Impact of Macroeconomic Factors and Firm Characteristics on Stock Returns in Nepalese Insurance Companies

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Abstract

This study examines the impact of macroeconomic factors and firm characteristics on the stock returns in Nepalese insurance companies. Market price per share and stock return are the selected dependent variables. The selected independent variables are inflation rate, money supply, GDP growth, total assets, firm age and net earned premium. The study is based on secondary data of 15 insurance companies with 105 observations for the study period from 2016/17 to 2022/23. The data were collected from the annual audited financial statements and website of respective insurance companies. The correlation coefficients and regression models are estimated to test the significance and importance of macroeconomic factors and firm characteristics on the stock returns in the context of Nepalese insurance companies.

The study showed that inflation has a negative effect on market price per share and stock return. It implies that increase in inflation rate leads to decrease in market price per share and stock return. Similarly, money supply has a positive effect on market price per share and stock return. It means that increase in money supply leads to increase in market price per share and stock return. Likewise, GDP growth rate has a positive effect on market price per share. It indicates that increase in GDP growth rate leads to increase in market price per share. In contrast, total assets have a negative effect on market price per share and stock return. It indicates that increase in total assets leads to decrease in market price per share and stock return. In addition, firm age has a negative effect on market price per share and stock return. It implies that increase in firm age leads to decrease in market price per share and stock return. Moreover, net earned premium has a negative effect on market price per share and stock return. It means that higher the net earned premium, lower would be the market price per share and stock return.

Keywords: inflation rate, money supply, gross domestic product, total assets, firm age and net earned premium, market price per share, stock returns

1. Introduction

Insurance is one of the major components of financial system. It plays a crucial role in the financial system by providing protection against various risks individuals and businesses face. Deyganto and Alemu (2019) stated that insurance serves as a form of risk management, providing a mechanism to hedge against contingent losses. It facilitates the transfer of potential loss risks from one entity to another, typically in exchange for a premium.

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The insurance sector has grown rapidly, mainly due to economic activity expansion and the rise of risk and uncertainty (Alhassan and Biekpe, 2016). The presence of a developed insurance sector allows transferring savings into the most productive investments in the economy. The insurance sector is also crucial for the whole economy since it provides risk transfer, indemnification services, and financial intermediation services (Ward and Zurbruegg, 2000). Insurance contributes to the stability of the economy by spreading risk among a large pool of policyholders. Insurance operates within a legal and regulatory framework that sets standards for solvency, consumer protection, and market conduct. This oversight helps maintain trust in the financial system and ensures that insurers can meet their obligations to policyholders. As a financial intermediary, the insurance sector generates an additional financial competition source, which may stimulate productive efficiency and performance of firms (Azman-Saini and Smith, 2011).

Olokoyo *et al.* (2020) stated that macroeconomic variables and stock market performance is co-integrated and thus linked in the long run. Hasan *et al.* (2018) concluded that the GDP growth rate has a statistically positive significant influence on the stock performance of non-life insurance companies. Similarly, Hussain *et al.* (2013) examined the macroeconomic determinants of stock price variability in Pakistan. The study found that the money supply has a significant and positive effect on the stock prices.

Wibowo and Khoirudin (2022) investigated the effect of interest rates, inflation, Rupiah exchange rate, money supply, and exports on the composite stock price index (CSPI) in Indonesia. The study showed that interest rates, money supply, and exports have a positive sign and have a positive and significant effect on the composite stock price index, meanwhile the rupiah exchange rate has a negative sign and a significant effect on CSPI. However, inflation has no significant effect on the composite stock price index. Kalam (2020) examined the effects of macroeconomic variables on the stock market return. The study showed that gross domestic product, interest rate, inflation, exchange rate and foreign direct investment significantly affect the Malaysia stock market return. Likewise, Alam (2020) examined the relationship amongst the chosen variables, inflation, short-term interest rate, money supply and crude oil price and oil price shocks represented by DUMMY respectively on the capital market of Saudi Arabia. The results showed a long-run equilibrium relationship between the Saudi stock market and the selected variables for the study. The study showed a positive association between the money supply and the stock market. However, inflation, short-term interest rate, and crude oil price have a negative relationship with the stock market. The finding

indicated the presence of both long-run and short-run unidirectional causality running from inflation, short-term interest rates, money supply, and the oil price shocks to the Saudi stock market.

