

DETERMINANTS OF CAPITAL STRUCTURE THE CASE OF SOME SELECTED INSURANCE COMPANY IN ETHIOPIA



SALALE UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

DEPARTMENT OF ACCOUNTING AND FINANCE

**A Thesis Submitted to Department of Accounting and Finance, College of
Business and Economics, Salale University for Partial Fulfillment of
Requirements for the Award of Masters of Science Degree in Accounting and
Finance**

By DerejeTafesse Mitiku

Id Number: Rm 0004/14

Major Advisor: Dr. Shewit Kinfe (PHD)

Co - Advisor: Amdemicael Abera (MA)

June, 2023

Fiche, Ethiopia

DETERMINANTS OF CAPITAL STRUCTURE THE CASE OF SOME SELECTED INSURANCE COMPANY IN ETHIOPIA



A Thesis Submitted to Department of Accounting and Finance, College of Business and Economics, Selale University for Partial Fulfillment of Requirements for the Award of Masters of Science Degree in Accounting and Finance

By Dereje Tafesse Mitiku

June, 2023

Fiche, Ethiopia

DECLARATION

I, Dereje Tafesse Mitiku, **Id Number Rm0004/14**, do hereby declare that this thesis entitled “Determinants of capital structure the case of some selected insurance companies’ in Ethiopia” is my original work and that it has not been submitted partially or in full by any other person for an award of degree or publication in any other university/institution.

Submitted by:

Dereje Tafesse Mitiku _____ _____

Name of student

Signature

Date

CERTIFICATE

This is to certify that the thesis entitled “Determinants of Capital Structure the case of some selected Insurance Company in Ethiopia” submitted to Department of Accounting and Finance College of Business and Economics, Selale University by Dereje Tafesse Mitiku for the degree of Masters of Science in Accounting and Finance, is original work done by the candidate under our supervision. We further certify that the entire thesis represents the independent work of Dereje Tafesse Mitiku and all the thesis works will undertake by the candidate under our supervision and guidance.

This thesis was submitted for examination with our approval.

Name of main advisor _____ Signature _____ Date _____

Name of co-advisor _____ Signature _____ Date _____

APPROVAL SHEET

SALALE UNIVERSITY
COLLEGE OF BUSINESS AND ECONOMICS
DEPARTMENT OF ACCOUNTING AND FINANCE
BOARD OF EXAMINERS THESIS APPROVAL SHEET

The undersigned certify that I have read and here by recommend Department of Accounting and Finance, Salale University, to accept the thesis Entitled “Determinants of Capital Structure the case of some selected Insurance Company in Ethiopia” which had been submitted by Dereje Tafesse Mitiku in partial fulfillment of the requirements for the award of a Master degree in Accounting and Finance.

Submitted by:

| | | |
|-----------------------|-----------|-------|
| Dereje Tafesse Mitiku | _____ | _____ |
| Name of Student | Signature | Date |

Approved by:

| | | |
|----------------------|-----------|-------|
| 1. _____ | _____ | _____ |
| Name of main Advisor | Signature | Date |

| | | |
|--------------------|-----------|-------|
| 2. _____ | _____ | _____ |
| Name of co-advisor | Signature | Date |

| | | |
|---------------------------|-----------|-------|
| 3. _____ | _____ | _____ |
| Name of External Examiner | Signature | Date |

| | | |
|---------------------------|-----------|-------|
| 4. _____ | _____ | _____ |
| Name of Internal Examiner | Signature | Date |

| | | |
|------------------|-----------|-------|
| 5. _____ | _____ | _____ |
| Name of Chairman | Signature | Date |

| | | |
|-------------------------|-----------|-------|
| 6. _____ | _____ | _____ |
| Name of Department Head | Signature | Date |

ACKNOWLEDGMENT

First of all I would thank the Almighty God for his an invaluable helps for all things. Then, I would like to express my sincere gratitude to my advisors for their genuine and constructive comments and their patience to go through and forward comments with respect to the work of the thesis. My grateful thanks also go to my family for the every support to finish this thesis. Next I would like thanks to staff members and management body of National Bank of Ethiopia for their cooperation with me by providing necessarily data.

LIST OF ACRONYMS AND ABBREVIATIONS

ACT: Agency Cost Theory

AFIC: African Insurance Corporation

AIC: Awash Insurance Company

EIC: Ethiopian Insurance Company

FEM: Fixed Effect Model

GIC: Global Insurance Company

LEV: Leverage

MMT: Modigliani and Millers Theory

NICE: National Insurance Company of Ethiopia

NTC: Nile Insurance Company

NYIC: Nyala Insurance Company

POT: Pecking Order Theory

REM: Random Effect Model

TOT: Trade-Off theory

UIC: United Insurance Company

TABLE OF CONTENTS

| | |
|---|------------|
| <i>DECLARATION</i> | <i>i</i> |
| <i>CERTIFICATE</i> | <i>ii</i> |
| <i>APPROVAL SHEET</i> | <i>iii</i> |
| <i>ACKNOWLEDGMENT</i> | <i>iv</i> |
| <i>LIST OF ACRONYMS AND ABBREVIATIONS</i> | <i>v</i> |
| <i>TABLE OF CONTENTS</i> | <i>vi</i> |
| <i>LIST OF TABLES</i> | <i>ix</i> |
| <i>LIST OF FIGURES</i> | <i>x</i> |
| <i>ABSTRACT</i> | <i>xi</i> |
| CHAPTER ONE | 1 |
| 1. INTRODUCTION | 1 |
| 1.1. Background of the Study | 1 |
| 1.2. Statement of the Problem | 4 |
| 1.3. Research Hypothesis | 7 |
| 1.4. Objective of the Study | 7 |
| 1.4.1. General Objective | 7 |
| 1.4.2. Specific Objectives | 7 |
| 1.5. Significant of the study | 8 |
| 1.6. Scope of the study | 8 |
| 1.7. Organization of the paper | 8 |
| CHAPTER TWO | 9 |
| 2. REVIEW OF THE LITERATURE | 9 |
| 2.1. Theoretical Review | 9 |
| 2.1.1. Modigliani and Miller Theory (MMT) | 9 |
| 2.1.2. Trade-off Theory..... | 10 |
| 2.1.3 .Pecking Order Theory | 13 |
| 2.1.4. Agency Cost Theory | 13 |
| 2.1.5. Market Timing Theory..... | 15 |
| 2.1.6. Determinants of capital structure of insurance companies in Ethiopia | 15 |
| 2.2. Empirical literature | 20 |

| | |
|---|-----------|
| 2.2.1. Empirical reviews from different countries..... | 20 |
| 2.2.2. Empirical Literature Review from Ethiopia..... | 22 |
| 2.3. Literature summary and Knowledge Gap | 25 |
| 2.4. Conceptual Framework | 26 |
| CHAPTER THREE..... | 27 |
| 3. RESEARCH METHODOLOGY | 27 |
| 3.1. Research Design | 27 |
| 3.2. Research Approach | 27 |
| 3.3. Data Type and Source | 27 |
| 3.4. Method of Data Collection | 28 |
| 3.5. Sample Design | 28 |
| 3.5.1. Study population | 28 |
| 3.5.2. Sampling technique..... | 28 |
| 3.5.3. Sample size determination | 29 |
| 3.6. Descriptions of Variables..... | 30 |
| 3.6.1. Dependent variable | 30 |
| 3.6.2. Independent variables..... | 30 |
| 3.6.3. Variable Measurement | 33 |
| 3.7. Model Specification | 33 |
| 3.8. Diagnostic Testing Methods..... | 36 |
| 3.9. Method of data process and analysis..... | 36 |
| 3.10. Validity and reliability of the data | 36 |
| CHAPTER FOUR..... | 38 |
| 4. DATA ANALYSIS, PRESENTATION AND DISCUSSION | 38 |
| 4.1. Descriptive statics | 38 |
| 4.2. Correlation Analysis..... | 41 |
| 4.3. Diagnostic test assumption..... | 42 |
| 4.3.1. Test for the average value of the error term is zero..... | 43 |
| 4.3.2. Check for the assumption of heteroskedasticity..... | 43 |
| 4.3.3. Check for the absence of the autocorrelation assumption | 44 |
| 4.3.4. Test for Normality assumption ($U_t \sim N(0, \sigma^2)$)..... | 44 |
| 4.3.5. Test for Absence of Series in Multicollinearity Assumption | 45 |
| 4.4. Results of the regression and detail interpretations | 46 |
| 4.4.1. Choosing random effect (RE) or fixed effect (FE) models | 46 |

| | |
|---|-----------|
| 4.4.2. Model summary result | 47 |
| 4.4.3. Interpretation of hypothesis results | 49 |
| CHAPTER FIVE | 56 |
| 5. CONCLUSION AND RECOMMENDATION..... | 56 |
| 5.1. Conclusion | 56 |
| 5.2. Recommendation | 58 |
| 5.3. Suggestions for future studies | 58 |
| <i>Reference</i> | 59 |
| APPENDIXES | 62 |
| <i>Appendix: I. Raw data</i> | 62 |
| Appendix: II. A list of Insurance Companies in Ethiopia | 65 |
| Appendix: III. Descriptive statistic result..... | 66 |
| Appendix: IV. Correlation result | 66 |
| Appendix: v. Correlation Matrix between independent variables | 67 |
| Appendix: VI. Hausman test result | 67 |
| Appendix: VII. Random regression result..... | 68 |

LIST OF TABLES

| | |
|--|----|
| Table.3.1. A list of Insurance Companies in Ethiopia | 29 |
| Table.3.2. Measurement of the study variables | 33 |
| Table 4.1: Descriptive Statistic Result..... | 39 |
| Table 4.2: Correlation Result..... | 41 |
| Table.4.3. Heteroskedasticity test result | 43 |
| Table4.4. Durbin-Watson Serial Correlation Test | 44 |
| Table.4.5. Test for Normality assumption | 45 |
| Table 4.6: Correlation Matrix between Independent Variables..... | 46 |
| Table.4.7. Hausman test result..... | 47 |
| Table 4.8: Random effect Regression Result..... | 48 |
| Table.4.9. Summary of the hypothesis..... | 55 |

LIST OF FIGURES

| | |
|---------------------------------------|----|
| Figure 1.1 Conceptual frameworks..... | 26 |
|---------------------------------------|----|

ABSTRACT

The objective of this study was assessing the determinants of capital structure with reference to insurance companies in Ethiopia. The study adopts an explanatory research design. The study was guided by a quantitative research approach. The necessary data required for this study was secondary data. The secondary data was the audited financial statements of selected insurance companies for the period of 2012 to 2022. The data was collected from the National Bank of Ethiopia. The study used non-probability sampling through a purposive method in order to take sample size. Currently, there are eighteen (18) insurance companies with their respective branch operations in Ethiopia. Based on age and based on years of establishment 8(eight) insurance companies was taken as samples purposively; Ethiopian Insurance Corporation, Africa Insurance Company S.C, Awash Insurance Company S.C, National Insurance Company of Ethiopia S.C, Nile Insurance Company S.C, Nyala Insurance Company S.C, Global Insurance Company S.C, and The United Insurance S.C. The data was analyzed using descriptive statistical techniques like mean, standard deviation, minimum, and maximum. Correlation and regression analyses are also employed. The results revealed that firm age, firm size and liquidity have a positive significant influence on leverage ratio, whereas business risk and exchange rate have a negative significant influence on capital structure. This study was performed using only secondary data. Therefore, the managers of insurance company should consider such variables to maximize the value of the firms and future researchers are advised to do similar studies with the addition of primary data, including qualitative and quantitative variables, which were not included in this study.

Keywords: Firm-specific variables, Capital structure, Macroeconomic variables.

CHAPTER ONE

1. INTRODUCTION

The main purpose of this study was to investigate the Capital structure determinants of Ethiopian selected Insurance Companies and specifically to investigate the relationship of firm's leverage with specific variables (Business risk, Firm age, Firm size, Liquidity, Management efficiency, Profitability, and Tangibility of asset), understand the most significant impact on leverage. This chapter lays the foundation as the precedent chapter and it outlines, defines and addresses the basic concepts of the research. It gives a brief overview of the study and introduces the thrust for the research by identifying its main areas and the likely subjects and the beneficiaries of the study. The chapter also outlines the problem statement, states the objectives of the study and the hypothesis statement. The chapter also provides the significance of the study and limitations of the study. In short, it is the foundation upon which the rest of the research is going to lay on and acts as the compass, which guides the researcher in carrying out the research. The chapter concludes by summarizing the chapter and introducing the next chapter.

1.1. Background of the Study

Insurance companies are very important to increase economic growth and development. Insurance companies are particularly interested in determining the capital structure patterns, because these companies require funds to settle the claims or pay damages at the time of loss. The current business world, without Insurance companies is unsustainable because risky businesses have not capacity to retain all types of risks that they are faced during the operations (Daniel as cited in Solomon, 2017). Insurance companies provide the needs of business units and private individuals in financial intermediation. Insurance companies play a key position in financial sector. In developed countries, it accounts for important portion of the economy. By collecting relative premium from a lot of small individuals in the economy, insurance companies are able to pull a large group of funds that can be invested both short and long term

periods. It is important for sustained economic growth and it could provide as the means of long term financing (Taiwo & Olumuyiwa, 2014).

Capital structure is one of the finance topics among the studies of researchers and scholars. Its importance derives from the fact that capital structure is strongly related to the ability of the firms to fulfill the needs of various stakeholders. Capital structure refers to the way that a corporation finances its assets through the combination of equity and debt. That means firm's capital structure is then the composition or 'structure' of its liabilities. Equity arises when the organization sells some parts of ownership right to gain funds for Investments activities. On the other hand, Debt is a contractual agreement by companies to borrow from external parts of an organization an amount of money and repay it with interest within a determined time border (Esmael, 2015). For all, business activity must be financed; without finance to support their fixed assets and working capital requirements, business could not exist. For fulfill such requirement, an appropriate capital structure is a critical decision for any business organization. The essentiality of Capital structure decision is not only the need to Shareholders return maximization, but also essential for the impact of such decision on an organization's ability to deal with its competitive environment (Simerly and Li as cited in Solomon, 2017).

The major struggle of financing decision making process was focused on both maximizing return with minimizing cost and decision on variable that impact on such decision. So that most of the researchers were examined and investigates to move such maximum capital structure decision. However, there were no constant decision from one to other study and many sourced idea contradicted each other. Since Modigliani and Miller, several theories have been developed to go to optimal decision and explain the capital structure determinants of the firms. With including MM, another theory including Trade off theory, Pecking order theory, and agency cost theory were the major theory that takes place in the field of Capital structure decision about its source of capital will affect its competitiveness among its peers. Therefore, the efforts of them were as of the firm use the appropriate mix of debt and equity that will maximize its values. According to Trade off theory, a decision maker running a firm evaluates the various costs and benefits of alternative leverage plans. Often it is assumed that an interior solution is obtained so that marginal costs and marginal benefits are balanced. Pecking order model is another important theory in the study of corporate capital structure that explains the relevance of

the debt and optimum capital structure of the firms. This incorporates the assumption of information asymmetries and costs of transaction.

Myers and Majluf, (1984) states that firm's should follow a financing hierarchy in order to minimize information asymmetry between the parties'. It states that companies prioritize their source of financing from internal financing to equity financing, according to this principle of the least resistance, preferring to raise equity as a financing means of last option. So, the pecking order theory claims that internal funds are used first and used debt from external parties only when all internal finances have been depleted. When it is not sensible to issue any more debt, they will eventually turn to equity as a last financing resource. To summarize this theory, it predicts that the more profitable firms that generate high cash flows are expected to use less debt capital than those who generate lower cash flows. Thirdly, the Agency cost theory states that an 'optimal capital structure is attainable by reducing the costs resulting from the conflicting between the managers and the owners of the company. These theories are developed by Jensen and Meckling in their 1976 publications. As consideration of them, this theory considered as the debt to be a necessary factor that creates conflict between 2 equity holders and managers. Both scholars used this theory to argue that the probability distribution of cash flows provided by the firm is not independent of its ownership structure and that this fact may be used to explain optimal capital structure. Jensen and Meckling recommended that, given increasing agency costs with both the equity-holders and debt-holders, there would be an optimum combination of outside debt and equity to reduce total agency costs. Research made by Fama, Miller and Jensen, (1976) observed how agency cost were modeled. This is known as an agency cost model. This model states that capital structure is determined by its agency cost. They found two types of problems create agency theory those are conflict between firm managers and shareholders as well as conflict between debt holders and shareholders.

The capital structure issue has been a subject of major concern for researchers and scholars in recent years. Such concern has brought many arguments on the subject which leads to numerous studies on this area. According to Modigliani and Miller (1958), stated that under the perfect market structure, a firm's financial structure would not affect a firm's value and its cost of capitals. However, in 1963, Modigliani and Miller argued that in reality, a firm's value could be increased by changing firm's capital structure, because of tax advantage of debt. Since

Modigliani and Miller's study, capital structure has become an issue that attracts a large number of researchers, for instant, Lim (2012), Solomon (2012), Charles *et al.* (2013), Muhammad *et al.* (2013), Sidra *et al.* (2013), Tornyeva (2013), Kingsley(2013), Dereje (2014), Albulena *et al* (2014), Sadam (2014), Mohammed(2014), Daniel(2015), Esmael (2015), Guruswamy & Adugnaw (2016) and yiberta (2020).

