Determinants of Capital Structure: (An Empirical Study on Ethiopian Insurance Industry)

Yiberta Teklemichael

Department of Accounting and Finance, Salale University, Fiche , Ethiopia

Abstract

The aim of this study was to examine the firm-specific, industry-specific and macro-economic determinants of Ethiopian insurance companies' capital structure decision with the sample size of nine insurance companies, covering the period of 2005-2016.To achieve this objective quantitative research approach and quantitative data were used. The data was obtained from the annual audited financial statement of insurance companies and from NBE. In comply with this objective the study applied panel data model with fixed effect Ordinary Least Square regression. To test the hypotheses those were formulated through the review of available literature, the collected data was organized and checked for the fulfillment of OLS linear regression assumptions and then analyzed using fixed effect linear regression. The finding of the study shows that age of the firm, firm size and growth rate of real GDP have statistically significant and positive relationship with insurance company's capital structure decision. On the other hand, variables like business risk, tangibility of asset and liquidity have a negative and statistically significant relationship with capital structure of insurance companies However, the relationship to exchange rate, profitability, growth opportunity and non-debt tax shield appear to be statistically insignificant. Depending up on the finding the study recommends that insurance companies in Ethiopia should not focus only on firm specific factors but also on macroeconomic environment so as to make an optimal capital structure decision and also the management of those insurance companies has to be focused on reducing factors that causes earning volatility to enhance earning sustainability. Finally the regulator (NBE) need to address problem of information asymmetry through setting up of rules that will ensure effective disclosures of the insurance companies audited financial statements.

1.1 Background of the study

The determination of capital structure becomes one of the most arguable issues in the finance literature since Modigliani and Miller introduced their capital structure irrelevance prepositions in their article in 1958. This theory was based on a number of impractical inferences (Usman, 2013). This theory states that the market value of a business depends on its ability to generate operating profit and by the probable risk of its main assets. Moreover, the value of the business is not reliant on the way it selects to finance its investments or share out dividends (Universal teachers, 'n.d')

A number of theories have been developed to explain a firm's choice of specific mix up of debt and equity, like Trade-Off theory, Pecking Order theory, Market Timing theory and Net Operating Income theory have been developed suggesting a number of factors that might determine a firm's capital structure decision. However, out of these theories of capital structure, two models appear to come across powerfully (Abubakr, 2007). One of them is the trade-off theory, which assumes that firms can get benefits to leverage within a capital structure until the optimum capital structure is achieved. This theory acknowledges the advantage of interest tax.

A major objective of the trade-off theory is to clarify the fact that businesses generally are funded partially with debt and partially with equity. The other main theory is the pecking order theory that shows a distinct preference for utilizing internal finance (as retained earnings or excess liquid assets) over external finance. If internal funds are inadequate to finance investment opportunities, a company might obtain external financing but it will choose among the various external finance sources in a manner as to minimize additional costs (Universal teachers, 'n.d'). But none of these theories separately is being capable of explaining the important facts about capital structure a firm faces in the real world is the problem that we face still today (Abbas, 2016).

As per, (Mary *et al*. 2011 cited in Bayeh 2011), If a company has too much debt, it may overstretch its ability to service the debt and can be exposed to business downturns and changes in interest rates, and thus would be viewed to be financially risky. On the other hand, too much equity possession interest may expose the company to outside control. This may be discouraging to investors, because it means less profits being distributed to them. In line with this issue research is rotating around a few theoretical models of capital structure since over than fifty years but could not be capable to afford the definite support to managers and practitioners for selecting between debt and equity in financial decisions (Abubakr, 2007).

The nature of insurance business is to grant protection to policy holders in times of accident through the minimization of loss. As a result of this function, insurance companies have always been worried with both

liquidity and solvency. In order to handle risks, insurance firms must encompass effective ways of determining the appropriate amount of capital that is necessary to absorb unpredicted losses arising from insurance claims and other operational risk exposures, (Muiruri & Bosire, 2015). The capital structure decision of a company is the focal point of other decisions in the area of business finance (Usman, 2013), furthermore as per (Abor and Biekpe ,2005 cited in Anthony & Odunayo, 2015), the firm's capital structure decisions plays a significant role in its financial performance and to decide is always a challenging function for any company.

Many studies on capital structure theory and determinants of financing decision have been done in the related literature over the years in developed as well as in developing countries, such as (Tamil, 2016), (Mohammed, 2016), (Guruswamy & Adugnaw, 2016), (Esmael, 2015), *(Adaramola & Olarewaju, 2015),* (Shams & Shahid, 2014), (Muhammed *et al*, 2014), (Tornyeva, 2013)*,* (Mohamed & Mahmoud, 2013), (Daniel, 2011), (Nazan, 2010), (Rajan & Zingales, 1995).

Only a relative small number of studies (e.g Guruswamy & Adugnaw, 2016), (Mohammed 2016), (Esmael, 2015), in case of Insurance company, (Usman, 2013) in case of large tax payer firms of Ethiopia) are conducted in Ethiopia. Beside to their fewness most studies have focused on only firm specific factors of capital structure. To the best of the researcher's knowledge based on the available literature there are very few studies (Saddam, 2014), (Guruswamy & Adugnaw, 2016), and (Tesfa, 2018) that investigate concurrently both internal (firm specific) and external (macro level) factors that are likely to affect capital structure decision of firms in general and insurance companies in particular even though they reached at contradictory conclusion. Beside to this the effect of market concentration on the capital structure decision of Ethiopian insurance companies is also remains an open question.

The scarcity of information on the effect of macroeconomic determinants and other industry specific determinants on the capital structure decision is regrettable because it is the sort of evidence the regulators and company's finance managers requiring, if they are to support to design financial system regulatory policies and financing decisions respectively.