The capital market is one of the means to raise sources of long-term economic funds available in banking and society (Triani, 2013). The world economy has entered the era of globalization which has an impact on significant impact on the movement of foreign capital that will enter the financial market in developing and underdeveloped countries through the stock exchange The movement of the stock price index is affected by investors guesses about the state of the country. Sunardi and Permana (2019) found that stocks are one of the most attractive capital market instruments investors because it can provide an attractive level of profit. In addition to the stock price index as a consideration for economic policymaking, the stock price index is also used to determine the level of community welfare that will be followed by crowded capital market activities. Ouma and Muriu (2014) investigated the impact of the macroeconomic variables on stock returns in Kenya during the period 2003- 2013, using the Arbitrage Pricing Theory (APT) and Capital Asset Pricing Model (CAPM) framework for monthly data. The study showed that Money Supply, exchange rates and inflation affect the stock market returns in Kenya. Money supply and inflation are found to be significant determinants of the returns at NSE. However, exchange rates have a negative impact on stock returns, while interest rate is not important in determining long rung run returns in the NSE. Bordo et al. (2008), using latent Variable VAR to estimate the impact of inflation and other macroeconomic variable on stock market conditions, found that inflation have large negative impact on stock market conditions, apart from their real effects on real asset prices. Using VECM model and yearly time series data for the period 1985- 2008, Onasanya and Ayoola (2012) found that the stock macroeconomic variables do not significantly influence the return at the stock market. Interest rates, specifically was found to be negatively related and insignificant to stock market returns in Nigeria.

Matemilola *et al*. (2017) investigated the moderating effects of firm age on the relationship between debt and stock returns. The study showed that firm age positively moderates the relationship between market debt and stock returns. Gunawardhane *et al.* (2022) stated that GDP growth rate is the essential factors that affect the insurance sectors financial and market performance in Sri Lanka. In addition, Desiyanti *et al*. (2023) assessed the determinants of stock underpricing in IPO companies listed on the Indonesia Stock Exchange. The study showed that firm age does not significantly

influence stock underpricing in IPO. Kitaka (2020) stated that asset quality had a positive and significant effect on sustainability of insurance companies in Kenya. Similarly, Dancakova *et al*. (2022) examined the role intangible assets play in a firm's market valuation besides other firm-specific characteristics. The study found that the positive impact of intangible assets on the companies' market value. Similarly, Yao (2011) examined the effect of corporate asset growth on stock returns using data of nine equity markets in Asia. The study showed pervasive negative relation between asset growth and subsequent stock returns. Likewise, Nahdhiyah and Alliyah (2023) assessed the impact of profitability, liquidity, leverage, firm size and asset growth on stock returns. The study showed that asset growth does not affect stock returns. In addition, Olalekan (2018) stated that premium growth has positive and insignificant effect on firm performance of listed insurance companies in Nigeria. Moreover, Riwayati and Natalia (2022) stated that premium income has a positive significant effect on insurance profit. The greater the net premium earned, the more controllable the amount of net claim expense will result in an underwriting surplus.

