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DETERMINANTS OF CAPITAL STRUCTURE IN ETHIOPIAN INSURANCE COMPANIES

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This is to certify that the thesis prepared by Tesfa Bizuayehu Sendeku, entitled: "determinants of capital structure in Ethiopian insurance companies" submitted in partial fulfillment of the requirements for the award of Master of Business Administration complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

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Abstract

This study empirically examines the determinants of capital structure of insurance companies in Ethiopia. The study tried to identify the specific firm and macroeconomic factors that managers should consider when deciding their optimal capital structure. The study employed fixed effect panel regression model in examining the capital structure of insurance companies in Ethiopia with financial statements of 9 insurance companies covering the period of eleven years, 2005-2015. The model (fixed effect panel regression model) fitness was tested using normality, multicollinearity, Heteroskedasticity, autocorrelation and redundant fixed effects tests on the data used for the model. The results show that pecking order theory is prominently important in explaining the capital structure of insurance companies in Ethiopia. Firm specific factors such as asset tangibility, growth, liquidity and size of the firm were found to be significant in relation to leverage. Though insignificant, the negative relationship between profitability and leverage is an indication that profitable insurance companies prefer internal sources of finance to external sources, hence less debt in their capital structure. Macroeconomic factors used in this study, GDP and inflation were positively related with leverage at significant level of 1%. The study indicated that the independent firm specific variables of size, asset tangibility, growth and liquidity and macroeconomic variable of GDP and inflation were significantly related to leverage. Therefore, managers of the insurance companies should consider the impact of these significant variables in determining their financing needs so as to maximize the value of the company and meet the shareholders return to the extent that gives value for their invested money.

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List of Acronyms

CLRM	Classical Linear Regression Model
DW	Dublin Watson
EIC	Ethiopian Insurance Corporation
FEM	Fixed Effect Model
GDP	Gross Domestic Product
GP	Growth in Premium
INF	Inflation
LQ	Liquidity
MOFED	Ministry of Finance and Economic Development
NBE	National Bank of Ethiopia
OLS	Ordinary List Square
REM	Random Effect Model
ROE	Return on Equity
SZ	Size of the Company
TANG	Tangibility of Assets

CHAPTER ONE - INTRODUCTION

1.1 Background of the Study

An optimum capital structure is a critical decision for any business organization. The decision is important not only because of the need to maximize returns to the shareholders, but it is also important because of the impact of such decision on an organization's ability to deal with its competitive environment (Simerly and Li, 2002). The last number of decades has witnessed a continuous development of new theories and empirical findings on the determinants of capital structure of a firm to maximize its value. These theories suggest that firms select capital structure depending on attributes that determine the various costs and benefits associated with debt and equity financing. The first milestone on the issue was set by Modigliani and Miller (1958), whose model argued on the Irrelevance of the capital structure in determining firms' value and future performance.

However, many researchers have rigorously proved that a relationship between capital structure and firm value actually exists (Lubatkin and Chatterjee, 1994). Though they have not reached an agreement on how and to what extent the capital structure of firms' impacts on their value, and performance, the studies and empirical findings of these researchers have at least demonstrated that capital structure has more importance than in the simple Modigliani-Miller model.

In terms of financial theory, insurers are no different from other sector in the economy with respect to the general factors that determine the capital structure and the market value of the firm except that insurer's debt as more closely corresponding to policy claims than to conventional debt, then insurer debt is contingent and indeterminate, (Dionne, 2013).

Most capital structure studies made to date are based on data from developed countries which almost on nonfinancial firms. To mention some, research made on firms in the United States which was carried out by Titman and Wessels (1988) and others made later by Rajan and Zingales (1995) on G7 countries, which based empirical analysis to determine the capital structure of firms, were focused on non-financial firms. Nevertheless, understanding of the determinants of capital structure is as important for insurers as for non-financial firms. Laeven

and Perotti (2010) found that an insurer's capital structure affects its stability as well as ability to effectively provide expected payouts to policyholders in the event of large losses. Given that a well-functioning and well-developing insurance system plays a crucial role in supporting growth of an economy, it is imperative to understand the factors which drive the capital structure decision of insurers. One of the well-known researches was carried out by Baranoff and Sager (2003) evidencing insurance from developed country (US) to study capital structure determinants of insurers. Their results provided strong support for the relevance of standard determinants of capital structure on insurer's capital by testing the significance of size, profitability, premium growth and asset tangibility.

As per the researcher's access and knowledge, the researchers conducted on determinants of capital structure so far in the Ethiopian insurance sector include: Regassa, (2014), Abate, (2012), Kinde, (2011), and Getahun, (2014). Though, their contributions are important and worth mentioning, most of these studies focused on limited dataset that covered less than ten years attributed to firm specific factors. Moreover, these researchers used only internal firm specific factors for their analysis. The impact of macroeconomic variables and other external factors such as GDP growth rate and inflation rate were not considered. Therefore, the aim of this study was to assess the influence of firm specific and macroeconomic factors on capital structure decision made by Ethiopian insurance firms.

1.2 *Overview of the Ethiopian Insurance Industry*

Modern forms of insurance service were introduced in Ethiopia by Europeans since 905. Bank of Abyssinia which was owned by foreigners was the first provider of modern insurance services in Ethiopia. The Imperial Insurance Company, the first domestic insurer, was established in 1951 with a share capital of Eth Birr1000, 000. During this period, insurance business (except marine insurance) was classified as any trade undertaking and was administered by the provisions of the commercial code. The minimum paid-up capital required to establish an insurance company was as little as 12,500 Ethiopian Birr as stipulated in the commercial code. There was no restriction on foreign insurers. The maritime code of Ethiopia was issued to govern the operations of maritime business and the related marine insurance.

According to Zeleke (2007) the first notable event that the Ethiopian insurance market witnessed was the promulgation of proclamation No. 281/1970. This proclamation was issued to provide for the control & regulation of insurance business in Ethiopia. It created an Insurance Council and an Insurance Controller's Office. The law required an insurer to be a domestic company whose share capital (fully subscribed) to be not less than Ethiopian Birr 400,000 for a general insurance business, Ethiopian Birr 600,000 in the case of long-term insurance business and Ethiopian Birr1,000,000 to do both long-term & general insurance business.

The proclamation defined 'domestic company' as a share company having its head office in Ethiopia and in the case of a company transacting a general insurance business at least 51% and in the case of a company transacting life insurance business, at least 30% of the paid-up capital must be held by Ethiopian nationals or national companies. Hence this act allowed Non-Ethiopian nationals to participate in insurance business. At that time, the controller of insurance licensed 15 domestic insurance companies, 36 agents, 7 brokers, 3 actuaries &11 assessors in accordance with the provisions of the proclamation immediately in the year after the issuance of the law. After the 1974 revolution, like other sector of economy, all private insurers were nationalized. Ethiopian Insurance Corporation (EIC) was established in 1976 by proclamation No.68/1975. The Corporation came into existence by taking over all the assets and liabilities of the thirteen nationalized private insurance companies, with Birr 11 million (USD 1.29 million) paid up capital. Hence Ethiopian Insurance Corporation became the sole operator.

After the change in the political environment in 1991, the proclamation for the licensing and supervision of insurance business heralded the beginning of a new era. Immediately after the enactment of the proclamation in the 1994, insurance market open to domestic private investors and private insurance companies began to increase. Proclamation No. 86/1994 ushered a new era in the history of insurance business in which 'Ethiopian insurance market has become an arena where the public and private insurance companies contest to grab a large chunk of the market' (Zeleke, 2007).

The National bank of Ethiopia which is the sole regulator of financial institutions has been vested the power by the new more enhanced proclamation than the earlier versions: Which is the Insurance proclamation no 746/2012. Article 10 of this proclamation explicitly disallowed foreign participation in the insurance sector. Pursuant to this proclamation the NBE has stipulated directive No. SIB 34/2013 that specifically states that '*in order to carry on insurance business in Ethiopia any person shall meet the following conditions':*

- It is a company whose share capital is not less than
  - Ethiopian birr 60 million for a general insurance business
  - Ethiopian birr 15 million in the case of long-term insurance business and
  - Ethiopian birr 75million to do both long-term & general insurance business.

Currently, one state owned Insurance Corporation (EIC) and sixteen private insurance companies are operating in the market. Among them, eight carry on general insurance and nine have been running composite (both general and long-term) insurance. As at March 31, 2016, the total number of insurance branch offices reached 410, that resulted in 13.6% growth over what they were 323 during the same period of the preceding year. Moreover, over 1,820 Insurance Agents, 49 Brokers, 87 Loss Assessors and 2 Surveyors were licensed and authorized to assist the works of insurance companies that operate in the market. The gross premium of the overall insurance sector was 5.4 billion as at in June30, 2015, that was raised 8% from previous year total premium of the sector (NBE, annual report 2015).

Growth in GDP is expected to meet the envisaged target, with double digit growth. In parallel with this growth, the financial performance of the insurance sector is expected to increase though it might face many challenges. To mitigate the impact of challenges that Companies might face, however, as mandated, NBE is expected to closely working with insurers. In this connection, the Bank has recently stipulated the minimum entry level capital which has been increased from Birr 7million to Birr75million (for both lines of businesses: life and nonlife). This is expected to strengthen the sector, helps to increase retention and enables insurer to absorb above average losses.

1.3 *Statement* of the problem

An insurance company is in the business of transferring risk. It does this by accepting premium from policyholders and paying claims. It can happen that the premium collected is less than the total amount paid for claims. If this is the case, the insurer is expected to pay for the claims from the capital of the insurance company. It is for this reason that the insurance regulator has a prime concern in the capital that the insurer has maintained. The regulator concern is to maintain the safety and soundness of insurance companies so that they can fulfill their obligations to the policyholders. Whereas, the owners of (or investors) the insurance company are concerned with the return and the safety of their investment.

The National Bank of Ethiopia (NBE), which is the regulatory authority of all financial institutions, has issued a directive that requires insurance companies to have a minimum paid-up capital of 60million Birr for general insurance and 15million Birr for Life insurance, effective April 2013. This is a twentyfold increment from the previous requirement of 3million Br in case of general insurance. The ground for this increment was to require companies to maintain adequate capital that can reduce risk by cushioning the volatility of earnings, increase the premium growth (as the amount of gross premium written is linked to the capital level maintained by the company to the extent that can run up to 7 times of its capital), and lowering the probability of insurance failure.

Some of the insurance officials argue that increasing paid up capital reduces expected returns to shareholders, as equity financing is more expensive than debt and cannot be raised easily from the public market. One of the issues of their argument is that many of the companies' return on equity has been declining since the past two or three operating years as this declining was attributed to the massive increase in paid-up capital (Fortune,2014). .

From regulatory perspective, insurers need to estimate the capital they need, and then effectively manage their capital to maximize the company's value and shareholder returns considering the minimum required regulatory capital. On the other hand considerable debate is happening among the industry officials regarding the level of capital required to support their business operation and maximize return to the shareholders. Their argument goes with the tradeoff

postulates that increasing of profitability is possible when the proportion of debt to equity is increased and when Companies get more leveraged.

The analysis of factors that determine the capital structure of the Ethiopian insurance companies in context with the above discussion points had not been adequately dealt to the author's best knowledge. While the study by Regassa, (2014), Mohammedamin, (2014), Abate, (2012), Kinde, (2011), and Getahun, (2014) are worth mentioning, these studies focused on limited dataset that covered less than ten years attributed to firm specific factors and still there are differences in results (for instance the empirical results of Profitability evidenced from previous studies, Mohammedamin, (2014) is consistent with pecking order arguments with leverage being found to be negatively related to profitability, but less significant. On the contrary, the empirical results of profitability made on the same Ethiopian insurance sector was divergently found positive (Regasa, 2014) & Kinde,(2011).

The studies mentioned above considered growth opportunity as one of the variables that determine capital structure in terms of assets growth but the regression results were insignificant. In this study, one of the independent variable that is assumed to determine capital structure is growth opportunity, which is represented by premium growth. This was tested and found significantly affecting capital structure in the study made on the insurance market of Ghana, Tornyeva (2013). Earlier studies in Ethiopia also did not consider testing the effect of macroeconomic variables (such as GDP and inflation) which are expected to have significant effect on the capital structure of Ethiopian insurers. Hence this study is made to independently identify the influence of regulatory capital requirement, firm specific factors and macroeconomic variables so as to fill the above stated gap by analyzing their impact on financing decision of insurance companies in Ethiopia by utilizing the most recent dataset, covering the years 2005-2015.

1.4. Research *questions*

This study tried to address the following research questions:

1. How do growth opportunities affect the leverage of an insurance Company?
2. What is impact of profitability on the level of debt of the Company?

3. What is the relationship between liquidity and debt ratio?
4. As suggested by the trade-off theory, does size have a positive relationship with the debt ratio? Or negative relationship in line with the pecking order theory of the capital structure?
5. What is the relationship between the asset tangibility and the level of debt?
6. Does the GDP growth positively influence the leverage of the insurance company?
7. What is the effect of inflationary situation on the capital structure of the insurance Company?

