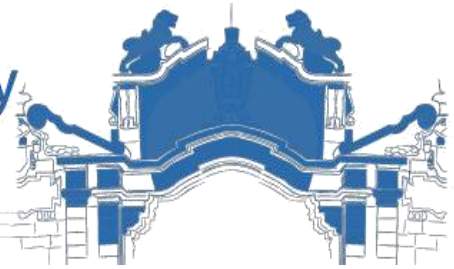




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ADDIS ABABA UNIVERSITY BUSINESS AND ECONOMICS

GRADUATE STUDIES PROGRAM

ACCOUNTING AND FINANCE DEPARTMENT

**DETERMINANTS OF GENERAL INSURANCE PROFITABILITY IN
ETHIOPIA: EVIDENCE FROM PRIVATE INSURERS**

**BY
SAMUEL TESFA**

**APRIL, 2021
ADDIS ABABA**

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**BY
SAMUEL TESFA**

**This Research is submitted in partial fulfillment of the requirements for the honor of the Degree
of Master of Science in Accounting and Finance from Addis Ababa University
APRIL 2021**

Advisor: Alem Hagos (Ph.D.)

DECLARATION

I, Samuel Tesfa, announce that this is my original research effort and has not been submitted to any other college, institution or university other than the Addis Ababa University for academic credit.

Signed: _____ Date: _____

Statement of Certification

This is to certify that this research work entitled “**Determinants of General Insurance profitability: Evidence from Private Insurers in Ethiopia**” is original work of Samuel Tesfa prepared under my supervision. As it fulfills all the requirements for the honor of Master of Science in Accounting and Finance, I endorse this through my signature.

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This is to verify that the research work carried out by Samuel Tesfa entitled Determinants of General Insurance Profitability: Evidence from Private Insurers in Ethiopia and submitted in partial fulfillment of the requirements for the honor of Master of Science in Accounting and Finance fulfills the rules of the University and meets the standards.

Advisor _____ **Signature** _____ **Date** _____

Internal Examiner _____ **Signature** _____ **Date** _____

External Examiner _____ **Signature** _____ **Date** _____

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ABBREVIATIONS

CLRM: Classical Linear Regression Model

COM= Combined

CSA: Central Statistical Agency

FTD: Fixed Time Deposit

GWP: Gross Written Premium

INP: Investment Income

LEV: Leverage

MGE: Management expenditure

MOFED: Ministry of Finance and Economic Development

NBE: National Bank of Ethiopia

OLS: Ordinary Least Square

ROA: Return of Asset

ROE: Return on Equity

ROI: Return of Investments

RGDP: Real Gross Domestic Product

STD: Standard Deviation

UPR: Unearned Premium Reserve

UWP: Underwriting Profit

VIF: Variance Inflation Factor

Abstract

The objective of this research is to investigate and analyze the factors that mostly an effect on financial performance of general insurance of private insurers in Ethiopia over the period from 2011 to 2020 by using non probability judgment sampling design of private insurers and panel data was used. Quantitative types and explanatory research design was applied. The sample data was drawn from all the seventeen private insurance companies in Ethiopia. The firm specific and macro variables ;Premium Growth, Combined Ratio, Retention Ratio, Assets Turnover, Investment Return, Leverage, and Inflation and Growth rate of GDP were used to analyzed determinants of private insurers of general business profitability in Ethiopia. The researcher selected and specified the model of the study through Ramsey's & Hausman tests, and the result of the two tests showed that there were no omitted variables and random effect model is appropriate and best fit for the research study. The regression result showed that Combine Ratio, Leverage had a negative and significant relationship with ROA of private insurers in Ethiopia at significant level of 5%. On the other hands, Assets Turnover and GDP had a positive and significant relationship with ROA at significant level of 5% and 95% confidence interval. However, premium growth and inflation had insignificant relationship with ROA of private insurers in Ethiopia with negative and positive signs respectively. And investment and Retention were showed a positive but insignificant relationship with ROA. In line with the findings, companies would formulate pricing strategies that charges a premium commensurate to the risk; and policy-wise, insurers association, and all relevant stakeholders would intensely advocate for necessary regulatory measure that would introduce floor premium price practice to the Ethiopian insurance market; Insurance companies would invest and regularly upgrade their insurance management information systems; deploy relevant Enterprise Resources Planning (ERP) and other emerging Insurtech to add value to their services and to significantly cut their operation costs; Further regulatory measures would be put in place to revisit the amendment directives of UPR, and technical reserves computation and of increase capital requirement for establishment of insurance companies so that new entrants can start operations with solid capital base which can in turn help them diversify business of insurers so that more outreach that increase the NEP of insurers. Insurers have to devise a strategy to benefit from the booming Ethiopian economy by innovatively creating demands to gain a fair share from the increasing disposable income. Towards this end, insurers would intensely work on strengthening their research and product development wing to attract customer and private insurers would also increase their total assets.

Keywords: Determinants, Insurance, Private Insurers, Profitability, Returns on Assets, Asset Turnover, Leverage and Premium Growth.

CHAPTER ONE

INTRODUCTION

This chapter deals with introduction of the study which consists of background of the study; background of insurance companies in Ethiopia; Brief History of the Insurance market in Ethiopia ; Statement of the problem; Objectives of the study; Hypothesis of the study; Importance of the study; Scope of the study; Organization of the paper.

1.1. Background of the Study

The development of the current economic system allows consumers exposed to various kinds of risks. These risks can be inherent in businesses that are carried out up to personal consumers. But with the increasing application of science these risks can be managed by consumers, the aim of which is to minimize future losses resulting from these risks. The application of this knowledge then gave birth to new business opportunities in the field of financial services namely financial risk management, this then gave birth to insurance companies (Angga, Isfenti, Iskandar Muda, 2020).

Insurance is a contract between a policyholder (insured) and an insurance company (insurer); whereby the insurer compensate for the loss occurred up on an insured property and a policyholder pays a sum amount of money paid payable periodically for the protections, which is called premium. Thus, insurance is a means of spreading a loss caused by an insured on a specific risk over a number of insurers exposed to risk and who agree to insure against the risk (Priehett 1996).

Insurers provide distinctive financial services to the growth and development of an economy. The distinctive services vary from the underwriting of risks inherent in economic entities and therefore the mobilization of a large amount of capitals through sales of policy for future investments (Agiobenebo and Ezirim, 2002).

The risk concentration role of insurers promotes financial stability in the financial markets and provides a sense of financial stability for an insured in particular and economy of a country in general. The business environment without insurance is unsustainable since risky business may not have the capacity to retain all kinds of risks in this ever changing and uncertain global economy (Ahmed et al., 2010).

The need for risk management or insurance guarantees arises as a direct result of economic growth. The role of the national insurance industry is to provide protection / protection against the risks

faced by the community so as to support the stability of development and as one of the institutions for raising public funds and providing funds for national economic development.

The roles of monetary institutions in the economy of a country in general and insurance companies in particular are essential for improvement of efficient and effective financial system through savings enrollment, risk transfer and intermediation (Abate, 2013).

Skipper(1997) elaborates the insurance activity, both as a provider of risk transfer and indemnification and as an institutional investor, may contribute to economic growth in the following ways (i) promoting financial stability, (ii) facilitating trade and commerce (the most ancient insurance activity), (iii) mobilizing domestic savings, (iv) allowing different risks to be managed more efficiently encouraging the accumulation of new capital, (v) fostering a more efficient allocation of domestic capital, and (vi) helping to reduce or mitigate losses.

The insurance companies' ability to continue to cover risk with in an economy hinges on their capacity to make profit or value for their shareholders.

1.2. Brief History of the Insurance market in Ethiopia

The emergence of contemporary insurance in Ethiopia is referred back to the Bank of Abyssinia which was established in 1905 as the first Ethiopian Bank. The Bank had been acting on behalf of a foreign insurance company to underwrite fire and marine policies. Initially, the insurance industry in Ethiopia was dominated by foreign insurance companies doing insurance business through agents. According to the first survey of the Ethiopian insurance market in 1954 by the then Ministry of Commerce and Industry, there were 19 offices which were providing insurance services in the country. Except Imperial Insurance Company of Ethiopia Limited which was the first domestic insurance company established in 1951, the remaining 18 represented local offices, branches and/or agents of foreign insurance companies. Another survey of the insurance industry which was conducted in 1960 by the same ministry showed that there were a total of 33 offices operating in Ethiopia of which only Imperial Insurance Company of Ethiopia Limited continued to be the only domestic company. But later on more domestic insurance companies joined the industry. Though not fully owned by Ethiopians, there were 15 domestic insurance companies operating in Ethiopia during the 1960s. Foreigners had ownership interest in those insurance companies and were participating in the boards of management and company management positions.

In 1974, the military junta confiscated all the 13 insurance companies operating in the market at that time and formed the Ethiopian Insurance Corporation (EIC) as the sole insurance service provider in the country. The Ethiopian insurance market thus became a state monopoly until 1994. The 1990's ushered in economic liberalization that led to the revival of private sector participation in the financial sector (Zelege, H. 2007). This has led to the formation of a number of private insurance companies. The first insurance business Proclamation No. 86 of 1994 signaled the beginning of a new era in the insurance industry. It opened up the insurance market for competition and thus ended the monopoly of the business. In the year 2012, the old proclamation was repealed and new Proclamation No. 746/2012 was issued. Then, it was amended by proclamation No.1163/2019 effective from 9th day of January 2020. The industry is regulated and supervised by NBE, whereby Supervision of Insurance Business, which is under the body of NBE, is responsible to follow insurers' activities by way of off-site and on-site surveillance report. The off-site surveillance report includes quarterly and annual financial and non-financial information of an insurer. Manner of Reporting Quarterly and Annual Returns, Directives No SIB/38/2014, is essential for NBE to receive information, financial and non-financial, to conduct effective off-site surveillance that enables it to assess the financial soundness, managerial effectiveness and stability of each insurer and the sector ongoing basis.

Off-site surveillance analysis is made using RBS, Risk Based Supervision; accordingly an insurer's financial soundness is checked on the basis of inherent risks identified by NBE. These are Credit, Market, Liquidity, underwriting, technical provision, operational and Technological and Reinsurance risks. The Risks of an insurer are rated as Low, Moderate, and High risk. Based on the rating factors of the risks, NBE shall forward recommendations to an insurer.

According to NBE's 3rd quarterly report for the year 2020, there were 18 insurers and 1 reinsurer operating in the market, eleven (11) of them are transacting composite insurance, and the remaining are general insurers. However, one private insurer, Zemen Insurance, recently joined the industry.

In terms of ownership except the Ethiopian Insurance Corporation (EIC), the rest are privately owned. On the other hand, the number of branches rose to 568 following the opening of 36 new branches. About 53.7 percent of the branches were located in Addis Ababa and 84.5 percent of the total branches were private. Capital strength of insurers increased by 49.5 percent to Birr 8.2 billion, of which, the share of private insurers was 68.3 percent and that of public insurance company was 31.7 percent.

Gross written premiums of the insurance industry reached Birr 9.1 billion witnessing almost 8.3% growth compared to the previous year result. General insurance (GI) continued to dominate the sector, accounting for Birr 8.6 Billion or 94.3% total premiums, with motor vehicle insurance continued to claim the largest share constituting 50.2% of total insurance premiums and 53.2% of the Gross Written Premiums under General Insurance class of business. The industry wide loss ratio in respect of general insurance has reached 61%. On the other hand, Long Term insurance accounted for Birr 514.3 million or merely 5.7% of total premiums written but witnessed a relatively low 51% loss ratio. Life insurance is the least underdeveloped business as compared with the other neighbor Africa countries.

The industry's net earned premium and net claims incurred for the period ended June 2019 reached Birr 6.3 billion and Birr 3.8 billion respectively, with an overall loss ratio of 60%.

The retention ratio remained 72% which has shown marginal reduction from last year's similar period i.e. 74.9% while the net claims incurred has increased to Birr 3.8 billion from Birr 3.67 billion compared to the preceding year. The total asset of insurers as at 30 June 2019 has reached Birr 20.8 billion witnessing an increase of Birr 4.8 billion compared to the figure in the preceding year. The underwriting result reached Birr 1.358 billion at 30 June 2018 from 1.151 billion in June 30, 2017. The underwriting result shows the performance of the operation; it tells the goodness and badness of the operation. The Investment income derived mainly from a dividend and interest from FTD. During the fiscal period ended June 30, 2018 interest income of Birr 811,898,456 has been earned from FTD; there was 50% growth from last year the same period. The industry has been dependent on investment income.

Finally, profit after tax for private general insurers has reached Birr 900 million during the period; the profit has shown a growth of 27% from last year the same period.

Insurance penetration explains the growth of premium with the growth of the gross domestic product in the economy. It is measured as ratio of premium to GDP of premium with the growth. Insurance density is known as per capita premium and measured as ratio of premium to total population. The Ethiopian insurance industry remained relatively undeveloped which is exemplified by the sector's low insurance penetration (percentage of insurance premium to GDP), the contribution of insurance sector to GDP is 0.02pct, manifested by extremely low insurance density (average per capita spending on insurance) which was Birr 62.4, as at 2015/16.

Generally, the Ethiopian Insurance industry is characterized by identical conventional products, low level of public awareness, price-based competition(no minimum premium), whereby industry players are competing by lowering premium to the extent that the premium charge is unable to cover a risk premium of insurers. In addition to these, it is a motor dependent, urban centered service, lack of innovation and scarce man power are some of the major features of the industry.

Despite of the above challenges in the industry, companies are achieving modest profit year in year out, and declaring dividend to their shareholders. However, compared with neighboring countries, Kenya, Uganda and Tanzani, the industry is infant and not grown with its age. Therefore, the study investigates the determinants of general insurance profitability in private insurers.

1.3. Statement of the Problem

The idea of performance particularly in financial institutions, banks and insurance, has got a significant thoughtfulness from scholars in the numerous ranges of business. It is also a main concern of almost all business stakeholders in any segments since financial performance is an ingredient to organizational well-being and eventually its survival. High performance reflects management success and productivity in making the utilization of a company's resources and this contributes to the economy at large (Ansah-Adu, 2012).

Determinants of insurance companies' profitability have straight implications on policyholders, shareholders, investors, and employees, stakeholders in general. Above all, the significance and contribution of insurance to economic growth and national wealth attracted the attention. A well-developed and evolved insurance industry may be a boon for economic development because it provides future funds for infrastructure development of each economy (Charumathi, 2012). Therefore, it is important and necessary to investigate on factors that influence profitability of insurance companies assuring the sustainability of the business (Batinca & Brca, 2014).

The risk immersion character of insurers encourages financial solidity in the financial markets in particular and to the economic in general. Hence, identifying determinants factors of insurance companies' profitability help for the growth of the economy, the growth of insurance would drive economic growth of a country (Mwangi & Wanjugu 2015).

