

# The Micro Economic Determinants of Insurance Profitability in Ethiopian Insurance Industry— Evidenced from Life and Non-Life Insurance Products

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## ABSTRACT

The insurance sector is an integral part of every business, especially the financial market of a country. Insurance companies are essential to economic prosperity for businesses and individuals alike. They are necessary because they compensate for losses and place individuals or businesses in the same position as before the losses. Insurance companies give companies social and economic benefits, such as reducing losses, reducing fear and uncertainty, and creating jobs. This research project examines the following key variables: microeconomic or firm-level variables (Firm size, leverage, liquidity, premium growth, Lose Ratio, market share, the tangibility of assets, age of the company).The researchers used the World Bank Data Center for Macroeconomic Variables. Besides this, the audited financial statements of the National Bank of Ethiopia for microeconomic (Firm-Level) Variables. The core explanatory variables were chosen from influential studies to demonstrate their relationships and effects on profitability. These research objectives used the fixed-effect model were used instead of the random-effect model, following the Hausman test results. Based on the Sample of 17 insurance company In Ethiopia Dated From 2005 to 2020, insurance companies were analyzed using econometric panel data for 16 years. The regression analysis results showed that the firm's size (insurance firm), leverage ratio, liquidity ratio, market share premium growth, the tangibility of assets, and age of the company were significant. However, liquidity ratio and insurance dependency, insignificantly impact insurance company profitability. Finally, the study recommends that insurance company executives and policymakers in the nation take critical steps by developing policies and strategies to enhance insurers' overall profitability.

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## **1. Introduction**

Ethiopia is Africa's second most populous country, with untapped resources, a big domestic market, a strong young labor, and a strategic location at the crossroads of Africa, the Middle East, and Asia. Ethiopia is a medium-sized developing country. Its economy is based on the agriculture sector, which accounts for 35.45 percent of GDP, the industrial sector, which accounts for 23.11 percent, and the services sector, which accounts for 36.81 percent (Aaron O'Neill, 2021; Statista, 2021). Ethiopia has been subjected to a variety of socioeconomic and political regimes during the last several decades.

In the current era, financial institutions' economic growth is significantly supported by the country's economic activities, both as a broker and as a risk-bearer. (Ofoghi & 2005). They are stabilizing rates, rising job levels, and stabilizing economic growth. According to (Douglass, 2011), the financial sector is increasing rapidly. It is gaining prominence in global financial growth due to technological advancement and globalization in businesses, public institutions, and private organizations, which have faced numerous limitations in achieving their organizational objectives.

The Ethiopian financial sector comprises banks, insurance firms, microfinance institutions, pension funds, and industry-leading banks (Outlook, 2016). Insurance companies are among the financial institutions that offer specialized financial services by assisting risk management organizations (Hanna, 2015). They provide individuals or businesses with financial protection against monetary losses incurred due to unforeseen circumstances (Kihara, 2012). Compensation and risk pooling of insurance assets promote financial transactions and credit availability by alleviating losses and reducing non-diversifiable risks for funding economic activities (Nдалu, 2017; Haiss & Sumegi, 2008). It noted that the availability of insurance companies in both developed and developing countries is imperative to the financial services industry, as they contribute to economic development, efficient allocation of capital, the reduction of transaction costs, the creation of liquidity, the assistance of both the economy's investment scale and the distribution of financial losses. Any country's insurance sector can contribute significantly to economic development and growth (Brainard, 2008; Word & Zurbruegg, 2000) .

As (Malik, 2011) specified, profitability is one of the financial management system's critical goals since its objectives are to optimize its resources for the owner's wealth. It demonstrates how well the operation of an organization produces income using the tools at its disposal. (Lee Y. C., 2014) reveals that the insurer's profitability plays a crucial role in persuading policyholders and shareholders by providing funds to insurance companies through raising their solvency rate. Valuing a non-life insurance firm's viability is challenging due to the particular nature of insurance firms' financial statements (Boyjoo & Romesh, 2017). Furthermore, the study on the evaluation of company profitability in the majority of financial systems in developing countries more strongly emphasizes the banking sector than insurance firms (Ayle & Sabasivam, 2013). However, the value of the profitability process for the

banking and insurance sector has been measured at the economy's micro and macro levels as a whole.

The position of the banking and insurance industries in the financial system will eventually boost their micro-and macroeconomic stability and economic growth. Ethiopia is easily characterized as the least developed economy with the fastest growth rate. The Ethiopian financial sector is not well established. Therefore, the financial system must be Made over to fit the economy well (Abebaw, 2014).The Ethiopian insurance industry, in particular, remains underdeveloped and targets the business market, focusing on general insurance, and nearly 90% of the population has no proper insurance. Insurance premiums account for about 0.47% of non-life insurance to GDP and 0.03% of life insurance to GDP (Geiger & Moller., 2015). Therefore, the Ethiopian insurance sectors are not growing as expected, are less profitable, and cannot play a significant role in economic growth than the banking sector. According to a quarterly survey conducted by the NBE in 2017, the Ethiopian insurance sector has a 3.89 billion capital, with a total branch of 482 across countries, where 53.9% is currently in the Ethiopian capital city Addis Ababa.

In today's dynamic world, a company cannot succeed in the long run without defining the factor that determines its profitability. The Firm is founded and entitled to generate profit. Profitability is a significant prerequisite for ensuring the company's performance of an economic organization (Achim & Borlea, 2008). It is also calculated by achieving positive results after comparing the economic effects of the three financial actions involved in the organizations' regular activities (Ayle & Sabasivam, 2013). (Suyehli, 2015) revealed that firms' capacity to make profits comprises two terms. The first word is profit, which is an actual profit figure, but an exact amount alone does not accurately indicate the adequacy or improvement in results, as seen in the firm's financial statements. The second word is the capacity that represents the strength of an organization to make money from its capital.

Consequently, it is reasonable to conclude that a company cannot survive without the financial institutions' contributions, such as insurers in today's business world, because some companies are cost-effective and efficient, while others have remained inefficient. Company policies are risky businesses by their very nature. Companies that do not cover their policies may find it difficult to prosper in an increasingly competitive climate, and as a result, they may experience lower profits than they would otherwise have. Therefore, they considered the factors influencing the performance of financial institutions, especially insurance companies, which probably impact economic growth. Similarly, other private and public institutional insolvencies and systemic crises negatively impact the entire economy and are essential for developed and developing countries to consider. Empirically studying the factors influencing insurance firms' profitability will also allow them to consider the related factors. Various studies have been conducted separately on the profitability determinants of life and non-life insurance firms in multiple jurisdictions, with varying results. Non-life insurance firms engage in risk-bearing practices, while life insurance companies are concerned with financial intermediation. However, the insurance industry is expected to receive little attention, especially in developing countries like Ethiopia. Therefore, this study primarily aims to investigate whether Micro Economic (endogenous variables) Premium Growth, Size of the company, Capital Adequacy

Ratio, Liquidity Ratio, Leverage Ratio, reinsurance dependence, risk underwriting (loss Ratio), Market size, Tangibility of Assets and Age of the company, affect the profitability of life and non-life insurance companies operating in Ethiopia.

## **2. Empirical Reviews of Different Studies**

Previous related literature on factors affecting the profitability of insurance companies is reviewed below.

(Malik, 2011) analyzed the various factors affecting insurance companies' profitability in Pakistan between 2004–2005 and 2008–09 and examined the effects of particular corporate variables, such as corporate age, corporate size, capital size, leverage, and loss ratios of profitability, and included a sample of 35 listed non-life and life insurance companies. The study results showed that the company's profitability and age were uncorrelated, but the company's size and profitability were positively correlated. The analysis also found a positive relationship between the amount of capital and the loss ratio and the leverage ratio, implying a negative profitability relationship. The researchers suggested that the relationship between the leverage ratio and the loss ratio be reversed, thereby inducing a significant relationship that improves profitability independently.

(Olajumoke, 2012) studied the determinants of micro-life insurer profitability in Nigeria between 2003–04 and 2007–08. The study's findings revealed that factors such as ownership structure, leverage, and firm size have no bearing on the profitability of micro-life insurers. However, profitability is negatively linked to the degree of reinsurance, implying that reinsurance in the Nigerian micro-life insurance market may be overpriced to represent the increased risk of insuring the lives of low-income groups. Furthermore, the profitability of Nigerian micro-life insurers is believed to positively impact the economy's interest rates.

(Amal, Sameer, & Yahya, 2012) examined the different factors influencing Jordanian financial results from 2002–03 to 2007–08. The findings showed a positive statistical impact on insurance companies' financial performance with variables such as equity ratio, liquidity, business size, and management skills. Nevertheless, the ages of the company were discovered by encouraging new insurance entries to affect its success. The researchers proposed that insurance firms should keenly consider increased assets and qualified workers in senior management roles to improve financial efficiency.

(Mazviona, Dube, & Sakahuhwa., 2017) explored the factors affecting the success of insurance companies in Zimbabwe. The study used secondary data from 20 short-term insurance companies obtained via panel research from 2010 to 2014. The report included nine key variables: expenditure ratio, the ratio of claims, size, liquidity, debt, growth rate, inflation, retention rate, and equity. Therefore, the thesis used factor analysis and multiple linear regression models for panel knowledge to ascertain the effects of these variables.

The multiple regression findings based on the data examined indicate that they substantially and adversely impact the performance of insurance undertakings in the sector's expenses, debt, and size ratios, and the performance of the capital and the liquidity of insurance undertakings.

The study showed that insurance firms are introducing mechanisms that reduce operating costs, such as automated systems, to improve profitability.

(Boyjioo & Romesh, 2017) examined factors affecting Mauritius-based general insurance firms' success from 2011–2015. Business size, corporate risk, debt, liquidity, investment outcomes, reinsurance dependence, sales profitability, net operating costs, market concentration ratio, rate of growth, and company age were among the 11 clarifying factors used in the research result. The output of general insurance companies was estimated using the dependent variable ROA. The data panel for multiple regression of ordinary least square (OLS) was used to test secondary data for the analysis.