1.5. *Objective*

The general objective of this study is to empirically test the influence of firm specific characteristics and macroeconomic variables on capital structure of insurance companies in financing their operations. The specific objectives are:

- To measure the effect of profitability on the capital structure of Insurance Companies in Ethiopia,
- To find out the extent to which variations in insurance size affects the capital structure of insurance companies in Ethiopia,
- To determine the effect of a change in premium growth of insurance companies capital structure
- To measure the impact of holding tangible assets on capital structure of insurers in Ethiopia
- To determine the effect of liquidity on leverage of insurance companies
- To empirically test the effect of GDP on capital structure of insurance companies in Ethiopia.
- To determine the extent of influence of inflation on the leverage of insurance companies.

1.6. Scope of the study

This study was limited to analyze the determinants of capital structure of 9 selected Ethiopian Insurance Companies from the years 2005 to 2015. The scope of study is to focus on nine insurance companies and their financial data of 11 operating years and based on conclusive research as the rest of companies that did not fall in the study were less than ten years of age in

the market. The study based key firm specific factors (profitability, growth opportunity, size, tangibility of the assets, and liquidity) and macroeconomic variables (GDP growth and inflation rate)

1.7. **Significance of the Study**

The importance of this study has been initiated from the fact that insurance sector plays a valuable role in support the economic growth of the country's economy, and providing cover for properties and services exposed for different insurable risks for people in Ethiopia. In this context, this thesis work examined the main firm specific and macroeconomic factors that determine capital structure decision of companies that enable them achieve their objectives of supporting the economy in general, the specific needs of its stakeholders in particular. The study also analyzed whether the trade off theory, pecking order theory or other capital structure theory can explain the financing pattern of the insurance companies in Ethiopia, in turn findings of the research has added to the existing knowledge on the area of corporate finance. Such analysis can help managers of insurance companies; to improve financial resource generating thereby they can improve sector performance, and become more competitive. Given limited domestic studies exclusively on insurance capital structure determinants, especially taking in to consideration of the minimum regulatory capital requirement the study was conducted to bridge the gap in this regard.

The study has also provided recommendations to the regulator of insurance companies in Ethiopia; the National Bank of Ethiopia, what level of equity capital is needed to maintain the soundness and healthy operation of Insurance Companies. Other interested parties are also be expected to benefit from this study like other potential researchers may get encouraged to conduct related research in the insurance sector

1.8. **Organization of the research paper**

This study focuses on examining the effects of firm specific and macro-economic factors on the capital structure decisions of companies in Ethiopian insurance sector. This research paper is organized into five chapters. The first chapter deals with introduction of the study. It also

discusses about the overview of Ethiopian insurance sector in general. The second chapter presents the review of related literature on the theoretical framework of capital structure and prior empirical findings on the determinants of capital structure decisions. Then, the third chapter explains about methodology and methods of the study. Empirical findings and analysis are presented in the fourth chapter. The last chapter presents the conclusion and recommendations of the study which is drawn from the findings of the study.

CHAPTER TWO : LITERATURE REVIEW

2.1. Theoretical Framework of Capital Structure

Since the publication of the Modigliani and Miller's (1958) "irrelevance theory of capital structure", the theory of corporate capital structure has been a study of interest to many researchers and scholars. Over the years, major theories of capital structure emerged which diverge from the assumption of perfect capital markets under which the "irrelevance model" is working. The first is the trade-off theory which assumes that firms trade off the benefits and costs of debt and equity financing and find an optimal capital structure after accounting for market imperfections such as taxes, bankruptcy costs and agency costs. The second is the pecking order theory (Myers, 1984) that argues that firms follow a financing hierarchy to minimize the problem of information asymmetry between the firm's managers-insiders and the outsiders shareholders.

2.1.1 The Modigliani-Miller Theorem

The theory of business finance in a modern sense starts with the Modigliani and Miller (1958) capital structure irrelevance proposition. Before them, there was no generally accepted theory of 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.

As a matter of theory, capital structure irrelevance can be proved under a range of circumstances. There are two fundamentally different types of capital structure irrelevance propositions. The classic arbitrage-based irrelevance propositions provide settings in which arbitrage by investors keeps the value of the firm independent of its leverage. In addition to the original Modigliani and Miller paper, important contributions include papers by Hirshleifer (1966) and Stiglitz (1969). The second irrelevance proposition concludes that "given a firm's investment policy, the

dividend payout it chooses to follow will affect neither the current price of its shares nor the total return to its shareholders" (Miller and Modigliani, 1961). In other words, in perfect markets, neither capital structure choices nor dividend policy decisions matter.

The 1958 paper stimulated serious research devoted to disproving irrelevance as a matter of theory or as an empirical matter. This research has shown that the Modigliani-Miller theorem fails under a variety of circumstances. The most commonly used elements include consideration of taxes, transaction costs, bankruptcy costs, agency conflicts, adverse selection, lack of separability between financing and operations, time-varying financial market opportunities, and investor clientele effects. Alternative models use differing elements from this list. Given that so many different ingredients are available, it is not surprising that many different theories have been proposed M&M theorem - with corporate taxes (1963)

In 1963, M&M theorem was further comprehended by assumption of no corporate taxes. With respect to taxes, interest payments on debts are deductible expenses and thus reduce taxes payable, improving the firm's net income position. Following that, the value of the leveraged firm is equal to the value of the unleveraged firm plus the present value of the interest tax shield. It implies that debt financing is highly advantageous and in the extreme, a firm's optimal capital structure is 100% debt since its WACC decreases with the increase of debt financing. This may refer the important role of corporate taxes in capital structure decisions of all profit-generating entities, among which banks are not exception, Roger (2011).

2.1.2. Agency theory

Agency theory suggests that the firm can be viewed as a nexus of contracts (loosely defined) between resource holders. An agency relationship arises whenever one or more individuals, called principals, hire one or more other individuals, called agents, to perform some service and then delegate decision-making authority to the agents. The primary agency relationships in business are those (1) between stockholders and managers and (2) between debt holders and stockholders. These relationships are not necessarily harmonious; indeed, agency theory is concerned with so-called agency conflicts, or conflicts of interest between agents and principals. This has implications for, among other things, corporate governance and business ethics. When

agency occurs it also tends to give rise to agency costs, which are expenses incurred in order to sustain an effective agency relationship (e.g., offering management performance bonuses to encourage managers to act in the shareholders' interests, Spremann (1987).

There have been a number of researches on the models in which capital structure is driven by agency costs. Jensen and Meckling (1976) proposed that agency costs arise due to conflict of interest between managers and shareholders, who both desire for self-benefit maximization. Managers have a very little claim on the profit of the company yet they are fully responsible for all the profit engineering activities. Hence they have a lesser incentive to utilize the resources fully for generating profit but transfer these resources to their own benefits. As pointed out by Jensen (1986), debts can be used as a correction tool to mitigate the agency costs of managerial discretion. The reason is that when requiring the firm to pay out cash on a regular basis, debts can helps decrease the amount of "free" cash accessible by managers to spend on their personal benefits.

Another conflict of interest is between shareholder and debt holder, whose costs are called agency costs of debt. Myer (1977) argues that a firm could incur costs when a company has a profitable investment opportunity which must be financed by equity, provided an outstanding default-risky debt. In this case, if the residual benefits to shareholders are lower than the project's costs after being transferred to debt holders, managers will not adopt the project even if it is profitable. This is usually assumed as the underinvestment problem, arising when managers, acting in the interest of shareholders, may take actions that appropriate wealth from debt holders to shareholders. This implies that leverage has a negative relation with the growth opportunities of the firms.

The term 'bankruptcy cost' connoted with failure to the managers, including loss of job, loss of position and fear of takeover. It motivates managers to work harder towards efficient allocation of resources and investing in higher profitable activities, reducing the conflict with the equity holders. This alleviates the divergences between managers and equity holders, one more time asserting the benefit of debt financing. From that, they concluded that leverage is positively

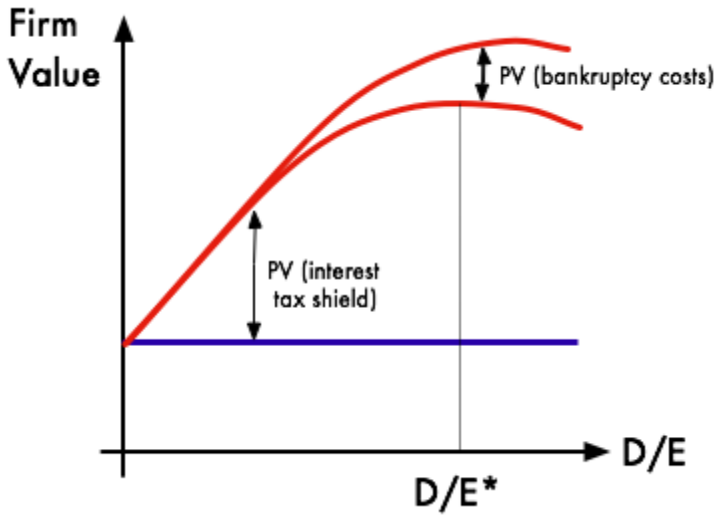
related with the value of the firm, (Grossman and Hart ,1982)

The agency theory is also expected to be applicable to insurance capital structure, for which this would be more analyzed later.

2.1.3. Static trade-off theory

The static trade-off theory is about act of balancing costs and benefits of leverage so that the value of the firm is maximized. Practically, the factors determining the target leverage ratio will not be constant. Fluctuations of these will cause the optimal leverage to change over time. Moreover, the firm's actual capital structure is not stable either. Regular leverage adjustments are hence necessary if the firm wishes to stay at its optimum. Some persistence of shocks to the capital structure can be expected. At a certain point, of course, the firm will eventually move towards the target optimum leverage margin. When and how this happens depends on the structure of the adjustment costs. In this connection, Leary and Roberts (2005) indicate that with a variable transaction cost function firms adjust continually, whereas fixed or proportional costs induce less frequent adjustments. The trade-off theory takes these inter-temporal factors explicitly into account (Frank & Goyal, 2007).

Kraus and Litzenberger (1973) develops the theory of optimal leverage ratio in which the trade-off between costs and benefits of taxes when decision of debt financing is considered. Their proposition disregards the M&M theorem (1963) that refers the optimal capital structure is 100% debt as interest on debt is a deductible expense, creating a tax shield for the firm. The basis of their argument states that, borrowing saves the firm money on its corporate taxes, but the more it borrows, the more likely it will go bankrupt. At the relatively low debt levels, the probability of bankruptcy and financial distress is low; hence the benefits of tax shield from debt may outweigh the costs. Nonetheless, at the very high debt level, tax advantage of debts may be offset by the bankruptcy costs. This is the main idea of static trade-off theory of capital structure, saying that firms borrow up to the point where marginal benefits of tax shield should be higher than marginal bankruptcy costs.



***Source**: Brealey, Myers and Allen (2007, 504)*

As the Debt equity ratio (i.e. leverage) increases, there is a trade-off between the interest tax shield and bankruptcy, causing an optimum capital structure, D/E*

Furthermore, there are more costs and benefits involved with the use of debt and equity such as agency costs as mentioned earlier. Incorporating agency costs into the static trade-off theory, capital structure is determined by balancing the trade-off between tax benefits against bankruptcy costs, and between benefits of debt when mitigating agency costs of managerial discretion against agency costs of debt arising from asset substitution effect.

The application of trade-off theory to capital structure` suggests a positive correlation between firm's profitability and size and its leverage ratio. Believing a profitable and large firm would be in less danger of bankruptcy, it is supposed to rely more on debt financing to take advantage of tax benefits. Moreover, profitable firms face higher agency costs of managerial discretion, hence likely would be interested in debt contracts as a mitigation tool.

The insurance companies being engaged in businesses with distinctly high leverage ratios, they are supposed to have higher probability of bankruptcy. However, insurance companies unlike non-financial firms are closely regulated on their minimum capital requirement, lowering the

chance of insolvency. Hence, the trade-off between costs and benefits of debt financing is still highlighted to insurers yet somehow different from its application to non-financial firms.

2.1.4 Pecking Order Theory

The pecking order theory illustrates that companies prefer internal financing to external financing and, when external funds are needed, debt is preferred to equity (Myers, 1984). This order of decision taking comes from asymmetric information between managers and outside investors about the value of the firm's current assets and growth opportunities (Myers and Majluf, 1984). When managers reach to a decision to issue new shares, potential investors have to estimate their true values. In doing so they take into account that managers, which are assumed to maximize the wealth of the current shareholders, are more likely to issue shares when the firm's stocks are overvalued in the market than when they are undervalued.

Assume that a firm eyes a potential investment project with a high NPV and that it can only finance this project by selling shares. Because of the dynamics outlined above, it can be expected that the shares can only be sold at a discount to their true value. If this discount is sufficiently large, management will decide to drop the investment as the value loss to existing shareholders due to the discount will offset the value generated by the project.

Managers are expected to increase internal capital at the time of there is a financial surplus in a given year. This way they try to prevent ending up in the situation where the firm must forgo a profitable project because it has to rely solely on selling shares to the public. When the reserves of retained earnings fail to cover investments, a firm will first issue debt before moving to the last resort of raising capital. As the value of debt is less sensitive to inside information than the value of equity, debt can be assumed to rank between equity capital and retained earnings (Myers, 1984).

