FACTORS THAT AFFECT PROFITABILITY OF ETHIOPIAN INSURANCE COMPANIES

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A Thesis submitted to the Department of Accounting and Finance in Partial Fulfillment of the Requirements for the award of the Degree of Master of Science in Accounting and Finance

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Statement of Declaration

I, Dawit Biset Akalu, declare that this thesis entitled "***Factors that affect profitability of Ethiopian insurance companies"***submitted by myself for the award of M.Sc. Degree in Accounting and Finance at Addis Ababa University is my original work and has not been previously submitted for the award of any degree or diploma at this or any other University or College, and that all the reference materials contained therein have been duly acknowledged.

Name: Dawit Biset Akalu

Signature: _____ Date: _____

Statement of Certification

This is to certify that this research work entitled ***"Factors that affect profitability of Ethiopian insurance companies***"is original work of Dawit Biset carried out under my supervision. As it fulfills all the requirements for the award of the Degree of Masters of Science in accounting and Finance, I endorse this through my signature.

Temesgen Worku (PhD)

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Master Thesis Examination Approval Sheet

Approved by Board of Examiners

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Table of Contents

LIST OF TABLES

LIST OF FIGURES

ACRONYMS

Adj - Adjusted

AUM - Asset Under Management

COM - Commission Ratio

Coef– Coefficient

CZ- Company size

DIV- Diversification of Company

EIC - Ethiopian Insurance Corporation

ELIG - Ethio- life and General Insurance

Fz- Firm Size

GDP - Gross Domestic Product

HHI - Hiershiman-Herfindahl Index

HO- Null Hypothesis

INF- Inflation

INV - Investment Ratio

LEV - Leverage of Company

MKTS - Market Share of Companies

MoFED- Ministry of Finance and Economic Development

NBE -National Bank of Ethiopia

Obs- Observation

OLS - Ordinary Least Square

Prob - Probability

RED - Reinsurance Dependence of Company's

ROA - Return on Asset

ROE - Return on Equity

ROI - Return on Investment

S.C -Share Company

UR - Underwriting Risk

VIF - Variance Inflation Factor

Abstract

Profitability has drawn the attentions ofscholarsassociated with finance literatureover several periods. However, the private insurance sector has received small amount ofattention in the context of Ethiopia. The objective of this study was to find and examine determinants of profitability of the private insurance companies in Ethiopia. The target population was defined as all private insurance companies. Hence, the research design was a sample survey of private insurance companies in Ethiopia which operated in the insurance industry from 2009/10 to 2018/19. Secondary data were collected from the financial statements of insurance companies and NBE. The data collected were analyzed using standard deviation, mean, correlation and multiple linear regression statistical analysis tools. Regression test was performed to know the effect of explanatory variables on profitability of insurance companies in Ethiopia. This study examined the effects of firm specific factors (firm size, leverage of a company, investment ratio, commission ratio, underwriting risk, reinsurance dependence), industry specific factors (market share and diversification) and macro-economic factors (real GDP and inflation) onprofitability of private insurance companies. Profitability is dependent variable while firm size, leverage of a company, investment ratio, commission ratio, underwriting risk, reinsurance dependence,market share, diversification, real GDP and inflationare independent variables. The outcome of the finding showedthat explanatory variables have of the expected sign excluding size of the company and inflation. That means investment ratio, commission ratio,marketshare, real GDP and inflation positively related to profitability whereas firm size, leverage of a company, diversification,underwriting risk, and reinsurance dependence affected profitability negatively. Company size, leverage of a company,investmentratio,underwritingrisk,market share andinflation affect profitability significantly whereas commission ratio, reinsurance dependence, diversification, and real GDP affect profitability insignificantly.

The insurers should give attention to the level of leverage in the company; it would be crucial setting minimum level of debt financing. The level of investment and market share should be seen as a crucial factor for the profitability of the insurers. Finally, the insurers should charge risk commensurate premium for the risk they bear to decrease the level of underwriting risk.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The missionof financial establishment is providing funds to the economyin particular insurance companies' means of well-organized and effectual financial schemevia savings utilization, treat transmission and interference. Therefore, financial establishment, channel funds and treat transmission from the insured to the insurer to facilitate the economic transaction(Gashaw & Sambasivam, 2013).

In Ethiopian context, financial institutions make up of banks, insurances companies and micro finance & saving associations. Particularly banks and insurance companiesperformvital role in the financial segment of the country.

As per (Hailegebreal, 2016), Insurance companies performs integral part via saving, collecting resources for big capital spending, treat allocation and safeguarding the economy in the nations. Specifically, allocating treats from insurance companies to those need protection, and also resource deployment, accumulating resources and capital spending in the economy.

(Zeleke,2007) stated that insurance industry plays an integral part in the economy developed and developing nations in their economic development, efficient resource mobilization, reduction for transaction costs, formation of liquidity, assistance of economics of scale in investment, and spread of financial losses. Insurance companies have importance for both businesses and individuals as they indemnify the losses and place them in the same status as they were before the happening of the loss.

Ethiopia economy classifiedas a least established economy but shows increasing financial growthin the economy and the financial institutions are under developed. So, the financial structure needs rejuvenation to support the economy(Kassie, 2014). Especially, the industry still undersized most of the Ethiopians don't have insurance coverage and most of the insurance companies focused on the corporate sector. The Ethiopian insurance industry is underdeveloped, after the reintroduction of liberal economic strategy in the country compares to the banking industry. As per report of NBE first quarterly bulletin of 2019/20, the numbers of insurance companies become 18 with the new arrival of Zemen Insurance S.C, of which 17 are private and one state owned. The branches of insurance companies rose to 574 from 542 a year ago. Of the total branches, about 46 percent were located in Addis Ababa. Likewise, the total capital of insurance companies reached Birr 8.5 billion of which 69 percent was that of private insurance companies.

According to Malik (2011), profitability is a way to analyze the financial performance of company subsequently the main purpose financial performance is to increase the owner's fortune.Literature about profitability shows that the study on evaluation of companies' profitability in a majority of developing countries financial system is highly saturated on the banking industry than insurance companies (Gashaw & Sambasivam, 2013).

Profitability examined in different stages by compiling the internal factors correspond to the company's activities and the specific features of the company which will be performed management system and the external effects connected to the country economy which compiles the market and the macro economy. However, recognizing and knowing effect and magnitude formulation of strategy to take the chance available and reduce the threat which companies face. (Lire&Tegegne, 2016). Profitability and Profit sometimes used interchangeably; Profit represent vague performance of the company but Profitability shows how effectively and efficiently the company Perform in detail way.

To investigatethe financial soundness and reliability knowing the factors that affect insurance companies' profitability and classifying them clearly is important task for researchers and financial analysts. Therefore, the goal of this researchis to assess the factors affecting profitability of insurance companies in Ethiopia.

1.2 Statement of problem

In the current period, financial institutions play a huge role in the economy of any country, so their performance is critical for the future of the country's economy. Financial organizations used to run the economy by easing the movement of funds. Financial institutions consist of banks, insurance companies, credit and saving associations, etc. Especially insurance companies' helps by facilitating financial and investment actions by giving fund and also protecting them from risk (Cudiamat&Siy, 2017). Profitability is one of the ways to see performance of financial institutions. Profit is the prime target for companies and the one that attract investors. On the other hand, profitability shows the level of solvency, performance of the company and the future of the company. The financial analysis of insurance companies used as an important mechanism by different stakeholders like actuaries in the decision-making process. In addition, their financial performance is one of the critical factors for the country's economy development. Therefore, the factors used as a point of interest for different stakeholders toconduct further study.

As per NBE publication of (2019), the insurance industry show dropping of the income generated from the premium collected through the recent periods. There have been enquiries about main factors that affect profitability of insurance firms by different stakeholders. Many of the studies are undertaken and showed that diverse findings. For example, from the factors affecting profitability leverage of a firm have diverse results (Dejene, 2015 &Meles 2014) found that the negative effect on leverage on the contrary,Debele(2017) found positive effect on profitability.

A lot of studies have been conducted with regards to determinants of profitability in insurance companies across different countries and the subject matter of profitability in the context of insurance companies'remains ambiguous in the field of study.

Most of the finding from previous studies displayed resemblance in their effect on profitability of insurance companies. Firm size had a positive and significant effect on profitability of insurance companies, underwriting risk affected profitability of insurance companies negatively, and leverage ratio affected profitability of insurance companies negatively. Reinsurance dependency affected profitability of insurance companies significantly and positively, premium growth affected profitability of insurance companies positively and finally inflation affected profitability of insurance companies negatively.

Most of the studies carried out in Ethiopian financial institutions concentrated in the banking industry; however, there is lack of studies on factors affecting profitability of the insurance industry few studies are conducted on profitability determinants of insurance companies. Regardless of that, the researches undertaken by Mehari & Aemiro (2013)

And Gashaw & Sambasivam (2013) on factors affecting profitability of insurer'smost of the give attention specifically to the company-specific factors. Horsa (2019), Atsbeha& Kaur (2017), Lire &Tegegn (2016), Demis (2016), Reshid (2015), Dejene (2015), Gebru (2015) and Meles (2014), studied including both company specific and macro economy factors, however, still there is omission of industry specified factors.

Not even all the stated studies explored all factors that affect profitability in Ethiopian insurance industry, there are other variables, which were not involved in the previous studies like investment ratio and commission ratio included in this study, which gives another dimension to profitability of the industry. In addition, there is a previous study conducted on the private insurance industry in Ethiopia by Lire & Tegegn (2016) and the study used data up to 2015, which included eight private insurance companies. This study included two additional insurance

companies (Lion insurance company S.C& Oromia insurance company S.C) which give another insight about factors affecting profitability of private insurance companies. Most of the prior studies, conducted in Ethiopian insurance industry take in to consideration both the pubic Insurance Company, Ethiopian Insurance Corporation (EIC) and private insurance companies. This study solely concentrated on Ethiopian private insurance companies. Therefore, it will give another dimension about factors affecting profitability of the industry without consideration of EIC.

1.3 Objectives of the Study

1.3.1 General objective

The main goal of the study is to find the factors affecting the private insurance companies using context of company specific factors, industry factors and macro-economic factors that shown in the previous studies as significant factors. This study assessed the factors that affect Ethiopian private insurance companies' profitability.

1.3.2 Specific objectives

The specific objective of the study to find factors affecting profitability of the insurers using size of the company, firm underwriting risk, reinsurance dependency, firm financial leverage, commission ratio, investment ratio, market penetration, diversification, real GDP growth rate and inflation and also investigate these variables effect due to exclusion on EIC.

1.4 Scope of the study

The factors that affect profitability employed in this study are those often used in diverse research works. The profitability affected by company specified factors, industry factors and macroeconomic factors in the research. The study based on profitability determinants of private insurance companies who work in Ethiopia. The necessary data for the study gathered from the financial statement of the chosen private insurance companies. The range of this research

assessed the internal and external variables that affect the profitability of private insurance companies specifically from the non-life insurance business stream and who operates minimum 10 years in the industry for this particular study operational period from 2010-2019 were used. Consequently, the scope of the study based on 10 private insurers in relation with number of branches, in the country in terms of their branch, operational time and the business class which they offer.

1.5 Limitation of the study

Researchers have their drawbacks;this study also has its own draw back. The method of sampling employed in the study is non-probability purposive according to range of study proposed by the researchers like period of operation in the industry, branch distribution and numbers and the type of business class they provide. It creates drawbacks in regard with non-probability sampling method. Therefore, the statement of finding was to certain degree to be limited due appliance of the non-random sampling method in the research. The other drawback of the study is limitation of necessary data. The financial statements of life insurance were difficult to analyze because prepared once in 3or 5 years. It is difficult to collect the necessary data's which are needed for the study, due to the nature of life assurance data's unavailability at the end of each physical year. The study focused on factors mentioned in the scope of the study section. However, there are other variables that have been used in literatures as determinant of insurance profitability like liquidity, solvency margin, retention ratio, currency ratio, interest rate, management efficiency and so on, due to time and accessibility of the required financial information, the researcher was obliged not to include the factors in the study.

1.6 Significance of the study

The result of the research will give another perspective for the Ethiopian private insurance companies identifying significant factors that affect profitability and point out some possible ways how improve the financial performance of the insurance companies. In addition, the study

will provide understanding about factors affecting profitability especially for the private insurance companies.

Thus, the study will try to give an empirical analysis on factors affecting of profitability of private insurance industry and will provide additional literature about subject matter. Moreover, the finding of this study will be used as a reference point for the future researches.

1.7 Organization of the Study

Chapter 2 focused on review of literature theoretically and empirically; knowledge gap and conceptual framework included. Chapter 3 discussed about the research methodology that employed in the study. Chapter 4 emphasized about findings and discussions of analyzed data. Finally, Chapter 5 presented summary of conclusion and recommendations and suggestion for future studies.

CHAPTER TWO

REVIEW OF RELATED LITERATURES

2.1 Introduction

In this chapter, Profitability of insurance companies and factors affecting profitability reviewed. This section presents the theoretical review (insurance industry, profitability and factor affecting profitability, empirical assessments, conclusion and understanding gap from literature, and conceptual framework utilized to manage the research.

