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Full Length Research Paper

The Determinants of Financial Pattern: Decompositions Analysis: Evidence from Construction Companies in Addis Ababa; Ethiopia

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Abstract
Capital structure has attracted intense debate in the financial management arena for nearly half-century. The basic question of whether a unique combination of debt and equity capital maximizes firm value, and if so, what factors determine a firm's optimal capital structure have been the subject of frequent debate in the capital structure literature. This paper aims to identifying what determines both externally and internally the capital structure of Ethiopian construction industry? A sample of 30 companies were taken from the population of 266 companies by using simple random sampling and secondary data was collected from the financial statements of selected companies for the period of 2001-2006EC. The collected data were analyzed using multiple regressions. The result revealed that, leverage has: a positive relation with, tangibility, growth opportunity, and size of the firm. But, have a negative relation with profitability, liquidity and risk. However, as argued by Harris and Raviv (1991), "The interpretation of results must be irritated by an awareness of the difficulties involved in measuring both leverage and the explanatory variables". Thus, the study decomposed leverage as short term and long term so; the study finds significant differences in the determinants of long and short-term debt. This study finding would assist in establishing financial policy guidelines that will mitigate financial risk in various firms. Therefore, it is recommended that in carrying out their financing decision, the financial managers of Construction Companies, should properly measure those significant variables in order to have an optimum financing mix for their firms.

Keywords: *Capital Structure, Determinants of Capital Structure, Construction Company, pecking order theory, trade of theory, MM theory, and agency cost theory*

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Introduction

According to Ethiopian Economic Association (EEA) 2006 report, Construction activities in Ethiopia are generally financed by government budgets and private equity capital, NGOs and banks. Government budget finances public infrastructures and other public constructions such as schools, clinics, etc. Government budget consists of resources originating from government treasury, domestic borrowing and foreign loans and grants. The private sector, on the other hand, finances buildings for residential and business purposes. Private sector's sources of financing originate from own capital and loans from formal and informal money markets. As per, Haipin & Senior (2009) construction financing is mainly concerned with; 1. Project financing, and 2, Company financing: Project financing is effectively a short term activity tied to "line of credit" issues and protocols. Short term financing, as the name indicates, has to do with loans or credits, which must be repaid in the near future .Company financing, on the other hand, is handled mainly using commercial bank loans and retained earnings from within the firm or organization. Therefore, financing decision in construction companies, just like other types of business enterprise, is also crucial decisions that can help them to increase the value of the firm.

Companies can utilize internal or external resources to provide funds for their financial needs. Strategies used by managers to provide the required financial resource of the economic entity will affect the company value. Therefore, awareness of factors affecting the company's financial decisik2on is so critical. Hence, this decision called in finance as Capital structure: it means the way a firm finances their assets through the combination of equity, debt, or hybrid securities (Saad, 2010). In short, capital structure is a mixture of a company's debts (long-term and short-term), common equity and preferred equity. Capital structure is essential on how a firm finances its overall operations and growth by using different sources of funds. The Modigliani and Miller theory, proposed by Modigliani and Miller (1958 and 1963), forms the basis for modern thinking on capital structure. In their seminal article, Modigliani

and Miller (1958 and 1963) demonstrate that, in a frictionless world, financial leverage is unrelated to firm value, but in a world with tax-deductible interest payments, firm value and capital structure are positively related. Miller (1977), added personal taxes to the analysis and demonstrates that optimal debt usage occurs on a macro level, but it does not exist at the firm level. Interest deductibility at the firm level is offset at the investor level. In addition, Modigliani and Miller (1963) made two propositions under a perfect capital market condition. Their first proposition is that the value of a firm is independent of its capital structure. Their second proposition states that the cost of equity for a leverage firm is equal to the cost of equity for an unleveraged firm plus an added premium for financial risk.

Since then, several theories 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 strongly. One of them is the trade-off theory, which assumes that there are benefits and costs associated with the use of debt. In the beginning, the theory was limited to the trade-off between the tax advantages of debt and bankruptcy costs. Then, it was extended to include benefits and costs of debt associated with agency conflicts. The other main theory ik2s the pecking order hypothesis which assumes that, under information asymmetry between insiders and outsider, firms will resort to internally generated funds first to finance their growth, but when external financing is needed, firms prefer to raise debt before equity.

According to Kila and Mahmood, (2008), Capital structure decisions are crucial for the financial well-being of any firm. Financial distress, liquidation and bankruptcy are the ultimate consequences lay ahead if any major misjudgment occurred following financing decision of firms'. Thus, firms with high leverage need to allocate an efficient mixture of capital that will finally reduce its cost.

Motives for the study

Over the past several decades, theories on a firm's capital structure choice have evolved in many directions. But what are the factors that affect the firm's financing decisions? Researchers in the corporate finance area have devoted extensive time and effort to ascertain the answer to this important question through theoretical and empirical means. Several researchers have investigated the determinants of the capital structure. However, there is still no unifying theory regarding capital structure, even after decades of serious research, which leaves the topic open for further research. Furthermore, most of the literature in the capital structure and its determinant has focused on the experience of developed economies (mainly US-based), where they have many institutional similarities. However, emerging markets like Ethiopia, with many institutional differences, have rarely been the subject of research in this field. In addition, as suspected by Rajan and Zingales (1995), a good understanding of the relevant institutional context is required when identifying the fundamental determinants of capital structure and in this context; it is worthwhile to note that Ethiopia has many special features as an emerging market. So, like other developing country, the determinants of capital structure of Ethiopian firms are still in underexplored areas in the literature of financing decision. Moreover, research in the capital structure of construction had received a very limited attention; to the researcher's knowledge, there was only two studies were conducted on determinants of capital structure in Ethiopian construction companies by Netsanet Belay. Furthermore, no study is conducted to see the effect of country-specific factors i.e. GDP and inflation on leverage. This fact reveals a great need for studies to update the existing evidence. Moreover, as argued by Harris and Raviv (1991), *"The interpretation of results must be tempered by an awareness of the difficulties involved in measuring both leverage and the explanatory variables of interest".* Therefore, in this paper the researcher focus on the difficulties of measuring leverage through dividing leverage as long term and short term debt.

