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Determinants of Capital Structure of Selected Insurance Companies in Ethiopia

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Abstract
The main objective of this study is to examine the determinants of capital structure of selected insurance companies in Ethiopia. To achieve the objective, researchers' used only secondary data obtained from the annual financial statement of selected insurance companies, National Bank of Ethiopia (NBE) and Ministry of Finance and Economic cooperation (MoFEC). In this study, one dependent variable (leverage) and nine independent variables, i.e. growth opportunities, business risk, size of the firm, tangibility of assets, liquidity, age, management efficiency, inflation and GDP was employed. Explanatory research design and purposive sampling method was employed in this study. The balanced panel data was analyzed by using descriptive, correlation and multiple regression analysis. From the regression results; age, business risk, firm growth, management efficiency, economic growth rate, and inflation are identified as the most important determinant factors of capital structure. Age, business risk, management efficiency, economic growth rate and inflation are positively related with capital structure; but, firm growth has negative relation with capital structure. However, liquidity, size and tangibility of assets had insignificant impact on capital structure. Finally, the study recommends that the management of the sample insurance companies shall devote their time and efforts on variables of age, business risk, management efficiency, firm growth, GDP and inflation in order to minimize the weighted average cost of capital.
Keywords: Capital Structure, Determinants, Insurance Companies, Ethiopia

1. Introduction

Financial institutions like insurance companies are very important to enhance economic growth and development (Christopher et al, 2007). Insurance companies serve the needs of business units and private individuals in financial intermediation. Insurance companies play a key role in financial sector. In developed countries, it accounts for a significant portion of the economy. By collecting relative premium from many small individuals in the economy, insurance companies are able to pull a large pool of funds that could be invested in both short and long term periods. It is important for sustained economic growth and it could serve as the means of long term financing. This will in turn generate higher saving rate and therefore greater economic development. Since, it provides stability by allowing large and small businesses to operate with a lesser risk of failure, it is critical to the ability of emerging and transition economies to grow, develop and provide a reliable cover for risk to the citizens (Taiwo & Olumuyiwa, 2014).

Ethiopia's insurance sector has shown strong resilience to a challenging macroeconomic environment and global development. According to a report by NBE (2014) the size of the country's insurance sector in terms of capital has increased by 36.6% at the end of June 2014. Insurance companies have importance for both businesses and individuals as they channel funds and indemnify the losses of other sectors in the economy and put them in the same positions as they were before the occurrence of the loss respectively. In addition, insurance companies provide economic and social benefits in the society by prevention of losses, reduction in anxiousness, fear and increasing employment (Abate, 2012).

Capital structure decisions are among the most important financing decisions companies would encounter. Under the perfect capital market assumption, if there is no bankrupt cost and without taxes, the firm's value is independent with the capital structure. Debt can reduce the tax to pay, so the best capital structure of enterprise should be one hundred percent of the debt (Modigliani & Miller, 1958). Since the seminal work of Modigliani and Miller in 1958, several theories have been developed to explain the capital structure of a firm including the Pecking order theory, Static Trade-off theory and agency cost theory. The firm's capital structure decision will affect its competitiveness among its peers. Since, the capital structure decisions affect profitability directly; care and attention must be given while determining capital structure decision (Velnampy & Niresh, 2012). Firm's can issue a large amount of debt or equity; because it's important to set up the appropriate mix of debt and equity that can maximize its overall market value. Therefore, a firm should use the appropriate mix of debt and equity that will maximize its profitability.

During the last few years, Ethiopia has experienced an impressive 11% GDP growth performance,

which is almost double of the average growth for sub Saharan Africa countries. In the future, the growth will continue at a slow pace than the previous years. Even if, there are many factors contributed for this economic growth, financial institutions in general and insurance companies in particular plays a major role (UNDP, 2014). The enactment of proclamation No. 86/1994 for licensing and supervision of insurance industry brings a new opportunity in Ethiopia for the development of insurance sector. This proclamation puts a ground where the public and private insurance companies competition to take a large portion of the market. The soundness of insurance business is very important to the well-being of the Ethiopian economy at large and financial system at specific (Fasil & Merhatbeb, 2009).

The issue of capital structure has been a subject of major concern for researchers and scholars in recent years. Such concern has brought a lot of arguments on the subject which leads to numerous studies on this area. (Modigliani and Miller, 1958) stated that under the perfect market structure, a firm‘s financial structure would not affect firm value and its cost of capital. However, in 1963 Modigliani and Miller argued that in a reality, a firm‘s value could be increased by changing the firm‘s capital structure, because of tax advantage of debts. Since they study, capital structure has become an issue that attracts a large number of researchers, such as Naveed et al. (2010), Muhammad et al. (2013), Lim (2012), Sidra et al. (2013), Sbeiti (2009), Mohamed and Mahmoud (2013), Tornyeva (2013), Kingsley (2013), Albulena et al. (2014), Naser and Krassimir (2011), Najjar and Petrov (2011), Charles et al. (2013), Dereje (2014), Daniel (2015), Bayeh (2011), Solomon (2012) and Mohammed (2014).

Naveed et al. (2010) found that there is a positive and statistically significant relationship between size and risk with leverage. There is also a negative and statistically significant relationship between profitability, liquidity and age with leverage. But, growth and tangibility has insignificant relationship with leverage. In contrast, Lim (2012) revealed a negative and significant relationship between risk and leverage and Mohamed and Mahmoud (2013) found a positive significance relationship between tangibility, profitability and age with leverage. However, there is also a negative relationship between growth and liquidity with leverage. Tornyeva (2013) revealed a positive significant relationship between growth and leverage; however, the relationship between tangibility and risk with leverage is statistically insignificant. But, Albulena et al. (2014) and Naser and Krassimir (2011) found a significant relationship between tangibility and liquidity with leverage. The founding’s made by Muhammad et al. (2013), Sidra et al. (2013), Sbeiti (2009), Kingsley (2013), Najjar and Petrov (2011) and Charles et al. (2013) are similar with the above mentioned authors. Therefore from the above study’s findings, the researchers understand that there are some inconsistencies regarding to their findings and conclusions in some variables.

