# The Effect of Macroeconomic Factors on Financial Performance of Nepali Insurance Companies

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## ABSTRACT

*This study looks at the impact of a few macroeconomic variables on the financial performance of Nepalese insurance businesses as determined by return on equity (ROE) and return on assets (ROA). These variables include the money supply, GDP growth rate, inflation rate, interest rate, and exchange rate. Six life and six non-life insurers that were listed on the Nepal Stock Exchange throughout a 12-year period (2013 to 2024) provided secondary data for the study. Multiple linear regression analysis was conducted using EViews software to assess the impact of the macroeconomic variables on profitability. The results show that, except for exchange rate, which has a significant effect at the 10 percent level, macroeconomic factors including inflation, GDP growth, interest rate, and money supply do not significantly influence ROA or ROE. The findings provide empirical evidence of the limited effect of macroeconomic conditions on the financial performance of Nepalese insurance companies and offer insights for policymakers and investors regarding macroeconomic risk.*

**Keywords:** Macroeconomic factors, insurance companies, financial performance, ROA, ROE

## INTRODUCTION

The insurance industry is very important to our systems today. It does two things for people and businesses. First it helps protect them from things that might happen unexpectedly. Second it helps the economy grow by moving money and saving it. This is what Msomi said in 2023. The insurance sector is also very important in countries that are still growing. It helps people in these countries save their money it helps move risk from one person to another. It makes the financial system stronger. Arena said this in 2018. The insurance sector is like a safety net for these countries. It helps them stay stable and secure. The insurance industry and the insurance sector are very important for our systems and, for countries that are still growing. In Nepal the insurance sector is doing well. It is getting better every year. The ratio of premiums to GDP represents the

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overall insurance penetration. In the fiscal year 2080/81, this percentage increased from 3.42 percent in 2079/80 to 3.47 percent. That is an annual gain of 1.46 percent. This shows that the insurance sector is becoming more important in Nepals economy. The Nepal Insurance Authority said this in 2025. The insurance sector, in Nepal is really growing. The escalating impacts of climate change have intensified global risks, prompting insurers to reassess their strategies; while non-life insurers face mounting claims from natural disasters, life insurers are confronting increased health and mortality risks, necessitating comprehensive adaptations across both sectors (Bhattacharya-Craven, 2024; Swiss Re Institute, 2025).

At the scale the insurance sector plays a vital role in national economies by directing accumulated premiums into productive assets thus promoting sustained economic growth and financial security (Ghosh, 2013). These premiums serve as a capital source, for the wider financial network supporting economic operations across various industries. Hodula et al. (2021) Demonstrate that total insurance premiums tend to fluctuate in tandem with the business cycle. Furthermore, the sector boosts resilience by creating jobs and assisting companies and individuals in managing financial setbacks thereby contributing to the overall economic stability in both advanced and emerging economies (Zainudin et al., 2018). Due to this function ensuring the insurance industrys profitability and long-term viability is vital, for macroeconomic stability and development. Therefore, a comprehensive analysis of the factors influencing insurers' profitability is essential to fully grasp the sector's capacity to foster economic development, support long-term sustainability, and unlock its broader growth potential within the national economy (Marjanović & Popović, 2020).

Return on Equity (ROE) and Return on Assets (ROA), which measure the financial health of insurance companies, serve as a barometer of the industry's resilience by demonstrating capital sufficiency (ROE = Net Income/Equity) and underwriting efficacy (ROA = Net Income/Total Assets) (Morara & Sibindi, 2021). Return on Assets (ROA) is the primary metric used to evaluate the financial performance of insurance companies in both the life and nonlife sectors. Return on Equity (ROE) which act as essential indicators of operational effectiveness and capital strength. ROA gauges the profitability from underwriting and the efficiency of investments whereas ROE indicates shareholder gains and the robustness of capital (Ibrahimov et al., 2025; Killins, 2020). Data from Bangladesh's -life insurance sector indicates that while profitability is mainly influenced by firm-specific elements macroeconomic factors like inflation GDP growth, interest rates and exchange rates are often analyzed for their possible effect on return, on assets and return on equity (Hasan et al., 2018). In Malaysia, macro variables including GDP, Consumer Price Index (CPI), and interest rates were shown to significantly influence ROA, confirming that external economic conditions filter directly through insurers' performance channels (Ismail et al., 2018).

The financial performance of insurance companies, measured through Return on Assets (ROA) and Return on Equity (ROE), serves as a critical barometer of sectoral resilience, reflecting underwriting efficiency (ROA = Net Income/Total Assets) and capital adequacy (ROE = Net Income/Equity) (Morara & Sibindi, 2021). The financial performance of insurance companies, including both life and nonlife segments, is predominantly evaluated through Return on Assets (ROA) and Return on Equity (ROE), which serve as critical barometers of operational efficiency and capital adequacy. ROA measures underwriting profitability and investment efficiency, while

ROE reflects shareholder returns and capital resilience (Ibrahimov et al., 2025; Killins, 2020). Empirical evidence from Bangladesh's non-life insurance market shows that, although firm-specific factors largely drive profitability, macroeconomic variables such as inflation, GDP growth, interest rates, and exchange rates are frequently examined for their potential impact on return on assets and return on equity (Hasan et al., 2018). In Malaysia, macro variables including GDP, Consumer Price Index (CPI), and interest rates were shown to significantly influence ROA, confirming that external economic conditions filter directly through insurers' performance channels (Ismail et al., 2018).