According to the findings, the company's size, underwriting risks, leverage, liquidity, concentration ratio, and investment performance all positively and significantly affect profitability, as measured by ROA. However, reinsurance dependency and growth rates were negatively and insignificantly related to the ROA. The profitability ratio, net operating expense, company age, and premium growth were all slightly related to the financial performance of Mauritian general insurance firms (Boyjioo & Romesh, 2017). According to the report, several factors influencing Mauritian performance were identified and evaluated for their correlation and predictive potential to develop a model that could monitor their performance to achieve growth and progress.

The research on the impact of corporate diversification on corporate results in the Serbian insurance industry for 11 consecutive years was performed (Krivokapic, Njegomirb, & Stojicc, 2017) using panel data. Their study focused primarily on the relationship between market diversification and insurance companies' performance over 11 years (2004–2014). The asset and equity returns were used as additive variables, while the independent variables were entropy (product diversity), corporate size, capitalization, life premium share, individual market concentration, and three dummy variables, including party, public, and international variables. The research analyzed the effect of using a mathematical model of multiple regressions.

The study found a significant and positive relationship between risk-adjusted returns calculated by asset income and equity and business diversification and entropy efficiency, and the results revealed that diverse insurance companies outperformed undiversified insurers (Krivokapic, Njegomirb, & Stojicc, 2017). Also, (Zhang, 2015) considered the income (outperformance) of specialized composite insurance companies over the ones run in a moderately competitive market by an entire line alone and found that diversified insurers are underperforming single-line insurers in the market setting, which is a negative and significant relationship between diversification and ROA. The study advised that management should devise strategic strategies and diversification plans to position itself better from their insurance businesses in the marketplace.

(Daara, 2016) assessed the factors affecting the profitability of non-life insurance undertakings in India using panel data from 2006 to 2016 for eight general insurance undertakings (2 public and 6 private undertakings). The report used secondary data from annual audited financial

statements. As a measure of company profitability, the author evaluated eight major internal and external combinations (size, capital adequacy, liquidity, loss ratio, premium boost, age, GDP, and asset inflation) to understand the effects. The OLS model of multiple linear regressions was used to analyze the study's research findings.

The findings showed that statistically significant factors determining the profitability of Indian insurance companies were defined by corporate size, liquidity, and inflation. The size, loss ratio, liquidity, age, and GDP of these variables correlated positively with ROA, while ROA correlated negatively with capital adequacy, premiums, and inflation. The author concluded that the essential factors in insurance companies' profitability were insurance companies' primary factors, such as the company's age and liquidity. Among macroeconomic variables, inflation in Indian non-life insurance was statistically significant. According to the findings, insurance managers should concentrate on managing current assets and liabilities, while external inflation is also significant.

(Datu, 2016) explored the effect of individual insurers and macroeconomic indicators on the profitability of the Philippine non-life insurance industry using panel data from 2008 to 2012. ROA and the operating ratio were used as benchmarks for determining profitability. The seven primary firm-specific and macroeconomic variables used in the analysis were diversification, market share, domestic product growth, inflation, reinsurance dependency, risk underwriting, input costs, and leverage. Standard least square multiple regression was used to interpret the study's findings.

The empirical study found that firm size, financial leverage, risk underwriting, reinsurance dependency, and input costs had substantial profitability influences in both the operating ratio and the ROA models. However, the macroeconomic variables have no significant impact on both models. The result indicated that risk underwriting, GDP, and market share significantly negatively impacted insurers' profitability, while debt, reinsurance dependency, and inflation significantly positively impacted profitability. However, diversification was optimistic and negligible, with profitability calculated by ROA.

Accordingly, based on the study results, the author recommended that low underwriting risk, low reinsurance dependency, low input costs, and smaller firms should positively impact profitability. The financial leverage firm may impede profitability, as it reduces the company's market value. Despite this, the study advised that a non-life insurer should make cautious calculations and consider relevant metrics for the insurer's deliberation and that macroeconomic conditions affect the business's performance before adopting policies for benefit and competitiveness.

(Jibrán, Samen, Kashif, & Novman, 2016) investigated the determinants affecting Pakistani non-life insurance firms' profitability empirically. In nine consecutive years, between 2005 and 2013, only 20 companies were considered. The secondary balanced panel data were collected from non-life insurance companies' financial statements, with a total of 180 to evaluate the data and conclude. Two dependent variables (ROA and ROE) and five independent vital variables were used for the study: business size, liquidity, premium rises, inflation, and economic

growth. Using balance panel data in Eview 6 to conclude, the study's OLS multi-regression model was employed.

The results of the panel data generated by the statistical package Eviews 6 software revealed that the determinants of both ROA and ROE were not the same across the study. Current assets were essential for ROA but proved negligible in ROE. Control variables also played a part in measuring market profitability. The current ratio and ROA have a positive relationship, implying that a higher current percentage would induce higher corporate income. The size of the company was also important in assessing its viability. It also benefited firms' ROA and ROE alongside premium growth. Even the latter word was significant in both cases. The study suggested evaluating the firm's management to optimize profitability based on the findings. Also, non-life insurers based in Pakistan could probably increase their firm size and premium growth to increase operating income.

(Nyamu, 2015) conducted a study on the effect of macroeconomic factors on the financial performance of Kenyan insurance companies from 2006 to 2015. The effects of the six major independent variables were examined in the study: interest rate, exchange rate, loan rate, capital supply, GDP, and inflation. Regardless, firms' financial results were used as the dependent variable. To analyze the data for the analysis and draw a potential inference, the researcher used a descriptive research design with SPSS and multiple linear regression and correlation. The SPSS revealed a marginally positive relationship between insurance companies' financial performance and GDP growth and inflation and a marginally negative relationship between insurance companies' financial performance and loan, exchange rate, and capital supply. According to the report, economic growth, inflation, and the inverse relationship between loan rates, currency exchange rates, and money provision and insurance company financial performance in Kenya were all directly related.

Based on the findings, the report recommended that the government and the ministries of finance and planning certify good economic performance. Nevertheless, the government should launch an effective mechanism to ensure that inflation, lending rates, exchange rates, and money supply do not impact businesses' financial performance.

(Hussain, 2015) analyzed the relationship between the macroeconomy and profitability of 39 insurance companies in the post-crisis scenario run in Pakistan using data from the company's 2006–2011 timeframe and the macroeconomic data from the panel. The study comprised firm-specific factors, such as firm size, financial leverage, growth opportunities, diversification, underwriting risk, labor capital management, stock market, and macroeconomic variables, such as inflation. However, the ROA was used to calculate profitability. To analyze the data, the standard statistical model of the panel data analysis, which combines cross-section and time-series data with the estimation panel, was used by researchers for the least square regression of the standard model.

The results showed that macro economic climates, the condition of the stock markets, and inflations positively and significantly affected the profitability of both life and non-life

insurance companies in Pakistan. In contrast, diversification significantly positively impacted the profitability of insurance companies.

Following the report's results, the management of non-life insurance undertakings should consider the macroeconomic environment, stock market conditions, inflation adding to the firm-specific characteristics, including financial leverage, relative size of undertakings, financial soundness, growth prospects, risk management, and diversification, in particular the regulation of profitability. Nevertheless, Takaful business managers should focus primarily on risk management, diversification, and working capital management to preserve their return on assets.

(Kazeem, 2015) used panel data from 12 listed insurance companies in Nigeria to investigate the impact of company-specific features on financial performance from 2006 to 2013. The financial performance measured by ROA was the dependent variable, while the age of the insurance agency, business size, premium increase, loss ratio, liquidity, and leverage were independent variables to determine the final target. Multiple regressions were used as a research tool, and secondary data were derived from the firms' audited financial statements, which were analyzed using different statistical regression methods. However, panel data techniques (fixed and random effects models) were used to investigate the influence of company-specific features on financial results. Finally, according to the Hausman specification, the random-effect model was better for drawing a firm conclusion in the analysis.

The most essential and typical determinants of financial performance in the Nigerian insurance industry were firm size, liquidity, loss rate, and leverage resulting from many regressions. This induced a negative correlation between firm size, loss ratio, and debt. The liquidity ratio was optimistic and significantly related to financial performance. Finally, the age and increase in the prizes of insurance companies were not linked to the Nigerian financial success of listed insurance companies. Thus, the report recommended that insurance undertakings operating in Nigeria should conduct a careful assessment and consider the company's specific characteristics (business sizes, losses, liquidity, and leverages) that affect the company's financial performance before making a definite business decision.

(Mwangi & Murigu., 2015) explored the determinants of financial performance in Kenyan non-life insurance from 2009–10 to 2012–13 using panel data. Multiple linear regression tests were used in their study, with ROA as the dependent variable. The researchers considered leverage, retention ratio, risk underwriting, liquidity, length, management competence index, ownership, equity capital, and age as independent variables.

According to the OLS multi-regression model, profitability was positively related to leverage, equity capital, and the management competency index but negatively associated with size and ownership structure. There was no connection between performance and retention ratio, liquidity, underwriting risk, or age in the analysis. According to the findings, Kenyan general insurers should perform better to increase leverage, equity capital, and staff performance.

(Saeed & Khurram, 2015) explored the determining factors of financial performance among Pakistani non-life insurance for nine years. The data used were obtained from a balanced panel

of 24 non-life insurance companies operating in Pakistan between 2005 and 2013. ROA, a proxy for the dependent variable, was used to measure financial performance. To measure profitability, the study employed six significant independent business-specific variables: company size, loss ratio, cost ratio, debt ratio, premium rise, and company age on performance depositions by ROA. The impact of out-layer variables was eliminated to avoid inconsistent regression results, and the Hausman test was used to determine whether a fixed or random effect model was appropriate for drawing a discernible conclusion. The results of the fixed-effect model study showed that the age-and-loss ratio significantly negatively impacted the profitability of non-life insurance companies in Pakistan.

The study suggested that management should make payments from the only place on claims based on the findings and strive to prevent false claims to raise their income. To extensively explain the insurance sector's financial performance operating in Pakistan, the forthcoming studies need to examine some peripheral factors coupled with internal ones.

(Moro & Anderloni, 2014) used panel data to investigate the determinants of economic performance in non-life insurance companies operating in major European markets from 2004 to 2012. To complete the final report, the authors evaluated the effect on several firm features' economic performance, such as dimension, capital structure, and investment policy. The study used various independent variables, both corporate and country-specific, such as leverage, asset size, corporate size, reserve size, combined ratio, finance contribution, investment profits, asset premium ratio, premium and reserve reinsurance ratios, internationalization, diversification, financial market indices, and insurance firms. ROA and ROE—the dependent variables—were the means for calculating profitability, and the OLS multi-regression model was used for data analysis in the study.

