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THE RELEVANCE OF FINANCIAL PERFORMANCE IN DETERMINING STOCK PRICES OF INSURANCE COMPANIES

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Abstract

Purpose. Despite their growth and economic significance, insurance stock prices raise concerns. This study investigates the factors influencing stock prices in the Nepalese insurance industry, specifically focusing on the relationship between financial performance indicators and stock pricing.

Design/methodology/approach. This research employs panel data regression analysis spanning eight years (FY 2014/15 to 2021/22) on ten insurance companies, disaggregated into life and non-life subsets. It investigates financial variables such as Return on Assets (ROA), Earnings per Share (EPS), Return on Equity (ROE), Net Profit Margin (NPM), and Book Value per Share (BVPS).

Findings. The research reveals a consistently positive and significant influence of EPS ($p<0.05$) on stock prices across all models. The Random Effects Model confirms that only EPS and ROE significantly affect stock prices in life and non-life insurance companies, with ROE exhibiting a notable negative impact. ROA, NPM, and BVPS show no significance, indicating variability in their impact on stock pricing.

Research implications. This study provides practitioners with insights into financial factors driving stock prices, aiding strategic decision-making. The findings contribute to a deeper understanding of the dynamics of the Nepalese insurance market and offer guidance for future research and policy interventions.

Originality/value. This study uniquely analyzes the insurance sector by incorporating life and non-life subsets, providing a more detailed analysis. Employing robust analytical techniques, it comprehensively explores the relationship between financial performance and stock pricing, contributing empirical evidence and insights to industry stakeholders and academia.

Keywords: panel data analysis, earnings per share, return on equity, random effects, fixed-effects model

JEL index: G11, G12, G17, G22

1. Introduction

Understanding the dynamic interactions between stock prices and financial metrics in Nepalese insurance companies is crucial for investors, regulators, policymakers, and researchers. Although relatively young compared to other countries, the Nepalese insurance sector has a pivotal role in the economy by ensuring the financial well-being of individuals and businesses, contributing significantly to the country's economic growth and stability (Dahal et al., 2023; Khadka, 2023). As of mid-July 2022, 19 non-life, 19 life, 4 micro-insurance, and 2 re-insurance companies are available in Nepal, reflecting a sector that has

witnessed a 16.48% growth in the last fiscal year 2021/22. The robust growth, with insurance companies collecting Rs. 177.81 billion (US $ 1.34 billion) in premiums during the same period, not only highlights the sector's increasing economic significance but also illuminates the evolving context of customer behaviors, particularly in the field of innovative financial services, digital literacy, and online trading (Bhandari et al., 2021; Gurung et al., 2024; Karki et al., 2021). However, challenges such as low insurance penetration, regulatory issues, competition from other financial service providers, and customer illiteracy persist despite this growth.

In the context of Nepal, financial performance is a comprehensive measure of an entity's accountability for its policies, operations, and activities, quantified over a specified period (Tandelilin, 2010). While the financial health of insurance companies significantly impacts their ability to deliver effective services, measuring this performance involves various quantifiable and non-quantifiable factors. Organizational structure, management quality, and control systems (Dahal, 2022; Osisanwo & Atanda, 2012), along with factors like innovation, skilled labor availability, and government policies (Bhattarai et al., 2020; Rajbhandari et al., 2020), collectively influence the overall evaluation of financial performance. Several studies in Nepal have explored the dynamic link between financial performance and stock prices. Lamichhane and Rai (2021) found a significantly positive influence of ROE on stock returns, highlighting the relevance of this financial metric in gauging market performance. However, the dynamics of EPS, ROA, BPVS, and NPM in influencing stock prices remain underexplored in the Nepalese context. In the broader context, the stock market acts as a mirror reflecting the status of the economy, holding a crucial role in promoting the formation of capital and sustainable economic development, a concept supported by the long-term cointegration of economic variables (Karki, 2012; Kurihara, 2006; Pant et al., 2022). Investors and practitioners face the challenge of anticipating stock values accurately, considering intrinsic and extrinsic factors that influence stock price movements (Malhotra & Tandon, 2013). The Nepalese insurance market, subject to various external influences, presents a dynamic environment in which a greater comprehension of the correlation between financial metrics and stock prices is required.

While studies have explored the introduction of insurance services, fundamental determinants of stock pricing, and the growth of insurance activities in Nepal (Bhattarai, 2016; Ghimire, 2013; Sharma, 2017), there exists a literature gap regarding the comprehensive exploration of the influence of financial performance on pricing stocks of Nepalese insurers. The few existing studies, such as Ghimire and Mishra (2018), fall short of an in-depth analysis of factors influencing stock pricing, particularly in the context of core financials. Therefore, this research seeks to address this gap and contribute to the existing body of knowledge by employing a robust methodology to evaluate the variables' effect in valuing Nepalese insurance companies' stocks.