2.2 Theoretical Reviews

The theoretical review gives the meaning of basic terminologies, theories and providing a comprehensive theoretical framework for the study. The following sub-sections will present definition of insurance, position of the insurance sector in the economy, meaning of profitability and factors affecting profitability.

2.2.1 Insurance Definitions and its Role in Economic Growth

Insurance is a mechanism of reducing occurrence of uncertainty of an event and it is drawing a strategy to tackle the financial effects of unfavorable events. It is a joint attempt of a way for eliminating the adverse effect under the occurrence of certain types of treats (Sushma, 2012).An insurance contract is a contract under which one party (the insurer) accepts major insurance risk from another party (the policyholder) by accepting to indemnify the insured if a stated adverse events happens (Pacter, 2016)

Insurance facility given as a monetary compensation in favor of an individual, association or business in swap for collected premiums that gives a payment in case a risk happens. It is an economic area, which provides the conception, production and marketing service (Berteji&

Hammami, 2016). The insurance companies provide help to the economy by providing funds to ease the economic transaction in the same time increasing confronting adverse events.
(Cudiamat & Siy, 2017).

According to the Stability of Financial Forum (2000), there are three major groups of insurance which consist Life insurance, general insurance and Re-insurance. The life insurance business class is providing various kind of products, with various mitigation ways and capital saving features which contain pension, saving, endowment insurance and term insurance. The same goes to the bind saving agreements and deposit other than treat transmission ways. In spite of that the general insurance business also known as property and liability insurance. The general insurance business gives explicit indemnification package in happening of the claims. The general insurance business gives protection for a year or less and without expectation of return at the end of policy unlike life insurance. Furthermore, the general insurance give for individuals and groups according to the business line which they operate, it includes business classes of motor, engineering, liability, pecuniary products etc.

2.2.2 Profitability of Insurance Companies

Profitability has been defined in different ways because there are proxies that measures profitability of insurancelike return on assets(ROA), return on equity (ROE), return on investment (ROI), etc.Therefore, profitability stated in different context. Kent & Powell (2005) stated that profitability ratios measure the earning power of a firm. They measure the management's capability to control expenses in relation to sales and reflect a firm is operating performance, riskiness, and leverage. To measure profitability, return on asset (ROA) used as measurement which shows the performance of the firm compares to total asset (Malik, 2011). Profitabilityused as a measurement financial status which is one of the instruments used to evaluate firm's performance. (Burca & Batrinca, 2014).

2.3 Factors Affecting Insurance Companies Profitability

2.3.1 Firm Size

Firm size showsthat big firms enjoy higher economies of scale in transactions and level of profits. Most of past studies show that positive relationship between firm size and profitability. However, in some cases firm becomes very large, firm size could have negative impactonprofitability. Because of this, firm size and profitability's relationship may not be uniform. Therefore, most studies use the logarithm to identify possible non-linear relationship. Firm size is calculated by using decimating logarithm of total assets of the company (Kaya, 2016).

Previous studies stated that company size positively affect profitability of the insurance companies, there are different assumptions. First, bigger firms have a capability to face unpresented market disruptions than the smaller ones. Second, big firms have the qualified and advanced human resource than smaller ones. Third, large companies have that economic scales which able them to provide different kinds of product which can help them to face any adverse reaction from the market. (Shiu, 2014).

Major insurance companies are expected to respond quickly to changes in the market conditions compared with small companies, diversify the risks. They accept in an effective way, employ more qualified labor power in an easier way, and in particular, benefit from the economies of scale concerning labor cost (Shiu2014). However, it doesn't mean a bigger company doesn't face problems related with inefficiency.

Dejene (2015) stated that majority of studies indicated that big firms are more profitable than the small ones. However, the size growth should be limited to a certain stage, and that certain stage could be defined based on the ability of the management. If the company size keeps on increasing above the optimal point it is obvious that the increase in insurance's size provides

diseconomies of scale, therefore, up to the optimal point increase in size gives the above-mentioned advantages to the firm.

2.3.2 Leverage

Leverage of a company is calculated by total debtto total owner's equity of the company (Mehari & Aemiro, 2013 and Lire & Tegegne, 2016). There have been mixed findings about relationship between leverage ratio and profitability due to theories used by researchers, if the researcher used the trade of theory, positive relationship is expected between them. Higher profitability has possibility of higher leverage ratio because of taxes, agency costs and bankruptcy costs. In contrary, pecking order theory usage in studies shows an outcome of negative relationship leverage ratio and profitability because of unbalance facts, preference of equity financing rather than debt finances way due to shortage of facts about external environment. Studies has been conducted about leverage and profitability extensively in favor of capital structure theory and suggested low leverage of company exhibited by high ROA but ROE is not affected by the level of leverage of the firm. (Harrington, 2005). Capital structure literature suggests that as the leverage increases up to an optimum point, so will the firm value and after surpassing this optimum level, the firm value will decline and the likelihood of insolvency will increase depending on the increased leverage (Carson & Hoyt, 1995)

2.3.3 Underwriting risk

The underwriting risk is considered the loss experience of the firm in contrast the underwriting income or collection of the company. The underwriting risk or loss ratio measured by ratio computed dividing the claim happened to net premium earned (Mwangi&Murigu, 2015)

Loss ratio is a risk of the insurance company when the underwriting income becoming insufficient to cover the loss happens. The premiums are calculated in to the consideration of the future claim may incur, based this consideration premium will be calculated. On this process of premium estimation inaccurate pricing policy may cause higher risk of underwriting risk. This

kind of price mismatch can happen due to political environment change or change in weather (Ernst & Young, 2010). Barth &Eckles (2009) find a negative relationship between premium growth and changes in loss ratios, suggesting that premium growth alone does not necessarily result in higher underwriting risk. Further, there is a positive relationship between claim count growth and changes in loss ratios, suggesting that claim count growth may be a preferred measure of underwriting risk.

According to (Atsbeha & Kaur ,2017), Lire & Tegegn (2016), Daare (2016), Datu (2016), Kazeem (2015), Reshid (2015), Burca & Batrinca (2014), Lee & Lee (2012), Mehari & Aemiro (2013), and Malik (2011) showed loss ratio affect profitability of insurer's and also it is indicated that a firm with low underwriting risk will experience higher ROA.

2.3.4 Reinsurance dependence

The reinsurance dependency is measured by the ratio of gross written premiums ceded to reinsurer's to total assets (Lee & Lee, 2012; Burca & Batrinca, 2014). It is utilized to decrease the collapse the insurance companies in arrival of catastrophic damages. (Rashid, 2015). (Sommer, 2005) the process by which the reinsurer passes on risks to another reinsurer is known as retrocession. The reinsurance dependence is computed by using the gross written premium ceded to the reinsurers divided by total asset.

Risks that are transferred to insurance companies from individuals and enterprises could be transferredto reinsurers from insurance companies through reinsurance (Kaya, 2013). Reinsurance provides insurance companies with the ability to mitigate the impact of unexpected major losses, to ensure stability of earnings, and to increase underwriting capacities (Swiss Re,2013).

According to (Kebede, 2016) There are two principal forms of reinsurance, (1) Facultative and (2) Treaty. Facultative Reinsurance- is an optional, case-by-case method that is used when the

ceding company receives an application for insurance that exceeds its retention limits. Before the policy is issued, the primary insurer shops around for reinsurance and contacts several reinsurers. Both the ceding company and the reinsures are under no circumstance to offer and accept respectively, of the contract. Facultative reinsurance is frequently used when large amount of reinsurance is desired. Facultative reinsurance does have the advantage of flexibility, because the contract can be arranged to fit any kind of case. The major disadvantage of facultative reinsurance arrangement is uncertainty. The ceding company does know in advance if a reinsurer will accept any part of the insurance, there is also further disadvantage of delay, because the policy will not be issued until reinsurance is obtained therefore, in general facultative arrangement is unreliable.

Treaty Reinsurance -Treaty reinsurance means the primary insurer has agreed to cede insurance to the reinsurer, and the reinsures has agreed to accept the business. All business that fall within the scope of the agreement is automatically reinsured according to the terms of treaty. This arrangement has several advantages to the ceding company. It is automatic, or no uncertainty or delay is involved. It is also economical, because it is not necessarily to shop around for reinsurance before the policy is written. Treaty reinsurance could be unprofitable to the reinsures. The reinsurers generally have no knowledge about individual applicants and must rely on the underwriting judgment of the primary company insurer may write bad business and then reinsure it. In addition, the premium received by the reinsurer may be inadequate; therefore, if the primary insurer has poor selection of risks or charges in adequate rates, the reinsurer could incur loss.

2.3.5 Market share

Market share is the percentage share of industries or markets total sales that are earned by a particular company over a specified time. Market share is calculated by taking a company's sales over the period and dividing it by the total sales of the industry over the same period. Investors look at market share increase or decrease carefully because they can be a sign the relative

competitiveness of the company's product or services. As the total market for a product service grows, a company that maintains its market share is growing revenues at the same rate as that total market. A company that is growing its market share will be growing its revenue faster than its competitors. Market share increase can allow a company to achieve greater scale in operations and improve profitability. Companies are always looking to expand their share of market, in addition to trying to grow the size of the market by appealing to larger demographics, lowering prices, or through advertising. There are several key advantages to building market share. One advantage is increased bargaining power. Top companies with the largest market shares may get special deals on products, as their buying power is likely greater than smaller companies. The bigger company sells more products, which leads to bigger orders from their suppliers, conversely smaller may lose its higher profit margin by increasing market share too drastically. (www.investopedia.com)

Market share is the percentage share of an industry has or markets total sales that are earned by a particular company over a specified time. Market share is calculated by taking a company's sales over the period and dividing it by the total sales of the industry over the same period. Investors look at market share increase or decrease carefully because they can be a sign the relative competitiveness of the company's product or services (Horsa, 2019). Companies increase market share through innovation, strengthen customer relationship, smart hiring practices and acquiring competitors. High marker share puts companies at a competitive advantage. Companies with better market share often receive better price from suppliers, as their larger order increase their buying power. Innovation is one method by which a company may increase market share. When a firm brings new technology to a market its competitors have yet to offer, customers become loyal which adds to the company's market and also by strengthening customer relationship by keeping current customers from jumping to other competitors. Companies with the highest market share in their industries almost invariably have the most skilled and dedicated employees.

Bringing the best employees on board reduces expense related to turnover and training, and enables companies to devote more resources to focusing on their core competencies
(Horsa, 2019).

2.3.6 Commission Expenses

Insurer's incur expense to facilitate the underwriting process which will be paid to the sales agents, brokers, marketing agencies and other to increase their underwriting profit(Ngoya, 2016).A commission is a servicecharge assessed by a broker or investment advisor for providing investment advice or handling purchases and sales of securities for a client. There are important differences between commissions and fees, at least in the way these words are used to describe professional advisors in the financial services industry. A commission-based advisor or broker makes money by selling investment products such as mutual funds and annuities and conducting transactions with the client's money. A fee-based advisor charges a flat rate for managing a client's money. This may be either a dollar amount or a percentage of assets under management (AUM). Sales between family members are often gifts of equity, which are not commission-based. (www.investopedia.com)

The commission expense is an account on an income statement generated with the accrual method of accounting. It shows how much was slated to be paid in commissions during the same period that the related revenue was earned. This kind of expense accounted for in the same period as commission liability as well.

There are multiple acceptable ways to classify a commission's expense. As it is a cost of maintaining the sales department, it can be categorized as a sales expense. Whether to use this kind of expense classification depends upon who is receiving the payment. If a salesperson earns the commission, then it is an expense. In a case where the company earns the commission, then it is revenue. When a company receives a commission, it may choose to absorb it into accounts

receivable. It this case, it may still be further categorized as a commissions expense. (www.investopedia.com)

A commission expense will be recorded for the time in which the commission was earned even if it has not been paid in that period. This typically happens when commission payments are made on a specific day of the month, rather than directly following the sale. If the commission has not been paid, it must be recorded as commission payable as well. It is also accurate to categorize an unpaid commission as an accounts payable item, as this category can include amounts due to employees, vendors, and contractors. The process of recording a typical commissions expense, where a salesperson is paid commissions at specific intervals, such as monthly or quarterly, is as follows. A salesperson makes a sale, which brings in revenue. The commission is calculated on this revenue. Then the amount is recorded as a debit in commission expenses and a credit in commissions payable. The next period, when the salesperson is to be paid, commission payable is changed to debit and the commission expense is now a credit. Then the actual payment is recorded as a debit for commission expense and a credit for cash. (www.wisegeek.com)

According to (Ngoya, 2016) commission expenses alone may have insignificant effect profitability. But the effect will be showed in the other explanatory variables, which means commission expense can't affect directly but will have indirect effect on others.