In the context of Nepal, Bhattarai (2018) examined the firm specific and macroeconomic variables effects on share prices of Nepalese commercial banks and insurance companies. The study concluded that the money supply and GDP growth rate affects the share prices of banks and insurances companies. Similarly, Pradhan and Dahal (2021) examined the financial performance of Nepalese insurance companies. The results shows that insurance premium has positive impact on return on assets and earning per share. It means that increase in insurance premium leads to increase in return on assets and earnings per share. Likewise, solvency ratio has positive impact on earnings per share. It indicates that higher solvency ratio, higher would be the earnings per share. The study also concludes that insurance premium followed by current ratio and firm size is the most influencing factor that explains liquidity management and financial performance of Nepalese insurance companies. Acharya and Pradhan (2019) examined the relationship of trading volume with stock return and return volatility in the context of Nepalese insurance companies. The result showed that trading volume and past trading volume have positive impact on stock return. Similarly, the result revealed that the market capitalization and firm size have positive impact on stock return. On the contrary, book values per share and turnover rate have positive impact on the return volatility. The study concluded that trading volume and past trading volume have significant impact on the stock return and return volatility of insurance companies. The study also concluded that

past trading volume followed by turnover rate is the most dominant factor that explains the changes in stock return in the context of Nepalese insurance companies. Gautam and Bista (2019) examined the factors affecting the share price of Nepalese non-life insurance companies. The result showed that firm size is positively related to market price of share and price earnings ratio. It indicates that larger firm size leads to increase in market price of share and price earnings ratio. However, the study shows that inflation is negatively related to market price of share and price earnings ratio.

The above discussion shows that empirical evidences vary greatly across the studies on the impact of macroeconomic factors and firm characteristics on stock returns. Though there are above-mentioned empirical evidence in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The major objective of the study is to examine the impact of macroeconomic factors and firm characteristics on the stock returns in Nepalese insurance companies. More specifically, the study examines the effect of inflation rate, money supply, GDP, total assets, firm age and net earned premium on the market price per share and stock return of Nepalese insurance companies.

The remainder of this study is organized as follows: Section two describes the sample, data and methodology. Section three presents the empirical results and the final section draws the conclusion.

2. Methodological aspects

The study is based on the secondary data which were collected from 15 insurance companies which includes 8 life insurance companies and 7 non-life insurance companies during the period 2016/17 to 2022/23, leading to a total of 105 observations. The study employed convenience sampling method. The main sources of data collected from the annual audited financial statements and website of respective insurance companies. This study is based on descriptive as well as causal comparative research designs. Table 1 shows the list of insurance companies selected for the study along with the study period and number of observations.

Table 1

List of insurance companies selected for the study along with the study period and number of observations

S. N.	Name of the insurance companies	Study period	Observations
Life insurance companies			
1	National Life Insurance Company Limited	2016/17 to 2022/23	7
2	Nepal Life Insurance Company Limited	2016/17 to 2022/23	7
3	Life Insurance Corporation (Nepal) Limited	2016/17 to 2022/23	7
4	Met Life Insurance Company Limited	2016/17 to 2022/23	7
5	Asian Life Insurance Company Limited	2016/17 to 2022/23	7
6	Reliable Nepal Life Insurance Company Limited	2016/17 to 2022/23	7
7	Citizen Life Insurance Limited	2016/17 to 2022/23	7
8	IME Life Insurance Company Limited	2016/17 to 2022/23	7
Non-life insurance companies			
9	Nepal Insurance Company Limited	2016/17 to 2022/23	7
10	Neco Insurance Limited	2016/17 to 2022/23	7
11	The Oriental Insurance Company Limited	2016/17 to 2022/23	7
12	National Insurance Company Limited	2016/17 to 2022/23	7
13	Shikhar Insurance Company Limited	2016/17 to 2022/23	7
14	NLG Insurance Limited	2016/17 to 2022/23	7
15	Rastriya Beema Company Limited	2016/17 to 2022/23	7
Total number of observations			**105**

Thus, the study is based on 105 observations.

The model

The model used in this study assumes that stock returns depend upon macroeconomic factors and firm characteristics. The dependent variables selected for the study are market price per share and stock return. Similarly, the selected independent variables are inflation rate, money supply, gross domestic products, total assets, firm age and net earned premium. Therefore, the models take the following forms:

$$MPPS = \beta_0 + \beta_1 IR + \beta_2 MS + \beta_3 GDP + \beta_4 TA + \beta_5 FA + \beta_6 NEP + e_{it}$$

$$SR = \beta_0 + \beta_1 IR + \beta_2 MS + \beta_3 GDP + \beta_4 TA + \beta_5 FA + \beta_6 NEP + e_{it}$$

Where,

MPPS = Market price per share as measured by the average price of share in the market, in Rs.