While non-life insurers are predominantly affected by underwriting risk and claim volatility, life insurance companies exhibit a distinct sensitivity to macroeconomic variables due to their long-term liabilities and investment profiles. In a broad EU analysis covering 2007–2021, GDP growth, inflation, and long-term interest rates were identified as significant macroeconomic drivers influencing ROA and ROE across life and composite insurers, underscoring the essential linkage between external economic cycles and insurer profitability (Siopi & Poufinas, 2023).

These macro-profitability links have been documented, albeit with considerable variation, by empirical research conducted in several nations. According to Ismail et al. (2018), GDP growth and higher interest rates have a favorable impact on insurers' return on assets (ROA) in Malaysia, however inflation (CPI) has a negligible impact. According to Hasan et al. (2018), the majority of macro variables (inflation, GDP, and exchange) had no discernible impact on ROA/ROE for non-life insurers in Bangladesh, with the exception of interest rates. However, other African studies reveal substantial macro correlations. For instance, Palečková and Pávčková (2023) discover that financial stability is significantly influenced by a set of macro variables, including GDP growth, but different determinants are important for life and non-life insurers. Notably, both Hodula et al. (2021) and Palečková & Přečková (2023) emphasize that the macro drivers often differ between life and non-life insurers: non-life insurers' performance is highly sensitive to cyclical price changes (reflecting claim cost inflation) while life insurers' profitability correlates more with long-term growth and interest rate trends.

The Nepalese insurance sector, though young, has been growing steadily. Under the regulation of the Insurance Authority of Nepal (formerly the Insurance Board), 35 insurance companies now operate (including state-run and private insurers). However, industry penetration remains low. Gross written premiums in Nepal were only on the order of NPR177–180 billion by FY2021/22, roughly 3.4–3.7% of GDP. Life insurance dominates the market share, but non-life business has also expanded (total 8-month premium was NPR28.0 billion as of early 2025. In recent years Nepal's insurance market has seen regulatory strengthening (e.g. Insurance Act, 2022), digitalization initiatives and premium growth (about 15–17% in FY2021/22). Still, with insurance coverage and density remaining low, the sector is vulnerable to macro shocks. For example, the COVID-19 downturn and inflationary pressures have strained insurers worldwide; understanding Nepal-specific dynamics is essential. Limited academic evidence exists on these issues in the Nepali context. Moreover, most existing studies in the Nepalese context have concentrated on banking institutions, leaving the insurance sector relatively underexplored. One panel study finds that Nepali insurers' ROA/ROE rose with GDP growth and fell with higher inflation (Pradhan & Pokharel, 2020).

This article seeks to fill that gap. The study specifically inquires: In what ways do macroeconomic variables, like inflation rate, GDP growth rate, interest rate, exchange rate fluctuations and money supply impact the financial outcomes of Nepalese insurance companies (evaluated by ROA and ROE)? The aim is to measure how insurer profitability responds to each factor using recent data at the firm level. By doing so, the research will contribute to academic literature (extending macro-financial analysis of insurers to an emerging market) and offer practical guidance to regulators, investors, and company managers. In particular, it will inform policy on insurance sector resilience by identifying which macro conditions most threaten or support insurers' stability. Filling this knowledge gap is significant for Nepal's economic policy: as insurance penetration grows, understanding these macro links will help ensure the sector can absorb shocks rather than amplify them.

## LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

### Keynesian Economic View

Keynesian theory states that changes in national income and aggregate demand determine business cycles and, consequently, the revenues of businesses (Keynes, 1936). While recessions and inflation reduce income, increased GDP growth and employment during boom times increase demand for insurance products and investment returns. This connection is supported by empirical research conducted throughout Asia. For instance, Khadka (2023) discovers that while inflation has a negative impact, rising GDP considerably raises Nepali insurers' ROA and ROE. According to Ismail et al. (2018), interest rates and GDP growth have a major impact on the performance (ROA) of Malaysian insurance businesses. According to Mitra et al. (2023), Indian businesses have a positive GDP–profitability link. These results support Keynesian theory, which holds that while inflation and economic contractions reduce profitability, stronger aggregate demand (higher GDP) increases it.

### Structure–Conduct–Performance (SCP) Paradigm

According to the SCP model (Bain, 1951), business performance and behavior are influenced by industry structure. The impact of macro shocks on profitability in the insurance industry is mediated by market concentration, competition, and regulation. For instance, Jaloudi and Bakir (2019) discover that the highly concentrated market in Jordan results in greater insurer profits, supporting the SCP hypothesis that ROE is positively impacted by the market share of the top five businesses (CR5). In contrast, Ofori-Boateng et al. (2022) support the "Efficient Structure" theory by demonstrating that efficiency drives profits rather than collusive behavior among Ghanaian insurers. These studies show that while profitability depends more on firm-level efficiency in some markets, concentration increases profitability (SCP) in others.