The primary goal of this investigation is to determine the significance of financial performance in driving the stock prices of Nepalese Insurances. To achieve this overarching goal, the study aims to respond to the subsequent research inquiry:

RQ1: How does financial performance impact the stock prices of Nepalese insurance companies?

Aligned with the research aim, the study has two specific objectives. Firstly, it aims to analyze how ROA, EPS, ROE, NPM, and BVPS impact stock prices in Nepalese insurance companies. Secondly, it seeks to identify the most significant factor among these financial metrics influencing stock prices in the Nepalese insurance sector. These objectives aim to provide a detailed understanding of the financial dynamics shaping stock prices in the Nepalese insurance industry. A robust methodology has been employed to achieve these objectives, utilizing panel data regression analysis. This method allows for a comprehensive exploration of the link between the financial indicators and stock pricing, comprising a sample of five life and five non-life insurance companies over eight years, from FY 2014/15 to 2021/22. As the study advances beyond theoretical exploration, its findings hold practical implications for various stakeholders.

The rest of the paper's structure comprises Section 2, which reviews the relevant literature; Section 3, which details the research methodology; Section 4, which presents the results of empirical analysis; and Section 5, which concludes with a summary of the findings and recommendations for further study.

2. Literature review

Financial performance evaluation is critical to assessing how insurance companies manage their financial resources and operations. It encompasses scrutinizing various financial metrics to measure profitability, solvency, liquidity, efficiency, and overall health. Management quality, organizational structure, control systems, and accounting further influence financial performance (Dahal et al., 2020; Ghimire et al., 2023; Osisanwo & Atanda, 2012). Menaje's (2012) investigation in the Philippines revealed a strong positive impact of earnings per share (EPS) on stock pricing, contrasting with an adverse effect on ROA. Similarly, Saleh (2015) explored Pakistan's oil and gas sector, finding ROA and NPM negatively influencing stock prices, while ROE had a small positive effect.

Studies in diverse markets further enriched the understanding. Anwaar (2016) explored the FTSE-100 Index on the London Stock Exchange, revealing a strong influence of NPM and ROA on stock pricing, where EPS exhibited a significant adverse effect, challenging the results of Idawati and Wahyudi (2015). In the Indonesian context, Talamati and Pangemanan (2015) emphasized the positive and significant effect of EPS on pricing the banking sector stocks, contrasting with the non-significant influence of return on equity. Sharif et al. (2015) identified variables influencing stock returns in Bahrain's stock exchange, including EPS, BVPS, ROE, firm size, price-earnings (P/E), dividend per share (DPS), dividend yield (DY), and debt to assets (D/A). The study found that variables such as BVPS, ROE, firm size, P/E, and DPS had a strong positive impact on stock pricing, which Karki (2018) also confirmed.

The effect of ROA, ROE, and EPS on market share prices for the LQ-45 mining companies listed on the Indonesia Stock Exchange (ISE) was studied by Mogonta and Pandowo (2016). The study, spanning 2011-2015, found a simultaneous positive impact of these variables on market share prices, with ROE having a negative effect. The results aligned with the mixed results of Julianto and Syafarudin (2020) and Martina (2019). Daniswara and Daryanto (2020) focused on the LQ45 index, analyzing the impact of EPS, ROE, ROA, and PBV (price-to-book value) on stock pricing. Their findings emphasized the significant positive effect of PBV, EPS, and market returns on stock returns. Sukesti et al. (2021) explored the factors influencing stock prices concerning changes in financial performance. By analyzing 136 production firms listed on the ISE, the research identified that NPM and D/E ratios favorably impact share prices, with ROA acting as a mediating variable.

In the Nepalese context, Sapkota and Pradhan (2016) found a favorable link between market prices and EPS, DPS, ROA, P/E ratios, and GDP. These findings indicated the significance of both micro and macroeconomic factors in influencing stock prices. Gautam and Bista (2019) specifically focused on Nepalese non-life insurance companies, identifying factors such as DPS, EPS, and ROA that negatively impact market prices. In contrast, firm size exerted a positive influence. Bhattarai (2020) shed light on the profitability of Nepalese insurers, emphasizing the positive impacts of equity to total assets, firm size, total debt ratio, and leverage on various financial performance indicators. Hamal (2020) explored the influence of firm-specific variables on life insurance companies in Nepal, revealing negative relationships between firm size and long-term investment with financial performance. Jaishi (2021) extended the exploration to life and non-life insurers in Nepal, finding a positive influence of a larger debt ratio on financial performance. From a broader perspective, Lamichhane and Rai (2021) documented that ROE had a positive and significant impact on stock pricing, emphasizing the relevance of financial metrics in determining stock prices.