SR= Stock return is measured by current year share price minus previous year share price whole divided by previous year share price, in Rs.

IR = Inflation rate as measured by the change in consumer price index, in percentage.

MS= Money supply as measured by the broad money, in percentage.

GDP= GDP as measured by GDP growth rate, in percentage.

TA= Total asset as measured by total amount of assets owned by an entity, Rs. in billion.

FA = Firm age as measured by the numbers of years of incorporation of the company, in years.

NEP= Net earned premium as measured by total number of premium an insurance company considered earned, Rs. in billion.

The following section describes the independent variables used in this study along with hypothesis formulation:

Inflation rate

Gallagher and Taylor (2002) found that the stock returns are negatively affected by both expected and unexpected inflation. Similarly, Fama (1981) stated that there is negative association between stock returns and inflation. It implies that if inflation rises, central banks may raise interest rates to curb inflationary pressures, which can dampen stock returns by increasing borrowing costs for companies and consumers. Moreover, Khan *et al.* (2021) found that inflation has a negative and significant effect on the stock markets of Asian countries. Furthermore, Supeni and Salim (2020) found that inflation has a significant negative effect on stock price volatility. Keswani and Wadhwa (2019) found that there is a negative relationship between inflation and Indian stock prices. Inflation has a negative impact on stock market performance (Panda *et al.*, 2023). Based on it, this study develops the following hypothesis:

H_1: There is a negative relationship between inflation rate and stock return.

Money supply

Widyastuti *et al*. (2017) analysed the effect of total money supply, stock trading volume, inflation, interest rate and Rupiah exchange rate on Indonesia stock exchange. The study found that there is a significant positive relationship between money supply and composite stock price index. Furthermore, Alam (2020) found that money supply has a positive association with stock market return. Stock prices are directly impacted by the money supply changes through changes in portfolio and are indirectly impacted by the same through variables of economic real activity studies. Furthermore, Pole and Cavusoglu (2021) stated that money supply and aggregate industrial production exerted positive and substantial impacts on stock returns. Based on it, this study develops the following hypothesis:

H_2: There is a positive relationship between money supply and stock return.

Gross domestic product

Stock prices are influenced by expectations of future economic growth,

and GDP is a key indicator of economic health and growth. When GDP is expanding, indicating a healthy economy, investors may become more optimistic about corporate profits and future earnings potential, leading to higher stock prices. There is a significant relationship between GDP and stock prices within the Iraqi stock market (Al-Kassab, 2022). Hsing and Hsieh (2012) stated that there is positive relation between stock return and GDP growth rate. Verma and Bansal (2021) stated that GDP exerted a positive influence on stock price volatility. Additionally, GDP has a significant positive impact on the stock market return (Kalam, 2020). Alam (2020) found that there is a significant positive impact of the GDP growth rate on the stock market return. Based on it, this study develops the following hypothesis:

H_3: There is a positive relationship between gross domestic product and stock return.

Firm age

Sinthupundaja and Chiadamrong (2015) stated that younger firms may experience higher stock returns because they have more growth potential and can innovate more rapidly. As firms mature, their growth rates may slow down, leading to lower returns. Matemilola et al. (2017) investigated the moderating effects of firm age on the relationship between debt and stock returns. The system generalized method of moment's results indicated that firm age has a positive moderating effect on the relationship between book debt and stock returns. The results are robust, as firm age positively moderates the relationship between market debt and stock returns. Moreover, firm age has a direct negative effect on stock returns. Younger firms might attract speculative investors hoping for high growth, leading to higher stock returns driven by demand rather than fundamentals. Conversely, older firms may appeal to more conservative investors seeking stability and dividends (Isynuwardhana and Febryan, 2022). Based on it, this study develops the following hypothesis:

H_4: There is a negative relationship between firm age and stock return.