Objectives of the study

The main purpose of this study is to identify the factors which influence the capital structure of Construction companies in Addis Ababa; and then testing the result in line with major capital structure theories.

Specifically, the study was designed:

1. *To assess the impact of firm specific factors i.e. non-debt tax shields, growth opportunity, profitability, risk, liquidity, size of the company, age of the firm, as well as the asset structure (tangibility) on the debt ratio(leverage) of construction companies*
2. *To know the effect of macroeconomic (external factors) i.e. Expected Inflation and GDP growth on the capital structure choice And*
3. *To identify which capital structure theory can more explain the variations on capital structure of Ethiopian Construction Companies.*
4. *To know whether determinants of leverage appear to vary significantly, depending upon which component of debt is being analyzed.*

Research Hypotheses

In this study, in order to identify which factors best explains capital structure of Ethiopian Construction Company and to know which of the capital structure theories is relevant in the Ethiopian context, the researcher's identifies ten key variables based on the available literature and major theories in capital structure. These explanatory variables were: tangibility, non-tax shields, growth, earning volatilities, age, profitability, liquidity, Expected Inflation, GDP and size. Out of these ten variables four explanatory variables (Tangibility, size, profitability and growth) are identified as important factors in the G-7 countries (Rajan and Zingales, 1995), as well as in ten developing countries (Booth et al,. 2001). Based on the above information the following ten hypotheses would be tested throughout the proposed study.

The developed hypotheses and their rationale would be discussed in the separate section in the methodology part.
Hypothesis 1*: There is a positive relationship between leverage ratios and tangibility.*
Hypothesis 2*: There is a positive relationship between leverage ratios and growth.*
Hypothesis 3: *There is a negative relationship between leverage ratios and non-debt tax shields.*
Hypothesis 4: *There is a negative relationship between leverage ratios and earnings volatility.*
Hypothesis 5*: There is a negative relationship between leverage ratios and profitability.*
Hypotheses 6*: There is a positive relationship between leverage ratios and size.*
Hypothesis 7*: There is a positive relationship between leverage ratios and age.*
Hypothesis 8: *There is a negative relationship between leverage ratios and liquidity*
Hypothesis9: *There is a positive relation between leverage and expected inflation.*
Hypothesis10: *There is a negative relation between leverage and GDP growth.*

Research Design and Methodology
This section provides information as to how the study would carry out in terms of data collection, analysis and presentation.

Research Approach
According to Creswell (2003), the problem that is going to be investigated in the study is used as a base for determining the research approach. He noted that if the problem is identifying factors that influence an outcome, the utility of an intervention or understanding the best predictors in outcomes, then a quantitative approach is best.

"A quantitative approach is one in which the investigator primarily uses postpositive claims for developing knowledge (i.e., cause and effect thinking, reduction to specific variables and hypotheses and questions, use of measurement and observation, and the test of theories), employs strategies of inquiry such as experiments and surveys, and collect data on predetermined instruments that yield statistics data (Creswell, 2009).'' Therefore to understand and analyze the possible determinants of capital structure decisions of construction companies in Addis Ababa and to know which capital structure theory explains the variations on the capital structure of the companies the study would adopt a quantitative research approach.

According to Yesgat (2009) the quantitative research approach translated the research problem in to specific variables and hypothesis to be tested (Yesgat, 2009, p.70). Thus, it enables the researcher to get a deep understanding about the area being investigated. In investigating the determinants of capital structure of firms in Addis Ababa Construction industry, the researcher would try to test the relationship between leverage ratio, which is a dependent variable, and ten explanatory variables. Therefore, in such a case a quantitative research approach plays a vital role and Yesgat (2009) noted to support this idea as a "quantitative research approaches tests the theoretically established relationship between variables using sample data with the intention of statistically generalizing for the population under investigation". Thus, this study would be conduct to test which determinant can best explain the variation on the leverage ratio of the companies by taking the construction industry as a case.

Survey Design
Cresswell (2003) also noted that a quantitative research approach employs strategies of inquiry such as experiments and surveys, and collect data on predetermined instruments that yield statistics data. Therefore, this study would use survey strategy using structured record review method than experimental one due to the following reasons: surveys are relatively inexpensive (especially self-administered surveys), the rapid turnaround in data collection and surveys are used to generalize from a sample to a population so that inferences can be made about some characteristic, attitude, or behavior of the intended population (Babbie, 1990), than other method.

Sampling Design
As noted by Cohen et al. (2005) the *"questions of sampling arise directly out of the issue of defining the population on which the research will focus"*. Further, they stated that *"factors such as expense, time and accessibility frequently prevent researchers from gaining information from the whole population. Therefore, they often need to be able to obtain data from a smaller group or subset of the total population in such a way that the knowledge gained is representative of the total population under study"* (Cohen et al. (2005) P.92 This study is conducted on Addis Ababa Construction companies, which is generally categorized in to three basic categories such as, general contractors, building contractors, and real estate contractors. This study only focuses on the first category, in which a total of 266 construction companies were currently in operation. Hence, as noted by Cohen et al. (2005), covering the entire construction firms in the category was both costy as well as time consuming. As a consequence of this, the researcher decided to draw only 30 companies as a sample from the total population. In addition to the constraint of time availability and cost, the other reason for taking small sample size is that, since the study is survey i.e. structured document review, taking a small amount of a sample does not affect the researcher to generalize the result to the populations.

The criterion for inclusion in the sample is holding 6 years data from 2001-2006 EC. In other words, companies that are at pre-implementation stage were deliberately excluded from the sample. Or companies which are implemented after 2001 are again excluded from the sample. To give equal chance for each construction company being included in the sample and to insure the representativeness of the sample, simple random sampling technique is used. All the 266 companies mentioned in the population were

listed separately on a piece of paper of same size, folded and kept in a basket. By blind fold, 30 construction companies are selected randomly.