In the context of Ethiopia, as per the researchers’ knowledge based on the available literature, there were few studies that have been conducted in relation with capital structure determinants as compared to other countries. Among those studies, Amanuel (2011) evidence from manufacturing share companies in Addis Ababa city, Bayeh (2011) and Solomon (2012) separately in case of insurance companies of Ethiopia, Woldemikael (2012) evidence from Ethiopian banking sector and Usman (2013) in case of large tax payer firms of Ethiopia were reviewed by the researchers. To the best of researchers’ knowledge, there was no a single empirical investigation in Ethiopian context that examined side by side both internal (firm specific) and external (macroeconomic) determinants of capital structure decision pertaining to Ethiopian insurance sector particularly. Therefore, this study would tries to examine determinants of capital structure of selected insurance companies in Ethiopia during the period of 2005-2014.

2. Objectives of the study

- To examine the impact of most important firm specific determinants of capital structure of selected Ethiopian insurance companies.
- To determine the effects of macroeconomic variables on capital structure of selected Ethiopian insurance companies.

3. Literature driven hypotheses

After reviewing relevant and related literatures, the researchers hypothesizes that growth opportunities, business risk, size of the firm, tangibility of assets, liquidity, age of the firm, management efficiency, inflation and GDP were expected to influence capital structure which will be measured by Leverage. To achieve the objectives of the study, the following hypotheses were formulated and tested.

3.1. Independent Variables

Growth opportunity

Empirically, there is much controversy about the relationship between growth opportunity and level of leverage. Pecking–order theory assumes that growing firms depend on internal funds more than external funds. On the other hand, firms with rapid growth opportunities are looking for more debt due to the lack of their internal

earnings (Michaelas et al, 1999). However, for the purpose of this research it is expected that growth opportunity will have a positive relationship with leverage.

H_1: There is a positive significant relationship between firm Growth and leverage of insurance companies in Ethiopia.

Firm's Size

Capital structures of insurance companies are affected by size. Insurance companies should have a high consideration for increase in assets because the size of company is an important factor that has a positive effect on debt/equity ratio (Albulena et al, 2014).

H_1: There is a positive significant relationship between firm's size and leverage of insurance companies in Ethiopia.

Tangibility of assets

Since it is considered as an explicit promise over debt, lenders require tangible assets as collateral. Agency theory suggests that collateralized assets can be used as a monitoring instrument to control managers. There exists a positive and significant relationship between tangibility of assets and leverage of insurance companies (Usman, 2014).

H_1: There is a positive significant relationship between tangibility of assets and leverage of insurance companies in Ethiopia.

Firm's liquidity

Naser & Krassimir (2011) found a significant negative relationship between liquidity and the Debt Ratio. This negative effect of Liquidity on debt indirectly confirms the Pecking Order Theory. (Woldemikael, 2012) Examined determinants of capital structure of commercial banks in Ethiopia; leverage was negatively correlated with profitability, growth, tangibility, risk and liquidity of the firm. Therefore, the researchers expect a negative relationship between leverage and liquidity of the firm.

H_1: There is a negative significant relationship between liquidity and leverage of insurance companies in Ethiopia.

Business risk

The tax shelter-bankruptcy cost theory of capital structure determines a firm's optimal leverage as a function of business risk. A number of studies have indicated a negative relationship between risk and debt ratio (Bradley et al., 1984) and (Titman & Wessels, 1988). In this study the researcher expects a negative relationship.

H_1: There is a negative significant relationship between business risk and leverage of insurance companies in Ethiopia.

Age of the firm

Shams et al (2013) reviled that there is a negative relationship of leverage and age of the insurance companies. (Naveed et al., 2010) also states that there is a negative linkage between age of the life insurance companies and debt ratio. They suggest that older or mature life insurance companies are preferred to utilize small portion of debt in the formation of capital. Therefore in this study, the researchers expect a negative relationship between age of the firm and leverage.

H_1: There is a negative significant relationship between age of the firm and leverage of insurance companies in Ethiopia.

Management efficiency

Aburime, (2008) prevailed that there is positive relationship between management efficiency and leverage of banks. This positive relationship shows that firms with high management efficiency ratio may use more debt in their capital structure. Dimitris & Maria (2007) also found a positive relationship between expense management and leverage. Therefore, the researchers expect a positive relationship between management efficiency and leverage of insurance companies.

H_1: There is a positive significant relationship between management efficiency and leverage of selected insurance companies in Ethiopia.

Inflation

Inflation is important economic factor which affects the management's decisions about firm's financing. With the rise in the price of various commodities, the overall costs of raw materials and other facilities like fuel and energy, transportation etc also rises and so does the capital requirement of the firms. The firm issue debt securities when they expect that in the future the inflation rate will be higher (Frank & Goyal, 2009). This shows that market timing theory suggests positive relationship between inflation and debt if it is expected that future inflation will be more. This expects a direct relation with leverage (Farah et al., 2014).

H_1: There is a positive significant relationship between Inflation rate and leverage of insurance companies in Ethiopia.

Economic growth

Past studies illustrate that GDP growth rate positively relates with debt ratios. They further investigate that when

countries encounter economic development, they have a smooth and constant growth pattern and their financial institutions are also stabilized. Therefore, debt financing options are easily available for their firm (Farah et al., 2014). Accordingly,

H_1: There is a positive significant relationship between Economic growth and leverage of insurance companies in Ethiopia.

3.2. Dependent Variables

Firm's leverage

In this study Leverage (LEV) is used as a dependent variable. It is commonly interpreted as a measure of capital structure. It is used to explain the amount of debt (leverage) used by a company. The researchers' used Total Debt, consisting of both long-term and short-term liabilities – the same as total liabilities. Total Assets include current assets and fixed assets, i.e., the size of the balance sheet. A high leverage ratio indicates that the company is largely dependent on debt to finance its activity. The consequences of higher Debt Ratio are that the company might be in a riskier position that is more likely to lead to financial distress, default, bankruptcy, or liquidation.