Total assets

Investors can see the level of company's stock return through the size of the company, because the larger the size of the company, the greater the rate of stock return to investors. Large company indicates that the company has a lot of assets that can be used to provide return to investors (Ernayani and Robiyanto, 2016). Mazviona and Nyangara (2014) investigated the relationship between firm size and stock returns for firms listed on the Zimbabwe Stock Exchange (ZSE). The results showed that firm size has a positive yet insignificant effect on stock returns for companies listed on the ZSE for the period June 2009 to July 2013. According to Sudarsono and Sudiyatno (2016), larger firms may

enjoy economies of scale and scope, which could lead to higher profitability and, consequently, higher stock returns. Additionally, larger firms might be perceived as more stable and less risky, attracting investors and leading to higher stock prices. Similarly, Dancakova *et al*. (2022) stated that there is a positive impact of intangible assets on the companies' market value. Based on it, this study develops the following hypothesis:

H_5: There is a positive relationship between total assets and stock return.

Net earned premium

Insurance premium is the payment of the insured to the guarantor in return for services for the transfer of the risk of the guarantor. According to Olalekan (2018), stated that premium growth has a positive and insignificant effect on firm performance of listed insurance companies in Nigeria. Premium growth have significant effect on financial performance of the insurance companies (Deyganto and Alemu, 2019). Premium income has a positive significant effect on insurance profit (Riwayati and Natalia, 2022). Furthermore, Pramusinta and Aryani (2023) showed that net premium growth has a positive effect on financial performance. Based on it, this study develops the following hypothesis:

H_6: There is a positive relationship between net earned premium and stock return.

3. Results and discussion

Descriptive statistics

Table 2 presents the descriptive statistics of selected dependent and independent variables during the period 2016/17 to 2022/23.

Table 2

Descriptive statistics

This table showed the descriptive statistics of dependent and independent variables of 15 insurance companies for the study period from 2016/17 to 2022/23. The dependent variables are MPPS (Market price per share as measured by the average price of share in the market, in Rs.) and SR (Stock return is measured by current year share price minus previous year share price whole divided by previous year share price, in Rs.). The independent variables are IR (Inflation rate as measured by the change in consumer price index, in percentage), MS (Money supply as measured by the broad money, in percentage), GDP (GDP as measured by GDP growth rate, in percentage), TA (Total asset as measured by total amount of assets owned by an entity, Rs. in billion), FA (Firm age as measured by the numbers of years of incorporation of the company, in years) and NEP (Net earned premium as measured by total number of premium an insurance company considered earned, Rs. in billion).

Variables	Minimum	Maximum	Mean	Std. Deviation
MPPS	354.00	21600	2408.29	4131.60
SR	-3.33	1.35	-0.44	0.68
INF	3.60	7.84	5.29	1.39
MS	6.80	21.80	15.54	4.71
GDP	-2.37	8.98	4.58	3.73
TA	0.00	194.42	21.14	36.49
FA	1.00	118.00	29.14	31.15
NEP	0.00	36.63	4.54	7.51

Source: SPSS Software

Correlation analysis

Having indicated the descriptive statistics, Pearson's correlation coefficients are computed and the results are presented in Table 3.

Table 3

Pearson's correlation coefficients matrix

This table showed the bivariate Pearson's correlation coefficients of dependent and independent variables of 15 insurance companies for the study period from 2016/17 to 2022/23. The dependent variables are MPPS (Market price per share as measured by the average price of share in the market, in Rs.) and SR (Stock return is measured by current year share price minus previous year share price whole divided by previous year share price, in Rs.). The independent variables are IR (Inflation rate as measured by the change in consumer price index, in percentage), MS (Money supply as measured by the broad money, in percentage), GDP (GDP as measured by GDP growth rate, in percentage), TA (Total asset as measured by total amount of assets owned by an entity, Rs. in billion), FA (Firm age as measured by the numbers of years of incorporation of the company, in years) and NEP (Net earned premium as measured by total number of premium an insurance company considered earned, Rs. in billion).