Sources of Data and Data Collection Instruments
To meet the objectives of this study, the researcher highly relayed on secondary source of data. A structured record review would be made to collect a panel data, which comprises both time series and cross-sectional elements, i.e., it embodies information across both time and space. Annual financial report of 30 construction companies, covering the period from 2008 to 2013 would be collected from Ethiopian revenue and custom authority (ERCA) and six year GDP as well as inflation data would be collected from national bank of Ethiopia (NBE). Regarding the use of panel data, Paula &Zelia (2007 P.552) mentioned two basic benefits. The first benefit of working with panel data is, understanding the development overtime of the relationship between explained variables and explanatory variables. The other benefit of using panel data is allowing the researcher to measure the difference between companies which are not observable and these differences having the name of individual effect. Furthermore, Shah& Khan (2007) noted that "panel data usually provides the researcher a large number of data points, increasing the degree of freedom and reducing the colinearity among explanatory variables and therefore, it improves the efficiency of econometric estimates".

Variable Descriptions and Model Specifications
Variable Descriptions
The dependent variable of this study is the financial leverage. In literature, several definitions of leverage were used to investigate its associations with firm-specific characteristics. Rajan and Zingales (1995) used the leverage as the ratio of total debt to net assets, where net assets are total assets less accounts payable and other liabilities instead of the ratio of total liabilities to total assets or the ratio of debt (short term and long term) to total assets. In this study leverage would be measured as the ratio of total debt to total equity using book values instead of market values because of two reasons:

The first reason was the data limitations, which is also discussed in Titman and Wessels (1988) which forced them to measure debt in terms of book values rather than market values. The second reason is the conceptual simplicity and the variables' ability to reflect a firm's total reliance on borrowed funds, which is also brought by Ferri and Jones (1979) who measured the financial leverage as the ratio of total debt to total assets at book value for the stated reasons. So that long term debt was measured as total long term debt divided to total asset and short term debt was measured as short term debt divided to total assets.

In this study, to identify which of the capital structure theories is relevant in the Ethiopian context, the researcher concentrates only on ten key explanatory variables because of the time constraints. These explanatory variables were: tangibility, non-tax shields, growth, earning volatilities, age, profitability, liquidity, GDP growth, inflation and size. Their explanation and proxies of these independent variables were separately examined in the following sub-sections referring to the relevant literature.

Tangibility
It is assumed, from the theoretical point of view that, tangible assets can be used as collateral. Therefore higher tangibility lowers the risk of a creditor and increases the value of the assets in the case of bankruptcy. As Boothet al. (2001, p. 101) state: "The more tangible the firm's assets, the greater its ability to issue secured debt and the less information revealed about future profits." Thus a positive relation between tangibility and leverage is predicted. In this study, tangibility was measured as tangible assets divided by total assets. The following hypothesis was formulated based on the rationale stated above.
Hypothesis 1*: There is a positive relationship between leverage ratios and tangibility.*

Growth Opportunities
According to Myers (1977), firms with high future growth opportunities should use more equity financing, because a higher leveraged company is more likely to pass up profitable investment opportunities. As Huang and Song (2002, p. 9) claim: "Such an investment effectively transfers wealth from stockholders to debkt holders." Therefore a negative relation between growth opportunities and leverage is predicted. However, Benito (2003) proposes the opposite. If firms have growth opportunities, then they require more funds to grow. Given that internal resources are not sufficient, firms would then turn to external sources of finance, which would lead to a higher debt level in firms. In this study, the growth of total assets measured by the percentage change in total assets (GTA) would be used as indicator of Growth attribute.

Based on the above rationale, the following hypothesis was formulated:
Hypothesis 2*: There is a positive relationship between leverage ratios and growth.*

Non-debt tax shields
Tax deductions for depreciation and investment tax credits are substitutes for the tax benefits of debt financing (De Angelo and Masulis, 1980). As a result, firms with large non-debt tax shields relative to their expected cash flow include less debt in their capital structures. Depreciation divided by total assets was used in order to proxy for non-debt tax shields in this study.
The following hypothesis was formulated based on the rationale stated above.
Hypothesis 3: *There is a negative relationship between leverage ratios and non-debt tax shields.*

Volatility

Volatility may be understood as a proxy for risk of a firm (probability of bankruptcy). Therefore it is assumed that volatility is negatively related to leverage. However, as Huang and Song (2002, p. 9) state based on findings of Hsia (1981): "As the variance of the value of the firm's assets increases, the systematic risk of equity decreases. So the business risk is expected to be positively related to leverage." Conversely, a negative relation is found by (Bradley et al., 1984) and (Titman and Wessels, 1988). As stated by Titman and Wessels (1988), various studies in different countries suggest that a firm's optimal debt level is inversely related to the volatility of earnings. In this study, standard deviation of return on assets was used as a proxy for volatility. Based on the above rationale, the following hypothesis was formulated:

Hypothesis 4*: There is a negative relationship between leverage ratios and earnings volatility.*

Profitability

There are no consistent theoretical predictions on the effects of profitability on leverage. From the point of view of the trade-off theory, more profitable companies should have higher leverage because they have more income to shield from taxes. The free cash-flow theory would suggest that more profitable companies should use more debt in order to discipline managers, to induce them to pay out cash instead of spending money on inefficient projects. However, from the point of view of the pecking-order theory, firms prefer internal financing to external. So more profitable companies have a lower need for external financing and therefore should have lower leverage. In this study, profitability was proxied by return on assets (defined as earnings before interest and taxes divided by total assets). Based on the above rationale, the following hypothesis was formulated:

Hypothesis 5*: There is a negative relationship between leverage ratios and profitability.*

Size

Size is likely to be positively correlated with leverage, since direct bankruptcy costs appear to constitute a larger proportion of a firm's value as that value decreases (Titman and Wessels, 1988). It is also the case that relatively large firms intend to be more diversified, have greater access to debt markets and less prone to bankruptcy therefore there is a tendency of being more leveraged as size increases, according to Trade-off and Agency Cost theories. The natural logarithm of assets (ln A) was selected as the indicator for size variable in this research.