2.3.7. Investment ratio

Investment income ratio is the ratio of an insurance company's net investment income to its earned premiums. The investment income ratio compares the income that an insurance company brings in from its investment activities rather than its operations. It is used to determine the profitability of an insurance company. The investment income ratio is used in the calculation of an insurance company's overall operating ratio, which is a measurement of the insurer's overall performance. The overall operating ratio is equal to the combination of underwriting risk and

expense ratio deducted from the investment income ratio. Operating ratio and below 100 indicates that the insurer is generating profit from its operations. (www.investopedia.com)

Net investment income is used as the numerator because it removes the expenses associated with generating the investment income. The denominator of the investment income ratio is earned premiums rather than written premiums. Using written premiums would make the denominator larger, but would mean that the calculation was including premiums that are still considered a liability. Earned premiums are used when calculating an insurer's after-tax net income.
Insurance companies have two main sources of revenue: premiums from underwriting activities and returns on investment income. Insurance companies invest premiums in order to generate a profit. Insurers invest in a wide array of assets and must balance the desire to earn a higher return through riskier investments with the need to maintain liquidity in order to cover the liabilities associated with claims made against the policies that they underwrite. Insurers invest in stocks, bonds, real estate, and a number of other asset classes. (www.investopedia.com)

The type of insurance being offered affects the amount of investment income that a company can bring in. Policies that cover long-tail risks, such as liability and malpractice insurance, have a greater gap between when premiums are collected and when claims are paid. This gives the insurer more time to invest premiums, and thus more time to make a higher investment return. (www.investopedia.com)

2.3.8 Real GDP growth rate

Real GDP growth rate is the aggregate value of goods and service produce in the country in the nation in specific time given (Gashaw & Sambasivam, 2013).GDP growth is defined as GDP at the time of t less GDP at the time of t minus one divided by GDP at the time of t minus 1.Real GDP growth rate is way to see the performance of the nation. If the country's economy weakened the financial composition of the country will be poor therefore profitability as a whole will be affected. The contrary will happen if the real GDP growth rate increase there will be high

possibility premium price will increase due to the GDP growth. So, profitability will increase because of the aggregate effect in the economy (Outreville, 1990). The economic growth of the country will have an effect on the life style, increase in the income of the people and on other social aspects of the people. (Burca & Batrinca, 2015). Fadzlan & Royfaizal (2008) states that GDP is the most commonly used macroeconomic indicator to measure total economic activity within an economy, its growth rate reflects the state of the economic cycle. Measuring GDP is complicated but empirically at most, it is measured as the ratio of change of the current GDP and previous GDP over the previous GDP.

2.3.9. Inflation

As inflation rises, purchasing power decreases, fixed-asset values are affected, companies adjust their pricing of goods, services, financial markets react, and there is an impact on the composition of investment portfolios. Whenever prices start to rise, people often worry about inflation, and with good reason. The real return on an investment is not how many more dollars are in your account, but how much more you can buy with the money you have. Therefore, in general it has negative effect on return on investment of any business (www.investopedia.com).

Expected inflation is taken into account when actuaries set actuarially fair premiums, inflation itself is unlikely to diverse impact on the performance of insurance companies. Nevertheless, if inflation is significantly greater than anticipated it could cause insurance companies financial difficulty. For instance, unanticipated inflation makes real returns on fixed-rate bonds lower than expected. Consequently, profit margins of insurance companies are compressed and financial performance is accordingly impaired (Browne, Carson & Hoyt, 1999).

2.3.10Diversification

The insurer's diversification is a dummy variable which classified insurer' according to the type of insurance which they operate (general or composite insurance). The insurance companies will be 1 if active in the general (non-life insurance business) or 0 if composite (both non-life and life

insurance business). Insurer's diversification considers only type of business; it does not consider product line underwritten by the business.

Diversification affected indifferent ways the profitability of the insurers according to the business classes. According to, (Hussain, 2015, and Zhang, 2015) insurance companies which apply diversification strategy have a better profitability compares to undiversified one. In contrary, Pavic & Pervan (2010) study show that undiversified insurance companies perform better than diversified ones. The above seen findings showed that there is still question on the effect of diversification on profitability. However, the studies conducted by Zhang (2015),

Pavic & Pervan (2010) and Lee (2014) finding showed that negative effect on the performance of the insurance companies. In spite of that, according toBurca & Batrinca (2014) & Datu (2016) finding showed that positive effect on the performance of the insurance companiesbut insignificant effect on profitability. The above seen findings showed that there is still question on the effect of diversification on profitability.

2.4 Empirical Reviews

Mazviona, Dube & Sakahuhwa (2017) investigate factors affecting the profitability of insurance companies in Zimbabwe on data from 20 insurance firms from 2010-2014. In the study nine explanatory factors employed such as expense ratio, underwriting risk, the extent of a company, liquidity rate, leverage of a company, real GDP growth rate, inflation rate, retention rate and equity capital. The study used factor analysis and multiple linear regression models to analyze the panel data.

The result of the study revealed that expense ratio, underwriting risk and the extent of a firm significantly and negatively affects profitability of insurance companies whereas leverage and liquidity affect positively affect profitability. The study recommends that insurance companies should introduce mechanisms that reduce operational costs such as automated systems to increase the profitability of the sector.

Boyjoo & Ramesh (2017) studied about the issues affecting the performance of general insurer's works in Mauritius for five consecutive years from 2011-2015. The research used 11 explanatory factors that affect the financial results of the insurance companies such as company size, underwriting risk, leverage, liquidity, investment returns, re-insurance dependency, sale profitability, net operating expense, industry concentration ratio, company's development index and firm age. In the study, Return on Assets (ROA) used proxy to measure profitability the dependent variable. OLS regressions method is applied to examine the panel data in the study.

The finding showed that size of the company, underwriting risk, firm Leverage, liquidity ratio, concentration ratio and capital spending outcome has positive and significant effect on the profitability of the firm. While, reinsurance dependency and company's development index negatively and insignificantly affect the profitability of the firm. Whereas sales profitability ratio, net operating expense, firm age and premium growth are positively and insignificantly affected profitability of general insurance firms in Mauritius. The result suggested that most of the variables affecting the profitability insurance companies could be used as indicator of development and achievement in the insurance industry.

Kramaric, Miletic & Pavic, (2017) investigate about factors affecting profitability of insurance companies in Croatia, Slovenia, Hungary, and Poland from 2010-2014. ROA and ROE used to measure profitability of the insurance industries. As independent variables gross written premium, dummy variables which shows diversification of the firms, reinsurance dependency, combined ratio, owners' equity which is consolidated, age of a firm, dummy variable which shows joint stocks or mutual and real GDP growth rate. In the study panel data used. The finding showed that real GDP growth rate and age of a company are significant variable to the proxy and also which affect positively both dependent variables.

Datu (2016) studied about factors affecting profitability of general insurance business in Philippines specified on company specified effect and macro-economy factors from 2008-2012, the study used panel data. The study used ROA and operation ratio to measure profitability and as independent variables diversification, market share, real GDP growth rate, reinsurance dependency, loss ratio, inflation, input cost and leverage. For analysis purpose OLS used to analyze the data.

Leverage of a firm, loss ratio, reinsurance dependence, and input cost found to be significant variable for the study; however, the macro economy factors and diversification found to be insignificant. From the study loss ratio, real GDP growth rate and market share affect negatively profitability, on the contrary the remaining variables affect positively ROA.

The study suggests that companies with lower loss ratio, reinsurance dependence, input cost, and smaller firms have a likelihood of higher ROA. The study suggested firms should consider the effect of macro-economy factors and company specific before formulating strategy on profitability.

Jibran, Samen, Kashif & Nouman (2016) conducted a study about factors that affect the profitability of general insurance firms in Pakistan on 20 insurance companies from 2005 to 2013. ROA and ROE used to measure profitability of insurance companies; size of the company, liquidity ratio, inflation and real GDP growth rate used as explanatory variables. OLS model used to analyze the panel data using EViews 6 software.

The finding of the study showed that the effect of the variables is not the same on both ROA and ROE. Current assets found to be significant to ROA, but it is insignificant to ROE. Current ratio has positively affected profitability. The size of a company also found to be crucial factor that affect the profitability of the insurance companies. Premium growth has positive effect on both the ROA and ROE of the insurance companies.

The finding showed that insurance companies in Pakistan should work in increasing the company size and the premium charged in the market should be given emphasis to its growth to increase the profitability of the firms.

Daare (2016) studied about determinants of profitability in Indian general insurance industry including 8 insurance firms from 2006- 2016, panel data used for analysis purpose. The study utilized 8 independent variables that affect the financial performance of the insurance companies such as size of a firm, capital adequacy, liquidity ratio, underwriting risk, premium growth, age o f a firm, real GDP growth rate and inflation in the economy. ROA used to measure profitability of insurance companies. OLS applied to analyze the panel data.

The study revealed that size of company, liquidity ratio and inflation rate are the significant variables in study. Underwriting risk, size of the company, liquidity ratio and real GDP growth rate have a positive effect on profitability of the insurance companies, while capital adequacy, premium growth and inflation negatively affect profitability. The study conclude that companies showed give emphasis on age of company, liquidity ratio and inflation rate regarding to profitability of the insurance companies.

Nyamu (2015) studied about factors affecting profitability of the insurance industry from 2006-2015. The study used 6 explanatory variables such as interest rate, Exchange rate of the country, Lending rate, Money reserve in the country, real GDP growth rate and inflation rate. To analyze the panel data OLS and correlation method applied.

The finding shows that, inflation rate and real GDP growth rate positively and insignificantly affect the profitability of insurance firms. Loan rates, conversion rate rates and money reserve have insignificant and negative effect on profitability of insurance firms. The study concluded

that economic growth and inflation directly affect profitability and lending rates, exchange rates and money supply inversely affect profitability of insurance companies.

The study suggested that responsible government bodies must undertake reforms which will enhance the economy of the country. Addition to that there should have to be system which control the lending rate, conversion rate, money reserve and inflation rate to mitigate their unfavorable effect on the financial institution.

Mwangi & Murigu (2015) studied about the factors that affect profitability of non-life insurance firms from 2010-2013. The study utilized as an independent variable such as leverage, retention ratio, underwriting risk, liquidity, size, management competence index, ownership, owner's equity and firm's age.

The result reveals that leverage of a firm, owners' equity, management competence index positively affect profitability and firm size and ownership structure affected profitability in a negative way. Retention ratio, liquidity risk, loss ratio and age of a company did not affect profitability. The study suggested that non-life insurance companies in Kenya should work on lowering the leverage of the company, increasing the owner's equity and quality of staff.

Kaya (2015) studied about factors affecting the profitability of general insurance sector in Turkey from the perspective of the companies from 2006-2013 of 24 general insurance firms using panel data. Profitability of the companies analyzed using technical and sales profitability ratio. As per the finding firm size, age of the firm, underwriting risk, premium growth rate and current ratio affect the performance of general insurance industry in Turkey.

Kazeem (2015) studied the effect of company aspect variables on profitability of insurance firms in Nigeria on twelve (12) insurance firms from 2006-2013 through the panel data. ROA used as a

proxy to measure the profitability of the insurance companies in the study. The study used six independent factors, which affect the financial performance of the insurance companies such as age of firm, company size, premium growth rate, underwriting risk, liquidity ratio and leverage of a company. Multiple regression models used to analyze the data.

The finding shows that firm size, liquidity ratio, underwriting risk and leverage of a company are significantly affect the profitability of Nigerian insurance firms. Therefore, company size, underwriting risk and leverage of company are negative effect on profitability. In contrast, liquidity ratio is positively and significantly affecting profitability of the insurance companies. Finally, age of a firm & premium growth rate doesn't have significant effect on profitability of the insurer's in Nigeria.

The finding suggest that insurer's Nigeria should run evaluation on those company specified factors that affect the performance of insurance companies before formulating strategies related with profitability. This process can enhance the financial institutions and the performance of market.

Moro & Anderloni (2014) studied about factors affecting profitability of the general insurance industry which operates in the common European market from 2004-2012. The study analyzes factors that affect profitability of insurance companies from the perspective dimension, capital structure of the companies and investment strategies. As explanatory variables size of the asset, company size, reserve dimension, combination ratio, Financial input, Investment yield, premium to asset ratio, reinsurance ratio measured by the premium and reserve, Internationalizations, diversifications, financial market indicator, Insurance market relative dimension, insurance market growth, and firm position. ROA and ROE measured the profitability of the insurance companies. For the analysis purpose OLS regression model applied.

The finding revealed that the ROA have an effect on the company specific factors and macro economy factors in different ways. Total asset & underwriting negatively affect ROA; however, internationalization, diversification, reserves' size and asset turnover ratio have a positive effect on ROA. Factors related with the common market affect positively both ROA and ROE of the insurance companies' however the macroeconomic factors don't have effect on ROA. Positive relationship seen between financial market scope and profitability, the contrary seen between market growth rates, this may lead stiff competition in the insurance market.

Burca & Batrinca (2014) studied about the factors that affect profitability of insurance firms in Romanian from 2008- 2012 which includes 12 insurance companies. 13 independent variables analyzed in the study such as leverage of the company, company size, number of years of operating in the market, premium growth, equity, total market share, diversification of the firm, underwriting risk, investment ratio, reinsurance dependence, retained risk ratio, solvency margin, and growth of GDP per capita, ROA used as a proxy to measure profitability.

Market share and reinsurance dependency positively and significantly related with profitability the GDP and underwriting risk negatively and significantly affect profitability. However, diversification positively affects profitability however it is effect is insignificant. The finding suggest that the insurance industry confront problem arise from the market and the financial crisis but it is suggested to formulate strategies that improve the industry as whole.

