



St. Mary's University School of Graduate studies

**FACTORS AFFECTING INSURANCE
COMPANIES PROFITABILITY IN ETHIOPIA.**

By: Behailu Kebede Wolde

Id No: SGS/0067/2007A

June, 2016

Addis Ababa, Ethiopia



FACTORS AFFECTING INSURANCE COMPANIES PROFITABILITY IN ETHIOPIA.

**A Thesis Submitted to school of Graduate Studies of
St. Mary's University in Fulfillment for the Degree of
Masters
Business Administration in Accounting and Finance.**

By : Behailu Kebede Wolde

Id No: SGS/0067/2007A

St. Mary's University school of Graduate Studies

June, 2016

Addis Ababa, Ethiopia

St. Mary's University School of Graduate studies

**FACTORS AFFECTING INSURANCE
COMPANIES PROFITABILITY IN ETHIOPIA.**

By: Behailu Kebede Wolde

Id No: SGS/0067/2007A

Approved By Board of Examiners

Dean, Graduate Studies

Date and Signature

Advisor

Date and Signature

External Examiner

Date and Signature

Internal Examiner

Date and Signature

Abstract

Insurance is one of the major risks mitigating mechanism in modern economy. The existence and survival of financially strong Insurance Companies is therefore inevitable. For Insurers to be reliable and financially sound, their profitability and most importantly knowing what factors makes them profitable is very crucial objective. In order to achieve this objective, this study used 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 proxied by ROA. Data was analyzed with a software Eviws8. The findings of the study showed that Size of company, Loss ratio and leverage have statistically significant relationship with insurers' profitability. However, reinsurance dependence has negative but insignificant relationship with profitability. On the other hand, 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 influence on profitability. The study provides evidence that company size, Loss ratio, and Leverage are most important factors affecting profitability of insurance companies Ethiopia. Therefore; the study recommends that Ethiopian insurance companies should give due consideration to these factors to appropriately address profitability issues.

Key Words: *Ethiopian Insurance Companies, Insurance, Profitability*

STATEMENT OF DECLARATION

I declared that this thesis of MBA degree in Accounting and Finance at St. Mary's University, which was done independently with the advice and suggestions of my advisor, Ato Asmamaw Getie (Asst.Professor), is my original work and had not been previously submitted for a degree at this or another university and that all reference materials contained therein have been duly acknowledged.

Name: Behailu Kebede

Signature: _____

Advisor: Ato Asmamaw Getie (Asst. Professor)

Signature _____

ACKNOWLEDGEMENT

Before all, I Praise the lord- *Medehanialem*- for paving me all the way from beginning to end, gave me the patience and courage, without which that would have been difficult to tackle inconveniences around me.

I would like to extend my heartfelt gratitude to my Advisor Ato Asmamaw Getie, (Asst Professor) for his Valuable comment and suggestion during the process of the study, the staff of National bank of Ethiopia, employees and managers of Insurance companies where I collected data for the research work, also Zinegnaw Abiy (PhD), Ababaw Kassie (PhD) for their support during the paper preparation.

Finally I would like to thank my family, friends and all who helped me in the finalization of the work.

ACRONYMS/ABBREVIATIONS

CE	Capital Employed
CLRM	Classical Linear Regression Model
DU	Upper Bound
DL	Lower Bound
FEM	Fixed Effects Models
GDP	Gross Domestic Products
INF	Inflation
LEV	Leverage
LOR	Loss Ratio
PBIT	Profit Before Interest and Tax
PBT	Profit Before Tax
MKS	Market Share
MoFEC	Ministry of Finance and Economic Cooperation
MOI	Motor insurance
NBE	National Bank of Ethiopia
NW	Net worth
OLS	Ordinary Least Square
REM	Random Effects Models
RID	Reinsurance Dependence
ROA	Return On Assets
ROE	Return on equity
ROTA	Return on total assets
TA	Total Assets
SIZ	Size
VOC	Volume of capital

TABLE OF CONTENTS

<i>Statement of Declaration</i>	I
<i>Acknowledgement</i>	II
<i>Acronyms/Abbreviations</i>	III
<i>Table of Contents</i>	IV
<i>List of figures</i>	VII
<i>List of Tables</i>	VIII
CHAPTER ONE - INTRODUCTION	1
1.1. Background of the Study	1
1.2. Statement of the Problem.....	3
1.3. Objectives of the study.....	5
1.3.1. General objective	5
1.3.2. Specific Objectives	5
1.4. Significance of the study.....	5
1.5. Scope of the study (Delimitation)	5
1.6. Limitations of the study.....	6
1.7. Organization of the study.....	7
CHAPTER TWO - LITERATURE REVIEW	8
2.1 Theoretical Review.....	8
2.1.1 Concepts of Insurance and Its Role in the Economy.....	8
2.1.2 Role of insurance in the Economy.....	10
2.1.4 The concept of profit	11
2.1.5 The concept of profitability.....	12
2.1.6 Firm-specific, industry related, and Macro-economic factors of Profitability.....	14
2.1.6.1 Size of company.....	14
2.1.6.2 Volume of Capital.....	15
2.1.6.3 Leverage.....	16
2.1.6.4 Loss ratio/underwriting risk.....	17
2.1.6.5 Reinsurance Dependence	18

2.1.6.6 Motor Insurance	20
2.1.6.7 Market share.....	22
2.1.6.8 Gross Domestic Product (GDP).....	23
2.1.6.9 Inflation	24
2.2 Empirical review.....	25
2.2.1 Size of company.....	25
2.2.2 Leverage.....	26
2.2.3 Loss ratio/underwriting risk.....	27
2.2.4 Reinsurance dependence.....	28
2.2.5 Motor Insurance	29
2.2.6 Market share.....	29
2.2.7 Gross Domestic Product (GDP).....	30
2.28 Inflation.....	31
2.3 CONCEPTUAL framework	32
2.3.1 Summary of the Literature Review and knowledge Gap	33
2.3.2 Conceptual Framework.....	33
CHAPTER THREE - RESEARCH DESIGN AND METHODOLOGY	34
3.1 RESEARCH DESIGN	34
3.2 RESEARCH APPROACHE.....	34
3.3 SAMPLING TECHNIQUE	35
3.4 DATA SOURCES AND COLLECTION INSTRUMENT.....	36
3.5 VARIABLE DEFINITION AND MEASURMENTS.....	37
3.5.1 Dependent and Independent variables	37
3.5.1.1 Dependent variable.....	37
3.6 Measurement of Variables.....	38
3.7 Data analysis techniques and model specification.....	39
3.8 MODEL VALIDITY ASSUMPTIONS	42
3.9 Hypotheses of the study Variables.....	43
CHAPTER FOUR - RESULTS AND DISCUSSIONS	45
4.1 Model Specification Test (Fixed effect Vs Random effect).....	45
4.2 Tests for the Classical Linear Regression Model (CLRM) Assumptions	46
4.2.1 Constant term assumption.....	46

4.2.2 Test for Heteroskedasticity.....	46
4.2.3 Test for Autocorrelation.....	47
4.2.4. Test for Normality	49
4.2.5 Test for Multicollinearity.....	49
4.3. Correlation between variables.....	51
4.6 Descriptive statistics	51
4.7 Regression results and discussion.....	53
4.8 Test for hypothesis.....	56
CHAPTER FIVE - CONCLUSIONS AND RECOMMENDATION	63
5.1 SUMMARY	63
5.2 Conclusion	64
5.3 Recommendations	66
References.....	67
Appendix	

LIST OF FIGURES

Figure 2.1 Conceptual framework of the study	39
Figure 4.1 Test for Normality	55

LIST OF TABLES

Table 3.1 Measurement of variables	45
Table 3.2 expected sign of variables	49
Table 4.1 Heteroskedasticity (white test)	52
Table 4.2 Model Assumption of DW	53
Table 4.3 Breusch-Godfrey Serial Correlation LM Test	54
Table 4.4 Collinearity of independent variables	55
Table 4.5 Correlation between variables	56
Table 4.6 Descriptive Statistics of the Variables	57
Table 4.7 Regression results	60

CHAPTER ONE - INTRODUCTION

This chapter consists of seven sections; section1 is back ground of the study, section2 Statement of the problem, section3 Objectives of the study section4, Significance of the study, and section5 tells Scope/delimitation of the study, section6 addresses Limitations of the study, and finally, section7explains Organization of the study.

1.1. Background of the Study

In a modern economy, the importance of financial institutions such as Banks, Insurance, saving and credit unions, Cooperatives and the likes is unarguable. These institutions play a great role in facilitating and lubricating the economy of nations. A. Saunders and M.M Cornett (2004)the financial institutions perform essential function of channeling funds from those with surplus funds (supplier of funds) to those with shortage of funds (user of funds) Frederic & Eakins (2009) financial institutions not only affect our everyday life but also involve huge flows of funds, which in turn affect business profits, the production of goods and services, and even the economic well-being of countrie.Dereje Workie (2012) stated that financial institutions serve as a medium of exchange and facilitate business activities, support mobilization of resources through savings and allocate resources to activities with highest returns, follow up investments and exert corporate governance, and offer a diversity of financial instruments.

Abate (2012) stated that financial institutions such as insurance companies play in insuring economic activity and contribute to the stability of the financial system in particular and the stability of the economy of concerned country in general.Naveed *et al*(2011) the efficiency of financial intermediation and transfer of risk can affect economic growth while at the same time institutional insolvencies can result in systemic crises which have unfavorable consequences for the economy as a whole.

As part of the important segment of the financial sector Hails and Sumegi(2008) , the insurance industry plays an important role in the economy of most developed and developing countries contributing to economic growth, efficient resource allocation, reduction of transaction costs, creation of liquidity, facilitation of economics of scale in investment, and spread of financial losses.

Insurance companies have importance both for businesses and individuals as they indemnify the losses and put them in the same positions as they were before the occurrence of the loss. In

addition, insurers provide economic and social benefits in the society, that is, prevention of losses, reduction in anxiousness, fear and increasing employment. Insurance is a financial product that legally binds the insurance company to pay losses of the policyholder when a specific event occurs. The insurer accepts the risk that the event will occur in exchange for a fee, the premium. The insurer, in turn, may pass on some of that risk to other insurers or reinsurers. Insurance makes possible ventures that would otherwise be prohibitively expensive if one party had to absorb all the risk.

Pfeiffer (1956) defines Insurance is a device for the reduction of uncertainty of one party called the insured, through the transfer of particular risks to another party, called the insurer, who offers a restoration, at least in part of economic losses suffered by the insured.

Pritchett, *et al* (1996) defines Insurance as a social device, in which a group of individuals (called “Insurds”) transfer risk to another party (called the “insurer”) in order to combine loss experiences, which statistical prediction of losses and provides for payment of losses from fund contributed (premiums) by all members who transferred risk. Therefore, the current business world without insurance companies is unsustainable because risky businesses have no capacity to retain all types of risk in the current extremely uncertain environment.

From the above literature reviews it could be understood that the importance and the role that insurance companies play to a society in a modern economy is very crucial. On the other hand, Insurance companies can be reliable and sustainable provided that they are financially strong. Consequently, they have to be profitable and make sure that they are dependable for policyholders (customers) in particular and the economy in general. Therefore; profitability and the factors affecting profitability of insurers is a great concern for the stakeholders: managers, policy makers, regulators, investors, customers, employees so on.

According to Hifza Malik (2011) profitability is one of the most important objectives of financial management since one goal of financial management is to maximize the owners ‘wealth. Profitability is very important measure of performance. A business that is not profitable cannot survive. Conversely, a business that is highly profitable has the ability to reward its owners with a large return on their investment. Hence, the ultimate goal of a business entity is to earn profit in order to make sure the sustainability of the business in prevailing market conditions. Pandey (1980) defined the profitability as the ability of a business, whereas he interprets the term profit in relation to other elements. A financial benefit is realized when the amount of revenue gained from a business activity exceeds the expenses, costs and taxes needed to sustain the activity.

Although there are numerous approaches, generally, insurers' profitability is estimated through the examination of premium and investment income and of the underwriting results or of the overall operating performance.

In general the important role that insurance companies play in an economy entails their financial strength and survival. To keep track of this financial soundness and reliability knowing the factors that affect insurers' profitability and identifying them clearly is important job for researchers and financial analysts.

Therefore the objective of this study was to assess the factors affecting insurance companies' profitability. Nine purposively selected insurance companies were taken as a sample from a total population of 17 insurance companies in Ethiopia. Quantitative research approach was employed; financial statements of the companies were used as sources of secondary data. The data was analyzed with multiple regression tests using E-views version 8.

1.2. Statement of the Problem

Profitability is one of the major objectives of business companies. Profit is an essential prerequisite for an increasing competitiveness of a company. Besides, profit attracts investors and improves the level of solvency, and thus, strengthens consumers' confidence. The financial analysis of insurance companies serves as an important tool used by actuaries in the process of decision-making on underwriting and investment activities undertaken by them. Their financial performance is also relevant within the macroeconomic context since the insurance industry is one of the financial system components fostering economic growth and stability. Therefore, the determinants of an insurance company's performance have attracted the interest of academicians, practitioners, managers, regulatory body, and policy makers.

Different scholars have been doing empirical investigation on the determinants of insurer's profitability and arrived at different conclusions. Swiss (2008) insurers' profitability is determined first by underwriting performance (losses and expenses, which are affected by product pricing, risk selection, claims management, and marketing and administrative expenses) and second, by investment performance, which is a function of asset allocation and asset management as well as asset leverage. Khan (2013) revealed that leverage, size, earnings volatility and age of the firm are significant determinants of profitability while growth

opportunities and liquidity are not significant determinants of profitability. Ahmed (2008) examined the determinants of insurers' profitability that size, volume of capital, leverage & loss ratio are significant determinants of profitability. Abate (2012) studied company specific factors affecting insurance profitability in Ethiopia and found out that size, volume of capital are positively and significantly related with profitability; whereas liquidity, and leverage are negatively but significantly related. Daniel&Tilahun (2013) studied that insurers' size, tangibility and leverage are significant and positively related with profitability; however, loss ratio (risk) is statistically significant and negatively related with ROA. Yuvaraj and Gashaw (2013) studied firm specific factors but they also ignored macro-economic factors affecting profitability.

The absence of comprehensive empirical evidences in Ethiopia concerning determinants of insurance company's profitability on the one hand, and the lack of consistency of the findings on the other, is then what motivated the researcher to put forward possible contribution in this study.

As per the researcher's possible effort made to review the studies conducted on factors affecting financial performance of insurance companies, the factors have not been adequately investigated. While taking into consideration the absence of sufficient empirical inquiry, the researcher attempted to supplement empirical evidence in the country by incorporating insurance specific determinants (variables) which are untouched by previous researchers such as the effect of *motor insurance and market share* which are considered as firm specific and industry factors respectively.

By taking this in to account, the researcher attempted to examine these factors along with other determinants of insurance companies' profitability which are previously studied. The study therefore, tried to fill the gap by addressing the factors that have not been touched so far by other researchers in Ethiopia and try to augment the findings to the existing literature.

Hence, those may be important issues to be considered for the insurance managers, professionals, regulators and policy makers to support the industry in achieving its goals so that required economic outcomes could be obtained from the industry in Ethiopia by understanding the important factors of profitability.

1.3. Objectives of the study

1.3.1. General objective

The general objective of the study was to identify and compare the factors affecting profitability of insurance companies in Ethiopia for the period of 2006 to 2015.

1.3.2. Specific Objectives

Based on the above general objective, the researcher explicates the following specific objectives:-

- To explore the major factors of insurance companies profitability.
- To examine the level of significance of these factors on profitability.
- To measure the degree of relationship of the factors with profitability.

1.4. Significance of the study

The fundamental reason of this study was that previous studies on determinants of financial performance of insurance companies in Ethiopia have been in-sufficient. Most of the studies previously focused on banks not on insurance companies. Furthermore, concerned parties would benefit from the results that emerged from the study. The parties may include regulatory authorities, Insurance Companies, Customers, employees, Investors, Policy makers, scholars, researchers, and others who are interested in the area. Also, the study tried to provide additional input to the literature and sort out the important factors (firm-specific, industry specific and macro-economic) affecting profitability of insurance companies and serve as a reference for other studies to be conducted in the future. Therefore, this study attempted to provide additional empirical evidence on financial performance of insurance companies in Ethiopia.

1.5. Scope of the study (Delimitation)

The study mainly focused on identifying the main determinants of insurance companies' profitability in Ethiopia. The study was limited to examination of the internal and external factors affecting insurers' profitability of purposively selected insurance companies which are registered by the NBE and that have at least ten years data i.e. 2006-2015. This period was selected because, five years and above is the recommended length time in most finance literatures. In addition, all private insurance companies was established following 1994 financial liberalization and the period has significant structural change in profitability in Ethiopian

insurance industry. Also, in order to get an accurate picture of insurers' profitability determinants; the researcher believed that it is important to consider at least ten years quantitative data. However, insurance companies operating for less than ten years were excluded in this study because they do not have full data for the study purpose. The study was conducted based on secondary data that was collected from the audited financial statements of those general insurance companies in Ethiopia specifically from balance sheet, revenue account, and income statement for the period. Profitability is influenced by variables such as industry dynamics and competitive market position, the perspective of the study encompasses company specific factors such as company size, leverage, underwriting risk/loss ratio, reinsurance dependence, motor insurance, market share and macro-economic variables-gross domestic product and inflation, which are potentially liable for being determinants of insurers' profitability.

Because of the unique accounting system used by life assurance business and not all insurance companies render life assurance services, the secondary data collection from income statement, balance sheet and revenue account was only limited to general insurance business, because income statement of life assurance business is not prepared at the end of each year. It is prepared one time in three years for established companies, those that have been operating for more than five years, or after five years for newly established companies.

1.6. Limitations of the study

The study focused on the 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 volume of capital, earning volatility, tangibility, age, retention ratio, expense ratio, asset quality and so on. Some variable like expense ratio was considered to be included in the study, but due to time and accessibility of the required financial information, the researcher was obliged not to include the factor as a study variable.

The study confined merely on the quantitative measure of insurance companies financial performance in Ethiopia without any overall performance measurement tool, which means that there are other qualitatively expressed factors such as attitude of customers towards insurance, opinion of the experts in the industry about what qualitative factors could affect insurers performance that could have been captured through interview or questionnaire and strengthened the output of this study.

The study was limited to some of the macroeconomic variable like GDP, inflation, where as there are other macro variables that affect profitability such as money supply, unemployment rate etc. Data was collected from secondary sources like Balance sheet and Income statements of the selected insurers using NBE's centralized data, even if there is still limitation on accessing every data that the researcher needed.

Also, the study didn't cover all insurance companies because of infant age of the companies to cover ten years data.

1.7. Organization of the study

The study was organized into five chapters. Chapter one is introduction, where back ground of the study, statement of the problem, research hypotheses, objectives of the study, significance of the study, scope/delimitation of the study, limitations of the study, and finally how the study was organized. Chapter two was review of literature in which theories, empirical evidence and conceptual frame work was framed out. Chapter three was statement of the research methodology employed in the study. Chapter four was findings and discussions in which the finding results were interpreted. Finally, Chapter five dealt with conclusion and possible recommendations up on the outcome of the study.

CHAPTER TWO - LITERATURE REVIEW

This chapter deals with theoretical and empirical literature reviews. Section1 definition and concepts of Insurance, historical highlights of insurance in Ethiopia, The role of Insurance in the economy, and theories of profitability and factors affecting profitability of insurance companies. Section2 emphasize empirical literature review on insurance profitability Section 3. Generalize the whole review with conceptual framework and formulate Conclusion and knowledge gap.

2.1 Theoretical Review

2.1.1 Concepts of Insurance and Its Role in the Economy

Insurance is the pooling of fortuitous losses by transfer of such risks to insures, who agree to indemnify insured for such losses, to provide other pecuniary benefits on their occurrence, or to render services connected with the risk E.Rejda (2008). According to the author concepts within the definitions are explained as follows. *Pooling* is the spread of losses incurred by the few over the entire group, so that in the process, average loss is substituted for actual loss, fortuitous loss is one that is unforeseen and unexpected and occurs as a result of chance. Risk transfer on the other hand means that the pure risk is transferred from the insured to the insurer, who typically is in a stronger financial position to pay the loss than the insured. The other characteristics of insurance are indemnification for loss which means that the insured is restored to his/her approximate financial position prior to the occurrence of the loss.