Hypotheses 6*: There is a positive relationship between leverage ratios and size.*

Age of the Firm

Age of the firm is a standard measure of reputation in capital structure models. As a firm continues longer in business, it establishes itself as an ongoing business and therefore increases its capacity to take on more debt; hence age is positively related to debt (Abor, 2008). As firms became aged, the long years of track record will enable them to easily convince creditors.

In addition experience enables the firm expertise in finding alternative credit source cost effectively or in favorable terms when going for debt capital. This induces a positive relationship between leverage ratios and age of the firm. The number of years of stay in business was used as indicators.

Hypothesis 7*: There is a positive relationship between leverage ratios and age.*

Liquidity

Firms prefer internal financing to external financing. Therefore, firms are likely to create liquid reserves from retained earnings. If the liquid assets are sufficient to finance the investments, firms will have no need to raise external funds. Hence, liquidity is expected to be negatively related to leverage. Here we use the current ratio (calculated as current assets over current liabilities) as a proxy of liquidity. Firms with higher liquidity ratios are preferred to acquire more debt because of great ability to meet short term obligations (Ozkan, 2001). In this study Liquidity was measured as a ratio of total current asset to short term liability.

Hypothesis 8*: There is a negative relationship between leverage and liquidity of the firm*

Expected inflation

According to Taggart (1985), Expected inflation is positively related to leverage. This may reflect features in the tax code that favor debt when inflation is expected. However, it might also reflect efforts by managers to time the market. It is hard to see why expected inflation would matter within a pecking order theory. Empirical studies generally find a positive relation between leverage and inflation. In the absence of inflation expectations data that spans the whole sample period, the researcher follow previous studies and use data on the realized inflation. In this study, the percentage change in the annual consumer price index (CPI) would be used as proxy for expected inflation.

Hypothesis9: *There is a positive relation between leverage and expected inflation.*

GDP growth

The trade-off theory predicts a negative relation between leverage and GDP growth. By contrast, the pecking order theory predicts a positive relation between leverage and macroeconomic growth, since a high ratio of growth opportunities to internal funds would imply a greater need for external finance. Empirical studies generally find a negative association between leverage and macroeconomic growth (see, for example, Demirgüç-Kunt and Maksimovic, 1996). Following common practice this study, measured GDP growth as the percent change in the annual real GDP.

Hypothesis10: *there is a negative relation between leverage and GDP growth.*

Model Specifications

The model to this study would be derived from the previous studies such as Ozkan (2001), Bevan and Danbolt (2002) and Titman and Wessels (1988). The chosen model is highly believed to capture the essence of the subject under study. The following model was specified based on the relationship outlined in the hypothesis.

Model: 1. $\mathbf{LVE}_{it} = \alpha + \beta 1\ Prof_{it} + \beta 2 Tang_{it} + \beta 3 Size_{it} + \beta 4 Grh_{it} + \beta 5 EarVol_{it} + \beta 6 Ndts_{it} + \beta 7 Age_{it} + \beta 7 Lq_{it} + GDP_{it} + INF_{it} \ldots\ldots\ldots + \varepsilon_{it}$

Model: 2. $\mathbf{LDT}_{it} = \alpha + \beta 1\ Prof_{it} + \beta 2 Tang_{it} + \beta 3 Size_{it} + \beta 4 Grh_{it} + \beta 5 EarVol_{it} + \beta 6 Ndts_{it} + \beta 7 Age_{it} + \beta 7 Lq_{it} + GDP_{it} + INF_{it} \ldots\ldots\ldots + \varepsilon_{it}$

Model: 3. $\mathbf{SDT}_{it} = \alpha + \beta 1\ Prof_{it} + \beta 2 Tang_{it} + \beta 3 Size_{it} + \beta 4 Grh_{it} + \beta 5 EarVol_{it} + \beta 6 Ndts_{it} + \beta 7 Age_{it} + \beta 7 Lq_{it} + GDP_{it} + INF_{it} \ldots\ldots\ldots + \varepsilon_{it}$

Where $\mathbf{LVE}_{it}$, $\mathbf{LDT}_{it}$ and $\mathbf{SDT}_{it}$ are the dependent variable i.e. the leverage, long term and short term leverage respectively of company (i) to the period t, which starts from the year 2008 to 2013. α is the intercept of the equation. β is the slope coefficient for X_{it} independent variables. X_{it} represents the ten independent variables. Where i = 1, 2, 3…….30 sampled companies and ε represents the error term.

Method of Data Analysis

To test the hypothesis, the relationshipk2s between the level of debt and ten explanatory variables, multiple regression analysis would be used for the study. In analyzing the data, the researcher uses Eviews6 software packages. The diagnostic tests and estimating the result for the study would be conducted through Eviews6 software package, because the researcher believes that Eviews6 software package is relatively simple to understand for diagnostic test, estimating and interpretation of the result.

Expected outcome of the paper

Table 1. Expected outcome of the paper

Determinants	Definitions of variables	Predicted signs by theories	Expected outcome of the paper
Tangibility	Fixed asset/total asset	+ (trade of theory and agency theory) -(pecking order theory)	+
Profitability	EBIT/total asset	+ (trade of theory) -(pecking order theory)	-
Growth opportunities	Percentage change in total asset	+ or - (pecking order theory) -(agency theory)	+
Size	In(total asset)	+ (trade of theory and agency theory) + or - (pecking order theory)	+
Earning volatility	standard deviation of return on assets	- (pecking order, agency cost and trade off theory)	-
Non-debt tax shields	Annual Depreciation Expense / Total Assets	- (trade of theory)	-
Age	Number of years stayed in the business	+ (trade of theory and agency theory) -(pecking order theory)	+
Liquidity	Current asset/current liability	+ (trade of theory) -(pecking order theory)	-
Expected inflation	Percentage change in CIP	+ (trade of theory) _(pecking order theory)	+
GDP growth	Percentage change in real GDP	- (trade of theory) + (pecking order theory)	+

The positive sign "+" specifies a positive relationship between the variable and firms' leverage, while a negative sign "-" indicates a negative relationship between the variable and leverage, as well as the blank "_"means no suggestion by theories.