The established theoretical frameworks support the study, ensuring its sound foundation and relevance in financial markets and stock pricing dynamics. Emphasizing stock market pricing efficiency, three pivotal theories have been considered: Behavioral Finance Theory, Revenue and Investment Catering Theory, and Efficient Market Hypothesis (EMH). These theories collectively contribute to an in-depth overview of the complex dynamics shaping stock prices.

2.1. Behavioral Finance Theory

Behavioral finance, rooted in the study of psychological influences on investors and financial markets, is crucial in understanding the dynamics of stock prices. Shiller (1981) emphasized that psychological factors and investor sentiment can significantly impact stock returns. The central tenet of behavioral finance involves identifying and explaining inefficiencies and mispricing in financial markets. The framework, as illustrated by Ricciardi and Simon (2000), explores the influence of cognitive biases, emotions, and social interactions on investing decisions (Figure 1). This theoretical perspective is crucial in

acknowledging that investors do not always behave rationally, and their reactions to financial performance information vary.

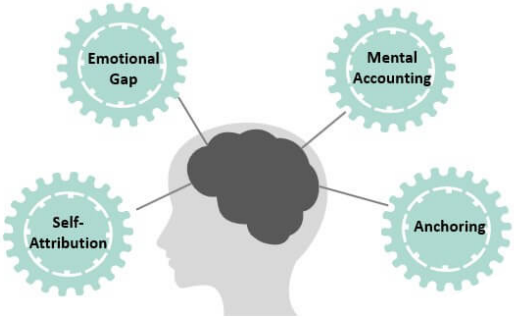

Figure 1. Behavioral Finance Theory (Ricciardi & Simon, 2000)

2.2. Revenue and Investment Catering Theory

Stein's (1996) revenue and investment catering theory provides insights into how a firm's investing decisions can be influenced by the market valuation of the company (Figure 2). Catering actions aimed at boosting share prices above fundamental value suggest that managers may choose to invest in overpriced projects to enhance short-term stock prices. This theory posits that when investors have limited time horizons, managers may favor overpriced projects, catering to sentiment and aligning with current investor preferences (Maharjan et al., 2022). This theory introduces the concept that market mispricing, based on the level of investment, can drive managers to cater to current sentiment, particularly when facing challenges in valuing assets.

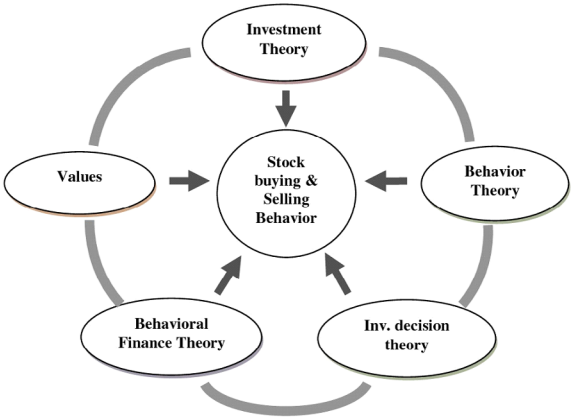

Figure 2. Revenue and Investment Catering Theory (Stein, 1996)

2.3. Efficient Market Hypothesis (EMH):

The EMH hypothesis (Fama, 1970) suggests that stock prices fully accommodate all available information, including financial performance (Figure 3). The EMH is associated with a "random walk," indicating that subsequent price changes are independent of past prices as long as stock prices immediately and accurately capture the information. This theory questions whether insurance company stock returns follow the EMH or exhibit anomalies based on financial performance metrics.

Figure 3. Efficient Market Hypothesis (Fama, 1970)

This study is primarily based on the Revenue and Investment Catering Theory, which examines how firms' investment decisions are influenced by market valuation, mainly through actions aimed at boosting share prices above fundamental value. While this theory is the main theoretical framework, insights from Behavioral Finance Theory and the Efficient Market Hypothesis (EMH) are also considered. Together, these theories provide a comprehensive perspective on the determinants of stock prices in Nepalese insurance companies. The Nepalese literature predominantly emphasizes commercial banks, creating a notable research gap regarding insurance companies' dynamics (Karki, 2020; Sharma, 2017). This study aims to bridge this gap by comprehensively examining the influence of financial indicators on stock prices, specifically within both the non-life and life insurance sectors. This research advances existing theoretical and empirical understanding by introducing a study framework adapted from Saleh (2015) and Anwar (2016) to analyze the dynamic relationship between these variables.