In comparison with the trade-off theory, the pecking order theory does not assume a target capital structure. Instead, it predicts that leverage changes can be explained by the financing deficit, which is defined as the difference between the external and internal cash flow. In this case, external cash flow is assumed to comprise the sum of dividends, net investments and changes in working capital, where as internal cash flow assumes to hold the operating cash flow

after net of interest payments and taxes (Frank & Goyal, 2003). When internal cash flow exceeds external cash flow, the pecking order theory predicts that firms build up financial slack, leading to a decrease in leverage. On the contrary, when internal cash flow is less than the external ones, this would induce firms to increase their leverage. In the latter, firms would either use part of the financial resources retained in the past, or, when that option is used up, they would borrow from an external source of financing. At the last, when the limits of their borrowing capacity get limited, they tend to issue new shares (Lemmon & Zender, 2010). The latter would, however, only happen infrequently and under rather extreme conditions (Fama & French, 2005).

2.1.5. Financial Theories from insurance perspective

For insurance companies, the trade-off and pecking order theory can be applied in case of financing decisions of insurance operations. As has been already discussed earlier, premiums received for services of insurance covers are the main source of finance for insurance companies, with the outstanding claims and unearned premiums as the corresponding liabilities. In lines with capital structure, insurance policies take some characteristics with debt instruments such as bonds. The customer of insurance company pays a certain amount to the insurer, either at once or periodically, in exchange for the promise that a sum of money will be paid out as compensation in accordance with the terms of the policy agreement. This implies that, as if the insurer borrows money from the policyholders Staking & Babbel, (1995). That means the policyholders act as the lenders, the insurer acts as the borrowing entity, the premiums paid constitute the amount lend by the policyholders and the claim payments are comparable to the refund of the principal plus the coupon payments. It should be stressed that we refer to the policyholders as a whole, not individual policyholders Therefore, we will treat an increase in policies, which should eventually translate into larger technical provisions, as an increase in leverage.

Insurance policies still differ significantly from debt instruments. Most prominently, while for debt securities the principal is a fixed amount to be paid at a predetermined date, for an insurance policy it is highly uncertain whether the contractual conditions for a pay-out will be

met. Moreover, in the latter case the size and the timing of the potential payment are uncertain. Another crucial difference is that insurance policies are not only a source of financing. Underwriting insurance contracts is the focus of the sector and can generate earnings for the companies. Debt financing, in contrast, is in itself not profitable. We will now interpret the two major capital structure theories, allowing for the fact that the main source of leverage is now the issuance of insurance policies rather than debt.

2.1.5.1. Trade-off Theory from insurer perspective

From the perspective of general version of the trade-off theory, the focus is on costs and benefits of leverage and weighs them against each other. The fact that insurance policies can lead to an underwriting profit is clearly an important benefit in comparison with equity capital. Plus to this, the tax shelter provided by increased leverage applies to insurance liabilities as well. Paying out claims or reserving funds for future claim settlements reduces the taxable profit. Furthermore, an additional benefit of the increased use of policies as a source of funding is that this way the insurer can exploit the law of large numbers to a greater extent and that it can further diversify its risks. The law of large numbers is stating that when an experiment is repeated a larger number of times, the average of the results will approach the expected value more and more. Consequently, when an insurer issues more policies, it will be able to predict the total future claim payments more accurately. As a result, the level of premiums needed can be determined more precisely This allows the insurer to estimate the required premium level more accurately and decrease the overall risk level of the insurer's portfolio, resulting in more profitable operations in the long run, (Nissim, 2010)

Also in line with the general explanation in the first section, when leverage increases, or equivalently, the surplus shrinks in relative terms, the risk of financial distress increases. The negative effect of this risk on the insurer's value can, however, is expected to be more severe than for firms in most other, non- financial industries. In insurance and by extension in financial industries in general, trust in the solvency of the institution is of major importance. It has been shown that default risk is negatively correlated with insurance prices, Cummins & Danzon, (1997). Also, when the surplus of an insurer relative to its total assets is reduced below a certain

level, regulatory action will be triggered. In that case, some constraints will usually be imposed on the firm which might reduce the value of the company by limiting its discretion. The threat of insolvency could also necessitate some emergency measures such as selling off investments before maturity at a value below par or raising capital at a low issue price.

Considering the agency conflict considerations, the conflict of interest between the manager of the company and the shareholders can be recognized in the same way as in the general trade off case. Given the time lag between collection of premiums and payment of claims, we know that insurance managers always have significant amounts of cash they have to invest. Therefore, we could expect that they are, compared to their peers in other industries, better able to maximize their personal utility through the choice of investments. However, matching assets to liabilities plays an important role for insurers. The degree to which managers have the ability to choose assets according to their personal preference is thus not necessarily greater than in other industries. Of course, many other possibilities exist for management to optimize their own situation while not necessarily acting in the best interest of shareholders, (Garven, 1987)

Identical to what was written above, shareholders can expect to incur some agency costs resulting from the conflict. Whereas an increase in debt clearly reduces these costs, the effect of more insurance liabilities is ambiguous. More policies will lead to greater claim expenses in the future, which one could interpret as reducing the cash available for discretionary spending by managers. Nevertheless, if an insurer is able to gain an underwriting profit on the additional policies, i.e. the premium revenue exceeds the claim expenses, and then its profit would increase. Consequently, managers could actually have more funds available to spend. Mayers and Smith (1994) argue that the manager-shareholder conflict is more severe for firms active in lines of insurance that require significant managerial discretion. This is typically the case when policies are non-standardized and premium rates are of haphazardly set. It can also be expected that, the policyholders, will find it more difficult to mitigate this agency conflict because they usually have less control over their risk managers' behavior, Mayers & Smith, (1994).

Insurers' use of pure debt is minimal. Accordingly, although still valid, the agency conflict

between shareholders and bondholders is of little importance. Yet, a very similar, but much more important, kind of agency conflict exists between shareholders and policyholders. Shareholders have a residual claim on the firm, i.e. they have a claim on the value of the firm that remains after policyholders (and debt holders) have been paid. Therefore, the argument of the preceding section still holds. Under certain circumstances it will be optimal for the shareholders to increase the risk of the firm's activities or investments after insurance policies have been issued. Stepping up the level of risk can, for instance, be achieved by engaging in more risky lines of insurance, investing the premiums in speculative assets or using less reinsurance. Potential policyholders will take this possibility into account when they choose an insurance provider because it would increase the risk of their claims not being paid. This will translate into lower prices for those insurers which are expected to change their risk level, such that the owners of the firm bear the costs of this agency conflict. By holding more capital the insurer can reduce its incentives to shift risks ex-post, thereby reducing the agency costs Cummins & Nini, (2002);

2.1.5.2. **Pecking Order Theory from insurer perspective**

The pecking order theory focuses on the analysis of asymmetric information. Thus, in order to properly apply this theory to insurers, it is obvious to take this aspect into account. Both premiums from policyholders and funds obtained through other liabilities clearly are forms of external financing. In this sense, the pecking order theory shows us that external premium financing are more expensive than internal funds because external parties do not have full knowledge about the insurer's situation. In particular, potential policyholders are uncertain about the future ability of the insurer to cover their claims. As outsiders, it is generally very difficult for them to judge the adequacy of the technical provisions and the capital buffer. Insurers do not disclose detailed information about the risks they are covering and policyholders usually lack the technical knowledge of calculated risks of the company, Cheng and Weiss (2012). Insurance liabilities have legal priority over debt. In case of bankruptcy or liquidation, the latter will only be paid after all insurance liabilities have been settled. As a result, investors holding debt should be more interested in the fundamental value of the insurer than policyholders. The pecking order theory would thus state that debt instruments are more expensive sources of funds than insurance policies, because of their greater sensitivity to inside information. For stock insurers another

possibility to gain financing is issuing new shares. However, according to the pecking order theory, insurers would prefer the previous two possibilities, as the residual nature of equity holders' claims results in the largest information sensitivity, Miller (1989)

In summary, the pecking order theory proposes that insurers will build up financial slack whenever they can. When, on the contrary, they face a financing deficit, they will first use the internal funds available to them. Then, they would turn to external financing. First, by underwriting insurance policies, next,by issuing (subordinated) debt and, finally by issuing new shares.

2.1.6. **Other financial theories**

2.1.6.1. **Signaling *Theory***

In the pecking order model, good quality firms have to use internal funds to avoid adverse selection problems and losing value. These firms cannot signal their quality by changing their capital structure. In signaling theory capital structure serves as a signal of private information (Ross, 1977). The main prediction of this theory is that the market reaction on debt issues (more generally, on leverage-increasing transactions such as issuing convertible debt, repurchasing shares, and debt for equity swaps) is positive. Similarly, the market reaction on equity issues (or leverage-decreasing transactions) is negative. Leland and Pyle (1977) obtain the same results by using managerial risk-aversion instead of a bankruptcy penalty. A negative share price reaction on the announcement of equity issues is usually consistent with empirical evidence, (similar for leverage-decreasing transactions). Evidence on the positive market reaction on leverage-increasing transactions (with the exception of debt issues) also supports signaling theory (Masulis, 1980)

2.1.6.2. 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).

2.2. Empirical Findings on Capital structure

2.2.1 Empirical findings in developed countries

After introduction by Modigliani and Miller on their seminal paper on capital structure, there are quite a number of researches directed towards finding the determinants of capital structure choice. Research on the determinants of capital structure initially was directed mainly on firms in the United States. One of the classical researches was carried out by Titman and Wessels (1988) where they studied the theoretical determinants of capital structure by examining them empirically. The theoretical attributes namely; asset structure, non-debt tax shields, growth, uniqueness, industry classification, firm size, earnings volatility and profitability were tested to see how they affect the firm's debt-equity choice.

As stated previously, there were many papers written by research scholars on capital structure choices that are mostly based on empirical data of the firms in the United States only. To broader the understanding of capital structure models, Rajan and Zingales (1995) have attempted to find out whether the capital structure choices in other countries is based on the similar factors of those influencing capital structure of U.S firms. For this purpose, the accounting data and monthly stock prices for five years, from 1987 till 1991 were collected from the international financial database called Global Vantage of all the G7 countries; namely the U.S, Japan, Germany, France, the U.K, Italy and Canada. Five different leverage ratios were calculated from the data collected that includes non-equity liabilities to total assets, debt to total assets, debt to net assets, debt to capital and interest coverage ratios. It appeared that the corporate leverage was fairly similar across the G-7 countries with the exception of the U.K and Germany, where firms were substantially less levered. Rajan and Zingales noted that across the countries, the asset tangibility

was positively correlated with leverage for all the countries as theory supported the notion that firms having more fixed assets in their assets mix will use that as collateral to get more loans or debt. The market to book ratio seemed to be negatively correlated with leverage except for Italy. Having high market value of the stocks would enable firms to issue more stocks and not seeking debt. Size of firm was positively correlated while profitability was negatively correlated with leverage in all countries except Germany.

In another study, Chen and Jiang (2001) used the structural equation modeling technique to examine the determinants of capital structure choice for Dutch firms. In their study, Chen and Jiang used seven independent variables and tested them to see the effect on leverage which includes provision ratio, tangibility, firm size, growth opportunity, profitability, earnings volatility and flexibility. The financial data from 1992 through 1997 were extracted from Dutch companies. The results indicated that provision, tangibility, firm size and financial flexibility appeared very significant while growth, profitability, volatility and industry dummy appeared to be least significant factors in the Dutch capital structure.

Hussain and Nivorozhkin (1997) studied the capital structure choice of listed firms in Poland using the firm level panel data. The result of the study shows that the firms in Poland generally had very low leverage levels due to reluctance of banks to grant loan to old and risky firms and the growing of equity market there. Therefore, Hussain and Nivorozhkin attempted to find out what firm characteristics that a firm has in order to get more leverage or higher leverage. To answer their question, eight firm specific factors were examined, namely ownership structure, dividend policy, asset characteristics, firm size, profitability, age, taxes and cash positions. The results indicated that large, new, foreign owned firms and firms with strong cash positions have higher levels of leverage. The age factor indicated that old firms enjoy smaller leverage and this could due to older firms having better reputation and can rely on stock market for financing. Except for age, other factors examined appeared as expected.

One of the recent studies on the determinants of capital structure choice of a developed nation was carried out by Miguel and Pindado (2001) gathered some new evidence on the corporate

capital structure from Spanish panel data. Firm specific factors and institutional characteristics were examined to the see the effect on leverage. Among the factors considered in this research include tax aspects, agency cost problems, financial distress and interdependent between investment and debt. The financial data of companies were gathered from the Security Exchange Commission while the market value of equity was extracted from the Stock Exchange Official Daily List. Altogether 133 companies from 10 industries between 1990 and 1997 were analyzed. The results indicated that the non-debt tax shields and financial distress costs were negatively related to leverage. A negative relationship was also noted between cash flow and leverage in the presence of asymmetric information. As a whole, these results were in line with the pecking order theory

2.2.2. In Developing Countries.

There were many empirical researches undertaken by scholars on capital structure choices in the developed nations. Relatively little research work on firms' financing decision has been done in developing countries as compared to developed nations that saw the applicability of the theories of capital structure generated from them, Shah & Khan (2007). The main difference between developing and developed world is that in developed world firms finance their leverage with long term debt and short term debt is mainly contributing in leverage of firms in developing world (Booth et al 2001). Mayer (1990), Singh (1995), Cherian (1996), Cobham and Subramaniam (1998) were among the scholars who have studied the capital structure issue in the developing nations.