The researcher has gone through most of the research studies in similar topic in Ethiopia and outside Ethiopia ,and found that research studies undertaken in the context of Ethiopia insurance industry has not considered combined ratio, asset turnover and investment return as variables that

have an effect on general insurers profitability. In the financial statements of insurance companies under the section of economic performance and challenges of business environment companies mostly evaluated and presented the successes and poor achievement in respect of the above parameters particularly investments and claims and administrative costs. In the other hands, the finding of the studies made on profitability of insurance companies in Ethiopia considered both general and life Insurance, however the two are different in their determination of claims cost , in the case of life it is an actuarial that determines the reserves of life Insurance and Investment strategy is also another difference. Moreover, the studies made in profitability of insurance companies had exhibited inconsistency results; Abate (2012) studied company specific factors affecting insurance profitability in Ethiopia found liquidity and leverage are negatively but significantly related. Daniel (2013) Studied that insurers leverage was significant and positively related with profitability; however, inflation statistically significant and negatively related with ROA. Gashaw (2012) studied firm specific factors but they also ignored macro-economic factors affecting profitability. Demis (2016) and Hana (2015) studies showed inflation had negative and significant impact on profitability. Studies conducted on determinants of profitability of insurance companies outside Ethiopia were Malik (2011), Onky (2015), Mwangi (2015), Hamdan(2008), Sameer(2008), Hammed(2015), and Shibu(2004).

The above studies used firm specific and macro-economic factors that could affect the profitability of insurance companies. These variables were Age, Size, Liquidity, volume of capital, leverage, loss ratio, solvency, premium growth, expense ratio, investment yield, tangibility, retention, earning assets, operating margin, and surplus of underwriting, and macro-economic factors market share, GDP, inflation, and interest rate.

The studies result showed that insurance leverage studies by Malik (2011), Oner Kaya (2015), Hamdan (2008), and Hammed (2015) showed that insurance leverage had negative and insignificant impact on insurance profitability. However, Sameer's (2008) result showed insurance leverage had positive and significant. In all studies loss and expense ratio had negative and significant impact on profitability. Premium Growth, Oner Kaya (2015), showed positive and significant on profitability while Mwangi (2015) and Hammed (2015) showed insignificant on profitability. Investment yield, Mwangi (2015) showed positive and significant impact on profitability. The above findings showed that results of the studies, regardless of their difference in samples, measurements, and business environment showed inconsistency. Therefore, this study

filled the research gaps by using new variables identified by researcher together with existing variables commonly used in most literatures and profitability proxied by ROA.

1.4. Objectives of the Study

1.4.1. General Objective

The main objective of this research is to investigate and analyze the factors that mostly an effect on financial performance of general insurance of private insurers in Ethiopia.

1.4.2. Specific Objective

- 1.4.2.1. To explore the effect of combined ratio on profitability of private insurers in Ethiopia.
- 1.4.2.2. To investigate the effect of assets turnover on profitability of private insurers in Ethiopia.
- 1.4.2.3. To examine the effect of retention ratio on profitability of private insurers in Ethiopia.
- 1.4.2.4. To investigate the effect of premium growth on profitability of private insurers in Ethiopia.
- 1.4.2.5. To determine whether Leverage has an effect on profitability of private insurers in Ethiopia.
- 1.4.2.6. To examine the effect of investment income on profitability of private insurers in Ethiopia.
- 1.4.2.7. To evaluate whether GDP has an effect on profitability of private insurers in Ethiopia.
- 1.4.2.8. To evaluate whether inflation has an effect on profitability of private insurers in Ethiopia.

1.5. Research Hypotheses

To achieve the above objectives, the researcher had forwarded eight alternative hypotheses based on the previous research findings, theories and on the existing insurers' performance scenarios. The hypotheses were empirically tested.

H1: Retention ratio has a positive and substantial effect on general business profitability of private insurers in Ethiopia.

Theoretically, a more efficient insurance company would have growth in profits because it is able to increase on its net premiums and net underwriting incomes (Charumathi, 2012). Ana-

Maria, Ghiorghe (2014) also showed that a higher premium retention ratio will positively affect profitability with a lower loss ratio.

H2: Combined ratio has a negative and important effect on general business profitability of private insurers in Ethiopia.

Rejda (2001) it is used as a measure of insurers' underwriting performance, the ratio is defined as loss ratio plus expense ratio and it presents the outlook of insurers' efficiency in underwriting operations. Browne et al. (2001) has found that a negative relationship among leverage and performance.

H3: Investment return has a positive and important effect on general business profitability of private insurers in Ethiopia.

Premiums are received and invested in advance of claims for losses. Consequently, an insurer's greater investment performance could produce a competitive advantage, particularly if the relative importance of investments exceeds that of underwriting, as a high ROI can generate better financial performances (Gatzlaff 2009).

H4: Leverage has a negative and significant effect on general insurance business profitability of Ethiopian private insurance companies.

The pecking order theory of capital structure shows that if a firm is profitable, then it is more likely that financing would be from internal sources rather than external sources. In other words, firms tend to use internally generated funds first and then resort to external financing. This implies that profitable firms will have less amount of leverage (Myers and Majluf, 1984). And studies done by B. Charumathi (2012); Malik (2011) and Abate Gashaw (2012) had supported the motion of leverage have negatively and significantly influence the insurance companies' profitability.

H5: Asset turnover has a positive and important effect on general business profitability of private insurers in Ethiopia.

Nweze (2011) says total assets turnover measures the level of capital investment relative to sales volume. It tells the firm how well it manages its overall assets. The larger the value of sales per invested capital, the larger will be the earnings on each invested in the assets of the business. The ratio is also a broad measure of the efficiency of the use of capital, since the total assets include

plant and other fixed assets as well as current assets. It helps management to determine if the sales volume is sufficient, relative to the capital commitment in the business.

H6: Premium growth has a positive and important effect on general business profitability of private insurers in Ethiopia.

Premium is the major source of income for insurance companies and the growth of premium would increase market share, investments and the overall financial capacity of the Company. As a result of this, the research supported the motion that it has a positive and significant effect of general business profitability. On the other hand, the empirical findings of Chen and Wong (2004) and Asrat Lire and Tesfahun Tegegn (2016) supported the hypothesis that premium growth has a positive and significant effect on profitability.

H7: GDP has a positive and important change on general business profitability of private insurers in Ethiopia.

Growth rate of GDP reflects economic activity as well as level of economic development and as such affect the various factors related to the supply and demand for insurance products and services. GDP is the most informative single indicator of progress in economic development. Poor economic conditions can worsen the quality of the finance portfolio, thereby reducing profitability. If GDP grows, the likelihood of selling insurance policies also grows and insurers are likely to benefit from that in form of higher profits. Outreville (1990) investigated the economic significance of insurance in developing countries and concludes that there is a positive but non-linear relationship between general insurance premiums and GDP per capita. Maja (2012) also examined that GDP growth positively affects insurers profitability i.e. growth of overall economic activity encourage demand for insurers services and indirectly result in higher growth in terms of premium volume . Murungi (2014) indicated that GDP growth positively affects insurers' profitability; an economic growth would boost demand for insurers' products and ultimately result in higher insurers' income.

H8: Inflation has a negative and insignificant change on general business profitability of private insurers in Ethiopia.

Inflation certainly plays a role in insurance and has adverse impact on many aspects of insurance operations, such as claims, expenses and technical provisions (Daykin, Pentikäinen & Pesonen, 1994). Expected inflation is taken into account when actuaries set actuarially fair premiums, inflation itself is unlikely to seriously impact on the performance of insurance companies. Nevertheless, if inflation is significantly greater than expected, it could cause insurance companies

financial difficulty. As a consequence, profit margins of insurance companies are compressed and financial performance is accordingly impaired (Browne, Carson & Hoyt, 1999). The inflation could affect insurance companies' profitability influencing both their liabilities and assets. In expectation of inflation claim payments increases as well as reserves that are required in anticipation of the higher claims, consequently reducing technical result and profitability. According to Lee (2014) in Browne et al. (2001) showed that firm performance is negatively related to inflation; inflation weakness the purchasing power of money and ultimately it would affect the interests of insurance products.

1.6. Significance of the Research

Insurers' profitability has direct implications on policyholders, shareholders, investors, employees, regulators, governments, and any other stakeholders. Thus, the following bodies are benefited from the research results; Policyholders: Policyholders' buy cover against the occurrence of events and insurers provide adequate capital against the projected cost of claims. Thus, policyholders must get the confidence that their claims are settled when due. Shareholders: Owners of a company where their income, as dividend and capital gain, depends mainly on the performance of a company.

Investors: Investors are required to return for the assumed risks in a business. Financial data are important sources of information for sound decisions. Employee: The benefits and other performance related payments in a company depend on profit.

Regulator: Identifying the key success indicators of insurance companies can help in facilitating the design of policies that may improve the profitability of the insurance industry. And also the research output will be used an input for policy makers, regulators and other stakeholders for making sound financial decisions

Management: knowing what determines profitability of insurance companies can help in facilitating the design of strategies that may improve a profitability of a company.

Academicians: The research will add to the body of knowledge and used as a reference for future related studies in the Ethiopian insurance industry.

1.7. Scope of the Study

The study is emphasized on general insurance of private insurers in Ethiopia. Life Business and Gov't owned insurer is not considered in the study. Life Business is not developed and it accounts

for less than 5.7% of Gross Written premium and few insurers recently started underwriting life insurance so that the ten years data cannot be available for the intended purpose.

As far as Government insurer exclusion, EIC, it will create outliers in the data analysis since EIC has got a large market share being owned by the government, and also huge capital that could not be comparable with the existing private insurers. The study used firm specific variables Premium Growth Rate, Retained risk Ratio, Combined ratio (COMB ratio), Investment return, Leverage Ratio, and macroeconomic factors GDP growth rate, and inflation rate.

On the other hand, the researcher used secondary data from insurance companies' financial statements and macro-economic factors from NBE and CSA. The researcher used ten years of financial statements of Awash, Global, Nile, Nice, Africa, NIB, Nyala, United, Lion and Oromia for the periods covered (2011–2020).

1.8. Limitation of the study

Due to the confidentiality policy of the insurers, the study was limited to the financial data of the insurers that were officially disclosed through financial statements ,furthermore, in this study the proxies used and were expressed in terms of ratios, however, the ratio does not perfectly reveal the amount of its components and in addition, there are a number of reasons in terms of measurement for individual variables, those that were selected in the model may have some bias, since they cannot fully represent the precise measurement for the tested variable. This is due to availability of data and the nature of the ratio analysis.

1.9. Organization of the Study

The research paper is structured as follows. The first chapter discusses the background of the study, statement of the problem, objectives, hypotheses, importance, and scope of the study. The second chapter two contains a review of the literature; theoretical and empirical studies on determinants of financial performance of the insurance industry in Ethiopia. The third chapter deals with research methodology. The fourth chapter also presents the analysis and empirical findings. Chapter five, which is last, presents conclusion of the findings and recommendations.

CHAPTER TWO

LITERATURE AND RESEARCH REVIEW

2.1. Introduction

This chapter presents an in-depth review of theoretical and empirical literature used to align the research objectives and justify the hypothesis. The first part will cover a review of profitability concepts and the chapter presents an empirical review of both international and local studies that have been done on determinants of insurance companies' profitability. Finally, the paper presents a research gap and justification of the research paper.

2.2. Theoretical review

In this section, the concept of profitability and profitability determinants on insurance companies are covered.

2.2.1. Profitability

Ostroff and Schmidt (1993) stated that various models were recommended for analyzing from the strategic management researched for financial performance analysis. However, there is no general agreement that financial performance of a firm can be evaluated or analyzed. But, performance refers to the degree to which financial objectives have been achieved. It is the process of measuring the results of firm's policies and operations in monetary terms. Companies' performance can be gaged against the key performance indicators in the strategic documents of a company. Therefore, depending on the nature of the business and objectives of the evaluation, companies may opt to utilize different performance measurement.

Companies may design performance measurements that can best fit for their business under consideration, and that provide necessary and relevant information to the management for decision making. Insurance business performance measurement can be analyzed in terms of market share, growth in premium, loss ratio, expense ratio, customer retention, branch expansion, time of claims settlement, profitability and any other ways. The performance measurements classified factors which are specific behaviors of a company, and factors, which are outside the internal business environment, are called external factors.

The performance measurement for financial institutions has gained the significance in the corporate finance literature because as the role financial institutions are playing in growth of an economy of a country by way of risk transfer mechanism, as a major investor in financial market, and also helps to network capitals in an suitable way from surplus to deficit economic units so as to backing the investment activities in the economy. The purpose of measuring the achievement is to obtain useful information related to flow of funds, the use of funds, effectiveness, and efficiency. Besides, the information can also motivate the managers to make the best decision (Sameer, 2012). The researcher tried to use profitability, proxy by ROA, as a measurement of the performance of general insurance business of private insurers in Ethiopia.

Profitability, defined as a proxy of monetary performance, is one among the most objectives of insurance companies' performance indicators. Profit is an important precondition for enhancing competitiveness, attracts investors and improves the extent of solvency, and thus, strengthens consumers' confidence. The financial analysis of a company is a crucial tool employed by actuaries within the process of decision-making on underwriting and investment activities of the insurance firm. The financial performance of insurance companies is additionally relevant within the macroeconomic context since the insurance industry is one among the financial system' components, promoting economic process and stability. Profitability ratios measure how effectively a firm's management is generating profits on sales, total assets, and, most importantly, stockholders' investment. Therefore, anyone whose economic interests are tied to the long-run survival of a firm will be interested in profitability ratios (Moyer, James, & William, 2006).

Profitability can also be defined as the final measure of economic success achieved by a company in relation to the amount of money committed in it. This economic success is determined by the magnitude of the net profit accounting Profitability refers to the capability to create profits in each and every business activity of a firm. It shows how well the management will generate profit as a result of utilizing all resources obtainable in the marketplace (Pimentel et al, 2005 p.86).Harward & Upton (1961) say that profitability is an investment's ability to earn revenue from its usage. Typically, 'Profit' and 'Profitability' have been sometimes used interchangeably. Nonetheless, in reality, there's a big distinction between these two. Profit is absolute but profitability is relative. In spite of this, they're closely linked, and in addition, are mutually interdependent. They also have separate roles in the world of business. Profit is the total financial gain obtained by the enterprise

throughout a specified time period, whilst profitability is the operative efficiency of a business. Its ability of an entity to earn sufficient return on capital and staff employed in business operations. Companies that have the same profits might vary in profitability. Profit in the two separate entities could be identical, but their profitability varies based on the size of investment. Profitability is one among the foremost significant objectives of monetary management because one goal of monetary management is to make the most of the owner's wealth and profitability is very significant determinants of performance (Malik, 2011). Profitability ratios are an indicator for the companies' overall efficiency; it is usually used as a measure for incomes generated by the company during a period of time based on the level of capital employed, net worth and earnings per share (Kabajeh and et al, 2012).

2.2.2. Determinants of Profitability

The profitability of a firm could be affected by internal and external factors. Many internal factors could be numerated, however, the study confined to combined ratio, assets turnover, growth of premium, leverage, retention and investment return. The external determinants were growth rate measured by real GDP and annual inflation of consumer price index.

The details of the variables are presented hereunder; the effect of the variables on profitability of also presented below.

2.2.3. Firm Specific

2.2.3.1. Asset Turnover and Profitability

Ezeamama (2010) defines total assets turnover as a ratio that expresses the number of times the value of assets utilized by the firm has been generated into sales. According to Pandey (2010) total assets' turnover ratio shows the firm's ability in generating sales from all financial resources committed to total assets. Nweze (2011) says total assets turnover measures the level of capital investment relative to sales volume. It tells the firm how well it manages its overall assets. The larger the value of sales per invested capital, the larger will be the earnings on each invested in the assets of the business. The ratio is also a broad measure of the efficiency of the use of capital, since the total assets include plant and other fixed assets as well as current assets. It helps management to determine if the sales volume is sufficient, relative to the capital commitment in the business.