Insurance is a contract in which the insured transfers risk of potential loss to the insurer who promises to compensate the former upon suffering loss. The insured then pays an agreed fee called a *premium* in consideration for this promise. The *promisor* is called insurer and the *promisee* is called the insured (Lowe, 1999). Insurance premium is the monetary consideration paid by the insured to the insurer for the cover granted by the insurance policy. The Insurer takes on a number of clients (insured) who pay small premiums that form an aggregate fund called the premium fund (Norman, 2000). The likelihood of an event or loss may be mathematically calculated or it may be based on the statistical results of past experience in order to determine the amount of premiums that would be required to accumulate a common fund or pool, to meet the losses upon their arising (Grose, 1992). As cited by (Mister, 2015) Insurance is a financial

product that legally binds the insurance company to pay losses of the policyholder when a specific event occurs. The insurer accepts the risk that the event will occur in exchange for a fee, the premium. The insurer, in turn, may pass on some of that risk to other insurers or reinsurers. Insurance makes possible ventures that would otherwise be prohibitively expensive if one party had to absorb all the risk. Insurance is an important and growing part of financial sector in virtually all developed and developing countries. A resilient and well regulated insurance industry can significantly contribute to economic growth through transfer of risk and mobilization of savings. In addition, it enhances financial system efficiency by reducing transaction cost, creating liquidity, and facilitating economies of scales in investment. The insurance industry is different from other financial services in that its main role is to spread financial loss. Policy- holders buy protection against the occurrence of defined events and insurers set reserves against the estimated total cost of claims. Insurance is founded on probability theory, where the price (insurance premium) is set before knowing the exact cost of the product (insurance contract, or policy). In line with financial stability forum (2000), we can classify insurance in to three major categories (i) life insurance (ii) non-life insurance and (iii) reinsurance.

Life insurance offers a variety of products with different degree of protection and investment components, including pensions, savings, permanent health and term assurance policies. In some developed markets, life insurance offers variety of products functions as contractual savings similar to deposits and in that respect the life insurance industry is concerned with asset accumulation in addition to risk transfer.

Non-life insurance is also called property and casualty insurance, property and liability insurance or general insurance. In buying non-life insurance, the customer is buying financial protection against specific insurable events, such as industrial injury. Policies are typically short-term (one year) indemnity contracts and normally there is no investment element or expectation of financial returns. Nevertheless, the liabilities arising from such contracts can continue for many years (e.g. an industrial injury or disease or a manufacturers liability to customers). Reinsurance is insurance for insurers. Reinsurance protects against peak exposures and the volatility of underwriting results. They provide both expertise and underwriting capacity to the primary market and are often systematically important to the primary insurance market. There exist four broad categories of reinsurance - proportional, non-proportional, facultative, and financial.

2.1.2 Role of insurance in the Economy

As Banks and Security firms, insurance companies are financial intermediaries. It is therefore appropriate to view the insurance sector simply as pass-through mechanisms for diversifying risk, under which the unfortunate few who suffer losses are compensated from funds collected from many policy holders. Insurance is an essential element in the operation of sophisticated national economies throughout the world today. Without insurance coverage, the private commercial sector would be unable to function (Peter R. Haiss and K.Sumegi, 2008). Carmichael and Pomerleano (2002) identified several main contribution of insurance that for instance, insurance promotes financial stability among households and firms by transferring risks to an entity better equipped to withstand them; it encourages individuals and firms to specialize, create wealth and undertake beneficial projects they would not be otherwise prepared to consider. Hifza Malik (2011) insurance plays a crucial role in fostering commercial and infrastructural businesses. From the latter perspective, it promotes financial and social stability, mobilizes and channels savings, supports trade, commerce and entrepreneurial activity and improves the quality of the lives of individuals and the overall wellbeing in a country. Life insurance companies mobilize savings from the households sector and channel them to corporate and public sectors. The key difference between banks and insurance companies is that the maturity of bank liabilities is generally shorter than that of life insurance companies. This enables life insurers to play a large role in the long- term bond market. At the same time, life insurer's portfolios are typically more equipped than those of banks, which make them less prone to bank liquidity crises.

A strong insurance industry can relieve pressure on government budget to the extent that provide private insurance reduces the demands on government social security programs and life insurance can be an important part of personal retirement planning program.

Insurance supports trade, commerce and entrepreneurial activity in general. Many sectors are heavily reliant on insurance; for example, manufacturing, shipping, aviation, the medical, legal, and accounting professions and (increasingly) banking through credit risk transfer. Insurance may actually lower total risk the economy faces since insurers have incentives to measure and manage the risks to which they are exposed, as well as promote risk mitigation activities. A number of empirical studies show evidence that the development of financial intermediaries, including insurance, has a strong correlation with economic growth. Patrick (1966) suggests that financial sector can have either a supply- leading or demand following relationship with economic growth. In the supply-leading view, economic growth can be induced through supply

of financial services, while in the demand following view; the demand for financial services can induce growth of financial institutions and their assets. The insurance sector can also contribute to the development of capital markets by making a pool of funds accessible to both borrowers and issuers of securities. This is due to the fact that insurance companies have longer term liabilities than banks. Catalan, Impavido, and Musalem (2000) study the relationship between the development of contractual savings (assets of pension funds and life insurance companies) and capital markets. The insurance industry has traditionally been regarded as a relatively stable segment of the financial system. Considerably lower liquidity of liabilities has prevented contagions run on insurance companies that have been seen in the banking sector. Nevertheless, insurance companies are not necessarily immune to crises particularly when they assimilate banking-type activities and /or have close business relationship with banks, including cross-shareholding, placement of deposits, and credit risk transfer. According to Balino, T.,J and T.V. Sundararajan (1991) define financial crises in general as a situation in which a significant group of financial institutions have liabilities exceeding the market value of their assets, leading to runs and other portfolio shifts, collapse of some financial firms and government interventions.

2.1.4 The concept of profit

Turnover is vanity

Profit is sanity

From the above quote we understand that mere turnover is not enough for companies to be successful and financially strong. It conveys a message that profit is more than turnover. Profit entails the management's effort of utilizing all resources efficiently and the ability of its cost management. If we are simply proud of selling voluminous items without effective cost management, it is a loss. What matters is the bottom line.

The term Profit, from accounting point of view, a residual left after deducting from total revenue of an enterprise all amount expended in earning that income. Profit is the surplus remaining after total costs are deducted from total revenue, and the basis on which tax is computed and dividend is paid. It is the best known measure of success in an enterprise. Profit is reflected in reduction in liabilities, increase in assets, and/or increase in owners' equity. It furnishes resources for investing in future operations, and its absence may result in the extinction of a company (www.businessdictionary.com, as read on April 2016). Profit is the money a business makes after accounting for all the expenses. Regardless of whether the business is a couple of kids running

lemonade stand or publicly traded multinational company, consistently earning profit is every company's goal. (www.investopedia.com/terms/p/profit.asp, as read on April 2016)

Giroux (2003) stated that profit is the most important criterion for evaluating commercial firms for investment decisions. Accordingly the future existence and success of firms largely depends on continuous profit growth. Profitability is not to be taken in isolation as an end in itself. J.Borland and McLeod (2000) Organizations will have continuity and growth as long term goals; profit is however an efficient indicator of how well current pricing, marketing, and product/services policies are working- it is a measure of successful strategic policy.

Profit is not related to any useful specific function. Thus monopoly profit is not functional reward. Profit may sometime be in the nature of windfall. It is an unexpected reward earned by a firm just by mere chance, an inflationary boom. Profit is the earning of entrepreneur. To the economist the most significant point about profit is that it is a residual income. However; the term profit has different connotations. In short, the following are distinctive feature of profit as a factor reward;

- It is not predetermined contractual payment
- It is not a fixed remuneration
- It is a residual surplus
- It is uncertain
- It may even be negative.

Source :(www.yourarticlelibrary.com, as read on April 2016)

2.1.5 The concept of profitability

Profitability means the ability to make profit from all the business activities of an organization. It shows how efficiently the management can make profit by using all the resources available in the market. According to Harward & Upton (1961), profitability is the ability of a given investment to earn a return from its use. The term Profitability however is not synonymous with the term "Efficiency". Profitability is a measure of efficiency; and is regarded as a measure of efficiency and management guide to greater efficiency. Profitability is one of the most important objectives of financial management because one goal of financial management is to maximize the owner's wealth and profitability which in turn indicates better financial performance. Though, profitability is an important yardstick for measuring the efficiency, the degree of profitability cannot be taken as a final proof or indicator of efficiency. At times satisfactory profits can mark inefficiency and conversely, a proper degree of efficiency can be accompanied

by an absence of profit. Sometimes people use the term Profit and Profitability interchangeably, but in real sense, there is a difference between the two. Profit is an absolute term, whereas, profitability is a relative concept or meaning. However, they are closely related and mutually interdependent, having distinct roles in business. Profit refers to the total income earned by the firm during the specified period of time, while profitability refers to the operating efficiency of the firm. It is the ability of the firm to make profit on sales. It is the ability of firm to get sufficient return on the capital and employees used in the business operation *ibid*.

William H. Greene & Dam Segal (2004) argued that the performance of insurance companies in financial terms is normally expressed in net premium earned, profitability from underwriting activities, annual turnover, return on investment, return on equity. These measures could be classified as underwriting performance (losses and expenses, which are affected by product pricing, risk selection, claims management, and marketing and administrative expenses) measures and investment performance (which is a function of asset allocation and asset management as well as asset leverage) measures (M. Adams, 1999). Hafiz Malik (2011) is among others, who have suggested that although there are different ways to measure profitability, it is better to use ROA. Walsh (1996) states that performance is measured by establishing relationship between balance sheet and profit and loss statement values. Profit before interest and tax (PBIT) could be measured against total assets or capital employed or net worth. We could do likewise with profit before tax and profit after tax and gives us nine possible measures of performance. However, in most finance literatures profitability is measured by ROA (return on assets) which is defined as the profits before tax divided by total assets. Profit before interest and tax (PBIT) could be measured against total assets or capital employed or net worth. We could do likewise with profit before tax and profit after tax and gives us nine possible measures of performance through extortion, because of its monopoly power in the market.

Profitability consists of two words profit and ability. While the term Profitability is defined as the ability of a given investment to earn a return from its use. Profitability is one of the most important objectives of financial management because one goal of financial management is to maximize the owner`s wealth and profitability which in turn indicates better financial performance. It is necessary to differentiate between the term Profit and Profitability at this point.

Profit and loss statement

PBIT

PBT

PAT

Balance sheet

TA

CE

NW

Where PBIT stands for profit before interest and tax

TA stands for total assets

PBT stands for-profit before tax

CE stands for Capital employed

PAT stands for profit after tax

NW stands for net worth

Return on total assets (ROTA) looks at the operating efficiency of the total enterprise while return on equity (ROE) considers how that operating efficiency is translated in to benefits to the owners. Return on total assets provides the foundation necessary for company to deliver a good return on equity. A company without a good ROTA finds it almost impossible to generate a satisfactory ROE. The ratio of return gives the value or the earnings being driven by total assets. Therefore this ratio measures how well management uses the assets in the business to generate an operating surplus. Whichever method of calculation is adopted ROA uses three main operating variables of the business, *total revenues*, *total cost*, and *asset employed*. It is therefore the most comprehensive measure of total management performance available to us.(ibid 1996).

Gitman (2006) return on total asset (ROA) often called the return on investment (ROI) measures the overall effectiveness of management in generating profits with in its available assets; the higher the rate the better. H.Kent and E.Powell (2005) stated that profitability ratios measure the earning power of a firm. They measure the management's ability to control expenses in relation to sales and reflect a firm's operating performance, riskiness, and leverage. Therefore from the above statements we can infer that return on asset is the safest and comprehensive measure of performance and serves as proxy to insurance companies' performance for this study.

2.1.6 Firm-specific, industry related, and Macro-economic factors of Profitability

2.1.6.1 Size of company

It has been suggested that company size is positively related to profitability. The main reasons behind this can be summarized as follows. First, large insurance companies normally have greater capacity for dealing with adverse market fluctuations than small ones. Second, large firms usually can relatively easily recruit able employees with professional knowledge

compared with small firms. Third, large insurance companies have economies of scale in terms of the labor cost, which is the most significant production factor for delivering insurance services (Shiu, 2014). Company size is computed as decimal logarithm of total assets of the insurance company. A positive linkage between company size and its profitability is expected, since larger firms have more resources, a better risk diversification, complex information systems and a better expenses management. In most literatures the effect of size on banks profitability are represented by total asset. Flaminius et.al (2009) indicated that size is used to capture the fact that larger firms are better placed than smaller firms in harnessing economies of scale in transactions and enjoy a higher level of profits. One of the most important questions underlying bank policy is which size optimizes bank profitability. According to Athanasoglou (2005), the effect of a growing size of a bank on profitability has been proved to be positive to a certain extent. Consequently, a positive relationship is expected between size and profitability by many insurance area researchers. However, for firms that become extremely large, the effect of size could be negative due to bureaucratic and other reasons Yuqi Li (2007). Hence, the size profitability relationship may be expected to be non-linear. Therefore most studies use the real assets in logarithm and their square in order to capture the possible non-linear relationship. As cited in Hana (2015) in general, majority of studies indicated that performance of large size insurance companies is better than small size companies. But the size growth should be limited to a certain stage, and that certain stage could be defined based on the ability of the management. If the company size keeps on increasing above the optimal point it is obvious that the increase in insurance's size provides diseconomies of scale, therefore, up to the optimal point increase in size gives the above mentioned advantages to the firm. Hailegeorgis (2011) explained commercial banks profitability in Ethiopian Commercial Banks size represented by banks assets which increased significantly, this increase leads to the profitability of banks; the result implies that larger banks enjoy the higher profit than smaller banks in Ethiopian banking sector because they are exploiting the benefit of economies of scales.

Therefore, from the above theoretical discussions it may be inferred that there is a positive relationship between size of a company and profitability as long as the size is manageable and to the optimum level. So size is one of the important factors of insurer's profitability.

2.1.6.2 Volume of Capital

Volume of capital is also known as capital adequacy and is a measure of insurers' financial strength or financial soundness in terms of its ability to withstand operational and abnormal

losses. Capital is seen as a cushion to protect insured and promote the stability and efficiency of financial system, it also indicates whether the insurance company has the financial strength to absorb losses arising from claims. Capital adequacy (volume of capital) also indicates the ability of insurers to undertake additional business (Tanveer Ahmad Darzi, 2004, p: 59).

Volume of capital indicates the availability of capital contributed by owners of insurance companies which is known as the amount of owners' funds available to generate future income. As the volume of capital increases, the capability of insurance companies' to involve in a wider variety of business also increases. Gashaw (2012) stated that insurance companies' equity capital can be seen in two ways, one it can be seen as the amount contributed by owners of an insurance (paid-up share capital) that gives them the right to enjoy all the future returns, in other way it can be seen as the amount of owners' funds available to support a business. There are studies conducted by including volume of capital as a determinant of profitability of insurance companies and the outcome is controversial, Malik (2011) from Pakistan and Sambasivam and Gashaw (2013) from Ethiopia conducted a research to get major factors affecting the profitability of insurance companies by including volume of capital and get positive and significant relationship between volume of capital and profitability of insurance companies. Whereas, Bawa and Chattha (2013) conducted a research on financial performance of life insurers in Indian insurance industry and Charumathi (2012) also conducted on the determinants of profitability of Indian life insurers, both found negative and significant relationship between volume of capital and insurers profitability. Since the result is controversial it is necessary to include the variable as a determining factor.

2.1.6.3 Leverage

In finance leverage may be divided into, *operating leverage* and *financial leverage*. Business risk depends in part on (F.Bringham, 1995) the extent to which a firm's costs are fixed. If fixed cost is high, even a small decline in sales can lead to a large decline in operating profits and ROE. Therefore, other things remain constant, the higher the fixed cost, the higher the business risk. Financial leverage refers to the use of fixed-income securities- debt and preferred stock- and financial risk is the additional risk placed on common stock holders as a result of financial leverage. Leverage (also called solvency) considers the capital structure of the firm and the evaluation of the relative risk and return associated with liabilities especially (long term debt) and equity or ownership (G.Giroux, 2003). The debt to equity ratio is one of the most fundamental measures in corporate finance. The purpose of this ratio (D/E ratio) is to measure the mix of funds in the balance sheet and to make a comparison between funds that have been

supplied by the owners (equity) and those which have been borrowed (debt). Why the ratio is important?

When a company raises its debt, it takes commitments to substantial fixed cash out flows for some times in to the future. The company doesn't have guaranteed cash inflows over the same period. The inflow may be most uncertain. The fixed cash outflow combined with an uncertain cash inflows give rise to financial risk. It follows that the grater the loan, the greater the risk. The question is why do then companies take this risk. The answer lies in the relative costs. Debt costs less than equity funds. By adding debt to its balance sheet, a company can generally improve its profitability, increase its share price, increase the wealth of its shareholders and develop greater potential for growth. Debt increase both profit and raise the job of the manager to maintain a proper balance between the two. Walsh (1996) Gearing is a comparison of the company's debt (borrowing) and its equity (Ramseden, 2002) to determine who is really financing the company's operations- the shareholders or the bank. Higher ratio indicates high debt and high amount of interest expense which in turn downs the profit. If the ratio is more than 60%, it is regarded as high, above 100% is very high. Less than 20% could be taken as low. The trade of theory suggests a positive relationship between profitability and leverage ratio and justified by taxes, agency costs and bankruptcy costs push more profitable firms towards higher leverage. Hence more profitable firms should prefer debt financing to get benefit from tax shield. Insurance leverage could be defined as reserves to surplus or debt to equity. The risk of an insurer may increase when it increases its leverage. Literatures in capital structure confirm that a firm's value will increase up to optimum point as leverage increases and then declines if leverage is further increased beyond that optimum level.

From the above theoretical discussions we can understand that leverage, financial or operating does have an impact on profitability of firms. Higher debt to finance the operation of the firm means that the firm is incurring more debt and brings more financial risk to the company. Besides more interest expense would be incurred in relation with the loan, which in turn reduces the profit of the business. If income declines, the return on equity (ROE) gets declined which in effect reduces the ROA (profitability).

2.1.6.4 Loss ratio/underwriting risk

Loss ratio or underwriting risk generally refers to the risk of loss on underwriting activity in the insurance and securities industries. In insurance, underwriting risk may either arise from an inaccurate assessment of the risks entailed in writing an insurance policy, or from factors wholly

out of the control of the insurer/underwriter as a result the policy may cost the insurer much more than it has earned in premiums (www.investopedia.com). Underwriting risk is the risk that the premiums collected will not be sufficient to cover the cost of coverage. Insurance prices are established based on estimates of expected claim costs and the costs to issue and administer the policy. The estimates and assumptions used to develop policy pricing may prove to ultimately be inaccurate. This may be due to poor assumptions, changing legal environments, increased longevity, higher than expected weather catastrophes (Ernst & Young, 2010). Huge fluctuations in net premiums written indicate a lack of stability in underwriting operation of an insurance company. Barth and 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. Underwriting risk as measured by the loss ratio is the claim cost incurred by an insurer to net premium earned.

Therefore it may be learned that insurers should be effective enough in estimating their possible claim costs and other administrative expenses in handling the underwriting process and set appropriate price of delivering insurance services. The risk is therefore, if this is not achieved the company would be in a risky position not to cover losses due to insolvency and become loss maker. Therefore the correct assessment of costs, expenses, and premiums are the crucial step to be taken if an insurer is supposed to be profitable.

2.1.6.5 Reinsurance Dependence

A reinsurance transaction is an agreement between two or more parties, the reinsured or the ceding company and the reinsurer. The reinsurer agrees to accept a certain fixed share of the reinsurer's risk up on terms as set out in the agreement. The purpose of reinsurance is purely technical. It is a means that an insurance company uses to reduce, from the point of view of possible material losses, the perils that it has accepted. When insurance companies seek financial security and their practice of insuring risks is termed reinsurance. However; in most cases, the reinsurer does not underwrite individual risks. The reinsurer underwrites the insurance company and its ability to underwrite soundly. Thus, reinsurance is insurance of insurance companies.

Reinsurance may be defined as the shifting by the primary insurer, called the ceding company, of a part of the risk it assumes to another company, called the reinsurer. The portion of the risk kept by the ceding company is known as the line, or retention, and the portion reinsured, the cession. (Sommer, 2005) the process by which the reinsurer passes on risks to another reinsurer

is known as retrocession. The reinsurance dependence is calculated as ratio of gross written premiums ceded in reinsurance to total assets. Insurance companies reinsure a certain amount of the risk underwritten in order to reduce bankruptcy risk in the case of high losses.