### Corporate Finance Theory

Classical corporate finance theory links macro factors, capital structure, and cost of capital to business performance (Modigliani & Miller, 1958). According to Khadka (2023), Nepali insurers' ROA and ROE are severely impacted by growing inflation and the money supply. According to Hasan et al. (2018), only interest rates—not GDP or inflation—have a major impact on non-life insurers' profitability in Bangladesh. Similarly, Ismail et al. (2018) demonstrate that interest rates influence Malaysian insurers' return on assets (ROA), with CPI having minimal

impact. These findings support the notion that financial leverage and the cost of capital are the channels via which macro variable's function.

**Intertemporal Capital Asset Pricing Model (ICAPM)**

By extending the CAPM over many periods, the Intertemporal Capital Asset Pricing Model (ICAPM) (Merton, 1973) enables investors to modify holdings in response to shifting macroeconomic conditions. Expected returns in the ICAPM are dependent on multiple state-variable betas that reflect shifting investment possibilities over time in addition to a market beta. Time-varying macro factors, such as changes in GDP growth trajectories, unemployment trends, and inflation, are readily incorporated into this theory as predictors of asset returns. When Barinov et al. (2020) use multi-period asset-pricing models, such as ICAPM, to insurers, they discover that macroeconomic factors significantly influence insurer returns over time. In particular, they demonstrate that insurers have a countercyclical beta, meaning that during recessions, their market risk increases. In practice, insurers' profits become more susceptible to market volatility during recessions, which are frequently characterized by high unemployment and low GDP. These results corroborate the ICAPM prediction that the changing economic environment affects insurers' stock and, by extension, accounting returns.

**Inflation Rate**

According to Ibrahimov et al. (2025), the inflation rate is a wide price-pressure indicator that can increase operating costs and erode enterprises' real revenues. It measures the rate at which prices are rising. Inflation is frequently considered a macroeconomic stress factor in empirical research on company performance in developing economies. For instance, it has been demonstrated that rising inflation tends to reduce company profitability through higher finance and input costs. Higher inflation dramatically lowers ROA in Nigeria, according to Egbunike and Okerekeoti (2018).

**GDP Growth Rate**

The percentage change in a nation's actual Gross Domestic Product, which represents the overall expansion of economic activity, is known as the GDP growth rate. According to earlier studies, GDP growth is seen as a crucial macro measure of economic demand that can support businesses' sales and investment returns (Hodula et al., 2021). Higher GDP growth is empirically associated with better business performance. For example, Hodula et al. (2023) discover that premiums for both life and non-life insurance increase with the business cycle, suggesting that higher GDP growth results in higher revenues for the insurance industry. Similarly, GDP growth considerably improves business profitability (ROA) in industrial sectors, according to Pacini et al. (2017) and Dewi et al. (2019). Additionally, Polat and Peker (2016) demonstrate that faster GDP growth in Turkey is correlated with better business revenues and profits. All things considered, GDP growth is seen as a stimulative macro factor that typically improves the financial performance of insurers by increasing demand for insurance services.

**Exchange Rate**

One of the main factors influencing businesses' foreign-currency cash flows and expenses is the exchange rate, which represents the local currency price of foreign currency. Theoretically, local currency appreciation has the opposite impact of depreciation, which raises the domestic value of foreign claims and import expenses. Exchange-rate volatility has been considered a source

of financial risk in earlier empirical research. Ibrahimov et al. (2025), for instance, point out that changes in exchange rates create uncertainty that may jeopardize the profitability of businesses. More specifically, Shah and Siddiqui (2019) discover that fluctuations in exchange rates have a substantial impact on ROA in the majority of Pakistani businesses. These studies suggest that exchange-rate fluctuations have a direct impact on insurers' income streams and asset valuations, which is why they are important explanatory factors in performance evaluations.

**Interest Rate**

The interest rate is the cost of borrowing money or the profit you make from lending money. This rate is usually a percentage of the amount you borrowed which is called the principal. It is for a certain amount of time. The interest rate is very important for the economy. It affects how much money businesses have to pay to borrow money what investments they choose to make and how well they do financially. This is especially true for companies, like insurance companies that make most of their money from investments. For example, in Ghanaian commercial banks, Musah et al. (2018) discovered a positive and statistically significant correlation between interest rate spread, as determined by net interest income or margin, and both return on equity (ROE) and return on assets (ROA). Similarly, interest rate spreads considerably improve business performance in Kenyan banks, accounting for roughly 50.9% of performance variation, according to Ndiritu et al. (2024).

**Money Supply**

The public's savings and time deposits, as well as currency in circulation and demand deposits, make up the money supply, especially M2. It affects inflation, interest rates, and investment activity and represents the amount of liquidity in the economy. According to the Nepal Rastra Bank, M2 is used in this analysis. Murungi (2014) discovered that the money supply has no statistically significant effect on the return on assets of Kenyan insurance companies, indicating that changes in the money supply might not have a direct effect on their financial performance. According to Ndegwa (2016), changes in money growth only have a substantial impact on stock market returns when they modify investors' expectations about future monetary policy. According to Msomi (2023), an increase in money growth suggests that monetary policy may be tightened in the future. One of the most significant ways to absorb excess liquidity is to boost interest rates. This raises the discount rate and lowers stock values.