2.2.3.2. Growth of Premiums and Profitability

According to Chen et al. (2004) measures the rate of market penetration. The increase in premium growth rate will safeguard the growth of the company and increase of its market share. On the other hand, poorly coordinated growth of premium volume may cause or aggravate other risks that may endanger the company's existence. Insurance companies may have weak financial positions if underwriting is excessive, if risk selection or pricing is not done carefully, and if financial resources are insufficient to cover risk.

Therefore, being unreasonably infatuated about the rise in the volume of the gross written premiums especially in an economic downturn may cause the negligence of other important targets and could lead to self-destruction (Chen and Wong 2004). Subsequently, it is expected that the rise in premium growth rate will increase the profitability of insurance companies together with a strong financial structure, suitable reinsurance policies, and a low loss ratio.

2.2.3.3. Retained risk Ratio and Profitability

Retention means the exposure of risks an insurer keeps for its net account after reinsurance cession usually expressed as monetary amount. The retention may apply to a single risk or an accumulation of risks materializing from a single event. Retention ratio is the percentage of businesses covered by insurance companies that are not ceded to reinsurance. A higher retention ratio with lower claims ratio is likely to affect the performance of insurers' positively. Notionally, a more financial strong company would have growth in profits since it is capable of exploiting its net premiums and net underwriting incomes (Charumathi, 2012).

Ana-Maria, Ghiorghe (2014) the retained risk ratio is calculated as ratio of underwritten premiums less premium ceded to reinsurers (a premium not retained) to underwritten premiums. Retention ratio reflects the amount of the underwritten risk retained by the insurer.

2.2.3.4. Combined(Loss and Expense) ratio and Profitability

Combined ratio is considered the most significant criteria for insurance companies, it is the sum of loss and expense ratio and it is also expressed as the underwriting and administrative risk of insurance companies. The combined ratio is a ratio of incurred losses to earned premiums plus incurred expenses to written premiums (Rejda, 2001). It is used as a measure of insurers' underwriting performance, the ratio is defined as loss ratio plus expense ratio and it presents the outlook of insurers' efficiency in underwriting operations.

In general, the goal of insurance companies is to increase premiums while at the same time decreasing losses and expenses. Higher values of operating expenses and incurred claims have direct impact on insurers' profit; therefore negative influence of this variable is expected.

2.2.3.5. Investment Return and Profitability

Investment is the other core function of insurance operations and therefore also a critical area for supervision and market surveillance. Premiums are received and invested in advance of claims for losses. Consequently, an insurer's superior investment performance could yield a competitive advantage, particularly if the relative importance of investments exceeds that of underwriting, as a high investment income can generate better financial performances. Organizations invest their resources in order to earn returns that will enable them to enhance their financial performance. Investment return is calculated as the ratio of investment and net earned premium.

2.2.3.6. Leverage and Profitability

Leverage shows insurers' ability to manage their economic exposure to unexpected losses. This ratio represents the potential impact on capital and surplus of deficiencies in reserves due to financial claims (Adams and Buckle, 2000). Insurer generates leverage from unearned premiums, from unexpired policies and any outstanding claim amount (Lee, 2014).

2.2.4. Macro-Economic Factors

Macroeconomic variables such as the unemployment rates and corporation tax rate are beyond the control of an organization, therefore, the need for businesses to predict the heterogeneous effect of these macroeconomic variables on future corporate performances (Broadstock, Shu, & Xu, 2011).

2.2.4.1. GDP and Profitability

GDP is one of the primary signs used to measure the health of a country's economy. It represents the total birr value of all goods and services produced over a specific time. Usually, GDP expressed as a comparison to the previous quarter or year. Growth rate of GDP echoes economic activity as well as level of economic growth and as such affect, the various factors related to the supply and demand for insurance products and services.

Suheyli (2015) stated that GDP is the most useful single gauge of progress in economic development. Poor economic conditions can worsen the quality of the finance portfolio, thereby

reducing profitability. If GDP grows, the likelihood of selling insurance policies also grows and insurers are likely to benefit from that in the form of higher profits.

2.2.4.2. Inflation and Profitability

Premiums are calculated based on past losses and costs. If inflation is higher than expected, insurance companies will not have sufficient premiums to meet with losses and would thus experience increased insolvency probabilities (Browne and Hoyt, 1995). The rate of inflation typically refers to changes in the overall level of prices within an economy, which consequently leads to the erosion of the domestic currency.

Inflation affects the financial performances of insurance companies by squeezing profit margins. Hence, inflation may lead to changes in retained premiums. This study refers to (Grace and Hotchkiss 1995) and assesses inflation according to annual increase rates of the consumer price Index. Inflation affects insurance companies' profitability liabilities and assets; inflation would increase the payments of claims by increasing the outstanding claims and other technical reserves of a company as a result of this it would consequently affect profitability. Similarly, inflation would affect the assets value of a company to depreciate and this in turn affects company's profitability. The most common methodology for estimating inflation calculates the percentage change in the overall level of prices over a 12-month period as measured by a price index, such as the Consumer Price Index (CPI). The traditional method for creating the CPI involves tracking the relative price of a basket of representative goods over time.

2.3. Empirical Literature

The researcher has gone through many research studies on the determinants of insurance financial performance, profitability, and their findings are presented hereunder. The researcher has considered research papers specific to Ethiopian Insurance Industry and research studies done in other Countries.

2.3.1. Studies outside Ethiopia

Malik (2011) examined the determinants of profitability in insurance companies of Pakistan. This paper studies the effects of firm specific factors like age of company, size of company, volume of capital, leverage ratio and loss ratio on profitability proxies by ROA. Accordingly the research

study findings showed that loss ratio and leverage ratio showed negative but significant relationship with profitability.

Öner Kaya (2015) examined the firm-specific factors on the profitability of non-life insurance companies in Turkey. Eight predictor variables were tested in the study including size of the company, age of the company, loss ratio, insurance leverage ratio, current ratio, premium growth rate, motor insurance and premium retention ratio. The OLS regression model, the one-way fixed effects model, and the one-way random effects model were employed in the research for the analysis of panel data.

Accordingly the research study findings showed that size and premium growth rate have positive effect on the performance, whereas all other variables significantly affecting performance have negative sign.

Mwangi (2015) this study sought to establish the association between variables of (growth of premiums; size of insurer; retention ratio; earning assets; investment yield; loss ratio; and expense ratio) and financial performance of general insurers in Kenya. The study used multiple linear regression data of three years that run 2010-2012. The findings showed that financial performance was positively related to earning assets and investment yield. Financial performance was negatively associated to loss ratio and expense ratio. Growth of premiums, size of underwriter and retention ratio were not significantly related to financial performance.

Hamdan (2008) investigated determinants of insurance company's profitability in United Arab Emirates. Four years financial data were collected, from 2004-2007. The research work showed that profitability and age of the company had no association however there was significantly positive association between profitability and size & volume of capital. Further result of the study showed Leverage ratio & loss ratio had significantly and opposite related to profitability.

Sameer (2012) investigated the determinants of the Financial Performance of Jordanian Insurance Companies Listed at Amman Stock Exchange. The researcher tried to outline the factors that majorly affect the financial performance of Jordanian Insurance Companies. The data collected was analyzed by using a number of basic statistical techniques such as T-test and Multiple- regression. The results showed that the following variables (Leverage, liquidity, Size, Management competence index) have a positive statistical effect on the financial performance of Jordanian Insurance Companies.

Hammed (2015) investigated firm particular features and financial performance of listed insurance firms in Nigeria. The findings of the study showed that firm size, loss ratio, liquidity, and leverage were the most important determinants of financial performance. Thus, firm size, loss ratio and leverage were negatively related. However, liquidity ratio is positively and significantly related with financial performance. Lastly, age of insurance company and premium growth are not significantly related with financial performance of listed insurance firms in Nigeria.

Shiu (2004) investigated the determinants of the performance of the United Kingdom general insurers for the period covered twenty years by using three variables: investment yield, a percentage change in shareholders' funds and return of shareholders' capitals. According to a panel dataset, the researcher empirically tested twelve explanatory variables and results of the findings showed that the performance of insurers has a positive correlation with the interest rate, return on equity, solvency margin and liquidity, and a negative correlation with inflation and reinsurance dependence.

Enekwe Chinedu Innocent, Okwo Ifeoma Mary& Ordu Monday Matthew (2013) studied to examine the relationship between the financial ratio analysis and profitability of the Nigerian Pharmaceutical industry over the past eleven (11) years period from 2001 – 2011. These financial ratio analyze have immense potentials to help organizations in improving their revenue generation ability as well as minimization of costs. The researcher used five (5) variables for the analyses such as: Inventory turnover ratio (ITR); Debtors' turnover ratio (DTR); Creditors' velocity (CRSV); Total assets turnover ratio (TATR) and Gross profit margin (GPM). Profitability as a dependent variable is represented by Gross profit margin (GPM) while financial ratio analysis stands as ITR, DTR, CRSV and TATR for independent variables. Secondary sources were gained from the financial statements mainly from Balance sheet and Profit and Loss account of the selected quoted pharmaceutical companies' financial statement. The data have been analyzed using descriptive research method and multiple regressions to find out the relationship between the variables. The results of the analysis showed that there is a negative relationship between all independent variables with profitability in the Nigerian pharmaceutical industry. It also revealed that debtors' turnover ratio, creditors' velocity and total assets turnover ratio have no significant relationship on the profitability of the company while only inventory turnover ratio shows a significant relationship with profitability.

2.3.2. Studies in Ethiopia

Daneiel & Tilahun (2013) the study analyzed and examined the firms features (size, leverage, tangibility, Loss ratio (risk), and Premium Growth, liquidity and age) on performance of insurance companies in Ethiopia. Return on total assets (ROA) was used a measurement of insurance company's performance while age of company, size of the company, growth in writing premium, liquidity, leverage and loss ratio are predictor variables. The findings of the research showed that insurers' size, tangibility and leverage are statistically significant and positively related with return on total asset; however, loss ratio (risk) is statistically significant and negatively related with ROA. But, premium growth, insurers' age and liquidity had statistically insignificant relationship with ROA.

Suheyli Reshid (2015) the research tried to analyzed the factors that have an effect on insurance companies' profitability in Ethiopia. The results of the research the study indicated that underwriting risk, technical provision and solvency ratio have statistically significant and negative relationship between ROA. However, reinsurance dependence has negative but insignificant relationship with ROA. On the other hand, variables like liquidity, company size and premium growth have a positive and statistically significant relationship between ROA. In addition, economic growth rate has significant influence on profitability whereas inflation has insignificant influence on insurers' profitability.

Demis (2016) conducted the study on macroeconomic and firm specific determinants of profitability of insurance industry in Ethiopia. The researcher had included the firm specific factors which consist of age of company, size of company, leverage ratio, liquidity ratio, premium growth, technical provision, underwriting risk, solvency, re-insurance dependency and tangibility of assets and macroeconomic factors; Economic Growth and Inflation on profitability of Ethiopian insurance industry. The findings of the study showed that underwriting risk, technical provision, leverage and inflation had negative and significant on profitability of insurance companies, measured by ROA while premium growth, age of the company, solvency ratio and GDP have statically positive and significant impact on the profitability of Ethiopian insurance industry. However, the study found that liquidity, re-insurance dependency, tangibility of assets and company size have no significant impact on the ROA of insurance industry in Ethiopia.

Simon (2016) investigates the internal factors affecting financial performance of insurance companies in Ethiopia by using the panel data over the period of 2005 to 2012. The Return on Asset was used as a proxy for measuring profitability which is dependent variable. The finding of the study demonstrates that leverage ratio, liquidity ratio, company size, Management competence index and company growth rate are influential factors of financial performance. But, age of company and loss ratio has no effect on the financial performance of Insurance Companies in Ethiopia.

Asrat & Tesfahun (2016) investigate the determinant of profitability, particularly in eight Ethiopian private insurance companies from the period of 2005- 2015 through panel data. The data were analyzed by using multiple linear regression analysis. The firm specific factors used in this study include underwriting risk, reinsurance dependence, solvency ratio, premium growth, company size and three macro factors was used such as GDP, Inflation and interest rate. The output of the analyses showed that profitability is significantly affected by firm specific factor which was underwriting risk negatively, company size positively, premium growth positively, and solvency ratio negatively and reinsurance dependency has no insignificant influence on profitability measured by ROA. Economic Growth had significant impact on profitability; whereas inflation and interest rate is considered as insignificant variable in the study.

Mistire (2015) has studied the determinant of profitability on insurance sector in Ethiopia. The study investigates both of the firm specific variables and macro-economic variables by using sample of nine companies over period duration of 2003 to 2014 by collecting through panel data and primary data. The firm specific variables used in this study includes age of companies, size of companies, leverage, tangibility of assets, liquidity, growth in premium , LR, reinsurance dependence, solvency margin and the macroeconomic variable used in the is only GDP growth rate. The finding of the study states that loss ratio and leverage ratio is significant and negative impact on profitability of insurance companies, whereas all other variables have positive and significant impact on profitability.

Hanna (2015) conducted the determinant of profitability in Ethiopian insurance companies by considering both external and internal factors. The internal independent variables used in the study are company size, leverage, liquidity, firm growth, age, volume of capital and tangibility are used. Moreover, as external explanatory variables, inflation and GDP are used. The return on asset were

used as the proxy of measuring profitability. In the study, a panel data covering the period of 2005 to 2014 are analyzed for a sample of nine insurance companies to reach on the final conclusions. The finding of the study shows that internal factors leverage, firm growth and tangibility of assets are the most significant determinants of profitability of insurance companies in Ethiopia, of which, firm growth has positive impact, on the other hand leverage and tangibility of assets have negative impact on profitability of insurers. From macroeconomic factors, inflation has a negative and significant impact on insurers' profitability as well as company size, company age and GDP growth shows positive but insignificant relationship with insurers' profitability. And liquidity has negative and insignificant relationship with insurers' profitability.

Hadush (2015) investigates the determinants of profitability by considering both exogenous and endogenous variables such as liquidity, tangibility, volume of capital, premium growth, claim ratio, real GDP and inflation on general insurance companies operating in Ethiopia proxy by ROA to measure profitability. The econometric analyses have performed on a panel data for a sample of nine Ethiopian general insurance companies for the study period of 2005-2014. Based on the above data the finding of the study reveals that tangibility, volume of capital, premium growth, claim ratio, and real GDP are the most important determinants of profitability hence tangibility, volume of capital, premium growth was significant and positively relationship with profitability. In contrast, claim ratio and real GDP are negatively but significantly relationship between profitability. Nevertheless, liquidity and inflation are not significantly related with profitability.

Gemachis (2017) the researcher had tried to examine the determinants of profitability in the insurance in Ethiopia with reference to general (non-life) insurance companies on basis of data covers six years (2011-2016) period. The study selected sample of twelve (12) insurance companies to study them for a period of six years (2011-2016) with total of 72 observations through panel data. The results of panel least square regression analysis indicate that industry concentration ratio and leverage had statistically significant and positive relationship between Non-life insurance business profitability. However, diversification, underwriting risk and reinsurance dependence has a negative and statistically significant relationship with general insurance companies' profitability.