Analysis and Discussions of Results

This section of the paper focuses on the analysis, and discussion of findings. Regression analysis was conducted and inferences were drawn from it. Summary of descriptive statistics and regression results from the Eview output were presented in a tabular form, from where detailed analysis and discussion of the result was given. In addition, the researcher also conducts unit root test for data stationary, Haussmann test to know whether the model is fixed or random effect as well as a diagnostic test is conducted to increase the reliability of the study.

Data Stationery and Unit Root Testing

According to Chris Brooks, (2008), a stationary series can be defined as one with a constant mean, constant variance and constant autocovariances for each given lag. Test of data stationary or not is essential because if the variables employed in a regression model are non-stationary, then it can be proved that the standard assumptions for asymptotic analysis will not be valid. In other words, the

usual "t-ratios" will not follow a t-distribution, and the F-statistic will not follow an F-distribution, and so on. In addition, if two stationary variables are generated as independent random series, when one of those variables is regressed on the other, the t-ratio on the slope coefficient would be expected not to be significantly different from zero, and the value of R^2 would be expected to be very low. This seems obvious, for the variables are not related to one another. However, if two variables are trending over time, a regression of one on the other could have a high R^2 even if the two are totally unrelated. So, if standard regression techniques are applied to non-stationary data, the end result could be a regression that 'looks' good under standard measures (significant coefficient estimates and a high R^2), but which is really valueless. Such a model would be termed a 'spurious regression'. Chris Brooks, (2008) Levin, Lin and Chu (LLC) (2002) have shown that the use of a unit root test for a pooled time series and cross-sectional (panel) data can significantly increase the power of the test. They developed their method from a multivariate generalization of the ADF test, and provided statistical foundation for panel unit root tests. The following table repots the LLC unit root test summary result for each variable. Based on the LLC unit root test method the hypothesis is:
H0: panel data has unit root (non-stationary)
H1: panel data has not unit root (stationary)

Table: 2. Unit Root Test Results

Variables	T-Statistic	Prob.**	Decision
LEV	-15.6071	0.0000	H0: is rejected at level i.e. stationary
TAG	-81.6374	0.0000	H0: is rejected at level i.e. stationary
GRO	-35.8566	0.0000	H0: is rejected at level i.e. stationary
NDTS	-15.4704	0.0000	H0: is rejected at 1st deference i.e. stationary
RISK	3.12	1.0000	H0: is not rejected at level i.e. non-stationary
PRO	-28.5422	0.0000	H0: is rejected at level i.e. stationary
SIZE	-10.0745	0.0000	H0: is rejected at level i.e. stationary
AGE	25.9459	1.0000	H0: is not rejected at level i.e. non-stationary
LIQ	-14.8599	0.0000	H0: is rejected at level i.e. stationary
INF	-17.5847	0.0000	H0: is rejected at level i.e. stationary
GDP	-13.8539	0.0000	H0: is rejected at level i.e. stationary

*"**" significant at 1% level except risk and age (**Source:** Regression output of Eview 6)*

As it is clearly indicated by the above table (4.1), the data of eight variables including dependent variables are stationary at level, the data of one variable has become stationary after 1st differenced and the data for two variable i.e. risk and age are non-stationary at all. This is because single calculated risk rate for each single company is applied for six consecutive years. The same is true for the variable age. It is therefore, possible to validly undertake hypothesis tests about the regression parameters of this study by using this data, because, the data are stationary except for the two variables because of the above stated reasons.

Diagnostics test

Assumption 1: Errors have zero mean or E (ut) = 0

The first assumption required is that the average value of the errors is zero. According to Chris Brooks, (2008), if a constant term is included in the regression equation, this assumption will never be violated. Since the regression model used in this study includes a constant term, this assumption cannot be violated.

Assumption 2: Homoscedasticity (variance of the errors are constant var(ut) = σ2 < ∞)

It has been assumed that the variance of the errors is constant; this is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heteroscedastic. The presence of heteroskedasticity makes ordinary least square estimators not efficient because the estimated variances and covariance of the coefficients (βi) are biased and inconsistent. Thus, the tests of hypotheses are no longer valid. Chris Brooks, (2008).There are many methods used to test the existence of heteroskedasticity, in this study the researcher used Breusch-Pagan-Godfrey test. Table (4.2) bellow presents the test statistics.

Table: 3. Heteroskedasticity test

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	1.832198	Prob. F(10,168)	0.0585
Obs*R-squared	17.60197	Prob. Chi-Square(10)	0.0621
Scaled explained SS	22.02160	Prob. Chi-Square(10)	0.0150

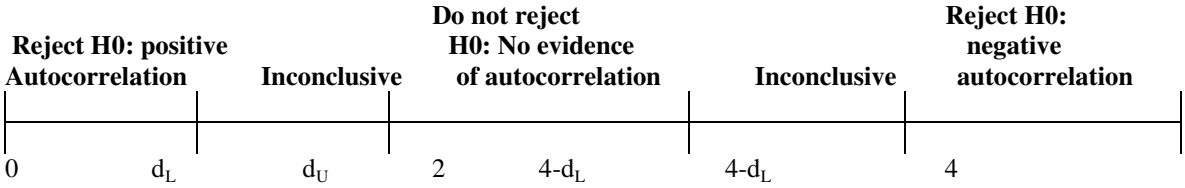
***Source:** Regression output of Eview 6*

From Breusch-Pagan-Godfrey test result above, it is obvious to say that there is no evidence for the presence of heteroskedasticity, because both the test-statistics i.e. F-and χ2 reveals the absence of heteroskedasticity since the p-value is more than 5% significant level.