The intent of this study is to investigate the relationship of non- debt tax shield, size, tangibility of asset, firm age, profitability, growth, business risk, liquidity, market concentration,, GDP, inflation, and exchange rate with leverage for Ethiopian insurance companies.

1.2. Statement of the problem

The capital structure of a firm is defined as specific mix of debt and equity that a firm uses to finance its operations (Abor & Biekpe, 2005 cited in Tornyeva, 2013). It has long been an important issue from the strategic management standpoint since it is associated with a firm's ability to meet the demands of various stakeholders. Debt and equity are the two major classes of liabilities, with creditors and stockholders representing the two types of investors in the firm. Each of these is associated with different levels of risk, benefits, and control. While creditors exert lower control, they earn a fixed rate of return and are protected by contractual obligations with respect to their investment. Stock holders are the residual claimants, bearing most of the risk and have greater control over decisions (Muiruri & Bosire, 2015).

Organizations in the non-financial area require capital mainly to obtain operational assets, securities or pursue new areas of business (Tornyeva, 2013). While this is also true for insurance companies, their main focus is somewhat different. The nature of insurance business is to provide protection to policy holders in times of accident through the minimization of loss. As a result of this function, insurance companies have always being concerned with both solvency and liquidity (Tornyeva, 2013). As an effect of the distinctive feature of insurance firms and the environment in which they operate, there is a strong ground for a separate study on explanatory variables that are likely to affect capital structure decision of Ethiopian insurance companies.

There is a dearth of research directed towards to developing countries in general and in Ethiopia in particular that tastes applicability of capital structure theories for developing countries those are derived from the developed nations. Moreover, those literatures by themselves provide contradictory conclusions. In line with this an empirical study that examines the determinant of capital structure in developing countries has been attempted by (Booth et al, 2001 cited in Esmail, 2015). In this study, a sample consisting of 10 developing countries were analyzed And found that, the variables that have explanatory power on capital structures in developed nations are also applicable in the developing countries irrespective of differences in institutional factors across these developing nations. But in contrary with (Booth *et al*. 2001): a study that investigated Determinants of Capital Structure of firms in the Asia Pacific region in four countries namely Thailand, Malaysia, Singapore and Australia by (Rataporn *et al,* 2004), concludes that the capital structure decision of firms is subjective of the environment in which they are within.

A study on determinant of insurance capital structure around the globe conducted by (Altuntas, *et al.,* 2014) examined the determinants of insurance companies' capital structure across a wide range of economies including both, developed and developing countries. The result of this study shows that the optimal capital structure of insurance companies is not consistent across countries, but varies systematically with country-level factors. On

the other hand a study conducted by (Psillaki & Daskalakis, 2008) examined factors determining the capital structure of Greek, French, Italian and Portuguese Small and Medium Sized Enterprises (SMEs). This study concludes that firm specific rather than country level factors explain differences in the intensity of capital structure choices.

Coming back to the case of the Ethiopia, (Amanuel, 2011) conducted a study to examine the relevance of firm level factors determine capital structure of manufacturing share companies in Addis Ababa, Ethiopia for the period of five years (2004-2010). This study used quantitative data and found that tangibility, non-debt tax shields, earning volatility, profitability, and size of the firm variables are the significant determinants of capital structure. But no clear and statistical proved relation is obtained for the variables growth of the firm and age of the firm in any of the capital structure models. (Netsanet, 2012) examined the determinants of capital structure of those construction companies in Addis Ababa using quantitative data for the period covering from 2006 to 2010. The result of this study show that growth opportunity, tangibility of assets, liquidity and age of the companies are found as significant variables that explains the variations of the capital structure of construction companies.

However, the empirical studies suggest that there is significant industry specific factors influence on capital structure decisions of the companies. For instance (Harris & Raviv, 1991 cited in Netsanet 2012) noted that "firms in the same industry have more in common than firms in different industries" and thus, the capital structure of firms is highly affected due to industry difference. This necessitates that a separate empirical study should be conducted on the financial sectors in general and insurance companies in particular in Ethiopia, due to their unique industry characteristics from non-financial sectors.

There are also handful of studies are conducted to explore determinants of capital structure decision of insurance companies in Ethiopia. For instance (Daniel, 2015) examines firm specific determinants of Capital Structure of Insurance Companies in Ethiopia. According to this study Profitability, asset tangibility, growth and liquidity were found to be significant in relation to leverage. Dereje, (2014) examined determinants of capital structure for private insurance companies of Ethiopia for the period of 2002 - 2011. The result of the study shows that variables like firm liquidity, business risk and non-debt tax shield were found to influence leverage negatively. While variables such as asset tangibility, firm size and profitability were significant and had a positive influence on leverage. (Guruswamy & Adugnaw, 2016) had examined the determinants of capital structure of selected insurance companies in Ethiopia. According to the study age, business risk, firm growth, management efficiency, economic growth rate, and inflation are identified as the most important determinant factors of capital structure.

Most of the studies conducted in Ethiopia related to capital structure determinants had focused on firm specific explanatory variables. To the best of the researcher's knowledge no more study had include macro level variables except (Saddam, 2014), (Guruswamy & Adugnaw, 2016), (Solomon, 2017) and (Tesfa, 2018) even if their finding is inconsistent to each other. In addition they also failed include market concentration as one of industry specific variable.

All the above discussed problems in the insurance industry of Ethiopia in relation to optimal capital structure decision and the link between leverage and firm specific and macro level determinants call for detailed investigation. Therefore, this study seeks to fill the gap by providing full information about the firm specific and macro level determinants that affect capital structure decisions of insurance companies in the Ethiopia by examining the untouched one and replicating the existing through including more explanatory variables

1.3 Research questions
In the context of the problems highlighted above, the following specific research questions were raised.
1. What are the most important firm-specific determinants of the capital structure of Ethiopian insurance companies?
2. Is there a significant association between industry specific determinants with capital structure decision of Ethiopian insurance companies?
3. Is there a significant association between macroeconomic determinants with capital structure decision of Ethiopian insurance companies?