Reinsurance is an important tool for transferring huge and catastrophic risks. It is used for reasons like boosting the underwriting capacity of the primary insurer. It also stabilizes profit by covering huge catastrophic losses such as industrial explosion, commercial airline disaster and similar events, up to certain agreed limit (E.Rejda2008). The tragic terrorist attacks on September eleven show clearly the importance of reinsurance to the insurance industry. Insured losses totaled about 36 million dollar (2005), however, reinsurance paid about 2/3 of the losses. 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 has 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. Also 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.

There are several types of reinsurance treaties and arrangements including the following. Quota share treaty is a treaty where the primary insurer and reinsurer agree to share premiums and losses based on some proportion. Ceding commission is an income for the primary insurer to help recover expenses associated with underwriting. The major advantage of quota share reinsurance is that the primary insurer's unearned premium reserve is reduced. The principal disadvantage is that a large share of potentially profitable business is ceded to the reinsurer. Surplus share treaty is a contract where the reinsurer agrees to accept insurance in excess of the ceding insurer's retention limit, up to some maximum amount. The retention limit is referred to as *line* and is stated in dollar amounts. The primary advantage of a surplus share treaty is that the primary insurer's underwriting capacity in a single exposure is increased. The major disadvantage is the increase in administrative expenses. The surplus treaty is more complex and requires greater record keeping. Excess of loss treaty is designed largely for catastrophic protection. Losses in excess of the retention limit are paid by the reinsurer up to some maximum limit. The excess of loss treaty can be written to cover (1) a single exposure (2) single occurrence, such as catastrophic loss from a tornado, or (3) excess of loss when the primary insurer cumulative losses exceeds a certain amount during some stated time period such as a year.

As can be seen from the above theoretical reviews, reinsurance types, costs, importance, advantage and disadvantages, we can understand that reinsurance arrangements (whether it is treaty or facultative) does have cost implication in opting one form the other. This means that reinsurance dependence has got profitability impact for the insurance companies (ibid 2008).

2.1.6.6 Motor Insurance

Motor insurance is the most prevalent insurance line in the world, and in Ethiopia, the largest sector in non-life insurance. In 2006/07 Ethiopian insurance industry generated a total income close to 44 USD or 46% of all general insurance premiums collected from all class of businesses. Despite the large portion that motor insurance constitutes, it is reported that it is a loss leader for most insurance companies. The economic health of the motor insurance industry will affect both its attractiveness to investors and the likelihood of investment in road safety activities. Unfortunately, the motor insurance industry too often appears to be loss making business in both high income countries and low income countries. In India recent loss ratios has been reported to be 189%, According to the study conducted in Cyprus, motor insurance is the largest class of non-life business mainly because of its compulsion by law. However the finding of the study revealed that motor class of business are consistently recorded negative results. The main cause

of the negative result has been identified as low premium charge, high acquisition and administrative costs, inadequate investment income.

The study of World Health Organization (WHO) estimated that 1.17 million deaths occur each year worldwide due to road traffic accident. A breakdown of the figures indicates that more than 70% of the deaths occurred in developing countries. The increased rate of traffic accident has been attributed to population explosion and increased motorization. Increased motorization may be characterized briefly as the “automotive revolution”, that is the motorization of urban population especially in developing countries. Traffic crashes also has an impact on the economy of developing countries at an estimated cost of 1-2 percent of country’s GNP per annum. Causes of motor vehicle crashes are multi- factorial and involve the interaction of a number of pre-crash factors that include people, vehicles and road environment. Human error is estimated to account for between 64% and 95% of all causes of traffic crashes in developing countries. A high prevalence of old vehicles that often carry many more people than they are designed to carry lack of safety belt, and helmet use, poor road design and maintenance and the traffic mix on roads are other factors that contribute to the high rate of crashes in less developing countries. Similarly in Ethiopia, as a study conducted by NUECA, 2009 indicated that more than 90% of the traffic accidents were caused by human errors, about which almost all 89% of the causes are drivers. Factors that may contribute to the costliness of motor insurance are: - premium charged is based on unhealthy competition of insurers and the absence of statistical information and qualified personnel forces companies to charge a premium even if it is not profitable, rather it is just to take the customer. It is more of traditional practice. As indicated above the prevalence of traffic accident every day put the insurance companies in expensive claim costs of motor insurance, the other important factor is most motor insurance business has been generated by insurance brokers and or agents. As a result, the cost of business acquisition/commission payments and administration would be high.

Motor insurance is the biggest and fastest growing general insurance portfolio in the Indian market. It accounts for more than 42% of the cash flow of general insurers (Shri VinayVerma, 2003). *Underwriters are scrutinizing their accounts more closely than any other time in recent past to drive their auto insurance portfolio in right direction towards profitability.*

As stated in Emine Öner Kaya (2015) Motor insurance, which has a significant share in the nonlife premium portfolio of the Turkish insurance industry, appears as an insurance in which competition is intense worldwide and insurance companies find it difficult to gain profit from this portfolio (Özer 2015). It is possible to state that this situation arises from the high loss

payments and marketing costs in motor insurance (Kozak 2015) and the fact that companies make pricing according to the prices of competitive companies with the concern that they could lose market share. Within this framework, it is expected that there is a reverse relationship between the share of motor insurance in the insurance portfolio of a company and the company's profitability. However, it is possible to make motor insurance profitable and sustainable with the correct pricing of risks and an effective damage and cost management.

In a nut shell, though motor insurance business generates lion share of the business income/premiums to insurers in Ethiopia or across the world, due to reasons mentioned above, the claim cost incurred by this class of business and its acquisition cost (cost of commission) has been found to be very much significant throughout time. Therefore; the impact of motor insurance business on profitability is needless to say.

2.1.6.7 Market share

Market share is the percentage share of an industry's or markets total sales that are earned by a particular company over a specified time period. 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)

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. 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. (www.investopedia.com).

As stated in Cassandra R. Cole et al (2015) in their multivariate analysis, they find evidence that market concentration and insurers' underwriting profits are positively related. More specifically, insurers in states with greater market concentration are more profitable than insurers in states with lower levels of market concentration. As noted in Bajtelsmit and Bouzouita(1998), this positive relation between concentration and profitability may be due to a number of factors—including price collusion, differences in products or efficiency—and it is, therefore, not clear if this relation is evidence in support of the SCP or efficiency structure hypotheses. As an attempt to provide some additional insight into the potential cause of the variation in profitability across the health insurance markets, they include a control variable for efficiency in the model and find some evidence that efficient operations of firms may explain some portion of the profit concentration relation.

2.1.6.8 Gross Domestic Product (GDP)

GDP is one the primary indicators used to gauge the health of a country's economy. It represents the total dollar value of all goods and services produced over a specific time period. Usually, GDP is expressed as a comparison to the previous quarter or year. Growth rate of GDP reflects economic activity as well as level of economic development and as such affect the various factors related to the supply and demand for insurance products and services. GDP is the most informative single indicator of progress in economic development. Poor economic conditions can worsen the quality of the finance portfolio, thereby reducing profitability. If GDP grows, the likelihood of selling insurance policies also grows and insurers are likely to benefit from that in the form of higher profits. Outreville (1990) investigated the economic significance of insurance in developing countries. He compares 45 developed and developing countries and concludes that there is a positive but non-linear relationship between general insurance premiums and GDP per capita. Maja (2012) also examined that GDP growth positively affects insurers profitability i.e. growth of overall economic activity encourage demand for insurers services and indirectly result in higher.

Therefore; the growth of GDP measures the economic growth of a particular country. When the GDP affected positively or when economic activities grow, so is the financial sector and as insurance is one of the major financial industries, it is positively affected by the boom of economy and there by enhances the profit of insurers.

2.1.6.9 Inflation

Inflation is defined as a sustained increase in the general level of prices for goods and services. It is measured as an annual percentage increase.

Inflation certainly plays a role in insurance and has adverse impact on many aspects of insurance operations, such as claims, expenses and technical provisions (DaykinP, &Pesonen1994).

Expected inflation is taken into account when actuaries set actuarially fair premiums, inflation itself is unlikely to seriously impact on the performance of insurance companies. Nevertheless, if inflation is significantly greater than expected, it could cause insurance companies financial difficulty. For instance, unexpected inflation makes real returns on fixed-rate bonds lower than expected. As a consequence, profit margins of insurance companies are compressed and financial performance is accordingly impaired (Browne, Carson & Hoyt, 1999). The inflation could affect insurance companies' profitability influencing both their liabilities and assets. In expectation of inflation claim payments increases as well as reserves that are required in anticipation of the higher claims, consequently reducing technical result and profitability. Taking into consideration that inflation affects assets side of the balance sheet, as the bond markets adjust to the higher level of inflation, interest rates begin to rise. This result in bond prices fall, negatively affecting value of investment portfolio. Given the negative relationship between inflation and returns on both fixed-income securities and equities, it is expected that the relationship between profitability and inflation will be negative.

2.2 EMPIRICAL REVIEW

In this part of the study the researcher looked at the studies conducted by other researchers regarding insurer's profitability in Ethiopia or outside Ethiopia.

2.2.1 Size of company

As can be seen in the theoretical review of the study, size and profitability are positively related and suggested that it has got huge impact on ROA.

A study conducted in Ethiopia by Yuvaraj and Abate Gashaw (2013) examined on factors affecting profitability of insurance companies for nine years (2003-2011) in Ethiopia using 7 firm specific factor (i.e. age of company, size of company, volume of capital, leverage ratio, liquidity ratio, growth and tangibility of assets) on profitability. According to their regression results they found that size is most important factor and positively related with profitability.

Daniel and Tilahun (2013) also studied on Firm specific factors that determine insurance companies' performance in Ethiopia using 7 firm specific factors (i.e. size, leverage, tangibility, Loss ratio (risk), growth in writing premium, liquidity and age) on 9 insurance companies for six consecutive year starting from 2005-2010 and they found that insurers' size is statistically significant and positively related with return on total asset.

Abate Gashaw (2012) studied factors affecting insurers profitability in Ethiopia sampling nine of insurance companies for nine years (2003-2011) and found out that size is the most important determinant factors of profitability and positively related with it. Other studies Suheyli Reshid (2015), Mistere (2015) also found out the same result. The effect of size on profitability in this study also was found to be significant and positively related with profitability.

Nino Datu (2016) examined the association between Insurer-specific indicators and macroeconomics on profitability in Philippine non-life insurance market utilizing the panel data over the period of 2008 through 2012. Return on assets (ROA) and operating ratio were used for profitability. The study found out that that firm size significantly affects profitability both in ROA and operating ratio.

Hamdan (2008) examined determinants of insurance company's profitability in UAE, the study revealed that there is significantly positive relationship between profitability and size. Bilal Javaria et al. (2013) similarly, investigated on the determinants of profitability in insurance sector of Pakistan with a panel data set of 31 insurance firms, and they found that size, earnings volatility and age of the firm are significant determinants of profitability.

2.2.2 Leverage

Leverage (also called solvency) considers the capital structure of the firm and the evaluation of the relative risk and return associated with liabilities especially (long term debt) and equity or ownership (G.Giroux, 2003). The debt to equity ratio is one of the most fundamental measures in corporate finance.

Nino Datu (2016) examined the association between Insurer-specific indicators and macroeconomics on profitability in Philippine non-life insurance market utilizing the panel data over the period of 2008 through 2012. Return on assets (ROA) and operating ratio were used for profitability. The study found out that that financial leverage significantly affects profitability both in ROA and operating ratio.

The study conducted by Yuvaraj and Abate Gashaw (2013) studied determinant factors of profitability and found in their study that leverage is negatively but significantly related with profitability. Abate Gashaw (2012) studied factors affecting insurers' profitability in Ethiopia sampling nine of insurance companies for nine years (2003-2011) and found out that leverage is the most important determinant factors of profitability that it significantly but negatively related with profitability. Other studies in Ethiopia also (Abate Gashaw, 2012), (Mistere, 2015), and (Hanna, 2015) found out the same result. All found a negative and significant relationship with profitability.

Hamdan (2008) examined determinants of insurance company's profitability in UAE. The study used secondary data for the period of 2004-2007. The study revealed that Leverage ratio significantly and oppositely related to profitability. Also Bilal Javaria *et al.* (2013) investigated on the determinants of profitability in insurance sector of Pakistan with a panel data set of 31 insurance firms (life insurance sector and no-life Insurance) of Pakistan from 2006-2011 the study suggests an opposite and significant relationship between leverage ratio as independent variables and profitability. Besides Shami and Ahmed (2008) explore on determinants of Insurance Companies' Profitability in UAE using 5 firm specific variables and they found that an opposite and significant relationship between leverage ratio as independent variables and profitability. Hen-Ying Lee (2014) also estimated the effects of firm specific factors and macroeconomic factors on profitability (measured by operating ratio and ROA) of propertyliability insurance industry in Taiwan and he found that financial leverage is significantly and negatively correlated with profitability. AnilaÇekrezi (2015) investigated factors that affect financial performance of Albanian Insurance Companies the study population consisted of 5 insurance companies with private capital, for the period 2008-2013 with a total

of 30 data. The results showed that leverage has negative impact on the financial performance (ROA) of these companies.

Therefore, in this study too it was found out that leverage has a significant effect and statistically negative relationship with profitability

2.2.3 Loss ratio/underwriting risk

Loss ratio is a ratio of claims incurred to net earned premium. It is also expressed as underwriting risk. It is the risk that the premiums collected will not be sufficient to cover the cost of coverage. Daniel and Tilahun (2013) found out that loss ratio (risk) is statistically significant and negatively related with ROA. Other studies in Ethiopia (Abate Gashaw, 2012), (Mistere, 2015), (Hanna 2015), (SuheyliReshid, 2015) all found out that loss ratio negatively and significantly affects profitability.

Curak *et al.* (2012) examined the determinants of the profitability of the Croatian composite insurers' between 2004 and 2009. The determinants of profitability, selected as explanatory variables include both internal factors specific to insurance companies and external factors specific to the economic environment. By applying panel data technique, the authors show that underwriting risk (loss ratio) had a significant influence on insurers' profitability. Also Anila Çekrezi (2015) investigated factors that affect financial performance of Albanian Insurance Companies. The study population consisted of 5 insurance companies with private capital, for the period 2008-2013 with a total of 30 data. The results showed that risk (loss ratio) has negative impact on the financial performance (ROA) of these companies.

Nino Datu (2016) examined the association between Insurer-specific indicators and macroeconomics on profitability in Philippine non-life insurance market utilizing the panel data over the period of 2008 through 2012. Return on assets (ROA) and operating ratio were used for profitability. The study found out that that underwriting risk significantly affects profitability both in ROA and operating ratio.

On that other hand, a study conducted in Kenya by D.Umutho Murungim (2013) on relationship of firm specific and macroeconomic variables with financial performance of insurance companies. In his study he investigated the relationship of interest rate, inflation rate (CPI), currency exchange rate fluctuations, money supply, GDP, as macro-economic factor, and Claim ratio (CR) and he found that Claim ratio has positive effect on ROA.

Therefore, this study is also consistent with most of the previous studies and found out that loss ratio is negatively related with profitability and its effect is significant.

2.2.4 Reinsurance dependence

The cost of reinsurance does have implications on profitability. It also stabilizes insurers' profit by reducing the amount of risk they assume.

Nino Datu (2016) examined the association between Insurer-specific indicators and macroeconomics on profitability in Philippine non-life insurance market utilizing the panel data over the period of 2008 through 2012. Return on assets (ROA) and operating ratio were used for profitability. The study found out that reinsurance utilization significantly affects profitability both in ROA and operating ratio.

Chen-Ying Lee (2014) also estimated the effects of firm specific factors and macroeconomic factors on profitability (measured by operating ratio and ROA) of property-liability insurance industry in Taiwan and he found that reinsurance is significantly and positively correlated with operating ratio. However, in case of profitability measured by ROA, he found that underwriting reinsurance is positively correlated with ROA.

Ornella and Anderloni (2014) tested the impact of several firm characteristics, such as dimension, capital structure and investment policies on economic performance for a panel of non-life insurance firms operating in the main European markets spanning from 2004 to 2012. The findings suggest that various factors contribute to the performance measured by return on equity and return on asset. According to the study, the three main areas that constitute the core insurance activity (insurance in its narrower sense, financial and reinsurance activities) strongly influence profitability, but reinsurance does not seem to contribute either positively or negatively to performance.

Muhaizam Ismail (2013) investigates the determinants of financial performance of general Islamic and conventional insurance companies in Malaysia using panel data over the period of 2004 to 2007, using investment yield as the performance measure. This measure is related to a number of economic and firm specific variables, which are the profit/interest rate levels, equity returns, size of company, retakaful/reinsurance dependence, solvency margin, liquidity, and contribution/premium growth, chosen based on relevant theory and literature. Based on the empirical results, the study found that retakaful dependence is statistically significant determinants of the investment performance of the general Islamic insurance companies in Malaysia. Also studies in Ethiopia (Suheyli Reshid, 2015) reinsurance dependence has negative but insignificant relationship with profitability. Also a study by (Mister, 2015) found that reinsurance dependency of insurance companies is negatively related with profitability and it is statistically insignificant determinant of profitability.

In this study, the reinsurance dependence was found to be negatively related with ROA and also it insignificantly affects profitability.

2.2.5 Motor Insurance

Despite the large portion that motor insurance constitutes, it is reported that it is a loss leader for most insurance companies. Kozak (2011) examined determinants of profitability of non-life insurance companies in Poland during integration with the European financial system for the period of 2002–2009. The results indicated that the reduction in the share of motor insurance in the portfolio, with simultaneous increase of other types of insurance has a positive impact on profitability and cost-efficiency of insurance companies. According to the study it is expected that there is a reverse relationship between the share of motor insurance in the insurance portfolio of a company and the company's profitability.

As stated in Emine Öner Kaya (2015) Motor insurance, which has a significant share in the nonlife premium portfolio of the Turkish insurance industry, appears as an insurance in which competition is intense worldwide and insurance companies find it difficult to gain profit from this portfolio.

In this study, motor insurance was found to be positively correlated with profitability. Other studies as shown above suggested that motor insurance has negative correlations with profitability, however in this study it is found to be positively related with profitability and insignificant effect.

2.2.6 Market share

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.

Chen-Ying Lee (2014) also estimated the effects of firm specific factors and macroeconomic factors on profitability (measured by operating ratio and ROA) of property-liability insurance industry in Taiwan and he found those market shares are positively correlated with ROA. Kozak (2011) examined determinants of profitability of non-life insurance companies in Poland during integration with the European financial system for the period of 2002–2009 and suggested that Companies improve profitability and cost efficiency with an increase of their gross premiums and decrease of total operating expenses. Additionally increases of the GDP growth and the market share of foreign owned companies positively impact profitability of nonlife insurance companies during the integration period.

Cassandra R. Cole et al (2015) in their multivariate analysis, they find evidence that market concentration and insurers' underwriting profits are positively related. More specifically, insurers in states with greater market concentration are more profitable than insurers in states with lower levels of market concentration

Besides as stated in Öner Kaya (2015) Pervan et al. [2010] have investigated the determinants of profitability in the Bosnia and Herzegovina insurance industry between the years of 2005–2010. According to their results, age of company, market share, and past performance are positively and significantly related with current profitability they have also found that foreignowned companies perform better than domestically owned companies; and there is no significant relationship between diversification and profitability.

In this study also, it was found that market share correlates positively with profitability and had insignificant effect, which is consistent to the above studies.

2.2.7 Gross Domestic Product (GDP)

Gross domestic product represents the total dollar value of all goods and services produced over a specific time period. Usually, GDP is expressed as a comparison to the previous quarter or year.

A study conducted in Kenya by D.Umotho Murungim (2013) on relationship of firm specific and macroeconomic variables with financial performance of insurance companies. According to the study it was implied that GDP has negative relationship with profitability.

Chen-Ying Lee (2014) also estimated the effects of firm specific factors and macroeconomic factors on profitability (measured by operating ratio and ROA). He found that economic growth ratio (GDP) and inflation rates exhibit negative correlation with ROA, but are not significantly different from zero. Michael Doumpos et al (2012) Using a sample of over 2000 nonlife insurance firms operating in 91 countries between 2005 and 2009, they found that macroeconomic indicators such as real GDP growth, inflation, and income inequality influence the overall performance of firms and a statistically significant effect on the overall performance of insurers.