The study results indicated that the ROA differently impacted the company's company-specific variables, macroeconomic variables, and adverse effects on the size and underwriting of assets. In contrast, strategic decisions, such as internationalization and diversification, positively impacted expenditure, reserve size, and asset sales but did not statistically affect reinsurance activities. For macroeconomic variables, financial markets' relevance positively affected profitability, while variables specific to the country's insurance industry did not seem to affect profitability. Concurrently, the 2007 financial crisis and the subsequent economic crisis harmed shareholder profitability. Due to increased competition in the non-life insurance sector, a positive relationship exists with capital market size, and a negative association exists with the growth rate of the insurance industry.

(Lee Y. , 2014) used panel data from 1999 to 2009 to investigate the relationship between company-specific and macroeconomic variables and profitability in the Taiwanese property-responsibility insurance market. The two forms of measurement of profitability were used to calculate the profitability of the insurers, including underwriting, the financial leverage, the size of firms, corporate risk, firm growth, reinsurance, and ROA, market share, diversification, input costs, economic development, and investment return—two dependent factors were operating ratio and investment return.

The findings showed that underwriting risks, financial leverage, reinsurance dependency, financial holdings, and input costs were strongly and negatively related to the ROA. This finding suggested that financial holder companies' high underwriting risk induced lower ROA-calculated profitability for property and casualty insurance than other insurance firms. The economic growth rate also significantly affected the operating ratio model's profitability but slightly impacted the ROA model's profitability.

The findings of Serbian non-life insurance companies were analyzed by (Jovovic , Paunovic, & Kocovic, 2014). Their analyses concentrated on the non-life and composite insurers' financial statements from 2006–2013 based on CARMEL indicators' panel results. A multiple regression analysis was used to achieve the final results. The ROA was a summary estimate of the insurer's profitability as a modified variable in this report. In their review, the independent variables employed were company age, combined ratio, and Hierhiman–Herfindahl index (HHI). Multiple regression analyses were used to analyze the data. Based on the results of the projected model of individual fixed effects, the cumulative ratio, leverage, and retaining rates of profitability (ROA) of non-life insurers have a significant and negative impact. However, regarding non-life insurer profitability, the effect of rising written premium rates, investment returns, and company size was substantial and positive.

According to the study's findings, insurance companies operating in Serbia should implement the related regulatory restrictions, which lead non-life insurers to consider compliance between assets and liabilities of the maturity system to protect insurer liquidity and maintain their companies' continuous profitability.

In 2008–2012, (Burca & Batrinca, 2014) examined the financial success factors for five consecutive years of 21 insurance firms operating in the Romanian insurance sector. To that end, financial leverage, size, number of years performing on the Romanian market, gross written premium growth, share, overall market share, diversification, risk in enterprises, investment rate, reinsurance reliance, retained risk ratio, solvency margins, and GDP per capita growth were explanatory variables. For the dependent variables, ROA was used as a performance measurement variable. The researchers used a panel model estimate in their research report. The study's results showed that financial leverage, business size, increase in gross written premiums, underwriting risk, retention risk ratio, and solvency margins were the major determinants of financial performance in the Romanian insurance market.

The conclusion obtained by applying the panel data technology to the model showed that a significant positive relationship exists between market share and reinsurance dependence and ROA calculated profitability. In comparison, the relationship between GDP and corporate risk and ROA was quite negative. However, the study results indicated that diversification had a favorable yet statistically insignificant effect on ROA profitability.

This finding provided an essential prospect of growth as a whole since Romanian insurance companies were faced with the combined effects of weakening business and financial crisis conditions, and the impact of the financial crisis remained. The Romanian insurance market was below its capacity.

(Sumaira & Amjad, 2013) conducted a profitability analysis for six consecutive years, focusing on a company-specific factor as a determinant of the Pakistani insurance market. The research was based on panel data for six consecutive years from 31 insurance companies. As primary independent variables, the analysis used leverage, growth opportunities, scale, liquidity, age, and income volatility, while return measures profitability on assets (ROA). The ordinary least square and multiple regressions were used to test secondary data and draw a conclusion for the explained and explanatory variables. The research found a strong negative association between ROA-measured profitability and independent variables, such as debt, earnings volatility, and company age. In Pakistan, however, the company's size was strongly positively related to the insurance sector profitability. According to the research, growth and profitability alongside liquidity and profitability were found to have a negligible relationship.

(Douplos, Gaganis, & Pasiouras, 2012) explored the performance of non-life (property and casualty) insurers using a sample of over 2000 non-life insurance companies operating five straight years between 2005 and 2009 in 91 countries. A two-stage analysis analyzed the secondary knowledge used in this report. The first stage suggested the use of a multi-criteria approach to determine the condition of insurers when simultaneously considering some overlapping financial criteria. The regression analysis was used in the second stage to analyze the effect of company-specific and country-specific characteristics on the overall performance metrics obtained during the first stage.

Based on their model, the regression results showed that macroeconomic indicators, such as real GDP growth, inflation, and income inequality, affected the overall output of the non-life insurance sector of a business operating in those selected countries. The most robust performance predictors were macroeconomic factors, such as gross domestic product (GDP) rise, inflation, and income inequality. However, other country-specific features relating to the institutional climate and financial or economic independence did not seem to matter. The inflation and loss ratios in these studies were adversely and substantially related to the profitability of non-life insurance firms. The research showed that output was often positively influenced by stock market growth, while inflation had a negative and substantial effect. However, other measures of the growth of the banking and capital markets, such as insurance premiums on GDP, bank loans on GDP, and insurance and financial services as a percentage of import services, were not relevant. Similarly, in the financial services sector, structural growth and overall freedom did not significantly affect the overall results.

(Pervan & Kramaric, 2012) investigated the effect of market share and diversification on non-life insurance from 1999–2009. The analysis employed internal variables, such as profitability, market share, and companies' diversification from previous years. Control variables, such as ownership, industrial concentration, per capita GDP, and inflation, were used, while ROA was used as an unexplained variable calculation. Based on their reports, the ties between the market share (and diversification too) and companies' results were examined within various industries, and different disciplines suggested that no continuity exists, either in magnitude or statistical significance. The course of the relationship was doubtful. While some authors have found this relationship beneficial, others have disclosed their negative correlation.

The effect of six independent variables on non-life insurance, such as business profitability from previous years, market share, diversification, and control variables (i.e., ownership, industrial concentration, GDP per capita, and inflation), was the output of companies assessed using the generalized two-step moment method (GMM) estimator of the analysis on the empirical model. It was evidence based on the model's outcome that diversification and inflation negatively and significantly impacted insurers' profitability. Market share, GDP, and previous profitability, however, had a strong and statistically appropriate effect on profitability.

Property-casualty insurance was studied (Iqbal & Rehman, 2014) using two dependent variables (ROA and ROI), adding to 10 company-specific profitability determinants (company size, insurance leverage, financial leverage, underwriting risk, line-of-company concentration, liquidity ratio, reinsurance price, premium rise, return on investment, and financial holding). The standards, least-square, and multiple regression models were used to analyze the insurance company's secondary results.

The study showed that higher ROA insurers tended to buy less reinsurance, and insurers with greater reinsurance dependence tended to have a lower level of company profitability and ROI. The financial holding dummy, by comparison, had a strong connection with reinsurance. The scale, financial leverage, reinsurance, risk underwriting, liquidity ratio, and ROI of the company significantly affected its performance. Other empirical findings suggested a significant adverse impact on non-life insurance companies' profitability due to risk, liquidity ratio, reinsurance dependence, and market subscription. Conversely, the concentration of industry lines negatively and significantly affected non-life insurers' profitability. (Iqbal & Rehman, 2014) finding on the relationship between ROA and reinsurance dependency was consistent (Lee & Lee, 2012).

The study advised that managers should emphasize the balance between reducing the risk of insolvency and reducing future profitability, with practical consequences for the property-liability insurance industry and for the competent Taiwanese authorities.

For nine consecutive years, (Kozak, 2011) examined the profitability determinants among 25 general insurance companies in Poland from 2002 to 2009. By applying the regression model, the author described the factors that have a positive impact on the profitability of insurance firms, and these factors induced a decline in auto insurance, an increase in other classes of insurance, an increase in gross written premiums, a decrease in operating costs, an increase in the GDP, and an increase in the market share of foreign-owned companies.

Between 1993 and 1997, (Adams & Buckle, 2003) appear to have given the first empirical evidence on the factors of business financial performance in the Bermuda insurance market. According to the panel data estimates, highly leveraged, lowly liquid, and reinsurers outperform lowly leveraged, highly liquid, and direct insurers in terms of operational performance. Once again, underwriting risk was found to be positively associated to performance, which was somewhat surprising. The size and coverage of the insurers, on the other hand, were not significant drivers of performance. (Connelly & Limpaphayom, 2004) extended (Adams & Buckle, 2003) study to investigate the influence of board features on

company performance as assessed by return on assets (ROA) across Thai life insurance businesses.

Based on the panel data regression model, the study discovered that profitability was positively related to reinsurance, and the random-effect model confirmed the above findings. Because of this relationship, increased dependence on reinsurer's decreases profitability and increases the risk of insolvency. Debt interest rates directly and negatively impacted profitability. The above-mentioned overall findings indicated that the majority of insurance companies in Poland depended on reinsurance and leverage orders to increase their subscription capacity and stabilize their earnings. Besides that, the availability of many insurance groups reduced the profitability of the insurance business. Due to the study's findings, certain general insurance firms, whether financially stable or unstable, should try to reduce their dependence on reinsurance and reinsurance exposure to maximize their profitability.

### **3. Objectives of the Study**

This study primarily aims to examine the factors influencing Ethiopian life and non-life insurance companies' profitability. Focusing on the Micro Economic firm-specific, which have not been described as having a significant impact on profitability in previous studies, this study investigates the determinant factors that Ethiopian insurance companies must recognize in improving their profitability.