Sisay (2019) the study was factors affecting profitability of insurance companies in Ethiopia. The results of the study indicated that market share and managerial efficiency have statistically significant relationship with insurers' profitability, and liquidity is positively less significant

relationship with profitability. Whereas the Volume of capital, inflation and GDP are significantly negative with profitability and size, liquidity, leverage and growth rate are negative but insignificant relationship with profitability.

2.4. Summary of Empirical Literature

The researchers used a firm specific characteristics and macro-economic factors that could affect the performance of the insurance industry. On the other hand, the researchers used ROA to measure financial performance of a firm in Ethiopia and outside Ethiopia.

As far as the studies done in other jurisdictions, the commonly used firm specific variables were age of the firm, market share, size of the firm, liquidity, leverage, premium growth, retention, underwriting risk, investment yield, earning of assets, and expense ratio. And macro-economic factors were interest rate, Inflation and GDP. The findings of the study revealed that results were inconsistent.

Similarly, studies done in Ethiopia have used firm specific characteristics like age, size, leverage, technical provisions, underwriting risk, liquidity, loss ratio, and growth in premium, reinsurance dependency, and few researches used market share and solvencies. The macro-economic factors were GDP, Inflation and Interest rate, interest rate is rarely used. The studies used ROA as measurement of profitability.

2.5. Research Gap and Justification of the Research

Generally, the empirical reviews would tell the findings of the studies were inconsistencies; this would lead further investigation on the profitability of insurance companies in Ethiopia.

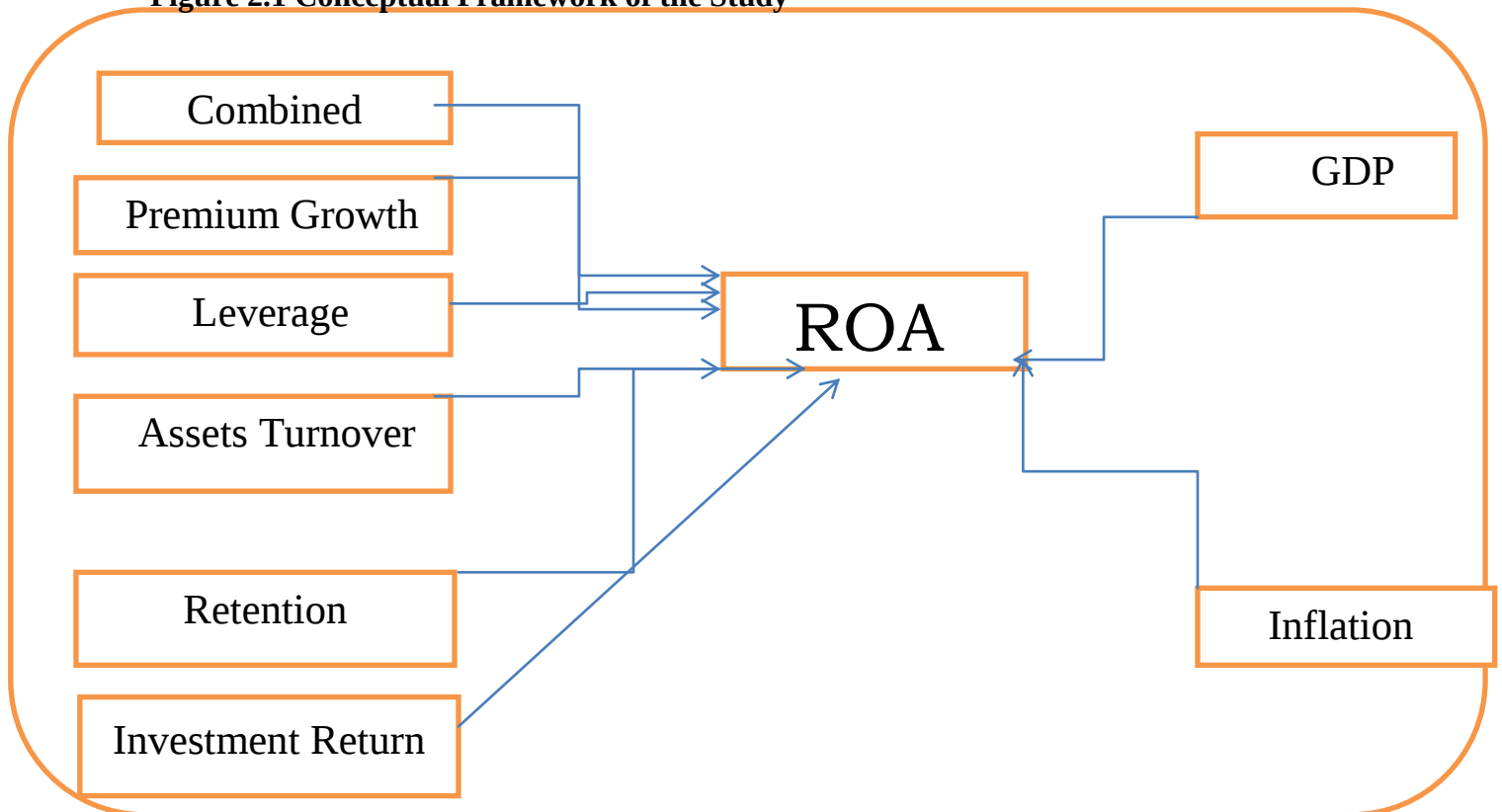
Moreover, from the above researches particularly did in Ethiopia, the researchers could not include variables that were important financial performance measurements for insurance profitability; Retention Ratio, combined ratio and Investment return which were integral part of the performance of insurance companies in Ethiopia and the most of the papers used composite insurers profitability. Therefore, these variables were considered in this study in addition to leverage, premium growth, inflation rate and GDP growth.

Therefore, the study empirically investigated the determinants of performance of general insurance of private insurers in Ethiopia during the period 2011-2020 and fills gaps by providing full information about firm specific and macro-economic determinants.

2.6. Conceptual Frame work

The conceptual framework is developed to explain the determinants of general insurance business of the private insurers' profitability in Ethiopia. By summarizing previous studies and inculcating new variables had not been used in previous studies, this study used firm specific variables firm leverage, combined ratio, premium growth, Investment income, retention ratio and assets turnover while the macro factors GDP growth and inflation were selected to be included as independent variables that have an effect on insurance companies' profitability measured by ROA. The researcher developed the conceptual framework of the research study from the reviews, theoretical and empirical literature.

Figure 2.1 Conceptual Framework of the Study



Source: Chen & Wong (2004), Charumathi (2013), Asrat (2016) Suheyli Reshid (2015) Shiu (2004) Hammed (2015)

CHAPTER THREE

RESEARCH METHODOLOGY & DESIGN

3.1. Introduction

This chapter discusses the research methodology, research design, and research method that are used in gathering, processing and translating the collected data into meaningful information. It provides the steps and procedures to discover the determinants of general insurance profitability in Ethiopia evidence from private insurers. It explains about the research design, data type and source, research approaches, population and sample size, sampling technique, data collection instrument, data analysis techniques, variable definitions which encompasses choice of dependent variable and independent variables.

This study used a quantitative research approach to determine the profitability of selected private insurers of general business using firm specific and macro-economic factors that affects insurance companies' profitability by establishing relationships.

3.2. Research Design

According to Amin (2011), a research design alludes to the methodology or methods used to gather data, measure and analyze the data. Cooper & Schlinder (2001), research design constitutes the blueprint for data collection, measurement and analysis. There are several research designs ranging from exploratory studies, descriptive studies and explanatory studies. This is an explanatory study for factors that determines profitability of insurance companies in Ethiopia.

3.2.1. Population

Cooper & Schindler (2001) define a population as the total collection of elements about which we wish to make some inferences. The intended population of the study consisted of 18 general insurance of private insurers in Ethiopia.

3.2.2. Sampling and Sampling technique

The sampling plans may be grouped into two categories; probability technique and non-probability technique (William, 2013). What constitutes an appropriate sample depends upon the research question(s), the research objectives, the researcher's understanding of the phenomenon under study (developed through the literature review), and practical constraints (Palys &

Atchison, 2014). These considerations will influence whether the researcher chooses to employ probabilistic or non-probabilistic sampling techniques. Probabilistic sampling techniques are employed to generate a formal or statistically representative sample. This technique is utilized when the researcher has a well-defined population to draw a sample from, as is often the case in quantitative research. This fact enables the researcher to generalize back to the broader population (Palys & Atchison, 2014). On the other hand, a non-probabilistic sampling technique is the method of choice when the population is not created equal and some participants are more desirable in advancing the research project's objectives. Non-probability sampling techniques are the best approach for qualitative research. Because the researcher seeks a strategically chosen sample, generalizability is more of a theoretical or conceptual issue, and it is not possible to generalize back to the population (Palys & Atchison, 2014).

This study used panel data of general business of private insurers; the panel data of each insurer during the year t is used. Therefore, panel data are used to examine the determinants of private insurer profitability in Ethiopia. Panel data describe a given sample pool within a period of time. Thus, the researcher used 10 years of financial statements and purposive sampling technique employed. The matrix of the framework is ten years and ten insurers which includes 100 observations. These periods were selected because ten years and above was the recommended length of time in most finance literatures.

3.2.3. Data Collection

The study used secondary sources from the Audited Financial Statements of the sampled companies. Secondary data is a data that has been prepared by someone else other than the user. Sources of secondary data for social science include censuses, surveys, organizational records and data collected through qualitative methodologies or qualitative research. Primary data, by contrast, are collected by the investigator conducting the research.

Secondary data analysis saves time that would otherwise be spent collecting data and particularly in the case of quantitative data, provides larger and higher-quality databases than would be unfeasible for any individual researcher to collect on their own. In addition to that, analysts of social and economic change consider secondary data essential, since it is impossible to conduct a new survey that can adequately capture past change and/or developments.

The study utilized secondary data that is extracted from published audited financial reports of the insurance companies, NBE's annual report and papers and articles published in Ethiopian Financial Sectors particularly on insurance, and the macro-economic variables GDP and Inflation; the macro-economic data gathered from CSA and MOFED.

3.2.4. Analysis and Evaluation of Data

Data obtained from the field is in a raw fact and it is difficult to interpret unless it is cleaned, coded and analyzed. The collected data is, therefore, cleaned, coded and systematically organized in a manner that facilitates analysis using a statistical analysis software package called (STATA). Quantitative analysis is used through descriptive statistics such as measure of mean, variance and standard deviation where possible. In order to make the data more users friendly and attractive to the readers ANOVA tables, graphic interactive tables are generated using the stata software to present and interpret the results. Therefore, to determine the relationship, the study used the return on assets (ROA) as a substitute for the private insurers' financial performance and independent dependent variables are Combined, Leverage, Retention, Premium Growth, Investments Return, and Assets Turnover, GDP and Inflation.

3.2.5. Diagnostics Tests

The diagnostic tests for the regression CLRM assumptions in this study included test for Linearity Normality, Heteroscedasticity, Multicollinearity, and Autocorrelation. Accordingly, the study used different techniques to check the output is free from the above problems. This would give assurance that the result is valid. These techniques have been tasted in many research papers so that output of the study is reliable.

3.3. Expected Results and Relationship

The study used eight variables that have an effect on the profitability of general business of private insurers in Ethiopia. The expected results of the finding presented hereunder.

Table 3.1 Hypothesis

S.N.	Determinants	Expected Result and Relationship with ROA
1	Asset turnover	Asset turnover has significant and positive effect on profitability
2	Leverage	Leverage has significant and negative effect on profitability
3	Retention Ratio	Retention ratio has a significant and positive effect on profitability
4	Combined Ratio	Combined ratio has a significant and negative effect on profitability
5	Premium Growth	Premium growth has a significant and positive effect on profitability
6	Investment return	Investment return has a significant and positive effect on profitability
7	GDP	GDP has a significant and positive effect on profitability
8	Inflation	Inflation has an insignificant and negative effect on profitability

Source: Chen & Wong (2004), Charumathi (2013), Asrat (2016) Suheyli Reshid (2015) Shiu (2004) Hammed (2015)

3.4. Analytical Model

Model Specification and Variable Description

The panel model for the study is specified thus: $ROA_{i,t} = \alpha_i + \beta_1 AT_{i,t} + \beta_2 LV_{i,t} + \beta_3 R_{i,t} + \beta_4 Com_{i,t} + \beta_5 PG_{i,t} + \beta_6 IR_{i,t} + \beta_7 GDP_{i,t} + \beta_8 Inf_{i,t} + \epsilon_{i,t}$

Where:

β_1 is the co-efficient for Asset Turnover

β_2 is the co-efficient for Leverage

β_3 is the co-efficient for Retention

β_4 is the co-efficient for Combined

β_5 is the co-efficient for Premium Growth

β_6 is the co-efficient for Investment Return

β_7 is the co-efficient for GDP

β_8 is the co-efficient for Inflation

$\epsilon_{i,t}$ is error terms

i = cross-sectional variable from 1, 2, 3, 10

t = time series variable form 1, 2, 3, 10

Table 3.2 Variables Measurement

Variables	Measured
ROA	Profit Before Tax/Total assets
Asset turnover	Total Premium/Total assets
Leverage	Total Debt/ Total Assets
Retention Ratio	(Gross Written premiums - premiums ceded)/ Gross Written premiums
Combined Ratio	(Expense+ Net Incurred Claims)/Net Earned premium
Premium Growth	Premium Year 1-Premium year 0/Premium year 0
Investment return	Investment income/Net Earned Premium
GDP	Growth Rate
Inflation	Inflation Rate-CPI

Source: Chen & Wong (2004), Charumathi (2013), Asrat (2016) Suheyli Reshid (2015) Shiu (2004) Hammed (2015), NBE directives, Mister (2016)

3.5. Test of Significance

The coefficient of determination (R^2) is used to measure the extent to which the variation in ROA is explained by the firm specific and macro-economic variables. F-statistic and Z-statistics are also computed at 95% confidence level .

CHAPTER FOUR

DATA PRESENTATION, ANALYSIS, & DISCUSSION RESULTS

4.1. Introduction

This chapter presents the results of the study. The chapter is organized as follows; the first section provides the results of descriptive analysis on the variables used in the study. The second section depicts the outputs of the regression analysis. The last part presents discussion of the findings.

The study used ten years of financial data of general insurance of private insurers in Ethiopia. The firm specific determinant variables were represented by Leverage, Retention, Investment income, combined ratio, premium growth and Assets turnover, and macro-economic determinants by GDP growth and Inflation. The data were collected from the insurers' financial statements; the records were majorly collected from NBE and CSE.

4.2. Results & Discussions

The descriptive actual data used in the study. Table 4.1 provides a summary of descriptive statistics on the variables. The study used stata software for analysis of the results.

4.2.1. Descriptive Statistics for ROA

Table 4.1.1: Descriptive Summary

Variables	Obs	Mean	SD	Min	Max
ROA	100	0.0847370	0.0379629	-0.035595	0.182026
Premium Growth	100	0.1847699	0.2154191	-0.411448	0.921400
Combined Ratio	100	0.9469567	0.1032879	0.660052	1.291254
Leverage	100	0.6652810	0.0802403	0.473100	0.822400
GDP	100	0.0874500	0.0252787	0.019500	0.114000
Inflation	100	0.1459600	0.0774814	0.074000	0.341000
Retention Ratio	100	0.7676147	0.1049589	0.365274	0.931928
Asset Turnover	100	0.5482421	0.1764551	0.226821	1.064177
Investment Return	100	0.1894233	0.1005610	0.0166538	0.5622047

Source: Stata output

The above table shows the summary of observations and statistical results of mean, standard deviation, minimum and maximum of dependent and independent variables.