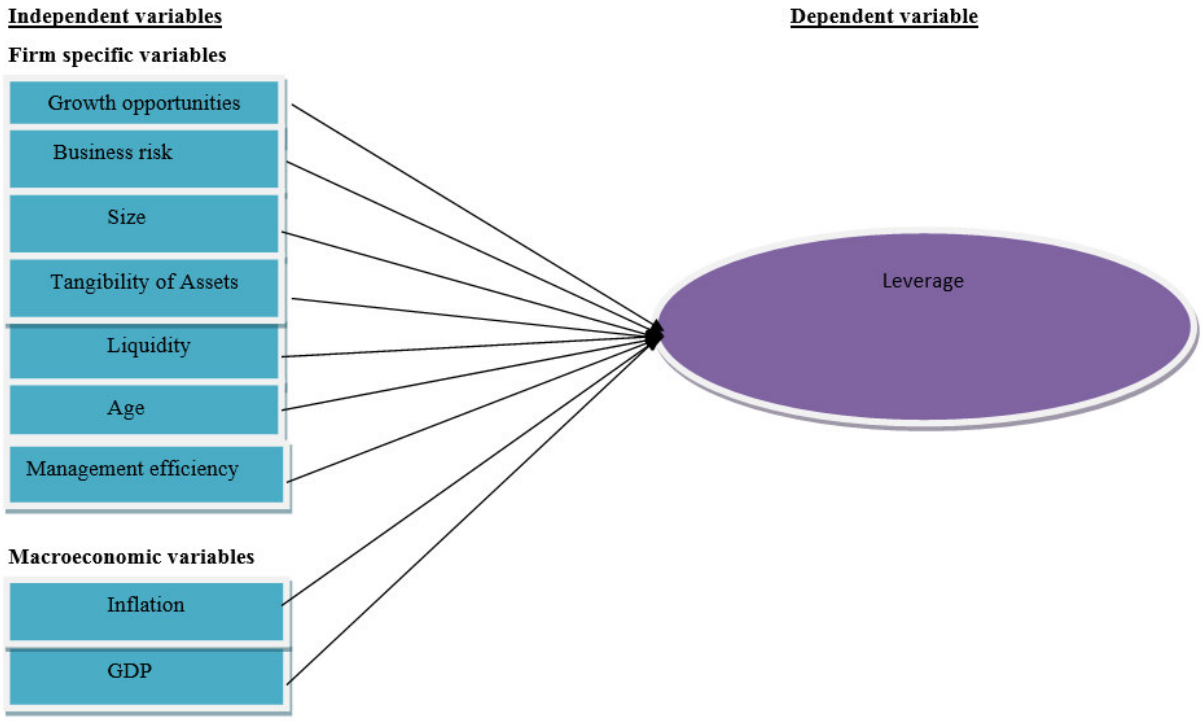
4. Significance of the study

The result of the study would benefit different stakeholders like, the management of Ethiopian insurance companies, investors, creditors, Government bodies and Policy makers. Finally, it serves as a step stone for further study and detail investigation for other researchers in this area.

5. Scope and limitation of the study

In order to undertake this study, only nine insurance companies were selected by the researchers; namely: Ethiopian Insurance Corporation, Africa Insurance company S.C, Awash insurance company S.C, National Insurance Company of Ethiopia S.C, Nyala Insurance company S.C, Nile Insurance Company S.C, United Insurance S.C, Global Insurance Company S.C and NIB insurance company. The study would also limit to the following variables: growth opportunities, business risk, size, tangible assets, liquidity, age, management efficiency, inflation and GDP. The study was taken only ten years data starting from year 2005 – 2014. Some of the insurance companies' financial statement of 2015 was not audited until the researchers' collects the data therefore it is excluded in the study. Since this study employed only the quantitative research approach, the qualitative aspects were not included in the study.

6. Conceptual framework



Source: Self extracted

7. Review of empirical literature

Naveed et al. (2010) on their study for life insurance sector of Pakistan regressed firm specific factors of profitability, size, asset tangibility, age, growth opportunity, liquidity, and risk against the dependent variable of leverage as measured by total debt ratio over the period of seven years from 2001 to 2007. The regression result showed that size, profitability, liquidity, risk, and firm's age are the major factors that influence capital structure decision of life insurance companies in Pakistan. Moreover, they explained that firm size and risk are positively related with leverage while profitability, liquidity, and age are negatively related with the dependent variable of total debt ratio. On the other hand, the study also found that the remaining two variables of growth opportunity and asset tangibility as insignificant to influence debt level of Pakistani life insurance firms.

Muhammad et al. (2013) on their study in case of insurance companies in Pakistan over the period of ten years from 2001-2010, regressed six explanatory variables of profitability, size, risk, tangibility, liquidity, and firm growth against leverage represented by total debt ratio. Their study result revealed that size and risk having positive relationship with leverage; whereas profitability and liquidity have a negative relationship with the dependent variable. The researchers' also implied that asset tangibility and growth have no any significant impact on leverage Pakistani insurance sector.

Lim (2012) in his study on financial services listed firms of china assessed the relationship between independent variables of profitability, non-debt tax shields, earnings volatility, tangibility, size, growth, and non-circulating shares with the dependent variable of leverage ratio over the period of five years from 2005-2009. The study found that profitability, firm size, non-debt tax shields, earnings volatility, and non-circulating shares are major factors that affect leverage of financial service listed firms in China. The study also revealed that only size is positively related with leverage while the others appeared a negative relationship with the dependent variable.

Sidra et al. (2013), on their evidence from Pakistani banking sector by using a panel data set for the period of 2007 - 2011 found size, tangibility, profitability, growth opportunities, and liquidity as significant determinants of capital structure. More specifically, size and liquidity of banks in the sample have positive impact on leverage, whereas; tangibility, profitability, and growth opportunities have a negative relationship with leverage confirming trade-off, agency cost, and pecking order theories for banking sector of Pakistan.

Sbeiti (2009), evidence from three Gulf Cooperation Countries (GCC) of Saudi Arabia, Kuwait, and Oman found that liquidity, tangibility and profitability are significant firm specific variables affecting the dependent variable negatively as measured by book leverage and market leverage; while firm size is positively and significantly related to leverage of firms operating in the three countries. The study also found that growth opportunities are positively related to book leverage and negatively related to market leverage of firms in all of the three GCC countries investigated.

A study conducted by Mohamed and Mahmoud (2013) in case of Egyptian insurance companies took profitability, growth, non-debt tax shields, liquidity, tangibility, size and age as independent variables and leverage ratio as dependent variable. From the study; they revealed that firm size, tangibility of assets, profitability, and age were positively related with leverage. On the other hand; growth, liquidity and non-debt tax shield appeared to have a significant negative influence on leverage of Egyptian insurance entities.