Lee (2014) investigates about firm specific and macroeconomics factors that affect profitability in Taiwanese property-liability insurance firms from 1999 to 2009 through panel data. Operating ratio and return on assets used as proxy to measure profitability and twelve independent variables used in the study such as underwriting risk, leverage of the company, size of a company, firm growth, reinsurance, return on capital spending, market segment, diversification, input cost, real

GDP growth rate, inflation rates and financial investment. The OLS multiple regression models used to analyzing the panel data.

The finding in the study showed that underwriting risk, leverage of the company, reinsurance dependency, financial investment and input cost has significant and negative effect on ROA however ROE has positive and significant effects on ROA. The study concludes that higher low ratio and the level of financial investments decrease the profitability of the insurance companies. to lower profitability measured by ROA. In addition, economic growth rate has significant

Jovovic, Paunovic & Kocovic (2014) investigate about factors affecting profitability of non-life insurance companies operating in Serbia from 2006-2013 through panel data. Returns on Assets (ROA) used as a proxy to measure profitability. The study used eight independent variables such as operational period of the company, combined ratio, HHI, investment ratio, leverage, liquidity, reinsurance dependency and size of the firm. OLS regression model is applied to examine the panel data.

The study showed that combined ratio, financial leverage and retention rate affects significantly and negatively profitability of insurance companies. Company size has significant and positive effect on profitability of insurance companies.
The study suggested that the insurance companies need regulatory and restriction which will able them to control their asset and liabilities to increase their liability.

Sumaira & Amjad (2013) investigate about firm specific factor that affect profitability of 31 insurance companies in Pakistan from 2006-2011through panel data. The study used explanatory variables such as leverage, growth opportunities, size, and liquidity, age and earnings volatility whereas profitability is represented by ROA in the study. The OLS multiple regressions model used to analyze the panel data.

The finding show that leverage, earnings volatility and age of the firm significantly and negatively affect profitability whereas size have significant and positive effect on profitability of insurance companies in Pakistan. In addition, the study found that liquidity and growth opportunities have insignificant effect on profitability.

2.5 Studies in Ethiopia

This section reviews studies conducted in Ethiopia in order to reach at the knowledge gap in this study.

Horas (2019) investigate the determinants of profitability, particularly in nine selected using data from 2009- 2018 through panel data. Multiple linear regression analysis was used to analyze the data. The independent variables used in the study include liquidity ratio, leverage of a company, volume of capital, managerial efficiency, company size, growth rate, Market share, GDP and Inflations.

The study revealed that market share, volume of capital, real GDP growth rate, inflation, and managerial efficiency are the significant variable in the study. Liquidity is positively related with profitability but it is insignificant, however firm size, leverage of a firm, growth rate of premium has negative effect but it is insignificant to the profitability of insurance companies

The study provides evidence that company volume of capital, market share, managerial efficiency, and inflation and GDP are significant variable that affect performance of insurance companies in Ethiopia. Therefore, the research recommends thatEthiopian insurance firms should pay attention these factors to address profitability issues.

Debala (2017) studied about factors that affect the profitability of insurance companies in Ethiopia, particularly in twelve Ethiopian insurance companies from a period of six years (2011-2016) through panel data. ROA used as proxy to measure profitability of insurance companies.

The data were analyzed by using multiple linear regression analysis. The company-based variables utilized in the research as liquidity, leverage, reinsurance dependency, underwriting risk. Level of diversification and industry concentration used as industry factor and two-macro factor used GDP and Inflations.

The result showed that industry concentration ratio and leverage of a company affect profitability positively and it is statistically significant. Instead, diversification, loss ratio and reinsurance dependency show negative impact on profitability and statistically significant. The study recommends that top managements of the insurance industries should pay attention those variables which affect profitability especially it is recommendable to formulate risk mitigation mechanisms and better corporate structure which pay attention to controlling system of the company.

Atsbeha& Kaur (2017) studied about factors affecting profitability of insurance industry from 2006-2016 using panel data of 17 insurance companies. The explanatory variables are firm size, capital adequacy, and leverage of a company, liquidity ratio, underwriting risk, market share, real GDP growth rate and inflation. Hausman test applied to analyze the panel data.

The finding showed that firm size, capital adequacy, liquidity ratio and real GDP growth rate are the significant variables in the study. On the contrary, leverage of the company, underwriting risk, market share and inflation rate have significant effect on profitability of insurance companies. The study recommends that top management of the insurance companies should work on formulating of strategies that can improve the profitability of the insurance companies.

Kebede (2016) investigate factors the effect of profitability of the insurance industry. The study applied quantitative research approach using Panel data covering ten-year period from 2006–2015 for nine insurance companies. The study uses linear regression model to see the effect of

independent variables, which were the factors under study, on dependent variable profitability proxy by ROA. The company specific variables utilized such as liquidity ratio, leverage of a company, reinsurance dependency, underwriting risk, size of company and motor insurance. Market share used as industry factor and two-macro factor used GDP and Inflations. The findings of the study showed that Size of company, Loss ratio and leverage are the significant variables. Have statistically significant relationship with insurers' profitability. Reinsurance dependence has affected negatively but with insignificant effect. On the other hand, explanatory variables like Motor insurance, market share have positive and statistically insignificant relationship with insurers' profitability. Motor insurance is the other most important factor affecting profitability. In addition; economic growth rate and inflation have negative and insignificant effect on the profitability of the insurance company. The study gives proof that company size, Loss ratio, and Leverage have significant effect on profitability of insurance companies. Therefore; the finding suggested that insurance industry must give attention these factors to appropriately address profitability issues.

Haile Gebriel (2016) studied about affecting profitability of Ethiopian insurance companies which include of nine insurance companies Ethiopia from 2004-2014. The study used company-based variables such as operational period of the company, size of firm, leverage ratio, liquidity ratio, premium growth, technical provision, loss ratio, solvency margin, re-insurance dependency and tangibility of assets and macroeconomic factors; GDP and Inflation.

The finding showed that loss ratio, technical provision, leverage ratio and inflation affect positively and significantly profitability. However premium growth rate, age of a firm, solvency ratio and real GDP affect significantly and positively profitability of insurance companies. Liquidity, reinsurance dependency, tangibility of assets and firm size doesn't affect profitability. Thefinding recommend that analyze the level of loss ratio in their company, lower the level technical provision and level of leverage in the company.

Lire & Tegegne (2016) studied about factors affecting profitability of eight Ethiopian private insurance companies from 2005- 2015 through panel data. Multiple linear regressions modelused to analyze the panel data. In the study, the explanatory variables are loss ratio, reinsurance dependency, solvency ratio, premium growth rate, firm size, real GDP growth rate, Inflations and interest rate.

The finding of the study revealed that profitability is significantly affected by firm specific factor underwriting risk negatively, company size positively, premium growth positively and Solvency ratio and reinsurance dependence have significant and negative effect on profitability. In the contrary inflation and interest rate is affectinginsignificantly profitability.
The study suggested that the insurance companies should put mechanisms to reduce loss ratio of the companies like implementing pricing strategies and evaluating business classes and risk related to the classes.

Sisay (2015) investigates about factors affecting of profitability of insurance sector in Ethiopia, specifically in nine Ethiopian insurance firms from 2003-2014 via panel data. In the study explanatory variables used such as age of companies, size of companies, leverage of a firm, tangibility of assets, liquidity ratio, premium growth rate, loss ratio, reinsurance dependence, solvency margin and GDP growth rate. The finding of the research showed that underwriting risk and leverage ratio is significant and negatively affects profitability, however the remaining variables affect positively and significantly the profitability of the firms. The study suggests that top managements in the insurance industry must give priorities like the way to improve the asset, control the level of leverage in the companies and investing in human resource by putting different strategies.

Dejene (2015) studied about factors affecting profitability of nine Ethiopian insurance companies from 2005-2014 through panel data. The study used explanatory variables such as firm size,

leverage of a firm, liquidity,growth rate, age of a company, volume of capital, tangibility of asset, inflation rate and real GDP growth rate. The return on asset used to measure as a proxy to measure profitability.

The finding of the study shows that firm specific variables leverage, firm growth and tangibility of assets are the most significant variables that affect profitability of insurance firms. Firm growth rate has positively affected profitability and leverage and tangibility of assets have negative effect on profitability of insurance companies. Inflation affect negatively and significantly profitability of insurance companies. Whereas, firm size, age of a firmand real GDP growth rate affects positively but insignificantaffectsprofitability. In addition, liquidity has negative and insignificant effect on profitability.

The study suggeststhe top management and the stakeholder of the industry should give emphasis on the development of the industry because the insurance industry is underdeveloped and which experience stagnant growth.

Gebru (2015) studied factors affecting profitability particularly in nine Ethiopian general insurance companies for the study period of 2005-2014 using panel data. The study usedexplanatoryvariables like liquidity ratio, tangibility of asset, volume of capital, premium growth rate, underwriting risk, real GDP growth rate and inflation rate. ROA computed the profitability of insurance companies.OLS regression model used to analyze the panel data of the study.

The results reveal that tangibility of asset, volume of capital, premium growth rate, underwriting risk, and real GDP growth rate are the significant factors on that affect profitability of insurance firm. Tangibility of asset, volume of capital, premium growth rate is significantly and positively affected profitability. However underwriting risk and real GDP growth rate has negative and significant effect on the profitability of firms. Even though, liquidity ratio and inflation rate have insignificant effect on profitability of insurance companies.

From the result, the study recommends that the insurance companies should work how to reduce the level of underwriting by setting up different mechanisms to mitigate the anticipating risk. Additionally, top management should pay attentions to the significant factors those affect profitability.

Reshid (2015) investigate that factors affecting profitability particularly in nine insurance companies in Ethiopia of insurance companies' in Ethiopia from 2004 – 2014 a panel data. The study used explanatory variables such as underwriting risk, technical provision, solvency ratio, reinsurance dependence, liquidity, company size, premium growth, economic growth rate and inflation.

The find of the study shows that loss ratio, technical provision and liquidity ratio are significant variables to the profitability insurers. Underwriting risk, technical provision and solvency ratio significantly and negatively affects profitability. On the other hand, reinsurance dependence affects negatively but insignificantly profitability of the insurers. Liquidity, company size and premium growth have a positive and statistically significant effect on profitability. In addition, real GDP growth rate significantly affect the profitability the insurer's whereas inflation doesn't affect profitability. The research suggests that, top management in the industry to provide priority underwriting risk, technical provision and liquidity that boost the performance of the firms.

Meles (2014) investigate the factor that affects profitability of ten insurance companies from 2008-2013 through panel data. The study used explanatory variables such asfirm size, leverage of a firm, underwriting risk, tangibility of assets,firm growth rate, managerial efficiency, and economic growth and inflation rate. ROA utilized to calculate profitability.
The finding shows that size, leverage of a company, tangibility of asset, underwriting risk, company development index and managerial efficiency affect significantly profitability of

insurance companies. In the contrary, leverage of a company and underwriting risk have negative and significant effect profitability of insurance companies. Liquidity ratio, inflation rate, and firm growth have insignificant effect on profitability of insurance companies.
The study recommends that the top management of insurance companies to provide company specified factors rather than macro economy factors because of the effect which happens due to macro-economic factors seen in long term.

Mehari & Aemiro (2013) investigate about factors affecting profitability of nine insurance companies from the period of 2005-2010 using panel data. The study used explanatory such as firm size, leverage of a company, and tangibility of asset, underwriting risk, premium growth, liquidity ratioand firm age.

The result revealed that firm size, tangibility of asset and firm leverage hasstatistically significant and positive effect on profitability of insurance companies.Underwriting risk significantly and negatively affect profitability. Therefore, insurers' size, Loss ratio, tangibility of asset and firm leverage are significantly affected the performance of insurance companies in Ethiopia. Meanwhile, premium growth, company age and liquidity ratio affected insignificantly.

Gashaw & Sambasivam, (2013) investigate about factors affecting profitability of nine insurance companies from 2003 to 2011 through panel data. The study used such as operational period of the company, size of company, volume of equity, leverage ratio, liquidity ratio, premium growth and tangibility of assets. ROA used as proxy to measure profitability and the study use Ordinary Least Square (OLS) multiple regression methods to analyze the panel data.

The result revealed that firm growth rate, leverage of a company, volume of capital, firm size, and liquidity ratio are the most significant factors to the performance of the insurance companies. Firm Growth, firm size, and volume of capita have positive effect on profitability. In the

contrary, liquidity ratio and firm leverage are negatively but significantly affected profitability. In addition, age of company and tangibility of assets are not significant factor to profitability.

The result suggested that top management should give priority to those firm specific factors, market specified and macroeconomic factors which are stated in the study.

2.7 Knowledge Gap

Studies conducted about the factors affecting profitability tried to give emphasis about subject matter through theoretical and empirical studies. As stated above in empirical reviews, many researchers have been conducted about profitability in Ethiopia and other countries. However, inadequate of study had been conducted about profitability in case of profitability and there is lack of studies in subject matter. For the purpose of the study some collected work used from different countries to identifying factors affecting insurance business profitability. Some of these researches showed contradicting results on relationship between profitability and the variables that affect profitability.

For example, Mazviona, Dube & Sakahuhwa (2017), Sumaira & Amjad (2013) and Lee & Lee (2012) showed that, leverage of a company of the non-life insurance companies is positively related with profitability. Kareem (2015) found inverse relationship between leverage and profitability of general insurers.