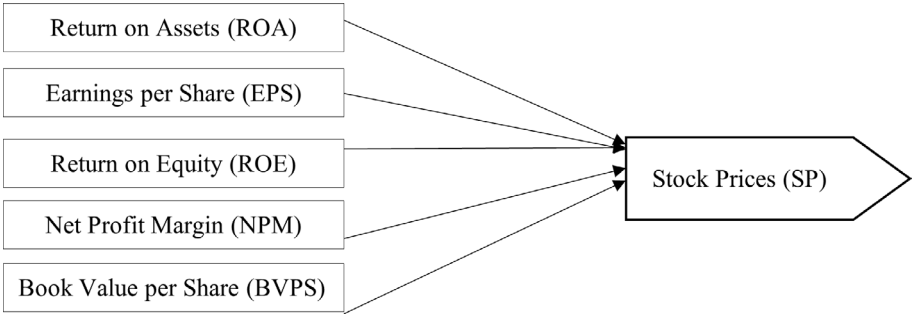

Figure 4. Conceptual Framework

Study Hypothesis

Extensive research has demonstrated significant interrelations among the financial variables included in this framework. Pernamasari et al. (2020) conducted a study grounded in firm performance assessment, suggesting that higher ROA correlates positively with stock prices. Building on prior research, Sharma (2011) demonstrated a positive link between EPS and stock prices, supported by associations between EPS, BVPS, and DPS. Similarly, Lamichhane and Rai (2021) identified a positive relationship between ROE and the share prices of insurers in Nepal, echoing findings by Reza and Dina (2016), emphasizing the positive effect of higher ROE on stock returns. Further, drawing from the significance of NPM in evaluating management efficiency and profitability, Sukesti et al. (2021) noted a positive influence of NPM on stock prices. Moreover, studies investigating BVPS's relationship with stock prices (Aiyabei et al., 2019; Chiu et al., 2020) highlighted its role in reflecting the valuation of stocks. Based on past literature, this study develops the following hypotheses to investigate the structural relationship:

H_{01}: ROA has no significantly positive impact on stock prices.
H_{02}: EPS has no significantly positive effect on stock prices.
H_{03}: ROE does not significantly impact stock prices.
H_{04}: NPM has no significantly positive influence on stock prices.
H_{05}: BVPS has no significantly positive impact on stock price.

3. Methodology

This research uses a causal-comparative and a descriptive approach within the context of quantitative research. The causal design facilitates the assessment of how financial performance affects the stock values of Nepalese Insurances, while a descriptive design aids in characterizing study variables, providing a foundational understanding.

3.1 Sample Description and Data: The sample comprises 10 insurance companies in Nepal, encompassing non-life and life sectors. Data spans eight fiscal years (2014/15 to 2021/22), making 80 observations. Selected companies include Shikhar Insurance (SICL), Sagarmatha Insurance (SIC), Neco Insurance (NIL), Himalayan General Insurance (HGI), Lumbini General Insurance (LGIL), Surya Life Insurance (SLICL), National Life Insurance (NLICL), Life Insurance Corporation (LICN), Asian Life Insurance (ALICL), and Nepal Life Insurance (NLIC). Secondary data sources were utilized in this analysis, including annual reports released by the Insurance Board of Nepal (*known as* Beema Samiti), statistics from specific insurers, and other pertinent publications.

A panel data analysis approach has been chosen, employing descriptive, correlation, and regression analyses. Statistical software used for the study includes SPSS, Gretl, and Stata.

3.2 Model Specification: The regression model aims to analyze the association between the share prices of Nepalese insurance and their financial performance. The model equation, derived from the conceptual framework, takes the form:

$SP = f\ (ROA, EPS, ROE, NPM, and\ BVPS)$

$$SP_{it} = \beta_0 + \beta_1 ROA_{it} + \beta_2 EPS_{it} + \beta_3 ROE_{it} + \beta_4 NPM_{it} + \beta_5 BVPS_{it} + \varepsilon_{it} \quad \text{..... (1)}$$

Where, *SP* is the stock price, *ROA* is return on assets, *EPS* is earnings per share, *ROE* is the return on equity, *NPM* is net profit margin, *BVPS* is book value per share, and ε represents the error term.

3.3 Panel Data Analysis: This study starts with a pooled OLS (Ordinary-Least-Squares) regression model (1), which helps evaluate the effect of endogenous factors on exogenous variables, excluding industry and time effects. It also serves as a baseline comparison model.

i) Fixed Effects Model (FEM): It estimates the effects of variables that vary across observations and only considers data from entities with a large number of observations, minimizing the impact of unobserved heterogeneity.

One-Way FEM: To assess industry impacts on stock prices, a one-way FEM is employed. This model accommodates heterogeneity among cross-sectional units, specifically ten insurance companies in this study. Unit dummy variables are introduced for each insurance, totaling nine to overcome the dummy variable trap. The model is represented as:

$$SP_{it} = \beta_i + \beta_{1t} ROA_{it} + \beta_{2t} EPS_{it} + \beta_{3t} ROE_{it} + \beta_{4t} NPM_{it} + \beta_{5t} BVPS_{it} + \delta_i B_i + \varepsilon_{it} \quad \text{.....(2)}$$

In this model, $\delta i\ Bi$ is a dummy variable for the insurance companies, and the subscript I has been added to the intercept to indicate that it may differ for insurance-specific reasons.