Specifically, the analysis would investigate endogenous variables like Premium Growth, Size of the company, Capital Adequacy Ratio, Liquidity Ratio, Leverage Ratio, reinsurance dependence, risk underwriting, market size, age of the company and tangibility of Assets influence performance, especially profitability of Ethiopian life and non-life insurance products. As a result, micro firm-level determinants variables affecting Ethiopian insurance industry performance as measured by Return on Assets will be examined.

### **4. Research Methodology**

We employed an econometric panel model that incorporated data regression analysis into the equations. Some alternative models can be estimated via panel data analysis (pooled, fixed effects, and random effects). Using different estimation models that had the most success is convenient, and in numerous studies, the best estimating model was adopted as the most and demonstrated usage (Hausman & Taylor, 1981). Regression of an experiment in pooled panel data has the effect of cross-and time-independent variables while expanding panel dataset case studies, omitting both cross-sectional and time-series effects and thus providing better insight into experimental models. Random Effect Model is like the random-factor model in that it assumes no systematic relationship between the countries but is different from the fixed-effect model because the variation within countries is considered to be random and uncorrelated with the independent variables. Pre-invariants (dependencies) from the little variable component of the study, but it is often abused to estimate characteristics or attribute parameters (unstable features and invariants) that may also have time variations (Hausman & Taylor, 1981). We

used the program "STATA 16" to analyze tests such as multicollinearity, heteroscedasticity, variance inflation factor, unit-root, country-effects, and Hausmann tests before using fixed and random effect regression. Finally in this research the researcher used Fixed Effect Model through Hausman test.

## **5. 5. Definitions of Variables and Development Hypothesis**

### **5.1. Definition of Variables**

In any quantitative analysis, the variables need to be defined to interest readers regarding what groups are undergoing empirical analysis and what effects are being assessed (Creswell J. , 2009).The analysis excluded some dimensions of profitability, i.e., global, industrial, and internal influences, but was restricted to the following variables. Therefore, one crucial point here is that, either in the measurement techniques above or in the following definitions, the researcher did not differ; instead, the current popular measurement techniques and definitions used by previous researchers on the subject under consideration were duplicated and expanded. No question using more than one measure brings reliability to the scores and increases their validity.

#### **5.1.1. Dependent Variable**

As mentioned in the literature section, ROA (Return on Asset) is the most universally used proxy for calculating profitability used in this study (Kozak, 2011; Lee & Lee, 2012; Pervan & Kramaric, 2012; Burca & Batrinca, 2014; Hadush, 2015; Lee Y. , 2014; Hussain, 2015; Datu, 2016; Malik, 2011; Mwangi & Murigu., 2015).They used multiple regression analysis, where ROA was used to determine the explained variable profitability. ROA is expressed in how effectively the business's management produces profit using the company's actual investment capital and is measured as the ratio of the net income to total assets. ROA is used as a better profitability metric than other ratios, which shows how much profit a business receives from its assets (Malik, 2011). Comparing the efficiency and financial performance of insurance firms is the most significant single ratio, as it shows the returns produced from the assets that insurers own regarding financial gains. ROA is determined by the ratio of pre-tax income (losses) to average total assets (Mehtar & Aemiro., 2013; Lee Y. , 2014; Lee & Lee, 2012; Mehtar & Aemiro., 2013). It showed the amount of profit generated per dollar of assets and how well insurance management uses the insurer's actual investment capital to generate profits for its companies. (Doupou, Gaganis,, & Pasiouras, 2012) noted that ROA high ratio demonstrates how quickly the company turns the money it had to spend into income.

As previously stated, the ROA used in this analysis was calculated as the pre-tax ratio of the net income to total assets, as stated by the writers. It was used as the dependent variable for measuring the economic output and was used to express the enterprise's ability to generate profit due to efficient resource use and management.

#### **5.1.2. Independent Variables**

This analysis used ten microeconomic (Firm-level), ten explanatory macroeconomic variables affecting the financial performance of profitability insurance undertakings of non-life and life insurance markets in Ethiopia. This study included Premium Growth, Company size,

Capital Adequacy Ratio, liquidity, leverage, reinsurance dependency, underwriting risk, market size, the tangibility of Assets, and Age of the Company from the various potential determinants of profitability found in previous similar studies. Therefore, the variable was established to achieve the objectives of this analysis. The hypotheses were drawn from different empirical and theoretical literature to give the following reasons that determine the profitability of life and non-life insurance companies operating in Ethiopia.

### **Premium Growth**

Premium growth measures the rate of market penetration. Empirical results have shown that the rapid growth of premium volume is a causal factor in insurers' insolvency (Kim, 1995). The primary motivation for focusing on premium growth is for potential early warning signals of financial impairment. However, premium growth attributable to rate increases may reduce risk if the same customers pay more for the same risk exposure. Also, if the rate increases alter or reflect a change in the mix of customers, the new book of business can generate unexpected losses if it is mispriced.

Regarding premium growth, (Suyehli, 2015) and (Asrat & Tesfahun., 2016) discovered that insurance companies' premium growth is substantially positively related to the profitability of insurance companies. In comparison, after conducting an empirical analysis on 23 Indian life insurance companies using three years of data, (Charumathi, 2012) found that the premium growth of insurance companies significantly positively relates to their profitability. (Kalkidan, 2017) also discovered similar effects.

Hypothesis 1(H1): Premium growth significantly and positively affects the profitability of Ethiopian insurance companies.

### **Profitability (ROA) Versus Size of Insurance**

**Size of company:** It has been suggested that company size is positively related to profitability. The main reasons behind this can be summarized as follows. First, large insurance companies normally have a greater capacity for dealing with adverse market fluctuations than small ones. Second, large firms usually can relatively quickly recruit able employees with professional knowledge compared with small firms. Third, large insurance companies have economies of scale in terms of the labor cost, which is the most significant production factor for delivering insurance services (Shiu, 2014). Company size is computed as the decimal logarithm of total assets of the insurance company. A positive linkage between company size and its profitability is expected, since larger firms have more resources, a better risk diversification, complex information systems and a better expenses management. In most literatures the effect of size on banks' profitability are represented by total asset. Flaminius et al. (2009) indicated that size is used to capture the fact that larger firms are better placed than smaller firms in harnessing economies of scale in transactions and enjoy a higher level of profits. One of the most important questions underlying bank policy is which size optimizes bank profitability. According to

Athanasoglou (2005), the effect of a growing size of a bank on profitability has been proved to be positive to a certain extent. Consequently, a positive relationship is expected between size and profitability by many insurance area researchers. However, for firms that become extremely large, the effect of size could be negative due to bureaucratic and other reasons Yuqi Li (2007). In addition, Adams and Jiang (2016) discover negative size coefficients when looking at the profitability of U.K. life insurers. This finding could indicate that company growth is being driven by decreased profit margins or more compliance and regulatory requirements. Hence, the size profitability relationship may be expected to be non-linear. Therefore most studies use the real assets in logarithm and their square in order to capture the possible non-linear relationship.

As cited in (Hanna, 2015) in general, majority of studies indicated that performance of large size insurance companies is better than small size companies. But the size growth should be limited to a certain stage, and that certain stage could be defined based on the ability of the management.

If the company size keeps on increasing above the optimal point it is obvious that the increase in insurance's size provides diseconomies of scale, therefore, up to the optimal point increase in size gives the above mentioned advantages to the firm. Hailegeorgis (2011) explained commercial banks profitability in Ethiopian Commercial Banks size represented by banks assets which increased significantly, this increase leads to the profitability of banks; the result implies that larger banks enjoy the higher profit than smaller banks in Ethiopian banking sector because they are exploiting the benefit of economies of scales. As a result of the above theoretical talks, it can be concluded that there is a positive association between firm size and profitability as long as the size is manageable and at the optimum level. As a result, one of the most critical elements affecting an insurer's profitability is its size.

Hypothesis 2(H2): Profitability of Ethiopian insurance companies positively and substantially relates to insurance size.

### **Profitability (ROA) Versus Capital adequacy ratio**

The capital adequacy ratio (CAR) is the difference between the value of an insurance company's assets and the value of its liabilities. The equity to asset ratio is commonly used as a proxy for capital adequacy in finance literature. It is a crucial sign of an insurer's financial soundness and demonstrates its long-term viability. Insurance businesses with higher equity-to-asset ratios are thought to be more financially stable and hence capable of attracting a wider range of policyholders. To put it another way, insurance businesses with higher capital adequacy ratios are thought to be safer in the event of a loss or insolvency. On the other hand, the larger the equity-to-assets ratio, the smaller the risk, which may allow insurers to improve their credit worthiness. As a result, insurers' funding costs will be cheaper. Furthermore, insurance businesses with larger equity-to-asset ratios will face less demand for outside funding. However, confirming the existence of a relationship between equity to asset ratio and profitability is difficult, and as a result, empirical research is required.

Hypothesis 3(H3) Insurance Capital adequacy ratio is positively and strongly linked to the profitability of Ethiopian insurance firms.

### **Profitability (ROA) Versus Liquidity**

**Liquidity(LIQ):** This measures the insurer's capacity to meet its immediate obligation to policyholders and other creditors without, or when due, growing earnings from underwriting and investment operations and liquidating financial assets (Mwangi & Murigu., 2015). Liquidity measures are determined by the ratio of existing total assets to total current liabilities and reveal an organizational potential when they are due to fulfill their current obligations (Burca & Batrinca, 2014; Kazeem, 2015). The relationship between current assets and current liabilities is then calculated for the ratio and (Ayle & Sabasivam, 2013) found a negative relationship between profitability and liquidity in their studies. The positive relationship is, however, noted by the studies of (Teklit & Jasmindeep, 2017), (Daara, 2016), and (Kazeem, 2015). Liquidity's effect on the profitability of an insurance firm is uncertain. Two potential possibilities exist. The first scenario reveals that insurance companies with limited current assets are more profitable, while the second scenario implies that insurance companies with more current assets are less profitable. When improved financial output is obtained, the liquidity element is universally correlated with the accounting outcome, enabling businesses to experience greater liquidity. Therefore, the conclusion obtained from the evidence from previous studies is more clearly expressed in the positive relationship between liquidity and profitability. This analysis anticipated an optimistic outcome following the claims in the first scenario.

Hypothesis 4(H4): Liquidity ratio Negatively relates to the profitability of Ethiopian insurance companies.