Kozak (2011) examined determinants of profitability of non-life insurance companies in Poland and according to the study of the GDP growth and the market share of foreign owned companies positively impact profitability of non-life insurance companies.

Suheyli Reshid (2015) found that economic growth rate has significant influence on profitability. To the contrary, Mister (2015) found that economic growth is not significant determinants of profitability. On other hand, Hadush (2015) found that GDP is negatively but significantly related with profitability. GDP growth shows positive but insignificant relationship with insurers' profitability. In addition, Hana Mariam (2015) found that out that GDP growth shows positive but insignificant relationship with insurers' profitability.

Nino Datu (2016) examined the association between Insurer-specific indicators and macroeconomics on profitability in Philippine non-life insurance market utilizing the panel data over the period of 2008 through 2012. Return on assets (ROA) and operating ratio were used for profitability. According to the study there was no evidence found in the Gross Domestic Product (GDP) on profitability in both ROA and operating ratio.

In this study, GDP was found to be negatively related with profitability and it has insignificant effect on profitability. Therefore the studies were found to be contradictory.

2.28 Inflation

Inflation is defined as a sustained increase in the general level of prices for goods and services. It is measured as an annual percentage increase.

A study conducted by Chen-Ying Lee (2014) found that inflation rates exhibit negative correlation with ROA, but is not significantly different from zero.

Curak et al. (2012) examined the determinants of the profitability of the Croatian composite insurers' between 2004 and 2009. The finding showed that inflation and return on equity have a significant influence on insurers' profitability. Michael Doumpos et al (2012) Using a sample of over 2000 nonlife insurance firms operating in 91 countries between 2005 and 2009, they found that macroeconomic inflation influence the overall performance of firms and a statistically significant effect on the overall performance of insurers.

(Viktoria Nikolaus, 2015) examines determinants of firm performance of Indonesian and Dutch firms over the period of 2009-2013. The study found that Inflation, which is high in Indonesia, has a negative influence. The more moderate inflation rate of the Netherlands leads to a positive, although not significant effect.

Other studies in Ethiopia (Suheyli Reshid, 2015), (Mistere, 2015)(Hadush, 2015) found out that inflation has insignificant influence on insurers' profitability, whereas (Hana mariam, 2015) found that inflation has a negative and significant impact on insurers' profitability.

Nino Datu (2016) examined the association between Insurer-specific indicators and macroeconomics on profitability in Philippine non-life insurance market utilizing the panel data over the period of 2008 through 2012. Return on assets (ROA) and operating ratio were used for profitability. According to the study there was no evidence found that inflation has effect on profitability in both ROA and operating ratio. In this study, inflation has negative relationship with profitability and it affects profitability insignificantly. So it was consistent with more of the studies in Ethiopia.

2.3 CONCEPTUAL FRAMEWORK

2.3.1 Summary of the Literature Review and knowledge Gap

Many empirical works have been done regarding determinants of insurer's profitability. Review of literatures showed that researches on the determinants of profitability have been comprehensively studied in developed countries around the world and in some emerging countries like Pakistan, India and Taiwan. Besides, in Ethiopia most of the researches focused on banks and other non-financial sectors rather than insurance companies. Different scholars come up with different conclusions on the determinants of profitability as shown in the above empirical reviews and inconsistency of the findings was observed. The empirical evidences regarding determinants of insurance companies' profitability, as tried to review in this study, focused mainly on factors such as size of companies, leverage, loss ratio, reinsurance dependence, motor insurance, market share, GDP, and inflation. Moreover this study tried to extend the previous studies by incorporating other factors. To the researcher's knowledge factors like *motor insurance* and *market share* have not been adequately addressed by previous studies. Therefore, the study attempted to fill this gap and augment its own possible contribution to the existing literature.

2.3.2 Conceptual Framework

A conceptual framework is an analytical tool with several variations and contexts. It is used to make conceptual distinctions and organize ideas. Strong conceptual framework captures something real and does this in a way that is easy to remember and apply (www.wikipedia.org, as read on April, 2016).

Below the diagram shows the relationship between determinants of profitability and profitability as measured by ROA

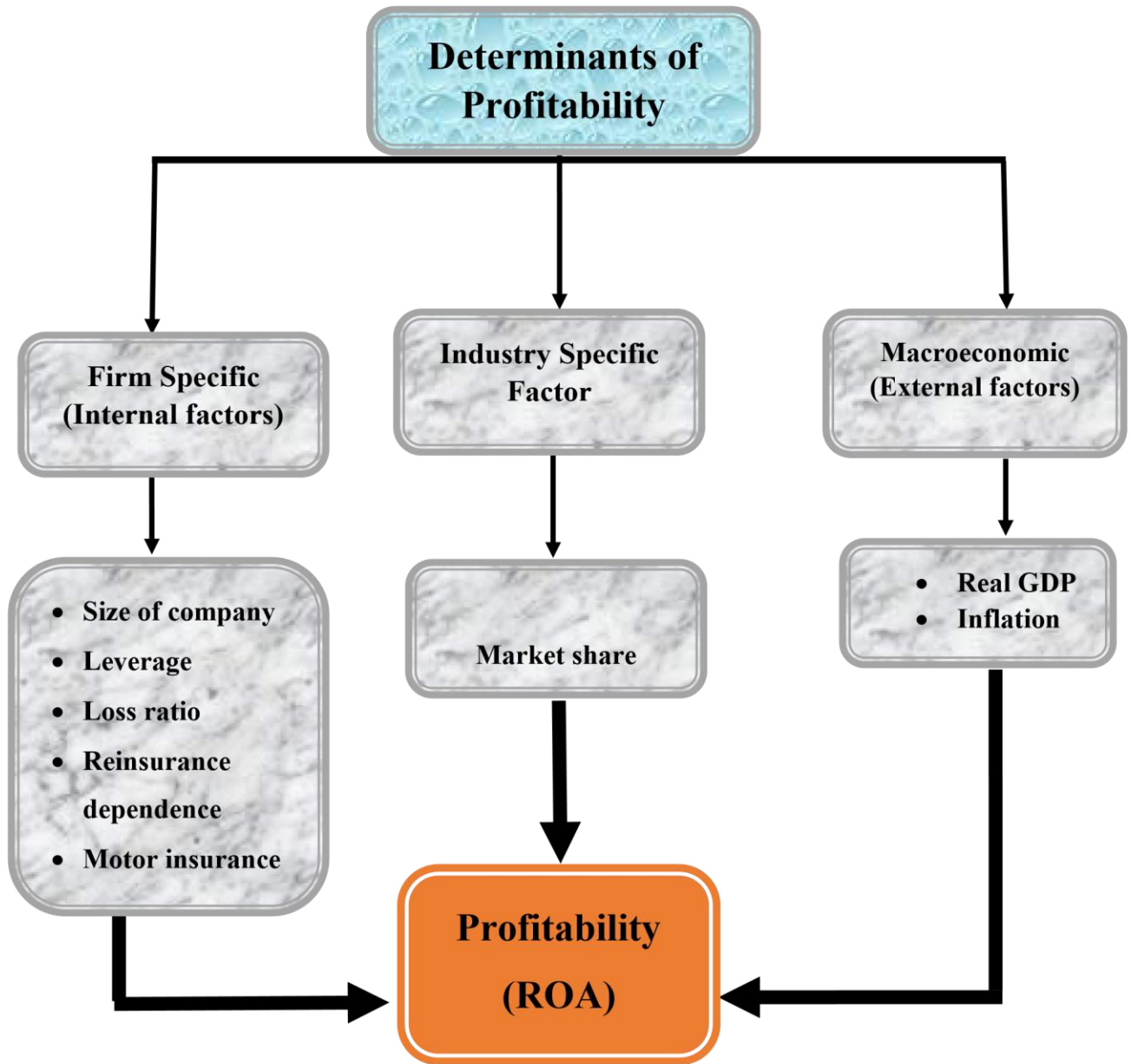


Fig 2.1. Conceptual framework: Relationship between determinants of Profitability and Profitability (ROA)

CHAPTER THREE - RESEARCH DESIGN AND METHODOLOGY

This chapter dealt with the explanations of the research design, research approach, target population, sampling technique, sample size, methods of data collection, data analysis techniques and also definitions and measurement of variables and model specifications.

This chapter discussed the methodology that was used in gathering data, processing the data and translating the collected data into meaningful information. It provides the steps and procedures of the study that were used to find out the determinants of profitability of general insurance companies in Ethiopia. The chapter explains about the research design, data type and source, research approaches, population and sample size, sampling technique, data collection instrument, data analysis techniques, variable definitions which encompasses choice of dependent variable and independent variables, and model specification.

3.1 RESEARCH DESIGN

A research design is a master plan that specifies the methods and procedures for collecting analyzing the needed information (William G.Zikmund, et al 2013).The research design constitutes the blue print for collection, measurement, and analysis of data.

Accordingly in this study, the researcher conducted the research using quantitative approach and data was collected from purposefully selected insurance companies in Ethiopia using ten years data (2006 to 2015). Secondary source of data included Balance Sheet, Income statements, and Revenue Account, of the insurance companies obtained from the NBE and other data that couldn't be directly obtained from financial statements were collected from the insurance companies themselves. Secondary sources are the most reliable one, as these financial statements are already audited by independent auditors and accepted by the users of the information. Other macro level data are also obtained from the NBE (Research directorate) as reported to them by MoFEC.

3.2 RESEARCH APPROACH

There are three approaches to conduct any research: Qualitative, Quantitative and Mixed approaches (Creswell 2009). Quantitative research is a means for testing objective theories by examining the relationship among variables. On the other hand, qualitative research approach is

a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem with intent of developing a theory or pattern inductively. Finally, mixed methods approach is an approach in which the researchers emphasize the research problem and use all approaches available to understand it.

In this study quantitative approach was employed to ensure effectiveness of the research process and meet the objective of the research. The quantitative research approach, which constructed an econometric model, was used to identify and measure the determinants of profitability. Specifically, multiple regression analysis is adopted to measure the effect of determinants on profitability. The use of multiple regressions considers the simultaneous relationships amongst the multiple numbers of independent and dependent variables found across the regression model, therefore best suited to the nature of the study.

Therefore to comply with the objective of this research, the study is solely based on quantitative data, which constructed an econometric model to identify and measure the determinants of profitability and their level of significance.

3.3 SAMPLING TECHNIQUE

There are several available alternative ways to take a sample. The main alternative sampling plans may be grouped in to two categories; probability technique and non-probability technique (William G. Zikmund, *et al* 2013). The probability sampling is a sample procedure which gives each one in the population non-zero probability of selection or it's about giving every element in the population the same opportunity to be selected. On the other hand non-probability sample involves the selection of a sample on the basis of personal judgment or convenience. According to Singh (2006) when the subjects used in the sample is homogeneous, using purposive sampling technique is appropriate.

Accordingly, this study applied Purposive/Non-probability/ sampling technique, because the study did not include all insurance companies to have an equal chance to be selected as a sample. The total population of the study was all insurance companies registered by NBE and under operation in Ethiopia. Currently, 17 insurance companies are working in Ethiopia. In order to reach meaningful conclusion, there was a need to sample from the seventeen insurance companies, by using quantitative data over the period of 2006-2015. But, because of lack of 10 years data in companies established after 2006, the number of sample companies was reduced to nine. Moreover, the inclusion of Ethiopian insurance Corporation (EIC) in the sample which

takes the lions share in the country's insurance industry made the sample more representative and reasonable.

Besides, ten years data is taken by the researcher to meet the objective of this study. Accordingly, available audited financial statements of ten consecutive years from 2006-2015 of the 9 sample insurance companies were included in the sample frame made up 90 observations. Thus, to make the panel data structured, i.e. every cross-section followed the same regular frequency with the same start and end dates. The procedure used for drawing the sample from the available lists is the insurance service year profile, for the reason that the study intend to use document sources. Therefore, sample size is decided based on the availability of operating data in the insurance operating in Ethiopia. Insurance companies sampled in the study are:-

Ethiopian Insurance Corporation, African Insurance Company, Awash Insurance Company, NIB Insurance Company, Nile Insurance Company, Nyala Insurance Company, National Insurance Company of Ethiopia (NICE), United Insurance Company, and Global Insurance Company.

3.4 DATA SOURCES AND COLLECTION INSTRUMENT

Consistent and reliable research indicates that research conducted by using appropriate data collection instruments increases the credibility and value of the research findings (Koul 2006). Accordingly, document review was used for this study to collect the required data which is relevant for addressing the objectives of the study from audited financial statements of each insurance company included in the sample size. The necessary data that are used in this study was obtained from secondary sources.

Moreover, in order to analyze the relationship that exists between profitability and macroeconomic variables, macro-economic data are collected for the same years. The advantage of using secondary data includes higher quality of data compared with primary data collected by researchers themselves. Stewart and Kamins, (1993) as cited by Yuqi Li (2007); the feasibility to conduct panel evidence, which is the case in this study; and the permanence of data, which means secondary data generally provide a source of data that is both permanent and available in a form that may be checked relatively easily by others, i.e. more open to public enquiry therefore, enhance the reliability of the data. The principal secondary data sources for this paper were individual insurance companies annual reports that contain detailed consolidated balance sheets and income statements and revenue accounts.

3.5 VARIABLE DEFINITION AND MEASUREMENTS

3.5.1 Dependent and Independent variables

3.5.1.1 Dependent variable

Dependent variable is the regressand, effect variable, or explained variable; where as Independent variable is the regressor, causal variable, or explanatory variable (Chris Brook 2008). The most commonly used profitability ratios are net profit margin, return on assets (ROA) and return on equity. The return on total assets ratio represents one of the most used methods of quantifying financial performance. It was developed in 1919 by DuPont and it emphasizes the company's ability to efficiently use its assets (Maria, 2014). ROA reflects the ability of insurance's management to generate profits from the insurances 'assets, although it may be biased due to off-balance-sheet activities. In most of the previous studies on insurance sector, return on assets (ROA) is being used as a proxy of profitability (Ahmed, 2011); (Al-Shami, 2008); (Malik, 2011); (Lee, 2014). Therefore this study has attempted to measure profitability by using ROA similar to most of the aforementioned researchers. $ROA = \text{Net profit before tax} / \text{Total Assets}$. In this study, therefore, profitability as proxied by ROA (return on assets) is the dependent variable.

3.5.1.2 Independent variables

This subsection describes the independent variables that are used in the econometric model to estimate the dependent variable. To measure the predictor variables of insurance companies' profitability, eight measures are used as independent variables which were identified by the researcher. The variables are; company size, Leverage, Loss ratio/underwriting risk, Reinsurance dependence, Motor insurance, Market share, Inflation and GDP.

- **Company size (SIZ):-** is computed as natural logarithm of total assets of the insurance company.
- **Leverage (LEV):-**The leverage ratio is calculated as total debt to total equity and represents a key indicator of the insurer's financial stability.
- **Loss ratio (LOR):-**The underwriting risk emphasizes the efficiency of the insurers underwriting activity and it was measured through the losses incurred divided by annual premium earned.

- **Reinsurance dependence (RID):**-The reinsurance dependence was calculated as the ratio of premiums ceded in reinsurance agreements to total assets. Insurance companies reinsure a certain amount of the risk underwritten in order to reduce bankruptcy risk in case of high losses. Although reinsurance improves the stability of the insurance company through risk dispersion, achievement of solvency requirements, risk profile equilibration and growth of the underwriting capacity, it involves a certain cost.
- **Motor Insurance (MOI):**-Motor insurance is the lion share of insurer's business portfolio. It is one of the classes of businesses in insurance activity that generates the largest volume of premium collection over specified period of time. It also involves high claim cost, marketing expenses in the form of commission payments to insurance agents and brokers. That is why the study tried to see its impact on profitability. It is measured as the ratio of total premium collected of motor insurance premium to gross written premium written of the company by all class of businesses.
- **Market Share (MKS):**-Market share of a company is the share of its business activity when compared to other similar companies in the industry. It is measured as the total premium collected by a company to total premium collected in the industry as a whole over a given period of time.
- **Growth of real GDP:**-growth domestic product is a macroeconomic variable, and tells the total value of goods and services produced in a given nation over a specified period of time usually a year. It is expected to have a positive influence on the insurers' financial performance, since economic growth improves the living standards and the levels of income, increasing the purchasing power of population.
- **Inflation (INF):**-inflation is a general increase in the pattern of price level of goods and services. It occurs when the prices of goods and services increase over time. Inflation cannot be measured by an increase in the cost of one product or service, or even several products or services. Rather, inflation is a general increase in the overall price level of the goods and services in the economy

3.6 Measurement of Variables

Table 3.1 Measurement of Variables

Determinants	Measurements	Remark
1. Dependent Variable		
Profitability (ROA)	Net Profit before tax/ Total Assets	Explained Variable
2. Independent Variable		
Size of the company	Natural log of Total assets	Explanatory Variable
Leverage	[Total Debt/Total Equity]*100	Explanatory Variable
Loss Ratio	(Incurred Claims/Earned Premium)*100	Explanatory Variable
Reinsurance Dependence	Premium Ceded to reinsurers/ Total Assets	Explanatory Variable
Motor Insurance	[Total Premium written by motor/Gross Written Premium by all class of businesses]*100	Explanatory Variable
Market share	[GWP of the company/GWP of the industry]*100	Explanatory Variable
Real GDP	[[GDP _t -GDP _{t-1}]/GDP _{t-1}]*100}	Explanatory Variable
Inflation	[[Inf _t -Inf _{t-1}]/Inf _{t-1}]*100	Explanatory Variable

Source: Compiled by researcher, 2016

3.7 Data analysis techniques and model specification

Model building involves specifying relationships between two or more variables; perhaps extending to the development of descriptive or predictive equations (William 2010). In order to achieve the objectives of this research study, the panel data regression model is used to identify the relationship between the profitability of insurance companies and explanatory variables. Panel data comprises of both *time series* and *cross-sectional elements*, and such a dataset would be known as a panel of data or longitudinal data. A panel of data embodies information across both time and space. Importantly, a panel keeps the same individuals or objects (we will call these ‘entities’) and measures some quantity about them over time (Chris Brook 2008). Panel data is favored over pure time-series or cross-sectional data because it can control for individual heterogeneity and there is a less degree of multi-linearity between variables (Altai, 2005). Thus, the collected panel data is analyzed using descriptive statistics, correlations, multiple linear

regression analysis and inferential statistics. Mean values and standard deviations are used to analyze the general trends of the data from 2006 to 2015 based on the sample of 9 insurance companies and a correlation matrix is also used to examine the relationship between the dependent variable and explanatory variables. In addition, ordinary least square (OLS) is conducted using statistical package “Eviws8” to determine the most significant and influential explanatory variables affecting the profitability of the insurance industry in Ethiopia. Modeling is based on panel data techniques. In light of the above, to investigate the effect of insurance specific, industry specific, and macro-economic determinants of insurer’s profitability. When hypotheses involve the distinction between independent and dependent variables, dependence techniques are needed. Predicting the dependent variable “profitability” on the basis of numerous independent variables is a problem frequently investigated with dependence techniques. Multiple regression analysis, multiple discriminate analysis, multivariate analysis of variance, and structural equations are all dependence methods. Multiple regression improves the prediction of dependent variable, as more number of independent variables are expected to explain the dependent variable better than if only one independent variable was used. It involves the estimation of the effect of individual independent variables on dependent variable. Unstandardized coefficients are estimated for all independent variables. Multiple regressions also involve constructing an equation to estimate the expected value of the dependent variable which is predicted by number of independent variables. Note that multiple regressions means multiple number of independent variables (Zikmund *et al.*, 2013)

$$Y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \dots + \beta_n x_n + e_i$$

Less-than interval (nonmetric) independent variables can be used in multiple regression. This can be done by implementing dummy variable coding. A Dummy variable is a variable that uses a 0 and 1 to code the different levels of dichotomous variable. Multiple dummy variables can be included in regression model (*ibid* 2013).

$$ROA_{it} = \beta_0 + \beta_1 (ISD)_{xt} + \beta_2 (MED)_{yt} + \beta_3 (IED)_{zt} + e_{it}$$

Where;

ROA_{it} is a dependent variable for insurance i at time t ; β_0 , β_1 and, β_2 represent estimated coefficients including the intercept; $(ISD)_{xt}$ represent the x -th insurance specific determinants at time t ; $(MED)_{yt}$ represent the y -th macroeconomic determinants at time t , (ISD) is industry specific determinant, and e_{it} is the error term.