**Return on Assets (ROA)**

A common accounting profitability statistic is return on assets (ROA), which is calculated by dividing net income by total assets. It gauges how effectively a company's asset base produces earnings. ROA is frequently employed as a major performance indicator in corporate finance studies (Singh et al., 2024). For instance, ROA is an important firm-level indicator in empirical research, according to Singh et al. (2024). ROA offers a thorough measure of operational efficiency by abstracting from finance structure (using total assets as the denominator). ROA is frequently used as a dependent variable in empirical research on insurers and other businesses to measure asset-utilization efficiency.

**Return on Equity (ROE)**

The return on owners invested capital is measured by return on equity (ROE), which is calculated as the ratio of net income to shareholders' equity. Similar to ROA, ROE is frequently

used as a profitability metric in both theoretical and empirical studies. In order to evaluate financial performance, empirical research often utilize ROE as an outcome measure. For instance, Ibrahimov et al. (2025) specifically employ ROE as a crucial performance statistic in addition to ROA. ROE, which measures how well a company turns equity financing into profits, is calculated by dividing net income by book equity. ROE is frequently reported in studies of corporate financial performance and complements ROA as a measure of firm profitability because it focuses on returns to shareholders.

## Impact of Inflation on Financial Performance

High inflation continuously reduces the profitability of non-life insurers, according to studies. For instance, Horvey and Odei-Mensah (2025) demonstrate that when inflation surpasses a certain point, it significantly negatively impacts the return on assets (ROA) of non-life insurers. Underwriting margins and investment returns are squeezed in high inflation situations because to increased claim and expenditure costs. However, several studies conducted in emerging markets have indicated weaker or mixed effects. For example, a study conducted in Bangladesh by Hasan et al. (2018) found that the ROA and ROE of non-life insurers were not significantly impacted by inflation or other macro variables. This disparity implies that pricing power and local market variables may mitigate the effects of inflation. Higher inflation tends to reduce the profitability of life insurance, according to a large body of recent empirical research. For instance, according to Khadka (2023), the inflation coefficient in a panel regression for ROA for Nepalese life insurers was negative and statistically significant, suggesting that rising consumer prices lower insurers' returns on assets. Similar findings apply to ROE by Khadka (2023) discovers that Nepalese insurers' return on equity is considerably reduced by increased inflation. In Kenya, Oburu et al. (2023) similarly note that rising inflation in 2017–2021 created severe challenges for insurers, they explicitly state "insurance is severely impacted by inflation" and advice firms to adjust pricing and hedge inflation risk. Several empirical studies across emerging markets report that inflation often has an insignificant effect on insurance-company profitability (measured by ROA or ROE). For example, Berhe and Kaur (2017) examine Ethiopian insurers and find that while firm-level factors (size, capital adequacy, liquidity) matter, the inflation rate does not significantly explain ROA changes. Mwangi (2017) report that inflation shows a weak or statistically insignificant relationship with insurers' profitability, with underwriting performance and firm-specific controls explaining most variation in ROA/operating ratios. Hasan et al. (2018) found that inflation has no statistically significant impact on the financial performance of non-life insurance companies in Bangladesh when measured by ROA and ROE. Similarly, Datu (2016) reported that inflation shows no significant effect on the profitability of non-life insurance companies in the Philippines when measured by ROA and operating ratio.

H1: *Inflation rate has no significant impact on insurers' profitability.*

## Impact of GDP on Financial Performance

Economic growth is generally positive for non-life insurers, but evidence varies by context. Horvey and Odei-Mensah (2025) find that higher GDP growth enhances non-life insurers' profitability once growth exceeds certain levels. In other words, robust economic expansion boosts premium volumes and reduces loss ratios (more insured activity, better pricing), but only above a threshold of stable growth. Hodula *et al.* (2023) also report that both life and non-life insurance