A study by Tornyeva (2013) on Ghanaian insurance sector from 2002-2007 examined the impact of profitability, size, growth, tangibility, tax charge and risk factors on leverage as measured by debt ratio. It was found that Firm size, profitability and growth to have a statistically significant impact on capital structure. More specifically, the study revealed that firm's size and growth opportunity to have a significant positive relationship with leverage while profitability appears a significant negative relationship with the dependent variable. On the other hand tax charge, tangibility, and risk had no any significant explanatory power on debt level of insurance companies in Ghana.

Kingsley (2013) investigated the determinants of capital structure of insurance companies in Ghana from the period 2002-2007. The results show that both the static trade-off and pecking order theories are important in explaining the capital structure of insurance companies in Ghana. Firm size, profitability and growth were statistically significant in relation to leverage. These are very important variables influencing the financing decisions of insurance companies in Ghana. The other firm level variables were statistically insignificant.

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

Naser and Krassimir (2011) examined the impact of firm level characteristics on the capital structure of the insurance industry in Bahrain. The study found that there is a strong correlation between Tangibility of

Assets, Profitability, Firm Size, Revenue Growth, and Liquidity with Debt Ratio, although Profitability and Revenue Growth are not statistically significant and require further research.

Najjar and Petrov (2011) examined the impact of five explanatory variables of profitability, growth opportunity, firm size, liquidity, and assets tangibility on leverage as represented by total debt ratio in case of Bahraini insurance companies for the period from 2005-2009. The result shows that firm size, liquidity, and asset's tangibility affects capital structure decision. Firm size and asset tangibility have a positive relationship with firm leverage while liquidity has a negative impact on debt level of insurance companies in Bahrain.

Charles et al. (2013) analyzed the impact of the macro economic factors on the capital structure of selected listed companies in Kenya. An econometric model of multiple linear regressions was used where leverage (debt ratios) was regressed against GDP growth rate, inflation and interest rate. The study found that GDP growth rate have a positive influence on long term debt ratio and a negative influence on total debt ratio and short term debt ratio. On the other hand, Inflation had a negative influence on the short term debts, while interest rates as measured by the treasury bills have a positive influence on the long term debt ratio and total debt ratio and a negative influence on the short term debt ratio.

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

Daniel (2015) examined determinants of capital structure (Profitability, asset tangibility, growth, business risk, size of the firm and liquidity) of insurance companies in Ethiopia. The study employed panel regression of eight insurance companies covering the period of ten consecutive years, 2005-2014 using STATA. The results show that pecking order, the static trade-off and agency cost theories are important in explaining the capital structure of insurance companies in Ethiopia, even if the Pecking order theory appears to be dominant. Profitability, asset tangibility, growth and liquidity were found to be significant in relation to leverage. The study reveals that there is a negative relationship between profitability, liquidity and asset tangibility with leverage. However, growth opportunity of the firm had a positive relationship with debt ratio. The other hypothesized firm level variables, business risk and size of the firm were insignificant.

Bayeh (2011) on his study for insurance sector of Ethiopia from the period 2004-2010, took seven factors of profitability, liquidity, growth, age, risk, tangibility, and size as independent variables and regressed them against dependent variable as represented by three models namely; total debt ratio, long term debt ratio, and debt to equity ratio. The results of the study showed that firm's growth opportunity, profitability, age, liquidity and risk found to have a significant impact on capital structure measured by long term debt and total debt ratios. The results also suggested that liquidity have a significant positive impact on long term debt and debt to equity ratios while business risk appeared a significant positive impact on debt to equity and debt ratio. On the hand, growth has a significant negative impact on long term debt and total debt ratios while profitability appear a significant negative impact on long term debt ratio and significant direct impact on total debt ratio. Furthermore, the researcher emphasized a positive and significant impact of age on all the three dependent variable proxies.

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. The results of the study implied size, growth, business risk and non-debt tax shield have a significant positive impact on leverage of insurance companies in Ethiopia. On the other hand, the study revealed that profitability, liquidity, tangibility, firm age and dividend payout had no any significant relationship with capital structure of firms in Ethiopian insurance sector.

Mohammed (2014) investigated empirically firm specific factors such as, firm leverage, growth opportunities, size, risk, tangibility and liquidity were impacts on capital structure and performance of Ethiopian insurance industry from 2004-2013 by using only secondary data. The results show that firm leverage, Size, tangibility and business risk were significant impact on performance of Ethiopian insurance companies. A significant negative relationship is established between leverage and performance. While firm growth and liquidity were not clear and statistical proved relationship obtained from the regression analysis. The results provide strong evidence in support of the pecking order theory of capital structure which asserts that leverage was a significant determinant of firms' performance.

From the above, even if, there are some common factors identified by several researchers that significantly affects capital structure and profitability of insurance industry, the researchers observe that the results of the studies differ significantly due to variation of the socio-economic environment of various countries and the type of data they included in the analysis.

8. Methodology

8.1. Research design

The basic aim of this paper is to assess determinants of capital structure of selected insurance companies in Ethiopia. Therefore, the explanatory type of research design will be the well suited method for this study. The reason for selecting this method is the support of numerous literatures on the relevant studies, where they employed explanatory methods to investigate their research problems and verified their hypothesis (Allen & Emilia, 2002), (Lucy et al., 2014) and (Kebede, 2011).

8.2. Data type and source

The researchers were collected quantitative type of data as a secondary data from the annual reports of selected insurance companies in Ethiopia, National Bank of Ethiopia (NBE) and Ministry of Finance and Economic Development (MoFED). The secondary data includes balance sheet statements, income statements and relevant statistical data's.

8.3. Target population and sampling technique

The target population of this study consists of all Ethiopian insurance companies. According to the reports of Nation Bank of Ethiopia, currently seventeen insurance companies are working in Ethiopia. Due to the researchers' intention to provide the reliable and most up-to-date result, the length of time in this study was ten years from 2005-2014. Therefore the researchers would use Purposive sampling in this study to select the sample. Accordingly, based on age, the researchers' were selected nine insurance companies in the study.

8.4. Method of data analysis and presentation

The researchers' would use the balanced panel of nine insurance companies in Ethiopia operating over the last ten years for running the regression equation. After the data is collected, the researchers would use Eview-6 software for analysis purpose. In this study the researchers' would employed like descriptive statics, Pearson correlation matrix, and classical linear regression analysis.