The equation that account for individual explanatory variables which are specified for this particular study is given as follows.

$$\text{ROA}_{it} = \beta_0 + \beta_1 \text{SIZ}_{it} + \beta_2 \text{LEV}_{it} + \beta_3 \text{LOR}_{it} + \beta_4 \text{RID}_{it} + \beta_5 \text{MOI}_{it} \\ + \beta_6 \text{MKS}_{it} + \beta_7 \text{GDP}_{it} + \beta_8 \text{INF}_{it} + \varepsilon$$

Source: developed by researcher by reviewing previous research works.

Where;

ROA_{it} = dependent variable profitability; SIZ= size; LEV=Leverage; LOR =Loss ratio; MOI= Motor Insurance; RID =reinsurance dependence; MKS=Market Share GDP = Gross domestic products, and; INF = inflation

ε =is the error component for company i at time t assumed to have mean zero E [ε_{it}] = 0

β₀= Constant β= 1, 2, 3...9 are parameters to be estimated. i = Insurance company i =

1...9; and t = the index of time periods and t = 1. . 10

The issue that may arise from the use of panel data is whether the individual effect is considered to be fixed or random. While random effects estimation addresses the endogeneity issue by incrementing potentially endogenous variables, it also assumes that the individual firm effects are uncorrelated with the exogenous variables. On the other hand, the fixed effect estimation deals successfully with the correlated effects problem.

Therefore a fixed cross-sectional effect is specified in the estimation so as to capture unobserved idiosyncratic effects of different insurance companies. In addition, as noted in Gujarati (2004) if T (the number of time series data) is large and N (the number of cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model and random effect model. Hence, the choice here is based on computational convenience. On this score, fixed effect model may be preferable than random effect model (Gujarati 2003). Since the number of time series N (N=10 year) is greater than the number of cross-sectional units (i.e.= 9 insurance companies) and adjusted R² value and Durbin-Watson stat value increases with the use of cross-sectional fixed effect model, fixed effect model was preferable than random effect model in this study.

3.8 MODEL VALIDITY ASSUMPTIONS

As mentioned in Chris Brookes (2008), there are basic assumptions required to show that the estimation technique, OLS has a number of desirable properties, and also that hypothesis tests regarding the coefficient estimates could validly be conducted. If these Classical Linear Regression Model (CLRM) assumptions hold, then the estimators determined by OLS will have a number of desirable properties, and are known as Best Linear Unbiased Estimators. Therefore, for the purpose of this study, diagnostic tests are performed to ensure whether the assumptions of the CLRM are true or not in the model.

Consequently, the basic CLRM assumption tests in this study were errors have zero mean, heteroskedasticity, autocorrelation, normality and multicollinearity. According to Brooks (2008) when the assumptions are satisfied, it means that all the information available from the patterns was used. But, if there is assumption violation in the data it usually means that there is a pattern of data that have not included in the model and suggested to find a model that fits the data better. Second assumption is heteroskedasticity. The assumption of homoscedasticity is that the variance of the errors is constant or equal. If the variance of the errors is not constant, this would be known as heteroskedasticity (Guajarati, 2004). In order to test homoscedasticity the white test was used.

The third assumption is the autocorrelation assumption that the covariance between the error terms over time is zero. If the errors are correlated with one another, it would be stated that they are serially correlated. Usually, Durbin-Watson (DW) value in the main regression table is considered and used to test the presence of autocorrelation. According to Brooks (2008), DW has 2 critical values: an upper critical value (DU) and a lower critical value (DL), and there is also an intermediate region where the null hypothesis of no autocorrelation can either be rejected or not rejected.

The fourth assumption is Normality of the error distribution that assumed the errors of prediction (differences between the obtained and predicted dependent variable scores) are normally distributed. Violation of this assumption can be detected by constructing a histogram of residuals (Brooks, 2008).

Finally the fifth assumption is multicollinearity assumption which refers to the situation in which the independent variables are highly correlated. When independent variables are multicollinear, there is overlap or sharing of predictive power. This may lead to the paradoxical effect, whereby the regression model fit the data well, but none of the explanatory variables (individually) has a

significant impact in predicting the dependent variable (Gujarati, 2004). A Pearson correlation was used for the purpose of testing multicollinearity in this study. The Pearson correlation matrix is a technique of testing multicollinearity of explanatory variables by investigating the relationship of bivariate variables (Wooldridge, 2006).

Table 3.2 summary of hypothesized expected sign for the relationship between the explanatory variables (independent variables) and insurance profitability (dependent variable).

<i>Variables</i>	<i>Description</i>	<i>Definitions/measures</i>	<i>Expected sign</i>
Dependent	Profitability(ROA)	Net profit before tax/Total Assets	NA
Independent			
1	Size of company	Natural logarithm of total assets	+
2	Leverage	Total Debt/Total Equity	-
3	Loss Ratio	Incurred claims/Earned premium	-
4	Motor Insurance	Motor premium/Gross premium	+
5	Reinsurance dependence	premium ceded/total asset	-
6	Market share	Company total premium/Industry premium	+
7	Real GDP	$[(GDP_t - GDP_{t-1}) / GDP_{t-1}] * 100$	+
8	Inflation	$I = [(Inf_t - Inf_{t-1}) / Inf_{t-1}] * 100$	

Source: Compiled by researcher, 2016

3.9 Hypotheses of the study Variables

According to Jonker and Pennink (2010) a hypothesis is an educated and testable –guess about the answer to your research question. It is often described as an attempt by the researcher to explain the phenomenon of interest. Hypothesis can be of null hypotheses or alternative hypotheses. A null hypothesis predicts that there will be no differences between variables or groups being studied. Alternative variable, on the other hand, predicts that there will be a difference between groups or variables.

Therefore, based on the literature reviews in the previous chapter, the researcher put forward the following hypotheses.

H1. Size of a company has a positive and statistically significant effect on Performance of insurance companies in Ethiopia.

H2. Leverage has a negative and statistically significant effect on profitability of insurers in Ethiopia.

H3. Loss ratio has a negative and statistically significant effect on performance of insurance Companies in Ethiopia

H4. Reinsurance dependence has a negative and statistically insignificant effect on Performance of insurance companies in Ethiopia

H5. Motor Insurance has a negative and statistically significant effect on Performance of insurance company's in Ethiopia.

H6. Market Share has a positive and statistically insignificant effect on Performance of insurance companies in Ethiopia.

H7. GDP growth has a positive and statistically significant effect on performance of insurance companies in Ethiopia.

H8. Inflation has negative and statistically significant effect on performance of Insurance companies in Ethiopia.

CHAPTER FOUR - RESULTS AND DISCUSSIONS

This chapter is organized into four sections. Section one presents model specification and tests for the classical linear regression model assumptions. Section two discusses descriptive statistics and correlation analysis. Section three presents discussion of results and finally, section four is about summary of the main findings.

In the previous chapter the research approach adopted, data sources, and sampling techniques, variable definitions, data analysis techniques, and model specification of the study were presented. This chapter analyzes the determinants of insurance company's profitability, using the annual balanced panel data, where all the variables are observed for each cross-section and each time period. The study has a time series segment covering from the period 2006 up to 2015 and a cross section segment which considered nine Ethiopian insurance companies. The chapter is organized into four sections. Section one presents model specification and tests for the classical linear regression model assumptions. Section two discusses descriptive statistics and correlation analysis. Section three presents discussion of results and finally, section four is about summary of the main findings.

4.1 MODEL SPECIFICATION TEST (FIXED EFFECT VS RANDOM EFFECT)

There are broadly two classes of panel estimator approaches that can be employed in financial research: fixed effects models (FEM) and random effects models (REM) (Brooks, 2008). The choice between both approaches is done by running a Hausman test. To conduct a Hausman test the number of cross section should be greater than the number of coefficients to be estimated. But, in this study the numbers of cross section are equal to the number of coefficients to be estimated. So it is not possible to conduct a Hausman test. Therefore a fixed cross-sectional effect is specified in the estimation so as to capture unobserved idiosyncratic effects of different insurance companies. In addition, as noted in Gujarati (2003) if T (the number of time series data) is large and N (the number of cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model and random effect model. Hence, the choice here is based on computational convenience. On this score, fixed effect model may be preferable than random effect model (Gujarati, 2003). Since the number of time series (10 year) is greater than the number of cross-sectional units (i.e.9 insurance companies). According to Brooks (2008) and Wooldridge (2006), it is often said that the REM is more appropriate when the entities in the sample can be thought of as having been randomly selected

from the population, but a FEM is more plausible when the entities in the sample effectively constitute the entire population/sample frame. Hence, the sample for this study was not selected randomly and equals to the sample frame, and FEM is appropriate.

4.2 TESTS FOR THE CLASSICAL LINEAR REGRESSION MODEL (CLRM)

ASSUMPTIONS

This section presents the test for the assumptions of classical linear regression model (CLRM) namely, the error have zero mean, heteroskedasticity, autocorrelation, multicollinearity and, normality.

4.2.1 Constant term assumption

According to Brooks (2008), if a constant term is included in the regression equation, this assumption will never be violated. Thus, since the regression model used in this study included a constant term, this assumption was not violated.

The errors have zero mean ($E(u_t) = 0$).

4.2.2 Test for Heteroskedasticity

Homoscedasticity (variance of the errors is constant ($\text{Var}(u_t) = \sigma^2 < \infty$)). This assumption requires that the variance of the errors to be constant. If the errors do not have a constant variance, it is said that the assumption of homoscedasticity has been violated. This violation is termed as heteroscedasticity. In this study white test was used for existence of heteroscedasticity across the range of explanatory variables. The table below shows test result of heteroskedasticity test result.

Table 4.1: Heteroskedasticity (White test)

F-statistic	1.607182	Prob. F(45,44)	0.0589
Obs*R-squared	55.95692	Prob. Chi-Square(45)	0.1268
Scaled explained SS	44.98660	Prob. Chi-Square (45)	0.4725
R-squared	0.621744	Mean dependent var	0.001013
Adjusted R-squared	0.234890	S.D. dependent var	0.001453
S.E. of regression	0.001271	Akaike info criterion	-10.19219
Sum squared resid	7.10E-05	Schwarz criterion	-8.914508
Log likelihood	504.6485	Hannan-Quinn criter.	-9.676953
F-statistic	1.607182	Durbin-Watson stat	1.907442
Prob(F-statistic)	0.058922		

Source: Eviews 8 output

In this study as shown above, both the F-statistic and Chi-Square versions of the test statistic gave the same conclusion that there is no evidence for the presence of heteroscedasticity, since the p-values were in excess of 0.05. The third version of the test statistic, ‘Scaled explained SS’, which as the name suggests is based on a normalized version of the explained sum of squares from the auxiliary regression, also gave the same conclusion that there is no evidence for the presence of heteskedasticity problem, since the p-value was considerably in excess of 0.05.

4.2.3 Test for Autocorrelation

This assumption requires that the errors are linearly independent of one another (uncorrelated with one another). ($cov(u_i, u_j) = 0$.) Covariance between the error terms over time is zero. If the errors are correlated with one another, it is stated that they are auto correlated. Brooks (2008) noted that the test for the existence of autocorrelation is made using the Durbin-Watson (DW) test and Breusch-Godfrey test.

Table: 4.2: Model Assumption of DW

Reject Ho : Positive autocorrelation		Inconclusive : Neither rejected not accepted		Don't reject Ho : No evidence of autocorrelation		Inclusive: Neither rejected nor accepted		Reject Ho : Negative autocorrelation			
0		DL		DU		4-DL		4- DU		4	
		1.366		1.741		2.259		2.634			

Source: - Eviews8 output

Where: DL = Lower bound

DU = Upper bound

For number of observation of 90, as the case in this study, (k=90) the DL and DU reads as 1.336 and 1.741 respectively, Brooks (2008).

In this study, The Durbin-Watson statistics is **1.3790**. The result falls in the inconclusive zone. In order to do a general test for autocorrelation the Breusch-Pagan-Godfrey test was conducted. The 5th order autocorrelation is found out to be insignificant therefore the statistical insignificance imply absence of autocorrelation.

Table 4.3: Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.534673	Prob. F (5, 76)	0.7494
Obs*R-squared	3.058252	Prob. Chi-Square (5)	0.6910

<u>Variable</u>	<u>Coefficient</u>	<u>Std. Error</u>	<u>t-Statistic</u>	<u>Prob.</u>
C	0.005902	0.304235	0.019400	0.9846
SIZ	-0.000208	0.012691	-0.016378	0.9870
LEV	-8.83E-05	0.010523	-0.008391	0.9933
LOR	-0.005349	0.056000	-0.095513	0.9242
RID	-4.82E-05	0.008627	-0.005583	0.9956
MOI	0.001664	0.056789	0.029301	0.9767
MKS	0.002464	0.077708	0.031712	0.9748
GDP	0.010499	0.735807	0.014269	0.9887
INF	-0.002395	0.096057	-0.024937	0.9802
RESID(-1)	0.154727	0.116503	1.328097	0.1881
RESID(-2)	-0.110616	0.119874	-0.922770	0.3590
RESID(-3)	0.031947	0.121353	0.263255	0.7931
RESID(-4)	-0.067135	0.119488	-0.561855	0.5759
RESID(-5)	0.047364	0.120557	0.392880	0.6955
R-squared	0.033981	Mean dependent var	1.46E-17	
Adjusted R-squared	-0.131260	S.D. dependent var	0.062441	
S.E. of regression	0.066413	Akaike info criterion	-2.443808	
Sum squared resid	0.335214	Schwarz criterion	-2.054949	
Log likelihood	123.9714	Hannan-Quinn criter.	-2.286997	
F-statistic	0.205644	Durbin-Watson stat	1.997513	
Prob(F-statistic)	0.998526			

Source: Eviews8 output

4.2.4. Test for Normality

According to Brooks (2008), if the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant. This means that the p-value given at the bottom of the normality test screen should be greater than 0.05. For normality test to be valid the value of skewness should be close to 0 and the value of kurtosis should equal to three.

The diagram (Fig 4.1) here under shows the normality test of the data under this study.

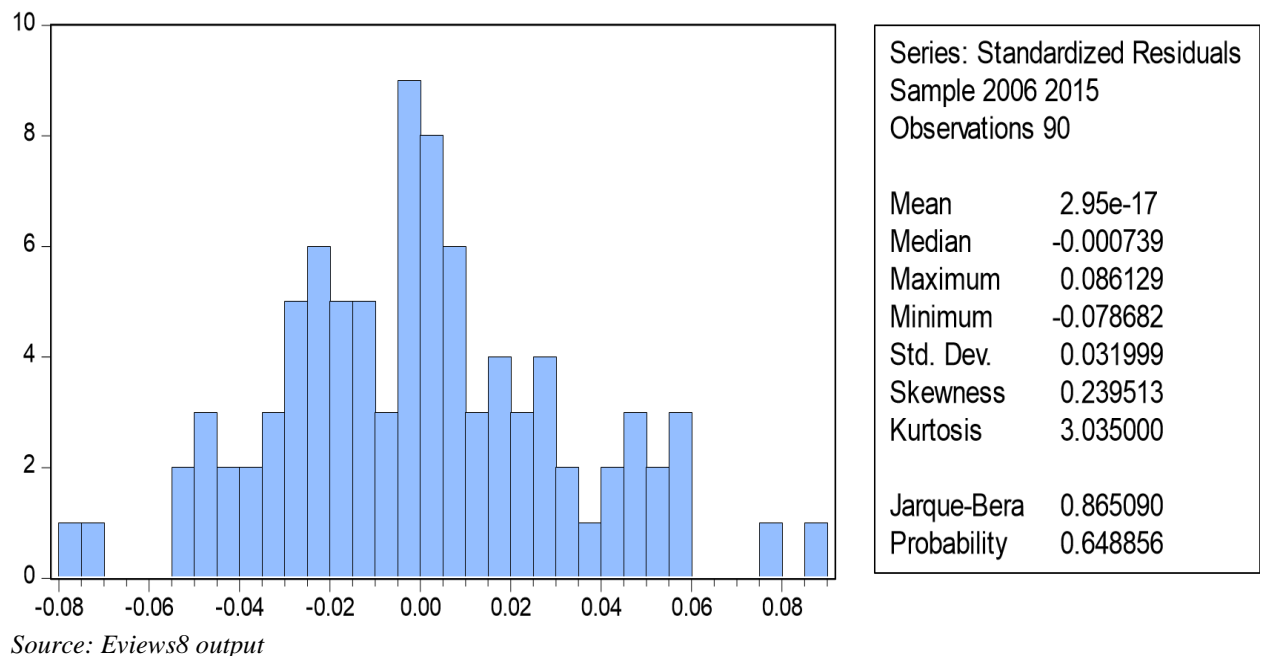


Figure 4.1: Normality Test Result

The above diagram witnesses that normality assumption holds, i.e., the coefficient of kurtosis was close to 3.04 and the Bera-Jarque statistic has a P-value of more than 5% implying that the data were consistent with a normal distribution assumption.

4.2.5 Test for Multicollinearity

Multicollinearity in the regression model suggests substantial correlations among independent variables. This phenomenon introduces a problem because the estimates of the sample parameters become inefficient and entail large standard errors, which makes the coefficient values and signs unreliable. In addition, multiple independent variables with high correlation

add no additional information to the model. It also conceals the real impact of each variable on the dependent variable.

Table 4.4: *Colliniarity of independent variables*

	INF	LEV	LOR	MKS	MOI	RID	SIZ	VOC
INF	1							
LEV	0.175819	1						
LOR	0.159941	0.362166	1					
MKS	0.016907	0.348161	0.038011	1				
MOI	-0.05808	-0.43289	-0.24257	-0.20118	1			
RID	0.017419	-0.19696	-0.11946	-0.02125	0.027974	1		
SIZ	-0.11841	0.531036	0.065351	0.497672	-0.31903	0.46411	1	
VOC	-0.23705	0.157358	-0.02084	0.183029	-0.06953	0.42909	0.8178	1

Source: Eviews8 output

Anderson *et al.*, (2008) and Hair *et al.*, (2006) argued that correlation coefficient below 0.9 may not cause serious multicollinearity problem. In addition, Malhotra (2007) stated that multicollinearity problems exists when the correlation coefficient among variables should be greater than 0.75. Accordingly in this study, multicollinearity problem was encountered between the independent variables volume of capital (VOC) and size of company (SIZ) and volume of capital at a rate of 81.79% as shown in the above table 4.4.

Because as shown in the appendix B, the correlation table shows Size has more positive contribution (27.61%) to profit than volume of capital (14.80%), therefore, size was preferred to be included for this study. In general, all tests illustrated above were recommendations as to the employed model was not sensitive to the problems of violation of the CLRM assumption.

4.3. CORRELATION BETWEEN VARIABLES

Correlation is a way to index the degree to which two or more variables are associated with or related to each other. The most widely used bi-variant correlation statistics is the Pearson product-movement coefficient, commonly called the Pearson correlation which is used in this study.

Table 4.5: Correlation between variables

	ROA	SIZ	LEV	LOR	RID	MOI	MKS	GDP	INF
ROA	1.000000								
SIZ	0.276125	1.000000							
LEV	-		1.000000						
LOR	0.076771	0.531036							
RID	-			1.000000					
MOI	0.307768	0.065351	0.362166	-					
MKS	-	-	-	-	1.000000				
GDP	0.170911	0.464111	0.196955	0.119456	-			1.000000	
INF	0.182976	0.319031	0.432887	0.242568	0.027974	1.000000			
ROA	0.109149	0.497672	0.348161	0.038011	0.021252	0.201184	1.000000		
SIZ	-	-	-	-	-	-	-	1.000000	
LEV	0.096507	0.174770	0.049821	0.000353	0.068343	0.088847	0.013953	-	
LOR	-	-	0.175819				0.016907	-	
RID	0.141229	0.118411		0.159941	0.017419	0.058075		0.564764	1.000000

Source: Eviews8 output

According to Brooks (2008), if it is stated that y and x are correlated, it means that y and x are being treated in a completely symmetrical way. Thus, it is not implied that changes in x cause changes in y, or indeed that changes in y cause changes in x rather, it is simply stated that there is evidence for a linear relationship between the two variables, and that movements in the two are on average related to an extent given by the correlation coefficient.

4.6 DESCRIPTIVE STATISTICS

Table 4.5 below presents a summary of the descriptive statistics of the dependent and independent variables for nine insurance companies for a period of eleven years from 2006-2015 with a total of 90 observations. Key figures, including mean, maximum, minimum and standard deviation value were reported.