The Return on Assets, measured by profit before tax and divided by total amount of assets shows the average ROA for the general insurance of private insurers was 8% over the last 2011-2020. From the total 100 observations the mean of ROA equals 8% with a minimum of -4% and a maximum 18%. This means, the most profitable company of general insurance of private insurers may earn 18% (1 Birr and 18 cents) of net income from investing one Birr on assets. On the other hand, the maximum losses incurred by the sample companies were -4% (4 cent) on each of Birr one investment on asset. The standard deviation was 0.04, below the mean; this suggests that private insurers' profitability has no variation in ROA.

Premium Growth ranged a maximum of 92% and a minimum of -41% and mean and SD were 18%, and 22% respectively. Private insurers on average had shown premium growth of 18% and the standard deviation was 0.22 for 2011-2020, it implies that premium growth of private insurers varies from the mean by 22% and it implies there is a volatility in level of premium Growth since its standard deviation is higher than the mean.

Combined ratio is computed as the sum of net incurred loss and expenses had a mean, standard deviation value of 95%, an 10% and it had a range of maximum and minimum values were 129% & 66%. The general insurance of private insurers combined ratio on average was 95% of the net earned premium while the standard deviation is 0.1, implies that there is less variation in combined ratio of private insurers.

Leverage's mean, standard deviation, and minimum and maximum were 0.9469567, 0.1032879, 0.660052 and 1.29254 respectively. Leverage measured by total liabilities against total assets showed a mean of 95%, this means that 95% of the private insurers financed through debt. In addition, the standard deviation also signifies that leverage was the other stable factor since its standard deviation (10%) less than the mean which is an indication less variation among insurance companies. This indicates that the proportions of the insurers' liabilities on the average account 95% of the assets of the insurers, it almost financed through debt.

GDP ranged a maximum of 11% and a minimum of 2% while mean and standard deviation showed 9%, and 3% respectively. The country's economy during the period on the average grew by 9% and the minimum growth was 2%, while the standard deviation showed 3% less than the mean; this implies that there is less variation in GDP.

Inflation ranged between a maximum and a minimum value of 34% and 7% respectively while mean and standard deviation were a value of 14%, and 8% respectively. On average annual inflation was 14% while the standard deviation was 0.08, it implied that the inflation varies from the mean by 8%, it indicates there is less variation in inflation since its std is lower than the mean. Retention ratio was a maximum and a minimum of 93% and 36% respectively while mean, standard deviation were 77%, and 10%, this means on the average the sampled companies retained 77% of the gross written, and the retention capacity of private insurers varies from the mean by 10%. Assets turnover, measured by gross written premium divided by total amount of assets, showed mean of 55% while the minimum and maximum values were 23% and 106% respectively. The standard deviation was 0.18; this implies that the private insurers' asset turnover varies by 18%. Investment ratio measured by investment income divided by net earned premium showed a range of a minimum and a maximum value of 56% and 2% while mean, and standard deviation of 19%, 10% respectively. Investment income of insurers on the average exhibited 19% of the NEP while Investment Income was 0.1 standard deviation; it implies that Investment Income of private insurers varies by 10%.

4.2.2. Correlation Analysis

This section presents the relationship between the identified explanatory variables and their relationship with companies' financial performance as expressed by ROA. Gujarati (2004) the correlation coefficients show the magnitude and direction of the relationships, whether it is strong, weak, positive or negative. The higher the values the stronger the relationship, and the smaller the coefficient is an indicator of a weak relationship. The sign also shows the direction of the relationship. The positive sign shows a positive relationship and the negative shows the opposite. However, the correlation coefficient does not highly support whether there is a causal effect between variables that are not theoretically related and have no causal effect that may reveal significant association. The Pearson correlation coefficient, R , can take a range of values from +1 to -1. +1, (i.e. perfect positive relationship) to -1 (i.e. perfect negative relationship). A value of 0 shows that there is no relationship among the two variables. A value greater than 0 shows a positive relationship, that is, as the value of one variable increases so does the value of the other variable. A value less than 0 shows a negative relationship, that is, as the value of one variable increases the value of the other variable decreases.

Table 4.2: Correlations matrix of ROA and Predictor variables

Variable	ROA	PG	COM	LV	GDP	INF	RE	AT	IR
ROA	1								
PG	-0.0306	1							
COM	-0.7104	-0.0779	1						
LV	-0.3872	0.2764	0.1364	1					
GDP	0.2026	0.1551	-0.1498	0.1962	1				
INF	-0.0178	0.5858	-0.1361	0.2275	-0.3031	1			
RE	-0.2003	-0.165	0.3816	0.0238	-0.0932	-0.1297	1		
AT	-0.0187	0.5231	-0.123	0.6438	0.4366	0.2555	0.0141	1	
IR	0.1473	-0.4018	0.044	-0.6492	-0.2948	-0.2021	-0.2974	-0.7958	1

Source: Stata output

Note: ROA=Return on Assets, PG=Premium Growth, RE=Retention Ratio, AT=Assets Turnover, IR=Investment Return, COM=Combined Ratio.

From the table 4.2. **ROA** was negatively correlated to Premium Growth, Combined ratio, Leverage, Inflation, Retention ratio and Assets turnover with value ranges 0.0178 for inflation and 0.7104 of combined ratio. It means that ROA of the sampled companies moved in the opposite directions with the above variables. On the other hand, ROA of the sampled companies moved in the same direction with GDP and Investment Return, they were positively correlated with ROA for values of 0.2026 and 0.1473 respectively. As shown in the table above, the correlation values were ranged in the acceptable degree of relationship; there was no sign of autocorrelation.

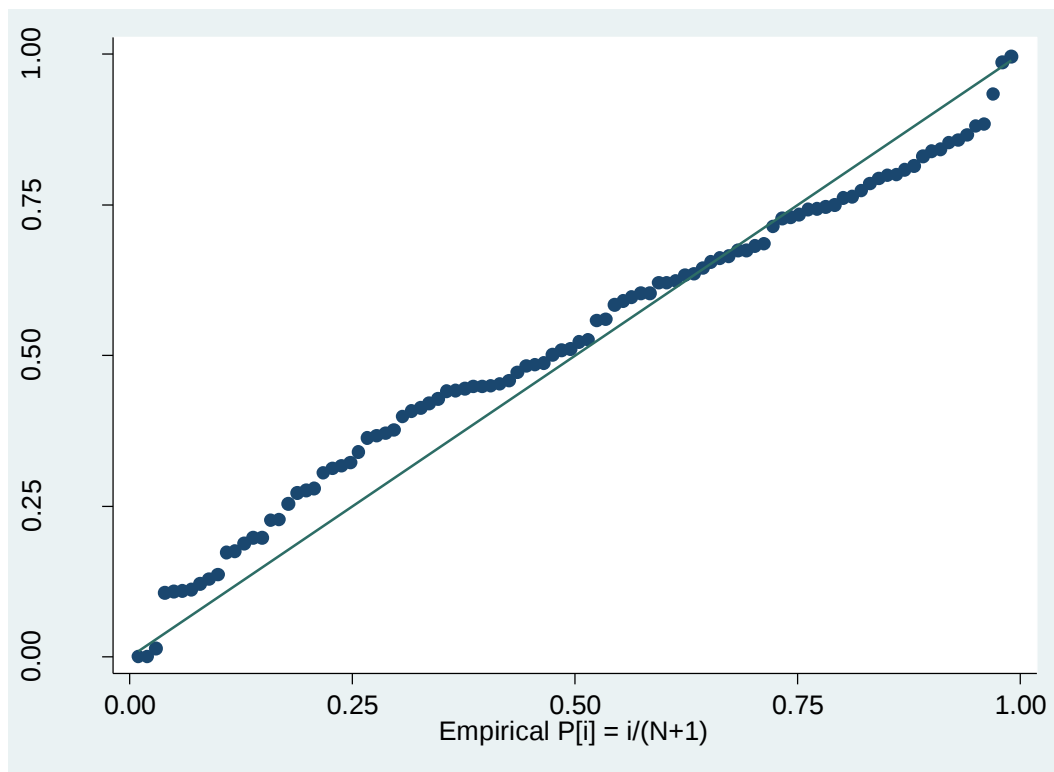
4.3. Diagnostic Tests

The regression outputs pass through the Classical Linear Regression Model assumptions to check the estimate is a good representation of the population under consideration and the estimates are best estimate of linear unbiased; the assumptions includes Linearity, Normality, Autocorrelation, multicollinerity, the errors have zero mean, error terms are constant variance (heteroskedasticity) and test of models selection and specifications. The study has employed graphs presentation generated from the stat output for checking the assumptions and other diagnostic techniques.

4.3.1 Linearity

The assumption states that the variables within the model are either a continuing or a parameter multiplied by the predicted variable. Drawing scatter plot of residuals and y values. Y values are taken on the vertical y axis, and standardized residuals (SPSS calls them ZRESID) are then plotted on the horizontal x axis. If the scatter plot follows a linear pattern (i.e. not a curvilinear pattern) that shows that linearity assumption is met. Figure 4.1 shows that the residuals are linearly spread across the observations and linearity assumption has been fulfilled.

Figure 4.1 Normal Probability Plot



Source: Stata output

4.3.2 Normality

This assumption is optional since OLS does not require that the error term follows a normal distribution to produce unbiased estimates with the minimum variance. However, to satisfy the assumption, perform hypothesis testing and generate reliable confidence intervals and prediction.

The easiest way to determine whether the residuals follow a normal distribution is to draw histogram of the residuals, and then examine the normality of the residuals. If the residuals are not skewed to the right and left but closes to the mean of residual, 0, the assumption of normality is satisfied. **Figure 4.2** Indicates the normality assumption is met. On the other hand normality assumption is tested through Jarque-Bera test, according to the result the p-value is greater than 5%, normality assumption is true. Hence, the null hypothesis is accepted, the error term is normally distributed.

H0: The Error term is normally distributed

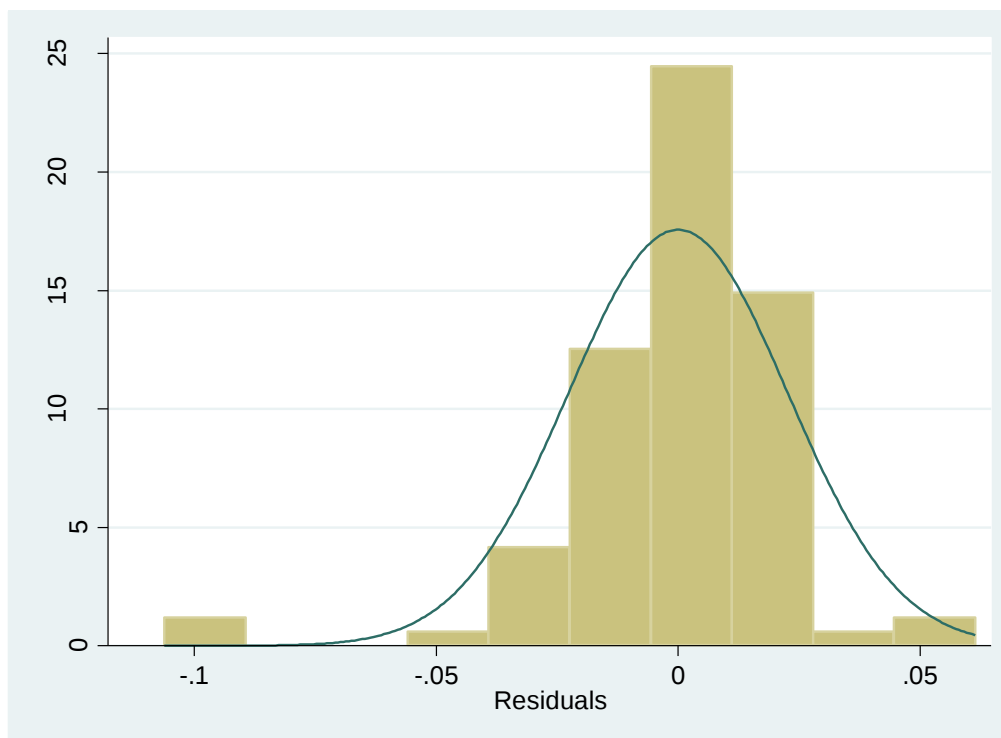
H1: The Error term is not normally distributed

Jarque-Bera normality test: $\chi^2 = 4.831$

Prob> χ^2 0.0893

Jarque-Bera test for H0: normality:

Figure 4.2 Histogram



Source: Stata output

4.3.3 Mean zero for error term

The regression equation contains a constant term the assumption of mean zero of error term never be violated as stated in (Brooks 2008). The study included a constant term, intercept, so that the assumption was not violated. The regression result from stat shows that the mean of residual is equal to zero.

4.3.4 Constant Variance of Error Term

The variance of errors term cannot change due to changes in the independent variables according to CLRM assumption. The variance must be constants across all observations so that the errors term are homoscedastic and the assumption of homoscedastic is fulfilled otherwise the result of the regression faces a problem of heteroskedasticity, standard errors was biased. There are many ways to diagnostic the problem of heteroskedasticity in dataset. The problem of heteroskedasticity in the data set to be checked in different ways; however, most classic tests are the Breusch-Pagan / Cook-Weisberg and white. Breusch-Pagan / Cook-Weisberg test output shows that the null hypothesis has a constant variance and variables are fitted with the dependent variable.

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

H0: the error variance is the homoscedasticity

H1: the error variance is heteroscedasticity

Ho: Constant variance

Variables: fitted values of ROA

chi2(1) = 35.27

Prob > chi2 = 0.0000

White's test for H0: homoscedasticity

Ha: unrestricted heteroscedasticity

H0: the error variance is the homoscedasticity

H1: the error variance is heteroscedasticity

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	64.86	44	0.022
Skewness	21.69	8	0.0055
Kurtosis	2.5	1	0.1138
Total	89.05	53	0.0014

Source: Stata output

Results of Breusch-Pagan test and White's test for heteroscedasticity showed that heteroscedasticity was present in the data set. Therefore, heteroscedasticity causes standard errors to be biased hence robust standard errors were used in research.

4.3.5 Multicollinearity

The assumption states that variables included in the model, independent variables, would not correlated one another. There may be a correlation between variables but an absolute value of Pearson correlation coefficient higher than 0.70 indicates a strong correlation between independent variables. Having multicollinearity in a model causes unrealistically high standard error estimates of regression coefficients and in the end can cause false conclusion about the significance of independent variable in the model being evaluated and also it causes R² to inflate but reduce adjusted R². A problem of multicollinearity can be tested by using Pearson correlation and VIF, Variance Inflation Factor. According to the Table 4.2, the highest correlation coefficient was 0.6438 between leverage and assets turnover so it is within the acceptable range of correlation coefficient. Similarly, the variance inflation factor attached herewith shows VIF 2.56. The variance inflation factor as a group and individual level was below 10; in most researches VIF above 10 indicates a possible of multicollinearity. Therefore, this indicates that there was no multicollinearity in both tests.