Variables	MPPS	SR	IR	MS	GDP	TA	FA	NEP
MPPS	1							
SR	0.202	1						
IR	-0.057	-0.026	1					
MS	0.050	0.373**	-0.701**	1				
GDP	0.036	-0.386**	-0.655**	0.022	1			
TA	-0.219	-0.028	0.167	-0.136	-0.126	1		
FA	-0.354**	-0.010	0.045	-0.032	-0.038	-0.132	1	
NEP	-0.218	-0.025	0.125	-0.096	-0.114	0.976**	-0.153	1

Note: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent respectively.

Table 3 shows that there is negative relationship between inflation and market price per share. It implies that increase in inflation rate leads to decrease in market price per share. Similarly, there is positive relationship between money supply and market price per share. It means that increase in money supply leads to increase in market price per share. Likewise, there is positive relationship between GDP growth rate and market price per share. It indicates that increase in GDP growth rate leads to increase in market price per share. In contrast, there is negative relationship between total assets and market price per share. It indicates that increase in total assets leads to decrease in market price per share. In addition, firm age has a negative relationship with market price per share. It implies that increase in firm age leads to decrease in market price per share. Moreover, net earned premium has a negative relationship with market price per share. It means that higher the net earned premium, lower would be the market price per share.

Similarly, the result also shows there is a negative relationship between inflation and stock return. It means that increase in inflation rate leads to decrease in stock return. Similarly, money supply has a positive relation with stock return. It indicates that increase in money supply leads to increase in stock return. Likewise, there is negative relationship between GDP growth rate and stock return. It indicated that increase in GDP growth rate leads to decrease in stock return. In contrast, there is negative relationship total assets and stock returns. It indicates that increase in total assets leads to increase in stock return. In addition, firm age has a negative relationship with stock return. It implies that increase in firm age leads to decrease in stock return. Moreover, net earned premium has a negative relationship with stock returns. It means that higher the net earned premium, lower would be the stock return.

Regression analysis

Having indicated the Pearson's correlation coefficients, the regression analysis has been carried out and results are presented in Table 4 and Table 5. More specifically, Table 4 shows the regression results of inflation rate, money supply, gross domestic products, total assets, firm age and net earned premium with market price per share of Nepalese insurance companies.

Table 4

Estimated regression results of inflation rate, money supply, gross domestic product, total assets, firm age and net earned premium on market price per share

The results are based on cross sectional data of 15 insurance companies with 105 observations for the period from 2016/17 to 2022/23 by using the linear regression model and the model is $MPPS = \beta_0 + \beta_1 IR + \beta_2 MS + \beta_3 GDP + \beta_4 TA + \beta_5 FA + \beta_6 NEP + e_{it}$, where, the dependent variable is MPPS (Market price per share as measured by the average price of share in the market, in Rs.). The independent variables are IR (Inflation rate as measured by the change in