Table 4.6: Descriptive Statistics of the Variables

	Mean	Median	Maximum	Minimum	Std. Dev.	Probability	Observations
ROA	0.10	0.09	0.61	-0.03	0.07	0.00	90
SIZ	19.32	19.24	21.87	17.23	0.99	0.91	90
LEV	2.37	2.15	4.76	0.83	0.96	0.01	90
LOR	0.64	0.66	0.90	0.17	0.14	0.00	90
RID	0.52	0.16	4.80	0.05	1.00	0.00	90
MOI	0.48	0.51	0.76	0.13	0.15	0.01	90
MKS	0.10	0.07	0.45	0.01	0.12	0.00	90
GDP	0.11	0.11	0.13	0.09	0.01	0.19	90
INF	0.17	0.15	0.36	0.03	0.11	0.02	90

Source: Its Own Survey,

The profitability measures (ROA) shows that Ethiopian insurance company achieved on average a positive before tax profit over the last ten years. For the total sample, the mean of ROA was 10% with a maximum of 61% and a minimum of -3%. That means the most profitable insurance company among the sampled earned 61cents of profit before tax for a 1birr invested in the assets of the firm. On the other hand, unprofitable insurance company of the sampled lost 3cents of profit before tax for 1birr invested in the assets of the firm. This clearly shows the disparity of rates of return earned by insurance companies. Regarding the standard deviation, it means the value of ROA deviate from its mean to both sides by 7% which indicates there was low variation from the mean. This implies that insurance companies incurred loss need to optimize the use of their assets to increase the return on their assets.

Concerning the Loss ratio, as proxies by losses incurred divided by annual premium earned; the mean of incurred claims to earned premium ratio was 64%, this implies that on average, most insurance companies from the sample in Ethiopia Incurred Birr64 loss for every Birr100 premium earned per year of the study period. The highest ratio of losses incurred to earned premium value was 90% but the minimum value for a company in a particular year was 17 % which is far below the average. This indicates that there is high variation in underwriting performance in insurance industry in Ethiopia during the study period. As the outputs of the descriptive statistics indicated the mean of reinsurance dependency as proxied by premium ceded to total asset was 52%.This means that on average 52% of gross premium collected as percentage of total asset was ceded to reinsurance.

The maximum value of premium ceded ratio was 480% and a minimum value of 16%. The minimum ratio of premium ceded indicate that the lower risk of dependency on reinsurance, but the higher will be the exposure of the capital base to unforeseen above average losses and catastrophe. Further, to check the size of the insurance company and its relationship with profitability, logarithm of total asset is used as proxy.

The mean of the logarithm of total assets over the period 2006 to 2015 was 19.32%. Size of insurance companies was highly dispersed from its mean value (i.e. 19.32) with the standard deviation of 0.99. The maximum and minimum values were 21.87 and 17.23 respectively. The maximum value indicating the Ethiopian Insurance Corporation (EIC) and the minimum value was some of privately owned insurance companies such as Global and Nice among the sampled insurance companies.

Regarding GDP, the mean value of real GDP growth rate was 11% indicating the average real growth rate of the country's economy over the past 10 years. The maximum growth of the economy was recorded in the year 2005 (i.e. 13%) and the minimum was in the year 2013 (i.e. 9.8%).

The country has been recording double digit growth rate with little dispersion towards the average over the period under study with the standard deviation of 1%. This indicates that economic growth in Ethiopia during the period of 2006 to 2015 remains stable.

Finally, other variable employed in this study, general inflation had rate (i.e. 16.2%) of the country on average over the past ten years was more than the average GDP. The maximum inflation was recorded in the year 2009 (i.e. 36.4%) and the minimum was in the year 2010 (i.e. 2.8%). The rate of inflation was highly dispersed over the periods under study towards its mean with standard deviation of 11%. This implies that inflation rate in Ethiopia during the study period was somewhat unstable.

4.7 REGRESSION RESULTS AND DISCUSSION

This sub section presents the empirical findings from the econometric output on determinants of the sample insurance companies' profitability in Ethiopia. Table 4.6 below reports regression results between the dependent variable (ROA) and explanatory variables. Under the following regression outputs the beta coefficient may be negative or positive; beta indicates that each variable's level of influence on the dependent variable. P-value indicates at what percentage or precession level of each variable is significant.

The R-squared value measures how well the regression model explains the actual variations in the dependent variable (Brooks, 2008). R-squared statistics and the adjusted- R squared statistics of the model were 80% and 77% respectively. The adjusted R-squared value indicates the total variability of determinants of insurance companies' profitability was explained by the variables in the model. Thus these variables collectively, are good explanatory variables to identify the determinant of insurance companies' profitability in Ethiopia.

The regression F-statistic (35.74) and the p-value of zero attached to the test statistic reveal that the null hypothesis that all of the coefficients are jointly zero should be rejected. Thus, it implies that the independent variables in the model were able to explain variations in the dependent variable. Moreover, the correlation result between loss ratio (claims incurred to earned premium) had negative correlation with return on equity and significantly correlated at 1% significant level with a coefficient of -0.114. Besides, leverage, reinsurance dependence, had negative relationship with return on equity with a coefficient of -0.013 -0.001, respectively with 5% significance level and insignificantly respectively. This indicates that as a ratio of leverage reinsurance dependence, profitability moves to the opposite direction, but the negative relationship are not statistically different from zero.

In contrary to the above explained variables, the Pearson correlation coefficients of Company size, Motor insurance, and market share had positive relationship with return on equity with a coefficient of 0.029, 0.017, 0.045, at 1%, significance level, 10% significance level, and insignificant level respectively. Further, there was negative correlation between macroeconomic variables gross domestic product and inflation with return on equity with a coefficient of -0.134 and -0.006, but very insignificantly.

The table below shows the overall regression results.

Table 4.7: Regression results

Dependent Variable: ROA Sample: 2006 to 2015
 Periods included: 10
 Cross-sections included: 9
 Total panel (balanced) observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.377174	0.152788	-2.468613	0.0157
SIZ	0.029141	0.006407	4.548277	0.0000***
LEV	-0.012728	0.005241	-2.428635	0.0174**
LOR	-0.113882	0.028342	-4.018088	0.0001***
RID	-0.001029	0.004360	-0.236056	0.8140
MOI	0.045265	0.027191	1.664700	0.0999*
MKS	0.017547	0.038699	0.453408	0.6515
GDP	-0.133687	0.365785	-0.365480	0.7157
INF	-0.005944	0.047126	-0.126133	0.8999
D513	0.514147	0.034305	14.98771	0.0000

R-squared	0.800844	Mean dependent var	0.096516
Adjusted R-squared	0.778439	S.D. dependen t var	0.071703
S.E. of regression	0.033751	Akaike info criterion	-3.835201
Sum squared resid	0.091128	Schwarz criterion	-3.557444
Log likelihood	182.5840	Hannan-Quinn criter.	-3.723193
F-statistic	35.74399	Durbin-Watson stat	1.379014
Prob(F-statistic)	0.000000		

Source: Eviews8 output

*** ** * indicates importance at 1%, 5%, and 10% significance level respectively

Estimation Command:

=====
 LS ROA C SIZ LEV LOR MOI RID MKS GDP INF D513

Estimation Equation:

=====

$$ROA = C(1) + C(2)*SIZ + C(3)*LEV + C(4)*LOR + C(5)*MOI + C(6)*RID + C(7)*MKS + C(8)*GDP + C(9)*INF + C(10)*D513$$

Substituted Coefficients:

$$\begin{aligned} \text{ROA} = & -0.37724277772 + 0.0291409885751*\text{SIZ} - 0.0127278413389*\text{LEV} - \\ & 0.11388205082*\text{LOR} + 0.0452654370182*\text{MOI} - 0.00102923543008*\text{RID} + \\ & 0.017546613953*\text{MKS} - 0.133687099996*\text{GDP} - 0.00594411875655*\text{INF} + \\ & 0.514147222293*\text{D513} \end{aligned}$$

The profitability determinants are individually discussed in the next paragraph by referring regression result of table 4.7 above.

4.8 TEST FOR HYPOTHESIS

This part is summary of the hypothesized and the actual relationship of the independent variables with profitability (ROA) of general insurance companies of Ethiopia during the study period of 2006-2015 G.C.

Hypothesis 1 (H1)

	Correlation coefficient (r)	P -value
SIZE of company	0.029141	0.0000

Source: Eviews 8 output

Form the table above, it was found that there is positive and significant relationship between size of company and profitability as measured by ROA. Therefore, H1 is accepted. **Hypothesis 2 (H2)**

	Correlation coefficient (r)	P -value
Leverage	-0.012728	0.0174

Source: Eviews 8 out put

Form the table above, it was found that there is negative and significant relationship between leverage and profitability as measured by ROA. Therefore, H2 is accepted. **Hypothesis 3 (H3)**

	Correlation coefficient (r)	P -value
Loss ratio	-0.113882	0.0001

Form the table above, it was found that there is negative and significant relationship between loss ratio and profitability as measured by ROA. Therefore, H3 is accepted. **Hypothesis 4 (H4)**

	Correlation coefficient (r)	P -value
Reinsurance dependence	-0.001029	0.8140

Source: Eviews 8 out put

Form the table above, it was found that there is negative and insignificant relationship between reinsurance dependence and profitability as measured by ROA. Therefore, H4 is accepted.

Hypothesis 5 (H5)

	Correlation coefficient (r)	P -value
Motor Insurance	0.045265	0.0999

Source: Eviews 8 output

Form the table above, it was found that there is positive and insignificant relationship between motor insurance and profitability as measured by ROA. Therefore, H5 is not accepted.

Hypothesis 6 (H6)

	Correlation coefficient (r)	P -value
Market share	0.017547	0.6515

Source: Eviews 8 output

Form the table above, it was found that there is positive and insignificant relationship between market share and profitability as measured by ROA. Therefore, H6 is accepted.

Hypothesis 7 (H7)

	Correlation coefficient (r)	P -value
GDP	-0.133687	0.7157

Source: Eviews 8 output

Form the table above, it was found that there is negative and insignificant relationship between GDP and profitability as measured by ROA. Therefore, H7 is not accepted.

Hypothesis 8 (H8)

	Correlation coefficient (r)	P -value
Inflation	-0.005944	0.8999

Source: Eviews 8 output

Form the table above, it was found that there is negative and insignificant relationship between inflation and profitability as measured by ROA. Therefore, H8 is not accepted.

Company size:-it is found that size is very important determinant of insurer's profitability. It is much harder for smaller companies to write insurance premiums than for bigger ones since smaller company cannot secure their clients in the cases of aggregate uncertainty or big catastrophe event. Larger insurers can achieve operating cost efficiencies through increasing output i.e. they are able to realize economies of scale especially in terms of labor costs, which is the most important factor for delivering insurance services. Company size is computed as logarithm of total assets of the insurance company. The regression result of this study showed that the variable size is positively related to profitability and statistically very significant at the 1% level of significance (pvalue=0.0000).This indicates that profitability of large insurance companies is better than small size companies. Profitability is likely to increase in size, because large insurance companies normally have greater capacity for dealing with adverse market fluctuations than small insurance companies and have more economies of scale in terms of the unit cost, which is the most significant production factor for delivering insurance services, complex information systems and a better expenses management. The finding of this study is consistent with, Niño Datu(2016), Yuvaraj and Abate Gashaw (2013) examined on factors affecting profitability of insurance companies for nine years (2003-2011) in Ethiopia, Daniel and Tilahun (2013) Abate Gashaw (2012), Hamdan (2008), Shami and Ahmed (2008) explore on determinants of Insurance Companies' Profitability in UAE, by D.UmothoMurungim (2013) on relationship of firm specific and macroeconomic variables with financial performance of insurance companies, Bilal Javaria et al. (2013) similarly, investigated on the determinants of profitability in Pakistan, Chen-Ying Lee(2014) also estimated the effects of firm specific factors and macroeconomic factors on profitability (measured by operating ratio and ROA) of property liability insurance industry in Taiwan. They all found that large size enables to effectively diversify their assumed risks and respond more quickly to changes in market conditions. An increase in total assets such as the establishment of more branches and the adoption of new technologies enables an insurer to underwrite more policies which may increase the underwriting profit and the total net profit. Hence, this study supports the hypothesis that firm size is a significant positive determinant of insurer's profitability in Ethiopia.

Loss ratio: - Loss ratio/the underwriting risk explains the efficiency of the insurer's underwriting activity and the exposure to financial loss resulting from the selection and approval

of risks to be insured. It is a risk of losses from underpriced products, insufficient volume of premium, improper underwriting controls, and the development of new products that are not properly priced.

The coefficient of underwriting which is measured by claim incurred to earned premium ratio was negative and statistically significant at 5% significance level (p -value=0.0001). The results indicate that low underwriting risk produce positive effect on profitability. It implies that higher underwriting risk increases the operating ratio, indicating adverse effect on the firm's profitability. This finding is consistent with previous studies by Daniel and Tilahun (2013) in Ethiopia, Hamdan (2008) examined determinants of insurance company's profitability in UAE, Curak et al. (2012) Anila Çekrezi (2015) investigated factors that affect financial performance of Albanian Insurance Companies, they concluded that underwriting risk has a negative influence on the insurer's profitability, since taking an excessive underwriting risk can affect the company's stability through higher expenses. Thus, this study supports the hypothesis that significant negative impact of underwriting risk on insurance companies 'profitability.

Leverage: - Leverage considers the capital structure of the firm and the evaluation of the relative risk and return associated with liabilities especially (long term debt) and equity or ownership (G.Giroux 2003). The coefficient of leverage which is measured by total debt to total equity was negative (p -value of 0.0174) the regression results of the study show that there is a statistically significant negative relationship between leverage ratio of insurance companies and their profitability in Ethiopia at 5% significant level. For this reason, the results are consistent with the hypothesis of the study. Literatures in capital structure confirm that a firm's value will increase up to optimum point as leverage increases and then declines if leverage is further increased beyond that optimum level. Previous studies with regard to leverage also found statistically significant relationship but negative. For instance, Yuvaraj and Abate Gashaw (2013), Shami and Ahmed (2008) Chen-Ying Lee (2014) Yana Safarova (2010), Anila Çekrezi (2015) investigated factors that affect financial performance of Albanian. In their studies all found that leverage have negatively and significantly influence on insurance company profitability.

Motor Insurance:-Motor insurance is the most prevalent insurance line in the world, and in Ethiopia, the largest sector in non-life insurance. The coefficient of motor insurance which is measured by total premium collected of motor insurance premium to gross written premium of

the company. In this study it was found that motor insurance has positive coefficient of 0.045 with a (p-value of 0.099). As the regression results of the study shown above in the table, there is a statistically insignificant positive relationship between motor insurance and profitability in Ethiopia at 10% significant level. Beside other studies such as Öner Kaya (2015) found out that the share of motor insurance in the companies' insurance portfolio is not important explanatory variable. On the other hand, S.Kozak (2011) found that the share of motor insurance in the company's insurance portfolio negatively impacts its profitability and efficiency, it means in a similar way as the level of operating costs. He stated that the analogy may come from the fact that motor insurance requires higher marketing expenses and creates higher values of compensations and gross claims paid by the company. Reduction of company's involvement in such insurance class results in lower operating expenses and has positive impact on the company's technical result and net financial profit and overall profitability.

Reinsurance dependence: - Insurance companies usually take out reinsurance cover to stabilize earnings, increase underwriting capacity and provide protection against catastrophic losses, nevertheless it involves a certain costs. The coefficient of reinsurance dependence which is measured as ratio of premiums ceded in reinsurance to total asset in this study was negative, but statistically insignificant even at 10% significance level (pvalue=0.814) indicating that its impact is negligible. The insignificant parameter indicates that the reinsurance dependence does not affect Ethiopian insurance profitability significantly. Referring to previous studies, the results concerning reinsurance dependence are mixed. Shiu (2014) found a negative relationship between reinsurance dependence and insurers profitability, but it is not significant which is consistent with this study. However Ying lee (2014) found a significant negative relationship between reinsurance dependence and insurance profits. Muhaizam Ismail (2013) investigated Islamic and conventional insurance companies in Malaysia using panel data over the period of 2004 to 2007, retakaful dependence/Reinsurance dependence and solvency margin are statistically significant determinants of the investment performance of the general Islamic insurance companies in Malaysia. Therefore, conclusion about the impact of reinsurance dependence on insurers' profitability remains ambiguous and further research is required.

Market Share:- the coefficient of market share which is measured as ratio of total written premium of the company to total gross written premium of the industry in this study was positive,(0.018) but statistically insignificant even at 10% significance level (pvalue=0.651) indicating that its impact is negligible. The insignificant parameter indicates that the market share does not significantly affect Ethiopian insurance profitability. Referring to previous

studies Cassandra R. Cole et al (2015) in their multivariate analysis, they find evidence that market concentration and insurers' underwriting profits are positively related. More specifically, insurers in states with greater market concentration are more profitable than insurers in states with lower levels of market concentration which is consistent to this study too. To the contrary, as stated in Öner Kaya (2015) Pervan et al. [2010] have investigated the determinants of profitability in the Bosnia and Herzegovina insurance industry between the years of 2005–2010. According to their results, age of company, market share, and past performance are positively and significantly related with current profitability they have also found that foreign-owned companies perform better than domestically owned companies; and there is no significant relationship between diversification and profitability.

Gross domestic product: - Gross domestic product is the market value of all finished goods and services produced in a country within a specified period, mostly one year. It is a gauge of economic recession and recovery and an economy's general monetary ability to address externalities. Oshinloye et al (2009) showed that no country can experience meaningful development without the presence of formidable insurance industry, thereby making insurance business in any nation indispensable irrespective of its quota to the gross domestic product. According to Ezirim (2002), insurance industry is perceived as an indispensable tool of economic progress, growth and development. Growth rate of GDP reflects economic activity as well as level of economic development and as such affect the various factors related to the supply and demand for insurance products and services. If GDP grows, the likelihood of selling insurance policies also grows and insurers are likely to benefit from that in form of higher profits. However, result of this study shows that a negative coefficient of -0.134 and it was statistically insignificant (P-value 0.7157) indicating that growth in economic condition measured in terms of gross domestic product has negative impact on profitability of Ethiopian insurers for the study period. The finding of this study is congruent with (Naveed, 2008), (Maria, 2014), and Lee (2014). But their finding was not significantly different from zero. The current study found that economic growth is not positively affect the insurer's profitability in Ethiopia and thus the conclusion about the impact of Ethiopian economic growth on insurers' profitability remains ambiguous and further research is required.

Inflation:-the inflation could affect insurance companies' profitability influencing both their liabilities and assets. In expectation of inflation, claim payments increases as well as reserves that are required in anticipation of the higher claims, consequently reducing technical result and profitability. The coefficient of inflation was negative, (-0.006) but it was not statistically significant, (p-values 0.90), thus the effect of inflation on Ethiopian insurers' profitability is not significant. The result suggested that inflation is not a determinant of insurers' profitability in Ethiopia.

The next chapter will discuss summary, the conclusions and recommendations of the study.

CHAPTER FIVE - CONCLUSIONS AND RECOMMENDATION

This chapter presents conclusions and recommendations based on the analysis made in previous chapter. Accordingly this chapter is organized into two subsections. Section 5.1 presents the conclusions and section 5.2 presents the recommendations.

5.1 SUMMARY

The objective of the study was to identify and compare the factors affecting profitability of insurance companies in Ethiopia for the period of 2006 to 2015. In addition, this study explicated the following specific objectives: to explore the major factors of insurance companies profitability, to examine the level of significance of these factors on profitability and to provide possible recommendations to interested users of the research outcome.

In this study quantitative approach was employed to ensure effectiveness of the research process and meet the objective of the research. Multiple regression analysis was used to measure the effect of determinants on profitability.

This study used to measure profitability by using ROA similar to most of the aforementioned researchers. $ROA = \text{Net profit before tax} / \text{Total Assets}$. In this study, therefore, profitability as proxied by ROA (return on assets) is the dependent variable. To measure the predictor variables of insurance companies' profitability, eight measures were used as independent variables which were identified by the researcher. The variables were company size, Leverage, Loss ratio/underwriting risk, Reinsurance dependence, Motor insurance, Market share, Inflation and GDP.

In this study it was found that Ethiopian insurers' profitability was affected by the independent variables included at different level of significance. Accordingly, the findings showed that Size of company, Loss ratio and Leverage have statistically significant relationship with insurers' profitability. However, reinsurance dependence, Motor Insurance, market share, GDP, and inflation have insignificant relationship with profitability. Moreover, the factor company size has a positive and statistically significant relationship with insurers' profitability, whereas, Market share and motor insurance have positive but insignificant relationship with profitability. On the other hand, Leverage and Loss ratio have negative and statistically significant relationship with profitability, whereas GDP and inflation have negative and insignificant influence on insurers' profitability.