1.4. Objective of the study
1.4.1. General objective of the study
The general objective of this study was to assess the determinants of capital structure decision of Insurance companies in Ethiopia.
1.4.2. Specific objectives of the study
For the overall achievement of the above general objective, this study derived the following specific objectives
1. To identify the most important firm -specific determinants of the capital structure of Ethiopia insurance companies.
2. To examine the effect of industry specific determinant on capital structure decision of Ethiopian insurance

companies.
3. To examine the effect of macroeconomic determinants on capital structure decision of Ethiopian insurance companies

1.5. Hypotheses of the study (HP)
In line with the general objective of this study, the following hypotheses were also formulated for investigation. Hypotheses of this study stands on the theories related to capital structure decision of firms and past empirical studies related to capital structure of insurance companies.
HP 1: There is a significant relationship between profitability and leverage ratio.
HP2: There is a significant relationship between age of the insurance companies and leverage of Ethiopian insurance companies.
HP 3: There is a significant relationship between tangibility of asset and leverage of Ethiopian insurance companies.
HP4: There is a significant relationship between growth opportunity and leverage of Ethiopian Insurance Companies.
HP5: There is significant relationship between Non- debt tax shield and leverage of Ethiopian insurance companies.
HP6: There is significant relationship business risk between and leverage of Ethiopian insurance companies.
Hp7: Liquidity has significant relationship with leverage of Ethiopian insurance companies.
HP8: Firm size has significant relationship with leverage of Ethiopian insurance companies.
HP9: Market concentration has significant relationship with leverage of Ethiopian insurance companies.
HP10: There is significant relationship between inflation and leverage of Ethiopian insurance Companies.
HP11: There is significant relationship between GDP and leverage of Ethiopian insurance Companies.
HP12: There is a significant relationship between exchange rate and leverage of Ethiopian insurance companies.

1.6. Significance of the study
The researcher believed that the result of this research will have the following significance. In the literature little is identified about the determinant of capital structure of Ethiopian insurance companies. Thus this study will provide novel insights in to the identification of factors that affect financing decision of Ethiopian insurance companies. This study will also provide some conclusions and recommendations for top management and decision makers at insurance companies to deal with variables that affect financing decision of their companies and to make an optimum capital structure decision so as to improve the value of their business and it will also provide valuable information for regulators in designing financial system regulatory policies. Finally, it will be used as a reference material for those want to conduct a future study of the same nature.

2.1 Conclusion and knowledge gap
The review of the literature reveals the existence of many gaps of knowledge in respect of the determinants of insurance company's capital structure decision, particularly in the context of Ethiopia. As per the review of the literature the empirical studies that have been conducted in Ethiopia is very scanty. Based on the review of the literature the majority of the empirical studies that have been conducted with the intent of exploring determinants of insurance's capital structure is belong to developed countries. Furthermore, based on the review of literature as discussed in the statement of the problem above also reveals the continuation of controversial conclusions about the applicability of capital structure theories those are derived from the developed nations to the developing countries like Ethiopia.

In the context of Ethiopia, most of empirical studies conducted in identifying the most determinant of capital structure of firms focused on only internal (firm specific) variables. Previous studies for instance, (Daniel, 2011), (Bayeh, 2013),(Usman, 2014), (Daniel, 2015), (Workneh,2015), (Esmail, 2015) call for future researches to incorporate macroeconomic variables such as growth of GDP, inflation and corporate tax rate in examining determinant of capital structure decision of companies. This reveals that macro level variables are not given due consideration in the previous studies in exploring determinants of capital structure decision of Ethiopian insurance companies.

Saddam, (2014) and Guruswamy & Adugnaw, (2016) ,Solomon, (2017) and (Tesfa, 2018) tried best to fill the gap by testing the impact of (GDP growth rate, interest rate, and inflation rate) on leverage of Ethiopian insurance companies. But surprisingly they could not reach at consistent conclusion. For instance regarding the effect of explanatory variable GDP growth rate Guruswamy & Adugnaw (2016) and Tesfa,(2018) found that GDP growth rate has positive and significant effect on leverage of Ethiopian insurance companies. On the other hand Saddam, (2014) and Solomon, (2017) reached at a conclusion that GDP growth rate has positive but insignificant effect on leverage of Ethiopian insurance companies respectively. This shows that the effect of macroeconomic variables on capital structure decision of Ethiopian insurance companies is vague still today.

This fact laid down a strong ground that further empirical study is needed to be conducted on these variables.

Beside to this they also overlooked an important variable i.e. market concentration. Regarding this variable one of the recent study by (Woltersn, 'n.d') examined Capital structure of non- public listed firms in the last financial crisis. This study employed panel data from US and Thailand for the period of 2007-2016. The study recommended that "inter-industry effects for firms in the sample cannot be explained only by differences in firm characteristics. In this case, it could be that the degree of industry competition is also important driver of capital structure. A more detailed investigation of this should be promising for future research".

Coming back to the case of Ethiopian insurance company insurance penetration and density are still low in Ethiopia. Bilal, (2017) noted that the industry's aggregate contribution to national GDP (penetration) is around 0.5 percent and the status depicts the low level of insurance development in Ethiopia, even by East African standards for instance in neighboring Kenya insurance penetration is 2.9 percent and in South Africa, it is 14 percent. So testing market concentration as a factor of capital structure decision for Ethiopian insurance companies will be prominent since it is an inverse measure of competition.