premium volumes co-move with the business cycle i.e. premiums rise when GDP growth is strong. However, not all studies find uniformly positive effects. For instance, one recent Bangladesh study (Samina, 2024) actually found a negative relationship between GDP growth and non-life insurer ROA. Such contradictions may reflect sample periods or local conditions: for example, if economic growth leads insurers to underprice risk or face more competition, profitability could fall. In the global context, Killins (2020) likewise finds for Canadian life insurers that real GDP growth significantly increases ROA. Researchers have long examined whether changes in the overall economy, especially gross domestic product, help explain the financial performance of insurance companies. However, evidence from emerging economies repeatedly suggests that GDP does not play a meaningful role in determining insurer profitability. In many cases, profitability measured through return on assets or return on equity appears largely unaffected by movements in GDP. In the context of Bangladesh, Hasan et al. (2018) analyzed data from 32 non-life insurance companies covering the period from 2009 to 2015. Their results showed that GDP growth, inflation, and exchange rate changes did not have a statistically significant relationship with either ROA or ROE. Interest rates were the only macroeconomic variable found to be significant. The study instead emphasized the importance of internal company characteristics, such as company size, solvency margin, and managerial efficiency, in explaining financial performance. Similar findings were reported in the Philippines. Datu (2016) examined non-life insurance companies over the period from 2008 to 2012 and found that GDP growth and inflation had no significant effect on profitability. The study highlighted underwriting risk, the use of reinsurance, and leverage as the primary factors influencing performance, suggesting that operational and financial decisions within firms mattered more than broader economic conditions. Evidence from India also supports this view. Mulchandani et al. (2018), in their study of 23 life insurance companies from 2009 to 2015, found that ROA and ROE were negatively related to GDP and other macroeconomic variables, but these relationships were not statistically significant. Their findings indicate that changes in the economic environment had limited influence on profitability, while firm level factors remained more important in shaping financial outcomes. More recently, Septina (2022) examined 35 general insurance companies in Indonesia between 2016 and 2019 and likewise confirmed that GDP and inflation did not significantly affect ROA or ROE, with company-specific variables such as claims ratio and risk-based capital emerging as stronger predictors of financial performance.

H2: *GDP growth has no significant effect on insurance companies' financial performance.*

**Impact of Interest Rate on Financial Performance**

Interest rates have been found to have no significant impact on financial performance, as measured by ROA, in Indonesian firms (Irsyadillah et al., 2024). The study by Kar and Swain (2014) find that higher interest rates, measured as the real yield on loan portfolios, positively and significantly influence the financial performance and repayment rates of microfinance institutions globally. Kavwele et al. (2018) find that interest rate capping significantly reduces the financial performance of commercial banks in Kenya, with declines in interest income outweighing gains from non-interest income or reduced interest expenses. According to Shawar et al. (2019), gross written premium is the main factor influencing profitability, and interest rates have little effect on the financial performance of insurance businesses in Pakistan.

H3*: Interest rate significantly influences the financial performance of insurance companies.*

**Impact of Exchange Rate on Financial Performance**

Saleem (2023) observed that exchange rate volatility has a detrimental effect on the profitability of insurance companies in Pakistan as determined by return on assets (ROA). This suggests that foreign exchange fluctuations can impair financial performance, particularly for businesses that engage in international transactions or possess assets denominated in foreign currencies, exposing them to financial risks related to currency. Although the relationship was statistically insignificant at the 5% level, Nyairo (2015) found that foreign exchange rate volatility has a negative impact on the return on assets (ROA) of insurance companies in Kenya. This suggests that companies that engage in international business or are exposed to currency fluctuations are vulnerable to profitability risks. Exchange rate fluctuations frequently have little impact on the profitability of insurance companies (as determined by ROA or ROE), according to a number of empirical studies from emerging and developing economies. For instance, an examination of 32 Bangladeshi non-life insurers revealed that firm-level restrictions and interest rates were more important in explaining variation in ROA or ROE than exchange rates, GDP, or inflation (Hasan et al., 2018). Evidence from Kenya likewise shows a positive but statistically insignificant relationship between exchange-rate changes and insurer ROA in panel regressions (Muteru & Omagwa, 2024).

H4: *Exchange rate changes significantly affect insurers' ROA and ROE.*

**Impact of Money Supply on Financial Performance**

Money supply reflects the liquidity available in the economy and influences inflation, interest rates, and investment activity. Murungi (2014) found that money supply, does not have a statistically significant impact on the return on assets of insurance companies in Kenya, suggesting that variations in money supply alone may not directly influence their financial performance. Ndegwa (2016) suggests that money supply significantly affects stock market returns only when changes in money growth alter investors' expectations regarding future monetary policy. According to Msomi (2023), an increase in money growth signals potential future tightening of monetary policy by authorities. One of the key tools for absorbing excess liquidity is raising interest rates, which subsequently increases the discount rate and causes stock prices to decline.

H5: *Money supply has no significant effect on the financial performance of insurance firms.*

## METHODS

This study is quantitative in nature; descriptive and correlational research design has been used to examine how macroeconomic factors influence the financial performance of Nepalese insurance companies. Following prior work on secondary data and aim to obtain an accurate representation of relevant variables and their relationships. We selected macroeconomic factors that prior literature identifies as key drivers of insurance (and financial sector) performance. For example, Khadka (2023) finds that inflation, GDP growth, and money supply significantly affect Nepalese insurers' ROA and ROE. Similarly, Kunwar and Jnawali (2023) include interest rates, broad money supply, inflation rate, and GDP growth as regressors in analyzing Nepalese banks' profitability. The analysis is structured to quantify the impact of inflation rate, GDP growth rate, exchange rate, and unemployment rate on insurers' profitability (measured by ROA and ROE),

using multivariate regression. This research uses the central bank's policy (base) interest rate and money supply (M2) as the measure of interest rate and money supply.