For instance, Singh (1995) observes that developing countries' firms finance themselves differently, mainly due to a different financial environment. He examined financing patterns of 100 top corporations in ten developing countries .The basic conclusions were that, first, in developing countries**,** there is an inverse pecking order as corporations rely heavily on external financing, especially stock issues and short-term finance. Second, top corporations in developing countries rely more heavily on equity issues than their counterparts in developed countries. While in the UK and the US, large issues of stock by large corporations are likely in the periods of high takeover activity; developing countries corporations use the proceeds to finance their

regular investments, which is a major difference in motivation to issue shares. In contrast to Singh (1995), Booth et al (2001) has carried out a research on ten developing countries data to review whether capital structure theory is convenient across countries with different institutional structures. According to their finding, the decisions on capital structure choice of the firms of those developing countries are affected by the same variables as in developed countries.

They argued that the variables that are relevant for explaining capital structures in the United States and European countries are also relevant in developing countries, despite the profound difference in institutional factors across these developing countries. Assets tangibility, average tax rate, size, business risk, profitability were taken as independent variables. The results showed that the more profitable the firm having free internal cash flow, the lower the debt ratio.

Rataporn et al. (2004) are also investigated the determinants of capital structure of firms in four countries from the Asia Pacific region. According to their finding the firm size has positive effect on the leverage and growth opportunities, non-debt tax shield, liquidity and share price performance has the negative effect on leverage which mainly support to major capital structure theories.

There were only very few recently done studies on capital structure available in Ethiopia. Kindie (2011) has attempted to examine the role of firm specific factors s in determining a firm's capital structure. He made an empirical assessment on nine Insurance Companies operating in Ethiopia that covers the period from 2004 to 2010. The intention of the study was to search the specific factors that determine capital structure in the case of insurance industry in Ethiopia. Panel data model with OLS regression analysis technique were used. The study has shown that growth, profitability, business risk and age of the firms are significant variables in explaining the capital structure pattern of those insurance companies included in the sample

Another study by Shibru (2012) in case of 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, Shibru (2012) also revealed that profitability, liquidity, and tangibility appeared a significant negative relationship with leverage while only firm size positively and significantly related with the dependent variable. Solomon (2012) on his study in case of Ethiopian insurance sector, took firm specific factors of profitability, size, liquidity, growth, non-debt tax shield, dividend payout, age, size, and tangibility as independent variables and regressed them against the dependent variable of leverage as measured by total debt ratio over the period of eight years from 2003-2010 . The results of his study implied size, growth, business risk, and non-debt tax shield to have a significant direct impact on leverage of insurance companies in Ethiopia. On the other hand, his study revealed that factors of profitability, liquidity, tangibility, firm age, and dividend payout had no any significant relationship with capital structure of firms in Ethiopian insurance sector.

Out of the financial sector, Amanuel (2011) in case of manufacturing share companies of Addis Ababa city; regressed firm's profitability, earnings volatility, size, age, tangibility, non-debt tax shields, and growth against leverage as measured by total debt, long term debt and short term debt ratios over the period of seven years from 2004-2010. From his regression results; he conclude that tangibility, non- debt tax shields, earning volatility, profitability, and size of the firm were the significant determinants of capital structure for Addis Ababa manufacturing share companies whereas; firm's growth and age had no statistically significant impact on leverage in any of the three capital structure models. Specifically, he found that tangibility, profitability, non-debt tax shields, and earnings volatility to have a significant positive relationship with leverage; whereas size appears a significant and positive relationship with total debt ratio.

Usman (2013), for his study in case of large tax payer share companies in Ethiopia for the study period of 2006-2011 used explanatory variables of profitability, size, age, tangibility, liquidity, non-debt tax shield, growth, dividend payout ratio, and earnings volatility then regressed them against the dependent variable of leverage as represented by long term debt ratio. Usman (2013)

found that size, age, tangibility, liquidity, and non-debt tax shield of a firm were positively associated with leverage whereas; profitability, earnings volatility, and dividend payout ratio established an inverse relation with leverage. Moreover, he revealed that among the regressed variables, only Growth opportunity variable was statistically insignificant in affecting capital structure of large taxpayer share companies in Ethiopia, suggesting that, Agency cost theory as more relevant theory for the sector.

2.3. Firm Specific Factors

2.3.1. 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. Booth et al. (2001) state: "The more tangible the firm's assets, the greater its ability to issue secured debt and the less information revealed about future profits." Thus a positive relation between tangibility and leverage is predicted.

Rajan and Zingales, (1995), Friend and Lang, (1988) and Titman and Wessels, (1988) found positive relation between tangibility and leverage. On the other hand, Huang and Song (2002) experience a negative relation between tangibility and leverage. But regarding maturity structure, Booth et al. (2001) argued that the influence of tangibility will differ between the long-term and total-debt ratios as firms match the maturity of their debt to the tangibility of their assets. According to the result, the more tangible the asset mix, the higher the long term debt ratio, but the smaller the total-debt ratio (Booth et al., 2001) In Ethiopia Ashenafi (2005) has found an inverse relationship between asset tangibility (asset composition) and capital structure. Although, the result shows statistically insignificant, Kinde (2011) also found negative relationship between asset tangibility and capital structure

2.3.2. 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 (leverage 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, Krenusz (2004) conducted empirical studies on the determinants of capital structure in the United States, Germany and Hungary. Among the ratio examined was liquidity ratio, which is given by the ratio of current assets over current liabilities. The result indicated a strong negative relation between leverage and liquidity. Ahmed et al. (2011) found negative relationship between leverage and liquidity. On the reverse, Kinde (2011) found a significant positive relationship between liquidity and leverage in Ethiopian Insurance companies' capital structure.

2.3.2. 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 Harris and Raviv (1991), Rajan and Zingales, (1995), Huang and

Song, (2002), Booth et al., (2001), Titman and Wessels, (1988). Ashenafi (2005) also found the inverse relationship between leverage and profitability. Similarly, Kinde (2011) on his study focusing on Ethiopian Insurance sector found that a significant negative relationship between profitability and leverage.

2.3.3. 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.

2.3.4. 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

2.4. Macroeconomics factors

2.4.1. GDP Growth

Gross Domestic Product (GDP) was one of the macroeconomic variables tested by very few studies (Booth et al., 2001 and Muhammad, 1999). 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. The financial statements were collected for the listed corporations in Hungary and Portugal between 1995 and 1999 and leverage was defined from the data collected. 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.

2.4.2. 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

2.5. Conclusion and Knowledge Gap

Having optimum capital structure is a paramount importance in all forms of companies regardless of the types of business they engaged, size or level of growth. Right mix of debt – equity level of capital will boost the value of the companies and saves them from losses caused by financial distress that arises from high indebtedness as well as being exposed for high cost of capital for holding too much equity capital. As a custodian of public money, insurers need to estimate the capital they need, and then effectively manage their capital to maximize the company's value and shareholder returns considering the minimum required regulatory capital. Many of the researchers who dedicated their time and effort were to find out basic determinants that optimize capital structure in different sectors. Though this has been extensively researched, there is no single formula or theory that conclusively provides the optimal capital structure for all firms of firms.

The analysis of factors that determine the capital structure of the Ethiopian insurance companies in context with the above discussion points had not been adequately dealt to the author's best knowledge. While there are few studies made on this sector and need to worth mention their contribution , most of these studies did not reach a conclusive common results, for instance the empirical results of Profitability evidenced from previous studies, Mohammedamin, (2014) is consistent with pecking order arguments with leverage being found to be negatively related to profitability, but less significant. On the contrary, the empirical results of profitability made on

the same Ethiopian insurance sector was divergently found positive (Regasa, 2014) & Kinde, (2011)

Hence this study is made to independently identify the influence of firm specific factors and macroeconomic variables so as to fill the above stated gap by analyzing their impact on financing decision of insurance companies in Ethiopia

CHAPTER THREE: RESEARCH METHODOLOGY

3.1. Research approach and Design

To conduct a research, there are different ways of approaching the problem. According to Creswell (2009), there are three approaches of research; quantitative, qualitative and mixed. The following discussions briefly presents the basic features of these research approaches.

Quantitative research is a means for testing objective theories by examining the relationship among variables. On the other hand, qualitative research approach is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem with intent of developing a theory or pattern inductively. Finally, mixed methods approach is an approach in which the researchers emphasize the research problem and use all approaches available to understand the problem (Creswell, 2009).

In this study, to assess determinants of capital structure in Ethiopian insurance companies, quantitative research approach has been employed and panel data has been used to analyze the resulting estimates so that stated objectives and hypothesis are addressed accordingly. According to Shikur (2015), a quantitative panel data give more informative data, more variability, less linearity among variables, more degrees of freedom and more efficiency. Moreover repeated cross section of observations over a range of years are better suited to study the dynamics of change, can better detect and measure effects that simply cannot be observed in pure cross-section or pure time series data. All this indeed minimizes the bias that might result if we aggregate individuals or firms into broad aggregates.

The procedure used for drawing the sample from the available lists is the insurance service year profile, for the reason that the study intend to use documented sources. Therefore, sample size is decided based on the availability of operating data in the insurance companies operating in Ethiopia.

3.2. Source of Data and data collection techniques

The data on insurance companies shall be taken from annual reports of NBE, and for macroeconomic factors, Ministry of Finance and development (MoFED). While information related to Ethiopian insurance companies capital structure and firm characteristics are collected from the NBE and data on macroeconomic variables (GDP and inflation) were collected from MoFED and the NBE web site.

3.3. Sample size and Sampling Technique

While the target population for this particular study was all the Insurance Companies, currently operating in the country, a sample of 9 insurance companies (EIC, Nice, Awash, United, Africa, Nile, Nyala, Global and Nib) was taken from the total population of 17 insurers that account aggregately more than 70% (NBE, 2015) of market share(in terms of premium, asset and capital) that covers 11years period (from 2005 to 2015) to provide for 99 observations (9Ins * 11 years).

A variety of 'rules of thumb' exist regarding minimum sample sizes, the most common being that it should be at least 10-15 data points per predictor parameter in a model (Pirk , 2013) ; e.g. with three predictors such as growth, debt to total asset ratio and size, you would need 30 to 45 experimental units (Field, 2012). For regression models (Eviews software), where you have k predictors, the recommended minimum sample size should be $50 + 8k$ to adequately test the overall model, and $104 + k$ to adequately test each predictor of a model (Green, 1991). Nevertheless, the number of observations, 99, provided in this study is below the minimum required of 106 (50+8*7 independent variables) observations according to the model 50+8K. Even though it is time consuming and expensive to collect data about every individual institution in the population, the sample sizes to be judged is constrained with the availability of data for companies that are out of sample size because of their late entry to the market that aged less than ten operating years. The procedure used for drawing the sample from the available lists is the insurance service year profile, for the reason that the study intend to use document sources. Therefore, sample size is decided based on the availability of operating data in the insurance operating in Ethiopia. According to Singh, (2006) when the subjects used in the sample is homogeneous, using purposive sampling technique is appropriate. Therefore, the researcher used

purposive sampling method to draw the sample from the population.

3.4 Description and Measurement of Variables

3.4.1 Dependent Variable

According to corporate finance literatures, there are three ways that commonly used to measure capital structure including market value leverage, book value leverage, and interest coverage ratios. Among those three measures, book value leverage is used in a repeatable manner to measure capital structure in majority of empirical studies pertaining to capital structure determinants. Three ratios namely long term debt, total debt (total leverage), and debt to equity ratios are the most widely used ratios to represent book value leverage, in majority of empirical researches in relation with capital structure determinant. Previous research work that include Najjar and Petrov (2011), Solomon (2012), Woldemikael (2012), Mohamed and Mahmoud (2013), and Tornyeva (2013) employed total debt ratio (also known as total leverage) calculated as total debt divided by total assets to measure leverage of firms.

For this study, the researcher has used the leverage ratio as a dependent variable which is measured by the ratio of total debt to total assets

3.4.2. Independent Variables

As an independent variables the researcher has assumed to test a total of five firm- specific explanatory variables i.e. Profitability, Growth opportunity, size, asset tangibility and Liquidity and two macroeconomic variables that include GDP and Inflation. The description of those explanatory variables and related hypothesis is described as follows;

3.4.2.1. Profitability

In many of empirical researches and financial theories, profitability factor is one of the major firm specific factors that determine capital structure of a firm. Trade off theory predicts a positive relationship between profitability and leverage of a firm. On the other hand, pecking order theory argues a negative relation of profitability and leverage, implying that more profitable firms will become less levered through time due to utilization of internally generated cash flows for financing their operation. In literatures, various measures such as ratio of

operating income over sales and operating income over total assets (Titman and Wessel (1988)), the return on total assets, which is calculated as the ratio of EBIT to total assets (Rajan & Zingals (1995), Ozkan (2001), Gaud et al (2005) were used as a measure of profitability.