All of these facts create a call for further studies with more variables and large number of observations. Therefore, this study seeks to fill the above mentioned gap by providing full information about the firm specific as well as industry specific variables that are likely to affect capital structure decisions by examining the untouched one and replicating the existing on insurance companies in the Ethiopia.
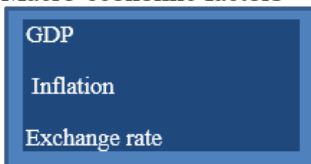
2.2 Conceptual framework
The conceptual frame work of this study shows the linkage between independent variables to the dependent variable. This study is conceptualized as follow in Figure 1.
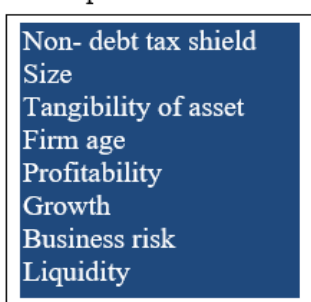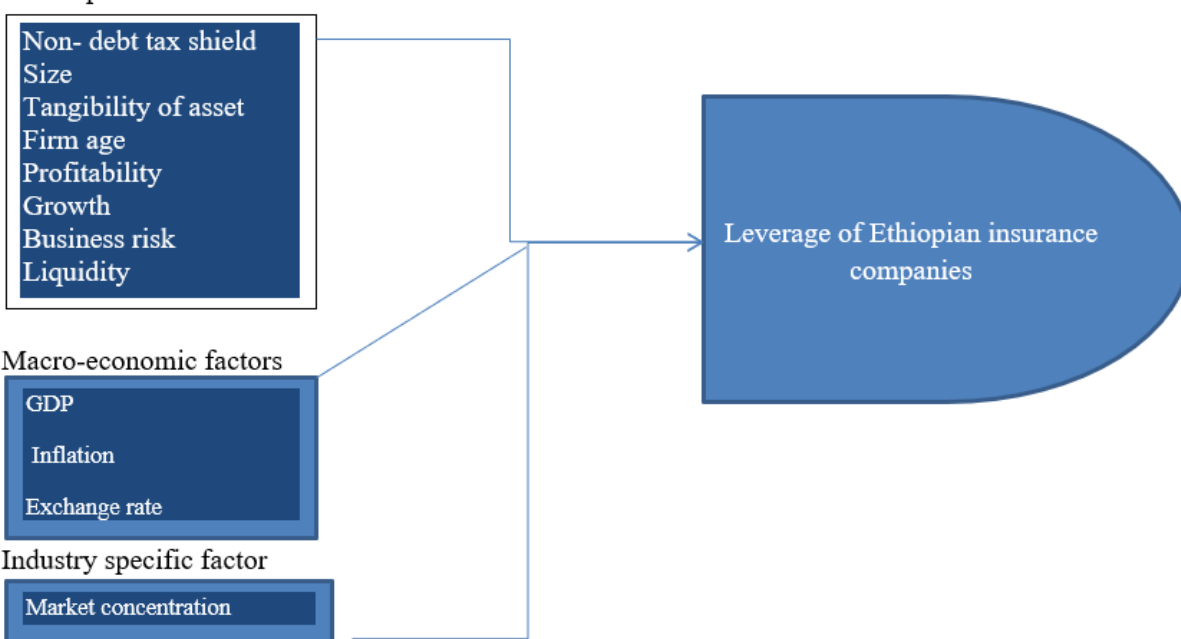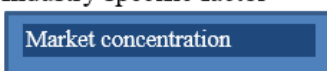

Fig 1: conceptual framework
(Self-extracted based on Guruswamy and Adugnaw (2016)

3. Research methodology
3.1. Research design
The objective of the study on hand was to examine the relationship between twelve explanatory variables with the dependent variable (leverage). So for the successful accomplishment of this objective adopting explanatory research design is appropriate. In this research design the researcher goes beyond simply describing the characteristics, to analyze and explain why or how something is happening. Thus, explanatory or analytical research aims to understand phenomena by discovering and measuring causal relations among them. That is, explanatory research looks for causes and reasons (Abiy, *et al*, unpubl).

3.2. Population and sampling technique
For the purpose of this study the target population was all insurance companies registered by NBE and under operation in the country currently. Currently, the country has seventeen insurance companies. From which one is public-owned and the other sixteen are private insurance companies, which are operating throughout the country.

But due to lack of twelve years data that is required for the analysis function in most of the newly established private insurance companies, the researcher was forced to reduce the sample size to nine insurance companies through applying purposive sampling technique. The researcher believed that the sample size is representative as it covers more than fifty percent of the total population and as it includes Ethiopian Insurance Corporation, having currently the total of 492 insurance branches distributed throughout the country and through the intermediation of 54 insurance brokers and 1,438 agents and Nyala insurance company. These Insurance Company have the lion's share in Ethiopian insurance industry (Bilal, 2017).

3.3. Types and Sources of Data Collection

In this study secondary data was used for successful achievement of the study. Secondary data refers to the information gathered from the sources that already exist. In order to investigate the effect of firm level specific factors and for industry specific factor (market concentration) on capital structure of insurance companies, audited financial statements of nine insurance companies (EIC, NIC, AWAIC, AFIC, NYIC, NILIC, UNIC, , NIBIC and GLOIC) for twelve consecutive years .i.e., from 2005-2016 inclusively was collected. But exceptionally for measuring level of market concentration the data from all insurance companies was gathered. For macro-economic variables the data was obtained from National bank of Ethiopia by conducting documentary review.