Two-Way FEM: To determine unit and time impacts on stock pricing, a two-way FEM has been implemented. This model considers heterogeneity among cross-sectional units (industry types) and incorporates time trends. Similar to the one-way model, unit dummies are included, and time dummies are added to capture time-specific variations. The model is expressed as:

$$SP_{it} = \beta_{it} + \beta_{1t} ROA_{it} + \beta_{2t} EPS_{it} + \beta_{3t} ROE_{it} + \beta_{4t} NPM_{it} + \beta_{5t} BVPS_{it} + \delta_i B_i + + \delta_t T_t + \varepsilon_{it} \ldots\ldots(3)$$

Here, β_{it} represents both unit and time-specific effects, and $\delta_t T_t$ includes time dummy variables to account for time trends. Seven (t-1) time dummies were utilized in total; one dummy has been omitted to prevent the dummy variable trap. Time dummies' coefficients can be adjusted for benchmark coefficients to analyze variations across different years.

ii) Random Effects Model (REM): To address potential issues associated with a large number of dummy variables, a random effect model was employed in this research. The model is expressed as:

$$SP_{it} = \beta_{i} + \beta_{1t} ROA_{it} + \beta_{2t} EPS_{it} + \beta_{3t} ROE_{it} + \beta_{4t} NPM_{it} + \beta_{5t} BVPS_{it} + \delta_i B_i + + \delta_t T_t + \omega_{it} \ldots\ldots(4)$$

where, $\omega_{it} = e_{it} + \upsilon_{it}$

As in model (2), $\beta + u_i$ denotes the β_i in this model, while u_i signifies the distinct variations in the intercept values for each insurer.

iii) **Levene's Test**: Levene's Test of Homogeneity of Variance was used to assess whether the variance of a variable is equal across different groups or categories, especially insurance subsectors, regarding their stock prices in this study.

3.4 Model Selection and Diagnostic Tests: The Hausman test determines the appropriateness of random or fixed-effect regression models (Karki et al., 2023). Before choosing between FEM or REM models, the Hausman test (Hausman, 1978) was conducted, examining whether unobserved effects are correlated with explanatory variables. If this hypothesis remains unrejected, indicating the absence of correlation among unobserved effects, the random effect model (REM) is chosen. Further tests for Serial Correlation (Breusch-Godfrey/Wooldridge test), multicollinearity tests, and Heteroskedasticity (Breusch-Pagan test) also has been conducted to confirm the suitability of the chosen model for the study.

4. Results

The descriptive analysis of the study variables provides an exhaustive description of the financial context of 10 life and non-life Nepalese insurers over eight years. Table 1 shows the descriptive data, shedding light on key central tendency and dispersion aspects.

Table 1. Descriptive Analysis

Variables	Mean	Median	Std. Deviation	Minimum	Maximum
ROA	5.50	3.39	8.04	-0.26	57.91
EPS	26.62	25.01	16.51	-4.30	100.81
ROE	12.41	12.12	7.88	-3.91	42.71
NPM	10.57	9.71	6.71	-1.00	34.12
BVPS	175.12	173.05	44.32	112.29	314.00
SP	1255.71	1030.80	793.80	325.97	4013.70

Notably, the average stock price across these companies stands at Rs 1255.71, showcasing the composite valuation of these entities in the market. The variability in stock pricing, illustrated by a standard deviation of Rs 793.80 and a range from Rs 325.97 to Rs 4013.70, highlights the diverse market positions and performances among these insurers. Return on Assets (ROA) exhibits an average of 5.50%, reflecting the efficacy of utilizing assets to generate profits. The range from -0.26% to 57.91% indicates varying degrees of operational effectiveness. Earnings per Share (EPS) average at Rs 26.62, capturing the profitability per share, with a range from -Rs 4.30 to Rs 100.81, revealing distinct earnings patterns. Return on Equity (ROE) at 12.41% signifies the return on shareholders' equity investments, ranging from -3.91% to 42.71%, showing differing financial performances. Net Profit Margin (NPM) at 10.57% measures the profitability from sales, with a range of -1.00% to 34.12%, showcasing diverse levels of profit generation. Book Value per Share (BVPS) at Rs 175.12 represents the accounting value, reflecting the financial position of these insurers. The range from Rs 112.29 to Rs 314.00 indicates variations in book values across the companies.