Table 4.4 VIF

Variable	VIF	1/VIF
IR	4.27	0.234272
AT	4.20	0.238372
LV	2.37	0.422784
PG	2.30	0.433874
INF	2.25	0.445126
RE	1.79	0.557801
GDP	1.78	0.562085
Combined	1.49	0.669354
Mean VIF	2.56	

Source: Stata output

4.3.6 Autocorrelation

Autocorrelation refers to the degree of correlation between the values of the same variables across different observations in the data. The concept of autocorrelation is most often discussed in the context of time series data in which observations occur at different points in time

The classical model assumes that the disturbance term relating to any observation is not influenced by the disturbance term relating to any other observation. However, autocorrelation can also occur in cross-sectional data when the observations are related in some other way. Autocorrelation can cause problems in conventional analyses (such as ordinary least squares regression) that assume independence of observations. In a regression analysis, autocorrelation of the regression residuals can also occur if the model is incorrectly specified. For example, if you are attempting to model a simple linear relationship but the observed relationship is non-linear (i.e., it follows a curved or U-shaped function), and then the residuals will be autocorrelated.

The autocorrelation can be checked by regressing residual at t , dependent variable against lagging residual $t-1$. Based on the result obtained from stata the lagging variable has a coefficient of 0.1490247, P value of 0.193 at 5 % significant level, R^2 and adjusted R^2 of 2% 0.8% respectively. Therefore, the results indicate that there was no serial autocorrelation so that the Null hypothesis of no serial autocorrelation was not rejected.

Table 4.5 Autocorrelation

Source	SS	Df	MS	Number of observation		90
				=		
				F(1, 88)	=	1.72
Model	0.00087808	1	0.00087808	Prob > F	=	0.1931
Residual	0.044920269	88	0.000510458	R-squared	=	0.0192
				Adj R-squared	=	0.008
Total	0.045798349	89	0.000514588	Root MSE	=	0.02259
Residual t	Coef.	Std. Err.	t	P>t	[95% Conf.Interval]	
Residual t-1						
L1.	0.1490247	0.1136243	1.31	0.193	-0.0767796	0.3748291
Constant	0.0009002	0.0023816	0.38	0.706	-0.0038326	0.0056331

Source: Stata output

Generally, the above tests of basic classical linear regression model assumptions for OLS estimation showed that the results obtained from the regression model were tested of the OLS assumptions and are free of biasness. Therefore, the estimates were unbiased and competent, and it is a good representative of the population parameter.

4.4. Test of Model specification

Final diagnostic test is model specification test According to Brooks (2008), a specification error occurs when an appropriate independent variable, including an unnecessary variable, is omitted or the wrong function form is selected so that the regression model is wrongly predicted which ensures that the right model is available Variables are included in the template and/or excluded to do this, the investigator used Ramsey's RESET test. The null hypothesis for this test is that the model does not contain any omitted variables and this is then accepted according to the result of statistics F as indicated below, the test showed that test F was 0.0529 Therefore, it is not important to reject the null hypothesis .This indicates that the model does not contain any omitted variable.

Ramsey RESET test using powers of the fitted values of ROA

Ho: model has no omitted variables

$$F(3, 87) = 2.66$$

$$\text{Prob} > F = 0.0529$$

4.5. Model Selection

This study uses a panel data of ten companies that provided ten years data, 2011-2020. In a panel dataset, the research has to define and identify a model that to be used in the study, fixed or random effect model or pooled panel. The Hausman (1978) model selection test can be used to determine the appropriate model for the study i.e. fixed or random effects model. However, econometricians seem to be united generally that the random effects model is more appropriate to be used if individual are drawn randomly from a large population. But the FEM is more appropriate in the case of focusing on specific sets of the companies. The null hypothesis is that the residuals in the random effects REM are uncorrelated with the regressions and that the model is correctly specified. The study tested the data using the Hausman model selection test; based on the results obtained from the Hausman test, whether the unobservable heterogeneity term is correlated with explanatory variables while continuing to assume that regressors are uncorrelated with the disturbance term in each period. The null hypothesis for this test is that unobservable heterogeneity term is not

correlated or random effect model is appropriate for model.

The Hausmen test hypothesis is

H0= Random effect model is appropriate

H1= Fixed effect model is appropriate

Table 4.6 Hausman Test

Coefficients				
Variables	(b)	(B)	(b-B)	$\sqrt{\text{diag}(V_b - V_B)}$
	Fixed	Random	Difference	S.E.
PG	-0.0061213	-0.0095845	0.0034632	0.0071571
Comb	-0.2487034	-0.2445291	-0.0041743	0.0117642
IV	-0.2216457	-0.1893764	-0.0322693	0.0293464
GDP	0.3115682	0.2736409	0.0379272	0.6701760
Inf	0.0440398	0.0349028	0.0091371	0.0160804
RE	0.0616839	0.0558118	0.0058721	0.0140853
AT	0.0554891	0.0557405	-0.0002514	0.0125583
IR	0.1003392	0.0888849	0.0114543	0.0312993

Source: Stata output

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

Chi2 (8) = (b-B)'[(V_b-V_B)^(-1)](b-B)= 1.43

Prob>chi2 = 0.9938

The Hausman model selection recommended if the P-value of a model is greater than 5%, it is appropriate to use a random effect model or else the fixed model is appropriate. According to the Hausman test, results depicted here above, the P-value is 0.9938, which was more than 5% of the significance level; the null hypothesis of the random effect is not rejected at 5 percent of the significant level.

Random-effects GLS regression
Group variable: company
R-sq:
 Within = 0.5809
 Between = 0.8156
 Overall = 0.6397

$$\text{Corr}(u_i, X) = 0 \text{ (assumed)}$$

ROA	Coefficient	Robust Std.Err.	z	p> z	[95% Conf. Interval]	
Premium Growth	-0.0095845	0.0148189	-0.65	0.518	-0.038629	0.01946
Combined	-0.2445291	0.0813975	-3.00	0.003	-0.4040653	-0.084993
Leverage	-0.1893764	0.0890695	-2.13	0.033	-0.3639495	-0.0148033
GDP	0.2736409	0.136273	2.01	0.045	0.0065508	0.5407311
Inflation	0.0349028	0.0322852	1.08	0.280	-0.0283751	0.0981806
Retention	0.0558118	0.0461473	1.21	0.226	-0.0346353	0.1462589
Assets Turnover	0.0557405	0.0251933	2.21	0.027	0.0063626	0.1051185
Investment Return	0.0888849	0.0718592	1.24	0.216	-0.0519565	0.2297264
Constant	0.3247925	0.0526498	6.17	0.000	0.2216009	0.4279841
sigma_u	0.01110588					
sigma_e	0.02305995					
rho	0.18827707	(fraction of variance due to u_i)				

Model for the study is presented hereunder;

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4.6. Regression Analysis

As per the regression result shown above R^2 of the ANOVA, which measures the goodness of fit was 64%; it shows that 64% of the variations in ROA of general business of private insurers' were explained by the variables included in the model and the remaining variables not included in the model accounts 36%, represented by error terms. In most social science literatures it is good and acceptable to have a value of R^2 above 50%. The P-Value of the model was about 0.0000, which was below 5% significance level, the P-value of critical value below 5% is considered to be significant for a model. Thus, the variables were jointly significant for the model.

Premium Growth

The random effect GLS regression model estimation result of the study revealed that premium growth has an insignificant and negative relationship with ROA of general business of private insurers in Ethiopia. Premium Growth has a regression coefficient of 0.01, std 1.5%, z-statistics of 0.65 and p-value of 0.518. The interpretation for a coefficient of premium growth 0.01 is that a one unit change in a premium growth of general business of private insurers other things remain constant, ROA of general business of private insurers decreased by 1 unit but statistically insignificant at 5% hence premium growth of private insurers would not affect the profitability of private insurers. Thus the result of the regression output is inconsistent with the hypothesis of the study. However, the study result was consistent with study made by Mwangi (2015), Daneiel & Tilahun (2013) and Sisay (2019).

Combined Ratio

The regression result shows that the combined ratio has a significant and negative relationship with ROA. Coefficient, std, z-statistic and p value were 0.245, 0.08, 3 and 0.000 respectively. Combined Ratio was significant at 95% confidence level. Therefore, unit changes in combined ratio other things remain constant decreasing the ROA of general business of private insurers by 24.6% with 95% confidence interval and 8% of standard deviation. This implies that the combined ratio of private insurers affects the ROA of general insurance of private insurers. The result was consistent with the hypothesis and few studies used a combined ratio. Instead loss and expense ratios were used separately and almost all studies found that loss ratio had a negative and a significant relationship with the performance of a company measured by ROA. These were Malik (2011), Daneiel & Tilahun (2013), Mistire (2015), Öner Kaya (2015), Mwangi (2015),

Hammed (2015). And no research particularly in Ethiopia used combined ratio as an independent variable that affects profitability of insurance companies in Ethiopia.

Leverage

With a regression coefficient of 0.18, z-statistics of -2.13 and p-value of 0.003 and std of 9%. The regression results of the study show that there is a statistically significant negative relationship between leverage ratio and general business of private insurers' profitability in Ethiopia at 5% significance level. As leverage of an insurer changes in one unit changes in leverage other things remain constant decreases ROA by 18 unities. It implies that the higher the leverage the lower the ROA of general insurance of private insurers. The result was consistent with the hypothesis of the study. Furthermore, the result also consistent with studies did by Malik (2011), Öner Kaya (2015), Hamdan (2008) Hammed (2015), Demise (2016) Mistire (2015), Hanna (2015), Frezer Legesse (2018).

Growth Domestic Production (GDP)

GDP has a positive and significant relationship with ROA of general business of private insurers at 5% significance level. GDP's coefficient, std, z-statistic and p-value were 0.27, 0.13, 2.01, 0.045 respectively. This means that a 1% change in GDP other things remain constant; it will increase ROA of general business of private insurers by 0.27 at standard deviation of 13% and significant at 95% confidence interval. The positive relationship implies the insurance companies profit is growing in accordance with growth of the economy and society getting knowledgeable in covering risks through insurance companies. The result supported the hypothesis that GDP has a significant effect on ROA and the findings were consistent with studies made by Demis (2016) Asrat & Tesfahun (2016) Mistier (2015) Hadush (2015).

Inflation

Inflation has a positive and insignificant relationship with ROA of general business of private insurers. The regression coefficient, z-statistics and significance value of inflation were 0.03, 1.08 and 0.28 respectively. It is insignificant for the model. As it is known inflation has effects on reducing performance by increasing the price of labor and increase in the price. The positive relation result of inflation and return on assets implies that insurance companies adjust their price in conjunction with inflation but the adjustment was not commensurate to cover the inflation. The result was inconsistent with the study hypothesis but the results of previous studies, Suheyli Reshid (2015) Asrat & Tesfahun (2016) Hadush (2015), were consistence with the study finding.

Retention Ratio

Retention has exhibited a positive and a statistically insignificant relationship with ROA of general business of private insurers at 5% significance level. The coefficient, z-statistic, p-value were 0.06, 1.21, 0.226 respectively. This is to mean that a 1unit change in the retention of general business of private insurers other things remains constant will change ROA by 0.06 however it is insignificant for ROA. The result of the study was inconsistent with the hypothesis of the study. The previous studies made by Öner Kaya (2015), Mwangi (2015). Oner Kaya showed that retention had a negative and significant relationship with profitability of insurance companies whereas Mwangi (2015) found that retention had no significant relationship with ROA. These two studies were from outside Ethiopia and no single study had used retention as a variable. Therefore, the findings of the studies were inconsistent.

Assets Turnover

Assets Turnover has exhibited a positive and a statistically significant relationship with ROA of general business of private insurers at 5% significance level. The coefficient, z-statistic, p-value were 0.06, 2.21, 0.027 respectively. This is to mean that a 1% change in the assets turnover of general business of private insurers will change ROA by 5% at a confidence interval of 95% and std of 2.52%. The result of the study was consistent with the study hypothesis; however, I couldn't find any single study in Ethiopia by this variable. However, the study made by Enekwe Chinedu Innocent, Okwo Ifeoma Mary& Ordu Monday Matthew (2013) had found that no significant relationship on the profitability of the company.

Investment Return

The regression result shows that investment return has a positive and a statistically insignificant relationship with ROA of general business of private insurers at 5% significance level. The coefficient, z-statistic, p-value were 0.08, 1.24, 0.216 respectively. This is to mean that a 1% change in the investment return of general business of private insurers will change ROA by 8% but it is not significant. Investment Return of an insurer changes by 1%, there will be an 8% change in the ROA of a general business of a private insurer. The result of the study was inconsistent with the hypothesis of the study and finding of the study made Mwangi (2015).

Therefore, the above results showed that Combined, Leverage of general business of private insurers have a negative and significant relationship with ROA of private insurers in Ethiopia at a significant level of 5%. However, Premium growth has a negative and insignificant relationship

with ROA of general business of private insurers. On the other hand, Inflation, Retention ratio, Investment Return have positive and insignificant relationship with ROA of general business of private insurers at a significant level of 5% while GDP & Assets Turnover have positive and significant relationship with ROA of general business of private insurers.

Table 4.8 Summary of Expected vs Output

Variables	Expected	Actual	Hypothesis
Asset turnover	Positive and significant	Positive and significant	Accepted @ P<5%
Leverage	Negative and significant	Negative and significant	Accepted @ P<5%
Retention Ratio	Positive and significant	Positive and insignificant	Rejected @P>5%
Combined Ratio	Negative and significant	Negative and significant	Accepted @ P<5%
Premium Growth	Positive and significant	Negative and insignificant	Rejected @P>5%
Investment return	Positive and significant	Positive and insignificant	Rejected @P>5%
GDP	Positive and significant	Positive and significant	Accepted @ P<5%
Inflation	Negative and insignificant	Positive and insignificant	Rejected @P>5%

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter presents the summary of findings, conclusions of the study, recommendations for practice and policy, and suggestions for further research.

5.2. Summary of Findings

This study sought to establish the determinants of profitability of general insurance business of private insurers in Ethiopia. The explanatory variables tested were Premium Growth, Leverage, Assets Turnover, Investment Return, Retention Ratio, Combined Ratio, GDP and Inflation. Secondary data was collected on these variables from ten insurers' annual reports from 2011-2020. The data was then organized in an Excel spreadsheet and imported into the Statistical Package for analysis. The descriptive analysis shows there were 100 observations & the mean of return on assets for insurance firms was 0.08. The mean Premium Growth was 0.18, mean retention ratio was 0.76, mean leverage was 0.66, mean combined ratio was 0.95 and mean Investment return was 0.19. The mean assets turnover, GDP and Inflation were 0.55, 0.09, and 0.144 respectively.

The correlation matrix showed that all the correlations were less than 0.70 and therefore none of the independent variables were serially correlated. The regression analysis shows that the model explained for 64% of the variation in return on assets. The model was therefore fit to explain the determinants of profitability of general business of private insurers in Ethiopia. Jointly the variables were significant for the model at a significant level of 1%. Individually, combined ratio and leverage, assets turnover and GDP were significant at 5% confidence level. Moreover, Combined Ratio and Leverage have a negative relationship with return of assets at a significant level of 5%. The other variables retention and investment return have positive relationship with ROA but insignificant at 5% while assets turnover has a positive and significant relationship with ROA at 5% significance level. Premium Growth had a negative but insignificant relationship with ROA. Both the macro economic factors represented by GDP and Inflation have positive and significant for GDP relationship with ROA while inflation is insignificant relationship with ROA respectively. Therefore, combined, leverage, GDP and assets turnover were the variables that significantly affect the profitability of general insurers negatively and positively respectively.