8.5. Model Specification

Based on the hypotheses stated in the study, the researchers' developed the statistical model. In the this model, leverage represents dependent variable and growth opportunities, business risk, size, tangibility of assets, liquidity, age, management efficiency, inflation and economic growth rate as independent variables. The researchers' adopted the model used by Mohammed (2014) with little modification to suit the researchers' need. The model is as follows:

$$Yit = \beta_0 + \beta Xit + \mu$$

Where:

Yit is dependent variable, β0 is the intercept (constant variable), Xit is independent variable, μ are the error terms i is the number of firms and t is the number of time period.

$$\mathbf{LEV_{it} = \beta_0 + \beta 1GR_{it} + \beta 2BRI_{it} + \beta 3SIZE_{it} + \beta 4TANG_{it} + \beta 5LQ_{it} + \beta 6AGE_{it} + \beta 7MGTE_{it} \beta 8INF_{it} + \beta 9GDP_{it} + U}$$

Where:

LEV = Firm Leverage
β0 = Constant coefficient
β1 – β9 = Regression coefficients for measuring independent variables
GR = growth opportunities, BRI = business risk. , SIZE = firm size, TANG = tangibility of fixed asset, LQ = liquidity of the firm, AGE = age of the firm, MGTE= management efficiency, INF = inflation rate, GDP = gross domestic product
i = no of insurance companies
t = time period from 2005-2014
U = Error term

9. Results and discussion

9.1. Descriptive Analysis

In this section, results pertaining to various descriptive measures of total leverage ratio as well as for the firm specific and macroeconomic explanatory variables were discussed. Table 4.1 depicts mean, minimum, maximum and standard deviation values of firms leverage, growth opportunities, business risk, size of the firm, tangibility of assets, liquidity, management efficiency and age of the firms as well as macroeconomic variables of real GDP growth rate and inflation rate for the sample insurance companies.

9.1.1. Descriptive statistics result interpretation for dependent variable

As stated in table 4.1, it was found that the mean distribution of leverage (total debt divided by total assets) of selected insurance companies in the sample was 0.63424, meaning on average those sample insurance companies generated almost two third of their financing needs for operation from debt sources of finance over the last ten years. The maximum and minimum leverage ratios, as measured by total debt ratio for a sample was 0.8559 and 0.4528 respectively, which indicates that the maximum and minimum debt amount used by the sample insurance companies over the last ten years is 85.59 and 45.28 cents respectively. The standard deviation statistics for leverage was 0.078027; this shows that how individual values of leverage vary from the mean over the last ten years.

9.1.2. Descriptive statistics result interpretation for independent variables

On average, the insurance company size value was 8.347480, which is the center of the distribution of insurance size value among selected insurance companies over the last ten years. The maximum value of insurance size distribution was 9.4641. Whereas, the minimum value of insurance company size was 7.363. The standard deviation of insurances size was 0.46599. The average value of growth was 0.22891. The maximum and the minimum value of growth was 0.67007 and -0.0413 respectively. The standard deviation of growth was 0.14094, which shows that there were no much significant variations among the values of growth. The mean value of tangibility of assets was 0.17161. The maximum and the minimum value of tangibility of assets was 0.6545 and 0.0227 respectively. The standard deviation of tangibility of assets was 0.11283 which shows the existence of relatively small variation of tangibility of assets over the last ten years as compared to the standard deviation of size. The mean value of liquidity was 1.15674. The maximum and the minimum value of liquidity was 2.3062 and 0.5482. The standard deviation of liquidity was 0.27975, which shows the lower variation of the value of liquidity over the last ten years as compared to standard deviation of size. The mean distribution of age over the last ten years was 15.8333 years. The maximum value of age distribution was 39 years. Whereas, the minimum value of age was 3 years and the value of standard deviation of age as shown in the table is 7.630880 years. Business risk, for the sample insurance companies in the last ten years ranged between maximum of 1.53807 up to a minimum of 0.01221. Average risk of doing business for sample insurance companies under study period was 0.16866. Whereas the riskiness dispersion represented by standard deviation was 0.25114. The mean value of management efficiency over the last ten years was 0.51696. The maximum and minimum values are 1.2366 and 0.01221 respectively. The standard deviation of management efficiency was 0.2063. The mean value of economic growth rate was 0.114. The maximum and the minimum value of economic growth rate were 0.13 and 0.1 respectively. The standard deviation of economic growth rate was 0.01207, which shows the existence of lower variation of the value economic growth rate over the last ten years as compared to the standard deviation of size. The mean value of inflation rate of assets was 0.1707. The maximum and the minimum value of inflation rate was 0.364 and 0.028 respectively. The standard deviation of inflation rate was 0.10992 which shows the existence relatively lower variation of inflation rate over the last ten years as compared to the standard deviation of size, but it is higher as compared to the standard deviation of GDP.

9.2. Correlation Analysis

As described by Brooks (2008), correlation measures the extent of linear relationship between two or more variables. The correlation coefficient represents the linear relationship between two variables. The correlation coefficient, which ranges between -1 and +1, was used to measure strength and degree of linear relationship between two variables in the study. A correlation coefficient of -1 implies that a perfect negative linear relationship between the two variables while +1 indicates a perfect positive linear association. On the other extreme, a correlation coefficient of zero indicates the absence of any linear relationship between two variables.

9.2.1. Correlation analysis results discussion between dependent and independent variables

The coefficient of correlation between leverage and age was 0.2849. This figure reveals that there is weak positive relationship between leverage and age of insurance companies over the last ten years. The correlation coefficient of leverage and business risk is -0.1597, which is a week and negative relation. The coefficient of correlation between leverage and firm growth was 0.4579, which shows the relationship between leverage and firm growth is moderate positive over the last ten years. The coefficient of correlation between leverage and liquidity was 0.1808. This figure reveals that there is weak positive relationship between leverage and liquidity over the last ten years. The coefficient of correlation between leverage and management efficiency was -0.0406. This shows that the relationship between the two variables is weak and negative. The coefficient of correlation between leverage and size was 0.1147. It indicates that there is weak positive correlation between them. The coefficient of correlation between leverage and tangibility of assets was 0.0591, which shows that the relationship between leverage and tangibility of assets is weak and positive over the last ten years. The coefficient of correlation between leverage and economic growth rate was -0.2947. Their relationship is negative and week. The coefficient of correlation between leverage and inflation was 0.2147. This figure shows that leverage and inflation had weak and positive relationship.