In Ethiopian context, few researches are conducted about factor affecting insurance companies' profitability; particularly in non-life insurance. Most of the studies failed to include industry associated variables that affect profitability of insurance industry, although there are studies which are conducted company specified variables and macroeconomic factors. For instance, variables related to the industry like diversification of a company and market segment are exclude from most of the studies. Consequently, ignoring to include those industry specific variables creates a void in the subject matter.

Certain researches undertaken on the factors that affect profitability of insurance companies showed contradicting finding between the factors utilized in their researches. Meles (2014),

Gebru (2015) & HaileGebreal (2016) finding showed that leverage affected negatively and significantly profitability of insurance companies, however Horsa (2019) finding showed that leverage affected negatively but insignificantly profitability of insurance companies. In the contrary, Debala (2017) found positive and significant to profitability. And also, the same kind of contradicting result found in the studies about real GDP growth, Gebru (2015) and Horsa (2019) found negative and significant relationship between profitability and real GDP growth. Debala (2017) found positive and significant relationship between profitability and real GDP growth whereas Reshid (2015)) found positive insignificant real GDP growth. These contradictory finds about financial leverage and real GDP growth create a knowledge gap in the study area.

In general, the lack of sufficient research on the factors affecting profitability of private insurance companies in the context of Ethiopia, only Lire & Tegegne (2016) tried to investigate specifically about private insurance industry. Therefore, there is a lack of study about factors that affect profitability of private insurance companies, which shows their knowledge gap according to the researcher. The statement of problem clearly stated the presence of knowledge imparity; it plays huge part to motivate undertaking the research. Therefore, the purpose the study is to explore factors affecting the performance of private insurance companies and to solve the knowledge imparity present about the industry by giving facts ad proofs about private insurance industry.

2.8 Conceptual framework

The conceptual framework of the study is developed to explain the firm specific, industry specific and macro-economic determinants of profitability. By summarizing previous studies, firm size, reinsurance dependence, underwriting risk, firms financial leverage, commission expense, investment ratio, market share, diversification, GDP and inflation selected as independent variables that influenced insurance companies' profitability as measured by ROA.Below the diagram shows the relationship between determinants of profitability and profitability

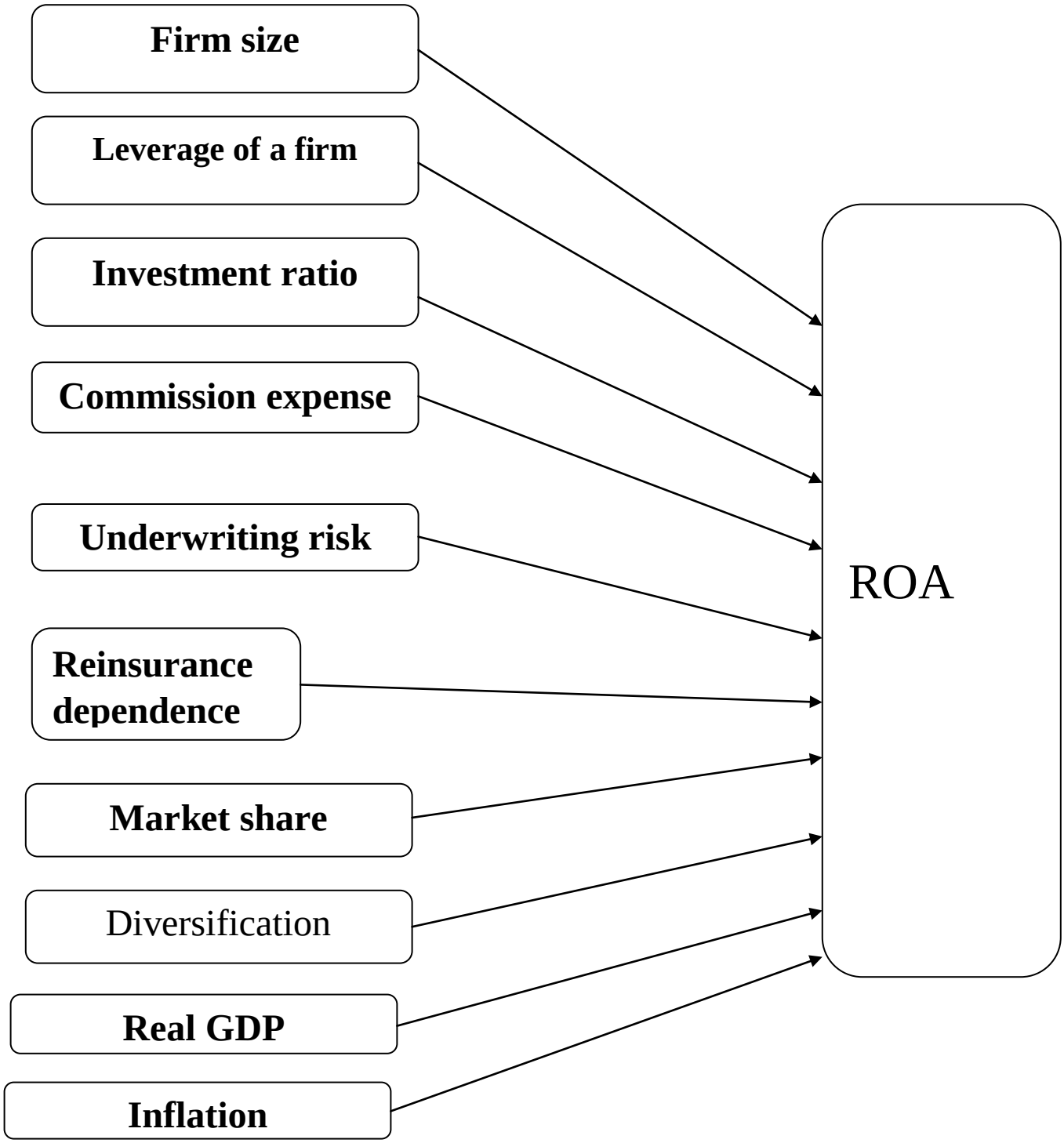


Figure 2.1: The Conceptual Framework or Model of the Study

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This section provides concise explanation about the research technique applied to find factors those affect profitability of private insurance companies in Ethiopia. It consists the research plan applied which includes the approaches applied in the study with the sampling plan of the research, data collection method used in the study which includes source of data, type of data and also how the data collected will be converted to the needed information, what techniques applied to convert data that are appropriate to the study.

3.2 Description of study area

The study conducted on Ethiopian insurance industry, which was specifically on private insurance companies. The focus was on factors that affect profitability of insurance companies; profitability is a main issue to interested parties because it helps for decision-making. The insurance industry is one of major parties in the financial institution; the industry performance is the main concern of the stakeholders, so factors affecting the profitability of the industry are area of interest by academicians and stakeholders. The study assessed these factors that affect profitability in case of Ethiopian private insurance companies.

3.3 Research Approaches

Research approaches is design and process for the study that goes from general theory to specific way of method of data gathering, examination and explanation. It is a way suggested to manage the research process which includes Creswell (2014) showed the key research processes to assess the problem; quantitative, qualitative and mixed approaches. Quantitative research method is the procedures of examining the goal of the research by testing the liaison between the independent

factors and the data's examined by using numerical method among variables and a numbered data that can be analyzed by using statistical procedure generallyor specifically. Conversely, qualitative research method is a way of finding and accepting the significance of person or collection of persons with peopled difficulty in assumption of breeding ideas in specific way. At the last, mixed methods approach is a way that accommodates gathering empirical and qualitative data by accommodating the assumption of both approaches inconsideration with philosophies and distinctive ways (Creswell, 2014).So, the study applied quantitative research method correspond to the type of data and taking in to consideration the statement of the problem and the intention of the study. The study applied positivist philosophical theory. This approach adopted because of the nature of the research method the nature of relationship between the independent and dependent variables, this assumption manifest cause and effect relationship between variables (Creswell, 2014).

3.4 Research design

A research design isa plan of precondition for gathering and analysis of data in a way that aims to combine significance to the research purpose with economy in procedure (Kothari, 2009). The research design is a kind of review with method that gives distinctive guideline to the process (Denzins & Lincoln, 2011).

The research planis explanatory research design. The type of the problem in the study inclined to be explanatory that aims to clarify the relation between profitability and explanatory variables. Co-relational research plan aids the study by building numerical correlation that reveal the extent of liaison between dependent and independent variables (Creswell, 2012 andSaunders, Lewis& Thornhill, 2016). The reason for the selection of this design is because of layout of secondary resource gathering collection through longitudinal time range, quantitative and deductive system of investigation.

3.5 Research type and data

The study utilizes the panel data from 2009/2010 to 2018/19 from ten privateinsurance firms. The study applied secondary data.Gupta (2012) stated that the secondary data is data that present in someplace having been gathered and utilized for other intention. The data for this study gathered from the reports of the National Bank of Ethiopia (NBE), financial statements of selected private insurance companies and Ministry of Finance and Economic development about macroeconomic variables to find the factors of the variable on profitability. To get the necessary literature for the study gathered from books, previous journal article, research works and websites.

3.6 Data gathering tools

The study used a panel data; the researcher gathered the data from audited financial statement of the insurance companies, annual report of NBE and ministry of finance and Economic development (MoFED). The researcher collectspanel data.

3.7 Sample and sampling technique

The population means the whole collection of individuals, occasion that attract the attention of researcher to examine (Sekaran, 2003). As per NBE quarterly report of 2020, there are 17 private insurance companies and one public insurance company with branches that increased to 568 by introducing additional new36 branches. Most of these branches found in Addis Ababa which compromise 53.7% of the branches and the private insurance companies have the majority of number of branches which is 84.5% of the total number of branches.

In this circumstance, the focus population of study include all private insurers that work in the insurance industry under supervision of NBE who participated in the general insurance business with a financial statement from 2010-2019. In the study 10 insurance companies have chosen out of 17 private insurance companies. The selection standard applied according to standard lay down which compromise the period which they operated in the industry and the type of

insurance they underwrite. In the study, the standard selections are firms who operate more than 10 years in the insurance industry which means companies launch their operation before 2011 and who underwrite non-life insurance on those operational periods. So, all private insurance companies who launch their operation prior 2011 and who underwrites non-life insurance business are selected in the study exclude Ethio-Life and General insurance (ELIG) because ELIG started non-life insurance business in 2012 even if entered in the industry in 2008.

According to criteria stated in the above, National Insurance Company of Ethiopia (NICE) (1994), Awash Insurance Company S.C (1994), Africa Insurance Company S.C (1994), Nyala Insurance Company S.C (1995), Nile Insurance Company S.C (1995), Global Insurance Company S.C (1997), The United Insurance S.C (1997), NIB Insurance Company S.C (2002), Lion Insurance Company S.C (2007) and Oromia Insurance Company S.C (2009) are selected as a sample for the study.

Therefore, in this study, all private insurers, which has ten-year annual financial statements and who operate in non-life insurance business included in the research. The researcher used non-random purposive sampling techniques in the study.

3.8 Data Analysis

The study used descriptive, correlation and regression analysis methods. This part of the research provides the explanatory analysis of the panel data and factors used in the study in collaboration with some testing methods, narrates the correlation analysis effect between profitability and explanatory variables, the linear regression will provide the main output for the end result of the study.

3.8.1. Descriptive Analysis

The descriptivediscussedand givesa synopsis the variables utilized in the research. In this part the mean, minimum, maximum, standard deviation of the variables produced.

3.8.2. Correlation Analysis

Correlation analysis showed how variables related to each other. The finding of the study showed that the features, path and implication of the variables on profitability of insurance companies.

3.8.3. Regression Analysis

The regression analysis utilized to investigate the effect the dependent variable on profitability such as size of the company, firm underwriting risk, reinsurance dependency, firm financial leverage, commission ratio, investment ratio, market share, diversification, real GDP growth rate and inflation.

The result of a regression analysis represented by this equation, which forecast the effect of the explanatory variables over profitability

The following regression equation estimated:

Return on Asset (ROA_{it}) = β_0 + $\beta_1(CZ_{it})$ +$\beta_2(MKTS_{it})$ + $\beta_3(INVit)$+ $\beta_4(COM_{it})$ + $\beta_5(LEV_{it})$ + $\beta_6(UR_{it})$ + β_7 (RED_{it}) +β_8 (DIV_{it}) + β_9 (GDP_{it}) +β_{10} (INF_{it}) +εi

Where:

In this model, all independent variables were entered in to regression equation to test the effect of explanatory variable and profitability. The purpose of this evaluation is to see from the variable which will have significant on profitability of the insurance companies.