5.3. Conclusion

The study concludes that ROA of general insurance business of private insurers in Ethiopia is positively related with Retention Ratio, Investment Return, Assets turnover, GDP, and Inflation. However, Premium Growth, Combined ratio and Leverage have a negative relationship with ROA. Out of the eight variables used in the model, Combined, Leverage was negative and significant at 5% whereas Premium Growth is found to be negative but insignificant for the model. On the other hand, the other variables were positive and significant at 5% and 95% confidence level.

The findings indicate that combined ratio and Leverage significantly affects negatively the profitability of general insurance business of private insurers in Ethiopia. On the other hand, assets turnover, GDP affects the profitability of general business of private insurers in Ethiopia positively. The remaining variables were insignificant effect on the ROA of private insurers in Ethiopia during the 2011-2020.

5.4. Recommendations

The objective of the study was to investigate and analysis the determinants of general insurance profitability evidence from private insurers in Ethiopia. The study found that from the firm specific determinants Combined Ratio and Leverage have negative and significant effects on ROA. The study thus recommends that Companies would formulate pricing strategies that charge a premium commensurate to the risk. It appears that this is the potential choice insurers can make to increase the premium they can collect from a certain policy. On the other hand insurers would devise a system that controls the claims leakage rises from internal control problems. As a policy recommendation; the study strongly recommends that insurance companies under the umbrella of insurers association, and all relevant stakeholders would discuss, strategize and intensify the ongoing advocacy for setting floor premium prices in the insurance industry. It is usually reported that the project during the study time was underway but the progress is so far slow. Thus, the study recommends that pushing for necessary regulatory measures that would introduce floor premium price practice to the Ethiopian insurance market would be the possible way to get over the issue in the long run. To address the increasing administrative cost, the study recommends that this is a high time for Insurance companies to invest and regularly upgrade their insurance management information systems; to deploy relevant Enterprise Resources Planning (ERP) and other emerging Insurtech to add value to their customers and to significantly cut their operation costs. It is obvious,

but unfortunate; that Ethiopia's insurance industry, during this heightened information technologies advancement, is characterized by its backward and labor-intensive business processing that would give the way for the more effective and efficient insurance business transaction processing systems. The study again emphasizes that insurance companies would build the capacity to acquire, test and implement effective systems to catch up with the time.

Leverage is negatively and significantly related with the performance of private insurers. This predicts that the performances of highly levered private insurers are going to be less profitable and implies equity financing is better than debt financing in private insurers. The leverage ratio level of the insurance companies affects their profitability negatively, which supports the hypothesis formulated for the study. Thus, from the result it is implied that highly profitable insurers are more likely rely on internally generated funds and equity capital than debt capital as the source of financing. Policy recommendation in this regard is the regulatory body revisit the directive of reserve computation particularly UPR, technical reserves, and claims under litigation.

The study revealed that assets turnover had a positive and significant relationship with ROA. This tells that firms having a large asset would produce more premiums that used to generate income. Improving the assets of an insurer would increase the amount of premium generated as result profitability will be improved. Therefore, private insurers would inject more capital in their business to boost sales that would improve the firms' profitability.

The study revealed that GDP had a positive and significant relationship with ROA. When the country's economy is growing it is obvious that new risks emerge that must be insured by insurance company's. It gives the opportunity to craft new products that would improve the profitability of the insurers. Insurance penetration must be improved where it is now, 0.02%. Improving insurance penetration increases the performance of the insurers. To this effect, it is strongly recommended that insurers have to devise a strategy to benefit from the booming Ethiopian economy by innovatively creating demands to gain a fair share from the increasing disposable income. Towards this end, insurers would intensely work on strengthening their research and product development wing to attract more customers.

5.5. Suggestions for Further Research

The study focused on six firm specific and two macroeconomic factors that determine general insurance of private insurers in Ethiopia and used panel data of 2011-2020. And the researcher used limited macroeconomic factors and few non-financial variables that could affect the profitability of private insurers and there are many other factors that could affect the profitability of private insurers but has left out because of inaccessibility of data from the sample companies, these include motor portfolio mix and reinsurance arrangements and its applications. On the other hand life insurers were not included in the study. Thus, future research would be carried out on Life insurers and the results obtained only reflect the characteristics of the period under consideration. Therefore, my suggestion for a future research might be the extension of the period covered and those issues which are not addressed in the study by the analysis but provided that the data is available and ready for external study. Regarding life insurers; life insurers differ greatly in terms of operations, investment activities, vulnerabilities, and duration of liabilities from general insurers and also the researcher believes that adding more macro and non-financial variables will make the study more comprehensive.

REFERENCES

- Abate. (2013). The Performance of Insurance Companies in Ethiopia. *International Journal of Marketing, Financial Services & Management Resrach.*
- Abate G. (2012). Factors Affecting Profitability of Insurance Companies in Ethiopia: Panel Evidence, Master of Science in Accounting and Finance, Addis Ababa, Ethiopia.
- Abate. (2013). The performance of insurance copmanies in Ethiopia . *Internatioanal Journal of Marketing, Financial Sevices & Management Resrach.*
- Adams, M., P. Hardwick, & H. Zou. (2008). Reinsurance and corporate taxation in the United Kingdom life insurance industry. *Journal of Banking and Finance*, 32(1), 101-115.
- Adams, M. & Buckle, M. (2000), *the determinants of operational performance in theBermuda insurance market, Working Paper, European BusinessManagement School, University of Wales*
- Agibenebo, T. E. (2020). Impact of Financial Intermediation on the profitability of Insurance Companies in Nigeria. *First Bank of Nigeria Quarterly Review*, 2(1), 4-14.
- Ahmed, H. (2010). Determinants of Insurance Companies' Profitability in UAE.
- Ana, M. &. (2014). determinants of Financial Performance in the Romanian Insurance Market. *International Journal of Academic Research in Accounting Finance and Management Sciences Vol. 4.*
- Angga Firmansyah and others published The Effect of Claim Ratio, ... Angga Firmansyah Putra Hasibuan, Isfenti Sadalia, Iskandar Muda.
- Ansah-Adu (2012) credit information sharing through private credit bureaus and public credit registries and their effect on bank credit risk in low and high income countries in Africa.
- Ansah-Adu, K., Andoh, C., & Abor, J. (2012). Evaluating the Cost Efficiency of Insurance Companies in Ghana. *Journal of Risk Finance*, 13(1), 61-76.
- BATRÎNCA, A.-M. B. G. (2014). The Determinants of Financial Performance in the Romanian Insurance Market, 4(1), 299–308. <https://doi.org/10.6007/IJARAFMS/v4-i1/637>
- Brooks, C. (2008) *Introductory Econometrics for Finance*. 2ndedn, Cambridge University Press, New York.
- Browne MJ, Carson JM, Hoyt RE (2001). Dynamic financial models of life insurers. *N.A.A.J.* 5: 11-26.

- Charumathi. (2012). The determinants of profitability of Indian Life Insurers . *Proceedings of the World Congress on Engineering* .
- Chen, W. (2004). The Determinants of Financial Health of Asian Insurance Companies . *The Journal of Risk and Insurance*, 469-499.
- Cooper, D. R. & Schindler, P. S. (2001). Business Research Methods, 7th Edition. New York: McGraw-Hill.
- Creswell J. W 2009, Research design: Qualitative and quantitative approaches, 3rd edition, Sage Publications, London UK.
- Daniel, T. (2013). Firm Specific Factors that determines insurance companies' performance in Ethiopia. *European Scintific Journal Vol 9*.
- Ezeamama, M. C. (2010). Fundamentals of Financial management: A practical guide. Enugu: Ema Press Ltd.
- Gatzlaff, Kevin M. and McCullough, Kathleen A., The Effect of Data Breaches on Shareholder Wealth
- Gemachis Debala (2017) Profitability determinants in the insurance sector in Ethiopia(MSC thesis, Addis Ababa University).
- Gujarati, D. N. 2004. Basic econometrics, 4th edn, the McGraw Hill, New York.
- Hailegebreal, D. (2016). Macroeconomic and Firm Specific Determinants of Profitability of Insurance Industry in Ethiopia . *Global Journal of Management and Business Research: C Finance*.
- Hanna. (2015). Determinants of profitability on insurance sector in Ethiopia. Ethiopia, MSC Addis Ababa University.
- Kabajeh and et al (2012). The Relationship between the ROA, ROE and ROI Ratios with Jordanian Insurance Public Companies Market Share Prices
- Hadush, 2015, Determinants of insurance companies' profitability in Ethiopia(MSC thesis, Addis Ababa University).
- Kaya, E. Ö. (2015). The Effects of Firm-Specific Factors on the Profitability of. *International Journal of*, 510-529.
- Kazeem, H. S. (2015). Firm specific characteristics and financial performance of. firm specific characteristics and financial performance of.

- Khan, S. B. (2013). Determinants of profitability panel data evidence from insurance sector of pakistan . *Elixir Fin. Mgmt.Elixir International Journal*.
- Lee, C.-Y. (2014). The Effects of firm specific factors and macroeconomics on profitability of property-liability insurance industry in Taiwan. *Asian Economic and Finacial Review*.
- Loof, H. &. (2008). Investment and Performnce of Firms. Correlation and Causality? Corporate Ownership Control. *Investment and Performnce of Firms. Correlation and Causality? Corporate Ownership Control*.
- Malik, H. (2011). Determinants of Insurance Companies' profitability: An analysis of insurance sector of pakistan. *Academic Reserch International*,1,(3),2223-9553.
- Mayer D, Smith CW (1988). Ownership Structure Across lines of Property-Casualty Insurance. *J. Law Econ.*, 26: 1-23.
- Mistir, S. (2015). The Determinants of profitability on insurance sector:Evidence from insurance companies in Ethiopia. MSC Addis Ababa University, Ethiopia.
- Moyer, James, & William (2006). Contemporary Financial Management the tenth edition.
- Mwangi, M. &. (2015). The Determinats of Financial Performance in General Insurance Companies in Kenya. *European Scintific Jornal*, 196-199.
- Mwangi, C. M. (2013). An Investigation Into Factors That Determine Financial Performance Of Insurance Companies In Kenya. University of Nairobi Unpublished MBA Project.
- Myers and Majluf, 1978Volume 13, Issue 2, June 1984, Pages 187-221. *Journal of Financial ... Journal of Financial Economics* (1984). this issue
- National Bank of Ethiopia, A. R. (2019). Retrieved from <https://nbebank.com/wp-content/uploads/pdf/annualbulletin/report-2018-2019.pdf>
- Nweze, A. U. (2011). Profit Planning: A Quantitative Approach(3rd ed.). Enugu: M'Cal communications International.
- Official website of National Bank of Ethiopia.
- ÖNER KAYA, E. (2015). The Effects of Firm-Specific Factors on the Profitability of Non-Life Insurance Companies in Turkey, *International Journal of Financial Studies*, Vol. 3, p. 510 529, <http://www.mdpi.com/2227-7072/3/4/510/htm> [March 3st 2017]
- Ostroff, C., & Schmitt, N. (1993). Configuration of Organizational Effectiveness and Efficiency. *Academy of Management Journal*, 36(6), 1345-61.

- Outreville, F. (1990). The Economic Significance of Insurance Markets in Developing Countries. *Risk Insurance*.
- Priehett, S. Travis (1996), Risk Management and Insurance, 7 th edition, west publishing Co.
- Patrick, H.T (1966)
- Pervan, M. P. (2010). Determinants of Insurance Companies' Profitability in Croatia. *The Business Review Cambridge*, 231-38.
- Rejda, George E.] on Amazon.com. *FREE* shipping on qualifying offers. Principles of Risk Management and Insurance w/ 2001 Tax Summary (7th Edition)
- Reshid, S. (2015). The Determinant of insurance companies' profitability in Ethiopia.
- Sameer. (2012). Factors Affecting the Financial Performance of Jordanian Insurance Companies Listed at Amman Stock Exchange. Jordan.
- Shibu, Y. (2004). Determinants of United Kingdom General Insurance Company Performance. *British Journal*, 10(5),1079-1110.
- Simon. (2016). Internal factors affecting financial performance of insurance industry in Ethiopia.
- Sisay. (2019). Determinants of profitability on insurance sector in Ethiopia. Ethiopia, MSC Addis Ababa University.
- Skipper, Jr., Harold D., (1997), Insurance in the General Agreement on Trade in Services, AEI Press Washington USA P 1-84.
- T., S. (2019). Factors affecting profitability of insurance in Ethiopia.
- Tariku. (2019). The Determinants of Insurance Companies Profitability in Ethiopia, MSC, Addis Ababa University, Ethiopia.
- Teshome, A. a. (2016). Investigate the determinant of profitability in Eight Ethiopian Private insurance Companies .
- Upton , National American Woman Suffrage Association Records: General Correspondence, 1839-1961; Sinclair,
- Wooldridge, J. (2010). Econometric Analysis of Cross Section and Panel Data 2nd ed. Cambridge MA: MIT Press
- William H. Greene and Dan Segal (2004), Profitability and Efficiency in the U.S Life Insurance Industry, Journal of Productivity Analysis, Kluwer Academic Publisher, Netherlands.
- Zeleke, H. (2007). *Insurance in Ethiopia: Historical Development, Present Status and Future Challenges*. Addis Ababa: Master Printing Press

APPENDICES

Appendix I: List of Insurers & Reinsurer in Ethiopia

- 1) Ethiopian Insurance Corporation----- Composite
- 2) Nice Insurance Company----- General
- 3) Awash Insurance Company----- Composite
- 4) Africa Insurance Company----- Composite
- 5) Nayal Insurance Company----- Composite
- 6) Nile Insurance Company ----- Composite
- 7) Global Insurance Company ----- General
- 8) Unites Insurance Company ----- Composite
- 9) NIB Insurance Company----- Composite
- 10) Lion Insurance Company ----- General
- 11) Ethio-Life & General Insurance ----- Composite
- 12) Oromia Insurance Company----- Composite
- 13) Abay Insurance Company----- Composite
- 14) Birhan Insurance Company ----- General
- 15) Tsehay Insurance Company----- General
- 16) Lucy Insurance Company ----- General
- 17) Bunna Insurance Company----- General
- 18) Zemen Insurance Company ----- General**
- 19) Ethio Re*----- Composite**

*Reinsurer

Source: NBE

. sum

Variable	Obs	Mean	Std. Dev.	Min	Max
company	100	5.5	2.886751	1	10
year	100	2015.5	2.886751	2011	2020
roa	100	.084737	.0379629	-.035595	.182026
pg	100	.1847699	.2154191	-.411448	.9214
combined	100	.9469567	.1032879	.660052	1.291254
lv	100	.665281	.0802403	.4731	.8224
gdp	100	.08745	.0252787	.0195	.114
inf	100	.14596	.0774814	.074	.341
re	100	.7676147	.1049589	.365274	.931928
at	100	.5482421	.1764551	.226821	1.064177
ir	100	.1894233	.100561	.0166538	.5622047

. estat imtest,white

White's test for Ho: homoskedasticity
against Ha: unrestricted heteroskedasticity

chi2(44) = 64.86
Prob > chi2 = 0.0220

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	64.86	44	0.0220
Skewness	21.69	8	0.0055
Kurtosis	2.50	1	0.1138
Total	89.05	53	0.0014

```
. estat hettest
```