In the Ethiopian context, there are few studies have been conducted on the internal and external determinates of capital structure with inconsistence result and this inconsistence works have motivated the researcher to probe in to the determinant of capital structure of insurance companies in Ethiopia. Therefore, the main purpose of this study was to empirically examine the relationship between leverage and internal and external determinants of capital structure decision of insurance companies in Ethiopia.

1.2. Statement of the Problem

Capital structure refers to several alternatives that could be adopted by a firm to get the necessary funds for its investing activities in a way that is consistent with its priorities. Most of the effort of the financial decision making process is entered on the determination of the optimal capital structure; where the firms value is maximized and cost of capital is minimized (Weldemikael, 2012). The modern theory of capital structure was first established by Modigliani and Miller as of 1958. Following the seminal work of Modigliani and Miller (1958), a vast theoretical literature developed, which led to the formulation of alternative theories, such as the static trade off theory, pecking order theory and agency cost theory. Static trade off-theory assumes that a firm's optimal debt ratio is determined by trade-off between the bankruptcy cost and tax advantage of borrowing, holding the firm's assets and investment plans constant. Whereas, pecking order theory is another dimension of the capital structure driven by firm's desire to finance new investments, first internally, then with low –risk debt, and finally if all fails with equity. Therefore, the firms prefer internal financing to external financing. Agency theory focuses on the cost which is created due to conflicts of interest between shareholders, managers and debt holders. According to this theory capital structures are determined by agency costs, which include the costs for both debt and equity issue. This shows that theories of capital structure have been resulting in different conclusion.

Similarly, the findings of prior empirical studies have provided varying evidence related to the determinants of capital structure. For instance, Albulena *et al.* (2014) analyzed the determinants of capital structure among insurance companies in Kosovo using RE model. The result shows that company size, fixed assets ratio, liquidity ratio, company life and growth had considerable effects on debt ratio. Cekrezi (2013), Analyzed the impact of a firm's specific factors and macroeconomic factors on capital structure. The study revealed that tangibility, profitability, size, risk and GDP growth rate and interest rate have a significant impact on leverage. It also showed found that liquidity has a negative insignificant relation with leverage. Kingsley (2013) investigated the determinants of capital structure of insurance companies in Ghana. The results show that both the static trade-off theory and pecking order theories are very important in explaining the capital structure of insurance companies in Ghana. Firm size, profitability and growth were statistically significant in relation to leverage. The other firm level variables were statistically insignificant. Netsanet, (2012) on the title "Determinants of capital structure decisions of Construction companies in Addis Ababa, Ethiopia" and his results show that the variables including growth opportunity, tangibility, and non-debt tax shield are positively affect the capital structure of construction companies. On the other hand, Profitability, size, earning volatility, liquidity and age are inversely Affect their capital structure. Dereje (2014) investigated determinants of capital structure for unlisted private insurance companies of Ethiopia from the period 2000-2011. The variables like firm liquidity, business risk and non-debt tax shield were found to influence leverage negatively whereas asset tangibility, firm size and profitability have significant positive influence on leverage. Saddam (2014) studied factors affecting capital structure decision: evidence from Ethiopian insurance firms to investigated data structuring from 2007 to 2013. The results of this study confirmed that business risk, firm size, age, and inflation rate variables were significant factors affecting leverage of insurance firms in Ethiopia positively, confirming Trade-off and pecking order theories as prominent theories for the sector. On the other hand, liquidity, profitability, growth opportunity, interest rate, and GDP growth rate variables are found insignificant to affect the dependent variable. Daniel (2015) identified determinants of capital structure (Profitability, asset tangibility, growth, business risk, size of the firm and liquidity) of insurance companies in Ethiopia. The results show that pecking order, the static trade- off theory and agency cost theories is very important in explaining the capital structure of insurance companies in Ethiopia. Profitability,

tangibility of asset, growth and liquidity were found to be significant in relation to leverage. The other hypothesized firm level variables, business risk and size of the firm were insignificant. Guruswamy & Adugnaw (2016) from the period 2005-2014 identified the determinants of capital structure of selected insurance firms in Ethiopia. They found that age, business risk, management efficiency, GDP and inflation has significant and positive relationship with leverage, while firm growth has significant and negative relationship with leverage. However, liquidity, size and tangibility of asset have no significant relationship with leverage of selected insurance companies of Ethiopia. Therefore from the above findings, the researcher understands that there are some inconsistencies in their findings and conclusions for some variables which stimulate further study.

In the context of Ethiopia, as per the researcher's knowledge based on the available literature, there were few studies that have been conducted in relation with capital structure determinants as compared to other countries. Among those studies, Netsanet, (2012), Dereje (2014), Mohammed (2014), Daniel (2015), Esmael (2015), Guruswamy & Adugnaw (2016), Solomon (2017) and yiberta (2020) separately in case of insurance companies of Ethiopia were reviewed by the researcher.

To the best of the researcher's knowledge no more study had include macro level variables except (Saddam, 2014), (Guruswamy & Adugnaw, 2016), (Solomon, 2017), (Tesfa, 2018) and (yiberta, 2020) even if their finding is inconsistent to each other. Most of the studies conducted in Ethiopia related to capital structure determinants had focused on firm specific explanatory variables. Besides, most capital structure studies to date are based on data from developed countries firms and very few studies provide evidence from developing countries. The capital structure of insurance companies has not also been investigated; there is no clear understanding on how insurance companies construct their capital structure and what internal and external fact or influence their corporate financing decision. Therefore, the purpose of this study was to fill the above stated gap by analysing both macroeconomic and firm specific determinants of capital structure of insurance companies in Ethiopia and providing full information about the relationship between leverage and macroeconomic and firm specific determinants of capital structure decision.

1.3. Research Hypothesis

The study was hypothesized the following hypothesis that is supported by the empirical literature.

Ho1: Business risk has no a significant impact on capital structure of insurance companies

Ho2: Firm Age has no a significant impact on capital structure of insurance companies

Ho3: Firm's size has no a significant impact on capital structure of insurance companies

Ho4: Liquidity has no a significant impact on capital structure of insurance companies

Ho5: Management efficiency has no a significant impact on capital structure

Ho6: Profitability has no a significant impact on capital structure of insurance companies

Ho7: Tangibility has no a significant impact on capital structure of insurance companies

Ho8: Exchange Rate has no a significant impact on capital structure of insurance companies

1.4. Objective of the Study

1.4.1. General Objective

The general objective of this study was assessing the determinants of capital structure the case of some selected insurance companies in Ethiopia.

1.4.2. Specific Objectives

This study was designed to achieve the following specific objectives

1. To assess the effect of firm specific factors (such as business risk, liquidity, firm's size, firm age, management efficiency, profitability and tangibility) on capital structure of insurance companies in Ethiopia.
2. To assess the effect of macro-economic factor exchange rate on capital structure of insurance companies in Ethiopia
3. To identify the theory of capital structure which explains the financing decision of Ethiopian Insurance Companies

1.5. Significant of the study

The study was giving a better insight for all insurance companies' stakeholders about means of company's capital structure. The study was used for further researchers to know factors affecting capital structure and help companies' to design and implement effective capital structure strategies. And also identifying and assessing the determinants of capital structure of insurance companies was essential to improve the growth of capital structure in Ethiopian insurance companies. Moreover, it may also serve as reference material for those who want to undertake intensive study on the same topic.

1.6. Scope of the study

The study was limited to eleven years of quantitative data from eight insurance companies in Ethiopia. The study assessed seven internal and one external variable that may determine the capital structure of Ethiopian insurance companies. The research was assessed through secondary data during the study period of 2012 to 2022. The researcher was used an explanatory research design, quantitative approach, and the sampling technique employed was non-probability sampling, specifically the purposive sampling technique.

1.7. Organization of the paper

The structure of this study has five chapters. Chapter one embraces introduction which contain background of the study, statement of the problem, research hypothesis, objectives of the study, significance of the study, scope of the study and organization of the study, Chapter two deals with review of related literature. The third Chapter looks at the methodology intended for the study, Chapter four deals with data presentation, analysis and interpretation. Finally last chapter deals with conclusion and recommendation.

CHAPTER TWO

2. REVIEW OF THE LITERATURE

This section presents theoretical and empirical review on the determinants of capital structure the case of some selected insurance companies in Ethiopia. Accordingly, the first part presented theoretical literature about different factors that affect capital structure of insurance companies and also explained some theories which are related with the topic. The second part discussed about various empirical studies. The gaps in existing literature described in the third part and the conceptual framework depicted in the fourth part.

2.1. Theoretical Review

Capital structure is attributed to a financial mix of debt and equity that one firm relies on to finance its operations. In other words, it is a composition of various sources of finance including internally generated retained cash flows and externally issued debts as well as equity shares that make up assets of a particular entity. Capital structure decision is one of among the three crucial decisions in financial management discipline. Thus, financial managers should worry much about the finance mix of their company in order to structure it optimally by which they can minimize a cost of capital thereby maximizing their firm's value (Solomon, 2015). There are various conditional theories that can explain the behavior of the capital structure of firms. Bauer, (2004) states that there are several useful conditional theories, each of which will help one to understand the debt-to-equity ratio structure those firms select. This theory either predicts the existence of the optimal debt-equity ratio for each firm or declares that there are no well-defined target capital structures. The most pronounced theories of capital structure are the Modigliani and Miller Theory, the trade-off theory, the pecking-order theory, the agency cost theory and market timing theory.

2.1.1. Modigliani and Miller Theory (MMT)

Modigliani and Miller (1958) argued that capital structure is irrelevant to the value of a firm under perfect capital market conditions with no corporate tax and no bankruptcy cost. This implies that the firm's debt to equity ratio does not influence its cost of capital. A firm's value is

only determined by its real asset, and it cannot be changed by pure capital structure management. Consequently, it means that there is no optimal capital structure. Modigliani and Miller start by assuming that the firm has a particular set of expected cash flows. When the firm chooses a certain proportion of debt and equity to finance its assets, all that it does is to divide up the cash flows among investors. Investors and firms are assumed to have equal access to financial markets, which allows for homemade leverage. The investor can create any leverage that was wanted but not offered, or the investor can get rid of any leverage that the firm took on but was not wanted. As a result, the leverage of the firm has no effect on the market value of the firm.

However, there is a fundamental difference between debt financing and equity financing in the real world with corporate taxes. Dividends paid to shareholders come from the after tax profit. By contrast, interest paid to bondholders comes out of the before-tax profits. Thus, Miller and Modigliani, (1963) argued that in the presence of corporate taxes, a value-maximizing company can obtain an optimal capital structure. In other words, if the market is not perfect, as result of, say, the existence of taxes, or of underdeveloped financial markets, or of in efficient case, firms must consider the costs entailed by these imperfections. A proper decision on capital structure can be helpful to minimize these costs.

2.1.2. Trade-off Theory

Trade-off Theory which, is developed by Myers (1984), proposes firms will have an optimal capital structure by using debt finance until the present value of benefits from debt equals the present value of costs associated with debt financing. This theory also states that an optimal capital structure can be achieved by equating the present value of tax shields on debt with the present value of financial distress (bankruptcy) costs associated with leverage. Moreover, it assumes that investors are risk neutral and face a progressive tax rate on end-of period wealth from bond. Dividend yields and capital gain yields are taxed at a single constant rate. So, such risk neutrality forces the investor to invest into whichever security offers the better expected after-tax benefit. Trade-off theory also assumes that until the firm faces a constant marginal tax rate on end-of-period wealth by which it can deduct both interest and principal payments, but the investor must pay taxes as far as these payments are received. According to this theory, non-debt tax shields do exist but it is impossible to arbitrage them across firms or over time.

In addition, Trade-off model of Myers (1984) explains that an increase in non-debt tax shields and marginal tax rate on bonds will lead to their deduction of optimal debt level, whereas an increase in personal tax rate on debt increases optimal level of leverage. Based on the above stated grounds, Trade-off theory predicts a positive relationship between profitability and leverage, implying that expected bankruptcy costs are lower and interest tax shields are more valuable for highly profitable firms than less profitable firms. Similarly, this theory predicts that firm size, tangibility of assets, GDP growth rate, interest rate, and expected inflation can have positive impact on firm's leverage. Generally, the trade-offs prediction of positive relation between size and leverage is interpreted as large firms will have more debt since larger firms are more diversified as well as more matured and will have lower default risk.

2.1.2.1. The Static Trade-Off Theory

The static trade-off theory claimed that a firm's optimal debt ratio is determined by a trade-off between the bankruptcy cost and tax advantage of borrowing, holding the firm's assets and investment plans constant (Myers, 1984). The theory affirms that firms have optimal capital structures, which they determine by trading off the costs against the benefits of the use of debt and equity. The goal is to maximize the firm value for that reason debt and equity are used as substitutes. One of the benefits of the use of debt is the advantage of a debt tax shield. One of the disadvantages of debt is the cost of potential financial distress, especially when the firm relies on too much debt.

According to this theory, higher profitability decreases the expected costs of distress and let firms increase their tax benefits by raising leverage; therefore, firms should prefer debt financing because of the tax benefit. As per this theory firms can borrow up to the point where the tax benefit from an extra dollar in debt is exactly equal to the cost that comes from the increased probability of financial distress (Ross, 2002). There are more cost and benefits involved with the use of debt and equity. One other major cost factor consists of agency costs. Agency costs stem from conflicts of interest between the different stakeholders of the firm and because of ex post asymmetric information (Jensen and Meckling, (1976) and Jensen (1986)). Hence, incorporating agency costs into the static trade-off theory means that a firm determines its capital structure by

trading off the tax advantage of debt against the costs of financial distress of too much debt and the agency costs of debt against the agency cost of equity.

2.1.2.2. The Dynamic Trade-Off Theory

Constructing models that recognize the role of time requires specifying a number of aspects that are typically ignored in a single-period model. Of particular importance are the roles of expectations and adjustment costs. In a dynamic model, the correct financing decision typically depends on the financing margin that the firm anticipates in the next period. Some firms expect to pay out funds in the next period, while others expect to raise funds. If funds are to be raised, they may take the form of debt or equity. More generally, a firm undertakes a combination of these actions.

An important forerunner to modern dynamic trade-off theories was Stiglitz (1972), who examines the effects of taxation from a public finance perspective. Stiglitz's model is not a trade-off theory since he took the drastic step of assuming away uncertainty. The first dynamic models to consider the tax savings versus bankruptcy cost trade-off are Kane et al.(1984) and Brennan and Schwartz (1984). Both analyzed continuous time models with uncertainty, taxes, and bankruptcy costs, but no transaction costs. Since firms react to adverse shocks immediately by rebalancing costless, firms maintain high levels of debt to take advantage of the tax savings.

Dynamic trade-off models can also be used to consider the option values embedded in deferring leverage decisions to the next period. Goldstein et al. (2001) observe that a firm with low leverage to day has the subsequent option to increase leverage. Under their assumptions, the option to increase leverage in the future serves to reduce the otherwise optimal level of leverage today. Strebulaev (2007) analyzed a model quite similar to that of Fischer et al. (1989) and Goldstein et al. (2001). Again, if firms optimally finance only periodically because of transaction costs, then the debt ratios of most firms will deviate from the optimum most of the time. In the model, the firm's leverage responds less to short-run equity fluctuations and more to long-run value changes.

Certain ideas are fairly general in dynamic models. The optimal financial choice today depends on what is expected to be optimal in the next period. In the next period, it may be optimal to raise

funds or to pay them out. If raising new funds, it might be optimal to raise them in the form of debt or in the form of equity. In each case, what is expected to be optimal in the next period will help to pin down the relevant comparison for the firm in the current period.

2.1.3 .Pecking Order Theory

Unlike the trade-off theory, the theory of pecking order does not assume an optimal level of capital structure. As previously indicated in the favor of the Pecking Order Theory which incorporates the assumption of information asymmetries and transaction costs, (Myers and Majluf 1984) suggests that 'firms should follow a financing hierarchy in order to minimize information asymmetry between the parties'. It states that companies prioritize their source of financing, from internal financing to equity financing, according to the principle of the least resistance, preferring to raise equity as a financing means of last resort. So, the pecking order theory claims that internal funds are used first and only when all internal finances have been depleted, firms will optimum for debt. When it is not sensible to issue any more debt, they will eventually turn to equity as a last financing resource. To summarize this theory, it predicts that more profitable firms that generate high cash flows are expected to use less debt capital than those who generate lower cash flows. The pecking order theory argues that businesses adhere to a hierarchy of financing sources and prefer internal financing when available. However, when external financing is required, firms prefer debt over equity. Equity entails the issuance of additional shares of the company, which generally brings a higher level of external ownership into the company. Therefore; the form of debt that a firm chooses can act as a signal for its need of external finance. Thus firms that are profitable and therefore generate high cash flows are expected to use less debt compared to those who do not generate high cash flows. This theory therefore suggests that firms prefer debt to equity (Muritala, 2012). All of the mentioned mechanisms suggest that the pecking order theory entitles a negative relationship between capital structure and firm performance, since more profitable firm's optimum to use internal financing over debt

2.1.4. Agency Cost Theory

Another important theory of capital structure is agency cost theory which is developed by Jensen and Meckling (1976). This theory emphasizes the cost associated with conflicting interests

between managers, debt holders and equity holders. Jensen and Meckling (1976) stated shareholders - managers and shareholders - bondholders conflicts as major kinds of conflict that cause agency problem and agency costs. They also recognized an agency problem in relation with debt known as risk shifting. Their point is that if the firm is operated with equity finance, only cash flows in non-bankrupt conditions matter. Thus, such firm will tend to accept projects of higher risk but with large payoffs in good conditions as well. It is obvious that this type of behavior is occasionally observed when a firm is in bad conditions but its general importance is debatable. If both kinds of agency conflicts occur, then their relative importance will become ambiguous.