### **Profitability (ROA) Versus Leverage**

The amount of debt used to fund the assets of a business is leverage. The total debt to the total equity value (capital and reserve) is measured by total debt (Mehar & Aemiro., 2013) (Asrat & Tesfahun., 2016). The insurer derives leverage from unearned premiums, unexpired policies, and any unpaid sum of claims (Lee Y. , 2014). There is a higher leverage coefficient for major insurance firms with a high average gross written premium (Pervan & Kramaric, 2012). The degree to which a company uses debt funds must be measured by leverage (Kazeem, 2015). Therefore, (Simon, 2016), (Kazeem, 2015), (Sumaira & Amjad, 2013), and (Ayle & Sabasivam, 2013) studies indicated that weak investment choices contribute to a negative relationship between leverage and profitability, indicating that highly leveraged companies appear to achieve lower non-life insurance sector profitability. However, studies conducted by (Tekit & Jasmindeep, 2017). (Malik, 2011), (Sumaira & Amjad, 2013), (Ayle & Sabasivam, 2013), (Jovovic, Paunovic, & Kocovic, 2014) and (Mehar & Aemiro., 2013) supported a positive relationship, suggesting that a highly leveraged insurer has better achieved financial efficiency. Such conflicting outcomes genuinely incentivize further investigation of this relationship. The researchers expected that the relationship between general insurance companies' profitability and leverage is a negative sign for the above theoretical reasons.

Hypothesis 5(H5): Firm leverage negatively affects the profitability of the Ethiopian insurance sector.

### **Profitability (ROA) Versus Loss Ratio (Underwriting Risk)**

#### **Loss Ratio (Underwriting Risk) (UR)**

The probability of underwriting risk is determined using the rate of loss and has been used to measure the underwriting process's efficiency. The ratio of net losses sustained to the net premium received determines the underwriting risk or loss ratio (Burca & Batrinca, 2014; Lee & Lee, 2012; Lee Y. C., 2014; Kazeem, 2015). Underwriting risk represents the insurers' underwriting output's adequacy and is determined by the proportion of the claim collected to the net premium earned (Mwangi & Murigu., 2015). It stresses the efficacy of insurance firms' underwriting activities (Burca & Batrinca, 2014). Lower expected losses in underwriting could induce better financial results for the company. Therefore, recognizing the key cause of underwriting risk enables insurers to monitor and report low handling costs (Lee & Lee, 2012). There is a negative relationship between the likelihood of underwriting and profitability (Tekit & Jasmindeep, 2017; Daara, 2016; Datu, 2016; Kazeem, 2015; Burca & Batrinca, 2014; Lee & Lee, 2012; Asrat & Tesfahun., 2016; Suyehli, , 2015; Hussain, 2015; Malik, 2011) (Asrat & Tesfahun., 2016) (Mehtar & Aemiro., 2013), (Doumpos, Gaganis., & Pasiouras, 2012), (Saeed & Khurram, 2015). Consequently, the authors of this report predicted a negative relationship between profitability (ROA) and underwriting risk. Therefore, the researcher formulated his hypothesis as follows:

Hypothesis 6(H6): Underwriting risk is negatively linked to the profitability of Ethiopian insurance companies.

### **Profitability (ROA) Versus Reinsurance Dependence**

There are several types of reinsurance arrangements, including those below. A quota-sharing agreement is a treaty in which, based on some proportion, primary insurers and reinsurers agree to share premiums and losses. Ceding commission is a primary insurer's income to help recover underwriting expenses. The critical benefit of reinsurance quota sharing is the elimination of the primary insurer's unearned premium balance. The key drawback is that the reinsurer earns a substantial share of a potentially lucrative business. Surplus share is an arrangement where the reinsurer agrees to accept insurance exceeding the ceding reinsurer's retention cap, up to a maximum sum. The retention cap is referred to as a line in dollar amounts. A surplus share treaty's primary benefit is to increase the primary insurer's underwriting ability in a single exposure. The big downside is increased operating expenses. The surplus treaty is more complicated, requiring greater record keeping. The excess loss treaty is primarily intended for catastrophic security. The reinsurer covers risks up to a maximum limit in excess of the retention cap. The excess of the loss treaty can be written to cover (1) a single exposure case, (2) such as a tornado disaster, or (3) an excess loss if the primary insurer's cumulative loss exceeds a certain amount for a given duration, such as the year. From the above theoretical analyses, modes of reinsurance, costs, meaning, advantages, and disadvantages, we can understand that in choosing one from the other, reinsurance agreements (whether a treaty or

optional) have cost implications. It implies that reliance on reinsurance has a profitability impact on insurance companies (ibid 2008).

Reinsurance is a useful tool for managing large, devastating risks. It is used for reasons like improving the primary insurer's underwriting ability. It also stabilizes profit by considerably covering tremendous catastrophic losses, such as an industrial explosion, commercial airline catastrophe, and similar incidents (E.Rejda, 2008). The horrific terrorist attacks on September 11 indicate the reinsurance industry's significance. Insured losses totaled about \$36 million (2005), but reinsurance paid about 2/3 of losses: the two primary reinsurance types are optional and treaty.

Based on the above theoretical definition of reinsurance dependence, the ratio of gross written premiums ceded in reinsurance to total assets calculated by reinsurance dependency is described by empirical analysis (Lee & Lee, 2012; Burca & Batrinca, 2014). It reduces the risk of bankruptcy when insurers are exposed to higher losses (Suyehli, , 2015) . Some research on the effect of reinsurance dependence on the profitability of general (non-life) insurance firms yields conflicting results. For example, while (Burca & Batrinca, 2014) and (Moro & Anderloni, 2014) discovered a negligible positive relationship between reinsurance and ROA, (Datu, 2016) discovered a significant positive relationship between profitability and reinsurance dependence, indicating negligible reinsurance dependence. Nonetheless, studies conducted by (Kozak, 2011) (Jovovic, Paunovic, & Kocovic, 2014) (Mistire., 2015) (Lee & Lee, 2012) (Dimes, 2016), (Asrat & Tesfahun., 2016) and (Lee Y. , 2014) discovered a negative relationship between reinsurance dependence and profitability, implying that an insurance firm with greater reinsurance dependence reported a low profit relative to the premium. Consequently, this report anticipates a negative relationship between profitability (ROA) and dependence on reinsurance. Therefore, the researcher develops his hypothesis as follows:

Hypothesis 7(H7): In Ethiopia, Reinsurance Dependency is negatively and strongly correlated with insurance company profitability.

### **Profitability (ROA) Versus Industry Concentration Ratio (Market Share)**

**Industry Concentration Ratio (HHI):** Industry concentration ratios are generally known as indicators of market structure in which a few dominant companies in an industry account for a greater share of the market's economic activities. The Herfindahl–Hirschman Index (HHI) computes the sector concentration vector (Lee & Lee, 2012; Jovovic, Paunovic, & Kocovic, 2014). The determinant of business performance of non-life insurance business companies in Serbia, (2014). The ratio of individual premiums written to total premiums written by the sectors is determined by the square's sum (Lee & Lee, 2012) (Mayers & Smith, 1988),. Simultaneously, market share is measured by the ratio of the individual company's gross written premium to the branches' total gross written premium ( Berger A. N., 1995; Choi & Weiss, 2005). More practitioners have enjoyed a highly concentrated property and causality insurance market, and they have effectively forecast an accurate occurrence of future damages. Despite that, a high market concentration means that their output may be influenced by potentially high risks (Mayers & Smith, 1988). It builds profitability estimates for insurers.

However, numerous studies by various authors have suggested various outcomes for the relationship between the industry concentration ratio and profitability. For example, Jovovic et al. (2016) found a substantial negative relationship between asset return and HHI, whereas a significant positive relationship between HHI and ROA is shown by (Pavic & Pervan, 2010) and (Lee & Lee, 2012). According to the SCP hypothesis paradigm theory, an insurer who works in a more fragmented market is likely to benefit from collusion, higher premiums, and more income. Based on this premise, this study foresees promising signs of a non-life insurance industry operating in Ethiopia between profitability and the industry concentration level (HHI).

Hypothesis 8(H8): The concentration level or Market Share in industry positively relates to Ethiopian insurance sector profitability.

### **Profitability (ROA) Versus Tangibility of Asset**

The tangibility of assets ratio evaluates the proportion of fixed assets to total assets; this ratio enables the firm to obtain credit more readily, as fixed assets serve as collateral for obtaining a sufficient loan. Asnakew (2011) Tangible assets are more likely to have an effect on a firm's borrowing decisions than intangible assets since they are less susceptible to informational asymmetries and typically have a higher value in the event of bankruptcy. As a result, it is assumed that the availability of such borrowing capacity will have an effect on the insurance companies' profitability.

The impact of firm-level features on the performance of the Pakistani life insurance business over a seven-year period is the subject of a recent study conducted by (Naveed, Zulfqar, & Ishfaq, 2011) The explanatory variables used for this study are size, profitability, age, risk, growth, and tangibility, while the dependent variable chosen is the return on investment (ROI). Following the findings of the OLS regression analysis, it was discovered that leverage, size, and risk are the most important determinants of the performance of the life insurance business, although the return on assets (ROA) has a statistically insignificant association with the tangibility of assets. As a result of her research (Malik, 2011) discovered a positive and statistically significant relationship between tangible asset formation and insurance company profitability and argued that the higher the level of fixed asset formation is, the older and larger the insurance company is in terms of age and size. In contrast to this, (Li, 2007) conducted research in the United Kingdom and discovered that there was no substantial association between the tangibility of assets and the profitability of insurance businesses.

Hypothesis 9(H9): The tangibility of assets significantly positively affects the profitability of Ethiopian insurance companies.