## Population and Sampling

The population for this study comprises all listed life and non-life insurance firms in Nepal Stock Exchange. According to Nepal Insurance Authority records, there are 14 life insurers and 14 non-life insurers (28 total) as of early 2025. To ensure representation of both sectors, we apply a stratified random sampling approach. Specifically, firms are first categorized into the life and non-life strata, and then an equal number of companies are selected from each group. Six life are selected based on complete 12 years of operation and six non-life companies are selected using the random sampling method to maintain a balanced sample. This stratified design follows established practice in the literature. Data are collected over a 12-year period (2013–2024), resulting 144 observations.

## Data Collection

Secondary data sources were employed for both macroeconomic indicators and firm`s financial performance. Macroeconomic variables (inflation rate, GDP growth rate, exchange rate, unemployment rate) are obtained from official publications and databases such as the Nepal Rastra Bank, the Ministry of Finance, and international sources (e.g. World Bank). Financial performance data (net income, equity, total assets) for each selected insurer are extracted from their audited annual reports and the reports of Nepal's Insurance Board. From these, ROA and ROE are computed for each firm. The use of published archival data is consistent with prior studies in the Nepalese insurance sector.

## Data Analysis

This research is based on multiple linear regression models to assess the combined effect of the macro-variables on firm performance. The regression analysis was conducted using EViews software and applied for econometric modeling of the panel data.

## Model Specification

Following the approach in prior research, two separate multiple regression models are developed one with ROE as the dependent variable and another with ROA.

## Model 1 (ROA as dependent variable))

In the first model, Inflation, GDP Growth Rate, Exchange Rate, interest rate and money supply are considered as the independent variables, and Return on Assets (ROA) is taken as the dependent variable. The model is designed to assess the effect of selected macroeconomic variables on the financial performance of Nepalese insurance companies, as measured by ROA. The functional form of the model is as follows:

$ROA_{it} = \beta_0 + \beta_1(Inflation_t) + \beta_2(GDP\ Growth_t) + \beta_3(ExchangeRate_t) + \beta_4(Interest\ Rate_t) + \beta_4(Money\ Supply_t) + e_{it}$

## Model 1I (ROE as dependent variable):

In the second model, the same macroeconomic variables, Inflation, GDP Growth Rate, Exchange Rate, interest rate and money supply are used as independent variables, and Return on Equity (ROE) is taken as the dependent variable. This model has been constructed to examine the impact of macroeconomic conditions on the financial performance of Nepalese insurance companies measured by ROE. The model is specified as:

$$ROE_{it} = \beta 0 + \beta 1(Inflation_t) + \beta 2(GDP\ Growth_t) + \beta 3(ExchangeRate_t) + \beta 4(Interest\ Rate_t) + \beta 5(Money\ Supply_t) + e_{it}$$

**Where:**

- $\beta 0$ = Constant term (intercept)

- $\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, $\beta 5$ = Coefficients of the respective macroeconomic variables

- $e_{it}$ = Error term for firm $i$ at time $t$

- ROA = Return on Assets

- ROE = Return on Equity

**Test of Significance**

Statistical significance of the results was assessed through standard hypothesis tests. The study examined the t-statistics for each regression coefficient to test if $\beta k=0$ (i.e. each macro variable's effect) and the F-statistic for the overall regression to test if the model explains a significant portion of variance. The coefficient of determination $R^2$ has been reported to indicate the variation in ROA/ROE is explained by the macro variables. For all tests, a 10% significance level has been used. Using 10% is common in exploratory macro-financial studies to avoid overlooking potentially meaningful relationships expecially in case of developing economies. Diagnostic checks (e.g. residual normality plots, multicollinearity VIFs) was performed to ensure the validity of regression assumptions (following best practices in related studies).

## ANALYSIS AND RESULTS

**Impact of Macroeconomic Factors on ROA of Insurance Companies of Nepal**

*Table 1 presents the regression results examining the impact of macroeconomic factors on the return on assets (ROA) of insurance companies in Nepal. The model explains 20.6867% of the variation in ROA ($R^2$ = 0.206867, Adjusted $R^2$ = 0.184508, F-statistic = 3.30246, p-value = 0.007551), indicating that the independent variables collectively have a statistically significant effect at the 1% level. Among the predictors, the exchange rate shows a negative and statistically significant effect on ROA at the 10% level (coefficient = –0.072189, t = –1.727833, p = 0.0863). However, inflation rate (coefficient = 0.045077, t = 0.208002, p = 0.8355), GDP (coefficient = –0.055980, t = –0.395349, p = 0.6932), interest rate (coefficient = 0.027731, t = 0.084209, p = 0.9330), and money supply (coefficient = 0.052640, t = 0.429446, p = 0.6683) do not exhibit statistically significant relationships with ROA.*

**Table 1**

*Impact of Macroeconomic factors on ROA of Insurance Companies in Nepal*

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 10.81197 | 9.781395 | 1.105361 | 0.2709 |
| *Inflation Rate* | 0.045077 | 0.216712 | 0.208002 | 0.8355 |
| *GDP* | -0.055980 | 0.141597 | -0.395349 | 0.6932 |
| *Interest Rate* | 0.027731 | 0.329316 | 0.084209 | 0.9330 |
| *Exchange Rate* | -0.072189 | 0.041780 | -1.727833 | 0.0863 |
| *Money Supply* | 0.052640 | 0.122578 | 0.429446 | 0.6683 |
| R-squared | 0.206867 | | F-statistic = 3.30246 | |
| Adjusted R-squared | 0.184508 | | p-value = 0.007551 | |