3.4. Measurement of variables

Table:1 Variables measurement

Variables	Measurement	Some empirical evidence	Expected sign
Independent variables			
Profitability	Earnings before tax / Total asset	(Bayeh, 2011) (Charumathi,2012) (Vinasithamby , 2014)	(-)
Age	Natural logarithm of ages	(Esmael,2015)	(-)
Tangibility	Fixed asset / Total asset	(Daniel,2011),(Amanuel,2011) (Anthony and Odunayo, 2015)	(+)
Growth	Total Assets(t)- Total Assets(t-1) / Total Assetst-1	(Daniel,2011),(Amanuel,2011),(Bayeh,2011) (Vinasithamby 2014)	(-)
Non- debt tax shield	Depreciation expense / Total asset	(Vinasithamby , 2014)	(-)
Business risk	Standard deviation of earning before tax	(Daniel,2011)	(-)
Liquidity	Current asset / Current liability	(Sritharan,2014), (Bayeh, 2011)	(-)
Firm size	Natural log of total asset	(Gurswamy & Adugnaw, 2016), (Wainaina,2013)	(+)
Market concentration	Market share of the 5 largest insurers. It is calculated as the sum of premiums earned for the 5 largest insurers in the sample divided by the industry's premiums written.	(Altuntas, et al, 2014)	(-)
Inflation	Annual inflation rate	(Wainaina,2013)(Altuntas, et al, 2014)	(+)
GDP	Growth rate of real GDP	(Gurswamy & Adugnaw, 2016)	(+)
Exchange rate	Natural log of yearly average exchange rate	(Mohsin, 2016)	(+)
Dependent variable			
Leverage ratio	Total debt / Total asset	(Bayeh, 2011), (Vinasithamby 2014)	

Compiled by the researcher from the available literature

3.5. Model Specification

The panel regression equation differs from a regular time-series or cross section regression by the double subscript attached to each variable (Tornyeva, 2013). In line of this to investigate the effect of firm – specific, Macroeconomic and industry specific determinants of capital structure of insurance companies. The general form of the panel data model can be specified as follows that is adopted from (Amdemikael, 2012) and (Fentaw, 2015) with slight modification to be suited with the objective of this study.

$$Y_{it} = B_0 + \sum_{j=1}^{J} B_j X_{it}^j + \sum_{l=1}^{L} B_l X_{it}^L + \sum_{m=1}^{M} B_m X_{it}^m + U_{it}$$

Y_{it} is the dependent variable, which is the firm's debt ratio with the insurance company, i at time t, with i=1… N, t=1… T, βo is a constant term; Xit is the independent variables in the estimation model over the time t for insurance company i with the error term $U_{it.}$ The Xits' are grouped into firm -specific $Xit\ j$, industry-specific Xit l, and macroeconomic variables $Xit\ m$.

Based on the general form of panel data model provided before and on the base of chosen variables the empirical model for the study on hand is specified as follows.

$$LEV_{it} = NDTS_{it} + SIZ_{it} + TANG_{it} + AGE_{it} + PROF_{it} + GRO_{it} + BUSR_{it} + LIQ_{it} + MKTCON_{it} + GDP_{it} + INF_{it} + EXR_{it} + U_{it}$$

Where:

LEV_{it} = Leverage ratio for insurance company i over the time t
$NDTS_{it}$ = Non debt tax shield for insurance company i over the time t
SIZ_{it} = Size of insurance company i over the time t
$TANG_{it}$ = Tangibility of asset for the insurance company i over the time t
AGE_{it} = Age of insurance company i over the time t
$PROF_{it}$ = Profitability of insurance company i over the time t
GRO_{it} = Growth of insurance company i over the time t
$BUSR_{it}$ = Business risk of insurance company i over the time t
LIQ_{it} = Liquidity of insurance company i over the time t
$MKCON_{it}$ = Market concentration for insurance company i over the time t
GDP_{it} = Real GDP Growth rate for insurance company i over the time t
INF_{it} = Annual inflation rate for insurance company i over the time t
EXR_{it} = Exchange rate for insurance company i over the time t
U_{it} = the error term

3.6. Data analysis techniques and tools

The data, after collection, would be analyzed in order to achieve the objective of the study. The term analysis refers to the calculation of certain measures along with searching for patterns of association that exist among data-groups and involves estimating the values of unknown parameters of the population and testing of hypotheses for drawing inferences (Kothari 2004). Due to the time series and cross sectional nature of the data, panel data analysis was used to enable the researcher can get good result. The Rational for using Panel data is that it involves the pooling of observations on a cross-section of units over a number of periods. It facilitates identification of effects that are simply not detectable in pure-cross sections or pure time-series studies (Tornyeva, 2013).

The collected data was analyzed by using descriptive statistics and multiple linear regression analysis using EVIEWS Version 7 and STATA version 13 software packages. The multiple linear regression model was used to identify the relationship between relationship of non- debt tax shield, size, tangibility of asset, firm age, profitability, growth, business risk, liquidity, GDP, inflation, market concentration and exchange rate with leverage (debt ratio) for Ethiopian insurance companies. Mean, minimum, maximum and standard deviation values were used to analyze the general trends of the data from 2005 to 2016 for the variables which included in the study.

Regarding model specification, comparing the fixed effect estimators and the random effects estimators' there will be substantial differences between the two. So which model is better fixed effects or random effects? The answer to this question depends on the assumption that one makes about the likely correlation between the cross-section specific error component U_i and the X_i predictors. If it assumed that U_i and the predictors are uncorrelated, Random Effect Model (REM) may be appropriate, but if they are correlated, Fixed Effect Model (FEM) may be appropriate (Gujarati, 2012).

Furthermore if T (the number of time observations) is large and N (the number of cross-section units) is small, there is likely to be little difference in the values of the parameters estimated by FEM and REM. The choice then depends on computational convenience, which may favor FEM (Gujarati, 2012). In the current study the number of time observation (Twelve years) is greater than the number of cross section unit (nine insurance companies). So for successful achievement of the objective of this study FEM is appropriate.