Profitability in this study will be measured as a ratio of earnings before interest and tax (EBIT) to equity. Furthermore, in this study profitability is expected to have a negative relationship with leverage, in line with pecking order theory as well as majority of empirical evidences. Therefore on the ground of the above analysis, research hypotheses is developed as below

H1. There is negative relationship between profitability of the insurance companies and its leverage ratio

3.4.2.2. *Growth* Opportunity

The trade-off theory predicts a negative relation between leverage and growth emphasizing that growth firms lose more of their value when they go into distress thereby they will be less leveraged .In contrast. Pecking order theory predicts a positive association of firm's growth with its debt level, implying that firms with more growth opportunity should become more leveraged through time. Frank and Goyal (2005) stated that growth of a firm is one of among the major firm specific factors that can influence funding choice. For this study, in line with pecking order theory, the researcher hypothesized that there is a positive relationship between growth opportunity of the firm and its debt ratio. Growth opportunity of the firm is measured by the annual growth rate of total assets.

H2. The insurance companies with high growth opportunity have high leverage ratio

3.4.2.3. Size of the firm

According to major theories of capital structure as well as respective empirical investigations, farm's size is one of the few powerful internal factors that can determine capital structure of firms. Trade-off theory predicts a direct relation of leverage and firm size implying that larger firms are typically more mature firms with a reputation in debt markets and consequently face lower agency costs of debt (Frank and Goyal, 2005). On the other hand, pecking order theory postulates an inverse association of firm‟s size and its leverage implying that large firms will have easy access to financial markets and can raise cheaper equity. Besides theoretical debate,

vast majority of empirical studies reviewed by the researcher including Amanuel (2011), Woldemikael (2012), and Cekrezi (2013) found a robust positive association of firm size (measured by natural logarithm of total assets) and leverage. As a result, in line with trade off theory and empirical evidences, size represented by natural logarithm of total assets was expected to have a positive relationship with firms‟ leverage in this study. For this study the ratio of total fixed assets to total assets is used as a proxy for tangibility of assets

Taking the tradeoff's view and many of the studies mentioned above, the research hypothesis is formulated as below:

H3. There is a significant positive relationship between the firm size and the debt level of the Ethiopian insurance companies

3.4.2.4. Asset Tangibility

The trade-off theory, states that higher levels of collateral contribute to the firm tending more to debt. In relation to this, Scott (1977) stated that, companies with higher levels of collateral find it easier to access debt, given that companies' fixed assets contribute to reduced information asymmetry. Most of the empirical studies evidenced a positive influence of asset tangibility on leverage. Booth et al. (2001) state: "The more tangible the firm's assets, the greater its ability to issue secured debt and the less information revealed about future profits." Thus a positive relation between tangibility and leverage is predicted.

For this study the ratio of total fixed assets to total assets is used as a proxy for tangibility of Asset. The hypothesis is formulated as

H4. A firm with higher percentage of fixed assets will have higher leverage ratio.

3.4.2.5. Liquidity

Liquidity indicates the ability of a firm to meet its short term obligations as they come due by using its liquid or short term assets. As measured by the ratio of current assets to current liabilities, liquidity factor employed by numerous researchers as one factor to affect financial structure decision made by firms. According to majority of such empirical studies pertaining to capital structure determinants, liquidity appeared to have negative association with leverage.

Since most of prior empirical studies have found the negative relationship, in this study it is expected that there is a negative relationship between liquidity and leverage. Liquidity is measured as a ratio of total current asset to short term liability.

Thus this study establishes the research hypothesis as follows:

H5. There is negative relationship between Liquidity and leverage of the firm

Macroeconomic variables

3.4.2.6. Gross Domestic Product (GDP)

GDP growth factor as measured by annual real gross domestic product growth rate reflects how much a country‟s overall economy is growing as compared to its own one year lagged value. 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 including Cekrezi (2013) and Bas et al. (2009), confirmed positive relationship of GDP growth rate and leverage. In this study GDP or gross domestic product considered to have a significant positive effect on corporate leverage of firms. Hence, the hypothesis is:

H6: Growth of GDP growth has a positive impact on leverage of insurance companies in Ethiopia

3.4.2.7. Inflation

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) ascertained also that there was a positive relation of inflation rate and debt level. Inflation rate is measured by annual general inflation rate in Ethiopia. Hence, the hypothesis for this variable is formulated as;

H7: There exists a significant positive relationship between inflation rate and insurance firms' leverage in Ethiopia

3.5. Regression Model Specification

The study will use a panel data which combines the features of both time-series and cross-sectional data. As noted by Shah and Khan (2007), "Panel data follows a given sample of individuals over time, and thus provides multiple observations on each individual in the sample". They also noted that panel data provides information on a number of statistical units for a number of years, Shah and Khan (2007). Regarding the use of panel data, Paula &Zelia (2007) mentioned two basic benefits. The first benefit of working with panel data understands the development overtime of the relationship between explained variables and explanatory variables. The other benefit of using panel data is allowing the researcher to measure the difference between companies which are not observable and these differences having the name of individual effect.

In order to achieve the objectives of this research study, the panel data regression model is used to identify the relationship between the leverage of insurance companies and explanatory variables like liquidity, size of the Company, tangibility of asset , return on equity, premium growth, inflation and growth rate of GDP. Prior studies; Gatsi and Gatzo (2013) used this model to identify the determinant of insurance companies' capital structure. The collected panel data was analyzed using descriptive statistics, correlations, multiple linear regression analysis and inferential statistics. Mean values and standard deviations are used to analyze the general trends of the data from 2005 to 2015 based on the sector sample of 9 insurance companies and a correlation matrix is also used to examine the relationship between the dependent variable and explanatory variables. In addition, ordinary least square (OLS) is conducted using Eviews 7 software to determine the most significant explanatory variables affecting the capital structure of the insurance industry in Ethiopia.

Modeling is based on panel data techniques. Panel data comprises of both cross-sectional and time-series elements; the cross-sectional element is reflected by the different insurance companies of Ethiopia and the time-series element is reflected the period of study (2005-2015).

In light of the above, to investigate the effect of insurance-specific and macroeconomic determinants of capital structure, the following general multiple regression model was adopted from different studies conducted on the same area.

$LEVit = \beta_0 + \beta_1 (ISD)xt + \beta_2 (MED)yt + eit$

Where;

LEV_{it} is a dependent variable for insurance i at time t; B_0, β_1 and, β_2 represent estimated coefficients including the intercept; $(ISD)_{xt}$ represent the x-th insurance specific determinants at time t; (MED)yt represent the y-th macroeconomic determinants at time t ; eit is the error term.

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

$LEVit = \beta_0 + \beta_1 ROE_{i,t} + \beta_2 LQ_{i,t} + \beta_3 SZ_{i,t} + \beta_4 GP_{i,t} + \beta_5 TANG_{i,t} + \beta_6 GDP_{i,t} + \beta_7 INF_{i,t}$

Source: developed by researcher taking into account the previous empirical works. Where:

LEV= the dependent variable which is Leverage;

ROE = Return on equity;

LQ = Liquidity ;(ratio of C. assets to C liabilities) GDP = Real growth rate of GDP;

SZ = Size of the Company; (Nlog of Total assets) INF = inflation; annual inflation rate

GP= Growth rate of Premium expressed annual % change

TANG = Tangibility of asset of the company expressed as ratio of fixed assets to total assets

Є =is the error component for company i at time t

β_0= Constant

β= 1, 2, 3…7 are coefficient of parameters to be estimate;

i = Insurance company i = 1. . 7; and t = the index of time periods and t = 1. . . 11

3.6. Data Analysis technique

The regression analysis is considered between one dependent variable (leverage ratio) against seven independent variables (firm specific variables: Profitability, growth opportunity, size, tangibility of assets, and liquidity and macroeconomic variables, GDP and Inflation) and therefore, multiple regression analysis is used for the study.

The collected panel data are analyzed and interpreted by using descriptive statistic, correlation analysis and multiple regression estimation method. To enhance the robustness of the models and to control the cross section effects of the intercepts, the study employed fixed effect regression techniques. In an OLS panel data analysis, there are broadly two classes of panel estimator approaches that can be employed in financial research: fixed effects models (FEM) and random effects models (REM) (Brooks, 2008). As noted in Gujarati (2003) if the number of time series data is large and the number of cross-sectional units is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model and random effect model. Hence, the choice here is based on computational convenience. The study checked whether the proposed empirical model is free from autocorrelation, multicollinearity, heteroskedasticity and normality. If any one of those phenomenon turns out to be present, this would be a violation of a key assumption of OLS regression. Redundant fixed effect (likelihood ratio) test is also made to ensure that a fixed effect regression technique is appropriate. The results of all assumptions tests and robustness checks ensured that they are not violated. To conduct this, the researcher used Eviews 7 software as recommended by Brooks (2008) due to its ability to help researchers to analyze research easily and efficiently.

Table 3.1: Summary of explanatory variables for Capital structure.

Variable	Definition	Expected result
ROE	Return to equity ratio	-
SZ	N logarithm of size of total assets	+
LQ	Liquid assets to liquid liabilities ratio	-
GP	**Growth rate of premium**	+
TANG	Fixed Assets to Total Assets ratio	+
GDP	GDP growth rate	+
INF	Inflation	+

Source: adapted from different theoretical reviews and empirical evidences

CHAPTER FOUR : RESULTS AND DISCUSSIONS

The preceding chapter presented the research methods adopted in the study. This chapter analysis the determinants of insurance company's capital structure, using the annual balanced panel data, where all the variables are observed for each cross-section and each time period. The study has a time series segment covering from the period 2005 up to 2015 and a cross section segment which considered nine Ethiopian insurance companies..

4.1. Model Specification Test (Fixed effect Versus Random effect)

There are broadly two classes of panel estimator approaches that can be employed in financial research: fixed effects models (FEM) and random effects models (REM) (Brooks, 2008). As noted in Gujarati (2003) if the number of time series data is large and the number of cross-sectional units is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model and random effect model. Hence, the choice here is based on computational convenience. On this score, fixed effect model may be preferable than random effect model (Gujarati, 2003). Since the number of time series (i.e. 11 year) is greater than the number of cross-sectional units (i.e.9 insurance companies), selecting fixed effect model is preferable. .

According to Brooks (2008) and Wooldridge (2006), it is often said that the REM is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population, but a FEM is more reasonable when the entities in the sample effectively constitute the entire population/sample frame. Hence, the sample for this study was not selected randomly and equals to the sample frame FEM is appropriate.

4.1.1 Tests for the Classical Linear Regression Model (CLRM) assumptions

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

The errors have zero mean (E(ut) = 0). According to Brooks (2008), if a constant term is included in the regression equation, this assumption will never be violated. Thus, since the regression model used in this study included a constant term, this assumption was not violated.

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

Table 4.1. Heteroskedasticity Test: White

F-statistic	1.498597	Prob. F(7,91)	0.1777
Obs*R-squared	10.23279	Prob. Chi-Square(7)	0.1758
Scaled explained SS	8.721996	Prob. Chi-Square(7)	0.2732

Source: Eview output from data of sample insurance com, 2005 – 2015

In this study as shown in table 4.1, both the F-statistic and Chi-Square versions of the test statistic gave the same conclusion that there is no evidence for the presence of Heteroskedasticity, since the p-values were in excess of 0.05. The third version of the test statistic, 'Scaled explained SS', which as the name suggests is based on a normalized version table 4.1 of the explained sum of squares from the auxiliary regression, also gave the same conclusion that there is no evidence for the presence of Heteroskedasticity problem, since the p-value was considerably in excess of 0.05

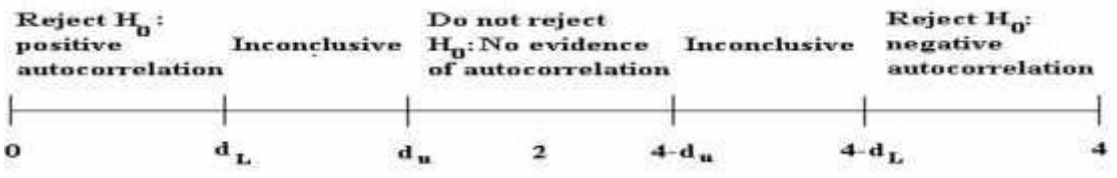
Covariance between the error terms over time is zero (cov (ui,uj) = 0.*)* This is an assumption that the errors are linearly independent of one another (uncorrelated with one another). If the errors are correlated with one another, it is stated that they are auto correlated. Brooks (2008) noted that the test for the existence of autocorrelation is made using the Durbin-Watson (DW) test. For this

study, the researcher used the Durbin–Watson test to detect the problem of autocorrelation.