*Impact of Macroeconomic Factors on ROE of Insurance Companies of Nepal*

*Table 2 presents the regression results examining the effect of macroeconomic factors on the return on equity (ROE) of insurance companies in Nepal. The model explains 19.5336% of the variation in ROE ($R^2$ = 0.195336, Adjusted $R^2$ = 0.176653, F-statistic = 3.54380, p-value = 0.018021), indicating that the independent variables jointly have a statistically significant impact at the 5% level. Among the predictors, the exchange rate shows a negative and statistically significant effect on ROE at the 10% level (coefficient = –0.076151, t = –1.766640, p = 0.07446). In contrast, inflation rate (coefficient = –0.711806, t = –1.381541, p = 0.1693), GDP (coefficient = –0.442121, t = –1.313333, p = 0.1913), interest rate (coefficient = 0.942200, t = 1.203419, p = 0.2309), and money supply (coefficient = 0.173538, t = 0.595483, p = 0.5525) do not exhibit statistically significant relationships with ROE.*

**Table 2**

*Impact of Macroeconomic factors on ROE of Insurance Companies in Nepal*

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|---|---|---|---|---|
| C | 15.09605 | 23.25490 | 0.649156 | 0.5173 |
| *Inflation Rate* | -0.711806 | 0.515226 | -1.381541 | 0.1693 |
| *GDP* | -0.442121 | 0.336641 | -1.313333 | 0.1913 |
| *Interest Rate* | 0.942200 | 0.782936 | 1.203419 | 0.2309 |
| *Exchange Rate* | -0.076151 | 0.069330 | -1.766640 | 0.07446 |
| *Money Supply* | 0.173538 | 0.291423 | 0.595483 | 0.5525 |
| R-squared | 0.195336 | | F-statistic = 3.54380 | |
| Adjusted R-squared | 0.176653 | | p-value = 0.018021 | |

## DISCUSSION

This study examined how selected macroeconomic variables (inflation, GDP growth, interest rate, exchange rate, and money supply) affect Nepalese insurers' financial performance (ROA and ROE) over 2013–2024. Overall, most macro variables were statistically insignificant for ROA and ROE, with the exception of the bilateral exchange rate (NEP/USD), which showed a weak negative effect at the 10% level. Below we interpret these findings in light of the Keynesian view, SCP paradigm, Corporate Finance theory, and ICAPM, and discuss plausible explanations and implications.

Inflation was not a significant determinant of ROA or ROE in our models. Although Keynesian logic predicts that inflation can reduce real returns and suppress demand in recessions (Keynes, 1936), the lack of significance here is consistent with several empirical studies in emerging markets (Hasan et al., 2018; Datu, 2016). A likely explanation is that Nepalese insurers may index premiums, hold inflation-hedging assets, or operate with pricing and regulatory features that blunt the direct pass-through of inflation to accounting profitability. Alternatively, measurement and timing issues (inflation effects that appear with lags or nonlinearly) or dominant firm-level practices (underwriting discipline, reinsurance) could obscure a direct inflation profitability link.

GDP growth also failed to exert a significant effect on ROA or ROE, despite Keynesian expectations that stronger aggregate demand should raise insurance take-up and investment

returns. This result aligns with studies that report weak GDP effects on insurance profitability in some emerging markets (Hasan et al., 2018; Mulchandani et al., 2018; Septina, 2022). One explanation is that market structure and competitive behavior (the SCP lens) moderate how macro expansion translates into firm outcomes: if premium rates are competitive or regulated, growth in GDP may increase volumes but not margins.

Interest rate changes were not significant predictors of ROA or ROE in our sample. Corporate Finance theory predicts that interest rates influence insurers' investment income and cost of capital, yet the empirical non-finding may reflect Nepalese insurers' conservative asset allocation (limited exposure to interest-sensitive securities), short durations on invested assets, or strong matching practices between assets and liabilities that insulate accounting returns from policy rate movements (Kar & Swain, 2014; Kavwele et al., 2018). It is also possible that the central bank base rate (our proxy) does not fully capture the range of market yields affecting insurers fixed-income portfolios.

Money supply (M2) did not significantly affect profitability, which echoes prior evidence that broad liquidity measures alone do not determine insurer returns (Murungi, 2014; Ndegwa, 2016; Msomi, 2023). From a Keynesian/monetary-transmission perspective, money growth may matter for aggregate demand, but its effect on insurer accounting measures may be indirect and conditional on credit channel functioning, financial deepening, and firm strategies; thus, neutral results are plausible.

Exchange rate volatility produced a weak but negative association with ROA and ROE (significant at 10%). This finding is consistent with studies showing that exchange-rate shocks impair insurers' profitability when firms have foreign-currency exposures (Saleem, 2023; Nyairo, 2015). ICAPM and multi-period asset pricing logic imply that state variables such as exchange rates can change expected returns and risk premia over time (Merton, 1973; Barinov et al., 2020); our result suggests that currency movements, perhaps through revaluation losses, higher cost of foreign reinsurance, or imported claim costs that translate into lower accounting returns for some Nepalese insurers.