Therefore, the **H0**: that the variances disturbances are homoscedastic will not be rejected.

Assumption 3: covariance between the error terms over time is zero (autocorrelation)

It is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are 'autocorrelated' or that they are 'serially correlated'. A test of this assumption is therefore required. There are again many methods to test this assumptions but for the purpose of this study the researcher used DW test because the condition for DW i.e. (there was a constant term in the regression, the regressors were non-stochastic, and no lags of dependent variable) are fulfilled. The following figure will show the DW test result;



Source: Chris Brooks, (2008) p. 147

Fig 1. Rejection and Non-Rejection Regions for DW Test

According to Chris Brooks, (2008), DW has 2 critical values: an upper critical value (d_U) and a lower critical value (d_L), and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected. the null hypothesis is rejected and the existence of positive autocorrelation presumed if DW is less than the lower critical value; the null hypothesis is rejected and the existence of negative autocorrelation presumed if DW is greater than 4 minus the lower critical value; the null hypothesis is not rejected and no significant residual autocorrelation is presumed if DW is between the upper and 4 minus the upper limits. To test this assumption, the DW statistics value in the main regression table should be used.

So as per the result indicated in the table (4.7) bellow, the value of DW statistics is 1.9 which is in the non rejection region. Therefore, there is no autocorrelation problem.

Assumption 4: Multicollinearity Test

Multicollinearity means that there is linear relationship between explanatory variables which may cause the regression model biasked (Gujarati, 2003). According to Chris Brooks, in any practical context, the correlation between explanatory variables will be non-zero, although this will generally be relatively benign in the sense that a small degree of association between explanatory variables will almost always occur but will not cause too much loss of precision. However, a problem occurs when the explanatory variables are very highly correlated with each other, and this problem is known as multicollinearity. This poses problems in interpreting regression coefficients. And it also results in large standard errors of the estimated regression coefficients and leads to instability of regression estimates. This is not a problem of model specification, but of data (Hair et al., 2006). In order to examine the possible degree of multi collinearity among the regressors, correlation matrixes of the variables were presented in table (4.3) bellow.

Table 4. Pearson correlation Coefficient matrix

	LEV	TAG	GRO	NDTS	RISK	PRO	SIZE	AGE	LIQ	INF	GDP
LEV	1	0.39	0.31	0.095	-0.335	-0.093	0.553	-0.028	-0.459	0.026	-0.02
TAG	0.39	1	0.021	-0.058	0.276	0.15	0.25	-0.082	-0.22	0.039	-0.00035
GRO	0.31	0.021	1	0.263	0.039	0.11	0.087	0.012	-0.194	-0.004	0.099
NDTS	0.095	-0.058	0.263	1	0.163	0.034	0.069	0.099	-0.02	0.04	-0.092
RISK	-0.335	0.276	0.039	0.163	1	0.231	-0.358	0.035	0.132	-0.01	0.003
PRO	-0.093	0.15	0.11	0.034	0.231	1	0.066	0.072	0.118	-0.058	0.02
SIZE	0.553	0.25	0.087	0.069	-0.358	0.066	1	-0.113	-0.29	-0.006	0.005
AGE	-0.028	-0.082	0.012	0.099	0.035	0.072	-0.113	1	0.20	-0.258	-0.08
LIQ	-0.459	-0.22	-0.194	-0.02	0.132	0.118	-0.29	0.20	1	-0.015	-0.02
INF	0.026	0.039	-0.004	0.04	-0.01	-0.058	-0.006	-0.258	-0.015	1	-0.52
GDP	-0.02	-0.00035	0.099	-0.092	0.003	0.02	0.005	-0.08	-0.02	-0.52	1

Source: *Regression output of Eview 6*

The conventional measures for multicollinearity are tolerance and the variance inflation factor (VIF). In this study only tolerance value is used as a measure of muliticollinearity. The tolerance value is the amount of an independent variable's predictive ability that is not predicted by the other independent variables in the equation (Hair et al, 2006). As a rule of thumb, the inter-correlation among the independents above 0.80 signals a possible multicollinearity problem (Gujatati, 2003). However, as indicated in the table above, almost all variables have low correlation power and this implies no multicollinearity problem in the explanatory variables included in this model. The result presented on table above, also confirms that; tangibility, size, non debt tax shield, inflation and growth have positive correlation with leverage whereas risk, age, GDP, liquidity and profitability are negatively correlated with the dependent variable. This therefore means that an increase in tangibility, size, non debt tax shield, inflation and growth will result to increase in debt. On the other hand, a decrease in tangibility, size, non debt tax shield, inflation and growth will lead to decrease in leverage. However, the inverse relation is true for the variable; risk, age, GDP, liquidity and profitability with leverage.

Normality test

One of the most commonly applied tests for normality is the Bera—Jarque (BJ) test. BJ uses the property of a normally distributed random variable that the entire distribution is characterized by the first two moments the mean and the variance. Bera and Jarque (1981), Formalize these ideas by testing whether the coefficient of skewness and the coefficient of excess kurtosis are jointly zero. A normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3 with the histogram should be bell-shaped and the Bera--Jarque statistic would not be significant. This means that the p-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level. Figure:2, Below presents the BJ test result for normality:

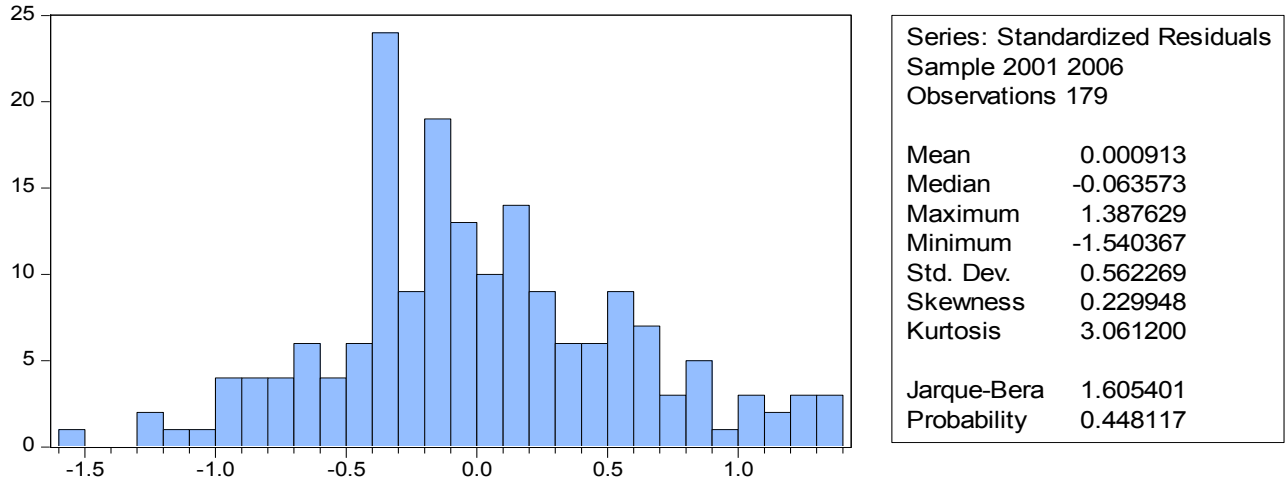


Fig: 2. BJ normality test. ***Source:*** *Regression output of Eview 6*

Based on the test result above, the residuals were normally distributed because the kurtosis is almost equal to 3 and its Jargue-Bera is insignificant at 5%, significant levels. And also the histogram is relatively bell-shaped. Therefore, **HO:** that states residuals follow a normal distribution would not be rejected.

Descriptive statistics

The following table bellow provides a summary of the descriptive statistics for the dependent and independent variables included in this study.

Table 5. Descriptive statistics of variables

Variables	Observations	Mean	Median	Maximum	Minimum	Std. Dev.
Lev	180	2.021774	1.992000	4.600000	0.586200	0.776527
Tag	180	0.095905	0.083000	0.501100	0.003200	0.066615
Gro	180	0.158830	0.107400	0.730000	-0.234000	0.175949
Ndts	180	0.106054	0.087500	0.421000	0.005700	0.071420
Risk	180	0.429051	0.235000	2.011000	0.010950	0.464513
Pro	180	0.080017	0.063100	0.630000	-0.190800	0.094789
Size	180	15.77373	15.96100	20.01300	10.92300	2.417309
Age	180	7.575419	7.000000	13.00000	6.000000	2.308472
Liq	180	1.145803	1.114000	1.661000	0.680000	0.183644
Inf	180	0.187352	0.135000	0.364000	0.028000	0.125369
GDP	180	0.100514	0.103000	0.114000	0.087000	0.008100

Source: *Regression output of Eview*

Table (5), above reveals that, the average leverage proportion in financing the total asset of Construction Company in Ethiopia is 200%. Which means 2x of the total asset invested by Construction Company in Ethiopia is financed from debt source. The minimum and the maximum value of leverage ratio are 58.6% and 460% respectively. This implies that, to the minimum 58.6% of the total asset invested by Construction Company in Ethiopia is financed from debt and the maximum debt finance goes to 4x... of the total asset invested. This provides evidence that, how Construction Companies highly depends on debt financing to cover their huge finance need. The standard deviation 77.65% indicates a wide variation in leverage ratio among sampled Construction companies.

The average fixed asset to total asset ratio is 9.6% with minimum and the maximum value of 50% and 3% respectively. This is the reflection of the fact that, Construction Company in Ethiopia invest slight on fixed assets and a tendency of investing more on current asset. This may disagree with actual practical situation, because Construction companies generally assumed to have huge machinery and equipment used in their operation. The standard deviation 6.67% is a sign of a small variation in leverage ratio among sampled

Construction companies. In terms of profitability, Table above also indicates that, the average profitability; when measured in terms of return on assets (ROA), or the ratio of operating income (EBIT) to total asset, accounted for 8% per annum. The standard deviation 9.5% indicates the existence of small variation in the profitability among the sampled firms. The maximum attainable average profit is 63% whereas the lowest observed average profitability rate is -19%.

Likewise, growth which is measured as a percent change in total asset was an average rate of, approximately 16% during the six-year period. While the maximum and minimum growth rate were 73% and -23.4% respectively. In addition, firms included in the study have an age distribution between 6 years and 13 years time span and the average age is approximated as 8 years. This implies that, largest observed operating experience of sampled firm is 13 years while the smallest amount is 6years of operating experience.

In terms of size which is measured as the natural logarithm of total asset; the descriptive statistics' result also reveals that, the average size of the sampled firm is 15.77 which is around 70603134 Ethiopian birr With the maximum and minimum asset value of birr 490041187 and 55270798 respectively. The standard deviation 2.4 indicates the existence of very wide variation in the asset value among the sampled firms.

The table above also point out that, the average liquidity ratio of the sampled firm was 1.145 with the minimum and maximum liquidity ratio of 0.68 and 1.67 respectively. This fact may be interpreted as; there is a problem of liquidity or insufficiency of funds to pay creditors. Because, as a Rule of thumb or arbitrary standard of the liquidity of the firm 2:1 is satisfactory but not enough. However, when we see the result in the above table even the maximum liquidity ratio was not meets the minimum requirement.

Regarding to the non-debt tax shield, the average tax shields enjoyed by Construction Company in Ethiopia from depreciation without considering interest were found to be 10.6% of the total assets invested. The upper limit of the non-debts tax shields was42% of the total assets and the lowest coverage on the other hand is 0.57% of the total assets. Again following the above table descriptive statistics result also reveals that, average inflation and GDP were found to be 18.73% and 10.05% respectively. The highest inflation rate was 36.4% which were recorded in 2010 while the lowest is 2.8%. This implies there was high inflation during the selected sample period.