### **Profitability (ROA) Versus Company Age**

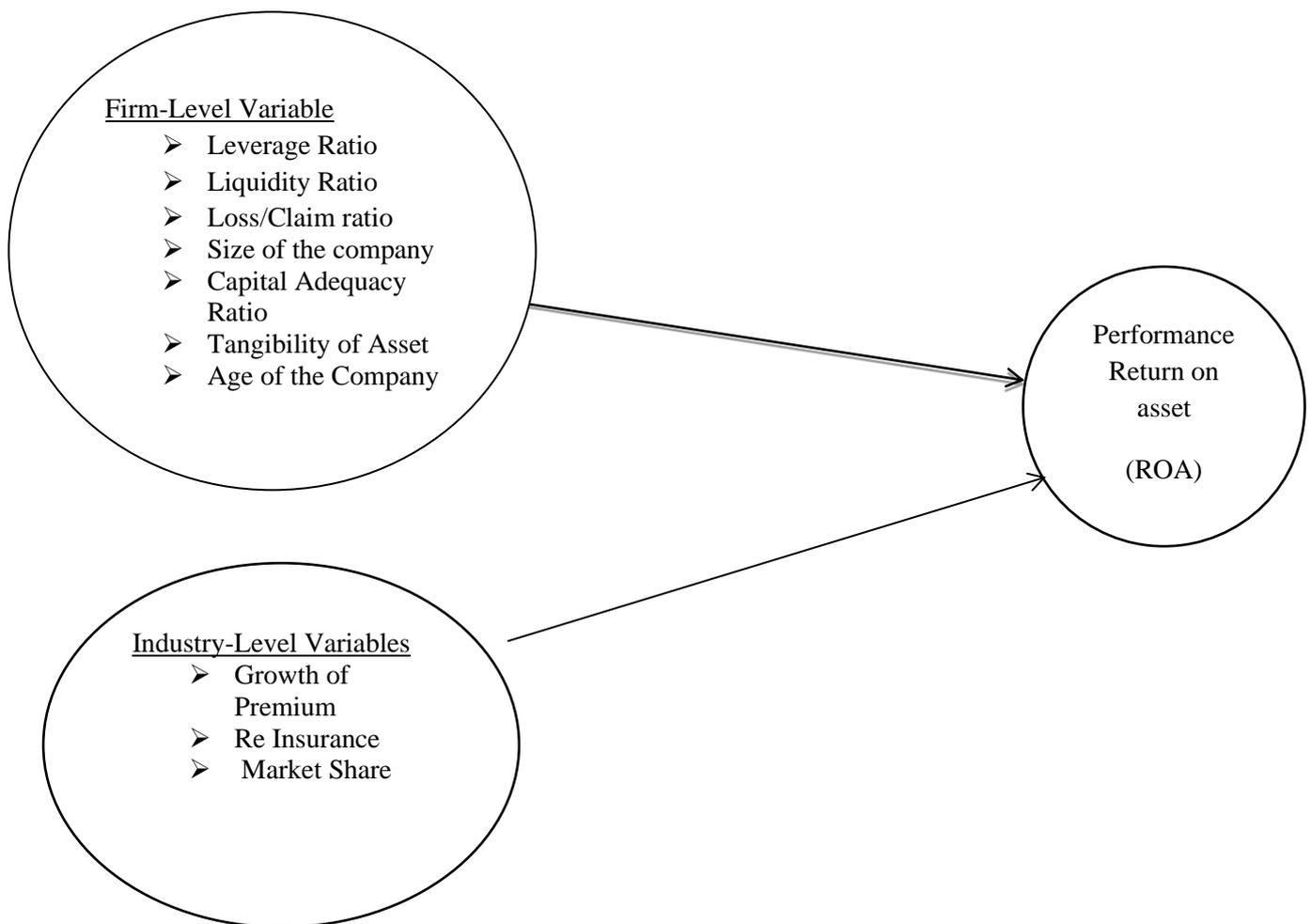
Several studies have investigated the impact of firm age on profitability, and it has been proposed that firm age is positively linked to profitability. However, the empirical evidence on the relationship between profitability and firm age is somewhat contradictory. For example, evidence gathered from UK firms by Philip Hardwick and Mike Adams (1999)

indicates an inverse relationship between profitability and firm age. Angoff et al.(2007) discovered a positive and statistically meaningful association between a company's age and its profitability as calculated by ROA. Similarly, in their analysis of the relationship between firm characteristics, such as size, age, location, industry group, profitability, and growth, (Swiss, 2008) discovered that larger firms outgrow smaller firms, and younger firms outgrow older firms. In comparison, (Hamadan Ahamed Ali Al-Shami, 2008) discovered that while there is no statistically significant relationship between the age of insurance firms in the UAE and its profitability, a positive and statistically significant relationship between firm age and profitability exists.

Similarly, his Pakistan research (Malik, 2011) discovered an essential positive relationship between the age of the business and profitability. The greater the company's age, the greater its profitability because experience and reliability in operations could lower production costs, and he discovered that age is the best predictor of profitability.

Hypothesis 10(H10). In Ethiopia, company age essentially positively impacts insurance company profitability.

### 6. Conceptual Frameworks on Micro Economic or Firm Level Variables



## 7. Model Specification and Diagnostic test

### 7.1. Model Specification

Here, we consider the following assumptions. We decide whether to use random or fixed effect estimation methods for the result estimation. As (Gujarati, 2003) stated, assuming  $\varepsilon_i$  and the X's are uncorrelated, the Random Effect Model may be appropriate, whereas if  $\varepsilon_i$  and the X's are correlated, the Random Effect Model may be appropriate. The assumption underlying the Random Effect Model is that the  $\varepsilon_i$  is a random drawing from a much larger population. In REM, it is assumed that an individual unit's intercept is a random drawing from a much larger population with a constant mean value. Random Effect Model is appropriate in situations where the (random) intercept of each cross-sectional unit is uncorrelated with the regressors.

However, the word "fixed effects" is because while the interception may vary across individuals, the interception of each entity is time-invariant. In Fixed Effect Model, in recognition that each entity or cross-sectional unit can have specific characteristics, the intercept in the regression model differs among different entities. One may use dummy variables to consider various intercepts (Gujarati, 2003). Based on our conceptual framework, we specify Two models that estimate the profitability of firms. Therefore, to test our research hypothesis, two models were used. The first model emphasized the impact on corporate profitability of internal variables. The second model which will be used in chapter six on macro economic variables also highlighted the macroeconomic variables' effect on insurance profitability on Governance and institutional environmental variables.

$$ROA_{it} = \beta_0 + \beta_1 prg_{it} + \beta_2 size_{it} + \beta_3 CAAR_{it} + \beta_4 liq_{it} + \beta_5 lev_{it} + \beta_6 RID_{it} + \beta_7 lor_{it} + \beta_8 mks_{it} + \beta_9 tan_{it} + \beta_{10} age_{it} + \mu_{it} \dots \dots \dots [1]$$

Where:

$\beta_0$  = constant-coefficient

$i$  = signifies a specific insurance company

$t$  = represents the study period

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \dots, \beta_{10}$  = the coefficient of independent variables

$i$  = signifies a specific insurance company

$t$  = represents the period for the study

S<sub>it</sub> The size of the insurer I at the time t

L<sub>vr it</sub> Insurer leverage ratio I at time span t

L<sub>qr it</sub> Insurer liquidity ratio I at time t

PRG<sub>it</sub> Premium growth ratio I at time t

L<sub>orit</sub> Insurer loss ratio I at time t

- RinDp<sub>it</sub> Reinsurance dependency
- Mks<sub>it</sub> The insurer's market share I at period t
- Tan<sub>it</sub> The tangibility of assets I at time t
- Age<sub>it</sub> The company age I at time t

$\mu_{it}$  the idiosyncratic error and independently identically distributed

However, the ordinary least square (OLS) estimates stated in the above equation suffer greatly from endogeneity bias as omitted variables because the analysis uses panel estimation. This is because such unknown time-invariant insurers may have specific characteristics that may be correlated with dependent variables and independent variables, such as management techniques, efficacy, and technological complexity. Therefore, the following linear model should be considered, considering the foot prints of previous studies, for the specific impact of the non-observed insurer:

$$ROA_{it} = \beta_0 + \beta_1 prg_{it} + \beta_2 size_{it} + \beta_3 CAAR_{it} + \beta_4 liq_{it} + \beta_5 lev_{it} + \beta_6 RID_{it} + \beta_7 lor_{it} + \beta_8 mks_{it} + \beta_9 tan_{it} + \beta_{10} age_{it} + \epsilon_{it} \dots \dots \dots [2]$$

➤  $(\epsilon_{it} = \mu_{it} + \delta_{it})$

Where:

$\epsilon_{it}$  = Error term

$\mu_{it}$  = the idiosyncratic error and independently identical distributed

$\delta_{it}$  = the insurer's unabsorbed specific effect.

## 7.2. Diagnostic test

### 7.2.1. Pairwise Correlation Analysis between Independent Variables

Table 5.8 presents the results and discussion of the pair-wise correlation analysis in this section. Pearson correlation coefficients were used to determine the relationship between insurance company profitability and age, size, leverage, asset tangibility, liquidity, premium growth, loss ratio, reinsurance dependence, GDP growth, inflation, education, trade openness, government effectiveness, monetary freedom, and exchange rate. The correlation coefficient indicates the magnitude and direction of the linear relationship between insurance companies' profitability and their age, size, leverage, the tangibility of assets, liquidity, premium growth, loss ratio, and reliance on reinsurance. According to (Ali, Taddinik, Rehman, & Ali, 2010), it is critical to conduct a correlation test between the dependent and independent variables before beginning the regression analysis.

The researcher used a pair-wise correlation coefficient matrix generated by Stata 16 to illustrate the cross-relationships among all variables in this study. The pairwise correlation coefficient is the most frequently used statistic for determining the relationship between two quantitative variables (Robert Hutchinson, p. 110, 2007). Correlation coefficients between pairs of variables

were used to assess the strength of the relationship between the independent and dependent variables.

The Pair correlation scale ranges from  $-1$  to  $+1$ ; when positive, it indicates that increasing the independent variable also increases the dependent variable. Any value less than zero implies a negative correlation, which means that any increase in the independent variable results in a decrease in the dependent variable, and any value less than zero indicates that any decrease in the dependent variable may also result in an increase in the independent variable (Abdul Hafiz, 2012, p. 14).

When assessing the relationships or correlations between variables, correlation analysis between pairs is commonly used as a preliminary technique. More specifically, correlation analysis is a technique for evaluating the linear relationship between two variables. Table 5.8 shows the association analysis of the independent variables used in the report. In general, the matrix showed that the correlation analysis between the independent variables was not severe, implying that multicollinearity was either slight or nonexistent. The problem of multicollinearity is considered extreme when the correlation coefficient between two variables exceeds 80% (Kennedy, 2008). According to (Hair, 2006) correlation coefficients below 90 do not always imply series multicollinearity. Furthermore, the Wooldridge test for autocorrelation in panel data yields a p-value of 0.5922, suggesting that multicollinearity is not an issue in this analysis. The variables in this analysis were intended to be used by the researcher. Table below shows the pairwise correlation matrix between variables.