5.2 CONCLUSION

Insurance is a key instrument which plays a major role in a country's economic activity and offers financial protection to an individual or firm against monetary losses suffered from unforeseen circumstances. The presence and survival of financially strong and reliable insurers is therefore unquestionable. The insurance industry should stay profitable and reliable to be shelter for others. Therefore, in order to survive and maintain good financial stability, it is important to be profitable and identify the determinants that mostly influence the insurers' profitability. To this effect, this study aimed at examining possible factors which are company specific, industry specific (the market share) and macro-economic factors that can affect Ethiopian insurance profitability and to what extent these determinants exert impact on

Ethiopian insurer's profitability. Quantitative research approach was used to achieve the stated objective. More specifically, the analysis are performed using data derived from the financial statements of insurance companies in Ethiopia covering ten years period from 2006-2015 by descriptive statistics and multiple regressions using purposive sample of nine insurance companies from seventeen insurance companies currently operating in Ethiopia. Fixed effect model is used to estimate the regression equation. In the study Size of company, Leverage ratio, Loss ratio/underwriting risk, reinsurance dependence, Motor insurance, Market share, real GDP and inflation are considered as independent variables while profitability which was the proxied by return on asset (ROA) is considered as dependent variables.

The empirical findings on the factors affecting insurance profitability in Ethiopia for the sample taken suggested the following conclusions.

The size of a company has a positive impact on profitability with strong significance coefficient. This indicates that larger insurance companies of the country experience more significant increases in profitability through economies of scale. Therefore, the larger the firm is the better the profitability. The results of the regression analysis showed negative relationship between Loss ratio (claims incurred to earned premium) and profitability with strong statistical significance. This shows that as minimizing underwriting risk of insurers will certainly improve their profitability since taking an excessive underwriting risk can affect the company's stability through higher expenses. The regression results of the study showed also that there is a statistically significant negative relationship between leverage ratio of insurance companies and their profitability in Ethiopia at a statistically significant level of confidence. Which means that the debt to equity mix should be maintained at an optimal mix? Beyond certain level it

contributes negatively to profit because the fixed cost of debt generates more expense and lowers profit. Again, the result showed a negative relationship between reinsurance dependence with profitability, but statistically insignificant significance level. This indicates that minimizing dependency on reinsurers or decreasing amount of premium ceded will result in increased profitability.

In this study it was found that motor insurance has positive relationship with profitability but statistically insignificant; however other studies Öner Kaya (2015) found out that the share of motor insurance in the companies' insurance portfolio is not important explanatory variable.

Besides S.Kozak (2011) found that the share of motor insurance in the company's insurance portfolio negatively impacts its profitability and efficiency, it means in a similar way as the level of operating costs. He stated that the analogy may come from the fact that motor insurance requires higher marketing expenses and creates higher values of compensations and gross claims paid by the company. Reduction of company's involvement in such insurance class results in lower operating expenses and has positive impact on the company's technical result and net financial profit and overall profitability. Therefore, the results of the effect of motor insurance on profitability are inconsistent.

The market share which is measured as ratio of total written premium of the company to total gross written premium of the industry in this study was positively affects profitability, but statistically insignificant level indicating that its impact is negligible. Reference to other studies for this study also suggested there is a positive relationship between market share and profitability of insurers.

On the other hand, the findings of the macro variables GDP and inflation negatively affects profitability of insurers in this study. However; both macro factors affect profit of insurers in Ethiopia statistically very insignificantly.

In general according to this study, Company size, Loss ratio/underwriting risk, Leverage, are significant key drivers of profitability of insurance companies in Ethiopia whereas reinsurance dependence, motor insurance, market share, GDP and inflation are insignificant determinant of insurance companies' profitability in Ethiopia.

5.3 RECOMMENDATIONS

On the basis of the findings of the study, the researcher has drawn the following recommendations:

- As size of company is the most important determinant of insurer's profitability, insurance companies should grow more and expand their activities to be more profitable.
- Since underwriting is one of the crucial activity for insurance Companies, the insurers should reduce underwriting risk, the amount of losses incurred, as a result of poor underwriting and claim handling activities, improving these performance through techniques like product selections, increase claims handling practices through efficient procedures, systems and, manpower and gathering sufficient information about subject matter of insurance before agreement with the insured. Here insurers should apply the rule of KYS (Know Your Customer).
- Companies should set their optimum mix of debt to equity to have leverage which contributes positively to profit.
- As reliance on reinsurers coupled with cost, insurance companies in Ethiopia should reduce their dependence on reinsurers by improving their capital base and size. Otherwise as indicated in this and other studies, the more the dependence, the more the cost and the smaller the profitability. The lower the risk (as reinsurance lowers the risk insurance companies take) the lower the return and profitability declines accordingly.
- Though motor insurance and market share contributes positively to profitability, their statistical significance was found to be low according to this study. However insurers should work more to enhance the contribution of these two factors because, on the one hand, motor insurance is one of the largest business portfolios in insurance business mix in Ethiopian insurance industry, on the other hand motor insurance is a mandatory in Ethiopian law and insurers do not have discretionary power not to provide insurance coverage. Therefore, prudent underwriting activities are mandatory to get the best out of this big business portfolio. Regarding market share, insurers should not only increase their market share, but also they should have to excel their underwriting risk management capability so that they could harvest the fruit of market share.

- Regarding the two macro-economic variables, GDP and Inflation, though their contribution was negative and statistically insignificant as per this study, constant flow up and keeping track of their impact on insurers activities should be taken seriously.
- Finally, this study attempted to look at some of the factors affecting insurer's profitability in Ethiopia. However, the variables used in the statistical analysis did not cover all factors that could affect insurers' profitability. Thus, future research should focus on some other dimensions of non-financial/qualitative aspects such as the effect of management quality, the quality of manpower, work ethics, effect of *morale hazard*(behavior of insured's after they get insured-insured may exhibit carelessness in their behavior because of holding insurance policy) and *moral hazards*(before or after insurance, insured's may conceal some important information to the insurer to win some unfair advantage), public attitude towards the concept of insurance in Ethiopia, government regulatory policy and directives, and other issues which the researcher is not knowledgeable with. Moreover, this study was conducted with non-life insurers only; future research should encompass the life insurance too.

REFERENCES

- Anthony Sanders and M.M Cornett. (2004). *Financial Markets and Institutions*. 2nd Edition, U.S.A
- Abate Gashaw. 2012, *Factors affecting profitability of Insurance Companies in Ethiopia: Panel Evidence*, MSc Thesis, AAU.
- Al-Shahim, A. A. Ali (2008). *Determinants of Insurance Companies Profitability in UAE*, Master's Thesis, University of Utah, Malaysia
- Athanasoglous P. (2005). *Bank specific industry- specific and macro determinates of bank profitability bank of Greece*, Working paper, No. 25
- Anila Cekrezi. (2015). *International journal of Economics, Commerce and Management*, Vlo 3
- Ayele. Desalegn (2014). *Assessment of motor Insurance on financial performance, the case of Awash Insurance Company*. Master's thesis Saint Mary's University. Addis Ababa.
- Barth, M & Eckles (2009). *An empirical investigation of the effect of growth on short term changes in loss ratio*, *journal of risk and insurance*.
- Balino, T., J.T.V. Sundararajan (1991). *Issues in Recent Banking Crisis" In Banking Crisis; cases and issues*, IMF, Washington
- Brown and Hoyt (1999). *Economic and market predictors of insolvencies in life insurance sector*, *journal risk and insurance*.
- Creswell, W. (2003). *Research design, qualitative, quantitative and mixed methods approaches*, 2nd edn, Sage Publications, California.
- Creswell, W. (2009). *Research design: quantitative, qualitative and mixed methods*
- Chen R. Wong K. (2004). *The determinants of financial health of Asian Insurance Companies*, *Journal of Risk and Insurance*.
- Chris Brooks (2008). *Introductory Econometrics for Finance*, 2nd Edition.
- Ciaran Walsh (1996). *Key management ratios, how to analysis compare and control the figures that drive company values*, FT Pitman publishing)
- Carmichael, J. M.Pomerleano (2002). *The development and regulation non-bank financial institution* (Washington: World Bank)
- Catalan M, G. Impavido and A.R. Musalem (2000), *Contractual saving or stock markets development; which leads?* , Unpublished Washington, World Bank

- Common Wealth of Pennsylvania (2013), *Automobile Insurance guide*, www.insurabceurope.eu, accessed April 20, 2016.
- Daniel M and Tilahun A (2013). *Firm specific factors that determines Insurance companies' performance in Ethiopia*, European Scientific Journal, Vol 9
- Derje Workie (2012). "Role of Financial Institutions in the growth of Small and medium enterprises in Addis Ababa"
- Daykin C.T.Pesonen (1994), *Practical Risk Theory for Actuaries*, U.K
- Ernst and Young (2011), *Motor Insurance, Asian growth engine*. www.ey.com, access April 2016.
- Ernst and Young (2010). *Analysis and evaluation of Insurance Companies*
- Eugene F. Brigham (1995). *Fundamentals of Financial management*, the Dryden press, U.S.A
- Frederick Stanley G. Eakins (2009). *Financial markets and Institutions*, 7th edn
- Financial Stability Forum (2000). *Report by the study group on insurance issues and developments*, March 2011
- Grose, V. (1992). *Risk Management from a technical perspective: the Geneva papers on Risk Insurance*, Vol 12.
- Gray Giroux (2003). *Financial Analysis, a user approach*, lash publishing LLC (p.59)
- Hanna Mariam (2015), *Determinants of insurance companies' profitability in Ethiopia*, Master's Thesis AAU.
- Hadush Gebru (2015), *Determinants of Profitability of Insurance Companies in Ethiopia: An Empirical study*, Master's Thesis, AAU.
- Hailu Zeleke (2007), *Insurance in Ethiopia, Historical development present status, and future challenges*, Master Printing press, Addis Ababa.
- H.Kent Baker, Gary E Powel (2005), *Understanding Financial Management*, Blackwell publishing, U.S.A
- Haiss, P. and Sumegi, K. (2008), *the Relationship of Insurance and Economic Growth in Europe*, A Theoretical and Empirical Analysis
- Haward and Upton (1961), "Introduction to Business Finance" McGraw Hill. weston and Brigham (1972), *Managerial Finance*.
- Hifza, M. (2011), *determinants of insurance companies' profitability: an analysis of Insurance sector of Pakistan*, Academic Research International, Vol 1

- Investopedia. Com/articles/personal finance/070715/*insurance companies* accessed April 13, 2016
- Jim Borland and Don Mcleod, *financial performance (2000)*, *financial performance: Dossier 09*, SciTech educational Ltd.
- J.Jonker and B. Pennink (2010), *Risk Management and Insurance*, 4th edition
- Khan, S.Bilila,(2013), *Determinants of profitability panel data evidence from insurance sector of Pakistan*, Elixir, Finance management (Elixir International Journal)
- Kozak, S. (2015). *Determinants of Profitability of Non-Life Insurance Companies in Poland during Integration with the European Financial System. Available online: <http://www.ejpau.media.pl/volume14/issue1/abs-01.html>* (accessed on 8 July 2015)
- Kihara Maja (2012), *The importance of insurance, its challenges and solutions*.
- Kim A. (1995), *The use of event history analysis to examine insures insolvencies*, journal of risk and insurance.
- Kaguri(2013), *Relationship between firms' characteristics and financial performance of life insurance companies in Kenya*, MSC thesis, University of Nairobi.
- Lowe (1999), *Management Research an Introduction*, sage publication ltd.
- Lawrence J. Gitman (2006), *Principles of managerial finance* 11th d, Pearson Education Inc.
- Mistre Sisay (2015), *the Determinants of Profitability on Insurance sector: evidence from Insurance Companies in Ethiopia*, MSc. thesis AAU.
- Muhaizam Ismail (2013), *determinants of Financial performance, the case of General Tajkaful and Insurance Companies in Malaysia*, Vol 9 pp 111-130
- Norman J (2000). *Insurance theory concept*, university of Caroline.
- Naveed, A.Zulfar, Ahmed U. (2011), *Determinants of performance, a case of life insurance sector of Pakistan*, International Research journal of Finance and Economics, Euro journals publishing, No 61, pp 123-128)
- N. Ramachandran & R.K Kakani (2007), *Financial Accounting for management*, 2nd Edition, Tata McGraw-Hill Publishing Ltd, New Delhi.
- Niño Datu(2016),*How do insurer specific indicators and macroeconomic factors affect the profitability of insurance business? A panel data analysis on the Philippine Non-life Insurance market*

- Outreville F. (1990), *The Economic significance of Insurance markets in developing countries Risk Insures.*
- Ornella M. L.Anderloni (2014), *Non-life Insurance Economic performance an empirical investigation, journal of economics and management*, Vol 18
- Özer, U (2015). Kaskove Trafik Sigortalari Kârlilik Degerlendirmesi. Available online: http://www.millire.com/dergi/SAYI_76.pdf (accessed on 8 July 2015).
- Öner Kaya (2013), E. *Capital Adequacy in the Insurance Business and Assessment of Turkish Insurance Sector within the Scope of Solvency II*. Ph.D. Thesis, Gazi University, Ankara, Turkey, 2013.
- Pandey (1980), *Concept of earning Power*. Accounting Journal
- Peter Haiss and Kjell Sumegi (2008), *the relationship of Insurance and economic growth in Europe, a technical and empirical analysis*
- Priehett, S. Travis (1996), *Risk Management and Insurance*, 7 th edition, west publishing Co.
- Patrick, H.T (1966), *Financial Development and Economic growth in underdeveloped countries” Economic growth and cultural change*, Vol 14(2), PP 174-189.
- Pfeiffer Irving (1956), *Insurance and Economic Theory*. Richard D. Irwin, Inc Illinois.
- Philip Ram sedan (2002), *Finance for non-financial managers*, Hodder and Stoughton educational, London.
- Richard A. Brealey, S.C. Myers, AJ. Marcus (2009). *Fundamentals of corporate finance*, MC Graw- Hill Irwin, New York.
- Suheli Reshid (2015), *Determinants of Insurance Companies in Ethiopia*, MSc Thesis, AAU.
- Swiss R. (2008), *Profitability of Non-Life Insurance Industry*, Egypt.
- Singh (2006), *Fundamentals of insurance methodology and statics, new age international PLC*, New Delhi.
- Trieschmann Hoyt Sommer (2005), *Risk Management and Insurance*, 5 th western, U.S.A
- William G. Zikmchd, B.J. Babin, J.C. caro, M. Griffin (2013), *Business Research methods*, 8th edn, sebgage learning India PLC.
- WWW. Business dictionary. Com Accessed April 14/2016
- WWW. Investopedia. Com/terms/p/ profits/asp/ accessed April 14, 2016

WWW. Yourarticlelibrary.com) accessed April 14, 2016

Yuvaraj and Abate G. (2013), *Performance of Insurance Companies in Ethiopia*, *International Journal of Marketing, Financial Services ,and Management research*

Yugi Li (2007). *Determinates of Banks profitability and its implication on risk management practices panel evidence from the UK*, the University of Nottingham.

Yana Safarova (2010), *Factors that determined firm performance of New Zealand listed companies*, MBUS thesis.

Appendix A

1. Test of collinearity result

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	4.337629	Prob. F(2,78)	0.0164
Obs*R-squared	9.008030	Prob. Chi-Square(2)	0.0111

Test Equation:

Dependent Variable: RESID

Method: Least Squares

Date: 06/01/16 Time: 12:02

Sample: 1 90

Included observations: 90

Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.036042	0.147496	0.244355	0.8076
SIZ	-0.002164	0.006202	-0.348983	0.7280
LEV	0.001534	0.005097	0.300922	0.7643
LOR	-0.005152	0.027296	-0.188746	0.8508
RID	-0.000466	0.004194	-0.111039	0.9119
MOI	0.004117	0.026286	0.156612	0.8760
MKS	0.011085	0.037526	0.295384	0.7685
GDP	0.029875	0.355471	0.084043	0.9332
INF	-0.001800	0.046086	-0.039054	0.9689
D48	-0.032725	0.035549	-0.920558	0.3601
RESID(-1)	0.348561	0.121559	2.867416	0.0053
RESID(-2)	-0.041415	0.119306	-0.347134	0.7294

R-squared	0.100089	Mean dependent var	8.29E-17
Adjusted R-squared	-0.026821	S.D. dependent var	0.031999
S.E. of regression	0.032425	Akaike info criterion	-3.896216
Sum squared resid	0.082007	Schwarz criterion	-3.562908
Log likelihood	187.3297	Hannan-Quinn criter.	-3.761807
F-statistic	0.788660	Durbin-Watson stat	1.993592
Prob(F-statistic)	0.650481		

Heteroskedasticity Test: White

F-statistic	1.607182	Prob. F(45,44)	0.0589
Obs*R-squared	55.95692	Prob. Chi-Square(45)	0.1268
Scaled explained SS	44.98660	Prob. Chi-Square(45)	0.4725

R-squared	0.621744	Mean dependent var	0.001013
Adjusted R-squared	0.234890	S.D. dependent var	0.001453
S.E. of regression	0.001271	Akaike info criterion	-10.19219
Sum squared resid	7.10E-05	Schwarz criterion	-8.914508
Log likelihood	504.6485	Hannan-Quinn criter.	-9.676953
F-statistic	1.607182	Durbin-Watson stat	1.907442
Prob(F-statistic)	0.058922		

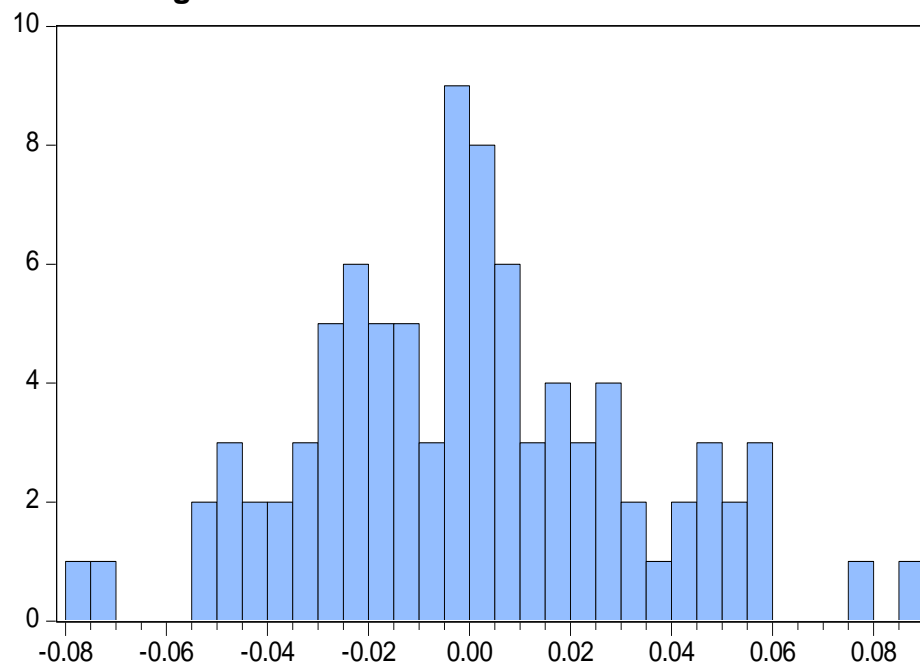
3. Variance inflation factors (VIF)

Variance Inflation Factors
 Date: 06/02/16 Time: 07:09
 Sample: 1 90
 Included observations: 90

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	0.023344	1844.417	NA
SIZ	4.11E-05	1213.677	3.170764
LEV	2.75E-05	14.17827	1.974067
LOR	0.000803	27.07817	1.234534
RID	1.90E-05	1.887527	1.487156
MOI	0.000739	14.99312	1.376396
MKS	0.001498	2.809941	1.547679
GDP	0.133798	122.1548	1.957753
INF	0.002221	7.251489	2.036344
D48	0.001177	1.033102	1.021623

* all are less than 10. (Centered VIF)

4. Histogram



Series: Standardized Residuals	
Sample	2006 2015
Observations	90
Mean	2.95e-17
Median	-0.000739
Maximum	0.086129
Minimum	-0.078682
Std. Dev.	0.031999
Skewness	0.239513
Kurtosis	3.035000
Jarque-Bera	0.865090
Probability	0.648856

5. The regression Equation

Dependent Variable: ROA
 Sample: 2006 2015
 Periods included: 10
 Cross-sections included: 9
 Total panel (balanced) observations: 90

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.377174	0.152788	-2.468613	0.0157
SIZ	0.029141	0.006407	4.548277	0.0000***
LEV	-0.012728	0.005241	-2.428635	0.0174**
LOR	-0.113882	0.028342	-4.018088	0.0001**
RID	-0.001029	0.004360	-0.236056	0.8140
MOI	0.045265	0.027191	1.664700	0.0999***
MKS	0.017547	0.038699	0.453408	0.6515
GDP	-0.133687	0.365785	-0.365480	0.7157
INF	-0.005944	0.047126	-0.126133	0.8999
D513	0.514147	0.034305	14.98771	0.0000
R-squared	0.800844	Mean dependent var	0.096516	
Adjusted R-squared	0.778439	S.D. dependent var	0.071703	
S.E. of regression	0.033751	Akaike info criterion	-3.835201	
Sum squared resid	0.091128	Schwarz criterion	-3.557444	
Log likelihood	182.5840	Hannan-Quinn criter.	-3.723193	
F-statistic	35.74399	Durbin-Watson stat	1.379014	
Prob(F-statistic)	0.000000			

6. Domestic Insurance Companies Prior to the Enactment of the 1970 insurance Proclamations

No	Company Name	Date of Establishment
1	Imperial Insurance Company of Ethiopia	1951
2	Yergib(Pigeon) Insurance Company	1960
3	Eritrea Insurance Company S.C	1961
4	National Ethiopian Insurance Co.	1963@
5	Blue Nile Insurance Company	1963
6	African Solidarity Insurance Co.	1963
7	Ras Insurance Co.	1963
8	Queen of Sheba Insurance Company	1963
9	Lion Insurance Company	1964
10	Star Fire and General Insurance Company	1967
11	Union Insurance Company	1965
12	The Life and Pension Society*	1967
13	General Insurance Co.	1968
14	International Insurance Co.	1969#
15	Pan-African Insurance Co.	1969

Source: First Annual Report by the Controller of Insurance, December 31, 1971, p6.