According to agency theory, with the issuance of debt in exchange for stock, managers can bond their promise to pay out future cash flows in a manner that is impossible to achieve by slight dividend increases. By doing so, they can give debt holders the right to put a firm into bankruptcy court if they default with their promise to make the interest plus principal payments.

As a result, debt lowers the agency costs associated with free cash flows by decreasing the cash flow available for spending based on the managers' judgment. These effects of debt considered as a potential determining factor of a firm's financial mix Jensen (1986). This theory emphasizes that firms with more debt as compared to their equity will benefit from the tax advantages in that interest payments are tax deductible. On the other hand, this theory also suggests that increasing leverage will have costs as well. Similarly, as a firm becomes more leveraged, the ordinary agency costs associated with debt finance (including bankruptcy costs) tend to increase. Thus, according to agency cost theory one firm can achieve an optimal capital structure thereby maximizing its value by balancing the marginal costs of debt with the marginal benefits Jensen (1986).

Agency theory of Jensen and Meckling (1976), also suggest that to control the agency costs caused by free cash flow, firms with more profitable assets will tend to use a larger portion of their earnings for debt payments. This will give such firms a debt capacity thereby they can leverage themselves by using such debt capacity due to their good credit ratings. Similarly speaking, according to agency theory firms with higher profits as compared to their investments also benefit from debt which in turn reduces the problem associated with free cash flow Jensen,

(1986). Thus, agency theory predicts a positive relation between firm's profitability and its leverage. Besides, as per this theory, agency costs associated with debt are lower for firms with more tangible assets implying a positive relationship between tangibility of assets and leverage. Conversely, agency theory predicts an inverse relation of firm's growth opportunity and its debt level emphasizing that the underinvestment problem is more serious for growing firms that leads them to be less leveraged Frank and Goyal (2005).

2.1.5. Market Timing Theory

Market timing has great importance in determining firm's capital structure to put it in a different way; the financial preferences of the firms indicate the results of precedent modifications of their stock prices plus the aspiration to time the market. Certainly, managers seize the benefit of the circumstances to issue shares to alleviate the pressure of debt constrictions and in that way amplify the opportunity of its entrenchment; throughout the phase of market expansion and affluence. When the environment is an unpromising financial market that matches a stringent control implemented by the mass of shareholders, managers of firms are limited towards requirements as well as restrictions forced by means of the market; in search of issuing less risky debt. Business executives seem to vigorously employ their financing decisions with market timing. Many of the business executives have the same opinion that the quantity through which stock is overvalued or undervalued was an essential concern in the decisions of equity issue; Graham and Harvey (2001).

2.1.6. Determinants of capital structure the case of some selected insurance companies in Ethiopia

The determinants of Determinants capital structure of insurance companies are classified as macroeconomic factors and micro economic factors that can affect the capital structure of insurance companies. They are discussed as follows: -

Macroeconomic Factors

The external or macro determinants are variables that are not related to companies management but reflect the economic and legal environment that affects the operation and capital positions of

companies. The macroeconomic factors that can affect firm leverage include factors such as; exchange rate, GDP and Inflation rate of the country among others.

Exchange Rate

The most effective macroeconomic factors that affect the leverage ratio of Ethiopian insurance companies. It is the rate at which the currency of one country exchanges for the currency of another country. It is important to note that the value of currency is relative as it is always given in terms of another currency. Results of empirical studies of yiberta (2020) confirmed negative relationship of Exchange Rate and leverage. The results indicated that the Exchange Rate was a significant negative effect on leverage.

GDP Growth

Gross Domestic Product (GDP) was one of the macroeconomic variables tested by very few studies (Booth et al., 2001). As noted in Frank and Goyal (2004), Trade off theory predicts a positive impact of GDP growth rate of a country on leverage of firms operate within that country. This positive prediction implies that firms will have more debt level in the period of higher economic growth than did in lower economic growth. Results of empirical studies of Balla and Mateus (2004) confirmed positive relationship of GDP growth rate and leverage. They undertook a research on capital structure in Hungary and Portugal. GDP was examined to see the effect on leverage. The results indicated that the growth of GDP or gross domestic product was a significant positive effect on corporate leverage of both firms

Inflation Rate

Gulati (1997) developed a general case model to identify the effect of inflation on capital structure. In his study, the inflation was represented by the percentage increase in product prices and production costs and was “adjusted” accordingly to get the effect of inflation. The result indicated that inflation is significantly affecting leverage. In another study, Frank and Goyal (2004), confirmed such a positive relation of inflation rate and debt level. Empirical studies made in Ethiopia by Tesfaye and Minga (2012) also found a positive relation of inflation rate and debt level.

Micro Economic /firm Specific Factors

The firm specific factors are factors that are related to internal efficiencies and managerial decisions. Such factors include Business Risk, Firm Age, Firm Size, Growth Opportunity, Liquidity, Profitability and Tangibility among others.

Business Risk

The static trade-off theory (Myers, 1984) argues risky firms can borrow less compared to less riskier firms. This is because the costs of financial distress offset the tax shields of debt. The more firms are risky, the greater the chance of the firm defaulting and being exposed to such costs. That is, high volatile earning firms face a risk of the earnings level dropping below their debt servicing commitments, there by incurring a higher cost of financial distress. Hence, such firms should reduce their leverage level to avoid the risk of bankruptcy. The pecking order theory also predicts a negative relationship between leverage and earning volatility of a firm's.

Firm Age

Age of the firm is a standard measure of reputation in capital structure models. As a firm continues longer in business, it establishes itself as an impact of firm level factors on Capital Structure: Evidence from Ethiopian Insurance Companies ongoing business and, therefore, increases its capacity to take on more debt; hence age is positively related to debt (Myers cited in Bayeh, 2013). Contrary to the theory, negative coefficient of variable age by Naveed et al. (2010) on Pakistan insurance companies specifies the negative relationship between age of the insurance companies and debt ratio. This inverse relationship predicts that in Pakistan older or mature insurance companies are preferred to utilize small portion of debt in formation of capital. According to Naveed et al. (2010) one key reason to employ less debt ratio is that when firm survives in business for a long time then it can accumulates more funds for running the operations of the business and subsequently keeps away the firm to go for debt financing. The Pecking order theory argued that as the firm matures it builds reputation leading to better access to equity markets and it implies that age should be negatively related to the firms leverage.

Firm Size

Trade off theory predicts a positive relationship between company size and their level of leverage. It has been found to be an important factor in determining capital structure decision of companies ever since the famous debt studies conducted by Gupta (1969) on US firms. Thereafter, many studies of capital structure choices have included firm size in their model (Booth et al., 2001). There are several theoretical reasons why firm size would be related to the capital structure, as argued by Nagano (2003) one of the reason for this positive relation was being large, firms generally seen as diversified entity. The diversification actually can protect them over time from demand downturns in business or product class, thus lowering the probability of income loss or in the extreme case insolvency. Therefore, large firms should be more leveraged, as they were less prone to bankruptcy. Chung, (1993) justified that smaller firms may find it relatively more costly to resolve informational asymmetries with lenders and financiers, which discourages the use of outside financing and should increase the preference of smaller firms for equity relative to debt.

Growth Opportunity

According to Pecking order theory, Myers (1984), firms finance their projects from the internally built reserve funds. However, the growing firms may not have sufficient fund to finance all its growth by the internally generated funds. As a result, firms with relatively high growth will tend to issue securities less subject to information asymmetries, i.e. short-term debt. This should lead to firms with relatively higher growth having more leverage. Therefore, according to pecking order theory assumption growing firm requires high capital and internal funds are insufficient to meet requirements, and so firms use external borrowing. This results increase in level of leverage. In line with the tradeoff theory, Jensen and Meckling (1976), show that firms with high growth opportunities were more likely to have higher agency costs due to higher debt prices. When managers plan to invest in more risky projects, creditors will take chance to increase the amount of interest and these will lead to shift of corporate control to creditors. Consequently, most of the cash flow generated can't be utilized for good investments as cash flow gets committed to the interest payment. As a result, the firms with good growth opportunities would maintain a lower leverage in order to minimize the constraints imposed by the creditors and

maximize the potential gains. Hence, a negative relationship was seen between growth opportunities and leverage. On the other hand, the empirical findings on the relationship between growth opportunity and leverage of the firm found negative. For instance, in Ethiopia Kinde (2011) and Amanuel (2011) empirically found significant positive relationship between the growth opportunity and the level of leverage.

Liquidity

Liquidity was referred to as the ratio of current assets over current liabilities. In the recent studies, liquidity is also considered significantly affecting the capital structure choice of firms. Tradeoff and Pecking order theory have two contrasting views about the relationship between liquidity and debt ratio. According to Tradeoff theory, the more liquid firm would use external financing due to their ability of paying back liabilities and to get benefit of tax-shields, resulting in positive relationship between liquidity and leverage. Pecking Order theory, on the other hand, assumes that the more liquid firm would use first its internal funds and would decrease level of external financing, resulting in negative relation between liquidity and leverage. Empirical evidence confirmed the negative relationship between liquidity and leverage; for example, Ahmed et al. (2011) found negative relationship between leverage and liquidity.

Management efficiency

Aburime (2008) prevailed that there is a positive relationship between management efficiency and leverage ratio. This positive relationship shows that firms with high management efficiency may use more debt in their capital structure. Guruswamy and Adugna (2016) also found a positive and significant relationship between management efficiency and leverage.

Asset Tangibility

The past literature has evidenced the importance of the type of assets owned by a firm as it affects the firm's capital structure choice. If a company has more tangible assets in their composition of total assets, it has higher capacity to raise debt on the collateral argument. Most of the empirical studies evidenced a positive influence of asset tangibility on leverage. Thus a positive relation between tangibility and leverage is predicted.

Profitability

The effect of profitability on leverage was well explained by the “pecking order” theory that was suggested by Myers (1984). According to this theory, firm has an ordered preference for financing whereby they prefer retained earnings as their main source of funds for investment which is followed by debt. The last resort sought by a firm would be external equity financing. The reason for this ranking was that internal funds were regarded as ‘cheap’ and not subject to any outside interference. External debt was ranked next as it was seen cheaper and having fewer restrictions than issuing equity and the issuance of external equity is seen as the most costly way of financing a firm. Therefore, when firms which was profitable is seen to have more retained earnings and choose to have lower leverage, hence a negative relationship between profitability and leverage is expected. Empirical studies depicted a negative relationship between leverage and profitability, for example Kinde (2011) on his study focusing on Ethiopian Insurance sector found that a significant negative relationship between profitability and leverage.

2.2. Empirical literature

Previous empirical studies on the determinants of capital structure of insurance companies and related studies in different continent in the world will be reviewed. The literatures indicate that there is various numbers of factors that critically determine the capital structure of insurance companies. However, the significance of each factor differs across countries, continents and time period. These will help to see where the literature on this area is and how this study will add to the existing literature.

2.2.1. Empirical reviews from different countries

Most of the empirical studies of the capital structure are conducted in developed countries. Devic and Krstic as cited in Esmael, (2015) conduct an empirical study on Poland and Hungarian countries. They identify four firms' specific factors namely: firm Size, Profitability, growth opportunities and tangibility were examined to see the effect on leverage level of the firms. Financial data were gathered from twenty listed firms from Hungary and eighteen listed firms from Poland. The leverage in both countries was compared besides individually finding the choice of determinants of capital structure. With regression analysis, their results indicated that

firm size was the most important determinants for Poland but profitability appeared to be the most significant factor in explaining the leverage for Hungary.

Delcoursé (2006) made a recent attempt to find out the determinants of capital structure choice in the Central and Eastern Europe countries, namely Poland, Russian Federation, Czech Republic and Slovakia. The sample in this study covered a period from 1996 till 2002 and the independent variable measured by the book value of total debt to total assets, long-term debt to total assets and short-term debt to total assets. The results showed that the average debt ratio for Poland, Slovakia, Czech Republic and Russia are 0.56, 0.51, 0.43 and 0.34 respectively. The long-term debt to asset ratio were low for all the companies with 0.16 for Czech Republic, 0.81 for Slovakia, 0.21 for Poland and 0.25 for Russia that suggested that companies in these countries were mainly equity financed. The author felt that these could be due to the fact that bond markets in these countries are still developing.

Albulena *et al.* (2014) analyzed the determinants of capital structure among insurance companies in Kosovo using RE model. They retrieved data from 11 insurance companies during the period 2009-2012. The researchers used the company size, growth, life, fixed assets and liquidity ratios as independent variables. The result of RE model shows that these variables are in a positive relationship with the debt ratio. On the other hand company size, fixed assets ratio, liquidity ratio, company life and growth had considerable effects on debt ratio.

Thian (2012) identified determinants of capital structure empirical evidence from financial services listed firms in China from the period 2005-2009. The study showed that profitability, firm size, non-debt tax shields, earnings volatility and non-circulating shares are significant influence factors in financial sector. Moreover, firm size is positively related to the corporate leverage ratio. Sidra *et al.* (2013) on their evidence from Pakistani banking sector by using a panel data set for the period of 2007 - 2011 found size, tangibility, profitability, growth opportunities, and liquidity as significant determinants of capital structure. More specifically, size and liquidity of banks in the sample have positive impact on leverage, whereas tangibility, profitability, and growth opportunities have a negative relationship with leverage confirming trade-off, agency cost, and pecking order theories for banking sector of Pakistan.

Cekrezi (2013), Analyzed the impact of a firm's specific factors and macroeconomic factors on capital structure. The study was conducted on small non-listed firms in Albania from the period 2008-2011. The study revealed that tangibility, profitability, size, risk and NDTSH, GDP growth rate and interest rate have a significant impact on leverage. It also showed found that liquidity has a negative but not a significant relation with leverage. Kingsley (2013) investigated the determinants of capital structure of insurance companies in Ghana from the period 2002-2007. The results show that both the static trade-off theory and pecking order theories are very important in explaining the capital structure of insurance companies in Ghana. Firm size, profitability and growth were statistically significant in relation to leverage. These are very important variables influencing the financing decisions of insurance companies in Ghana. The other firm level variables were statistically insignificant.

Charles *et al.* (2013) made an empirical analysis of macro-economic influences on corporate capital structure of listed companies in Kenya from the period 1999-2008. The study found that GDP growth rate has a positive influence on long term debt ratio and a negative influence on total debt ratio and short term debt ratio. On the other hand, inflation had a negative influence on the short term debts, while interest rates as measured by the Treasury bill have a positive influence on the long term debt ratio and total debt ratio and a negative influence on the short term debt ratio. Muthama *et al.* (2013), conducted an empirical analysis of macro-economic influences on corporate capital structure of listed companies in Kenya, from the period 2004-2008. They found that GDP growth rate has a positive influence on long term debt ratio and a negative influence on total debt ratio and short term debt ratio. Inflation, on the other hand had, a negative influence on the short term debts while interest rates as measured by the treasury bills have a positive influence on the long term debt ratio and total debt ratio and a negative influence on the short term debt ratio. Interest rate has a positive influence on the long term debt ratio and total debt ratio and a negative influence on the short term debt ratio

2.2.2. Empirical Literature Review from Ethiopia

Netsanet, (2012) on the title "Determinants of capital structure decisions of Construction companies in Addis Ababa, Ethiopia" and his results show that the variables including growth opportunity, tangibility, and non-debt tax shield are positively affect the capital structure of

construction companies. On the other hand, Profitability, size, earning volatility, liquidity and age are inversely Affect their capital structure.

study by Woldemikael (2012) in case Ethiopian banking sector examined the impact of firm specific factors of profitability, liquidity, growth, tangibility, risk, and size on leverage as measured by total debt ratio by using twelve years data from 2000-2011. His findings showed that profitability, firm size, asset tangibility, and liquidity were important determinants of capital structure for Ethiopian banks suggesting pecking order theory as a pertinent theory for the sector. However, growth opportunity and business risk variables were found to have no influence on capital structure of banks in Ethiopia. Specifically, Woldemikael (2012) also revealed that's profitability, liquidity, and tangibility appeared a significant negative relationship with leverage while only firm size positively and significantly related with the dependent variable.

Dereje (2014) investigated determinants of capital structure for unlisted private insurance companies of Ethiopia from the period 200-2011. The researcher used only secondary data obtained from Ethiopian private insurance companies. The researcher found that on average the proportion of debt in the capital mix of Ethiopian private insurance companies is moderate. In the same way the variables like firm liquidity, business risk and non-debt tax shield were found to influence leverage negatively whereas asset tangibility, firm size and profitability have significant positive influence on leverage.

Mohammed (2014) investigated empirically firm specific factors (internal factors) such as firm leverage, growth opportunities, size, risk, tangibility and liquidity were impacts on capital structure and performance of Ethiopian insurance industry from 2004-2013 by using only secondary data. The results show that firm leverage, Size, tangibility and business risk were significant impact on performance of Ethiopian insurance companies. A significant negative relationship is established between leverage and performance. The result provides strong evidence in support of the pecking order theory of capital structure which asserts that leverage is a significant determinant of firm's performance.