Table 3.1 Model description and meaning of Variable

Variable used in the Analysis	Their definition
ROA_{it}	Return on Asset utilized as a proxy of profitability of company i at time t.
CZ_{it}	Company size i at time t
$MKTS_{it}$	Market share i at time t
INV_{it}	Investment ratio i at time t
COM_{it}	Commission ratio at time t
LEV_{it}	Leverage of a firmi at timet
UR_{it}	Underwriting risk of a firmi at time t;
RED_{it}	Reinsurance dependence of a company i at time t;
DIV_{it}	Diversification of a firmi at time t; 1 forgeneralinsurance; 0 life insurance.
GDP_{it}	Real Growth Domestic Product i at time t;
INF_{it}	Average Inflation anticipated change in each period i at time t;
Є it	Error factor for a company i at time t while is I is cross sectional and t is time locator expected to have mean zero E [Є it] = 0;
β1- β10`	1 to 10 are limits to be projected or Coefficients limits;
i	Insurance firms and i = 1 to 10
t	The periods and t = 1 to 10

3.9 Measurement of Variables

In this study, different measurements employed to see the effect of independent variables on dependent variable (ROA). The measurements are taken from previous studies, which found to be significant in predicting insurer's profitability. This study adopted the same ratios in computing the independent and dependent variables, which is summarized below

Table 3.2: Lists of Financial Ratios Employed for Predicting profitability and Sources of References

Variables name	Mathematical expressions	Sources
Profitability	Net Income before taxes /Total asset	(Lee, 2014)
Company size	Logarithm of total asset	(Kaya, 2016)
Market share	Company's Gross Written Premium/Market Gross Written Premium*100	(Horsa,2019)
Investment ratio	net investment income / earned premium	(www.investopedia.com)
Underwriting risk	Annual net claims incurred / Net earned premiums	(Burca&Batrinca, 2014)
Re-insurance dependence	Premium ceded to reinsurers / Gross Earned Premium*100	(Ngoya,2016)
Leverage	Total debt/ Total Capital and reserve	(Lire &Tegegn, 2016)
Commission ratio	Commissionpaid/gross written premium * 100	(Ngoya,2016)
Diversification of company	Dummy variables:l if it is operating in non-life and life insurance business and 0 for companies operate only non-life insurance	(Moro &Anderloni, 2014 and Zhang, 2015)
Real Growth Domestic Product	$(GDP_t - GDP_{t-1})/ GDP_{t-1}$	(Debala,2017)
Inflation	$I = (Inf_t - Inf_{t-1})/Inf_{t-1}$.	(Debala,2017)

3.10 Hypothesis Development

In the study ten research hypotheses were used to accomplish the purpose of research, these hypotheses are based on the statement of problem and established on the previous studies based on profitability of insurance companies in Ethiopia and different countries concerning the issue under inquiry.

Ho1: size of the company is positively and significantly related to profitability of private insurance companies in Ethiopia.

Ho2: Reinsurance dependence is negatively and significantly related to profitability of private insurance companies in Ethiopia.

Ho3: underwriting risk is negatively and significantly related to profitability of private insurance companies in Ethiopia.

Ho4: leverage of a company is negatively and significantly related to profitability of private insurance companies in Ethiopia.

Ho5: Commission ratio is positively and significantly related to profitability of private insurance companies in Ethiopia.

Ho6: investment ratio is positively and significantly related to profitability of private insurance companies in Ethiopia.

Ho7: Market share is positively and significantly related to profitability private of insurance companies' in Ethiopia.

Ho8: Diversification is negatively and significantly related to profitability private of insurance companies' in Ethiopia.

Ho9: Inflation is negatively and significantly related to profitability of private insurance companies in Ethiopia.

Ho10: Real GDP growth rate is positively and significantly related to profitability of private insurance companies in Ethiopia

CHAPTER FOUR

DATA ANALYSIS AND RESULT DISCUSSIONS

4.1. Introduction

This chapter presents, analyzes and discusses data in detail manner to respond research hypothesis and accomplish the objectives of the study. It includes the finding of the study that was designed to show factors that affect profitability of private insurance companies in Ethiopia. Ten private insurance companies fulfill the criteria of the study out of the 16 registered private insurance companies. Those exist in the period of 2009/2010 up to 2018/2019.

The values of the variables were collected from the financial statements of selected insurance company's insurance companies were return on asset (ROA), investment ratio (INV), firm financial leverage (LEV), company size (CZ),underwriting risk (UR), commission ratio (COM), market share (MKTS), reinsurance dependence (RED), diversification (DIV), real GDP growth rate (GDP), and inflation (INF).

This chapter includes model specification, descriptive statistic, correlation analysis, regression analysis and finally summary of findings.

4.2. Descriptive Statistics

Descriptive statistics describes both dependent and independent variables. Profitability is the dependent variable on the other hand firm size, investment ratio, underwriting risk, firm financial leverage, reinsurance dependence, commission ratio, market share, diversification, real GDP growth rate and inflation are independent variables. Ten private insurance companies operational

time of 10 years through 100observations were summarized. This study is conducted to what extent; factors affecting profitability of private insurance companies.

Table 4.1 summarizes the mean, maximum, minimum and standard deviation of each variable as follows.

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
roa	100	.088	.046	-.12	.262
cz	100	8.606	.375	7.742	9.397
lev	100	2.184	.823	.111	4.632
inv	100	.174	.099	.001	.483
com	100	7.542	5.478	.036	23.579
mkts	100	.051	.021	.008	.098
ur	100	.628	.136	.235	.998
red	100	.141	.084	.041	.465
div	100	.7	.461	0	1
gdp	100	.097	.012	.077	.114
inf	100	.13	.083	.028	.341

Source: Stata output

The mean values of all the factors span from minimum value of 0.051 for MKTS to a maximum value of 8.61 for CZ.

ROA (Return on asset) is computed by net income before tax over total asset. Its mean and standard deviation for the ten private insurance firms was 0.0875 and 0.046 correspondingly. It illustrates insignificant disparity in the values of ROA across the private insurer's included in this study. The maximum and minimum ROAthrough the periods were .2616 and -.1203correspondingly. The most profitable insurance among the sampled insurances earned 26.16 % of profit before interest and tax amount for each birr invested in the assets of the company. Contrariwise, a firm with smallest profitability from sampled insurance recorded a loss of 12.16 %for each birr invested in the assets of the company.

Firm size is measured by natural logarithm of total asset of the insurance company. The average value of size of a company and its standard deviation is8.61 and 0.375 correspondingly. The

average size is 8.61 and there exists significant variation across the sample insurance companies for the reason that the average value of company size is 8.61 and the value of the standard deviation is 0. 375. The maximum and minimum values of company'ssize were 9.3974 and 7.7423 correspondingly.

Investment ratio is computed by net investment income over earned premium. The mean value of investment ratio and its standard deviation is 0.174 and 0.099 correspondingly; it indicates that insignificant deviation in the amounts of investment ratio across the private insurers. The maximum and minimum investment ratios through the periods were0.483 and 0.0008 correspondingly. The highest earner insurance company among the sampled insurances earned 48.3% investment income for each birr earned premium. On the other hand, the lowest earning company of the sampled insurance loses0.08%investment income for each birr earned premium.
Firm financial leverage is measured by total debt over total capital and reserve. The mean value and a standard deviation is 2.184 and .8228 respectively. It indicates that the presence of normal variation in the firm leverage over the years. The maximum and minimum leverage of the company through the periods were 0.4.632 and 0.1105 correspondingly.

Commission ratio is measured by commission paid over gross written premium. The mean value for commission ratio is 8.66 and a standard deviation of 14.73. The result reveals that the presence of significant dispersion in commission ratiobetween private insurance firms. The maximum and minimum commission ratio is 23.579 and 0.0355 correspondingly. Among the sampled insurances companies the highest commission expense incurred 23.58 % commission paid for each birr gross written premium. On the other hand, the lowest commission expense incurred 3.6% commission paid for each birr gross written premium.
Market share is measured by company's gross premium over market gross written premium. The mean value market share is 0.051 and a standard deviation of 0. 0211. This shows insignificant

variation in the values of ROA in the sampled insurance companies. The maximum and minimum market share is0.097 and 0.008 correspondingly.

Underwriting risk is computed by annual net claim incurred over net earned premium. The mean value of underwriting risk is0.628 and a standard deviation of 0.1357. The result reveals a presence of normal dispersion in underwriting risk between insurance firms. The maximum and minimum underwriting risk is 0.234 and 0.998 correspondingly.

Reinsurance dependency is computed by reinsurance premium paid over gross earned premium. The mean value of reinsurance dependencyis 0.1412 and a standard deviation of 0.83. The result reveals a presence of normal dispersion in reinsurance dependence between insurance firms. The maximum and minimum reinsurance dependence is0.4654 and 0.0408 respectively. Among the sampled insurances companies the highest reinsurers premium incurred 46.54% reinsurance premium paid for each birr gross written premium. On the other hand, the lowest reinsurer's premium incurred 4.08 % reinsurance premium paid for each birr gross written premium.

In the study to assess the diversification of private insurance companies dummy variables used 0 and 1. Dummy variable 1 represented composite insurance companies which underwrite both the non-life and life insurance business and dummy variable o represent firms who underwrite only general insurance business.

Minimum and maximum value of diversification is 0 and 1 correspondingly. The standard deviationand the mean of diversified insurance companies is 0.461 and 0.7 correspondingly. It shows that 70% of private insurance companies underwrite both the general insurance and life insurance business. The result shows that most of the private insurance companies which included in the study are diversified. It showed that when firms become diversified there is higher chance of profitable.

The mean value of GDP is 0.0969 and standard deviation of0.012. The maximum and minimum rate of GDP was 11.4% and 7.7% respectively, it revealsnormally scattered compared to maximum and minimum real GDP growth rate values on the period of study

Finally, the mean value of inflation is .1304 along with the standard deviation value 0.0836 and in addition the inflation has a significance effect on the insurance companies. The maximum and minimum inflation rate is 34.1% and 2.8% respectively. The inflation rate of inflation shows high variation in the economy on the study period, the mean value, standard deviation, the maximum and minimum value which shows unstable inflation in the country.

4.3. Model Specification Test (Fixed effect versus Random effect)

Hausman test should be undertaken to choose the best model among fixed effect and random effect models.

Contrariwise, Brooks (2008) and Wooldridge (2006) as cited by Dejen (2017) stated that the random effect model is much suitable when the parts of the sample considered to be chosen arbitrarily.

So, fixed effect model is sufficient for the study without conducting Hausmantestsince the samples were taken according to the researcher's criteria which makes the data are not collected randomly from the population.

4.4 Correlation Analysis

The main aim of the correlation test is to demonstrate the linear relationship between explanatory variables and dependent variable. Brooks (2008) stated that the correlation between two variables extent of linear relation among them. The result of the correlation coefficient is every time stays in the middle of -1. Positive correlation coefficient showed that positive linkage among them. In the contrary negative correlation coefficient shows that negative linkage among them. Contrariwise zero correlation coefficient shows no linear linkage among them.

4.4.1. Correlation analysis between ROA andIndependent variables

ROA is associated with other explanatory factorsin positive or negative way. Thecorrelation investigation was performed between ROA and explanatoryfactors; firm size, investment ratio, underwriting risk, firm financial leverage, reinsurance dependence, commission ratio, market share, diversification, real GDP growth rate and inflation.

Table 4.2 Correlation matrix between ROA and independent variables

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) roa	1.000										
(2) fz	-0.021	1.000									
(3) lev	-0.262	-0.195	1.000								
(4) inv	0.242	0.400	-0.581	1.000							
(5) com	0.054	-0.419	0.047	-0.159	1.000						
(6) mkts	0.045	0.651	0.138	0.025	-0.282	1.000					
(7) ur	-0.286	0.055	0.154	-0.134	0.169	0.080	1.000				
(8) red	0.041	-0.399	0.345	-0.225	-0.024	-0.018	-0.414	1.000			
(9) div	0.055	0.541	-0.064	0.136	-0.553	0.682	-0.078	0.036	1.000		
(10) gdp	0.027	-0.405	0.065	-0.154	0.067	-0.048	-0.033	0.253	0.000	1.000	
(11) inf	0.017	-0.047	0.294	-0.184	-0.080	-0.113	-0.025	0.209	-0.002	-0.364	1.000

Source: Stata output

As it had been shown in the table 4.2 above, ROA is positively correlated with investment ratio, commission ratio, market share, reinsurance dependence, diversification, real GDP and inflation with a value of 0.2421, 0.0539, 0.0455, 0.0411, 0.0553, 0.0268 and .0168respectively. It is negatively correlated with firm size, leverage of company and underwriting risk with a value of -.0207, -0.2619 and -0.2858 respectively. The smallest correlation coefficient is -.2858 which is correlation between ROA and underwriting risk.

The highest positive percentages are measured by diversification and investment ratio with a coefficient of correlations is .0553 and0.2421respectively. They are positivelycorrelated with ROA means ROA increase as these variables increases.

The size of insurance company is negatively related to leverage of company, commission ratio, reinsurance dependence, real GDP and inflation. On the other hand, it is positively related to investment ratio, market share, underwriting risk and diversification.

Leverage has a positive correlation coefficient value with market share, underwriting risk, commission ratio, reinsurance dependence, real GDP growth rate and inflation and a negative correlation coefficient value with firm size, investment ratio and diversification.
Investment ratio is negatively correlated to commission ratio, underwriting risk, leverage of company, reinsurance dependence, real GDP and inflation and is positively correlated with the firm size, market share and diversification.

Commission ratio has a positive correlation coefficient with leverage of company, underwriting risk, and real GDP. On the other hand, it is negatively related with firm size, investment ratio, market share, reinsurance dependence, inflation and diversification.

Market share has a positive correlation coefficient with leverage of company, firm size, investment ratio, underwriting risk, and diversification. On the other hand, it is negatively related with commission ratio, reinsurance dependence, inflation and real GDP growth rate.