According to Brooks (2008), the DW test uses two critical values; the upper critical value (dU) and the lower critical value (dL). According to DW test, the null hypothesis of 'there is no autocorrelation' will be rejected if the DW value from the regression is less than DL and greater than 4 minus dL. But the null hypothesis is not rejected if the DW value is between dU, and 4 minus dU. And finally, the test result will be inconclusive if the DW value is between dU and dL, and between 4 minus dU and 4 minus dL. The rejection /non-rejection rule is given by selecting the appropriate region from the following figure:

Rejection and non-rejection regions for Durbin-Watson Test

Figure 4.1 The result of DW value



0	dl=1.549	du= 1.803	1.991	4-du=2.197	4-dl=2.451	4

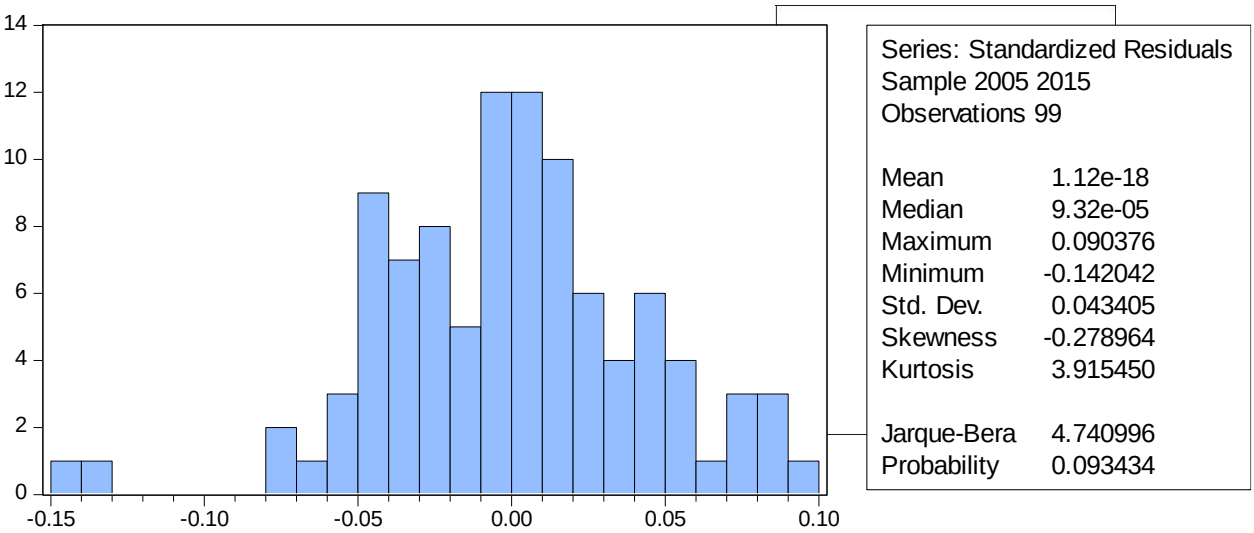
Source: Eviews output and Durbin Watson table

The Durbin-Watson test statistic value in the regression result was 1.991. To identify determinants of Ethiopian insurance companies capital structure, 99 (9*11) observations were used in the model. Therefore, to test for autocorrelation, the DW test critical values were used. Then relevant critical lower and upper values for the test are dL= 1.549 and dU=1.8103 respectively. The values of 4 - dU = 4-1.803=2.197; 4 - dL = 4-1.549=2.451. The Durbin-Watson test statistic of 1.991 is clearly between the upper limit (dU) which is 1.803 and the critical value of 4- dU i.e.2.197 and thus, the null hypothesis of no autocorrelation is within the non- rejection region of the number line and thus there is no evidence for the presence of autocorrelation.

Normality test*:* Brooks (2008) noted that if the residuals are normally distributed, the Jarque-Bera statistic would not be significant meaning disturbance to be normally distributed the mean. This study establishes a null hypothesis for residual normality and an alternate hypothesis for non-normal distribution error. Testing the normality assumption required that, not to reject the

null of normality at the 5% level, the *p*-value given at the bottom of the normality test screen should be bigger than 0.05. Figure 4.1 indicated that distribution of the panel observation is symmetric about its mean. The Jarque-Bera statistic has a P-value of 0.093 implies that the p-value for the Jarque-Bera test for the model is greater than 0.05 which indicates that the errors are normally distributed. Based on the statistical result, the study failed to reject the null hypothesis of normality at the 5% significance level

Figure 4.2. Normality test



Source: Eviews output

Multicollinearity Test- Multicollinearity in the regression model suggests substantial correlations among independent variables. This phenomenon introduces a problem because the estimates of the sample parameters become inefficient and entail large standard errors, which makes the coefficient values and signs unreliable. In addition, multiple independent variables with high correlation add no additional information to the model. It also conceals the real impact of each variable on the dependent variable (Anderson et al., 2008). Hair et al. (2006) argued that correlation coefficient below 0.9 may not cause serious multicollinearity problem. On the other hand, Malhotra (2007) stated that multicollinearity problems exist when the correlation coefficient among variables exceeds 0.75.

Table 4.2 Covariance matrix Estimation

Covariance Analysis: Ordinary

Date: 05/01/16 Time: 18:21

Sample: 2005 2015

Included observations: 99

Correlation	GDP	INF	LQ	ROE	SZ	AT	GP
GDP	1.000000						
INF	-0.672266	1.000000					
LQ	0.131347	-0.193002	1.000000				
ROE	-0.336261	-0.006538	0.101990	1.000000			
SZ	-0.346378	0.016421	-0.098573	0.648359	1.000000		
TANG	-0.125110	0.061844	0.022236	-0.234398	-0.153016	1.000000	
GP	-0.180681	0.232463	0.031506	0.216841	0.013413	-0.118807	1.000000

Source: Eviews output, 2016

The method used in this study to test the existence of multicollinearity was by checking the Pearson correlation between the independent variables. The correlations between the independent variables are shown in table 4.3 above. All correlation results are below 0.75, which indicates that multicollinearity is not a problem for this study. The three tests illustrated above proved that the applied model was not sensitive to the problems of violation of the CLRM assumption.

4.2 Descriptive statistics

In this section the study presents the descriptive statistic results for dependent variables, leverage and the independent variables discussed in the earlier chapters.

Table 4.3: Descriptive statistics for dependent variables.

Variables	**Mean**	**Median**	**Maximum**	**Minimum**	**Std. Dev.**
LEV	0.6712	0.6806	0.8367	0.2530	0.0999
ROE	0.3028	0.2774	1.2227	-0.1625	0.2197
GP	0.2301	0.1994	0.8444	-0.0980	0.1795
SZ	19.2058	19.0956	21.6275	16.9541	1.0417
TANG	0.2020	0.1767	0.5416	0.0262	0.1174
LIQ	1.1014	1.083744	2.310	0.6720	0.2800
GDP	0.1097	0.1090	0.1264	0.0982	0.0084
INF	0.1761	0.1530	0.1530	0.0613	0.1018

Source: Eviews descriptive statistics output for dependent and explanatory variables,

As it is shown above on the table, the Leverage ratio (measured by total debt over total assets) has a mean value of 0.6712. This indicates that the insurance companies in Ethiopia, are financed their total assets through debt to the extent of 67.12% and less than 33% of the total asset is financed through equity capital. Maximum and minimum leverage ratios, as measured by total debt over total assets ratio for the designated sample was 83.7% and 25.3% percent respectively whereas the dispersion of debt ratios among the sample measured with standard deviation was 9.99 %.

Insurance companies generally do finance their operation through premium financing. Thus, the result shows that the percentage of debt is high as compared to equity in financing the operation of the insurance companies in Ethiopia. Nevertheless, there is still an extra buffer to raise additional debt as far as the ratio is not exceeded the required margin of the supervisory authority maximum limit of 80%. The standard deviation (9.9%) revealed in this study was very low as compared to related findings around the world and related studies in Ethiopia. For example **in,** (Al Singlawi, **2016) study** leverage ratios of insurance companies in Jordan had standard deviation of just above 17%. Another study made in Ethiopian insurance company by Getahun,(2014) the leverage ratio had a standard deviation of 18.4%. Lower standard

deviation is a good indication that most of the observations are concentrated around the mean

The profitability of the insurance companies (measured by the profit before tax over equity which is ROE), on the other hand, has shown a mean value of 30.28%, indicating that the companies earn around 30.28% profit before tax on their total equity.

Growth opportunity, which is measured by the annual growth rate of premium, shows a mean value of 0.2301, indicating that the annual revenue of insurance companies is increased by 23.01% annually. The reason for the growth of revenue of insurance companies is highly related with the recent rapid growth of economy in the country. Hopefully, this increment of the growth of the premium of insurance companies will continue even at a higher rate in the future parallel with the continuing recorded double digit economic growth of the economy of Ethiopia.

The mean value of size is 19.2058. It indicates that the average total assets of insurance companies are Birr 109,504,322. Tangibility shows a mean value of 0.2020, indicating that out of the total assets owned by insurance companies, 20.20% is categorized as tangible or fixed assets. *Insurance* companies, those engaged in nonlife insurance business are required by law (NBE's directive) to hold at least 65% of the total assets in the form of liquid assets, i.e cash and bank balances and 10% investment in equity share. It is for this reason that insurance companies generally assumed to have less fixed assets.

Liquidity shows a mean value of 1.10. This means that the insurance companies have current assets (liquid assets) that are 1.10 times greater than their short term liabilities. This is slightly above statutory minimum standard margin of 0.95.

The mean real GDP growth rate of Ethiopian economy in the last 11 years of observation period was 10.97 percent per annum with a standard deviation of 0.84 percent. During the study period a maximum real GDP growth rate was registered with 12.64 percent whereas the minimum was 9.8 percent.. Average inflation rate of Ethiopian economy during the last eleven years of observation was 17.61 percent per annum whereas the standard deviation was 10.18 percent.

4.3. Regression result

The regression result as shown on Table 4.5 below ascertained that the study found the estimated result of multiple regression analysis is at a satisfactory level where R-squared is 81% and Adjusted R-squared value is 77%, respectively. The value of Adjusted R-squared revealed that there are strong relationships between dependent and independent variables where all independent variables can explain about 77% of the leverage of insurance compan9es in Ethiopia. While the remaining 23% of the change in leverage regression model is explained by other factors which are not included in the regression line, both R-squared and Adjusted R-squared values in this study are found to be higher (has more explanatory power) than the previous results found in Ethiopia (Mohamedamin , 2014, Kindie, 2011) .

Table 4.4 Regression results for the determinants of Capital structure

Dependent Variable: LEV

Method: Panel Least Squares

Date: 04/27/16 Time: 16:14

Sample: 2005 2015

Periods included: 11

Cross-sections included: 9

Total panel (balanced) observations: 99

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.981922	0.319090	-3.077262	0.0028
GDP	4.188418	1.117953	3.746506	0.0003
INF	0.371269	0.078694	4.717895	0.0000
LQ	-0.150369	0.026471	-5.680587	0.0000
ROE	-0.005023	0.035828	-0.140193	0.8888
SZ	0.068059	0.011533	5.901446	0.0000
TANG	-0.121532	0.054533	-2.228574	0.0285
GP	0.053907	0.029709	1.814499	0.0732

Effects Specification

Cross-section fixed (dummy variables)			
R-squared	0.811425	Mean dependent var	0.671161
Adjusted R-squared	0.777346	S.D. dependent var	0.099953
S.E. of regression	0.047164	Akaike info criterion	-3.123409
Sum squared resid	0.184631	Schwarz criterion	-2.703995
Log likelihood	170.6087	Hannan-Quinn criter.	-2.953713
F-statistic	23.80962	Durbin-Watson stat	1.990548
Prob(F-statistic)	0.000000		

Source: Eviews out put

The reliability and validity of the model was further enhanced by the Probability of (F-statistic) value (0.000) which indicated a strong statistical significance. Thus the null hypothesis of the overall test of significance that all coefficients are equal to zero was rejected as the p-value was significantly low (less than 0.05).

The dependent variable being explained is leverage which is measured by Total debt to Total Assets ratio. The independent variables that determine the capital structure (Size of total assets – SZ, current assets to current liability ratio -LQ earning before tax to equity ratio – ROE, fixed assets to total assets ratio -TAN and growth opportunity measured by annual premium growth rate – GP), which are firm specific characteristics and macroeconomic variables (GDP and Inflation) are found to be significant regressors of capital structure in Ethiopian insurance companies. Among these size, GDP and inflation are positive and statistically significant at 1% each. On the other hand premium growth was positive and significant at 10%, Liquidity and asset tangibility were also negatively significant at 1% and 5% respectively. Profitability was not statistically found **to** affect capital structure in Ethiopian insurance companies.

The following section demonstrates the impact each of explanatory variables on determination of capital structure.

Profitability

According to the Tradeoff Theory, a positive relationship between a firm's profitability and leverage ratio is expected on account of the advantage of taxes shield. More profitable firms should prefer debt to benefit from the tax shield. On the other hand, the Pecking Order theory predicted a negative relationship between firm's profitability and leverage. According to this argument, firms passively accumulate retained earnings, becoming less levered when they are profitable, and accumulate debt, becoming more levered when they are unprofitable.