Saddam (2014) studied factors affecting capital structure decision: evidence from Ethiopian insurance firms to investigated data structuring from 2007 to 2013. In order to achieve this aim the researcher liquidity, profitability, business risk, growth opportunity, size, age, interest rate,

GDP growth rate, and inflation rate against the dependent variable as measured by total debt ratio. The results of this study confirmed that business risk, firm size, age, and inflation rate variables were significant factors affecting leverage of insurance firms in Ethiopia positively, confirming Trade-off and pecking order theories as prominent theories for the sector. On the other hand, liquidity, profitability, growth opportunity, interest rate, and GDP growth rate variables are found insignificant to affect the dependent variable.

Daniel (2015) identified determinants of capital structure (Profitability, asset tangibility, growth, business risk, size of the firm and liquidity) of insurance companies in Ethiopia. The results show that pecking order, the static trade-off theory and agency cost theories are very important in explaining the capital structure of insurance companies in Ethiopia, even if the Pecking order theory appears to be dominant. Profitability, tangibility of asset, growth and liquidity were found to be significant in relation to leverage. The study reveals that there is a negative relationship between profitability, liquidity and asset tangibility with leverage. However, growth opportunity of the firm had a positive relationship with debt ratio. The other hypothesized firm level variables, business risk and size of the firm were insignificant.

Guruswamy & Adugnaw (2016) from the period 2005-2014 identified the determinants of capital structure of selected insurance firms in Ethiopia. They showed found that age, business risk, management efficiency, GDP and inflation has significant and positive relationship with leverage, while firm growth has significant and negative relationship with leverage. However, liquidity, size and tangibility of asset have no significant relationship with leverage of selected insurance companies of Ethiopia.

Generally, when compare our country (Ethiopia) with developed countries as well as other developing countries; the researcher understands as the lack of such study or lack of the literature of capital structure in Ethiopia. So that, the lack of such studies in Ethiopia motivated the researcher to do this study.

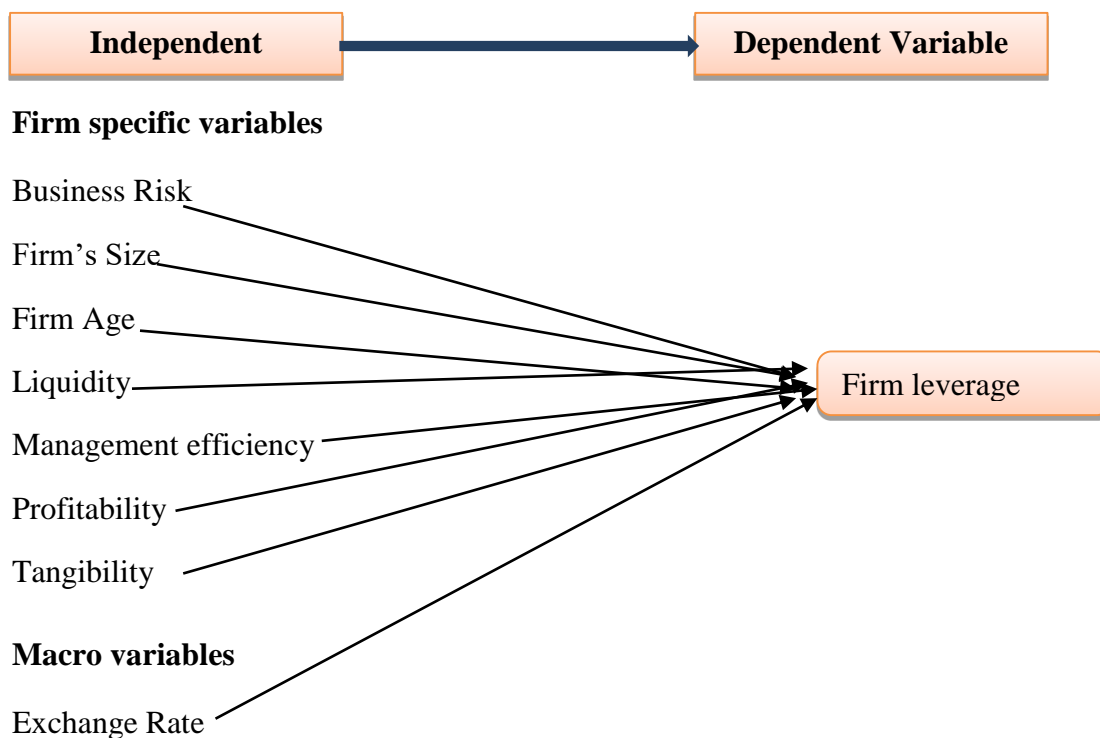
2.3. Literature summary and Knowledge Gap

Capital structure is one of the finance topics among the studies of researchers and scholars. Its importance derives from the fact that capital structure is strongly related to the ability of the firms to fulfill the needs of various stakeholders. As it was discussed in the above literature review part, Most of the studies conducted in Ethiopia related to capital structure determinants had focused on firm specific explanatory variables, most capital structure studies to date are based on data from developed countries firms and very few studies provide evidence from developing countries, and some internal and external factors that are reviewed by different researcher's indifferent research techniques also showed different effect on companies capital structure. Thus, inconsistency of finding among researchers and little attention given by researcher on the determinants of capital structure the case of some selected insurance companies in Ethiopia motivated the researcher to undertake the research in this particular area by adding additional variable to fill this gap.

2.4. Conceptual Framework

The following conceptual schema derived from theoretical and empirical literature review that determine the capital structure of the dependent variable (leverage ratio) and independent variables (business risk, firm's size, firm age, liquidity, management efficiency, profitability, tangibility) and also the researcher try to include one external factor which is exchange rate is important in financial statement are depicted here below.

Figure 1.1 Conceptual frameworks



Source: Developed by Researcher, 2023

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1. Research Design

The choice of research design depends on the objectives that the researcher wants to achieve (Admas et al., 2007). The objective of this study was assessing the cause-and-effect relationship between capital structure and its determinants. Thus, the study adopts an explanatory research design. This is because explanatory research describes the cause-and-effect relationship between dependent and independent variables and was make it suitable for this study.

3.2. Research Approach

The choice of a research approach is also determined by a combination of many factors such as the research problem, objectives of the study and the availability of the data. Hence, considering the research problem and objective, this research was used quantitative research approach. Quantitative research is “explaining phenomena by collecting numerical data that are analyzed using mathematically based methods. According to Abiyet *al.*(2007), quantitative research is a systematic investigation of quantitative properties, phenomena, and their relationships by developing mathematical models, theories, and hypotheses pertaining to natural or social phenomena.

3.3. Data Type and Source

The necessary data required for this study was secondary data. A secondary source of data was preferred by the researcher since it is less expensive in terms of time and money while collecting. It affords an opportunity to collect high-quality data (Saunders *et al.* 2007). The secondary data was the audited financial statement of the selected insurance companies in Ethiopia for the period of 2012 to 2022. The data was collected from the National Bank of Ethiopia.

3.4. Method of Data Collection

The researcher was used secondary panel data set for insurance companies in Ethiopia. Eight insurance companies operating in Ethiopia during the period under the study was included in the panel data set. The researcher prefers to use panel data since panel data can take heterogeneity among different units into account over time. Besides, by combining time series and cross-section observations, it gives more informative data. Furthermore, panel data can better detect and measure effects that simply cannot be observed in cross-section or time series data (Gujarati, 2004). Cross-sectional elements were reflected by the different insurance companies and the time series element is reflected in the period of study (2012–2022). Accordingly, the researcher was used secondary sources of data that is panel in nature. The secondary data was gathered from the NBE.

3.5. Sample Design

3.5.1. Study population

A population refers to the group of individuals, organizations, or events that a researcher is interested in doing an investigation. The total population for this study was all insurance companies in Ethiopia that are registered by NBE. Currently, there are eighteen (18) insurance companies with their respective branch operations in Ethiopia.

3.5.2. Sampling technique

According to Singh (2006), when subjects used in the sample are homogeneous, using the purposive sampling technique is appropriate. Thus, the study will be used non-probability sampling through the purposive sampling method in order to take samples from the population. The use of purposive sampling enables the researcher to generate meaningful insights that help to gain a deeper understanding of the research phenomena by selecting the most informative participants that is satisfactory to its specific needs.

3.5.3. Sample size determination

Based on age and based on years of establishment eight insurance companies were taken as sample purposively, Ethiopian Insurance Corporation, Africa Insurance Company S.C, Awash Insurance Company S.C, National Insurance Company of Ethiopia S.C. Nile Insurance Company S.C, Nyala Insurance Company S.C Global Insurance Company S.C. and The United Insurance S.C.

Table.3.1. A list of Insurance Companies in Ethiopia

| No | Name of Insurance Company | Establishing year | Period of the study (2012-2022) |
|----|---------------------------------------|-------------------|---------------------------------|
| 1 | Ethiopian Insurance Corporation | 1975 | Selected insurance companies |
| 2 | African Insurance Company S.C | 1994 | |
| 3 | Awash Insurance Company S.C | 1994 | |
| 4 | National Insurance Company S.C | 1994 | |
| 5 | Nile Insurance Company S.C | 1995 | |
| 6 | Nyala Insurance Company S.C | 1995 | |
| 7 | Global Insurance Company S.C. | 1997 | |
| 8 | United Insurance S.C | 1997 | |
| 9 | NIB Insurance Company | 2002 | unselected insurance companies |
| 10 | Lion Insurance Company S.C | 2007 | |
| 11 | Ethio-Life and General Insurance S.C. | 2008 | |
| 12 | Oromia Insurance Company S.C. | 2009 | |
| 13 | Abbay Insurance Company | 2010 | |
| 14 | Berhan Insurance S.C. | 2011 | |
| 15 | Tsehay Insurance S.C. | 2012 | |
| 16 | Lucy Insurance S.C. | 2012 | |
| 17 | Bunna Insurance S.C. | 2013 | |
| 18 | Zemen Insurance S.C | 2020 | |

Source: National Bank of Ethiopia 2023

3.6. Descriptions of Variables

The dependent and independent variables taken for the study are discussed as follows:

3.6.1. Dependent variable

In this study, Leverage (LEV) was used as dependent variable. It is commonly interpreted as a measure of capital structure. It is used to explain the amount of debt (leverage) used by a company. The researcher used total debt, consisting of both long-term and short-term liabilities which are the same as total liabilities. Total Assets include current assets and fixed assets, that is, the size of the balance sheet. Generally, leverage ratio is the variable that considers the main variable to express the capital structure and measured as total liabilities to total asset.

$$\text{Leverage Ratio} = \text{Total Liabilities} / \text{Total Assets}$$

3.6.2. Independent variables

The independent variables of this study are determinant factors that mostly affect the capital structure of insurance companies in Ethiopia. The study independent variables are categorized as micro (firm-specific) variables and macro (country-specific) variables. These firm specific factors are business risk, firm's size, firm age, liquidity, management efficiency, profitability and tangibility of insurance companies in Ethiopia whereas the macro-economic factor is exchange rate of insurance companies in Ethiopia. These are:

Business Risk

In this study, the researcher expects risky insurance firms tend to be using less debt financing. According to the static trade-off theory Myers (1984) argues more risky firms can borrow less compared to less riskier firms. This is because the costs of financial distress offset the tax shields of debt. The more firms are risky, the greater the chance of the firm defaulting and being exposed to such costs. That is, high volatile earning firms face a risk of the earnings level dropping below their debt servicing commitments, thus incurring a higher cost of financial distress. Hence, such firms should reduce their leverage level to avoid the risk of bankruptcy. The pecking order theory also predicts a negative relationship between leverage and earning

volatility of a firm's. Relying on this evidence, the study hypothesizes business risk have a positive and statistically significant effect on leverage of insurance companies in Ethiopia.

Firm Age

Age of the firm is a standard measure of reputation in capital structure models. As a firm continues longer in business, it establishes itself as an impact of firm level factors on Capital Structure: Evidence from Ethiopian Insurance Companies ongoing business and, therefore, increases its capacity to take on more debt; hence age is positively related to debt (Myers cited in Bayeh, 2013). The study hypothesizes firm age have a positive and statistically significant effect on leverage of insurance companies in Ethiopia.

Firm Size

Trade off theory predicts a positive relationship between company size and their level of leverage. It has been found to be an important factor in determining capital structure decision of companies ever since the famous debt studies conducted by Gupta (1969) on US firms. Chung, (1993) justified that smaller firms may find it relatively more costly to resolve informational asymmetries with lenders and financiers, which discourages the use of outside financing and should increase the preference of smaller firms for equity relative to debt. The study hypothesizes firm size have a positive and statistically significant effect on leverage of insurance companies in Ethiopia.

Liquidity

The Liquidity Ratio measures the firm's ability to convert its assets in to cash quickly to settle its liabilities. Natsanet (2012), Albulena et al (2014), Dereje (2014) and Daniel (2015) indicated that they use liquidity ratios as determinant factor of capital structure helps to assess whether the company would continue to be able to contract more debt capital or not. The study hypothesizes firm age have a positive and statistically significant effect on leverage of insurance companies in Ethiopia. It is calculated by the following formula.

Liquidity = Current Assets / Total Liabilities.

Management efficiency

Aburime (2008) prevailed that there is a positive relationship between management efficiency and leverage ratio. This positive relationship shows that firms with high management efficiency may use more debt in their capital structure. Guruswamy and Adugna (2016) also found a positive and significant relationship between management efficiency and leverage. The study hypothesizes management efficiency have a positive and statistically significant effect on leverage of insurance companies in Ethiopia.

Profitability

The pecking order theory Myers (1984) argues profitable firms with access to retained profits can rely on them as opposed to depending on outside sources (debt). Myers and Majluf (1984) suggest that firms have a pecking-order in the choice of financing their activities. That is, firms prefer internal funds rather than external funds. The study hypothesizes profitability have a positive and statistically significant effect on leverage of insurance companies in Ethiopia. It is calculated by the following formula.

$$\text{Profitability} = \text{Earnings before tax} / \text{total assets}$$

Tangibility of Assets

Tangibility asset is considered as an explicit promise over debt, lenders require tangible assets as collateral. Agency cost theory suggests that collateralized assets can be used as a monitoring instrument to control manager. There exist a positive and significant relationship between tangibility of assets and leverage of insurances company Usman (2014). The study hypothesizes tangibility have a positive and statistically significant effect on leverage of insurance companies in Ethiopia. It is calculated by the following formula.

$$\text{Tangibility} = \text{Total Fixed Asset} / \text{Total Asset.}$$

3.6.3. Variable Measurement

Table.3.2. Measurement of the study variables

| Variables | | Measurement | Notation | Expected sign | |
|------------------------|-----------------------|----------------------------------|---|---------------|---|
| Dependent variable | Leverage ratio | Total liability / Total Asset | LR | - | |
| Independent variables | Firm Specific factors | Business risk | Natural logarithm net profit before tax | BR | + |
| | | Firm age | Natural Logarithm of firm age | FA | + |
| | | Firm's size | Natural Logarithm of total assets | FS | + |
| | | Liquidity | Current assets / current liabilities | LQ | + |
| | | Management efficiency | Efficiency ratio | ER | + |
| | | Profitability | Earnings before tax/total assets | PR | + |
| | Tangibility | Total Fixed Asset / Total Assets | TA | + | |
| Macro economic factors | Exchange rate | Annual exchange rate | EXR | - | |

Source: Developed by researcher, 2023

3.7. Model Specification

The nature of the data to be used in this study was a panel data model. Panel data involves the pooling of observations on a cross-sectional over several time periods. As Brooks (2008) argued, there are three types of data that econometricians might use for analysis, namely, time series data, cross-sectional data, and panel data. In this study, panel data was used. By combining cross-sectional and time series data, one can increase the number of degrees of freedom, and thus the power of the test, by employing information on the dynamic behavior of a large number of entities at the same time. The additional variation introduced by combining the data in this way can also help to mitigate problems of multicollinearity that may arise if

time series are modeled individually. And by structuring the model in an appropriate way, we can remove the impact of certain forms of omitted variable bias in regression results (Brooks, 2008). The model is a multiple regression model with one dependent variable and eleven independent variables. The purpose of multiple regressions is to learn more about the relationship between independent and dependent variables. Multiple regressions are important for testing economic theories and may accommodate many explanatory variables that may be correlated.

According to Brooks (2008), the general multiple linear regression models with Y_i independent variables can be written as follows: $-Y_{it} = \beta_0 + \beta_1 X_{1it} + \beta_2 X_{2it} + \dots + \beta_k X_{kit} + \epsilon_{it}$ ($i = 1, 2, 3, \dots, n$). Where Y_i is the i^{th} observation of the dependent variable, X_{1i} , X_{ki} are the i^{th} observation of the independent variables, β_0 , β_k are the regression coefficients, ϵ_i is the i^{th} observation of the stochastic error term, and n is the number of observations. Hence, the determinant of capital structure (LR) can be modeled as described below: - The study multiple linear regression models are expressed below:

$$LR_{it} = \beta_0 + \beta_1(BR)_{it} + \beta_2(FA)_{it} - \beta_3(FS)_{it} + \beta_4(LQ)_{it} + \beta_5(ME)_{it} + \beta_6(PR)_{it} + \beta_7(TA)_{it} + \beta_8(EXR)_{it} + \epsilon_{it}$$

Where: The dependent variable is:

LR_{it} - Leverage ratio i at time t

The following independent variables are referred as:

BR_{it} - Business risk i at time t

FA_{it} - Firm age i at time t

FS_{it} - Firm's size i at time t

PR_{it} - profitability i at time t

ME_{it} - management efficiency i at time t

LQ_{it} - Liquidity i at time t

TA_{it} - Tangibility i at time t

EXR_{it} - Exchange rate i at time t

t - Time (2011-2021)

ϵ_{it} - Error term for omitted variables

3.8. Diagnostic Testing Methods

A diagnostic tests assumption was performed to check for the validity of the parameters. The assumption was made in relation to the classical linear regression model (CLRM). Every estimator of the model should have to meet the Ordinary Least Squares (OLS) assumptions before the estimation is carried out. If the estimators of the model satisfy the OLS assumption it is possible to say the estimator is BLUE (Best Linear Unbiased Estimator) (Brooks, 2008). According to Brooks (2008) there are five assumptions to test the classical linear regression model (CLRM) and the researcher was also Conduct the research according to the given below Assumption of (CLRM).