4. RESULTS AND DISCUSSION

4.1. Descriptive statistics

In this section descriptive statistics such as Mean, minimum, maximum and standard deviation values were used to analyze the general trends of the data from 2005 to 2016 for the dependent variable leverage and the remaining independent variables (non- debt tax shield, size, tangibility of asset, firm age, profitability, growth, business risk, liquidity, GDP, inflation, market concentration and exchange rate), those are incorporated in the study.

Table: 2. Descriptive statistics

Variables	Observations	Mean	Median	Min	Max	Std deviation
LEV	108	0.671778	0.675220	0.252842	0.836687	0.093972
BR	108	0.031720	0.020152	0.000100	0.234092	0.036359
AGE	108	2.765818	2.772589	1.098612	3.713572	0.453520
EXR	108	2.596240	2.668223	2.157767	3.049553	0.349330
GDP	108	0.106850	0.104750	0.077300	0.134600	0.015199
GRO	108	0.217866	0.183221	0.022908	0.677907	0.140293
INF	108	0.173650	0.146500	0.028000	0.364000	0.107675
LIQ	108	0.996113	0.991859	0.089121	2.306163	0.283421
MKTCON	108	0.777316	0.781081	0.601368	0.970444	0.079382
NDTS	108	0.021154	0.013599	0.000416	0.093335	0.019241
SIZ	108	19.27127	19.22483	16.95413	21.75521	1.079314
PROF	108	0.092305	0.085937	-0.047141	0.393985	0.054434
TANG	108	0.183970	0.151393	0.048022	0.541663	0.105702

Source: Financial statements of insurance companies, NBE and own computation using EVIEWS.7

4.2. Results of Regression Analysis

After researcher examines the most important assumptions of the linear regression-model homoscedasticity, no autocorrelation, no multicollinearity, and normality of the data, the empirical findings from the econometric results on the determinants of capital structure of Ethiopian insurance companies is presented below.

Table: 3. Regression result for the determinants of capital structure

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.372053	0.309667	-1.201464	0.2328
BR	-0.330964	0.188893	-1.752128	0.0833*
AGE	0.097366	0.056326	1.728625	0.0874*
EXR	-0.061054	0.041096	-1.485628	0.1410
GDP	0.994414	0.496231	2.003934	0.0482**
GRO	0.037138	0.045066	0.824069	0.4122
INF	0.074706	0.059983	1.245456	0.2163
LIQ	-0.083660	0.025001	-3.346275	0.0012***
MKTCON	0.165772	0.095826	1.729936	0.0872*
NDTS	-0.340840	0.418252	-0.814916	0.4173
PROF	0.156521	0.158433	0.987931	0.3259
SIZ	0.041491	0.017261	2.403774	0.0183**
TANG	-0.196374	0.079226	-2.478640	0.0151**

Effects Specification				

Cross-section fixed (dummy variables)

R-squared	0.752088	Mean dependent var	0.671778	
Adjusted R-squared	0.695097	S.D. dependent var	0.093972	
F-statistic	13.19657	Durbin-Watson stat	1.619337	
Prob(F-statistic)	0.000000			

***, ** and * denotes significant level of variables at 1%, 5% and 10% respectively

Source: Financial statements of insurance companies, NBE and own computation using EVIEWS .7

As per the result of table: 3 above, all of eight firm specific variables except growth opportunity, non-debt tax-shield and profitability had statistically significant effect on leverage ratio. From the industry specific variable, market concentration was also significant at low level of significance. On the other hand, among the three macro-economic independent variables used in this study the only statistically significant variable was GDP. To sum up liquidity is the one among the significant variables, which was statistically significant at 1% level of significance since its p-value was almost 0.000. Whereas growth rate of GDP, asset size and tangibility were significant at 5% significance level. Finally, business risk, market concentration and age were significant at 10% as presented in table: 3 above.

Besides, table: 3 also shows that the coefficient of business risk, exchange rate, liquidity, non debt tax shield and tangibility for insurance companies against leverage ratio was negative as far as the coefficients for those variables were negative(-0.330964), (-0.061054), (-0.083660), (-0.340840) and (-0.196374) respectively. This indicates that there was an inverse relationship between the above mentioned five independent variables and leverage ratio. Thus the increase of those variables will lead to a decrease in leverage ratio.

On the other hand, explanatory variables like age, growth rate of GDP , growth opportunity inflation rate, , market concentration, profitability and size had a positive relationship with leverage ratio as far as their respective coefficients were (0.097366), (0.994414) ,(0.037138), (0.074706), (0.165772), (0.041491) and (0.156521) respectively. This shows that there was a direct relationship between the above seven independent variables and leverage ratio. In general as per the regression results provided in table: 3 among the twelve predictor variables incorporated in this study seven of them were statistically significant.

5. CONCLUSIONS AND RECOMMENDATIONS
5.1. Conclusions
❖ Based on the result this study, the pecking order and the static trade-off theories are dominant in explaining the capital structure of insurance companies in Ethiopia, However, pecking order theory appears to come across powerfully.

❖ Although numerous factors have been listed by many researchers as key in determining capital structure decision, this study has indicated that Business risk, Age, Growth rate of GDP, Liquidity, Tangibility, market concentration and Size appeared to be significant in determining the Ethiopian insurance companies' capital structure decision. Depending on this finding of the study the researcher concludes that the capital structure of Ethiopian insurance companies is influenced by both internal and external factors.

- ❖ The result of the study indicates a significant negative relationship between asset tangibility and leverage of Ethiopian insurance companies. This finding is in line with the pecking order theory that states the low information asymmetry associated with tangible assets makes equity financing less costly, resulting in a negative relation between leverage and tangibility. A firm with fewer tangible assets tends to finance their investments with external financing and they ought to favor debt over equity, most likely short term debt.