9.2.2. Correlation analysis results discussion between two independent variables

Age was positively correlated with GDP, firms growth, inflation rate and tangibility of assets by having correlation coefficient of 0.4201, 0.2007, 0.7582 and 0.5727 respectively whereas it was negatively correlated with business risk, liquidity, management efficiency and size by having correlation coefficient of -0.1102, -0.0646, -0.2954 and -0.2523 respectively. Business risk was positively correlated with economic growth rate, inflation rate and tangibility of assets with correlation coefficient of 0.1197, 0.1986 and 0.0756 respectively whereas it was negatively correlated with firm growth, liquidity, management efficiency and size with coefficient of -0.1354, -0.1879, -0.2063 and -0.1321 respectively. Economic growth rate was positively correlated with inflation rate, liquidity, size and tangibility of assets with a correlation coefficient of 0.2789, 0.0294, 0.0053 and 0.0557 respectively whereas it was negatively correlated with firm growth and management efficiency at a coefficient of -0.3066 and -0.1367 respectively. Firm growth was positively correlated with management efficiency and tangibility of assets by having correlation coefficient of 0.1849 and 0.2602 respectively whereas inflation rate, liquidity and size were negatively correlated with it with coefficient of -0.2977, -0.2157 and -0.0060 respectively. Inflation rate was positively correlated with tangibility of assets with correlation coefficient of 0.1912. But it has a negative correlation with liquidity, management efficiency and size at a correlation coefficient of -0.0461, -0.3327 and -0.1627 respectively. Liquidity was positively correlated with tangibility of assets at a correlation coefficient of 0.0749 whereas it correlates negatively with management efficiency and size at correlation coefficient of -0.0752 and -0.1431 respectively. Management efficiency was positively correlated with tangibility of assets and negatively correlated with size at a correlation coefficient of 0.0898 and -0.0906 respectively. Insurance size was positively correlated to tangibility of assets with correlation coefficient of 0.1760.

9.3. Testing assumptions of classical linear regression model (CLRM)

The following assumptions were tested in the study:

1. Test for average value of the error term is zero assumption
2. Test for no hetroscedasticity assumption
3. Test for the absence of multicollinearity assumption
4. Test for no autocorrelation assumption
5. test for normality assumption

The diagnostic tests showed that basic assumptions of classical linear regression model were not violated in the study.

9.4. Multiple regression output and its discussion

9.4.1. Fixed effect (FE) Versus Random effect (RE) models

It is necessary to determine whether the fixed effect or random effect approach is appropriate. The choice between both approaches is done by running a Hausman test. To conduct a Hausman test the number of cross sections should be greater than the number of coefficients to be estimated. But, in this study the numbers of cross sections are not greater than the number of coefficients to be estimated so it is not possible to conduct a Hausman test. As noted in Gujarati (2003) if T (the number of time series data) is large and N (the number of cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model and random effect model. Hence, the choice here is based on computational convenience. On this score, fixed effect model may be preferable than random effect model (Gujarati, 2003). Since the number of time series (i.e. 10 years) is greater than the number of cross-sectional units (i.e.9 insurance companies). In addition, according to Brooks (2008), 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. However, in this study, samples were not selected randomly from the population. Therefore, fixed effect model is more appropriate and preferred in this study.

9.4.2. Discussions of multiple regression results

From the regression, the beta indicates that each variable's level of influencing on the dependent variable which is leverage. P-value also indicates at what percentage or precession level of each variable is significant. On the other hand, R-squared values indicate the explanatory power of the model and also the adjusted R-squared value which takes into account the loss of degrees of freedom associated with adding extra variables were inferred to see the explanatory powers of the independent variables in the regression model. In addition, the F-statistic shows the overall significance of variables.

As it is presented in table 4.3, the dependent variable is explained by the explanatory variables in the model with R^2 of 80.1%, which means that 80.1% of the variation in leverage was explained by the independent variables used in this study. In other words only 19.9% of the variation in leverage was not explained by the independent variables and this is due to other factors that are not included in this study. The R^2 result indicates the overall goodness-of-fit of the models used in this study. After modification the explanatory power of the

model, adjusted R^2 values, is 75.35%. The adjusted R^2 measures how well the model fits the data by taking into account the loss of degrees of freedom associated with adding extra variables. The F- statistic of 17.00243 is also significant with P- value of zero indicating that the null hypothesis, that all the coefficients are jointly zero is rejected and the models do not suffer from specification bias. So, the variation in the dependent variable is well explained by the regresses in the model**.**

According to the regression results, the variables like age, business risk, GDP, inflation, management efficiency, size and tangibility had positive coefficient. It indicates that there was direct relationship between those variables and leverage, which imply that increase in these variables cause increase in leverage level of insurance companies. However, size and tangibility had no significant impact on the profitability of selected insurance companies. However, firm growth and liquidity had negative coefficient. It indicates that there was an inverse relationship between those variables and leverage, which implies that increases in these variables cause decreases in leverage of insurance companies. However, only liquidity had no significant impact on leverage of selected insurances companies in Ethiopia.

9.5. Testing of hypotheses

Hypothesis 1:

H_0: There is no positive significant relationship between firm Growth and leverage of selected insurance companies in Ethiopia

H_1: There is a positive significant relationship between firm Growth and leverage of selected insurance companies in Ethiopia.

Firm growth was one of the independent variable employed in this study. This variable has a beta coefficient of -0.152650 and p-value of 0.0000. This indicates that holding other factors constant, if firm growth increases by 100%, the level of leverage will decrease by 15.26% and the relationship is negative and statistically significance at 1%. This shows that the firm with the higher growth rate in assets will employ lower debt to finance their activities. In other words this finding supports that the insurance companies having more and more assets over the years have also a better chance of financing their activities through internal source of finance. This result is in line with Pecking–order theory. Therefore, the null hypothesis which stated that firm growth has no positive significant impact on leverage was not possible to reject in the study. This finding was inline with researchers Naser and Krassimir, (2011); however, it is inconsistent with the findings of Michaelas et al, (1999) and Naveed et al., (2010).