1. The average value of the error is zero
2. Assumption of Homoscedasticity
3. The Assumption of Autocorrelation
4. The Assumption of Disturbances are normally Distributed.
5. Test of Multicollinearity

3.9. Method of data process and analysis

After the necessary data was collected, STATA 14.2 software program was used for data process. The data processed was presented by the use of charts and tables. Data was analyzed using descriptive statistical techniques like mean, standard deviation, minimum and maximum. The correlation and regression analysis was used to test the effect strength of relationship between dependent and independent variables. The hypothesis test and panel data model explained above was also adopted to provide the major finding.

3.10. Validity and reliability of the data

Validity concerns the accuracy or truthfulness of the data. That is, validity refers to the extent to which the data obtained is accurate for the purpose. The researcher was exercised validity by soliciting published annual reports of the National Bank of Ethiopia. This was helping the researcher to get relevant information for the purpose of the study. Reliability of data is related to its consistency and refers to the extent to which the data is the same irrespective of its source.

That is the data for the study was specifically taken from the annual reports of the insurance company and agreed with some of the data found in the publications of the National Bank of Ethiopia.

3.11. Ethical considerations

The researcher was carried out the research work in an ethical manner, honestly and with integrity by detecting the probability of fraud that may arise from being selective in sampling, deliberately biasing data collection, making up data, falsifying analysis, and data presentation. The researcher was conducted the study as much as possible with high integrity by taking ethical responsibility into consideration.

CHAPTER FOUR

4. DATA ANALYSIS, PRESENTATION AND DISCUSSION

Introduction

This chapter presents the study results and analysis of the findings. The section contents four major parts. The first part presents descriptive analysis of both dependent and independent variables of the study; the second part presents correlation analysis between dependent and independent variables; the third part; presents the result of the diagnostic test of the classical linear regression model (CLRM) assumptions and the fourth part presents results of the regression and detail interpretations.

4.1. Descriptive statics

According to, J. Toby Mordkoff (2016), the purpose of a descriptive statistic is to summarize data. Descriptive statistics only make statements about the set of data from which they were calculated it never go beyond the data you have. The study used different descriptive statistics tools like mean, standard deviation minimum and maximum. Mean value measure the average or central location of the independent or explanatory variables. In cooperation with the minimum and maximum values of the observation the mean value is accordingly analyzed. The standard deviation measure the deviation from the mean. Large deviation shows the observation much vary and small deviation shows the observation deviation very less. The minimum and maximum shows the lower and upper edge of the observation.

Table 4.1 presents a descriptive statistics result of the both variables for the insurance companies in Ethiopia from the year 2012 to 2022 with a total of 88 observations. The summary presents the descriptive statistics tools like number of observations, mean, standard deviation minimum and maximum of the dependent variable leverage ratio (LR) and independent variables business risk, firm's size, firm age, liquidity, management efficiency, profitability, tangibility and exchange rate.

Table 4.1: Descriptive Statistic Result

```
. sum LR BR FA FS LQ ME PR TG EXR
```

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|----------|-----|----------|-----------|----------|----------|
| LR | 88 | .6596177 | .1158795 | .1794729 | 1 |
| BR | 88 | 7.826514 | .5041228 | 6.2788 | 8.978069 |
| FA | 88 | 1.377583 | .1123238 | 1.176091 | 1.672 |
| FS | 88 | 7.573242 | 1.3256 | 5.481772 | 9.526208 |
| LQ | 88 | 1.543636 | 1.272872 | .27 | 11.93 |
| ME | 88 | .5010997 | .3584629 | .0642425 | 1.947412 |
| PR | 88 | .1393044 | .189823 | .0124785 | 1.278182 |
| TG | 88 | .245349 | .0862254 | .0584792 | .4528815 |
| EXR | 88 | 26.47455 | 9.425038 | 17.253 | 48.566 |

Source: stata 14.2 results

From the above table 4.1: regarding leverage ratio of selected insurance companies in Ethiopia, formula of the total debt divided by total assets was used. The mean value of leverage ratio was 65.9 percent with the standard deviation of 11.5 percent. This means that more than 65 percent of insurance companies in Ethiopia were financed by debts and only 35% of the total asset is financed through equity capital in Ethiopian selected insurance companies over the period of 2012-2022. Theoretically, it is arguable that firms in developed countries are highly levered compared to those in developing countries. Leverage ratio was found to be high in this study. The reason for this high leverage might be the lack of well-developed stock markets or the market inefficiency in the developing countries. The standard deviation among companies in terms leverage ratio was 11.5 percent; this confirms that there were low variations of leverage among insurance companies during the period. According to Brooks, (2008), a low standard deviation indicates that the data point tend to be very close to the mean, whereas high standard deviation indicates that the data point are spread out over a large range of values. The descriptive statistics result of minimum and maximum value shows of 0.17 and 1 respectively.

From the above table 4.1: Business risk, measured by the volatility of earnings (standard deviation of operating income) for the sample insurance companies in the last eleven years varied between maximum of 8.97 up to a minimum of 6.27. Average risk of doing business for sample insurance companies under study period was 7.82 whereas the risk dispersion represented by standard deviation was 50.4.

The mean score of firm age shows 1.37 for the sample period. The descriptive statistics result also shows minimum and maximum value of 1.17 and 1.67 respectively. The standard deviation among companies in terms of age of insurance companies was 0.112 during the study period. The mean value of firm's size of insurance firms under study as measured by natural logarithm of total assets was 7.57 with a standard deviation (dispersion between insurance firms size) of 1.32. The size of sample insurance firms in eleven years period of study ranged from a minimum of 5.48 up to a maximum of 5.92. Furthermore, it was also found that among the whole sample of eight insurance firms, there is no larger insurance firm than the government owned EIC.

Liquidity which is measured as current asset to current liabilities, it has the mean value of 1.54 which indicate the amount of cash generated from current assets is 1.54. The liquidity values of sampled Ethiopian insurance companies also varied from minimum 0.27 to maximum 11.93 which is a very low variation of liquidity. The value of standard deviation is 1.22, which means it deviates from the mean value of the sampled Ethiopian insurance companies by 1.22.

The mean score of the average value of management efficiency shows 0.50 of the sample period. The descriptive statistics result also shows minimum and maximum value of 0.064 and 1.947 respectively. The standard deviation among insurance companies in terms of management efficiency is 0.358 during the study period.

From the above table, regarding Profitability the mean score shows 0.139 from the period of 2012 to 2022. The descriptive statistics result also shows minimum and maximum value of 0.012 and 1.278 respectively. This indicates that profitability in insurance companies during the period from was between 0.02 and 0.05. The standard deviation in terms of profitability in insurance companies was 0.189 during the sample period.

The mean values of tangibility of assets were 0.245. This means that 24.5 percent of Ethiopian insurance companies are fixed asset. The maximum and the minimum value of tangibility of assets was 0.058 and 0.452 respectively. The standard deviation of tangibility of assets was 0.086.

Regarding exchange rate the mean score shows 26.47 for sample period. The descriptive statistics result also shows minimum and maximum value of 17.25 and 48.56 respectively. The standard deviation in terms of exchange rate was 9.425 during the study period of 2012 to 2022.

4.2. Correlation Analysis

As noted in Brooks (2008), Correlation between two variables measures the degree of linear association between them. The study used product moment of correlation coefficient to look the association of the dependent variable (leverage) and independent variables (business risk, firm's size, firm age, liquidity, management efficiency, profitability, tangibility and exchange rate). The following table 4.2. Presents the correlation coefficient summery result as shown below.

Table 4.2: Correlation Result

```
. corr LR BR FA FS LQ ME PR TG EXR
(obs=88)
```

| | LR | BR | FA | FS | LQ | ME | PR | TG | EXR |
|-----|---------|---------|---------|---------|--------|---------|---------|--------|--------|
| LR | 1.0000 | | | | | | | | |
| BR | 0.0739 | 1.0000 | | | | | | | |
| FA | 0.3037 | 0.6978 | 1.0000 | | | | | | |
| FS | 0.2108 | 0.0427 | -0.2220 | 1.0000 | | | | | |
| LQ | 0.2250 | 0.0578 | 0.0374 | -0.3409 | 1.0000 | | | | |
| ME | 0.1942 | 0.0939 | 0.1120 | 0.1777 | 0.3712 | 1.0000 | | | |
| PR | 0.0743 | 0.0132 | -0.0417 | -0.0704 | 0.2893 | 0.1876 | 1.0000 | | |
| TG | 0.0245 | -0.0227 | 0.0025 | -0.2079 | 0.1688 | 0.0463 | 0.0285 | 1.0000 | |
| EXR | -0.1330 | 0.1229 | 0.4688 | -0.7244 | 0.1730 | -0.1584 | -0.1245 | 0.1314 | 1.0000 |

Source: STATA 14.2 Results, 2023

According to Gujarat (2011), a correlation coefficient of positive one indicates that a perfect positive association between the two variables; while a correlation coefficient of negative one indicates that a perfect negative association between the two variables. A correlation coefficient of zero, on the other hand, indicates that there is no linear relationship between the two variables. From the above table 4.2: leverage (dependent variable) was positively correlated with business risk, firm size, firm age, liquidity, management efficiency, profitability and tangibility. However, leverage was negatively correlated with exchange rate.

As it can be observed from the above table 4.2 the correlation coefficient of leverage to business risk is 0.0739 indicating that an increase in business risk by insurance company has to make a leverage to increase by the same direction which means there is positive correlation. In regard with firm size the correlation coefficient of leverage to firm size is 0.2108 indicating that an

increase in firm size by insurance company has to make a leverage to increase which means there is a positive correlation. In addition the correlation coefficient of leverage to firm age is 0.3037 indicating that an increase in firm age by insurance company has to make a leverage to increase by the same direction which means there is positive correlation. In regard to liquidity the correlation coefficient of leverage to liquidity is 0.2250 indicating that an increase in liquidity by insurance company has to make a leverage to increase by the same direction which means there is positive correlation. In regard with management efficiency the correlation coefficient of leverage ratio to management efficiency is 0.1942 indicating that an increase in management efficiency of insurance company has to make leverage increase by the same direction which means there is positive correlation.

In regard with profitability the correlation coefficient of leverage to firm profitability is 0.0743 indicating that an increase in firm profitability by insurance company has to make a leverage to increase by the same direction which means there is positive correlation. In regard with tangibility the correlation coefficient of leverage to firm tangibility is 0.0245 indicating that an increase in firm tangibility by insurance company has to make a leverage to increase by the same direction which means there is positive correlation. However, in regard with exchange rate the correlation coefficient of exchange rate to Ethiopians insurance company is -0.1330 indicating that an increase in exchange rate by insurance company has to make leverage ratio to decrease which means there is negative correlation.

4.3. Diagnostic test assumption

Diagnostic test assumptions were performed to check for the validity of the parameters. The assumptions were made in relation to the classical linear regression model (CLRM). Every estimator in the model should have to meet the Ordinary Least Squares (OLS) assumptions before the estimation is carried out. If the estimators of the model satisfy the OLS assumption, it is possible to say the estimator is BLUE (Best Linear Unbiased Estimator) (Brooks, 2008). According to Brooks (2008), there are five assumptions to test the classical linear regression model (CLRM) and the researcher was also Conduct the research according to the given below assumption (CLRM).

4.3.1. Test for the average value of the error term is zero.

Relay on Brooks (2008), the first assumption required is that the average value of the errors is zero. This assumption will never be violated if a constant term is included in the regression equation and the regression line does not intercept through the origin. This assumption is violated if the model does not have a constant term since the line intercepts. Hence, the study's regression model has included a constant term (β_0), which proves that the line did not pass through the origin and that the first assumption of CLRM is not violated. Therefore, the variation in the dependent variable leverage ratio is explained by the independent variables.

4.3.2. Check for the assumption of heteroskedasticity.

As indicated by Brooks (2008), this assumption requires that the variance of the errors 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 heteroscedasticity. If heteroscedasticity occurs, the estimators of the ordinary least square method are inefficient, and hypothesis testing is no longer reliable or valid. In this study, the researchers used the Breusch-Pagan-Godfrey Test to test for the existence of heteroskedasticity. The hypothesis for the heteroskedasticity test was formulated as follows:

H0: The error variance is homoscedastic.

H1: The error variance is heteroscedastic.

Decision rule: Reject H0 if the p-value is less than significance level. Otherwise, do not reject H0.

Table.4.3. Heteroskedasticity test result

```
. hetttest BR FA FS LQ ME PR TG EXR
```

```
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
```

```
Ho: Constant variance
```

```
Variables: BR FA FS LQ ME PR TG EXR
```

```
chi2(8) = 9.29
```

```
Prob > chi2 = 0.3188
```

Source: stata 14.2 Output.

The result in table 4.3 shows that the P-value is 0.3188, which indicates insignificance and there is no heteroskedasticity detection. The Breusch-Pagan-Godfrey Test suggests that the researcher's data is free of heteroskedasticity. Thus, the result of the test has shown that there is no evidence of heteroscedasticity and the null hypothesis of the error variance is homoscedasticity is accepted.

4.3.3. Check for the absence of the autocorrelation assumption

When the error term for any observation is related to the error term of another observation, it indicates that an autocorrelation problem exists in this model. This is an assumption that the errors are linearly independent of one another (uncorrelated with one another). If the errors are correlated with one another, it would be stated that they are auto-correlated or that they are serially correlated (Brooks, 2008). The Durbin-Watson (DW) test has been used to check the autocorrelation problem in the model. Under this testing method, test values of less than 1 or more than 3 are a definite cause for concern; i.e., the presence of autocorrelation (Field, 2009). From table 4.4 below, it is observed that the DW test value for the model is 1.096621, which lies within the given range (rule of thumb), suggesting that there is no autocorrelation in the models.

Table4.4. Durbin-Watson Serial Correlation Test

```
. dwstat  
  
Durbin-Watson d-statistic( 9, 88) = 1.096621
```

Source: Stata14.1 Output

4.3.4. Test for Normality assumption ($U_t \sim N(0, \sigma^2)$)

As per Brooks (2008), normality tests are used to determine if a data set is well-modeled by a normal distribution. In this study, the Jarque-Bera Test (JB test) was used to find out whether the error terms are normally distributed or not. If the Jarque-Bera value is greater than 0.05, it's an indicator of the presence of normality (Brooks, 2008). The hypothesis for the normality test was formulated as follows:

H0: The error term has a normal distribution.

H1: The error term is not distributed normally.

Decision Rule: Reject H₀ if the p-value of JB tests is less than 0.05 otherwise, not reject H₀.

Table.4.5. Test for Normality assumption

Jb residual

Jarque-Bera normality test: 32.46 Chi (2) 0.08

Source: Stata 14.2 Output

The Jarque-Bera statistic, as shown in table 4.5, has a p-value of 0.08 that is greater than 0.05, implying that the data were consistent with a normal distribution assumption. Based on the statistical results, the study failed to reject the null hypothesis of normality at the 5% significance level.

4.3.5. Test for Absence of Series in Multicollinearity Assumption

According to Brooks (2008), when the error term for any observation is related to the error term of other observation, it indicates that autocorrelation problem exist in this model. The researcher conducted test for absence of series Multicollinearity assumption. Multicollinearity indicates a linear relationship between explanatory variables which may cause the regression model biased (Gujarati, 2004). If an independent variable is an exact linear combination of the other independent variables, the model suffers from perfect collinearity, and it cannot be estimated by OLS (Brooks, 2008). The results of correlation tests are presented by a correlation matrix table 4.6 below:

Table 4.6: Correlation Matrix between Independent Variables

```
. corr BR FA FS LQ ME PR TG EXR
(obs=88)
```

| | BR | FA | FS | LQ | ME | PR | TG | EXR |
|-----|---------|---------|---------|--------|---------|---------|--------|--------|
| BR | 1.0000 | | | | | | | |
| FA | 0.6978 | 1.0000 | | | | | | |
| FS | 0.0427 | -0.2220 | 1.0000 | | | | | |
| LQ | 0.0578 | 0.0374 | -0.3409 | 1.0000 | | | | |
| ME | 0.0939 | 0.1120 | 0.1777 | 0.3712 | 1.0000 | | | |
| PR | 0.0132 | -0.0417 | -0.0704 | 0.2893 | 0.1876 | 1.0000 | | |
| TG | -0.0227 | 0.0025 | -0.2079 | 0.1688 | 0.0463 | 0.0285 | 1.0000 | |
| EXR | 0.1229 | 0.4688 | -0.7244 | 0.1730 | -0.1584 | -0.1245 | 0.1314 | 1.0000 |

Source: STATA 14.2 Results

The above table reports the correlation matrix of the variables of the estimation model. The correlation matrix also shows that the pair-wise correlations between explanatory variables are not quite high, indicating that Multicollinearity is not a serious problem.