- ❖ The finding the study indicates the negative and significant relationship between business risk and leverage ratio for Ethiopian insurance companies. This implies that the more those insurance companies are risky the more the difficulty they faced to access funds from debt financing.

- ❖ According to the result of this study there is a significant positive relationship between age of the insurance companies and leverage of Ethiopian insurance companies. The result is in conformity with the Trade of theory that assumes as a firm operates for a long period of time, it can create good image and reputation from the point of view of financiers, so this put a firm in a position to increases its capacity to obtain more debt from any lenders.

- ❖ The result of the fixed effect regression model shows that there is significant negative relationship between business risk and leverage of Ethiopian insurance companies. This is in conformity with the argument of (Myers & Majluf, 1984) that risky firms ought to borrow less, other things equal. The higher the risk, the greater the likelihood of default on any given package of debt claims.

- ❖ Liquidity has significant negative relationship with leverage of Ethiopian insurance companies with a regression coefficient of -0.082350 and p-value of and 0.0013. Therefore, from the result of this study one can concludes that as the liquidity of Ethiopian Insurance Companies increase, the leverage level of these companies' decreases. This finding is in accordance with the pecking order theory which proposed a claim that internal source of funds are used first.

- ❖ It is found that Firm size has significant positive relationship with leverage of Ethiopian insurance companies. This finding is consistent with the static trade of theory that argues larger firms can issue debt at low cost compared to small firms because larger firms can diversify to avoid bankruptcy and it is also consistent with the agency theory, which suggests that large firms have a reputation in debt markets and as a result face lower agency costs of debt.

- ❖ This study also found a significant positive relationship between GDP and leverage of Ethiopian insurance companies. The result is consistent to the idea that financial institution in countries of smooth and constant growth pattern are stabilized. Therefore, debt financing sources are easily accessible for their firm (Farah *et al*, 2014).

- ❖ The current study finds that market concentration has significant and positive impact on leverage of Ethiopian insurance companies. This finding is contradicted with the theoretical expectation that Competition puts pressure on firms to produce their output as cost efficiently as possible so holding more capital is costly for firms in an intense competitive industry. Since this variable does not given due consideration in most previous studies it is difficult to compare this result with the previous obtained result. So it needs further empirical investigation to determine their relevance in determining the capital structure of Ethiopian insurance companies.

5.2. Recommendations

Based on the major findings obtained from the analysis of the result, the study forwards the following recommendations.

- ❖ The significant negative relationship between liquidity and leverage of Ethiopian insurance companies indicates that Ethiopian insurance companies favored more on internal source of finance as much as this fund is available. But in this competitive world it is also advantageous to use other fixed cost assets or funds to increase the return to its owners or stockholders.

- ❖ The finding the study indicates the negative and significant relationship between business risk and leverage ratio for Ethiopian insurance companies. This implies that the more those insurance companies are risky the more the difficulty they faced to access funds from debt financing. So the management of those insurance companies has to be focused on reducing factors that causes earning volatility to enhance earning sustainability.

- ❖ The result of the study indicates the significance and positive effect of market concentration on leverage of Ethiopian insurance companies. This shows that Ethiopian insurance companies favor debt financing even though they are in a concentrated market. In the process of financing decision access to finance plays a great role in influencing the firm's choice of either debt financing or equity financing. So this study recommends Ethiopian government to give a due consideration in establishing strong and efficient capital market to mitigate the problem of access to finance and to enable those insurance companies to make optimum capital structure decisions.

❖ The explanatory powers of firm-specific variables are far more important in explaining the variability in leverage for insurance companies in Ethiopia than external variables. But among the external factors included in this study GDP growth rate appears to be significant key predictor of leverage for Ethiopian insurance companies. This is a clear signal to all insurance companies in Ethiopia that they cannot overlook the macroeconomic indicators in making financing decision so as to improve the value of their business.

5.3. Suggestion for further studies

Despite of its contributions to understand the financing decision determinants of Ethiopian insurance companies, this study is not free from limitations. In this section the researcher forwarded some direction for future empirical studies to fill these limitations.

First this study incorporated only twelve variables with explanatory power of $R^2 = 0.7518$. This indicates the presence of other possible explanatory variables that will affect leverage of Ethiopian insurance companies. Thus, future researchers need to consider incorporating other possible variables such taxation, ownership and regulation Second to make the panel data structured and balanced, the horizon of this study was limited to only nine insurance companies for the period of 2005-2016. But for better generalization and inference upcoming studies may also increase the panel size by including all insurance companies and more years' through using unbalanced panel data. Lastly this study can also be replicated with different sectors in future research even on life insurance companies.

References

Abbas, M. (2016). Determinants of Capital Structure: Empirical evidence from listed firms in Norway .

Abiy Z, Alemayehu W, Daniel T., Melese G, and Yilma S, (unpubl) Introduction to Research Methods (Preparatory module for Addis Ababa University graduate programs).

Abor, J. & Biekpe, N. (2005), "What Determines the Capital Structure of Listed Firms in Ghana?" *African Finance Journal*, volume 7.

Abubakr. S, (2007), The Determinants of Capital Structure in Energy Sector of Pakistan listed firms.

Altuntas.M, Berry-Stölzle.R and Wende.S, (2014), Does One Size Fit All? Determinants of insurer capital structure around the globe.

Amanuel, M (2011), Determinants of capital structure: evidence from manufacturing share Companies of Addis Ababa city.

Amdemikael. A, (2012), Factors Affecting Profitability: An Empirical Study on Ethiopian Banking Industry.