The correlation matrix in Table 2 reveals considerable correlations between major financial indicators in the sampled Nepalese insurance companies. Notably, EPS and ROA exhibit a robust positive correlation (0.524**), signifying that an increase in profitability per share corresponds to heightened efficiency in utilizing assets for returns. Moreover, Return on Equity (ROE) demonstrates a significant positive correlation with both ROA (0.480**) and EPS (0.817**), reinforcing the interconnectedness of profitability metrics. Net Profit Margin (NPM) emerges as a pivotal indicator, showcasing substantial positive correlations with ROA (0.804**), EPS (0.666**), and ROE (0.667**). This suggests that companies with higher net profit margins exhibit enhanced efficiency in asset utilization, increased profitability per share, and superior returns on stocks. Book Value per Share (BVPS) demonstrates significant positive correlations with all study variables ROA, EPS, ROE, and NPM. As the accounting value per share increases, there is a corresponding augmentation in asset efficiency, profitability, and returns on equity. However, the stock price exhibits a noteworthy negative correlation with the Net Profit Margin at the 95% level of confidence. This indicates that companies with higher net profit margins may not necessarily require a corresponding upsurge in stock prices, emphasizing the complexity of market dynamics.

Table 2. Correlation Matrix

	ROA (%)	EPS(RS)	ROE (%)	NPM (%)	BVPS(Rs.)	Stock price
ROA (%)	1					
EPS(Rs.)	.524**	1				
	.000					
ROE (%)	.480**	.817**	1			
	.000	.000				
NPM (%)	.804**	.666**	.667**	1		
	.000	.000	.000			
BVPS(Rs.)	.491**	.626**	.479**	.609**	1	
	.000	.000	.000	.000		
Stock price	-.140	.174	-.210	-.236*	-.034	1
	.217	.123	.062	.035	.764	

*Correlation is significant at 0.01 and 0.05 with '**' and '*'.*

4.1. Panel Data Analysis

Results from panel-data computation, encompassing the Pooled-OLS, Fixed, and Random Effects Analysis, have been illustrated in Table 3.

Table 3. Panel Data Regression Results

Pooled-OLS Analysis Model						
Stock Price	**Coeff.**	**Std. Error**	**T**	**p>t**	**[95% Confd. Interval]**	
ROA	0.0047	0.0048	0.97	0.336	-0.0049	0.0143
EPS	0.0167	0.0027	6.09	0.000	0.0112	0.0221
ROE	-0.0221	0.0054	-4.09	0.000	-0.0329	-0.0113
NPM	-0.0229	0.0071	-3.20	0.002	-0.0371	-0.0086
BVPS	-0.0001	0.0007	-0.14	0.887	-0.0015	0.0013
_cons	3.0874	0.1021	30.23	0.000	2.8839	3.2908
F (5, 74)	10.42		Prob.> F		0.0000	
R-sq.	0.4132		Adj. R-sq.		0.3736	

Fixed-Effects Analysis Model						
Stock Price	**Coeff.**	**Std. Error**	**T**	**P>t**	**[95% Confd. Interval]**	
ROA	-0.0004	0.0053	-0.08	0.938	-0.0111	0.0102
EPS	0.0117	0.0033	3.55	0.001	0.0051	0.0183
ROE	-0.0186	0.0053	-3.51	0.001	-0.0291	-0.0080
NPM	-0.0082	0.0099	-0.83	0.409	-0.0279	0.0115
BVPS	-0.0008	0.0010	-0.78	0.437	-0.0029	0.0013
_cons	3.1714	0.1701	18.64	0.000	2.8315	3.5112
R-sq. (within)	0.1934	R-sq. (between)		0.6135	R-sq. (overall)	0.3713
F(5, 65)	3.12		Prob.> F	0.0139		
Random Effects Analysis Model						
Stock Price	**Coeff.**	**Std. Error**	**Z**	**P>z**	**[95% Confd. Interval]**	
ROA	0.0024	0.0049	0.49	0.623	-0.0072	0.0121
EPS	0.0138	0.0028	4.86	0.000	0.0082	0.0194
ROE	-0.0201	0.0051	-3.96	0.000	-0.0301	-0.0102
NPM	-0.0156	0.0082	-1.91	0.056	-0.0317	0.0004
BVPS	-0.0005	0.0008	-0.58	0.561	-0.0021	0.0011
_cons	3.1403	0.1303	24.09	0.000	2.8848	3.3958
R-sq. (within)	0.1873	R-sq. (between)		0.6925	R-sq. (overall)	0.4040
Wald $\chi^2(5)$	27.35		Prob.> χ^2	0.0000		

The symbols ROA (return on assets), ROE (return on equity), EPS (Earnings per Share), NPM (net profit margin), and BVPS (book value per share) were used in this analysis.