consumer price index, in percentage), MS (Money supply as measured by the broad money, in percentage), GDP (GDP as measured by GDP growth rate, in percentage), TA (Total asset as measured by total amount of assets owned by an entity, Rs. in billion), FA (Firm age as measured by the numbers of years of incorporation of the company, in years) and NEP (Net earned premium as measured by total number of premium an insurance company considered earned, Rs. in billion).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		IR	MS	GDP	TA	FA	NEP			
1	3303.019 (1.597)	-168.894 (0.447)						0.013	4158.525	0.200
2	1734.929 (0.957)		43.323 (0.388)					0.014	4160.202	0.151
3	2228.454 (2.676**)			39.206 (0.278)				0.015	4162.694	0.077
4	3061.695 (4.837) **				-20.711 (1.756)			0.032	4063.920	3.082
5	4332.508 (5.311) **					-78.769 (2.953)**		0.111	3896.164	8.720
6	3062.987 (4.823) **						-99.474 (1.744)	0.032	4065.255	3.040
7	2842.232 (0.580)	-129.994 (0.0243)	16.397 (0.104)					0.030	4192.658	0.104
8	1660.704 (0.141)	-9.405 (0.008)	40.748 (0.150)	35.772 (0.111)				0.047	4227.601	0.072
9	3329.101 (0.286)	-49.763 (0.017)	1.605 (0.002)	7.970 (0.007)	-20.461 (0.0217)			0.017	4167.225	0.736
10	6116.440 (0.560)	-75.096 (0.067)	23.860 (0.095)	44.221 (0.148)	-23.100 (1.987) *	-82.190 (3.063) **		0.111	3895.267	2.550
11	6185.116 (0.562)	-96.643 (0.085)	19.685 (0.078)	45.850 (0.152)	-9.253 (0.168)	-82.324 (3.042) **	-67.688 (0.257)	0.096	3927.580	2.101

Notes:

i. Figures in parenthesis are t-values.
ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.
iii. Market price per share is the dependent variable.

Table 4 shows that the beta coefficients for inflation rate are negative with market price per share. It implies that inflation rate has a negative impact on market price per share. This finding is consistent with the findings of Gallagher and Taylor (2002). Similarly, the beta coefficients for money supply are positive with market price per share. It indicates that money supply has a positive impact on market price per share. This finding is consistent with the findings of Widyastuti *et al*. (2017). Likewise, the beta coefficients for GDP growth are positive with market price per share. It indicates that GDP growth rate has a positive impact on market price share. This finding is similar to the findings of Al-Kassab (2022). Further, the beta coefficients for total assets are negative for market price per share. It implies that total assets have a negative impact on market price per share. This finding is consistent with the findings of Mazviona and Nyangara (2014). Similarly, the beta coefficient for firm age are negative with market price per share. It indicates that firm age has a negative impact on market price per share. This finding is similar to the findings of Sinthupundaja and Chiadamrong (2015). Moreover, the beta

coefficients for net earned premium are negative with market price per share. It implies that net earned premium has a negative impact on market price per share. This finding is consistent with the findings of Pramusinta and Aryani (2023).

Table 5 shows the regression results of inflation rate, money supply, gross domestic products, total assets, firm age and net earned premium with stock return of Nepalese insurance companies.

Table 5

Estimated regression results of inflation rate, money supply, gross domestic product, total assets, firm age and net earned premium on stock return

The results are based on cross sectional data of 15 insurance companies with 105 observations for the period from 2016/17 to 2022/23 by using the linear regression model and the model is $SR = \beta_0 + \beta_1 IR + \beta_2 MS + \beta_3 GDP + \beta_4 TA + \beta_5 FA + \beta_6 NEP + e_{it}$, where, the dependent variable is SR (Stock return is measured by current year share price minus previous year share price whole divided by previous year share price, in Rs.). The independent variables are IR (Inflation rate as measured by the change in consumer price index, in percentage), MS (Money supply as measured by the broad money, in percentage), GDP (GDP as measured by GDP growth rate, in percentage), TA (Total asset as measured by total amount of assets owned by an entity, Rs. in billion), FA (Firm age as measured by the numbers of years of incorporation of the company, in years) and NEP (Net earned premium as measured by total number of premium an insurance company considered earned, Rs. in billion).