Anthony. A and Odunayo. O, (2015) Determinants of Capital Structure in Nigerian Quoted Composite Insurance Companies. Global *Journal of Management and Business Research:* Vol. 15 Issue 10 Version 1.0, Online ISSN: 2249-4588 & Print ISSN: 0975-5853

.Bayeh. A, (2011), Capital Structure Determinants: An Empirical Study: An Empirical Study on Insurance Industry in Ethiopia.

Bayeh. A, (2013), Impact of Firm Level Factors on Capital Structure: Evidence from Ethiopian Insurance Companies, Global Journal of Management and Business Research Finance Volume 13 Issue 4

Bilal, (2017), Ethiopia: Harnessing the Insurance Industry for Economic Development.

Charumathi .B,(2012) On the Determinants of Profitability of Indian Life Insurers – An Empirical Study; Proceedings of the World Congress on Engineering 2012 Vol I WCE 2012, July 4 - 6, 2012, London, U.K

Daniel. B, (2015), Determinants of Capital Structure of Insurance Companies in Ethiopia.

Daniel. K, (2011), The Determinants of Capital Structure in Ethiopian Small Scale Manufacturing Cooperatives.

Dereje. G, (2014) Determinants of Leverage for Unlisted Firms: Evidence from Ethiopian Private Insurance Companies: *Journal of Poverty, Investment and Development*. Vol. 4.

Esmael. B, (2015), Determinants of capital structure: A study on Ethiopian Insurance Companies.

Farah, R, Komal, K . B. & Shahabud, D.(2014). Macroeconomic Conditions and Firm's Choices of Capital Structure: Evidence from Pakistan's Manufacturing Sectors. *Middle-East Journal of Scientific Research 19(4), 521-531.*

Fentaw. L, (2015). Meta analysis on the determinants of commercial bank's profitability: (a conceptual frame work and modelling). *European scientific journal (1)19*, 1857 – 7881.

Gujarati, D.(2012) *Econometrics by Example* 2nd edition, MPG books group, Bodmin and King's Lynn, Great Britain

Guruswamy. D and Adugnaw. M (2016), Determinants of Capital Structure of Selected Insurance Companies in Ethiopia: *Developing Country Studies* Vol.6, No.10, ISSN 2224-607X (Paper) ISSN 2225-0565 (Online).

Harris and Ravivv (1991), 'The theory of capital structure', *Journal of Finance*, 46(1), pp. 297-355.

Mary A. Malina Hanne S.O. Nørreklit Frank H. Selto, (2011),","Lessons learned: advantages and disadvantages of mixed method research", *Qualitative Research in Accounting & Management,* Vol. 8 ISSN 1 pp. 59 – 71.

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

Mohammed. G, (2014), Determinants of capital structure and its impact on the performance of Ethiopian insurance industry.

Mohammed. G, (2016), Capital Structure and Financial Performance of Insurance Industries in Ethiopia: *Global Journal of Management and Business Research,* Vol, 16 Issue 7 Version 1.0

Muiruri. M and Bosire. N (2015) Determinants of Capital Structure Decisions of Listed Insurance Companies in Kenya: *International Journal of Scientific Engineering and Research (IJSER),* Volume 3 www.ijser.in ISSN (Online): 2347-3878.

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

Nazan, (2010), The Determinants of Capital Structure: *Evidence from the Turkish Banks, https*://www.researchgate.net/publication/26365.

Netsanet.W, (2012), Determinants of capital structure decisions of the construction companies in Addis Ababa, Ethiopia.

Psillaki. M and Daskalakis. N, (2008) Are the Determinants of Capital Structure Country or Firm Specific? Evidence from SMEs, available at: http://ssrn.com/abstract=1341860.

Rajan, G and Zingales. L, (1995), 'What Do We Know about Capital Structure? Some Evidence From International Data.' Journal of Finance, 50, 1421–60.

Saddam. M, (2014), Factors Affecting Capital Structure Decision: Evidence from Ethiopian Insurance firms.

Shams and Shahid, (2014) Determinants of Capital Structure Decision of Pakistani Insurance Industry: *Abasyn Journal of Social Sciences* – Volume: 9 – Issue: 1

Solomon. C, (2017), Determinants of Capital Structure Of Insurance Companies In Ethiopia

Tamil. S, (2016), Analysis of capital structure theory with factors determining capital structure of small size software industry in India: Journal *of Management Research,* Vol. 7 Issue 2, ISSN 2347 – 4270.

Tesfa, B. (2018,). Internal and external factors that determine capital structure of insurance companies: the case of ethiopia. *Birritu, a quarterly magazine published by the National Bank of Ethiopia* .

Tornyeva. K (2013) Determinants of Capital Structure of Insurance Companies in Ghana *research journal of accounting and finance* Vol.4, No.13, ISSN 2222-2847 (Online).

Universal teachers. ('n.d'). Retrieved December 19, 2017, from ht tp://universalteacher.com/ 1 /theories-of-capital-structure.

Usman, M, 2013), Determinants of Capital Structure: Empirical Evidence from Large Taxpayer Share Companies in Ethiopia. *International Journal of Economics and Finance*; Vol. 6, No. 1; 2014ISSN 1916-971X E-ISSN 1916-9728

Vinasithamby.S , (2014) Determinants of capital structure - a study of listed banks finance & insurance companies in Colombo stock exchange in sir Lanka, *International Journal of Economics, Commerce and Management United Kingdom*, Vol. II, Issue 10, / ISSN 2348 0386 , Oct 2014

Wainaina. G, (2013) The relationship between capital structure and financial performance of insurance companies in kenya

Wolters,F, (n.d), Capital structure of (non-) public listed firms in the last financial crisis: a cross country and cross industry study.

Workneh. A. (2015), The Determinants of Capital Structure Evidence From: Manufacturing Share Companies of Addis Ababa City