The Pooled OLS Model exhibits a robust fit with an R-squared of 41.32%, signifying that the endogenous factors effectively account for 41.32% of the variance observed in stock prices. The fixed effects regression model further supports a sound fit, boasting an overall R-squared of 37.13%. The Random Effects Model was chosen as the best fit for this study based on various metrics, including the Hausman specification and Breusch-Pagan tests, which confirmed its suitability for the panel data with an overall R-squared of 40.40%. However, the FEM and Pooled OLS Model were also included for benchmarking purposes. The FEM serves as a comparison, while the Pooled OLS Model provides a baseline for evaluation.

The Random Effects Model reveals crucial insights. Especially, EPS emerges as a noteworthy driver of stock prices (coefficient: 0.014, $p < 0.05$). On the contrary, ROE exhibits a substantial negative influence on stock pricing (coefficient: -0.020, $p < 0.05$). ROA shows a positive but insignificant influence on stock returns (coefficient: 0.002, $p > 0.05$).

NPM indicates a marginally significant and negative influence (coefficient: -0.016, $p \approx 0.05$). BVPS demonstrates an insignificant and negative effect on share prices (coefficient: -0.0005, $p > 0.05$). The unexpected negative impact of ROE on stock prices may be due to the presence of other confounding factors not accounted for in our analysis. Despite their high correlation, EPS and ROE capture different aspects of financial performance. EPS signifies profitability per share, while ROE reflects efficiency in generating profits from shareholders' equity (Shiller, 1981). Factors such as debt involvement and varying equity composition may lead to inconsistencies between the two metrics (Bhattarai, 2020). These results emphasize the complexity of financial performance indicators and their implications for stock pricing.

4.2 Levene's Test

Levene's Test was conducted to examine the equality of variances between life and non-life insurance sub-sectors concerning stock prices. The results are presented in Table 4.

Table 4. Levene's Test for Life and Non-life Insurance Sectors Influencing Stock Prices

Sub-sectors	N	Mean	Std. Dev.	T-value	P-Value
Life-Insurance	40	1518.49	939.96	3.12	0.003
Non-Life Insurance	40	992.93	501.23	3.21	0.029
				F = 12.89 (P = 0.001)	

The results presented in Table 4 reveal statistically significant differences ($F=12.89$; $p < 0.05$) between the Life and Non-Life sub-sectors of the insurance industry regarding their stock prices. The results suggest that company categories significantly influence stock prices in the Nepalese insurance market. This aligns with Joshi and Giri's (2015) findings on sectoral impacts in determining stock prices.

4.3 Diagnostic Tests

To ascertain the appropriateness of the chosen methods and to assess the characteristics and quality of the collected data, diagnostic tests were conducted. Key tests included the VIF (Variance Inflation Factor) test, the Hausman-Specification test, and the Breusch-and-Pagan Lagrange-Multiplier test.

i) Variance Inflation Factor (VIF): The scores for the independent variables were evaluated to detect multicollinearity. A VIF score of 10 or more suggests multicollinearity, but in this study, the VIF values for NPM, EPS, ROE, ROA, and BVPS, as shown in Table 4, ranged from 1.91 to 4.38, with a mean VIF of 3.30, indicating the absence of multicollinearity issue.

Table 4. Diagnostic Tests

Variance Inflation Factor (VIF Test)		
Variable	**VIF**	**1/VIF**
NPM	4.38	0.23
EPS	3.88	0.26
ROE	3.46	0.29
ROA	2.89	0.35
BVPS	1.91	0.52
Mean VIF	3.30	
Hausman Specification Test for Fixed or Random Effects Model		
Chi-Sq. (χ^2) = 7.08	Prob.> χ^2 = 0.2149	
Breusch-and-Pagan Lagrangian Multiplier Test		
Chi-Sq. (χ^2) = 6.38	Prob.> χ^2 = 0.0058	

ii) Hausman Specification Test: The focus of this test was to determine the comparative appropriateness of a random-effects model in comparison to a fixed-effects model. The null proposition (H_0) suggested that the REM (random-effects-model) is suited, whereas the research proposition (H_1) supposed that the FEM (fixed-effects-model) is more fitting. The findings presented in Table 4 provide a p-value of 0.2149, which signifies that the null hypothesis cannot be discarded. Therefore, the Random-Effects-Model was deemed suitable for this study.

iii) Breusch-and-Pagan Lagrange Multiplier Test: The purpose of conducting this test was to evaluate the significance of random effects in panel-data models. This pivotal test aimed to select the most fitting models between the Pooled-OLS-Model and the Random-Effects-Model. The null proposition (H_o) posited that the Pooled-OLS-Model is suitable, whereas the research hypothesis (H_1) suggested the suitability of the Random Effects Model. According to the results in Table 4, this test produced statistically significant p-values of 0.0058 with a 95% level of confidence, leading to the rejection of the null hypothesis. Consequently, the Random-Effects Model was confirmed as the suitable model for this research.

