. Understanding these causal pathways is essential for policymakers and financial analysts in designing effective economic development strategies.

Discussion

The findings of this study offer a comprehensive understanding of the dynamic relationship between stock market performance and economic growth in Nepal, with prominent implications for policy and investment strategies. The empirical results reveal expected and unexpected relationships, providing valuable insights into the functioning of Nepal's capital markets and their role in driving long-term economic growth.

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Support for Hypotheses

The results largely align with the initial hypotheses, particularly regarding the positive relationship between stock market development and GDP growth. As hypothesized, paid-up capital (H1) and the number of listed companies (H3) exhibit a significant positive relationship with GDP growth, consistent with the existing literature (Levine & Zervos, 1998; Beck & Levine, 2004). These findings highlight the critical role of capital mobilization and market development in promoting sustainable economic growth, as the stock market serves as a channel for raising capital and directing it toward productive investment. Similarly, the existence of a statistically significant long-run relationship between these variables and economic growth supports the view that stock market development plays a pivotal role in resource allocation and capital formation.

However, the results for market capitalization (H4) and the NEPSE Index (H5) diverge from the expected pattern. Despite their relevance in stock market analysis, both variables were found to be statistically insignificant in the long run, which contradicts the widely held belief that market capitalization is a direct driver of economic growth. This finding contrasts with prior studies that have emphasized market capitalization as an indicator of financial sector depth (Pokharel, 2020). The insignificance of the NEPSE Index in the long run further questions its ability to reflect real economic growth, possibly due to the speculative nature of stock market indices, where short-term fluctuations do not necessarily correlate with fundamental economic performance.

Unexpected Results

One of the most striking findings is the negative long-run relationship between turnover and GDP growth. Turnover, which represents market liquidity and trading activity, is traditionally seen as a positive indicator of market well-being. However, the negative relationship in this study recommends that higher trading volumes may not always lead to productive investment. This is consistent with concerns raised in emerging markets, where increased turnover can be driven by speculative trading rather than long-term investment (Singh, 1997). Speculation in Nepal's stock market, characterized by short-term trading and volatility, could be diverting attention from the real economic sectors that drive growth. Moreover, low market depth and limited investor participation may intensify these effects, leading to a disconnect between trading volumes and actual economic performance.

In the short run, real market capitalization was found to be significant but negatively associated with GDP, suggesting that fluctuations in market size and performance may not align with real sector growth. This result could be explained by market volatility, investor sentiment, and short-term market inefficiencies, which be inclined to dominate the market in the absence of strong institutional frameworks and investor confidence.

Comparison with Literature

The findings of this study contrast with certain features of the literature, particularly regarding the role of market capitalization and turnover. While Levine & Zervos (1998) and Beck & Levine (2004) argue that market capitalization should positively influence economic growth, our results suggest a more nuanced relationship; market size alone does not necessarily lead to

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long-term economic benefits. Similarly, the unexpected negative relationship between turnover and economic growth raises concerns by Singh (1997), who cautioned against equating market activity with real economic performance. The lack of significance of the NEPSE Index in the long run could be attributed to market inefficiencies and speculative trading, rather than to underlying economic fundamentals.

Conclusion and Policy Implications

This study examines the effect of stock market performance on economic growth in Nepal by using the Autoregressive Distributed Lag (ARDL) model on data spanning from 1994 to 2024. The analysis approves a significant long-run relationship between stock market variables (particularly paid-up capital and the number of listed companies) and Gross Domestic Product (GDP). These findings highlight the crucial role of capital accumulation and market expansion in promoting sustainable economic growth in Nepal. However, variables such as market capitalization, turnover, and government education expenditure showed limited or no significant impact on long-term economic growth, indicating that market size or liquidity alone may not guarantee growth without efficient capital allocation and strong institutional frameworks.

In the short run, real market capitalization presented a significant but adverse effect on GDP growth; At the same time, turnover was insignificant, suggesting that short-term market fluctuations do not necessarily translate into tangible economic benefits. The Granger causality test supports the importance of financial deepening, revealing bidirectional and unidirectional causal relationships between key stock market indicators and GDP growth.

Policy Implications

The findings stress the importance of focusing on the structural development of Nepal's stock market rather than trusting solely on its size or index performance. Policymakers should prioritize improving investor confidence, enhancing market transparency, and promoting long-term institutional participation to create a more robust financial ecosystem. Encouraging productive investment, rather than speculative trading, could help align market performance with real economic growth. Furthermore, policies aimed at deepening the financial markets, improving liquidity depth, and reducing volatility could alleviate the adverse effects of excessive turnover.

In conclusion, while stock market development in Nepal (primarily measured by paid-up capital and the number of listed companies) plays a critical role in fostering long-term economic growth, the findings suggest that other market indicators, such as market capitalization and turnover, may not always have the expected positive effects. Policymakers should focus on addressing market inefficiencies and improving the overall investment climate to guarantee that the financial sector contributes effectively to economic growth.

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Novelty

This study offers a perspective on the relationship between stock market performance and GDP growth in Nepal. Using the Autoregressive Distributed Lag (ARDL) model to analyse data from 1994 to 2024, it provides new insights into how stock market variables such as paid-up capital and market capitalisation, the number of listed companies, and Nepal's economic growth. Unlike previous studies, this research emphasises Nepal's emerging stock market, making it a valuable contribution to understanding the role of financial markets in developing economies.

Transparency Statement: The author confirms that this study has been conducted with honesty and in full adherence to ethical guidelines.
Data Availability Statement: Author can provide data.
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Authors' Contributions: The author solely conducted all research activities i.e., concept, data collecting, drafting and final review of manuscript and second author contributes for feedbacks ad correction in each steps of research and final review of manuscript.

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