Hypothesis 2:

H_0: There is no positive significant relationship between firm's Size and leverage of selected insurance companies in Ethiopia.

H_1: There is a positive significant relationship between firm's size and leverage of selected insurance companies in Ethiopia.

It can be seen from table 4.3, that size has a beta coefficient of 0.132827 and p-value of. 0.7298 which indicates that keeping other factors constant, if firm size increases by 100%, leverage will also increases by 13.28% but the relationship is statistically insignificant. This implies that leverage is higher for large firms and lower for small firms. The result of this study confirms that size of the sample Ethiopian insurance companies positively affects leverage even if it was insignificant. This predicts that large size insurance companies are preferred to utilize more debt in formation of capital. Thus, shows a positive relationship between leverage and size of insurance sector over ten years. These results also confirm the notion that large firms are employed more debt because these are less risky and diversified in nature (Static trade- off Theory). In addition, larger firms are preferred to issue more debt because it reduces direct bankruptcy costs due to market confidence. This is in line with trade-off theory and agency theory. Though positive sign confirms that large firms are expected to have high debt ratio, but insignificant result indicates that size is not considered as a proper explanatory variable of leverage in the insurance sector. Therefore, the null hypothesis which stated that size has no positive significant impact on leverage was possible to reject by the researchers in this study. This finding was consistent with researchers Albulena et al, (2014), Daniel, (2015), Naveed et al., (2010) and Naser and Krassimir, (2011).

Hypothesis 3:

H_0: There is no positive significant relationship between tangibility of assets and leverage of selected insurance companies in Ethiopia.

H_1: There is a positive significant relationship between tangibility of assets and leverage of selected insurance companies in Ethiopia.

As it can be seen in table 4.3, Tangibility of assets has 0.052490 beta coefficient and p-value 0.1839, which indicates that holding other factors unchanged, if the amount of tangibility of assets increase by 100%, leverage will also increase by 5.25% but the relationship is statistically insignificant even at 10%. Since intangible asset is considered as an explicit promise over debt, lenders require tangible assets as collateral. This implies that selected Insurance companies in the study with high intangible asset may get debt funds easily.

Although positive relationship shows that a firm with the large portion of fixed assets can easily raise debt or obtains more debt at relatively lower rates by providing collaterals of these assets to creditor but due to the insignificant relationship, tangibility is not considered as a powerful explanatory variable to define the debt ratio of selected insurance companies in Ethiopia over the last ten years. Therefore, the null hypothesis which stated that tangibility of assets has no positive significant impact on leverage is possible to reject in the study by the researchers. This finding was consistent with researchers Usman, (2014), Naveed etal, (2010) and Naser and Krassimir, (2011).

Hypothesis 4:

H_0: There is no negative significant relationship between liquidity and leverage of selected insurance companies in Ethiopia.

H_1: There is a negative significant relationship between liquidity and leverage of selected insurance companies in Ethiopia.

Liquidity was another independent variable employed in the study. From the table 4.3, it has a beta coefficient of -0.009298 and p-value of 0.8229. This indicates that being others factors constant, if liquidity increases by 100%, leverage will decrease by 0.93% but the relationship is weak and statistically insignificant. Even if the relationship is weak, this negative relationship implied that the sample Ethiopian Insurance companies with more current assets such as cash and marketable securities will prefer internal sources than debt to finance future investments. However, the insignificant relationship reveals that liquidity is not considered as a powerful explanatory variable to define the debt ratio of selected insurance companies in Ethiopia over the last ten years. Therefore, the null hypothesis which stated that liquidity has not negative significant impact on leverage was possible to reject in the study by the researchers. This finding was consistent with researchers Naser & Krassimir, (2011), Daniel, (2015), and Naveed et al., (2010).

Hypothesis 5:

H_0: There is no negative significant relationship between business risk and leverage of selected insurance companies in Ethiopia.

H_1: There is a negative significant relationship between business risk and leverage of selected insurance companies in Ethiopia.

Business risk has a beta coefficient of 0.150739 and p-value of 0.0002. This indicates that keeping others factors constant, if business risk increase by 100%, leverage will also increase by 15.1% and the relationship is statistically significant ant 1%. Positive sign shows a positive relationship between capital structure and business risk of the insurance companies i.e. debt ratio increases with the increase of business risk. This indicates that in order to fulfill the claims of the insurance policyholder at the expiry of the policy, risky companies acquire external funds. Therefore, the null hypothesis which stated that business risk has not negative significant impact on leverage was not possible to reject in the study by the researchers. This result was in support with the findings of Rafiq et al. (2008) and Naveed et al., (2010) but it is also inconsistency with the findings of Bradley et al., (1984) and Titman & Wessels, (1988).

Hypothesis 6:

H_0: There is no negative significant relationship between age and leverage of selected insurance companies in Ethiopia.

H_1: There is a negative significant relationship between age and leverage of selected insurance companies in Ethiopia.

As shown in table 4.3, the regression coefficient of age was 0.252076 with p-value of 0.0002. This can be interpreted as holding others factors unchanged, when age of insurance companies increase by 100%, leverage (debt ratio) also increases by 25.21% and the relationship is statistically significant at 1%. This indicates that the more firms stay in business, the more likely they become known and mature thus they can easily raise more debt. Therefore, the null hypothesis which stated that age has no negative significant impact on leverage was not possible to reject by the researchers in this study. This finding was consistent with researchers Mohamed and Mahmoud (2013), Saddam Mohammedamin, (2014) and Bayeh (2011). However, the finding was inconsistent with Shams et al (2013) and Naveed et al., (2010).

Hypothesis 7:

H_0: There is no positive significant relationship between management efficiency and leverage of selected insurance companies in Ethiopia.

H_1: There is a positive significant relationship between management efficiency and leverage of selected insurance companies in Ethiopia.

The regression coefficient of management efficiency was 0.083704 with p-value of 0.0024. This is interpreted as holding others factors constant, when management efficiency of insurance company's decreases by 100%, leverage (debt ratio) also increases by 8.37% and the relationship is statistically significant at 5%. This means that there is immediate positive relation between lack of efficiency in expenses management and leverage. Therefore, the null hypothesis which stated that management efficiency has no positive significant

impact on leverage was possible to reject by the researchers in this study. This finding was consistent with the findings of Aburime, (2008) and Dimitris, & Maria (2007).