5. Discussion

This research analyzes the relationship between financial indicators and share prices within Nepalese Insurances. The impact of independent factors, comprising ROA, EPS, ROE, NPM, and BVPS, on stock prices was systematically examined through five

hypotheses. The findings reveal a dynamic relationship, with some variables exhibiting positive significance, others negative significance, and some proving insignificant in their impact on stock prices. The second and third hypotheses documented a statistically significant relationship in determining stock prices, whereas, as illustrated in the first, fourth, and fifth hypotheses, there was no significant influence on the stock prices of the insurers.

The first hypothesis, exploring the effect of ROA (Return on Assets), yielded a p-value ($P > 0.05$), suggesting insufficient evidence to reject the null hypothesis. This indicates that ROA has an insignificant influence on stock prices in Nepalese insurance companies. This result diverges from Talamati and Pangemanan's (2015) study, which found a significant impact. In contrast, the second hypothesis, emphasizing the effect of Earnings per Share (EPS), presented a p-value of ($P < 0.05$), signifying strong significance at a 95% confidence level. This supports the conclusion that EPS exerts a significantly positive influence on share prices, aligning with Menaje's (2012) findings. The third hypothesis, predicting a negative significant impact of ROE (Return on Equity) on share values, was confirmed by rejecting the null hypothesis with a p-value less than 0.05 and a negative coefficient of -0.0201. This shows a significant but negative effect of ROE on stock prices. The reason behind this unexpected result could be the influence of unaccounted factors such as market sentiment, industry-specific dynamics, or macroeconomic conditions, which may have affected the relationship between ROE and stock prices in ways not captured in our analysis. Additionally, unique characteristics of the Nepalese insurance industry, such as regulatory changes (to increase capital base) or competitive pressures, might have contributed to the observed inconsistencies.

The fourth hypothesis, investigating the impact of Net Profit Margin (NPM), resulted in a p-value of ($P > 0.05$), highlighting insignificance at the 95% confidence level. Consequently, it might be inferred that the influence of NPM on stock prices is negligible, diverging from Anwaar's (2016) findings. Lastly, the fifth hypothesis, examining the impact of BVPS (Book Value per Share), revealed a p-value of ($P > 0.05$), indicating insignificance. This underscores the conclusion that BVPS has an insignificant impact on stock prices, aligning with Martina's (2019) study. The summary of the hypothesis testing is mentioned in Table 5.

Table 5. Summary of Hypothesis Testing

Hypotheses	P-values	Remarks
H_{01}: 'ROA has no significantly positive impact on stock prices'	0.623	Fail to reject
H_{02}: 'EPS has no significantly positive effect on stock prices'	0.000	Rejected
H_{03}: 'ROE does not significantly influence stock prices'	0.000	Rejected
H_{04}: 'NPM does not significantly and positively impact stock pricing'	0.056	Fail to reject
H_{05}: 'BVPS does not positively and significantly impact stock prices'	0.561	Fail to reject

Practically, this study contributes valuable insights for investors, practitioners, and insurance company managers, offering a guide on prioritizing influential factors for optimal stock prices. The recommendations emphasize the significance of EPS in investment decisions, holistic analysis, caution in relying solely on ROE, and the necessity for special policies and a supportive environment from the Insurance Board. Despite these contributions, the study acknowledges certain limitations, including the confined sample size, limited data period and the exclusion of re-insurance companies. Future research opportunities include exploring additional variables beyond the scope of this study with an extended dataset and employing primary data sources and the cognitive-behavioral model proposed by Devkota et al. (2023) for a more comprehensive analysis.

6. Conclusions

The findings revealed significant insights into the relationships between financial factors employed in this study. Notably, earnings per share (EPS) emerged as a pivotal factor that consistently positively and significantly affected stock prices. This implies that higher EPS correlates with higher stock prices, emphasizing the importance of investors and insurance company managers focusing on strategies to enhance EPS for increased stock value. The study aligns with existing literature, such as the findings of Menaje (2012) and Talamati and Pangemanan (2015). Contrastingly, return on equity (ROE) significantly negatively influences stock pricing. The study suggests that an increase in ROE does not necessarily lead to a corresponding increase in stock prices, emphasizing the need for cautious management of ROE to optimize its influence on stock values. However, Return on Assets (ROA), Book Value per Share (BVPS), and Net Profit Margin (NPM) were found to have a non-insignificant influence on stock pricing in the selected companies. The results highlight significant sectoral differences between the life and non-life insurance sectors regarding their impact on stock prices. These findings emphasize the complexity of the relationship between financial performance indicators and stock prices. Further research is expected to conduct in-depth analyses of these variables and identify potential explanatory factors for the observed inconsistencies, recognizing their significance in influencing stock prices in the dynamic Nepalese Insurance Market.

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