**Table 5 1 Pair Wise Correlation Matrix Between Variables**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)ROA1	1.000										
(2) PRG	0.143	1.000									
(3) SIZ	0.255	-0.101	1.000								
(4) CAR	0.038	-0.164	-0.114	1.000							
(5) LIQ	-0.112	0.034	-0.303	0.027	1.000						
(6) LV	-0.199	0.005	0.068	-0.451	-0.096	1.000					
(7) RID	0.099	0.002	0.086	-0.063	0.022	0.010	1.000				
(8) LOR	-0.174	0.023	0.197	-0.219	-0.254	0.311	-0.127	1.000			
(9) Mks	0.305	-0.012	0.498	-0.111	-0.107	-0.182	0.366	-0.071	1.000		
(10) AN	-0.161	-0.113	0.154	0.463	-0.282	-0.122	-0.156	0.090	-0.186	1.000	
(11) GE	0.349	-0.047	0.753	0.088	-0.213	-0.260	0.164	0.026	0.720	0.174	1.000

## 8. Empirical Results

Various models may be used to analyze panel results. The fixed-effect and random-effect models are the most suitable models. While a fixed-effect model suffers from endogeneity bias or issues with omitted variables, a random-effect model does not suffer from endogeneity; that is, there is no omitted variable. Following the Hausman test result, the fixed-effect model was chosen over the random-effect model in this study (Table5.7)

**Table 5 2 Hausman test on Fixed verses Random Effect Model**

```
. hausman Fixed Random
```

	— Coefficients —		(b-B) Difference	sqrt(diag(V_b-V_B)) S. E.
	(b) Fixed	(B) Random		
PRG	.0019253	.0023352	-.0004099	.
SIZ	-.0307808	.0062725	-.0370534	.0088554
CAAR	.0231252	.032436	-.0093108	.0045554
LIQ	-.0221026	-.0158932	-.0062094	.0032205
LV	-.0161064	-.0063549	-.0097515	.0028737
RID	-.0249115	-.0022589	-.0226526	.0152612
LOR	-.0374919	-.0431967	.0057048	.0067511
Mks	.4032198	-.0320307	.4352505	.1266356
TAN	-.1552914	-.1446514	-.0106399	.
AGE	.0120896	.001882	.0102076	.0022706

b = consistent under Ho and Ha; obtained from xtreg  
 B = inconsistent under Ha, efficient under Ho; obtained from xtreg

Test: Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(10) &= (b-B)' [(V_b-V_B)^{-1}] (b-B) \\ &= 44.73 \\ \text{Prob}>\text{chi2} &= 0.0000 \\ &(\text{V}_b\text{-V}_B \text{ is not positive definite}) \end{aligned}$$

### 8.1. Discussion of Variables

Table: 5.2 summarize the fixed-effect model's overall effects using the ROA as the dependent variable, keeping with the fixed-effect model's over the random effect model. The R-squared-within, R-squared-between, and R-squared-overall were 28 %, 44.%, and 16.%, respectively. This result revealed that the variables studied in this research account for approximately 28.% of variation within an insurer's profitability, 44% of the between insurers' profitability, and 16% of the variation across all insurers' profitability. The study's key findings regarding the factors that influence insurance companies' financial (profitability) results are also discussed below.

**Table 5 3 Fixed Effect Regression Result**

Fixed-effects (within) regression	Number of obs	=	215
Group variable: ID	Number of groups	=	17
R-sq:	Obs per group:		
within = 0.2789	min =		7
between = 0.4397	avg =		12.6
overall = 0.1638	max =		16
corr(u_i, Xb) = -0.9620	F(10, 188)	=	7.27
	Prob > F	=	0.0000

ROAI	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
PRG	.0019253	.0008512	2.26	0.025	.0002463 .0036043
SIZ	-.0307808	.0101045	-3.05	0.003	-.0507136 -.0108481
CAAR	.0231252	.0226009	1.02	0.308	-.0214588 .0677091
LIQ	-.0221026	.0072293	-3.06	0.003	-.0363635 -.0078416
LV	-.0161064	.0057164	-2.82	0.005	-.0273829 -.0048299
RID	-.0249115	.0395516	-0.63	0.530	-.1029336 .0531105
LOR	-.0374919	.0182626	-2.05	0.041	-.0735179 -.0014659
Mks	.4032198	.1378634	2.92	0.004	.1312618 .6751777
TAN	-.1552914	.0345472	-4.50	0.000	-.2234413 -.0871414
AGE	.0120896	.0024383	4.96	0.000	.0072798 .0168995
_cons	.5735178	.1664333	3.45	0.001	.2452011 .9018345
sigma_u	.10735932				
sigma_e	.04572246				
rho	.84647061	(fraction of variance due to u_i)			

F test that all u\_i=0: F(16, 188) = 3.46

Prob > F = 0.0000

### Growth Written Premium:

The coefficient of growth written premium (GRP) is positive (0.0019253), and it is a statistically significant determinant of profitability for Ethiopian insurance companies; with a p-value of 0.025, this positive relationship is considered statistically significant. The results of Chen and Wong (2004) are supported by the findings of this report. In comparison, (Li, 2007) of the United Kingdom and (Hamadan Ahamed Ali Al-Shami, 2008) of the United Arab Emirates found a positive and statistically significant relationship between insurance company growth and profitability. Regarding premium growth, (Suyehli, , 2015) and (Asrat & Tesfahun., 2016) discovered that insurance companies' premium growth is substantially positively related to the profitability of insurance companies. In comparison, after conducting an empirical analysis on 23 Indian life insurance companies using three years of data, (Charumathi, 2012) found that the premium growth of insurance companies significantly negatively relates to their profitability. Kalkidan (2017) also discovered similar effects.

According to the Regression result, growth in written premium has a major effect on the insurance company's profitability. Development is calculated by dividing the average percentage increase in a company's net assets over two years by the previous year. A higher growth rate is regarded as a sign of a company's financial strength and can induce

increased demand for external equity funding. The insurance provider receives premiums from policyholders, invests the money (usually in low-risk investments), and then reimburses the money until the individual dies or the policy matures; hence, a rise in premium provides insurance firms with more investment opportunities. That gross written premium growth mainly affects insurance company profitability in Ethiopia; the regression results show that this impact is Positive.

### **Size of Insurance Firms**

According to the researcher, the size of insurance companies is a major determinant of insurer profitability. The total assets log of an insurer is used to estimate its size (Size). Based on the regression result above (0.03078 & 0.003) coefficient P-value respectively showed a negative and significant effect on the profitability of insurance companies. The negative coefficient indicates that larger insurance firms are less likely to gain minimum income than smaller companies. This study's findings support the relative market power hypothesis, which notes that large corporations have more idle spending, which results in higher operating costs and lower profitability.

Even though Bayeh (2011) and (Mwangi & Murigu., 2015) found an inverse relationship between size and profitability, the results of this study agree with those of previous researchers, such as (Hamadan Ahamed Ali Al-Shami, 2008), Naveed (2010), (Malik, 2011), and (Charumathi, 2012) However, for firms that become extremely large, the effect of size could be negative due to bureaucratic and other reasons (Li, 2007). In addition, According to (Admas and Jiang 2016), when looking at the profitability of U.K. life insurers, find negative coefficients for size. This finding could indicate that increases in size are due to lower profit margins or increasing compliance and regulatory burdens. Regarding the positive connection between insurers' size and profitability, Hamdan (2008) presented two main findings. The first result is related to the fact that large insurers typically pay less for their capital or inputs. The second point is that increasing returns to scale can be accomplished by prioritizing fixed costs over a higher volume of services or by obtaining productivity from a skilled work force. Hence, the negative relationship between insurer size and profitability of insurance firms in Ethiopia has two significant implications. First, large insurance companies may be disadvantaged in operating costs due to their high capital costs. If the insurance firm has ideal investments, such as fixed assets and idle money, it decreases profitability.

**Liquidity (LIQ):** Because insurance companies act as intermediaries, like banks, the current liability demand from policyholders exceeds that of other companies. This may seem very rational, especially regarding recent natural disasters and catastrophes. Companies with greater liquidity can easily cover their short-term liabilities. Therefore, liquidity affects profitability positively insurance companies in Ethiopia at a negative coefficient of (-0.0221) and is a statistically significant determinant of profitability for Ethiopian insurance firms, with a p-value of (-0.003). The empirical evidence on liquidity yielded almost inconclusive findings.

In a study conducted in Pakistan, (Naveed , Zulfqar, & Ishfaq, 2011) discovered that ROA has a statistically insignificant relationship with liquidity. Similarly, several other

surveys have been conducted to assess the success of insurance firms. However, Chen and Wong (2004) found that liquidity is the most significant determinant of insurance companies' financial health and has a negative relationship. According to Hakim and Neaime (2005), liquidity, existing capital, and investment are the most important determinants of bank profitability. In their study of Sub-Saharan African countries, Valentina Flamini, Calvin McDonald, and Liliana Schumacher (2009) discovered an essential and negative relationship between bank profitability and liquidity. As previously reported, this report supports (Naveed, Zulfqar, & Ishfaq, 2011) study on the Pakistan insurance industry.

### **The Leverage Ratio:**

The study also looked at the leverage ratio as a factor or determinant of insurer profitability. The leverage ratio, which is described as the debt-to-equity ratio, has been found to be negatively and significantly related to the profitability of insurance companies. Since there is a negative and important relationship between debt-to-equity ratio and profitability, insurance firms in Ethiopia were significantly affected by the decreasing leverage ratio from 2005 to 2020. The leverage ratio of insurance firms (LAV) has a negative coefficient of (-0.016) and is a statistically significant predictor of profitability for insurance companies in Ethiopia, with a likelihood of (0.005) at a 5% significance level. This research is supported by empirical evidence showing a statistically significant yet negative association between leverage and income. Renbao Chen and Kie Ann Wong (2004) in Canada, Hamadan Ahamed Ali Al-Shami (2008) in the UAE, (Malik, 2011) in Pakistan, and (Kozak, 2011) in the United Kingdom are just a few examples. In Egypt, (Swiss, 2008) found a negative but statistically relevant relationship between leverage and firm profitability, as did Flamini et al. (2009) in Sub-Saharan Africa. According to Harrington (2005), the relationship between leverage and profitability has been extensively studied to support capital structure theories. Insurance companies with lower leverage will show higher ROA but lower ROE since the risk associated with high leverage is ignored in an ROE study. Compared to Navee, Zulfqar, and Ishfaq (2010) and Baye (2011), who found a substantial relationship between leverage and profitability, the empirical results of this study are close to those of Muhammed (2012), (Malik, 2011), John et al. (2013), Kamrul and Firoja (2013), and Ansah et al. (2013, 2010).