In this study, the regression result shows there is a negative relationship between profitability of the Ethiopian insurance companies and their level of leverage. Though it is insignificant, the negative result can be concluded that as the profitability of the insurance companies increased, they minimize their reliance on debt financing. The negative effect of profitability to capital structure decision indicates a tendency to the pecking order theory of capital structure. This shows that insurance companies in Ethiopia would prefer to use their internal reserves or retained profits first, followed by debt and equity as the choice of corporate financing. This result is consistent with the hypothesis of the study. Most empirical studies support this negative relationship between leverage and profitability, for example Harris and Raviv (1991), Rajan and Zingales, (1995), Huang and Song, (2002), and Mohamedamin (2014)

Growth Opportunity

Pecking order theory states that firms first go to finance its projects from the internally generated funds. However, the growing firms may not capable 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. Trade-Off Theory, on the other hand, argues the existence of a negative relationship between growth opportunities and level of debt. According to this theory as companies with good opportunities for growth are encouraged to invest in high risk projects so as to maximize shareholders' income in detriment to creditors. This will results a negative relation with leverage ratio. (Myers (1977))

Consistent with Pecking Order Theory, in this study it is found that there is a statistical significant positive relationship between growth opportunity and leverage ratio of insurance. The panel fixed effect estimation regression result shows a significant positive relationship between growth opportunity of the insurance companies and their leverage ratio at 10% significant level. In general, these finding of significant (at 10% significant level) positive relationship between growth opportunity and leverage ratio is consistent with what pecking order theory suggested in which companies with relatively high growth needs more debt financing. Companies with growth potential can also find it easier to get debt financing. Besides the results was consistent with findings of previous studies Paulo & Zelia (2007), Kinde (2011) and Mohammedamin (2014.

Size

The Statistical results show that there is insufficient evidence to reject the explanatory power and the positive impact of size on leverage ratios of insurance companies. As depicted in table 4.4 above, the result of the coefficient of size variable was positive and strongly significant at 1% level with p-value of 0.0000, as expected and hypothesized. This result is the same as conclusion from Gropp and Heider (2007) and Octavia and Brown (2010). Similar to the case of non-financial firms, this can be explained by the trade-off theory. Big size insurance Companies can more easily attract more risk transfers from individuals and business firms. The saying of "Too big to fail", holds true for big sized insurance companies to attract more customers thereby increasing the leverage of the companies by premium financing.

Tangibility of Assets

Regarding the determinant effect of tangibility of the assets of the companies on their leverage ratio, the trade off theory suggests the existence of a positive relationship. The amount of fixed assets owned by the companies serve as collateral security for outside financer Mayers (1984)) and hence, the companies with high ratio of fixed assets to total assets can raise debt financing with relatively least cost. Thus, a positive relationship between tangibility of assets and leverage ratio was expected. As shown in table 4.4 above the regression result of asset tangibility was

negative and significant at 5% contrary to the expected positive relationship. This means the relationship is significant at less than 5% implying that tangibility is one of the major determinates of the leverage of insurance companies in Ethiopia such that as this variable decrease, the leverage of insurance companies increase. The results seem to be consistent with Najjar & Petrov (2011), Gatsi (2013) and Dhanasekaran et al (2012) who researched the capital structure of the insurance companies in Bahrain, Ghana and India respectively. Previous studies made on Ethiopian insurance companies also found same significant effect of tangibility on capital structure that resulted in a negative relationship with leverage, Beshir(2015) and Kindie(2011)

Liquidity

According to the Trade off theory there is a positive relationship between liquidity and leverage ratio, suggesting that the more liquid firm would use external financing due to their ability of paying back liabilities and to get benefit of tax-shields. In contrast with this view, pecking order theory 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.

Consistent with pecking order theory and the hypothesis of this study, the liquidity ratio of Ethiopian insurance companies was inversely related with their leverage ratio. The result shows that there is a statistically significant relationship at 1% significant level. Specifically, panel fixed effect estimation with a coefficient of -0.15, which is statistically significant at 1% significance level, with t-statistic of -5.680 and P-value of 0.0000 confirmed a negative relationship between liquidity and leverage ratio. The negative relationship is in line with the pecking order theory, as more liquid firms will tend to use less debt in their capital structure. Liquid firms are in possession of more internal funds, which can be used as a source of finance. Therefore more liquid firms are far less leveraged than less liquid firms. Consistent with the result of this study a number of prior empirical studies found a negative significant relationship between liquidity and leverage; Among the empirical evidences reviewed by the researcher including , Najjar & Petrov (2011), Gatsi (2013) and Dhanasekaran et al (2012), Beshir (2015), and Mohamedamin(2014) found a negative relation of firm's liquidity and its leverage.

GDP Growth Rate

The Macroeconomic variable of real GDP growth rate of Ethiopian economy was expected to have a significant and positive relationship with leverage of insurance companies within the country. As expected, the regression result in table 4.4 shows that the GDP growth has a direct significant and positive relation to the leverage of insurance companies. The coefficient of GDP was positive as expected and found statistically significant to explain the dependent variable measured as total leverage, with p-value of 0.0003 at 1%. The positive coefficient of GDP growth rate is in support of tradeoff theory which predicts positive relationship between GDP growth rate and firm's leverage. In empirical perspective, this finding is consistent with Muthama et al. (2013, Cekrezi (2013) and Bas et al. (2009)

Inflation

In this study, inflation was predicted to have a positive correlation to leverage of the insurance companies. The result indicated that the hypothesis which states that inflation has a significant positive relation with the leverage of the insurance companies resulted in a p value of (0.0000) at 1%. Results of this study are consistent with empirical studies conducted by Mohammedamin (2014) which implies inflation affects leverage of the firm. This can be explained from the results that the increase in the inflation rate actually increases the value of insurable properties which ultimately increase the premium of insurance companies which is a significant source of debt financing to companies. It also affects the value of claim costs that resultantly increase the debts of the insurance companies as stated by Ahlgrim and D'Arcy (2012).

CHAPTER **FIVE: CONCLUSIONSAND RECOMMENDATIONS**

5.1. Conclusions

The insurers play a pivotal role in supporting the growth of economy and for its well-functioning. Many activities that gear the growth of the economy like transport , construction and all other forms of business transaction get embedded with some degree of risk that are inherently exposed to it. By allowing individuals and enterprises to limit their risk exposure, insurers reduce the likelihood that economic players might restrain away from these activities because of fear for financial losses. In addition to this, the premium collected by insurers in return for covering risks is temporarily invested in various investment vehicle in the economy, thus contributing to the financing of other value-creating activities. Insurers with optimum level capital are, therefore, able to safely carry the risks they underwrite and support the economy. Hence, the capital structure of an insurer is an important subject to researchers. However, most of the studies made on capital exclude insurers and other financial firms from their sample. The potential relevance of the empirical studies for insurers has been practically ignored so far, with the exception of few mentioned in this study.

This study aimed at conducting an empirical study to examine the determinants of capital structure decisions of insurance Companies in Ethiopia. The study was made using data computed from the financial statements of insurance companies in Ethiopia during eleven-year period from 2005-2015 using descriptive statistics and multiple regressions. The sample taken for the study was nine insurance companies selected from seventeen insurance companies that operate currently in Ethiopia. Fixed effect model was applied to estimate the regression equation.

In this study, both firm specific and macroeconomic explanatory variables were considered. These include Profitability, liquidity, size of the company, growth opportunity measured by premium growth, tangibility of assets, real GDP growth rate and inflation were considered as independent variables while leverage measured by total assets to total liabilities was considered as dependent variables. The empirical findings on the determinants of capital structure of the insurance companies in Ethiopia for the sample suggested the following conclusions

- ✓ The profitability level of the insurance companies affects their leverage ratio negatively though insignificant, which supports the pecking order theory and the hypothesis formulated for the study. Thus, from the result it can be concluded that highly profitable insurance companies are more likely relied on internally generated funds and equity capital than debt capital as the source of financing.
- ✓ Consistent with the argument of Pecking Order Theory, and the hypothesis made for this study, the result is found a significant positive relationship between growth opportunity and leverage ratio of the insurance companies. Insurance companies with relatively high growth opportunity needs more debt financing than less for growing companies. Because internal fund is not sufficient to meet their requirement, and therefore they go for external financing by way of issuing more underwriting policies and thereby collect more premium to finance their operations
- ✓ Regarding to the effect of tangibility on the capital structure of insurers in this study, the regression result of asset tangibility was negative and significant at 5% contrary to the expected positive relationship, but it is in line with the pecking order theory. This means the relationship is significant at less than 5% implying that tangibility is one of the major determinates of the leverage of insurance companies in Ethiopia such that as this variable decrease, the leverage of insurance companies increase.
- ✓ Besides, the results of the study indicated that insurer's size had significant positive relationship with leverage, which was consistent with trade- off theory. This result indicates that large sized insurance companies, needs more debt financing than small sized insurance companies. Big size insurance Companies can more easily attract more risk transfers from individuals and business firms thereby increasing the leverage of the companies by premium financing
- ✓ Consistent with pecking order theory and the hypothesis of this study, the liquidity ratio of Ethiopian insurance companies was inversely related with their leverage ratio. The result shows that there is a statistically significant relationship at 1% significant level. The negative relationship shows that more liquid firms will tend to use less debt in their capital structure. Liquid firms are in possession of more internal funds, which can be used as a

source of finance. Therefore more liquid firms are far less leveraged than less liquid firms.

- ✓ The regression result shows a positive impact of GDP growth rate on the leverage of insurance companies and in consistent with the research hypothesis that GDP has a positive relationship with leverage of insurers. This is due to, the fact that increase in GDP growth raises overall income level and business performance which ultimately increase insurable properties that ultimately raises the volume of premium income and hence high leverage of the insurer.
- ✓ Inflation was predicted to have a positive correlation to leverage of the insurance companies. The result indicated that inflation has a significant positive relation with the leverage of the insurance companies resulted in a p value of (0.0000) at 1%. Results of this study are consistent with empirical studies conducted by Mohammedamin (2014) which implies inflation affects leverage of the firm. This can be explained from the results that the increase in the inflation rate actually increases the value of insurable properties which ultimately increase the premium of insurance companies which is a significant source of debt financing to companies. It also affects the value of claim costs that resultantly increase the debts of the insurance companies as stated by Ahlgrim and D'Arcy (2012).
- ✓ In general, the finding of the study suggests that, growth opportunity, size, tangibility of assets, liquidity and macroeconomic factors: GDP and inflation were important variables that influence insurance companies' capital structure. Moreover, though result of profitability was insignificant it was negative as hypothesized and influencing the financial decision of the insurance companies. The overall results also, confirms that pecking order theory was pertinent theory in Ethiopian insurance industry, while there were little evidence to support trade-off theory

5.2 **Recommendations**

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

- ✓ The analyses indicated that the independent firm specific variables of size, asset tangibility, growth and liquidity and macroeconomic variable of GDP and inflation were significantly related to leverage. Therefore, managers of the insurance companies should consider the

impact of these significant variables in determining their financing needs so as to maximize the value of the company and meet the shareholders return to the extent that gives value for their invested money.

- ✓ The regression result of the variables applied in this study indicated that the pecking order theory exceedingly appears to exert influence on the insurance company's capital structure. It is, therefore, important for managers of this sector to formulate a policy that promote the need to enhance the equity capital and the internal growth and to use for future financing needs of the company.
- ✓ In view of the current growth opportunity and the overall macroeconomic situations, the values of insurable properties and all forms of trading activities is expected to steadily continue growing and in return the demand for insurance coverage will increase. So the managers of insurers should manage level of leverage that comes in the form of premium financing. The insurers should reduce the impact of high claim costs that likely increase from the volume of premium written through techniques like product selections, increase claims handling practice and gathering sufficient information or detail about subject matter of insurance. This is because, as this study has concluded, the financing behavior of Ethiopian insurance companies is in support of the pecking order theory that the debts that comes in the form of premium financing needs to be carefully managed. Otherwise, it may lead to bankruptcy if the proportion of debt to equity is more on these companies.
- ✓ Regarding tangibility of assets, the statistical result shows that the percentage of fixed assets to total assets was 20% and a negative sign which implies that insurance companies might not have enough tangible assets so as to use collateral for debt financing and increase the leverage The reason for holding less fixed assets by the companies is a statutory requirement with expected benefit of holding a large amount of liquid assets is that it can offset any unexpected and large claims costs without reverting to asset sales or emergency funding. If assets have to be sold at short notice, insurers may not obtain a fair market value. It is more prudent to anticipate unexpected losses and keep liquid assets to meet the demand. On the other hand, liquid assets provide lower yields, so the opportunity cost for holding a large amount of liquid assets is high. So the regulatory authority should consider to relax the amount of liquid assets to optimum level that balances the tradeoff between the opportunity

cost of holding too much liquid assets versus expected benefit of holding these assets and allow companies to improve holding of their fixed assets in proportion of the total assets they hold thereby manage their capital structure using hedge these assets security for loan to be acquired from the bank market used as an alternative way of debt financing .

- ✓ The significant part of the debt composition of the insurance companies is claim reserves which is a short term liabilities payable to policyholders. The companies do not hold long-term debt because of the absence of long-term financing entities as long term debt is the major issue for any firm for the expansion of its business. This type of debt financing can be facilitated from bond markets. The decision to develop a market-based system seems to be of a priority. Therefore, the government should consider the establishment of capital market in Ethiopia as this greatly contributes to the development of the economy in general and to the insurance sector in particular to access their financing needs.