Underwriting risk has a positive correlation coefficient with firm size, leverage of company, commission expense, and market share. On the other hand, it is negatively related with, investment ratio, reinsurance dependence, inflation, diversification, inflation and real GDP.
Reinsurance dependence has a positive correlation coefficient with leverage of company, diversification, inflation and real GDP growth rate. On the other hand, it is negatively related with firm size, commission ratio, underwriting risk, investment ratio and market share.

Diversification has a positive correlation coefficient with, firm size, reinsurance dependence, investment ratio, real GDP and market share. On the other hand, it is negatively related with leverage of company, commission ratio, inflation and underwriting risk.

Real GDP has a positive correlation coefficient with, leverage of company, commission ratio, reinsurance dependence, and diversification. On the other hand, it is negatively related with firm size, investment ratio, market share, underwriting risk and inflation.

Finally, inflation has a positive correlation coefficient with, leverage of company, and reinsurance dependence. On the other hand, it is negatively related with firm size, commission expense, investment ratio, diversification, market share, real GDP and underwriting risk, inflation.

4.5. Regression Analysis

Diagnostic test was conducted to make sure that the data suits key theories of linear regression model.

4.5.1 Tests of Heteroskedasticity

The theory of homoscedasticity stated that the dispersion of the errors is constant (Brooks, 2008). Heteroskedasticityis a methodical way in the errors while the variances of the errors are not the same through the analysis. Chi Square (0.1239) is greater than 0.05 and it is insignificant to reject the hypothesis. As a result,the study accepted HO, it showed that there is noHeteroskedasticity, which indicates that variance of the error term is constant.

Table 4.3 Test of Heteroskedasticity

```
Breusch-Pagan / Cook-Weisberg test for Heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of roa
         chi2(1)      =     2.37
Prob > chi2  =   0.1239
```

Source: Stata output

4.5.2 Multicollinearity Test

Multicollinearity shows the degree of correlation between independent variables. If independent variables are highly correlated, they create double effect on the model. Including highly correlated independent variables in the model creates large standard errors, which makes the coefficient values and signs unreliable. The best regression models are those in which the predictor variables each correlate highly with the dependent (outcome) variable but correlateat most only minimally with each other. Guajarati (2004) stated thatmulticollinearity is one of an important techniques of linear regression model that help the examining the presence of multicollinearity between the dependent factors which putted by X's.

The presence of Multicollinearity issues examined through accepted level and value inflator factor (VIF) value. A higher VIF or below acceptance level (1/VIF) value shows the presence of high correlation among the variables which should be excluded from the study.

Many studies try to put a threshold for the maximum limit of correlation coefficient. Hair (2006) and Malhotra (2007) as cited by Dejen (2017) said that a correlation coefficient value below 0.9 and 0.75 correspondingly don't show multicollinearity problem. The results ofVIF and acceptance multicollinearity level are demonstrated in table 4.6 below.

Table 4.4 Test for Multicollinearity

VIF	1/VIF
4.410	0.227
3.690	0.271
2.800	0.357
2.150	0.465
2.000	0.501
1.870	0.535
1.700	0.588
1.700	0.590
1.530	0.656
1.460	0.687

Mean VIF 2.33

Source: Stata output

As it is stated in the table 4.4, the VIF value seen are below 0.9 and 0.75, therefore there is no existence of negative effect of Multicollinearity between the variables used in the model.

4.5.3 Auto Correlation Test

Autocorrelation shows the level of association between the values of the variables acrossvarious observations in the data. The existence or non-existence of autocorrelation problem was tested by the Breusch–Godfrey serial correlation LM test. It is a test for autocorrelation in the errors or residuals in the model. The null hypothesis states that there is no serial correlation.

As shown in table 4.5 below, Prob> chi2 = 0.1862 is greater than 0.05. This shows that the null hypothesis of the model, which says no serial correlation, cannot be rejected at 5% level of significance. The result shows us there is no Autocorrelation problem

Breusch-Godfrey LM test for autocorrelation chi2	df	Prob>Chi2
99.650	88	0.186

Table 4.5 Autocorrelation test result

H0: no serial correlation

Source: Stata output

4.5.4 Model Specification

A model specification error is an error which happens by omitting one or more relevant variables or by including one or more irrelevant variables in the model. The existence of omitted relevant variable was checked by adjusted R square and P value of the model. It can also be checked bystata command called ovtest.

AS shown in table 4.6 below, Prob> F = 0.1080 which is greater than 0.05. This shows that the null hypothesis of the model, which says no omitted variable, cannot be rejected at 5% level of significance. The result shows us there are no omitted variables.

Table 4.6 Model specification

```
Ramsey RESET test using powers of the fitted values of ROA
       Ho:  model has no omitted variables

                    F (3, 86) =      2.09
Prob> F =      0.1080
```

Source: Stata output

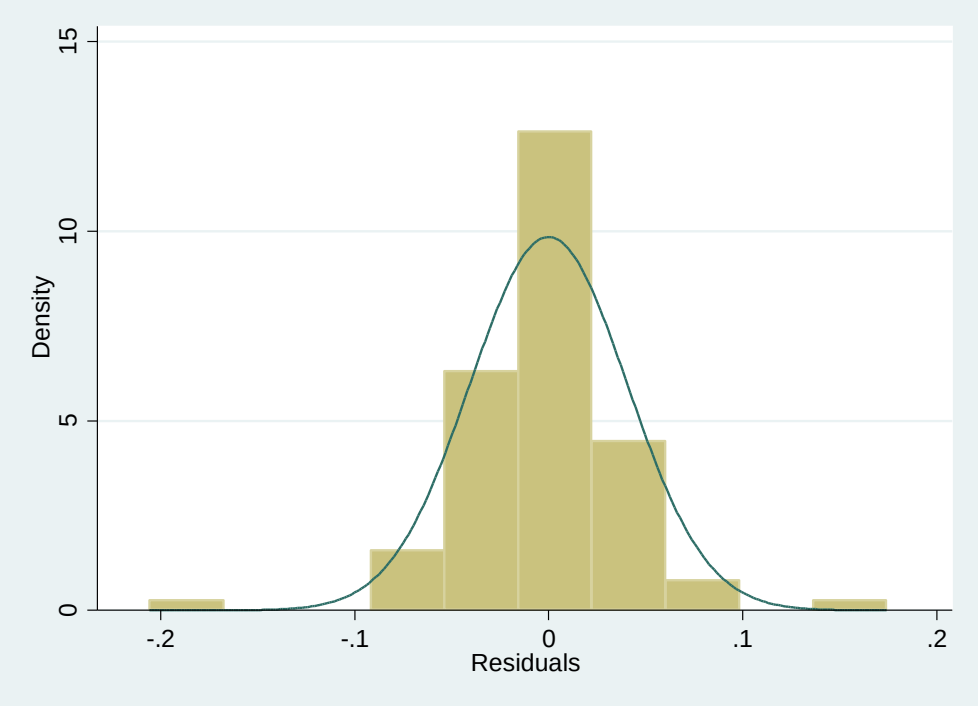
4.5.5 Normality test

Brooks (2008) noted that in order to do hypothesis evaluation regard tothe study boundary, the normalitytheories must be fulfilled. To fulfill this assumption, the mean value of the residuals

should be distributed to the mean of zero. It can be checked in many different ways; the simplest way is by observing a histogram of the values. The histogram should be bell shaped.

Therefore, the study used graphical method to test normality.

Figure 4.1 Histogram with all independent variables



Source: Stata output

From figure 4.1 below, it can be noted that the residual is normally distributed to the mean ofzero since the shape of the histogram is bell shaped. Therefore, the normality assumption is fulfilled.

The Skewness and Kurtosis values and if the value computed exceeds the specific critical value, then the distribution is non-normal. The most commonly used critical values are ±2.58 (0.01significance level) and ±1.96 which corresponds to a 0.05 error level (Joseph et al, 2014). Normality can also be tested using a stat instruction. A Sktest exhibit the number of observations

is 100 and the probability of skewness and probability (kurtosis) indicates that skewness and kurtosis is also normally spreadsince its p-value is between -1.96 and 1.96.

Table 4.7 Skewness/Kurtosis tests for Normality

Skewness/Kurtosis tests for Normality

------ joint ------

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj_chi2(2)	Prob>chi2
fz	100	0.160	0.855	2.060	0.357
lev	100	0.013	0.385	6.520	0.038
inv	100	0.002	0.138	10.390	0.005
com	100	0.003	0.781	7.920	0.019
mkts	100	0.380	0.349	1.690	0.430
ur	100	0.297	0.198	2.820	0.244
red	100	0.000	0.000	33.260	0.000
div	100	0.001	0.000	37.650	0.000
gdp	100	0.150	0.000	29.310	0.000
inf	100	0.000	0.015	22.190	0.000
roa	100	0.443	0.000	14.350	0.001

Source: Stata output

Table 4.8 ANOVA table

Linear regression

roa	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
fz	-.051	.024	-2.12	.037	-.099	-.003	**
lev	-.012	.007	-1.69	.095	-.027	.002	
inv	.118	.059	2.00	.049	.001	.236	**
com	.001	.001	0.83	.406	-.001	.003	
mkts	.943	.39	2.42	.018	.168	1.719	**
ur	-.105	.038	-2.75	.007	-.181	-.029	*
red	-.086	.075	-1.15	.254	-.236	.063	
div	-.003	.016	-0.17	.868	-.034	.028	
gdp	.113	.464	0.24	.809	-.81	1.035	
inf	.112	.064	1.76	.082	-.015	.239	
Constant	.533	.224	2.38	.019	.088	.978	**
Mean dependent var		0.088	SD dependent var			0.046	
R-squared		0.237	Number of obs			100.000	
F-test		2.760	Prob> F			0.005	

Source: Stata output

Note: * and **indicates significance at 1 % and5%level significance correspondingly.

4.6. Result Discussion

The ANOVA table 4.8 above shows that the F value shows significance at P=0.0052. The model demonstrates the liaison between profitability and explanatory variables. Furthermore, the model has significant effect and utilized all the explanatory factors are forecaster of the dependent variable. The result of the model showed that on average 23.61% of the adjustment in ROA can be affected by the factors in the study. Therefore, the function for regression equation for the model is

ROA= 0.5333 - 0.051 FZ - 0.0124 LEV + 0.118 INV + 0.00085 COM + 0.00943 MKTS - 0.105 UR -0.0863 RED - 0.0025 DIV+ 0.1126 GDP + 0.112 INF+ ε

Therefore, the regressionfinding from table 4.8reveal that, firm size (FZ), investment ratio (INV), market share (MKTS), and underwriting risk (UR), have significant effects on profitability of Ethiopian private insurance companies. Whereas, commission ratio (COM), reinsurance dependence (RED), diversification of company (DIV), and real GDP (GDP)have no significant effect on profitability of Ethiopian private insurance companies.

The above profitabilitydeterminantsofprivateinsurancefirms wereseparately discussed in the proceeding section in context to regression analysis of ANOVA table.

Firm Size (FS)

The regression test reveals a regression coefficient of -0.0503, t-statistics of -2.12 and p-value of 0.037. Meanwhile, the p value of firm size 0.07 is less than 0.05 and its coefficient is negative, it hassignificant and negative effect on profitability. Hence, H1 is not accepted. The finding shows its significance but not with forecasted sign.

It has the same result with the research by Mwangi & Murigu (2015) by both with predicted sign and significance.

Leverage of the company (LEV):

The regression test reveals a regression coefficient of -0.0124, t-statistics of -1.69and p-value of 0.095. Meanwhile, the p value of leverage of the company 0.095 is higher than 0.05and its coefficient is negative, it isinsignificant and negative effect on profitability. Hence, H4 is not accepted.

The study exhibits insignificant effect on profitability but the past research revealed significant effect.

Investment ratio (INV)

The regression test reveals a regression coefficient of 0.1184, t-statistics of 2.00 and p-value of 0.049. Meanwhile the p value of investment ratio 0.049 is less than 0.05 and its coefficient is positive, it has significant and positive effect on profitability. Hence, H6 is accepted.

Positive and significant effect on profitability, it showed that insurance companies well invested their premium experience higher ROA. The finding has same result forecasted sign and significance and with the research of Jovovic, Paunovic & Kocovic (2014).

Commission ratio (COM)

The regression test reveals a regression coefficient of .001, t-statistics of 0.83 and p-value of 0.406. Meanwhile the p value of commission expense 0.406 is higher than 0.05, it has insignificant and negative effect on profitability. Therefore, H5 is not accepted. The finding has coherent with the forecasted sign but not its significance level.

It has the same result with the research by (Ngoya, 2016). The study exhibits insignificant effect on profitability but the past research revealed significant effect.

Market share (MKTS)

The regression test reveals a regression coefficient of 0.00943, t-statistics of 2.42 and p-value of 0.018. Meanwhile the p value of market share (MKTS) 0.018 is less than 0.05and its coefficient is positive;it has significant and positive effect on profitability. Hence, H7 is accepted.

Positive and significant effect on profitability showed that insurer's with higher market share experience higher ROA. The finding showed the same result with hypothesis and it has the same result with the research by Burca & Batrinca (2014).