4.4. Results of the regression and detail interpretations

4.4.1. Choosing random effect (RE) or fixed effect (FE) models

The collected data was processed and estimated based on a panel model, which includes cross-sectional and time-series observations for eight insurance companies that span over 11 years. The estimation technique was carried out on the basis of balanced panel data regression. A balanced panel data has equal time series observations for the study entities. In this study, the cross-sectional units are eight and the time series are 11 years. The most commonly used models for panel data are fixed effects and random effects models. The hausman specification test was conducted to examine whether individual effects are fixed or random. The null hypothesis for this test is that a random effect model is appropriate with the independent variables. If the null hypothesis is rejected, then we employ the fixed effects model. The researcher conducted the Hausman test as shown below:

H0: A random effect model is appropriate at greater than a 5% significance level.

Ha: A fixed effect model is appropriate at less than a 5% significance level.

Table.4.7. Hausman test result

```
. hausman fe re
```

| | Coefficients | | (b-B) Difference | sqrt(diag(V_b-V_B)) S.E. |
|-----|--------------|-----------|---------------------|-----------------------------|
| | (b) fe | (B) re | | |
| BR | -.1328172 | -.1328172 | -6.86e-15 | . |
| FA | .9798506 | .9798506 | 9.15e-14 | 3.47e-08 |
| FS | .0363646 | .0363646 | 4.75e-15 | 1.48e-09 |
| LQ | .0425357 | .0425357 | 1.63e-15 | 1.02e-09 |
| ME | -.0516499 | -.0516499 | -6.56e-15 | 3.67e-09 |
| PR | .0023277 | .0023277 | 4.47e-15 | 1.74e-09 |
| TG | .088634 | .088634 | 1.72e-14 | . |
| EXR | -.0039372 | -.0039372 | -5.12e-17 | . |

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

Test: Ho: difference in coefficients not systematic

chi2(8) = (b-B)' [(V_b-V_B)^(-1)] (b-B)
 = 0.00
 Prob>chi2 = 1.0000
 (V_b-V_B is not positive definite)

Source: Stata14.1 Output

From the above Hausman specification test result, the P-value of the model is more than 5% level of significance. As a result, the random effect model null hypothesis is appropriate and fails to reject at a 5% significance level. This implies that a random effect model is more appropriate than a fixed effect model.

4.4.2. Model summery result

After checking for all CLRM assumptions, a regression models used to find the determinants of capital structure of insurance company in Ethiopia, the regression coefficients are analyzed the independent and dependent variables and identify both magnitude and the direction of impact. 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. R2 values indicate the explanatory power of the model and in this study adjusted R2 value which takes into account the loss of degrees of freedom associated with adding extra variables were inferred to see the explanatory powers of the models. The random effect regression result was presented in the following 4.8 below

Table 4.8: Random effect Regression Result

```

. xtreg LR BR FA FS LQ ME PR TG EXR, re

Random-effects GLS regression           Number of obs   =           88
Group variable: company1                Number of groups =            8

R-sq:                                    Obs per group:
    within = 0.2684                       min =           11
    between = 0.7745                       avg =          11.0
    overall = 0.4520                       max =           11

corr(u_i, X) = 0 (assumed)                Wald chi2(8)    =          65.17
                                           Prob > chi2     =          0.0000

```

| LR | Coef. | Std. Err. | z | P> z | [95% Conf. Interval] | |
|---------|-----------|-----------------------------------|-------|-------|----------------------|-----------|
| BR | -.1328172 | .0289427 | -4.59 | 0.000 | -.1895437 | -.0760906 |
| FA | .9798506 | .1486896 | 6.59 | 0.000 | .6884244 | 1.271277 |
| FS | .0363646 | .0120316 | 3.02 | 0.003 | .0127832 | .0599461 |
| LQ | .0425357 | .0095943 | 4.43 | 0.000 | .0237313 | .0613402 |
| ME | -.0516499 | .0322269 | -1.60 | 0.109 | -.1148134 | .0115136 |
| PR | .0023277 | .0549653 | 0.04 | 0.966 | -.1054023 | .1100578 |
| TG | .088634 | .1153918 | 0.77 | 0.442 | -.1375298 | .3147977 |
| EXR | -.0039372 | .0017609 | -2.24 | 0.025 | -.0073885 | -.0004858 |
| _cons | .1162762 | .182653 | 0.64 | 0.524 | -.2417171 | .4742694 |
| sigma_u | 0 | | | | | |
| sigma_e | .0734626 | | | | | |
| rho | 0 | (fraction of variance due to u_i) | | | | |

Source: STATA 14.2 Results

Thus, based on the result above Table 4.8, the following model was developed to examine the determinants of capital structure of insurance company in this study.

$$LR_{it} = 0.1162 - 0.1328 \beta_1(BR)_{it} + 0.9798 \beta_2(FA)_{it} + 0.0363 \beta_3(FS)_{it} + 0.0425 \beta_4(LQ)_{it} - 0.05164 \beta_5(ME)_{it} + 0.0023 \beta_6(PR)_{it} + 0.08863 \beta_7(TG)_{it} - 0.0039 \beta_8(EXR)_{it} + \varepsilon_{it}$$

The regression result in Table 4.8 demonstrates the R-squared value, beta coefficients, and corresponding p-values of eight explanatory variables. According to Brooks (2008), the beta coefficient may be negative or positive. The beta coefficient indicates the influence level of each explanatory variable on the dependent variable. A p-value indicates at what percentage or precession level each variable is significant. The R-squared value measures how well the regression model explains the actual variations in the dependent variable. According to the random effect regression result, the R-squared value and probability of p-values are 0.7745 and 0.0000, respectively. The R squared value of 0.7745 is an indication that the model is a good fit. This means 77.45 % of the variation in selected insurance company leverage was explained by

these eight independent variables (business risk, firm's size, firm age, liquidity, management efficiency, profitability, tangibility and exchange rate) and the rest, 22.55%, was explained by residuals or other variables that are not included in the model. Additionally, the probability of p-values is 0.0000, which indicates that the overall model is highly significant even at 1% level, and that all the independent variables are jointly significant in causing variation in leverage, which means there is a significant relationship between the dependent variable and the independent variables.

4.4.3. Interpretation of hypothesis results

This section discusses in detail the analysis of the results for each explanatory variable and their importance in determining the capital structure of insurance company in Ethiopia. In addition, the discussion analyzes the statistical findings of the study in relation to the previous empirical evidence. Therefore, the following discussions present the interpretation of the random effect model regression results between the dependent variable and explanatory variables.

➤ Business risk

In regard with Business risk the researcher develop the following hypotheses:

Ho: Business risk has no a significant impact on capital structure of insurance companies

Ha: Business risk has a significant impact on capital structure of insurance companies

In this study, business risk is measured by the natural logarithm of net profit before tax. The result of random effect regression, as presented in table 4.8 above, revealed that Business risk has a negative and significant effect on leverage with a beta coefficient value of -0.1328 and a P-value of 0.0000 even at the 1% significance level. The study's findings are consistent with previous studies by Dereje (2014), Daniel (2015) and Guraswamy & Adugna (2016) that show a significant relationship between business risk and leverage ratio. The regression coefficient beta value of -0.1328 indicates that 0.1328 units of the variation in leverage is indirectly affected by business risk. This means holding other independent variables constant and when one unit increases in business risk, decreases the leverage ratio of Ethiopian insurance companies by 0.1328 units. The p value of (0.0000<0.01) indicates that the variable Business risk has a statistically significant impact on leverage ratio of Ethiopian insurance companies, and this

significant impact is consistent with the alternative hypothesis. This study also in line with the argument of trade-off theory which suggests that less risky insurance firm can take more debt as its ability to pay the interest payments on time or without any delay is reliable. That is, high volatile earning firms face a risk of the earnings level dropping below their debt servicing commitments, thereby incurring a higher cost of financial distress. Hence, such firms should reduce their leverage level to avoid the risk of bankruptcy. The result is also in line with the pecking order theory, which predicts a negative relationship between leverage and earning volatility of a firm's. Therefore, the alternative hypothesis that states Business risk has a significant effect on leverage is accepted and the null hypothesis is rejected.

➤ **Firm Age**

In regard with Firm Age the researcher develop the following hypotheses:

Ho: Firm Age has no a significant impact on capital structure of insurance companies

Ha: Firm Age has a significant impact on capital structure of insurance companies

Regarding Firm Age, Natural Logarithm of firm age for selected banks was used. The result of random effect regression presented in table 4.8 above shows that Firm Age has a positive and significant impact on leverage ratio of Ethiopian insurance companies with a beta coefficient estimate of 0.9798 and a P-value of 0.000 at 1% significance level. This means that, holding other independent variables constant, when one unit increases in Firm Age, it increases the leverage ratio of Ethiopian insurance companies by 0.9798 units. The p value of (0.000<0.05) reveals that it is statistically significant even at 1% level. The alternative hypothesis that states firm age has a significant effect on leverage ratio is accepted and the null hypothesis is rejected. The study's findings are consistent with previous studies by Natsanet (2012), Albulena et al (2014), and Guraswamy & Adugna (2016) that show a significant relationship between Firm Age and leverage ratio. The result is in conformity with the Trade of theory that assumes as a firm operates for a long period of time, it can create good image and reputation from the point of view of financiers, so this put a firm in a position to increases its capacity to obtain more debt from any lenders. Therefore, the firm age has a significant contribution to explaining or supporting the dependent variable capital structure (leverage).

➤ **Firm's size**

In regard with Firm's size the researcher develop the following hypotheses:

Ho: Firm's size has no a significant impact on capital structure of insurance companies

Ha: Firm's size has a significant impact on capital structure of insurance companies

Regarding Firm's size, the natural logarithm of total assets for selected companies was used. The result of random effect regression, as presented in table 4.8 above, revealed that Firm's size has a positive and significant effect on leverage with a beta coefficient value of 0.0363 and a P-value of 0.003 even at the 1% significance level. The regression coefficient beta value of 0.0363 indicates that 0.0363 units of the variation in leverage are directly affected by firm size. This means holding other independent variables constant and when one unit increases in firm size, it increases the leverage of Ethiopian insurance company's by 0.0363 units. The p value of (0.003<0.05) indicates that the variable firm size has a statistically significant impact on leverage, and this significant impact is consistent with the alternative hypothesis. Therefore, the alternative hypothesis that states firm size has a significant effect on leverage is accepted and the null hypothesis is rejected. The study's findings are consistent with previous studies by Natsanet (2012), Cekrezi (2013), Albulena et al (2014), Daniel (2015), Dereje (2014) and Guraswamy&Adugna (2016) that show a significant relationship between Firm size and leverage ratio. This finding is also consistent with the static trade of theory that argues larger firms can issue debt at low cost compared to small firms because larger firms can diversify to avoid bankruptcy and it is also consistent with the agency theory, which suggests that large firms have a reputation in debt markets and as a result face lower agency costs of debt.

➤ **Liquidity**

In regard with Liquidity the researcher develop the following hypotheses:

Ho: Liquidity has no a significant impact on capital structure of insurance companies

Ha: Liquidity has a significant impact on capital structure of insurance companies

In this study Liquidity is measured by total Current assets divided by total current liabilities. The result of random effect regression presented in table 4.8 above shows that Liquidity has a positive and significant impact on leverage ratio of Ethiopian insurance companies with a beta coefficient estimate of 0.0425 and a P-value of 0.000 at the 1% significance level. This means that, holding other independent variables constant, when one unit increases in Firm Liquidity, it increases the leverage ratio of Ethiopian insurance companies by 0.0425 units. The p value of

($0.000 < 0.05$) reveals that it is statistically significant even at 1% level. Therefore, the alternative hypothesis that states Liquidity has a significant effect on leverage ratio is accepted and the null hypothesis is rejected. The result is in line with the tradeoff theory, which argues firms with more liquidity (more current assets) tend to use more external borrowing, because of their ability in paying off their liabilities. The study's findings are consistent with previous studies by Natsanet (2012), Albulena et al (2014), Dereje (2014) and Daniel (2015) and findings are inconsistent with previous studies by Sadam (2014) and Guraswamy & Adugna (2016) that show insignificant relationship between Liquidity and leverage ratio. The Liquidity has a significant contribution to explaining or supporting the dependent variable capital structure (leverage).

➤ **Management efficiency**

In regard with Management efficiency the researcher develop the following hypotheses:

Ho: Management efficiency has no a significant impact on capital structure

Ha: Management efficiency has a significant impact on capital structure

According to the regression result, Management efficiency has a negative insignificant impact on leverage ratio of Ethiopian insurance company with a coefficient estimate of -0.0516 and a P-value of 0.109. This means a one-unit change in the company's Management efficiency, keeping other things constant, has resulted in 0.0516 unit changes in leverage ratio of insurance company in Ethiopia in the opposite direction. The p value of 0.109 reveals that it is statistically insignificant at 5%. So, the researcher failed to reject the null hypothesis that Management efficiency of insurance company has no significant impact on capital structure (leverage) of insurance companies, because there is sufficient evidence to accept the null hypothesis. The study's findings are consistent with previous studies by Guraswamy & Adugna (2016). Finally, the implication of this result is that as a company Management efficiency increases, leverage decreases, and Management efficiency has no significant contribution to explaining the dependent variable leverage in this study.

➤ **Profitability**

In regard with Profitability the researcher develop the following hypotheses:

Ho: Profitability has no a significant impact on capital structure of insurance companies

Ha: Profitability has a significant impact on capital structure of insurance companies

The results of random effect regression in table 4.8 above indicate that Profitability has a positive and statistically insignificant impact on leverage with a beta coefficient of 0.0023 and a p-value of 0.966. This implies that for one unit change in Profitability, keeping the other things constant had resulted in a 0.0023 unit change in leverage in the same direction. The p-value of 0.966 indicates that this is statistically insignificant even at a 10% level. Therefore, the researcher failed to reject the null hypothesis that Profitability has no significant effect on leverage. The result of this study is inconsistent with the pecking order theory that argues profitable firms with access to retained profits can rely on them as opposed to depending on outside sources (debt). The study's finding is consistent with previous studies by Sadam (2014) that an increase in profitability has an insignificant change on leverage and inconsistent with previous studies by Natsanet (2012), Cekrezi (2013), Dereje (2014) and Daniel (2015) that states profitability has a significant effect on insurance company's leverage. The implication of this result suggests that Profitability has a positive relationship with the dependent variable and an insignificant result, meaning that an increase in Profitability has no significant impact on capital structure in this study.

➤ **Tangibility**

In regard with Tangibility the researcher develop the following hypotheses:

Ho: Tangibility has no a significant impact on capital structure of insurance companies

Ha: Tangibility has a significant impact on capital structure of insurance companies

The results of random effect regression in table 4.8 above indicate that Tangibility has a positive and statistically insignificant impact on the capital structure (leverage) with a beta coefficient of 0.0886 and a p-value of 0.442. This implies that for one unit change in Tangibility, keeping the other things constant had resulted in a 0.0886 change in leverage in the same direction. The p-value of 0.442 indicates that this is statistically insignificant even at a 10% level. Therefore, the researcher failed to reject the null hypothesis that Tangibility has no significant effect on capital structure (leverage). A positive relationship between tangibility and leverage in this study is not conformance with agency cost theory that argues there is a conflict between lenders and

shareholders due to the possibility of moral hazard on the part of borrowers. This conflict creates incentives for shareholders to invest in a suboptimal way and lenders require tangible assets as collateral to protect them. The agency cost of debt increase when firms cannot collateralize their debt. The study's finding is consistent with previous studies by Gurasway & Adugna (2016) that an increase in tangibility has an insignificant change on leverage. The study finding is also consistent with previous studies by Natsanet (2012), Cekrezi (2013), Dereje (2014) and Daniel (2015) that tangibility has a significant effect on insurance company's leverage, that Tangibility has a positive effect on company's capital structure (leverage). The implication of this result suggests that Tangibility has a positive relationship with the dependent variable and an insignificant result, meaning that an increase in Tangibility has no significant impact on leverage in this study.

➤ **Exchange Rate**

In regard with Exchange Rate the researcher develop the following hypotheses:

Ho: Exchange Rate has no a significant impact on capital structure of insurance companies

Ha: Exchange Rate has a significant impact on capital structure of insurance companies

The most effective macroeconomic factors that affect the leverage ratio of Ethiopian insurance companies are Exchange Rate. The regression result in the above table 4.8 shows that Exchange Rate has a negative and significant effect on leverage with a beta coefficient value of -0.0039 and a P-value of (0.025). The regression coefficient beta value of -0.0039 confirms that 0.0039 of the variation in leverage ratio is affected by the Exchange Rate in the opposite direction. This means that changing the Exchange Rate by one unit while holding the other variables constant resulted in a 0.0039 unit decrease in leverage ratio. The p value of (0.025<0.05) reveals that it is statistically significant at a 5% level. Therefore, the alternative hypothesis that states' Exchange Rate has a significant effect on leverage is accepted and the null hypothesis is rejected. Finally, the implication of this result suggests that the independent variable Exchange Rate has a significant contribution to explaining the dependent variable leverage ratio.