Insurance firms' leverage ratio has a direct effect on their financial efficiency and profitability. Leverage is described as a set of events that decide a company's financial resources to operate. Financial debt influences the cost of capital, affecting company profitability. Highly leveraged insurance companies are riskier in terms of return on equity and investment. Because of its effect on profitability and the company's risk level due to its reliance and expansion on debt, a company's financial structure is fundamental in investment and financing decisions. Decisions about the financial framework leverage, which is a ratio of borrowed to owned money, affect a company's financial risk. A company with high asset profitability will keep a larger portion of its net annual income to fund its needs, reducing its reliance on debt.

**Loss Ratio or Underwriting Risk:** explains the efficiency of the insurer's underwriting

activity and the exposure to financial loss resulting from this selection and approval of risks to be insured. It is a risk of losses from underpriced products, insufficient volume of premiums, improper underwriting controls, and the development of new improperly priced products. The coefficient of underwriting, which is measured by the claim incurred to earned premium ratio, was negative (-0.03749) and statistically significant, With (p-value=0.041). According to the findings, a high underwriting risk negatively affects profitability. It means that increased underwriting risk raises the operating ratio, which negatively impacts the firm's profitability. This result supports the findings of previous studies by Daniel and Tilahun (2013) in Ethiopia. Hamdan (2008) examined determinants of insurance company's profitability in the UAE. Curak et al. (2012) and Anila Çekrezi (2015) investigated factors that influence the financial performance of Albanian insurance companies. They concluded that underwriting risk negatively impacts the insurer's profitability since taking an excessive underwriting risk can affect the company's stability through higher expenses. Thus, this study supports the hypothesis that underwriting risk significantly negatively impacts insurance companies' profitability.

#### **Reinsurance Dependency:**

According to the regression results, insurance companies' reinsurance reliance (RED) is a positive coefficient (0.024915). With an insignificant P-value (0.530) With a likelihood of above 10%, it is a statistically negligible factor of profitability for Ethiopian insurance firms. To lessen the chance of bankruptcy due to substantial damages, insurance firms reinsure a portion of the risk they underwrite. While reinsurance helps an insurance company's stability by distributing risk, meeting solvency rules, equilibrating risk profiles, and improving underwriting competence, it is not free. As a result, a negative link between reinsurance dependency and insurer financial performance is anticipated. This validates the conclusions of the investigation. Reinsurance dependency, on the other hand, has a positive impact on an insurer's financial efficiency, according to (Burca & Batrinca, 2014) Romanian studies, because reinsurance entails a specific expense and aids in risk transfer. Reinsurance also allows insurance companies to share risk. The nature of business risk, such as catastrophes, fire, and flooding, helps the insurance company's long-term profitability by transferring such risks to reinsurers. As a result, insurance companies in Ethiopia are able to reduce costs associated with this higher risk, so increasing their profitability.

#### **Market Share:**

The regression coefficient and p-value (0.004 and 0.4032, respectively) reveal a substantial and statistically significant association between market share and insurance firm profitability when it comes to market share (Mrs). The positive coefficient shows that increasing the market share of insurance businesses would boost profitability. (Pavic & Pervan, 2010), as well as (Lee & Lee, 2012), backed up this conclusion (2012). Market share and return on investment (ROI) have a strong positive relationship. Bajtelsmit and Bouzouita (1998), Robert and Stephen (2009), Alireza and Mojtaba (2010), and Jayawardhana (2016) found a direct and positive link.

According to the SCP hypothesis paradigm theory, an insurer operating in a more fragmented market is more likely to benefit from collusion, higher premiums, and more revenue. Peter (2011) and Tekeste (2013), on the other hand, discovered a negative link between market share and profitability. According to the hypothesis presented by this study, market share and profitability have a statistically significant and positive relationship in the Ethiopian insurance business.

### **The tangibility of Asset (TAN):**

The tangibility of asset (TAN) coefficient is negative ( $-0.15529$ ), and it is a statistically significant predictor of profitability for Ethiopian insurance companies, with a likelihood of (0.000). This finding is consistent with (Naveed, Zulfqar, & Ishfaq, 2011). The analysis of the Pakistani life insurance sector evaluates the link between the tangibility of assets and profitability. Regression results were found that negative and significant. However, Hafiz (Malik, 2011) analyzed the various factors affecting insurance companies' profitability in Pakistan with a positive and significant relationship between assets and insurance company profitability, arguing that the higher the degree of fixed asset formation, the older and larger the insurance company. Firms with a large number of tangible assets are more likely to collateralize their assets to raise additional funds with some risk due to investment diversification, lowering the risk of bankruptcy. According to (Li, 2007), while there is no relationship between the tangibility of assets and the profitability of insurance companies in the United Kingdom. According to the Ethiopian insurance industry findings, the ratio of asset and insurance profitability ratio has a negative relationship, implying that increasing the proportion of tangibility of assets results in idle investment, which affects the profitability of the Ethiopian insurance industry. This result is consistent with the hypothesis developed by the researcher in this study that the tangibility of assets has a negative impact on the profitability of insurance companies in Ethiopia.

### **Age of Insurance Companies:**

Jay Angoff Roger Brown (2007) found a connection between the age of a business and its profitability as measured by ROA. Larger companies expand faster than smaller firms, according to (Swiss, 2008). Younger firms are studied faster than older firms because of the relationship between business properties such as size, age, place, industrial group, profitability, and growth. In contrast to the above, (Hamadan Ahamed Ali Al-Shami, 2008) discovered that the relationship between an insurer's age and profitability is not statistically significant, but that the relationship between a company's age and profitability is not is positive and statistically significant. (Malik, 2011) discovered a crucial positive relationship between company age and profitability in a study conducted in Pakistan. The profitability of a business grows in tandem with its generation. This may be due to his discovery that age is the best predictor of profitability and that experience and competitiveness in the manufacturing process lowers production costs.

The coefficient of insurance company age (AGE) is positive (0.0120896) in Table 5.2, indicating that it is a statistically significant determinant of insurance company profitability in Ethiopia (0.000). This research agrees with (Angoff, Jay Roger Brown (2007), and (Malik, 2011), but other studies in the United Arab Emirates, such as (Hamadan Ahamed Ali Al-Shami, 2008), Shami's, and Naveed Ahmed's (2007), find no

statistically significant relationship between age and insurance company profitability. This result is inconsistent with the findings (Liargavas and Skandalis, 2008), who found that age has no statistically significant impact on financial outcomes. The age of insurers is now considered a significant explanatory variable for assessing insurance company performance in Ethiopia due to this report. Summary of Analysis.

**Table 5 4 Summery and Comparison of test results With Expectation results**

Dependent variable		ROA		
Explanatory Variables	Expected relationship	Actual relationship	Statistical significance Test	Hypothesis status
PRG	Positive	Positive	Significant 5%	Failed to reject
SIZ	Positive	Negative	Significant at 1%	Rejected
CAR	Positive	Positive	insignificant	Rejected
LIQ	Negative	Negative	Significant at 1%	Failed to reject
LV	Negative	Negative	Significant 1%	Failed to reject
RID	Negative	Negative	insignificant	Rejected
LOR	Negative	Negative	Significant at 5%	Failed to reject
Mks	Positive	Positive	Significant 1%	Failed to reject
TAN	Positive	Negative	Significant at 1%	rejected
AGE	Positive	Positive	Significant at 1%	Failed to reject

Source: Developed by the researcher.

As shown from the above summary table 5.12, the independent variables: Size and Tangibility of Assets, deviated from the expected results. It implies the researcher hypothesizes a positive relationship between size, Tangibility of Assets, and ROA, but the finding result was negative. So, the possible reason for the negative association between the size of the company and ROA could be attributed to the fact that Ethiopian insurance companies with more assets means that there is an idle investment. Companies will have more cash and will have fewer difficulties repaying policyholders when a loss occurs. In addition to the negative relationship between the Tangibility of assets and ROA, tangible assets are likely to impact the borrowing decisions of a firm because they are less subject to informational asymmetries and usually have greater value than intangible assets in case of bankruptcy. Therefore, it is considered that the availability of such borrowing capacity will negatively impact the profitability of insurance companies. In addition, capital adequacy and reinsurance dependency are positive relationships between capital adequacy, reinsurance dependency, and ROA, but the finding

result shows an insignificant positive relationship between capital adequacy and reinsurance dependency variables. So, the possible reason for the insignificant association between these two variables could be attributed to the fact that Ethiopian insurance companies are no such impact on insurance profitability.

## 9. Conclusions

The purpose of this study was to identify the major microeconomic determinants of profitability of life and non-life insurance companies in Ethiopia that were in operation over the periods of 2005-2020. It used return on assets (ROA) as a measure of profitability against which a number of internal variables were regressed. to examine the impact of microeconomic variables on the performance (profitability) of the insurance sector in Ethiopia. For this purpose, we selected 17 listed insurance firms from the period of 2005-2020. This study regressed a number of microinsurance level variables against return on assets (ROA) as a measure of profitability. Premium Growth Size of insurance businesses, capital adequacy, leverage ratio, liquidity ratio, loss ratio, insurance Dependency Age of the company, and Tangibility of the asset were those internal variables. The result of the panel data the regression has shown that the significant impact of the microeconomic variables such as premium growth, the size of insurance, capital sufficiency, liquidity ratio, loss ratio, market share, age of the company, have an effect on the performance of the insurance sector. However, profitability was found to be unaffected by parameters such as capital adequacy ratio and reinsurance dependency. Attention should be paid to these micro-economic variables to improve the performance of the insurance sector and reach an appropriate outcome.

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