Taken together, the predominance of insignificant macro effects suggests three non-mutually exclusive interpretations that correct earlier misstatements about APT/MPT: (1) macro variables in our model may genuinely have limited direct impact on accounting profitability in Nepal's insurance sector during 2013–2024; (2) firm-level characteristics and managerial choices (underwriting quality, expense management, reinsurance strategy, asset-liability matching) may dominate outcomes, an inference best framed through the RBV and SCP lenses rather than as a literal prediction of APT; and (3) methodological factors (sample size, variable measurement, omitted dynamics or nonlinearity, and use of contemporaneous rather than lagged macro indicators) could attenuate observed relationships.

The results provide a more thorough theoretical understanding. Due to low insurance penetration and insufficient demand sensitivity, the classic Keynesian link between aggregate demand and insurer profitability is weak in Nepal, as evidenced by the insignificance of GDP, inflation, interest rates, and money supply. This is also consistent with the Structure Conduct Performance perspective, which contends that institutional conditions and market structure influence insurer performance more than macroeconomic cycles. Similarly, the subdued impacts

of interest rates and inflation suggest that corporate finance mechanisms like leverage adjustments and cost of capital function poorly in this situation. On the other hand, the Intertemporal Capital Asset Pricing Model, which highlights vulnerability to time-varying systematic risks, is supported by the substantial impact of exchange rate fluctuations. Overall, the findings reflect the structural and developmental features of a developing insurance market by demonstrating that Nepali insurers are more sensitive to external financial shocks than to local macroeconomic variables.

## CONCLUSION

This study examined how certain macroeconomic variables, such as the money supply, GDP growth rate, inflation rate, exchange rate, and interest rate, affected the financial performance of Nepalese insurance companies as determined by ROA and ROE. The findings show that the macroeconomic factors have little effect on insurers' profits, with the exception of exchange. In particular, it was discovered that neither ROA nor ROE were significantly impacted by inflation, GDP growth, or the money supply. In line with the ideas of Modern Portfolio Theory and Arbitrage Pricing Theory, the results imply that firm-specific traits are probably more important predictors of success than general macroeconomic swings. As a result, the hypotheses H1, H2, H4, and H5 are accepted, but H3 about interest rate is rejected because it did not have a statistically significant impact on ROA or ROE. This is probably because Nepalese insurers have conservative investment strategies, low interest-rate volatility, and little exposure to interest-sensitive assets.

The study's conclusions have significant ramifications for theory and practice. Policymakers may think about stabilizing foreign exchange markets to protect the stability of the financial sector, while Nepalese insurance companies and regulators should improve risk management practices, such as the use of hedging strategies and diversification into less exchange rate-sensitive assets, based on the evidence that exchange rate volatility significantly reduces insurers' profitability. The results are theoretically in line with Keynesian, SCP, Corporate Finance, and ICAPM viewpoints, indicating that only certain systematic macroeconomic risks—most notably exchange rate shocks—have a significant impact on the financial performance of insurers, while other frequently mentioned macro variables—such as GDP, inflation, interest rates, and money supply—have minimal effects in the Nepali context. By demonstrating that inflation, GDP, interest rates, and money supply—all of which are highlighted in international research—do not substantially impact insurer returns in Nepal, this adds to the body of knowledge on emerging markets and expands the application of asset-pricing theory to a setting where institutional and idiosyncratic factors impede the transmission of macroeconomic variables to firm performance.

## LIMITATION AND FUTURE DIRECTION

The study has a number of shortcomings even if it offers valuable information. First, the results may not be as applicable to the larger insurance industry since the sample was restricted to 12 insurance companies during a 12-year period. Second, the use of only secondary data made it more difficult to record qualitative elements that can affect financial performance, such as management choices, market mood, and legislative changes. Third, by focusing only on macroeconomic difficulties, the study ignored other possible aspects such as consumer preferences, competitive behavior, and technological adoption. Fourth, the 10% significance level

does not fully capture the complex effects of macroeconomic factors on profitability, while being widely employed in research on emerging markets. Reinsurance companies and microinsurance companies are neglected at the operational/establishment stage. Finally, by assuming linear relationships between macro variables and financial success, the approach oversimplifies complex interconnections in the insurance sector.

By expanding the scope to include all insurance companies operating in Nepal and other emerging nations with comparable market conditions, further research can advance this study. It would be easier to see how insurance companies function in expanding marketplaces if a wider range of businesses were examined. Future research can include surveys or interviews with insurance professionals in addition to financial data to get useful information on business strategy, management choices, and profitability sources that are frequently absent from published reports. Since the consequences of economic changes may manifest gradually, it would also be beneficial to look at how economic conditions affect insurance performance across time rather than just within a single period. Alternative metrics including market value, underwriting margin, and combined ratio can enhance the analysis and give a more comprehensive picture of performance. Additionally, analyzing insurance markets in developing and developed nations, or comparing life and non-life insurance companies, may assist understand why insurance companies react differently to economic conditions in different contexts.

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