Table.4.9. Summary of the hypothesis

Note: * significant at 1% level** significant at 5% level*** significant at 10% level.

| Variables | Coefficient | Probability | Observation | Decision |
|-----------|-------------|-------------|----------------|----------------------------------|
| BR | -0.1328 | 0.000* | P-value < 0.01 | Reject null hypothesis |
| FA | 0.9798 | 0.000* | P-value < 0.01 | Reject null hypothesis |
| FS | 0.0363 | 0.003* | P-value < 0.01 | Reject null hypothesis |
| LQ | 0.0425 | 0.000* | P-value < 0.01 | Reject null hypothesis |
| ME | -0.0516 | 0.109*** | P-value > 0.1 | Failed to reject null hypothesis |
| PR | 0.0023 | 0.966*** | P-value > 0.1 | Failed to reject null hypothesis |
| TA | 0.0886 | 0.442* | P-value > 0.1 | Failed to reject null hypothesis |
| EXR | -0.0039 | 0.025** | P-value < 0.05 | Reject null hypothesis |

CHAPTER FIVE

5. CONCLUSION AND RECOMMENDATION

This chapter deals with conclusions, recommendations and Suggestions for future studies.

5.1. Conclusion

The main objective of this study was to assess the Firm-specific variables (internal factors) and macroeconomic variables (external factors) determinants of capital structure of insurance companies and to identify the theory of capital structure which explains the financing decision of Ethiopian Insurance Companies. To comply with the research objectives and hypothesis, seven Firm-specific variables, and one macroeconomic variable was used. The Firm-specific variables include; Business Risk (BR), Firm Age (FA), Firm Size (FS), Liquidity (LQ) Management efficiency (ME), profitability (PR) and Tangibility and macroeconomic variable was exchange rate. The study used panel data for the sample of eight insurance companies in Ethiopia for the period 2012 to 2022. The data was collected from NBE, and the collected data was presented and analyzed using descriptive statistics, correlation analysis, and balanced random effect model regression analysis to identify the determinants of capital structure. Before performing OLS regression analysis, the model was tested for the classical linear regression model assumptions. All the tests and models are estimated using the statistical package Stata 14.2 software. Generally, the result of the study shows that among the eight determinants affecting capital structure (leverage), five variables have a statistically significant impact and three variables have an insignificant effect on capital structure and all the determinants factors selected in this study was concluded as follows:

- The leverage ratio was indirectly and significantly influenced by business risk. The relationship between business risk and leverage was negative and this is in line with the static tradeoff theory and the pecking order theory. This implies that the more those insurance companies are risky, the more the difficulty they faced to access funds from debt financing.
- The firm age has a positive and significant effect on leverage ratio of Ethiopian insurance companies. The result is in conformity with the Trade of theory that assumes as a firm

operates for a long period of time, it can create good image and reputation from the point of view of financiers, so this put a firm in a position to increase its capacity to obtain more debt from any lenders.

- Firm's size variable has measured by natural logarithm of total assets and it has a positive and significant effect on capital structure of Ethiopian insurance firms. This implies that, larger insurance firms used more debt than equity as compared to smaller insurance firms in Ethiopia. This finding is consistent with trade off theory, which suggests a positive relationship between firm's size and its leverage.
- Liquidity has a positive and significant impact on leverage ratio of Ethiopian insurance companies. This study concludes that as the liquidity of Ethiopian Insurance Companies increase, the leverage level of these companies increase. Positive sign of liquidity is in line with the trade-off theory and not accordance with the pecking order theory which proposed a claim that internal source of funds is used first.
- Management efficiency has a negative insignificant impact on leverage ratio of Ethiopian insurance company. Based on the regression result, independent variable management efficiency is not considered as a powerful variable to define the capital structure of insurance companies in Ethiopia in the study period.
- Profitability has a positive and insignificant effect on capital structure. This implies that, an increase in profitability has no significant impact on capital structure in this study. The result of this study is inconsistent with the pecking order theory that argues profitable firms with access to retained profits can rely on them as opposed to depending on outside sources (debt).
- The results of random effect regression indicate that tangibility has a positive and statistically insignificant impact on leverage and an insignificant result, meaning that an increase in tangibility has no significant impact on leverage. This finding is opposite with the pecking order theory that states the low information asymmetry associated with tangible assets makes equity financing less costly.
- The exchange rate has a negative and significant effect on capital structure of insurance companies. This implies that it has an indirect significant contribution to explain leverage.

- Therefore, the researcher concluded that, the macroeconomic and firm specific determinant variables of capital structure of selected insurance companies in Ethiopia (business risk, firm age, firm size, liquidity and exchange rate) have statistical significant effect. However, management efficiency, profitability and tangibility have insignificant effect on capital structure. Based on the result of this study, the pecking order, agency cost and the static trade-off theories are dominant in explaining the capital structure of selected insurance companies in Ethiopia; however, static trade-off theory appears to come across powerfully.

5.2. Recommendation

Based on the major findings of the study, the researcher makes the following recommendations:

- Among of eight independent variables business risk, firm age, firm size, liquidity and exchange rate have a significant effect in determining optimum capital structure of Ethiopian insurance Companies. Therefore, Insurance companies should pay greater attention to these significant variables in determining their optimal capital structure to maximize weighted average cost.
- Business risk has a negative and considerable impact on capital structure. This implies that the more those insurance companies are risky, the more the difficulty they faced to access funds from debt financing. So insurance companies have to be focused on reducing factors that causes earning volatility to enhance earning sustainability.

5.3. Suggestions for future studies

- The main focus of this research was identifying determinants of capital structure in the case of insurance companies in Ethiopia using selected variables. However, there are a lot of macroeconomic and firm-specific variables that were left out of this analysis. Therefore, it is advised that future researchers conduct comparative studies on the same companies while considering additional factors like Non debt tax shield, firm growth , Market concentration, Annual inflation rate, GDP growth rate and the like

Reference

- Abiy, Z., Alamayehu, W., Daniel, T., Melese, G., and Yilma, S., (2007). Introduction to research method. Preparatory module for AAU Graduate Programme. Graduate study and research office AAU.
- Albulena, S., Skender, A., Vlora, B., & Edona, P. (2014), The Factors that determine the Capital Structure among Insurance Companies in Kosovo: Empirical Analysis. Academic Journal of Interdisciplinary Studies, MCSER Publishing, Rome-Italy
- Bayeh, A. (2011), Capital structure determinants: an empirical study on insurance industry in Ethiopia, Master's thesis, Addis Ababa University.
- Booth, L. Aivazian, V Demirguc-Kunt, V and Maksimovic, V (2001). Capital structures in developing countries, Journal of Finance, vol. 56, No. 1, 87– 130.
- Brooks C. (2008). Introductory Econometrics for Finance. Second Edition, Cambridge University Press, New York.
- Cekrezi, A. (2013), Analyzing the impact of firm's specific factors and macroeconomic factors on capital structure: A case of small non-listed firms in Albania, Research Journal of Finance and Accounting, ISSN2222-1697(Paper)ISSN2222-2847(Online)Vol.4, No.8, 2013.
- Charles, M., Peter, M., & Elizabeth, K. (2013), An Empirical Analysis of Macro-Economic Influences on Corporate Capital Structure of Listed Companies in Kenya. Journal of Finance and Investment Analysis, vol.2, no.2, 2013, 41-62.
- Creswell, J.W. (2013), Research design: Qualitative, Quantitative and Mixed methods approaches, (4th ed.), Sage Publications, California.
- Daniel, B. (2015), Determinants of Capital Structure of Insurance Companies in Ethiopia. Master's thesis, Addis Ababa University, college of business and economics.
- Dereje, G. (2014), Determinants of Leverage for Unlisted Firms: Evidence from Ethiopian private Insurance Companies, Journal of Poverty, Investment and Development-An Open Access International Journal, Vol.4

- Esmael.B.(2015), Determinants of Capital Structure: A study on Ethiopian Insurance Companies. Master's thesis, Jimma University.
- Farah, R., Komal, K. B., & Shahabud, D. (2014), Macroeconomic Conditions and Firm's Choices of Capital Structure: Evidence from Pakistan's Manufacturing Sectors. Middle East Journal of Scientific Research 19 (4),521-531.
- Frank, M.Z. and Goyal, V.K. (2005), Trade-off and Pecking order theories of debt, working paper, Center for corporate governance, Tuck school of business at Dartmouth.
- Gujarati, D.(2003), "Basic Econometrics", (4thed.), McGraw-Hill/Irwin.
- Guruswamy & Adugnaw. M (2016), Determinants of Capital Structure of Selected Insurance Companies in Ethiopia, Developing Country Studies, ISSN2224-607X (Paper) ISSN 2225-0565 (Online) Vol.6, No.10, 2016.
- Jensen, M. and Meckling,W. (1976), Theory of the firm: Managerial behavior, agency costs and ownership structure, Journal of Financial Economics, October,1976,V.3,No.4,pp.305- 360.
- Jensen, M.(1986),The agency costs of free cash flow: Corporate finance and takeover,AmericanEconomicReview,vol.76,no.2,pp.323-329
- J. Toby Mordkoff (2016), Descriptive Statistics, Copyright © 2000
- Kingsley,T.(2013), Determinants of Capital Structure of Insurance Companies in Ghana. Research Journal of Finance and Accounting,Vol.4,No.13,2013,Open University of Malaysia, Accra Institute of Technology Campus.
- Kumar,S.,Dhanasekaran,M.,Sandhya,S.andSaravanan,R.(2012),Determinantsoffinancial capital structure on the Insurance sector firms in India, European Journal of Social sciences, Vol. 29, No. 2, 288-294.
- Marshall C, and Rossman, R, (2011), Designing Qualitative Research, on Amazon.com.
- Mehdi A., Saeed F., and Fateme N., (2012), analyzing the impact of financial managers' perception of macroeconomic variables on capital structure of firms listed in Tehran stock

exchange, *International Journal of Academic Research in Economics and Management Sciences*, Vol.1, No.3ISSN:2226-3624.

Modigliani, F., and Miller, M.(1958), *The Cost of Capital, Corporate Finance and the Theory of Investment*. *American Economic Review*, Vol. 48, pp. 261-97.

Modigliani, F., and Miller, M. (1963), *Corporate Income Taxes and the Cost of Capital: A Correction*. *American Economic Review*, Vol. 53, June, pp. 443-53.

Mohamed,S. and Mahmoud, E. (2013), *The impact of corporate characteristics on capital structure: evidence from the Egyptian insurance companies*, research paper in Cairo University.

Mohammed, G. (2014), *Determinants of Capital structure and its impact on the Performance of Ethiopian insurance industry*, master thesis, Jimma University.

Muthama, C., Mbaluka, P., and Kalunda, E.(2013), *An empirical analysis of macro-economic influences on corporate capital structure of listed companies in Kenya*, *Journal of Finance and Investment Analysis*,vol.2,no.2,2013,41-62,ISSN:2241-0998.

Myers, S.C. and Majluf, N.S.(1984),*Corporate financing and investment decisions when firms have information that investors do not have*. *Journal of Financial Economics*,13,187-221

Myers, S.C. (1984).*The capital structure puzzle*, *Journal of Finance*,Vol.39,No.3,575-92.

Naveed,A.,Zulfqar,A.,& Ishfaq,A.(2010), *Determinants of Capital Structure: A Case of Life Insurance Sector of Pakistan*. *European Journal of Economics, Finance and Administrative Sciences*, available at <http://www.eurojournals.com> .

Saddam M.(2014), *Factors Affecting Capital Structure Decision: Evidence from Ethiopian Insurance Firms*, master thesis, Addis Ababa University

Sbeiti, W. (2010),*the determinants of capital structure: Evidence from the GCC countries*, *International Research Journal of Finance and Economics* ISSN1450-2887 Issue 47 (2010), Euro Journals Publishing,Inc.2010

- Sidra, A., Bilal and Sumaira, T.(2013), Determinants of capital structure: What can be the determinants of capital structure of banking sector of Pakistan?, Proceedings of 3rd, International Conference on Business Management (ISBN: 978-969-9368-07-3).
- Simerly, R.L., &Li,M.(2002). Rethinking the Capital Structure Decision: Translating Research into Practical Solutions. B Quest. Retrieved from <http://www.westga.edu/~bquest/2002/rethinking.htm>
- Taiwo, A., & Olumuyiwa, A.T.(2014), Relationship between Insurance and Economic Growth in Sub-Saharan African: A Panel Data Analysis, Nigeria.
- Tesfaye, T. and Minga, N. (2012), Institutional, macroeconomic and firm-specific determents of capital structure: The African evidence, Management Research Review Vol.36No. 11,2013pp. 1081-1122 Emerald Group Publishing Limited 2040-8269.
- Thian C. 2012, Determinants of Capital Structure Empirical Evidence from Financial Services Listed Firms in China. International Journal of Economics and Finance, Vol.4, No.3, March 2012
- Tornyeva, K. (2013), Determinants of capital structure of insurance companies in Ghana, Research Journal of Finance and Accounting ISSN2222-1697Vol.4, No.13, 2013.
- Woldemikael, S. (2012), Determinants of Capital Structure of Commercial Banks in Ethiopia. Master's thesis, Addis Ababa University.

APPENDIXES

Appendix: I. Raw data

| Company | year | LR | BR | FA | FS | LQ | ME | PR | TG | EXR |
|---------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| EIC | 2012 | 0.825 | 8.387 | 1.568 | 9.252 | 0.930 | 0.101 | 0.164 | 0.058 | 17.253 |
| EIC | 2013 | 0.826 | 8.536 | 1.579 | 9.318 | 0.870 | 0.876 | 0.131 | 0.069 | 18.194 |
| EIC | 2014 | 0.814 | 8.643 | 1.591 | 9.360 | 1.720 | 0.909 | 0.151 | 0.080 | 19.074 |
| EIC | 2015 | 0.827 | 8.670 | 1.602 | 9.393 | 1.240 | 0.132 | 0.148 | 0.273 | 20.095 |
| EIC | 2016 | 0.749 | 8.715 | 1.612 | 9.448 | 1.300 | 0.923 | 0.149 | 0.267 | 21.105 |
| EIC | 2017 | 0.728 | 8.843 | 1.623 | 9.526 | 1.380 | 0.876 | 0.170 | 0.257 | 22.413 |