Model	Intercept	Regression coefficients of						Adj. R_bar^2	SEE	F-value
		IR	MS	GDP	TA	FA	NEP			
1	0.024 (0.069)	-0.013 (0.026)						0.016	0.687	0.042
2	-0.880 (3.162) **		0.054 (3.136) **					0.125	0.638	9.833
3	0.278 (2.189) **			-0.070 (3.272) **				0.135	0.634	10.704
4	-0.031 (0.289)				-0.002 (0.217)			0.016	0.684	0.047
5	-0.036 (0.248)					-0.001 (0.078)		0.016	0.682	0.006
6	-0.032 (0.301)						-0.002 (0.193)	0.016	0.688	0.037
7	-2.801 (3.978) **	-0.225 (2.940) **	0.100 (4.433) **					0.222	0.602	9.853
8	0.249 (0.153)	-0.086 (-0.509)	0.038 (0.998)	-0.092 (2.059)*				0.262	0.586	8.336
9	0.280 (0.170)	-0.087 (0.509)	0.037 (0.967)	-0.093 (2.053)*	-0.001 (0.024)			0.250	0.591	6.163
10	0.303 (0.181)	-0.087 (0.506)	0.037 (0.953)	-0.093 (2.041)*	-0.001 (0.225)	-0.001 (0.161)		0.237	0.596	4.853
11	0.328 (0.195)	-0.095 (0.548)	0.038 (0.986)	-0.094 (2.042)*	-0.005 (0.559)	-0.001 (0.172)	-0.050 (0.621)	0.229	0.599	4.065

Notes:

i. Figures in parenthesis are t-values.

ii. The asterisk signs (**) and (*) indicated that the results are significant at one percent and five percent level respectively.

iii. Stock return is the dependent variable.

Table 5 shows that the beta coefficients for inflation rate are negative with stock returns. It indicates that inflation rate has a negative impact on stock returns. This finding is consistent with the findings of Keswani and Wadhwa (2019). Similarly, the beta coefficients for money supply are positive with stock returns. It implies that money supply has a positive impact on stock returns. This finding is similar to the findings of Pole and Cavusoglu (2021). Likewise, the beta coefficients for GDP growth rate are negative with stock returns. It indicates that GDP growth rate has a negative impact on stock returns. This finding is similar to the findings of Verma and Bansal (2021). Further, the beta coefficients for total assets are negative with stock returns. It implies that total assets have a negative impact on stock returns. This finding is similar to the findings of Nahdhiyah and Alliyah (2023). Similarly, the beta coefficients for firm age are negative with stock returns. It implies that firm age has a negative impact on stock returns. This finding is similar to the findings of Matemilola *et al*. (2017). Moreover, the beta coefficients for net earned premium are negative with stock returns. It indicates that net earned premium has a negative impact on stock returns. These findings are similar to the findings of Olalekan (2018).

4. Summary and conclusion

The interaction between macroeconomic factors and firm characteristics plays a significant role in determining stock returns in insurance companies. Investors and analysts often examine these factors closely to assess the potential risks and opportunities associated with investing in insurance stocks. The competitive landscape within the insurance industry can affect companies' growth prospects and profitability. The ability of an insurance company to effectively underwrite risks and manage claims is crucial for its profitability and stock performance. Companies with strong underwriting practices and disciplined risk management processes are likely to generate higher returns for investors. Economic growth can drive demand for insurance products, such as property and casualty insurance for businesses and individuals. Strong economic growth may lead to higher premium volumes and increased profitability for insurance companies, positively impacting stock returns.

This study attempts to analyze the effect of macroeconomic factors and firm characteristics on stock returns in Nepalese insurance companies. The study is based on secondary data of 15 insurance companies with 105 observations for the study period from 2016/17 to 2022/23.

The major conclusion of this study is that inflation rate, total assets, firm age and net earned premium have negative effect on market price per share. It indicates that Nepalese investors perceive higher inflation as a sign

of economic instability, which can decrease confidence in a company's future earnings potential. High premium earnings don't necessarily translate into higher market valuation, possibly due to concerns about profitability, risk management, or other factors affecting the insurance business. Similarly, money supply and GDP growth have positive effect on market price per share. Likewise, inflation rate, GDP, total assets, firm age and net earned premium have negative effect on stock returns. However, money supply has a positive effect on stock returns. The study also concludes that higher money supply can indicate economic growth, which boosts investor confidence and leads to higher stock prices.

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