Hypothesis 8:

H_0: There is no positive significant relationship between Inflation rate and leverage of selected insurance companies in Ethiopia.

H_1: There is a positive significant relationship between Inflation rate and leverage of selected insurance companies in Ethiopia.

Inflation was one of the macroeconomic independent variable employed by the researcher in this study. The beta coefficient and p-value of inflation was 0.014518 and 0.0116 respectively. This shows that holding other factors constant, if inflation rate increases by 100%, leverage will increase by 1.55% and the relationship is significant at 5%. This shows that inflation has positive impact on insurance companies' leverage. Therefore, the null hypothesis which stated that inflation has not positive significant impact on profitability was rejected in the study by the researchers. This finding was consistent with previous studies made by Farah et al., (2014) and Saddam Mohammedamin (2014).

Hypothesis 9:

H_0: There is no positive significant relationship between Economic growth and leverage of selected insurance companies in Ethiopia.

H_1: There is a positive significant relationship between Economic growth and leverage of selected insurance companies in Ethiopia.

Economic growth rate was the other macroeconomic independent variable employed by the researcher in this study. The beta coefficient and p-value of economic growth rate was 0.193255 and 0.0084 respectively. This shows that keeping other things constant, when economic growth rate increases by 100% leverage also increases by 19.33% and the relationship is statistically significance at 5%. Therefore, the null hypothesis which stated that economic growth has no positive significant impact on leverage was rejected in the study by the researchers. This finding was consistent with Farah et al., (2014).

10. Conclusions

The fixed effect regression result of the model shows that age, business risk, management efficiency, GDP and inflation has significant and positive relationship with leverage, while firm growth has significant and negative relationship with leverage. However, liquidity, size and tangibility of asset have no significant relationship with leverage of selected insurance companies of Ethiopia. In the study, therefore the researchers concluded that the main determinants of capital structure for selected insurance companies in Ethiopia are age, business risk, firm growth, management efficiency, GDP and inflation in order of their degree of influence since they have statistically significant impact at 1% and 5% significance level.

Finally, the study found that age, business risk, firm growth, management efficiency, economic growth and inflation rate as the most important determinants of capital structure of selected Ethiopian insurance companies. The findings of the study indicates that pecking order theory, trade-off theory and agency cost theory are the most important capital structure theories applied in the sample insurance companies in Ethiopia.

11. Recommendations

The conclusions indicated that the variables of age, business risk, management efficiency, firm growth, GDP and inflation were significantly related to leverage. Therefore, the researchers recommend that the management of the sample insurance companies shall devote their time and efforts on those variables in order to minimize the weighted average cost of capital.

Management efficiency has a positive and significant impact on capital structure of selected Ethiopian insurance companies. This predicts that insurance companies with high coefficient of expense to income ratio may use more debt in their capital structure. Therefore, it is better for the insurance companies under study to give more attention in reduction of operating, administrative and personnel expenses and other costs, to employ appropriate mix of capital structure.

Among the major theories of capital structure, pecking order theories, agency cost theories and trade off theories are the prominent theories for Ethiopian insurance sector. More specifically, pecking order theories and agency cost theories are found as the most influential theory from the three theories. Therefore, managers of the sample Ethiopian insurance firms are advised to act accordingly by giving due attention first and most importantly for pecking order and agency cost theories thereafter for trade off theories while making their financing decision.

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Table 4.1: Descriptive analysis

Variables	Mean	Maximum	Minimum	stand.dev	Observation
LEV	0.63424	0.8559	0.4528	0.07803	90
SZ	8.34748	9.4641	7.363	0.46599	90
GRW	0.22891	0.67007	-0.0413	0.14094	90
TN	0.17161	0.6545	0.0227	0.11283	90
LQ	1.15674	2.3062	0.5482	0.27975	90
AGE	15.8333	39	3	7.63088	90
BR	0.16866	1.53807	0.01221	0.25114	90
MGTE	0.51696	1.2366	0.01221	0.2063	90
GDP	0.114	0.13	0.1	0.01207	90
INF	0.1707	0.364	0.028	0.10992	90

Source: Eviw6 output

Table 4.2: Correlation analyses

	LEV	AGE	BR	GDP	GRW	INF	LQ	MGTE	SZ	TN
LEV	1									
AGE	0.2849	1								
BR	-0.1597	-0.1102	1							
GDP	-0.2947	0.4201	0.1197	1						
GRW	0.4579	0.2007	-0.1354	-0.3066	1					
INF	0.2147	0.7582	0.1986	0.2789	-0.2977	1				
LQ	0.1808	-0.0646	-0.1879	0.0294	-0.2157	-0.0461	1			
MGTE	-0.0406	-0.2954	-0.2063	-0.1367	0.1849	-0.3327	-0.0752	1		
SZ	0.1147	-0.2523	-0.1321	0.0053	-0.0060	-0.1627	-0.1431	-0.0906	1	
TN	0.0591	0.5727	0.0756	0.0557	0.2602	0.1912	0.0749	0.0898	0.1760	1

Source: Eview6 output

Table 4.3: Fixed effect regression result for all explanatory variables

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1.130867	0.471722	-2.397318	0.0191**
AGE	0.252076	0.064522	3.906823	0.0002*
BR	0.150739	0.038119	3.954406	0.0002*
GDP	0.193255	0.071263	2.711860	0.0084**
GRW	-0.152650	0.023840	-6.403198	0.0000*
INF	0.014518	0.005603	2.591197	0.0116**
LQ	-0.009298	0.041383	-0.224674	0.8229
MGTE	0.083704	0.026584	3.148700	0.0024**
SZ	0.132827	0.383017	0.346792	0.7298
TN	0.052490	0.039121	1.341728	0.1839

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.800577	Mean dependent var	0.634236
Adjusted R-squared	0.753491	S.D. dependent var	0.078027
S.E. of regression	0.038740	Akaike info criterion	-3.487022
Sum squared resid	0.108058	Schwarz criterion	-2.987060
Log likelihood	174.9160	Hannan-Quinn criter.	-3.285408
F-statistic	17.00243	Durbin-Watson stat	1.893144
Prob(F-statistic)	0.000000		

*and ** denotes significance level at 1% and 5% levels respectively
Source: Eview6 output