| | | | | | | | | | | |
|--------|------|-------|-------|-------|-------|--------|-------|-------|-------|--------|
| EIC | 2018 | 0.680 | 8.978 | 1.633 | 6.561 | 1.470 | 0.789 | 0.137 | 0.266 | 26.108 |
| EIC | 2019 | 0.781 | 8.876 | 1.643 | 6.965 | 1.280 | 0.222 | 0.088 | 0.265 | 28.054 |
| EIC | 2020 | 0.814 | 8.904 | 1.653 | 7.080 | 1.220 | 0.854 | 0.077 | 0.253 | 31.342 |
| EIC | 2021 | 0.864 | 8.633 | 1.662 | 7.249 | 1.080 | 0.772 | 0.072 | 0.235 | 39.016 |
| EIC | 2022 | 0.811 | 8.555 | 1.672 | 7.151 | 1.220 | 0.832 | 0.086 | 0.245 | 48.566 |
| NIC | 2012 | 0.751 | 7.401 | 1.255 | 8.160 | 1.050 | 0.129 | 0.174 | 0.264 | 17.253 |
| NIC | 2013 | 0.726 | 7.437 | 1.279 | 8.345 | 1.160 | 0.139 | 0.124 | 0.244 | 18.194 |
| NIC | 2014 | 0.736 | 7.247 | 1.301 | 8.405 | 1.120 | 0.923 | 0.069 | 0.243 | 19.074 |
| NIC | 2015 | 0.678 | 7.044 | 1.322 | 8.448 | 1.210 | 0.876 | 1.278 | 0.303 | 20.095 |
| NIC | 2016 | 0.720 | 7.528 | 1.342 | 8.527 | 1.070 | 0.789 | 0.100 | 0.354 | 21.105 |
| NIC | 2017 | 0.699 | 7.571 | 1.362 | 8.602 | 1.090 | 0.923 | 0.093 | 0.265 | 22.413 |
| NIC | 2018 | 0.700 | 7.433 | 1.380 | 5.694 | 1.940 | 0.876 | 0.091 | 0.256 | 26.108 |
| NIC | 2019 | 0.683 | 7.653 | 1.398 | 5.711 | 1.460 | 0.789 | 0.088 | 0.268 | 28.054 |
| NIC | 2020 | 0.667 | 7.809 | 1.415 | 5.713 | 1.940 | 0.340 | 0.097 | 0.264 | 31.342 |
| NIC | 2021 | 0.631 | 7.945 | 1.431 | 5.788 | 1.580 | 0.273 | 0.101 | 0.276 | 39.016 |
| NIC | 2022 | 0.616 | 7.577 | 1.447 | 5.873 | 1.620 | 0.276 | 0.118 | 0.273 | 48.566 |
| Awash | 2012 | 0.768 | 7.570 | 1.255 | 8.671 | 1.790 | 0.206 | 0.072 | 0.228 | 17.253 |
| Awash | 2013 | 0.735 | 7.919 | 1.278 | 8.747 | 1.100 | 0.126 | 0.125 | 0.206 | 18.194 |
| Awash | 2014 | 0.692 | 7.772 | 1.301 | 8.763 | 1.110 | 0.923 | 0.084 | 0.250 | 19.074 |
| Awash | 2015 | 0.695 | 7.876 | 1.322 | 8.811 | 1.080 | 0.876 | 0.095 | 0.258 | 20.095 |
| Awash | 2016 | 0.670 | 7.881 | 1.342 | 8.925 | 1.020 | 0.789 | 0.075 | 0.262 | 21.105 |
| Awash | 2017 | 0.640 | 8.007 | 1.361 | 9.002 | 1.100 | 0.122 | 0.086 | 0.231 | 22.413 |
| Awash | 2018 | 0.547 | 8.146 | 1.380 | 6.337 | 1.320 | 0.208 | 0.649 | 0.257 | 26.108 |
| Awash | 2019 | 0.511 | 8.040 | 1.397 | 6.347 | 1.680 | 0.265 | 0.032 | 0.258 | 28.054 |
| Awash | 2020 | 0.179 | 8.238 | 1.414 | 6.410 | 1.300 | 0.203 | 0.060 | 0.209 | 31.342 |
| Awash | 2021 | 0.514 | 8.880 | 1.431 | 6.489 | 1.840 | 0.284 | 0.061 | 0.241 | 39.016 |
| Awash | 2022 | 0.522 | 8.421 | 1.447 | 6.567 | 1.830 | 0.279 | 0.063 | 0.305 | 48.566 |
| UIC | 2012 | 0.648 | 7.640 | 1.255 | 8.554 | 1.360 | 0.159 | 0.107 | 0.068 | 17.253 |
| UIC | 2013 | 0.621 | 7.874 | 1.278 | 8.636 | 0.790 | 0.091 | 0.152 | 0.092 | 18.194 |
| UIC | 2014 | 0.621 | 7.859 | 1.301 | 8.709 | 0.970 | 0.111 | 0.123 | 0.332 | 19.074 |
| UIC | 2015 | 0.561 | 7.861 | 1.322 | 8.745 | 0.880 | 0.923 | 0.112 | 0.453 | 20.095 |
| UIC | 2016 | 0.542 | 7.744 | 1.342 | 8.825 | 0.890 | 0.876 | 0.071 | 0.333 | 21.105 |
| UIC | 2017 | 0.605 | 7.786 | 1.361 | 8.899 | 0.820 | 0.789 | 0.066 | 0.433 | 22.413 |
| UIC | 2018 | 1.000 | 8.121 | 1.380 | 6.126 | 11.930 | 1.947 | 0.706 | 0.416 | 26.108 |
| UIC | 2019 | 0.594 | 8.909 | 1.397 | 6.120 | 2.530 | 0.413 | 0.039 | 0.448 | 28.054 |
| UIC | 2020 | 0.572 | 8.036 | 1.414 | 6.149 | 1.940 | 0.316 | 0.051 | 0.413 | 31.342 |
| UIC | 2021 | 0.579 | 8.100 | 1.431 | 6.196 | 1.340 | 0.216 | 0.059 | 0.354 | 39.016 |
| UIC | 2022 | 0.612 | 8.560 | 1.447 | 6.277 | 1.750 | 0.279 | 0.078 | 0.301 | 48.566 |
| Africa | 2012 | 0.812 | 7.430 | 1.255 | 8.704 | 0.790 | 0.091 | 0.048 | 0.303 | 17.253 |
| Africa | 2013 | 0.781 | 7.488 | 1.278 | 8.696 | 0.680 | 0.078 | 0.054 | 0.413 | 18.194 |
| Africa | 2014 | 0.770 | 7.643 | 1.301 | 8.738 | 0.840 | 0.096 | 0.068 | 0.362 | 19.074 |
| Africa | 2015 | 0.673 | 7.642 | 1.322 | 8.785 | 0.600 | 0.068 | 0.060 | 0.320 | 20.095 |
| Africa | 2016 | 0.642 | 7.620 | 1.342 | 8.814 | 0.270 | 0.923 | 0.054 | 0.341 | 21.105 |

| | | | | | | | | | | |
|--------|------|-------|-------|-------|-------|-------|-------|-------|-------|--------|
| Africa | 2017 | 0.683 | 7.571 | 1.361 | 8.858 | 0.960 | 0.876 | 0.043 | 0.306 | 22.413 |
| Africa | 2018 | 0.709 | 7.828 | 1.380 | 5.990 | 2.010 | 0.789 | 0.461 | 0.238 | 26.108 |
| Africa | 2019 | 0.788 | 7.132 | 1.397 | 5.950 | 1.880 | 0.316 | 0.012 | 0.280 | 28.054 |
| Africa | 2020 | 0.795 | 7.434 | 1.414 | 6.088 | 1.340 | 0.220 | 0.019 | 0.204 | 31.342 |
| Africa | 2021 | 0.759 | 7.560 | 1.431 | 6.116 | 1.340 | 0.219 | 0.023 | 0.205 | 39.016 |
| Africa | 2022 | 0.739 | 7.453 | 1.447 | 6.098 | 1.370 | 0.225 | 0.016 | 0.204 | 48.566 |
| Nile | 2012 | 0.641 | 7.570 | 1.230 | 8.561 | 0.550 | 0.064 | 0.093 | 0.129 | 17.253 |
| Nile | 2013 | 0.650 | 7.666 | 1.255 | 8.626 | 0.890 | 0.103 | 0.099 | 0.151 | 18.194 |
| Nile | 2014 | 0.662 | 7.761 | 1.278 | 8.686 | 1.250 | 0.923 | 0.105 | 0.164 | 19.074 |
| Nile | 2015 | 0.627 | 7.689 | 1.301 | 8.759 | 1.310 | 0.876 | 0.076 | 0.148 | 20.095 |
| Nile | 2016 | 0.667 | 7.302 | 1.322 | 8.814 | 1.010 | 0.789 | 0.027 | 0.253 | 21.105 |
| Nile | 2017 | 0.635 | 8.059 | 1.342 | 8.908 | 0.960 | 0.108 | 0.129 | 0.289 | 22.413 |
| Nile | 2018 | 0.632 | 7.803 | 1.361 | 6.008 | 1.370 | 0.228 | 0.637 | 0.293 | 26.108 |
| Nile | 2019 | 0.612 | 7.798 | 1.380 | 6.107 | 2.170 | 0.355 | 0.068 | 0.298 | 28.054 |
| Nile | 2020 | 0.608 | 7.999 | 1.397 | 6.148 | 2.330 | 0.379 | 0.066 | 0.276 | 31.342 |
| Nile | 2021 | 1.000 | 7.107 | 1.414 | 6.248 | 3.310 | 0.530 | 0.075 | 0.228 | 39.016 |
| Nile | 2022 | 0.652 | 7.311 | 1.431 | 6.386 | 2.560 | 0.401 | 0.078 | 0.229 | 48.566 |
| NYIC | 2012 | 0.595 | 7.749 | 1.230 | 8.489 | 4.810 | 0.567 | 0.158 | 0.188 | 17.253 |
| NYIC | 2013 | 0.618 | 7.846 | 1.255 | 8.630 | 1.240 | 0.144 | 0.148 | 0.175 | 18.194 |
| NYIC | 2014 | 0.603 | 7.891 | 1.278 | 8.734 | 1.320 | 0.151 | 0.126 | 0.144 | 19.074 |
| NYIC | 2015 | 0.625 | 7.962 | 1.301 | 8.873 | 1.250 | 0.923 | 0.110 | 0.105 | 20.095 |
| NYIC | 2016 | 0.642 | 8.007 | 1.322 | 8.937 | 1.040 | 0.876 | 0.104 | 0.092 | 21.105 |
| NYIC | 2017 | 0.616 | 8.196 | 1.342 | 9.033 | 1.330 | 0.789 | 0.127 | 0.076 | 22.413 |
| NYIC | 2018 | 0.630 | 8.203 | 1.361 | 6.231 | 1.630 | 0.262 | 0.912 | 0.177 | 26.108 |
| NYIC | 2019 | 0.583 | 7.243 | 1.380 | 6.260 | 1.710 | 0.273 | 0.108 | 0.190 | 28.054 |
| NYIC | 2020 | 0.569 | 7.346 | 1.397 | 6.272 | 1.730 | 0.276 | 0.131 | 0.238 | 31.342 |
| NYIC | 2021 | 0.563 | 7.421 | 1.414 | 6.335 | 1.700 | 0.268 | 0.070 | 0.209 | 39.016 |
| NYIC | 2022 | 0.575 | 7.300 | 1.431 | 6.407 | 1.760 | 0.275 | 0.089 | 0.201 | 48.566 |
| GIC | 2012 | 0.681 | 6.279 | 1.176 | 7.971 | 0.920 | 0.115 | 0.020 | 0.349 | 17.253 |
| GIC | 2013 | 0.647 | 7.279 | 1.204 | 8.094 | 1.130 | 0.923 | 0.153 | 0.272 | 18.194 |
| GIC | 2014 | 0.570 | 7.393 | 1.230 | 8.188 | 1.350 | 0.876 | 0.160 | 0.226 | 19.074 |
| GIC | 2015 | 0.488 | 7.405 | 1.255 | 8.271 | 1.630 | 0.789 | 0.136 | 0.180 | 20.095 |
| GIC | 2016 | 0.503 | 7.413 | 1.279 | 8.344 | 1.470 | 0.923 | 0.117 | 0.148 | 21.105 |
| GIC | 2017 | 0.601 | 7.245 | 1.301 | 8.277 | 1.250 | 0.876 | 0.093 | 0.122 | 22.413 |
| GIC | 2018 | 0.513 | 7.741 | 1.322 | 5.482 | 1.950 | 0.789 | 0.182 | 0.233 | 26.108 |
| GIC | 2019 | 0.554 | 7.540 | 1.342 | 5.571 | 1.810 | 0.325 | 0.047 | 0.203 | 28.054 |
| GIC | 2020 | 0.538 | 7.571 | 1.362 | 5.625 | 1.860 | 0.331 | 0.088 | 0.289 | 31.342 |
| GIC | 2021 | 0.529 | 7.467 | 1.380 | 5.695 | 1.890 | 0.332 | 0.096 | 0.267 | 39.016 |
| GIC | 2022 | 0.514 | 7.741 | 1.398 | 5.768 | 1.950 | 0.338 | 0.094 | 0.249 | 48.566 |

Appendix: II. A list of Insurance Companies in Ethiopia

| No | Name of Insurance Company | Establishing year | Period of the study (2012-2022) |
|----|---------------------------------------|-------------------|---------------------------------|
| 1 | Ethiopian Insurance Corporation | 1975 | Selected insurance companies |
| 2 | African Insurance Company S.C | 1994 | |
| 3 | Awash Insurance Company S.C | 1994 | |
| 4 | National Insurance Company S.C | 1994 | |
| 5 | Nile Insurance Company S.C | 1995 | |
| 6 | Nyala Insurance Company S.C | 1995 | |
| 7 | Global Insurance Company S.C. | 1997 | |
| 8 | United Insurance S.C | 1997 | |
| 9 | NIB Insurance Company | 2002 | unselected insurance companies |
| 10 | Lion Insurance Company S.C | 2007 | |
| 11 | Ethio-Life and General Insurance S.C. | 2008 | |
| 12 | Oromia Insurance Company S.C. | 2009 | |
| 13 | Abbay Insurance Company | 2010 | |
| 14 | Berhan Insurance S.C. | 2011 | |
| 15 | Tsehay Insurance S.C. | 2012 | |
| 16 | Lucy Insurance S.C. | 2012 | |
| 17 | Bunna Insurance S.C. | 2013 | |
| 18 | Zemen Insurance S.C | 2020 | |

Appendix: III. Descriptive statistic result

```
. sum LR BR FA FS LQ ME PR TG EXR
```

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|----------|-----|----------|-----------|----------|----------|
| LR | 88 | .6596177 | .1158795 | .1794729 | 1 |
| BR | 88 | 7.826514 | .5041228 | 6.2788 | 8.978069 |
| FA | 88 | 1.377583 | .1123238 | 1.176091 | 1.672 |
| FS | 88 | 7.573242 | 1.3256 | 5.481772 | 9.526208 |
| LQ | 88 | 1.543636 | 1.272872 | .27 | 11.93 |
| ME | 88 | .5010997 | .3584629 | .0642425 | 1.947412 |
| PR | 88 | .1393044 | .189823 | .0124785 | 1.278182 |
| TG | 88 | .245349 | .0862254 | .0584792 | .4528815 |
| EXR | 88 | 26.47455 | 9.425038 | 17.253 | 48.566 |

Appendix: IV. Correlation result

```
. corr LR BR FA FS LQ ME PR TG EXR
(obs=88)
```

| | LR | BR | FA | FS | LQ | ME | PR | TG | EXR |
|-----|---------|---------|---------|---------|--------|---------|---------|--------|--------|
| LR | 1.0000 | | | | | | | | |
| BR | 0.0739 | 1.0000 | | | | | | | |
| FA | 0.3037 | 0.6978 | 1.0000 | | | | | | |
| FS | 0.2108 | 0.0427 | -0.2220 | 1.0000 | | | | | |
| LQ | 0.2250 | 0.0578 | 0.0374 | -0.3409 | 1.0000 | | | | |
| ME | 0.1942 | 0.0939 | 0.1120 | 0.1777 | 0.3712 | 1.0000 | | | |
| PR | 0.0743 | 0.0132 | -0.0417 | -0.0704 | 0.2893 | 0.1876 | 1.0000 | | |
| TG | 0.0245 | -0.0227 | 0.0025 | -0.2079 | 0.1688 | 0.0463 | 0.0285 | 1.0000 | |
| EXR | -0.1330 | 0.1229 | 0.4688 | -0.7244 | 0.1730 | -0.1584 | -0.1245 | 0.1314 | 1.0000 |

Appendix: v. Correlation Matrix between independent variables

```
. corr BR FA FS LQ ME PR TG EXR
(obs=88)
```

| | BR | FA | FS | LQ | ME | PR | TG | EXR |
|-----|---------|---------|---------|--------|---------|---------|--------|--------|
| BR | 1.0000 | | | | | | | |
| FA | 0.6978 | 1.0000 | | | | | | |
| FS | 0.0427 | -0.2220 | 1.0000 | | | | | |
| LQ | 0.0578 | 0.0374 | -0.3409 | 1.0000 | | | | |
| ME | 0.0939 | 0.1120 | 0.1777 | 0.3712 | 1.0000 | | | |
| PR | 0.0132 | -0.0417 | -0.0704 | 0.2893 | 0.1876 | 1.0000 | | |
| TG | -0.0227 | 0.0025 | -0.2079 | 0.1688 | 0.0463 | 0.0285 | 1.0000 | |
| EXR | 0.1229 | 0.4688 | -0.7244 | 0.1730 | -0.1584 | -0.1245 | 0.1314 | 1.0000 |

Appendix: VI. Hausman test result

```
. hausman fe re
```

| | Coefficients | | (b-B) Difference | sqrt(diag(V_b-V_B)) S.E. |
|-----|--------------|-----------|---------------------|-----------------------------|
| | (b) fe | (B) re | | |
| BR | -.1328172 | -.1328172 | -6.86e-15 | . |
| FA | .9798506 | .9798506 | 9.15e-14 | 3.47e-08 |
| FS | .0363646 | .0363646 | 4.75e-15 | 1.48e-09 |
| LQ | .0425357 | .0425357 | 1.63e-15 | 1.02e-09 |
| ME | -.0516499 | -.0516499 | -6.56e-15 | 3.67e-09 |
| PR | .0023277 | .0023277 | 4.47e-15 | 1.74e-09 |
| TG | .088634 | .088634 | 1.72e-14 | . |
| EXR | -.0039372 | -.0039372 | -5.12e-17 | . |

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

Test: Ho: difference in coefficients not systematic

```
chi2(8) = (b-B)'[(V_b-V_B)^(-1)](b-B)
          = 0.00
Prob>chi2 = 1.0000
(V_b-V_B is not positive definite)
```

Appendix: VII. Random regression result

```
. xtreg LR BR FA FS LQ ME PR TG EXR, re
```

```
Random-effects GLS regression           Number of obs   =           88
Group variable: company1                Number of groups =            8
```

```
R-sq:                                     Obs per group:
  within = 0.2684                          min =           11
  between = 0.7745                          avg =          11.0
  overall = 0.4520                          max =           11
```

```
Wald chi2(8) =           65.17
corr(u_i, X) = 0 (assumed)                Prob > chi2     =           0.0000
```

| LR | Coef. | Std. Err. | z | P> z | [95% Conf. Interval] | |
|---------|-----------|-----------------------------------|-------|-------|----------------------|-----------|
| BR | -.1328172 | .0289427 | -4.59 | 0.000 | -.1895437 | -.0760906 |
| FA | .9798506 | .1486896 | 6.59 | 0.000 | .6884244 | 1.271277 |
| FS | .0363646 | .0120316 | 3.02 | 0.003 | .0127832 | .0599461 |
| LQ | .0425357 | .0095943 | 4.43 | 0.000 | .0237313 | .0613402 |
| ME | -.0516499 | .0322269 | -1.60 | 0.109 | -.1148134 | .0115136 |
| PR | .0023277 | .0549653 | 0.04 | 0.966 | -.1054023 | .1100578 |
| TG | .088634 | .1153918 | 0.77 | 0.442 | -.1375298 | .3147977 |
| EXR | -.0039372 | .0017609 | -2.24 | 0.025 | -.0073885 | -.0004858 |
| _cons | .1162762 | .182653 | 0.64 | 0.524 | -.2417171 | .4742694 |
| sigma_u | 0 | | | | | |
| sigma_e | .0734626 | | | | | |
| rho | 0 | (fraction of variance due to u_i) | | | | |