Underwriting risk (UR)

The regression test reveals a regression coefficient of -.105, t-statistics of -2.75 and p-value of 0.007. Meanwhile, the p value of underwriting risk 0.007 is less than 0.05, and its coefficient is negative; it has significant and negative effect on profitability. Hence, H3 is accepted.

Negative and significant effect on profitability showed that an insurance companies with less underwriting risk experience higher ROA. The finding showed the same result with hypothesis and it has the same result with the research by Datu (2016), Lee (2014), Debala (2017), Reshid (2015) and Lire & Tegegne (2016).

Reinsurance dependence (RED)

The regression test reveals a regression coefficient of -.0863, t-statistics of -1.15 and p-value of 0.254. Meanwhile, the p value of reinsurance dependence 0.254 is higher than 0.05, it has insignificant and negative effect on profitability. Therefore, H2 is not accepted. The finding is coherent with the forecasted sign but not its significance level.

It has the same result with the research by Boyjoo & Ramesh (2017), Kebede (2016), Reshid (2015). The study exhibits insignificant effect on profitability but the past research revealed significant effect.

Diversification of company (DIV)

The regression test reveals a regression coefficient of -0.0025, t-statistics of -0.17 and p-value of 0.868. Meanwhile, the p value of reinsurance dependence 0.868 is higher than 0.05, it has insignificant and negative effect on profitability. Therefore, H8 is not accepted. The finding is coherent with the forecasted sign but not its level of significance.

It has the same result with the research by Datu (2016) by forecasted sign but not its level of significance. The study exhibits insignificant effect on profitability but the past research revealed significant effect.

Real GDP growth rate (GDP)

The regression test reveals a regression coefficient of 0.1126, t-statistics of .24 and p-value of 0.809. Meanwhile, the p value of reinsurance dependence 0.809 is greater than 0.05, it has insignificant and negative effect on profitability. Therefore, H10 is not accepted. The finding is coherent with the forecasted sign but not its level of significance.

It has the same result with the research by Doumpos*et.al.* (2012), Pervan and Kramaric (2012), Daare (2016), Reshid (2015), Dejene (2015), and Meles (2014) by predicted sign but not its significance. The study exhibits insignificant effect on profitability but the past research revealed significant effect.

Inflation (INF)

The regression test reveals a regression coefficient of 0.1119, t-statistics of 1.76 and p-value of 0.082. Meanwhile, the p value of investment ratio 0.082 is less than 0.1 and its coefficient is positive, it has significant and positive effect on profitability. Therefore, H09 is not accepted. The finding is coherent with level of significance but not its forecasted sign.

It has the same result with the research by Datu (2016). The study exhibits positive effect on profitability but the past research revealed negative effect.

IndependentVariables	Abbreviations	Expected result	Actual result	status
Firm size	Fs	Positive and significant	Negative and significant	**Rejected**
Company leverage	Lev	Negative and significant	Negative and significant	**Rejected**
Investment ratio	Inv	Positive and significant	Positive and significant	**Accepted**
Commission ratio	Comm	Positive and significant	Positive and insignificant	**Rejected**
Market share	Mkts	Positive and significant	Positive and significant	**Accepted**
Diversification	Div	Negative and significant	Negative and insignificant	**Rejected**
Underwriting risk	Ur	Negative and significant	Negative and significant	**Accepted**
Reinsurance dependency	Red	Negative and significant	Negative and insignificant	**Rejected**
Real GDP growth rate	GDP	Positive and significant	Positive and insignificant	**Rejected**
Inflation	Inf	Negative and significant	Positive and significant	**Rejected**

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1. Introduction

This chapter contains summary of findings, conclusions, recommendations and suggestions for further research.

5.2. Summary of Findings

As it shown from the regression result (ANOVA Table), the p-value of F- statistic is 0.0052 which means the model was significant and can interpret the coefficient and the significance of each independent variable. The adjusted R square of the model is 0.2367; it shows which means on average 23.67 % of the change in ROA happens due to the effect of the variables in the model.

The regression result showed that, investment ratio, leverage of the company, market share and underwriting risk affected profitability Ethiopian private insurance companies significantly. It means, firm with high investment ratio, low leverage ratio, greater market share and with low level of underwriting risk have higher return on asset (ROA). The result on investment ratio, leverage of the company, market share and underwriting risk is coherent with the hypothesis and with the past researches stated in chapter two.

Firm size, commission ratio, reinsurance dependence, diversification, real GDP and inflation affected profitability of Ethiopian private insurance companies insignificantly. The results of the four variables are consistent with the predicted sign. When we compare with the previous studies, the results of investment ratio, firm financial leverage, market share and underwriting

risk are consistent with previous (both with predicted sign and significance) but the study result show that firm size and inflation are not consistent with the sign but shows significance

5.3. Conclusions

The study investigates factors affecting profitability of private insurance industry in Ethiopia. The study revealed most of the studied independent variables have the same predicted sign except firm size and inflation. Firm size, commission ratio, market share, investment ratio and real GDP growth rate were positively related whereas reinsurance dependence, underwriting risk, firm financial leverage, diversification, and inflation have a negative effect on profitability.

The regression analysis has produced statistically significant results consistent withfour of the ten hypotheses formulated. Company size, investment ratio, market share, and underwriting riskaffected profitability significantly but commission ratio, reinsurance dependence, diversification, real GDP growth affect profitability insignificantly.

The result of the study shows some important issues that can increase profitability of private insurance companies in Ethiopia. Since investment ratio, market share and underwriting risk are the most direct factors that influence insurancecompanies ‘financialcondition, supervisory bodies, investors and other stakeholders may take in consideration applying them as a signal of possible factors that affect profitability of private insurance companies.

5.4. Recommendations

The analysis and discussion show that, the variables of leverage of a company, investment ratio, market share and underwriting risk have significant effect on profitability of private insurance business in Ethiopia.

Monitoring premium rates and the level of leverage in companies is crucial since both underwriting risk and high leverage ratio have negative effect on profitability of private insurance industry.

The study found that negative relationship between underwriting risk and profitability. It shows that the insurers are not collecting enough premiums that cover the claim payments of the company. This means, insurance companies are carrying higher risk for each premium collected from their customers. That shows, insurance companies are not collecting premiums that can cover their risk their bear or there is a very risky business class that takes a portion of premium from other business class. If this happens to the insurance companies, it affects the profitability of the insurance companies adversely. In the context of this, the study recommends that the insurance companies should give especial attention to the rate of premium in the context of risk according to their business class and also try to identify which business class record the highest level of risk and prone to risk. In our country context the insurance record the highest level of claims from motor business of class and most of their premium is collected from motor business of class but the claim paid is higher that the collected premium. So, it is recommended to develop the market share of the other business classes with low rate risk.

Level of investment and market share is the most important since investment ratio and market share affects positively profitability of private insurance companies.

The positive relationship between investment ratio and profitability shows that if the insurers invest more from earned premium, it can increase the level of profitability of insurance companies. The study recommends that to use all possible investment opportunities that allowed by NBE to increase the level of profitability in the firm. Most of private insurance companies getting huge part of profit from their investment segment especially from the time deposit and their capital investment in other companies. This shows that huge potential of the investment

segment. The executives in private insurance sector should prioritize the investment segment of the company to bear the risk in the industry.

The study shows positive relationship between market share and profitability. An insurance company with a higher market share increase profitability of insurance companies. This show, insurers with higher market share is profitable which leads to profitability of the firm. The study recommends that insurers should try to increase their market share. The Ethiopian insurance industry is hugely dominated by EIC which has a market share of more than 33%, its huge percentage of market when one insurance company holds more than 1/3 market share of the industry. So, these private insurances companies must work hard to increase their market share and creating new market stream which helps creating more market segments regarding to the business classes.

5.5. Suggestions for Further Research

The study particularly focused some firm specific, industry specific and macro-economic factors that affect profitability private insurance companies in Ethiopia due to brief period, limitation of number of size and resources. Future studies about profitability of private insurance take in consideration including variable such as solvency margin, retention ratio, currency ratio, interest rate, management efficiency and motor insurance which can give another perspective to see factors affecting profitability. Future researches should give emphasis to include life insurance business in determining the profitability of private insurance companies. The study only used quantitative data, so qualitative assessment should be considered to give additional perspective to the assess profitability and insurer's financial conditions.

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LIST OF INSURANCE COMPANIES

NO	Insurance companies	Type	Date of establishment
1	Ethiopian Insurance Corporation S.C	General	1976
2	National Insurance Company of EthiopiaS.C	General	23/09/1994
3	Awash Insurance Company S.C	Composite	1/10/1994
4	Africa Insurance Company S.C	Composite	1/12/1994
5	Nyala Insurance Company S.C	Composite	6/1/1995
6	Nile Insurance Company S.C	Composite	11/4/1995
7	Global Insurance Company S.C.	General	11/1/1997
8	The United Insurance S.C	Composite	1/4/1997
9	NIB Insurance Company S.C	Composite	1/5/2002
10	Lion Insurance Company S.C	General	1/7/2007
11	Ethio-Life & General Insurance S.C	Composite	23/10/2008
12	Oromia Insurance Company S.C	Composite	26/1/2009
13	Abay Insurance company S.C	Composite	26/7/2010
14	Berhan Insurance Company S.C	General	24/5/2011
15	Tsehay Insurance Company S.C	General	28/3/2012
16	Lucy Insurance Company S.C	General	1/10/2012
17	Bunna Insurance Company S.C	General	21/5/2013
18	Zemen Insurance Company S.C	General	5/6/2020

Source: - *https://www.nbe.gov.et/financial/insurer.html 20 November 2020*

DATA ANALYSIS OUTPUT FROM STATA

Linear regression

roa	Coef.	St.Err.	t-value	p-value	[95% Conf	Interval]	Sig
fz	-.051	.024	-2.12	.037	-.099	-.003	**
lev	-.012	.007	-1.69	.095	-.027	.002	*
inv	.118	.059	2.00	.049	.001	.236	**
com	.001	.001	0.83	.406	-.001	.003	
mkts	.943	.39	2.42	.018	.168	1.719	**
ur	-.105	.038	-2.75	.007	-.181	-.029	
red	-.086	.075	-1.15	.254	-.236	.063	
div	-.003	.016	-0.17	.868	-.034	.028	
gdp	.113	.464	0.24	.809	-.81	1.035	
inf	.112	.064	1.76	.082	-.015	.239	*
Constant	.533	.224	2.38	.019	.088	.978	**

Mean dependent var	0.088	SD dependent var	0.046
R-squared	0.237	Number of obs	100.000

Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
roa	100	.088	.046	-.12	.262
fz	100	8.606	.375	7.742	9.397
lev	100	2.184	.823	.111	4.632
inv	100	.174	.099	.001	.483
com	100	7.542	5.478	.036	23.579
mkts	100	.051	.021	.008	.098
ur	100	.628	.136	.235	.998
red	100	.141	.084	.041	.465
div	100	.7	.461	0	1
gdp	100	.097	.012	.077	.114
inf	100	.13	.083	.028	.341

Matrix of correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) roa	1.000										
(2) fz	-0.021	1.000									
(3) lev	-0.262	-0.195	1.000								
(4) inv	0.242	0.400	-0.581	1.000							
(5) com	0.054	-0.419	0.047	-0.159	1.000						
(6) mkts	0.045	0.651	0.138	0.025	-0.282	1.000					
(7) ur	-0.286	0.055	0.154	-0.134	0.169	0.080	1.000				
(8) red	0.041	-0.399	0.345	-0.225	-0.024	-0.018	-0.414	1.000			
(9) div	0.055	0.541	-0.064	0.136	-0.553	0.682	-0.078	0.036	1.000		
(10) gdp	0.027	-0.405	0.065	-0.154	0.067	-0.048	-0.033	0.253	0.000	1.000	
(11) inf	0.017	-0.047	0.294	-0.184	-0.080	-0.113	-0.025	0.209	-0.002	-0.364	1.000

Skewness/Kurtosis tests for Normality

------ joint ------

Variable	Obs	Pr(Skewness)	Pr(Kurtosis)	adj_chi2(2)	Prob>chi2
fz	100	0.160	0.855	2.060	0.357
lev	100	0.013	0.385	6.520	0.038
inv	100	0.002	0.138	10.390	0.005
com	100	0.003	0.781	7.920	0.019
mkts	100	0.380	0.349	1.690	0.430
ur	100	0.297	0.198	2.820	0.244
red	100	0.000	0.000	33.260	0.000
div	100	0.001	0.000	37.650	0.000
gdp	100	0.150	0.000	29.310	0.000
inf	100	0.000	0.015	22.190	0.000
roa	100	0.443	0.000	14.350	0.001

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
         Ho: Constant variance
         Variables: fitted values of roa

 chi2(1)      =     2.37
Prob>chi2  =   0.1239
```

VIF	1/VIF
4.410	0.227
3.690	0.271
2.800	0.357
2.150	0.465
2.000	0.501
1.870	0.535
1.700	0.588
1.700	0.590
1.530	0.656
1.460	0.687

Mean VIF= 2.330

Breusch-Godfrey LM test for autocorrelation chi2	df	Prob>Chi2
99.650	88	0.186

```
 Ramsey RESET test using powers of the fitted values of ROA
       Ho:  model has no omitted variables

                  F (3, 86) =      2.09
Prob> F =      0.1080
```