7. Country of origin of Foreign Insurers operating insurance Business Prior to the enactment of the 1970 Insurance Proclamations

Country	No of Companies
Italy	6
United Kingdom	20
USA	2
Egypt	1
Switzerland	1
New Zealand	1
India	1
Japan	1
Total	33

Source: First Annual Report by the controller of Insurance, December31, 1971

8. Insurance Companies in Ethiopia and their respective date of establishment together with the type of business they do.

S. No	Name of Insurer	Date of Establishment	General Insurance	Long-term Insurance
1	Africa Insurance Company S.C	1/12/1994	✓	✓
2	Awash Insurance Company S.C	1/10/1994	✓	✓
3	Global Insurance company S.C	11/1/1997	✓	✓
4	NIB Insurance company S.C	1/5/2002	✓	✓
5	Nile Insurance company S.C	11/4/1995	✓	✓
6	United Insurance company S.C	1/4/1997	✓	✓
7	Nyala Insurance company S.C	6/1/1995	✓	✓
8	Lion Insurance company S.C	1/7/2007	✓	✓
9	Ethiopian Insurance Corporation	1/1/1976	✓	✓
10	Abay Insurance company S.C	26/07/2010	✓	
11	Berhan Insurance company S.C	24/05/2011	✓	
12	National Insurance Company of Ethiopia S.C. (NICE)	23/09/1994	✓	
13	Oromia Insurance company S.C	26/01/2009	✓	✓
14	Ethio Life and General Insurance company S.C	23/10/2008	✓	
15	Tsehay Insurance company S.C	28/03/2012	✓	
16	Lucy Insurance company S.C	15/11/2012	✓	
17	Bunna Insurance company S.C	23/08/2011	✓	

Source: NBE, Annual Report, 2015

Appendix B**Correlation Matrix of variables**

	ROA	SIZ	VOC	LOR	LEV	RID	MOI	MKS	GDP	INF
ROA	1.0000	0.2761	0.1480	-0.3078	-0.0768	-0.1721	0.1830	0.1091	-0.0965	-0.1412
SIZ	0.2761	1.0000	0.8179	0.0654	0.5310	-0.4239	-0.3190	0.4977	-0.1748	-0.1184
VOC	0.1480	0.8179	1.0000	-0.0208	0.1574	-0.3507	-0.0695	0.1830	-0.2412	-0.2370
LOR	-0.3078	0.0654	-0.0208	1.0000	0.3622	-0.1406	-0.2426	0.0380	-0.0004	0.1599
LEV	-0.0768	0.5310	0.1574	0.3622	1.0000	-0.2330	-0.4329	0.3482	-0.0498	0.1758
RID	-0.1721	-0.4239	-0.3507	-0.1406	-0.2330	1.0000	-0.0305	-0.0376	0.0556	0.0099
MOI	0.1830	-0.3190	-0.0695	-0.2426	-0.4329	-0.0305	1.0000	-0.2012	-0.0888	-0.0581
MKS	0.1091	0.4977	0.1830	0.0380	0.3482	-0.0376	-0.2012	1.0000	0.0140	0.0169
GDP	-0.0965	-0.1748	-0.2412	-0.0004	-0.0498	0.0556	-0.0888	0.0140	1.0000	-0.5648
INF	-0.1412	-0.1184	-0.2370	0.1599	0.1758	0.0099	-0.0581	0.0169	-0.5648	1.0000

**Appendix C
Data Used in the Study**

year	CompanyName	ROA	SIZ	VOC	LIQ	LEV	PRG	LOR	RID	MOI	MKS	GDP	INF
2006	EICO	0.0719	20.4656	17.8587	1.2307	1.9452	0.1420	0.6662	0.4149	0.2945	0.4384	0.1092	0.1058
2007	EICO	0.0881	20.4749	17.8587	1.2072	2.1681	0.2038	0.6929	0.3970	0.3145	0.4276	0.1146	0.1582
2008	EICO	0.0909	20.5730	17.8587	0.9924	2.8190	0.1943	0.7177	0.4239	0.3024	0.4177	0.1079	0.2530
2009	EICO	0.0868	20.6827	17.8587	1.1070	2.9125	0.1757	0.7297	0.4320	0.2937	0.4242	0.0880	0.3640
2010	EICO	0.0989	20.8226	17.8587	1.0872	3.1453	0.3283	0.6174	0.4895	0.2803	0.4236	0.1255	0.0280
2011	EICO	0.1122	20.9745	17.8587	0.9917	3.9307	0.2716	0.7446	0.4497	0.2941	0.4053	0.1300	0.1810
2012	EICO	0.1366	21.3027	17.8587	0.9405	4.7023	0.5066	0.5591	0.2555	0.3633	0.3978	0.0865	0.3410
2013	EICO	0.1652	21.4558	17.8587	0.9677	4.7601	0.3750	0.6659	0.4826	0.3175	0.4517	0.1058	0.1350
2014	EICO	0.1894	21.5523	17.8587	0.9849	4.3892	-0.0780	0.6023	0.3707	0.4025	0.3998	0.1028	0.0810
2015	EICO	0.1955	21.8660	19.7580	2.1079	4.5921	0.0482	0.6449	0.2920	0.4190	0.3941	0.0961	0.0770
2006	AICS	0.0604	18.4804	17.0736	1.1046	1.9293	0.3565	0.6602	2.1048	0.5566	0.0864	0.1092	0.1058
2007	AICS	0.0650	18.7166	17.1720	0.9892	2.1875	0.2779	0.7768	0.1688	0.6028	0.0895	0.1146	0.1582
2008	AICS	0.0685	18.8482	17.2437	0.8171	2.3498	0.1582	0.7014	2.0892	0.5855	0.0848	0.1079	0.2530
2009	AICS	0.0518	19.0191	17.3430	0.7856	2.6977	0.1446	0.8145	0.2116	0.5535	0.0838	0.0880	0.3640
2010	AICS	0.0904	19.1947	17.5103	0.8322	2.2173	0.1994	0.6249	0.1908	0.6021	0.0756	0.1255	0.0280
2011	AICS	0.0795	19.6171	17.8292	0.7846	2.8270	0.4738	0.6165	0.1918	0.6222	0.0838	0.1300	0.1810
2012	AICS	0.0793	19.9655	17.9960	0.8507	3.3161	0.5838	0.6612	0.0817	0.6693	0.0864	0.0865	0.3410
2013	AICS	0.1485	20.1411	18.0227	0.8890	2.7727	0.0770	0.6127	0.1818	0.6351	0.0769	0.1058	0.1350
2014	AICS	0.1022	20.1780	18.3791	0.8609	2.2512	0.0213	0.6436	0.2049	0.6731	0.0754	0.1028	0.0810
2015	AICS	0.1161	20.0506	18.4515	1.3947	2.2794	0.1384	0.6391	0.2116	0.6583	0.0807	0.0961	0.0770
2006	GLOB	0.0432	17.2292	16.5236	2.3062	0.8276	0.3862	0.5568	12.9413	0.3979	0.0865	0.1092	0.1058
2007	GLOB	0.0546	17.4171	16.6390	1.5432	0.9203	0.1461	0.5029	0.2895	0.4481	0.0853	0.1146	0.1582
2008	GLOB	0.0452	17.6058	16.7242	0.8466	1.2438	0.2073	0.5119	13.7393	0.4700	0.0904	0.1079	0.2530
2009	GLOB	0.0541	17.8044	16.7865	0.9619	1.3623	0.0499	0.5056	0.2890	0.4815	0.0885	0.0880	0.3640
2010	GLOB	0.0584	17.9226	16.8112	0.8395	1.4700	0.2444	0.4413	0.2303	0.5049	0.0966	0.1255	0.0280
2011	GLOB	0.0364	17.9954	16.9928	0.9195	1.3482	0.4940	0.7878	0.2559	0.5242	0.1007	0.1300	0.1810
2012	GLOB	0.0203	18.3545	17.0850	0.9160	2.1395	0.8444	0.8762	0.0836	0.6282	0.0921	0.0865	0.3410
2013	GLOB	0.1532	18.6375	17.1673	1.1350	1.8366	-0.0228	0.5682	0.2279	0.6799	0.0686	0.1058	0.1350
2014	GLOB	0.1603	18.8530	17.5807	1.3519	1.3253	0.1452	0.4841	0.2202	0.6203	0.0671	0.1028	0.0810
2015	GLOB	0.1364	19.0436	18.0603	1.6279	0.9538	0.1791	0.6005	0.2047	0.6362	0.0654	0.0961	0.0770
2006	NILE	0.0357	19.0145	17.3990	1.0210	2.6718	0.2406	0.7986	1.4632	0.6060	0.0592	0.1092	0.1058
2007	NILE	0.0227	19.0725	17.3990	0.8810	3.0775	0.0991	0.8550	0.1730	0.6073	0.0683	0.1146	0.1582
2008	NILE	-0.0265	19.0552	17.3990	0.6843	3.2945	-0.0067	0.8304	1.9688	0.5773	0.0843	0.1079	0.2530
2009	NILE	0.0217	19.0884	17.5014	0.7184	3.0307	0.1104	0.6938	0.2662	0.4911	0.0958	0.0880	0.3640
2010	NILE	0.1379	19.2317	17.5180	0.9275	1.8118	0.1572	0.5737	0.1693	0.5599	0.0943	0.1255	0.0280
2011	NILE	0.0980	19.4050	17.9386	0.9642	1.8323	0.3433	0.7145	0.1535	0.5907	0.0892	0.1300	0.1810
2012	NILE	0.1020	19.7131	18.0615	1.0891	1.7887	0.4486	0.7051	0.0870	0.6047	0.0900	0.0865	0.3410
2013	NILE	0.1096	19.8631	18.2582	1.1108	1.8603	-0.0387	0.7349	0.1710	0.6451	0.0701	0.1058	0.1350
2014	NILE	0.1397	20.0003	18.2582	1.0900	1.9571	0.1693	0.7006	0.1424	0.6068	0.0715	0.1028	0.0810
2015	NILE	0.0851	20.1686	18.7698	1.2138	1.6785	0.1407	0.6856	0.1251	0.6225	0.0723	0.0961	0.0770
2006	NICE	0.0620	17.2660	15.9746	0.7321	2.1589	0.2041	0.6603	4.8177	0.6598	0.1243	0.1092	0.1058
2007	NICE	0.0849	17.4950	16.0453	0.9490	2.1406	0.1761	0.6459	0.1317	0.6410	0.1107	0.1146	0.1582
2008	NICE	0.0572	17.5967	16.2555	0.9315	1.9961	0.1573	0.6740	5.1997	0.5930	0.0899	0.1079	0.2530

2009	NICE	0.0463	17.7498	16.3881	0.8112	2.1272	0.1401	0.6813	0.2057	0.5909	0.0863	0.0880	0.3640
2010	NICE	0.0475	17.9591	16.4746	0.9921	2.3654	0.3159	0.6773	0.2418	0.5919	0.0751	0.1255	0.0280
2011	NICE	0.0029	18.2758	16.6131	1.1206	3.6928	0.2452	0.7276	0.1853	0.6348	0.0758	0.1300	0.1810
2012	NICE	0.1743	18.7887	16.6131	1.0525	3.0177	0.6795	0.5405	0.1156	0.6672	0.0716	0.0865	0.3410
2013	NICE	0.6132	19.0956	16.6131	1.2023	2.2457	0.1288	0.5903	0.2075	0.6552	0.0568	0.1058	0.1350
2014	NICE	0.0695	19.3538	17.6285	1.1232	2.7908	0.0532	0.7002	0.1874	0.6933	0.0638	0.1028	0.0810
2015	NICE	0.1202	19.4527	17.8215	1.2080	2.1036	0.0713	0.5620	0.1443	0.7573	0.0684	0.0961	0.0770
2006	AFRI	0.0732	18.8790	17.0736	1.1610	2.3909	0.2719	0.6016	2.1038	0.2325	0.0141	0.1092	0.1058
2007	AFRI	0.0204	18.9782	17.0736	1.0833	2.9691	0.2180	0.8072	0.3304	0.1818	0.0131	0.1146	0.1582
2008	AFRI	0.0373	19.2533	17.0736	0.9990	4.0438	0.2949	0.8175	1.9596	0.1595	0.0129	0.1079	0.2530
2009	AFRI	0.0478	19.2878	17.0736	0.9361	3.7648	0.1341	0.8283	0.2608	0.1720	0.0117	0.0880	0.3640
2010	AFRI	0.0579	19.6250	17.0736	0.8890	4.2048	0.4507	0.8155	0.2745	0.1715	0.0109	0.1255	0.0280
2011	AFRI	0.0530	19.8813	17.6936	0.8271	4.6322	0.3869	0.8200	0.2350	0.1414	0.0123	0.1300	0.1810
2012	AFRI	0.0532	20.0406	17.8409	0.6717	4.3138	0.4030	0.8540	0.1411	0.1333	0.0148	0.0865	0.3410
2013	AFRI	0.0111	20.0234	17.9550	0.5431	3.5574	-0.0980	0.8535	0.2075	0.1487	0.0119	0.1058	0.1350
2014	AFRI	0.0804	20.1199	18.0932	0.6317	3.3439	0.0190	0.8952	0.2569	0.1534	0.0131	0.1028	0.0810
2015	AFRI	0.0720	20.2281	18.6884	1.0724	2.0968	0.0358	0.8098	0.2552	0.1804	0.0145	0.0961	0.0770
2006	NIBI	0.0467	18.1034	17.0670	1.0050	1.4657	0.4101	0.1657	3.0745	0.4314	0.0924	0.1092	0.1058
2007	NIBI	0.0757	18.4078	17.1748	1.0541	1.6894	0.4258	0.6671	0.1702	0.4638	0.0859	0.1146	0.1582
2008	NIBI	0.1122	18.6529	16.8112	0.8573	2.7954	0.5079	0.6612	2.1009	0.3854	0.0824	0.1079	0.2530
2009	NIBI	0.0975	19.0792	17.3080	0.9426	2.7977	0.3156	0.6809	0.1420	0.4033	0.0684	0.0880	0.3640
2010	NIBI	0.0776	19.3421	17.4271	0.9797	3.0170	0.3094	0.6633	0.1761	0.4531	0.0689	0.1255	0.0280
2011	NIBI	0.0899	19.5381	17.4395	0.9999	2.8517	0.2576	0.2909	0.6146	0.4786	0.0572	0.1300	0.1810
2012	NIBI	0.0885	19.9792	17.9899	0.9693	3.6408	0.5482	0.2995	0.0905	0.4979	0.0500	0.0865	0.3410
2013	NIBI	0.1112	20.0647	18.2379	1.0518	2.7433	-0.0571	0.2689	0.6339	0.5144	0.0538	0.1058	0.1350
2014	NIBI	0.1127	20.2944	18.6079	1.1079	2.3231	0.0632	0.3049	0.6212	0.5123	0.0565	0.1028	0.0810
2015	NIBI	0.0756	20.4476	18.9937	1.5807	2.0163	0.0743	0.6765	0.1955	0.5192	0.0602	0.0961	0.0770
2006	NYLA	0.0945	18.6345	17.2495	1.1956	1.3830	0.2700	0.5932	1.9688	0.5444	0.0378	0.1092	0.1058
2007	NYLA	0.0972	18.6571	17.2495	1.0771	1.3909	0.1474	0.5240	0.2401	0.5416	0.0360	0.1146	0.1582
2008	NYLA	0.0557	18.7783	17.2495	0.9721	1.7299	0.1725	0.6822	2.1498	0.4938	0.0341	0.1079	0.2530
2009	NYLA	0.1340	18.8339	17.2495	0.9063	1.3136	-0.0391	0.6171	0.2622	0.4710	0.0335	0.0880	0.3640
2010	NYLA	0.1011	19.0508	17.2495	0.9823	1.4860	0.3411	0.5886	0.3781	0.3845	0.0332	0.1255	0.0280
2011	NYLA	0.1591	19.1872	17.2495	1.0176	1.3584	0.1037	0.5484	0.3302	0.3812	0.0311	0.1300	0.1810
2012	NYLA	0.1820	19.5459	17.2495	1.0995	1.4706	0.3411	0.4094	0.2555	0.4482	0.0340	0.0865	0.3410
2013	NYLA	0.1647	19.8708	17.2495	1.1423	1.6170	0.3033	0.4608	0.3507	0.4124	0.0317	0.1058	0.1350
2014	NYLA	0.1434	20.1119	18.5160	1.2176	1.5181	0.0940	0.5396	0.3197	0.4184	0.0321	0.1028	0.0810
2015	NYLA	0.1227	20.4311	18.8489	2.9189	1.8189	0.1327	0.5722	0.3275	0.4452	0.0323	0.0961	0.0770
2006	UNIC	0.0922	18.2884	17.1096	1.2362	1.1262	0.4374	0.5033	2.9814	0.5487	0.0610	0.1092	0.1058
2007	UNIC	0.1002	18.5299	17.1460	1.1115	1.5056	0.6916	0.7202	0.2664	0.5698	0.0836	0.1146	0.1582
2008	UNIC	0.1668	18.8090	17.2151	1.1068	1.6284	0.3579	0.5878	1.9067	0.4729	0.0929	0.1079	0.2530
2009	UNIC	0.0472	18.9672	17.4967	1.0268	2.2238	0.0389	0.7707	0.3372	0.5093	0.0833	0.0880	0.3640
2010	UNIC	0.1142	19.1726	17.6078	1.1695	1.6899	0.0955	0.5826	0.2783	0.4559	0.0686	0.1255	0.0280
2011	UNIC	0.0874	19.3721	17.7624	1.1893	1.8721	0.2887	0.7130	0.2768	0.4521	0.0666	0.1300	0.1810
2012	UNIC	0.1219	19.6969	18.1432	1.2454	1.8392	0.4762	0.6413	0.1463	0.5892	0.0640	0.0865	0.3410
2013	UNIC	0.1732	19.8845	18.2875	1.2684	1.6390	0.0415	0.5427	0.2834	0.5783	0.0550	0.1058	0.1350
2014	UNIC	0.1412	20.0522	18.5160	0.9112	1.6359	0.1019	0.5413	0.2597	0.5849	0.0582	0.1028	0.0810
2015	UNIC	0.1306	19.7238	18.8907	1.2015	1.2681	0.0808	0.5326	0.2653	0.5887	0.0592	0.0961	0.0770