5.3. Directions for further research

This study focused on limited firm specific and macroeconomic determinants of capital structure. Other factors affecting the insurance companies' financing decision may further be considered and those hypothesized by this study might be more analyzed using others forms of research models. Other firm specific factors related to insurance operation like, the impact of reinsurance cession, the type of risk the company underwrites, (short term or long-term nature),and factors of qualitative in nature like companies' management competency, qualities of internal control system etc. and composition of the shareholders of the companies that determine decision of financing choice of the company are recommended for further areas of research.

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APPENDICES

Appendix **1**: Data input to capital structure regression models

Ins ID	Year	LEV	ROE	SZ	LQ	TANG	GDP	INF	GP
1	2005	0.837	0.604	20.321	1.350	0.101	0.126	0.061	0.097
1	2006	0.660	0.212	20.466	1.400	0.184	0.115	0.106	0.142
1	2007	0.684	0.279	20.475	1.350	0.108	0.118	0.158	0.204
1	2008	0.738	0.347	20.573	1.251	0.173	0.112	0.153	0.194
1	2009	0.744	0.381	20.683	1.115	0.168	0.100	0.364	0.176
1	2010	0.759	0.485	20.823	1.184	0.170	0.106	0.280	0.328
1	2011	0.797	0.553	20.975	1.250	0.180	0.109	0.181	0.272
1	2012	0.825	0.779	21.303	1.351	0.168	0.098	0.341	0.252
1	2013	0.826	0.750	21.456	1.235	0.158	0.104	0.135	0.375
1	2014	0.814	1.035	21.552	1.351	0.158	0.117	0.081	0.457
1	2015	0.827	1.091	21.628	1.347	0.073	0.102	0.077	0.523
2	2005	0.609	0.208	18.275	1.155	0.117	0.126	0.061	-0.052
2	2006	0.659	0.177	18.480	1.105	0.110	0.115	0.106	0.250
2	2007	0.686	0.207	18.717	0.989	0.149	0.118	0.158	0.357
2	2008	0.701	0.229	18.848	0.817	0.207	0.112	0.153	0.278
2	2009	0.730	0.193	19.019	0.786	0.245	0.100	0.364	0.158
2	2010	0.689	0.357	19.195	0.832	0.254	0.106	0.280	0.145
2	2011	0.739	0.304	19.617	0.785	0.343	0.109	0.181	0.199
2	2012	0.768	0.345	19.965	0.851	0.228	0.098	0.341	0.474
2	2013	0.735	0.574	20.141	0.889	0.206	0.104	0.135	0.584
2	2014	0.692	0.363	20.178	0.861	0.250	0.117	0.081	0.077
2	2015	0.695	0.381	20.289	0.832	0.258	0.102	0.077	0.320
3	2005	0.476	0.077	16.954	2.246	0.253	0.126	0.061	0.165
3	2006	0.253	0.079	17.229	2.306	0.197	0.115	0.106	0.238
3	2007	0.479	0.105	17.001	2.310	0.363	0.118	0.158	0.386

3	2008	0.554	0.101	17.606	1.050	0.542	0.112	0.153	0.146
3	2009	0.577	0.128	17.804	1.350	0.453	0.100	0.364	0.207
3	2010	0.595	0.193	17.923	1.250	0.494	0.106	0.280	0.050
3	2011	0.574	0.086	17.995	1.150	0.454	0.109	0.181	0.244
3	2012	0.681	0.064	18.354	1.320	0.349	0.098	0.341	0.494
3	2013	0.647	0.435	18.637	1.135	0.272	0.104	0.135	0.844
3	2014	0.570	0.373	18.853	1.352	0.226	0.117	0.081	0.025
3	2015	0.488	0.267	19.044	1.632	0.180	0.102	0.077	0.035
4	2005	0.653	0.119	18.842	0.839	0.172	0.126	0.061	0.148
4	2006	0.728	0.131	19.015	1.021	0.177	0.115	0.106	0.145
4	2007	0.755	0.093	19.073	0.881	0.180	0.118	0.158	0.241
4	2008	0.767	-0.114	19.055	0.684	0.232	0.112	0.153	0.099
4	2009	0.752	0.088	19.088	0.718	0.221	0.100	0.364	-0.007
4	2010	0.644	0.388	19.232	0.927	0.203	0.106	0.280	0.157
4	2011	0.647	0.277	19.405	0.964	0.176	0.109	0.181	0.343
4	2012	0.641	0.284	19.713	1.089	0.523	0.098	0.341	0.449
4	2013	0.650	0.314	19.863	1.111	0.423	0.104	0.135	-0.039
4	2014	0.662	0.351	20.000	1.090	0.413	0.117	0.081	0.169
4	2015	0.352	0.228	18.500	1.153	0.401	0.102	0.077	0.173
5	2005	0.710	-0.163	17.057	0.705	0.296	0.126	0.061	0.192
5	2006	0.683	0.196	17.266	0.732	0.237	0.115	0.106	0.204
5	2007	0.682	0.267	17.495	0.949	0.203	0.118	0.158	0.176
5	2008	0.666	0.171	17.597	0.931	0.183	0.112	0.153	0.157
5	2009	0.680	0.145	17.750	0.811	0.159	0.100	0.364	0.140
5	2010	0.703	0.198	17.959	0.992	0.127	0.106	0.280	0.316
5	2011	0.787	0.014	18.276	1.121	0.090	0.109	0.181	0.245
5	2012	0.751	0.700	18.789	1.053	0.064	0.098	0.341	0.680
5	2013	0.692	0.452	19.096	1.202	0.050	0.104	0.135	0.129
5	2014	0.736	0.263	19.354	1.123	0.043	0.117	0.081	0.053

5	2015	0.678	1.223	19.453	1.208	0.048	0.102	0.077	0.075
6	2005	0.681	-0.012	18.507	1.117	0.089	0.126	0.061	0.119
6	2006	0.705	0.248	18.879	1.161	0.051	0.115	0.106	0.272
6	2007	0.748	0.081	18.978	1.083	0.039	0.118	0.158	0.218
6	2008	0.802	0.188	19.253	0.999	0.048	0.112	0.153	0.295
6	2009	0.790	0.228	19.288	0.936	0.114	0.100	0.364	0.134
6	2010	0.808	0.302	19.625	0.889	0.177	0.106	0.280	0.451
6	2011	0.822	0.298	19.881	0.827	0.210	0.109	0.181	0.387
6	2012	0.812	0.283	20.041	1.060	0.303	0.098	0.341	0.403
6	2013	0.781	0.282	20.023	1.023	0.413	0.104	0.135	-0.098
6	2014	0.770	0.349	20.120	0.672	0.362	0.117	0.081	0.019
6	2015	0.673	0.220	20.228	0.760	0.320	0.102	0.077	0.020
7	2005	0.587	0.223	17.938	0.982	0.160	0.126	0.061	0.379
7	2006	0.594	0.115	18.103	1.005	0.125	0.115	0.106	0.410
7	2007	0.628	0.204	18.408	1.054	0.086	0.118	0.158	0.426
7	2008	0.737	0.426	18.653	0.857	0.142	0.112	0.153	0.508
7	2009	0.737	0.361	19.079	0.943	0.110	0.100	0.364	0.316
7	2010	0.751	0.378	19.342	0.980	0.109	0.106	0.280	0.309
7	2011	0.740	0.265	19.538	1.000	0.113	0.109	0.181	0.258
7	2012	0.785	0.349	19.979	0.969	0.092	0.098	0.341	0.548
7	2013	0.733	0.416	20.065	1.052	0.092	0.104	0.135	-0.057
7	2014	0.699	0.375	20.294	1.108	0.090	0.117	0.081	0.063
7	2015	0.668	0.228	20.448	1.099	0.139	0.102	0.077	0.090
8	2005	0.524	0.151	18.508	1.084	0.300	0.126	0.061	0.078
8	2006	0.580	0.225	18.634	1.196	0.275	0.115	0.106	0.270
8	2007	0.582	0.232	18.657	1.077	0.258	0.118	0.158	0.147
8	2008	0.634	0.152	18.778	0.972	0.254	0.112	0.153	0.173
8	2009	0.568	0.310	18.834	0.906	0.306	0.100	0.364	-0.039
8	2010	0.598	0.342	19.051	0.982	0.250	0.106	0.280	0.341

8	2011	0.576	0.375	19.187	1.018	0.258	0.109	0.181	0.104
8	2012	0.595	0.450	19.546	1.100	0.188	0.098	0.341	0.341
8	2013	0.618	0.431	19.871	1.142	0.175	0.104	0.135	0.303
8	2014	0.603	0.361	20.112	1.218	0.144	0.117	0.081	0.094
8	2015	0.624	0.637	20.432	1.247	0.105	0.102	0.077	0.035
9	2005	0.591	-0.038	17.934	1.016	0.026	0.126	0.061	-0.083
9	2006	0.530	0.196	18.288	1.236	0.150	0.115	0.106	0.437
9	2007	0.601	0.251	18.530	1.111	0.141	0.118	0.158	0.692
9	2008	0.620	0.438	18.809	1.107	0.127	0.112	0.153	0.358
9	2009	0.690	0.152	18.967	1.027	0.122	0.100	0.364	0.039
9	2010	0.628	0.400	19.173	1.169	0.100	0.106	0.280	0.096
9	2011	0.652	0.251	19.372	1.189	0.085	0.109	0.181	0.289
9	2012	0.648	0.346	19.697	1.245	0.068	0.098	0.341	0.476
9	2013	0.621	0.457	19.884	1.268	0.092	0.104	0.135	0.042
9	2014	0.621	0.372	20.052	1.312	0.332	0.117	0.081	0.102
9	2015	0.561	0.298	20.136	1.352	0.453	0.102	0.077	0.125

Appendix 2: List of Insurance Companies in Ethiopia

No	Name	Establishment date
1	Ethiopian Insurance Corporation	1975
2	Africa Insurance Company	1/12/1994
3	Awash Insurance Company	1/10/1994
4	Global Insurance Company	11/1/1997
5	Lion Insurance Company	1/7/2007
6	NIB Insurance Company	1/5/2002
7	Nile Insurance Company	11/4/1995
8	Nyala Insurance Company	6/1/1995
9	United Insurance	1/4/1997
10	Abay Insurance Company	26/07/2010
11	Berhan Insurance	24/05/2011
12	National Insurance Company of Ethiopia	23/09/1994
13	Oromia Insurance Company	26/01/2009
14	Ethio-Life and General Insurance	23/10/2008
15	Tsehay Insurance	28/03/2012
16	Bunna Insurance	23/8/2011
17	Lucy Insurance	15/11/2012

Source: www.nbe.org.et

Appendix **3: Heteroskedasticity Test: White, for capital structure model**

Heteroskedasticity Test: White

F-statistic	1.498597	Prob. F(7,91)	0.1777
Obs*R-squared	10.23279	Prob. Chi-Square(7)	0.1758
Scaled explained SS	8.721996	Prob. Chi-Square(7)	0.2732

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 04/27/16 Time: 16:06

Sample: 1 99

Included observations: 99

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.015999	0.010217	1.565846	0.1209
GDP^2	-0.351131	0.438496	-0.800761	0.4254
INF^2	-0.013764	0.017067	-0.806479	0.4221
LQ^2	0.001501	0.000694	2.161823	0.0333
ROE^2	-0.000313	0.002893	-0.108083	0.9142
SZ^2	-2.52E-05	1.71E-05	-1.477905	0.1429
AT^2	0.003366	0.009161	0.367422	0.7142
GP^2	-0.001813	0.004883	-0.371326	0.7113

R-squared	0.103362	Mean dependent var	0.003772
Adjusted R-squared	0.034389	S.D. dependent var	0.005385
S.E. of regression	0.005292	Akaike info criterion	-7.568040
Sum squared resid	0.002548	Schwarz criterion	-7.358333
Log likelihood	382.6180	Hannan-Quinn criter.	-7.483192
F-statistic	1.498597	Durbin-Watson stat	1.705182

Prob(F-statistic)	0.177713

Appendix 4: Redundant **Fixed effect Tests for capital structure model**

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	10.608627	(8,83)	0.0000
Cross-section Chi-square	69.729998	8	0.0000

Cross-section fixed effects test equation:
Dependent Variable: LEV
Method: Panel Least Squares
Date: 04/27/16 Time: 16:16
Sample: 2005 2015
Periods included: 11
Cross-sections included: 9
Total panel (balanced) observations: 99

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.534575	0.252931	-2.113524	0.0373
GDP	3.219178	1.243988	2.587788	0.0112
INF	0.320120	0.095550	3.350293	0.0012
LQ	-0.152570	0.024306	-6.277073	0.0000
ROE	0.020107	0.043596	0.461219	0.6457
SZ	0.050845	0.008707	5.839433	0.0000
AT	-0.159027	0.059225	-2.685156	0.0086
GP	0.058630	0.038881	1.507934	0.1350

R-squared	0.618605	Mean dependent var	0.671161
Adjusted R-squared	0.589266	S.D. dependent var	0.099953
S.E. of regression	0.064059	Akaike info criterion	-2.580681
Sum squared resid	0.373419	Schwarz criterion	-2.370975
Log likelihood	135.7437	Hannan-Quinn criter.	-2.495834
F-statistic	21.08536	Durbin-Watson stat	0.986664
Prob(F-statistic)	0.000000		