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity

Ho: Constant variance

Variables: fitted values of roa

chi2(1) = 35.27

Prob > chi2 = 0.0000

```
. vif
```

Variable	VIF	1/VIF
ir	4.27	0.234272
at	4.20	0.238372
lv	2.37	0.422784
pg	2.30	0.433874
inf	2.25	0.445126
re	1.79	0.557801
gdp	1.78	0.562085
combined	1.49	0.669354
Mean VIF	2.56	

```
. xtreg roa pg combined lv gdp inf re at ir , robust
```

```
Random-effects GLS regression      Number of obs   =      100
Group variable: company            Number of groups  =      10
```

```
R-sq:                               Obs per group:
    within = 0.5809                      min =      10
    between = 0.8156                     avg  =     10.0
    overall = 0.6397                      max  =      10
```

```
Wald chi2(8)      =     1058.25
corr(u_i, X)      = 0 (assumed)    Prob > chi2       =      0.0000
```

(Std. Err. adjusted for 10 clusters in company)

roa	Robust					
	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
pg	-.0095845	.0148189	-0.65	0.518	-.038629	.01946
combined	-.2445291	.0813975	-3.00	0.003	-.4040653	-.084993
lv	-.1893764	.0890695	-2.13	0.033	-.3639495	-.0148033
gdp	.2736409	.136273	2.01	0.045	.0065508	.5407311
inf	.0349028	.0322852	1.08	0.280	-.0283751	.0981806
re	.0558118	.0461473	1.21	0.226	-.0346353	.1462589
at	.0557405	.0251933	2.21	0.027	.0063626	.1051185
ir	.0888849	.0718592	1.24	0.216	-.0519565	.2297264
_cons	.3247925	.0526498	6.17	0.000	.2216009	.4279841
sigma_u	.01110588					
sigma_e	.02305995					
rho	.18827707	(fraction of variance due to u_i)				

Appendix II: Summarized Data on Insurance Industry 2011-2020

Company	Year	ROA	PG	Combined	LV	GDP	INF	RE	AT	IR
Awash	2011	0.102540	0.473786	0.928877	0.7387	0.1140	0.1810	0.808166	0.616198	0.12070386
Awash	2012	0.079546	0.583785	0.943075	0.7683	0.0870	0.3410	0.729827	0.688827	0.10613287
Awash	2013	0.079097	0.073161	0.840816	0.7349	0.0990	0.1350	0.882858	0.620119	0.11201535
Awash	2014	0.148475	0.024970	0.949930	0.6924	0.1030	0.0810	0.843507	0.612615	0.14761646
Awash	2015	0.102153	0.138435	0.945355	0.6951	0.1040	0.0770	0.825231	0.624158	0.17078642
Awash	2016	0.116114	0.184979	0.938118	0.6702	0.0800	0.0970	0.782595	0.569575	0.15813367
Awash	2017	0.090416	0.136907	0.949161	0.6403	0.1010	0.0740	0.766348	0.541912	0.19238654
Awash	2018	0.099631	0.110045	0.944827	0.5241	0.0770	0.1460	0.748604	0.308365	0.20256251
Awash	2019	0.066298	0.142599	0.987382	0.5107	0.0900	0.1260	0.745717	0.310629	0.24397063
Awash	2020	0.063484	0.122050	1.023479	0.5222	0.0195	0.2016	0.707510	0.301610	0.31241893
Global	2011	0.067379	0.494000	1.124898	0.5741	0.1140	0.1810	0.744142	0.457513	0.23185911
Global	2012	0.036416	0.844358	1.053803	0.6815	0.0870	0.3410	0.788031	0.589256	0.09744679
Global	2013	0.020302	-0.022757	0.810687	0.6475	0.0990	0.1350	0.772119	0.433932	0.25873226
Global	2014	0.153184	0.145249	0.789901	0.5699	0.1030	0.0810	0.779772	0.400588	0.30272004
Global	2015	0.160344	0.179113	0.885660	0.4882	0.1040	0.0770	0.795314	0.390379	0.32504157
Global	2016	0.136417	0.135841	0.926179	0.5030	0.0800	0.0970	0.773209	0.374778	0.3572689
Global	2017	0.117261	-0.024821	1.034424	0.4731	0.1010	0.0740	0.734184	0.335349	0.34921989
Global	2018	0.081329	0.095316	1.017708	0.5135	0.0770	0.1460	0.711019	0.291198	0.43773277
Global	2019	0.083310	0.243228	0.978017	0.5538	0.0900	0.1260	0.763080	0.294692	0.43937208
Global	2020	0.066134	0.076309	0.660052	0.5377	0.0195	0.2016	0.779480	0.280265	0.38217477
Nile	2011	0.097951	0.343257	0.996358	0.6469	0.1140	0.1810	0.846513	0.689527	0.18926201
Nile	2012	0.101956	0.448568	0.949203	0.6414	0.0870	0.3410	0.853019	0.733934	0.14558785
Nile	2013	0.109611	-0.038675	0.947335	0.6504	0.0990	0.1350	0.829046	0.607272	0.15116685
Nile	2014	0.118709	0.169260	0.975901	0.6618	0.1030	0.0810	0.857593	0.619040	0.22422585
Nile	2015	0.085108	0.140709	0.991641	0.6267	0.1040	0.0770	0.874933	0.596749	0.16576767
Nile	2016	0.030749	0.182665	1.066951	0.6666	0.0800	0.0970	0.893497	0.621778	0.12836443
Nile	2017	0.099516	0.055268	0.959480	0.6348	0.1010	0.0740	0.869549	0.529189	0.17574493
Nile	2018	0.062319	-0.017362	1.025473	0.6152	0.0770	0.1460	0.819731	0.412401	0.20981717
Nile	2019	0.071906	-0.063778	0.913536	0.5938	0.0900	0.1260	0.820208	0.298697	0.22213959
Nile	2020	0.070359	0.101182	0.914853	0.5869	0.0195	0.2016	0.800030	0.297162	0.21211265
Nice	2011	0.002904	0.245175	1.058831	0.7869	0.1140	0.1810	0.814704	0.874066	0.06373141
Nice	2012	0.174276	0.679463	0.765882	0.7511	0.0870	0.3410	0.807616	0.878981	0.06577988
Nice	2013	0.123703	0.128815	0.811114	0.7264	0.0990	0.1350	0.792491	0.648301	0.06473842
Nice	2014	0.069469	0.018273	0.962427	0.7362	0.1030	0.0810	0.806175	0.574156	0.11251059
Nice	2015	0.135238	0.108020	0.823119	0.6778	0.1040	0.0770	0.855741	0.576284	0.11585086
Nice	2016	0.067779	0.248833	0.985899	0.7195	0.0800	0.0970	0.931928	0.600092	0.11974298
Nice	2017	0.069862	0.082839	0.994556	0.6986	0.1010	0.0740	0.906286	0.547349	0.1353905
Nice	2018	0.090225	0.130531	0.959837	0.6996	0.0770	0.1460	0.902283	0.499821	0.15990168
Nice	2019	0.087607	0.085764	0.928552	0.6830	0.0900	0.1260	0.909615	0.522433	0.1536302
Nice	2020	0.097155	0.088940	0.927323	0.6705	0.0195	0.2016	0.879100	0.565809	0.16958136
Africa	2011	0.052964	0.386877	0.943489	0.8224	0.1140	0.1810	0.764984	0.568859	0.08579313
Africa	2012	0.053241	0.402965	0.968543	0.8118	0.0870	0.3410	0.741435	0.680506	0.08814137
Africa	2013	0.061893	-0.097994	0.999322	0.7806	0.0990	0.1350	0.792517	0.624503	0.12033941
Africa	2014	0.080398	0.019049	1.031017	0.7698	0.1030	0.0810	0.743092	0.577844	0.21295119
Africa	2015	0.072025	0.035751	1.069144	0.6726	0.1040	0.0770	0.744792	0.537110	0.25415809
Africa	2016	0.063905	0.143903	1.069588	0.6417	0.0800	0.0970	0.798926	0.574591	0.21862981
Africa	2017	0.044945	0.316947	1.086772	0.6830	0.1010	0.0740	0.827868	0.683700	0.17952151

Africa	2018	0.055040	0.120242	1.051982	0.6843	0.0770	0.1460	0.814490	0.565934	0.17444978
Africa	2019	-0.035595	-0.029718	1.291254	0.7879	0.0900	0.1260	0.857539	0.601108	0.19995144
Africa	2020	0.025283	0.031159	1.089125	0.7954	0.0195	0.2016	0.792597	0.451617	0.17757717
NIB	2011	0.083648	0.257622	0.838518	0.7404	0.1140	0.1810	0.385357	0.710093	0.1804482
NIB	2012	0.082796	0.548243	0.825922	0.7845	0.0870	0.3410	0.474244	0.707221	0.18425505
NIB	2013	0.111177	-0.057057	0.742608	0.7329	0.0990	0.1350	0.366109	0.612222	0.23862266
NIB	2014	0.112712	0.063247	0.758420	0.6991	0.1030	0.0810	0.378823	0.517374	0.33349913
NIB	2015	0.075571	0.074302	0.967345	0.6685	0.1040	0.0770	0.804496	0.476881	0.17405684
NIB	2016	0.055997	0.013584	1.037928	0.6454	0.0800	0.0970	0.865110	0.447306	0.18871726
NIB	2017	0.053927	0.058057	1.068679	0.6606	0.1010	0.0740	0.843392	0.424297	0.22391183
NIB	2018	0.034049	0.134013	1.113400	0.7499	0.0770	0.1460	0.796884	0.346972	0.23694525
NIB	2019	0.061904	-0.054315	0.991851	0.7037	0.0900	0.1260	0.818336	0.289062	0.2489996
NIB	2020	0.087727	0.027423	0.943050	0.6482	0.0195	0.2016	0.799534	0.262687	0.34729088
Nyala	2011	0.159094	0.103711	0.811866	0.5760	0.1140	0.1810	0.669768	0.646993	0.20574866
Nyala	2012	0.182026	0.341085	0.707119	0.5952	0.0870	0.3410	0.724280	0.606179	0.19026015
Nyala	2013	0.164699	0.303323	0.741688	0.6179	0.0990	0.1350	0.649278	0.570868	0.20709542
Nyala	2014	0.143369	0.090875	0.837986	0.6029	0.1030	0.0810	0.676794	0.489333	0.26683819
Nyala	2015	0.122722	0.135897	0.866010	0.6251	0.1040	0.0770	0.672481	0.403952	0.31325312
Nyala	2016	0.089430	0.175891	0.980003	0.6415	0.0800	0.0970	0.642060	0.409959	0.31638336
Nyala	2017	0.106039	0.081998	0.919671	0.6285	0.1010	0.0740	0.630022	0.363087	0.34199993
Nyala	2018	0.082062	0.826157	0.903834	0.6302	0.0770	0.1460	0.365274	0.412012	0.38346979
Nyala	2019	0.093120	-0.411448	1.045234	0.5833	0.0900	0.1260	0.767803	0.226821	0.56220463
Nyala	2020	0.063842	0.125813	1.100391	0.5686	0.0195	0.2016	0.756129	0.248393	0.41008185
United	2011	0.087412	0.288725	0.916727	0.6518	0.1140	0.1810	0.723242	0.625314	0.14092025
United	2012	0.121934	0.476220	0.841506	0.6478	0.0870	0.3410	0.717382	0.667080	0.13957579
United	2013	0.173187	0.041507	0.705948	0.6211	0.0990	0.1350	0.716554	0.575924	0.12905327
United	2014	0.141249	0.101926	0.768650	0.6206	0.1030	0.0810	0.740307	0.536641	0.15951222
United	2015	0.130647	0.080764	0.811480	0.5609	0.1040	0.0770	0.734686	0.533416	0.1445483
United	2016	0.083017	0.061940	0.918534	0.5425	0.0800	0.0970	0.821659	0.470902	0.14888959
United	2017	0.070089	0.229924	0.958065	0.6047	0.1010	0.0740	0.770102	0.489148	0.15858789
United	2018	0.079667	0.130597	0.965808	0.6208	0.0770	0.1460	0.809710	0.380403	0.23986023
United	2019	0.061651	0.130030	0.963818	0.5937	0.0900	0.1260	0.767803	0.375498	0.17762719
United	2020	0.077112	0.114987	0.985684	0.5718	0.0195	0.2016	0.756192	0.391671	0.2280348
Lion	2011	0.053154	0.535284	0.926867	0.7799	0.1140	0.1810	0.677010	1.043975	0.0206776
Lion	2012	0.101240	0.554747	0.878683	0.7742	0.0870	0.3410	0.722086	1.064177	0.02510354
Lion	2013	0.101907	0.190210	0.922493	0.7028	0.0990	0.1350	0.748494	0.951692	0.07011749
Lion	2014	0.087883	0.165064	0.916122	0.6434	0.1030	0.0810	0.784092	0.766239	0.0946663
Lion	2015	0.081309	0.271400	0.908313	0.6774	0.1040	0.0770	0.814987	0.832757	0.04993796
Lion	2016	0.050286	0.252001	0.977300	0.7310	0.0800	0.0970	0.834641	0.841660	0.05799451
Lion	2017	0.037370	0.238902	1.008178	0.7806	0.1010	0.0740	0.770337	0.856579	0.06842875
Lion	2018	0.053564	0.003710	0.964805	0.7598	0.0770	0.1460	0.741888	0.580045	0.08877469
Lion	2019	0.068275	0.047045	0.957259	0.7327	0.0900	0.1260	0.798409	0.508386	0.12980477
Lion	2020	0.063292	0.058529	0.986768	0.7114	0.0195	0.2016	0.797238	0.461902	0.16440923
Oromia	2011	0.022282	0.921400	1.041919	0.7513	0.1140	0.1810	0.780927	0.874002	0.01665381
Oromia	2012	0.063155	0.860371	0.929480	0.7875	0.0870	0.3410	0.833020	0.842780	0.02729514
Oromia	2013	0.055502	0.235353	0.969989	0.7530	0.0990	0.1350	0.830738	0.752179	0.0697185
Oromia	2014	0.080651	0.319793	0.965091	0.7125	0.1030	0.0810	0.812727	0.662654	0.12099244
Oromia	2015	0.116015	0.169070	0.900735	0.7101	0.1040	0.0770	0.819471	0.647014	0.13254582
Oromia	2016	0.054386	0.119132	1.033496	0.7451	0.0800	0.0970	0.771895	0.572431	0.14709429
Oromia	2017	0.053560	0.072227	1.051934	0.6926	0.1010	0.0740	0.756123	0.550306	0.17208746

Oromia	2018	0.093356	0.095806	0.946238	0.6764	0.0770	0.1460	0.809873	0.448060	0.17120502
Oromia	2019	0.082416	0.131776	0.962972	0.6778	0.0900	0.1260	0.808362	0.396248	0.19566106
Oromia	2020	0.051889	0.116649	1.118433	0.6277	0.0195	0.2016	0.776335	0.352645	0.25361247
	Note:									
	ROA	Return on Assets			AT	Asset Turnover				
	PG	Premium Growth			IR	Investment Return				
	LV	Leverage								
	INF	Inflation								
	RE	Retention								