Finally, as it was disclosed on table above, the mean value of risk (earning volatility) which is measured as the standard deviation of return on asset was 42.9% and its minimum and maximum value were 1.1% and 200% respectively. This indicates that there is high volatility of earnings in construction companies or the sector is more risky given that they are the fastest growing sector. A reasonable explanation is that high growth opportunities may provide enough incentive to management to undertake risky investments in order to grow the firm. And also standard deviation of 46.45% point outs the existence of wide variation in the risk level among the sampled firms.

Estimation of the Model

In panel data, there are three models such as: pooled OLS regression model, random effect model and fixed effect or LSDV model. Under the pooled OLS regression model all observations are put together and OLS regressions were run by neglecting the cross-section and time serious nature of the data. That's why the major problem of this model is that it does not distinguish between various companies included in the study. In other word, by pooling all the observations it denies the heterogeneity or individuality that may exists among companies. Whereas fixed effect model allows the heterogeneity or individuality that may exist among companies by allowing each company to have its own intercept value which is time invariant. Wooldridge, (2010).

To determine the kind of estimation (model) in panel data, different tests are used. In this study to know which model (random effect, fixed effect and pooled), is suitable for the given data, the researcher used Haussmann test and Breusch-Pagan-Godfrey LM test. A classical application of the Haussmann test for panel data is to compare the fixed and the random effects models whereas Breusch-pagan LM test is used to compare random effect to pooled regression models. Based on Haussmann test: the hypothesis is;

H0: Random effect model is appropriate
H1: Fixed effect model is appropriate

Table: 6 Haussmann test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.0000	10	1.0000

Source: *Regression output of Eview 6*

Based on the test result the p-value is very large (100%) therefore, we cannot reject null hypothesis which states Radom effect model is appropriate. Again in order to know whether this random effect model is appropriate or not, it is necessary to double check against the pooled regression model by using Breusch-Pagan-Godfrey LM test. The test result is presented in table below: Under the Breusch-Pagan-Godfrey LM tests: the hypothesis to be tested is:
H0: Pooled regression model is appropriate

H1: Random effect model is appropriate

Table: 6 Breusch-Pagan-Godfrey LM tests.

Breusch- Pagan LM Test for random effect model			
F-statistic	94.02839	Prob. F(2,166)	0.0000
Obs*R-squared	95.07561	Prob. Chi-Square(2)	0.0000

Source: *Regression output of Eview*

The result of the above table (4.6) reveals that, we can reject the null hypothesis because p-value is very small i.e. 0%. Meaning that random effect model is appropriate. Thus, both Haussmann test and Breusch-Pagan test are telling that, random effect model is the best model to represent this data. Therefore, final estimation method used in this research is Radom effect. The results of Radom estimation are shown in table (4.7) bellow.

Regression analysis

The summary of the regression results from the Eview output were presented in table (4.7), from where detailed analysis and discussion of the result was given.

Table: 7 Random effect regression model result

Variable	Coefficient	S td. Error	t-Statistic	Prob.
C	1.806109	0.622569	2.901056	0.0042
TAG	2.142959	0.473393	4.526811	0.0000
GRO	0.504032	0.233986	2.154108	0.0327
NDTS	0.225742	0.358997	0.628815	0.5303
RISK	-0.389440	0.182996	-2.128140	0.0348
PRO	-0.708650	0.326150	-2.172772	0.0312
SIZE	0.078283	0.029993	2.610070	0.0099
AGE	0.005517	0.009629	0.572964	0.5674
LIQ	-0.843740	0.136103	-6.199269	0.0000
INF	0.046788	0.147689	0.316800	0.7518
GDP	-1.415799	2.153559	-0.657423	0.5118

Weighted Statistics			
R-squared	0.471382	Mean dependent var	0.319752
Adjusted R-squared	0.439916	S.D. dependent var	0.254248
S.E. of regression	0.290565	Sum squared resid	6.100954
F-statistic	14.98096	Durbin-Watson stat	1.932040
Prob(F-statistic)	0.000000		
S			

Source: *Regression output of Eview*

From the above regression result of Random effect model, it would be observed that the coefficient of determination of R-squared and Adjusted R-squared were 47% and 44% respectively. This implies that 44% of the change in leverage is successfully explained by the selected firm specific factors as well as microeconomic factors (profitability, size, growth, tangibility, age, liquidity, risk, inflation, GDP, and non-debt tax shield) or independent variables included in the model. However, the remaining 66% changes in leverage were caused by other factors that were not included in the model. This indicates that the model is an average fit with almost average predictive power.

Regarding to the adequacy of the model which is measured by the standard error of the model as well as f-statistics', also, the result reveals that, the Standard Error of Regression (SER) is 29% which is considered relatively good enough to confirm the predictive power of the model. In addition, The F-test which measures the existence of linear relationship between the dependent and independent variable revealed that a highly significant relationship exist between the variables. Furthermore, the observed value of DW is 1.9 which is approximately 2.00, revealed that there is the absence of serial correlation in the regression results. Therefore, the model is good model for policy making purposes. It can be also observed from the above Table (4.7), estimated regression result that, six out of ten explanatory variables in this model were statistically significant at 5% with the dependent variable whereas the remaining four being GDP, inflation, age and non debt tax shield were not. This implies that; variation in this variables i.e. GDP, inflation, age and non debt tax shield does not affect debt ratio (leverage) as per the model. Again the result disclosed that, the

coefficient of three statistically significant explanatory variables, such as: tangibility, size and growth were positive while, liquidity, profitability and risk have a negative coefficient.

Decomposition analysis of leverage

As noted above, in the objective of the study one of the intent of this study is to see the sensitivity of results to variations in leverage measures through decomposing the companies leverage as long term and short term debt. While, as it is expected**,** the results vary depending on which component of long-term or short-term debt is being studied. These differences result from the fact that alternative definitions of leverage reflect differing aspects of capital structure. See the following two tables bellow to understand whether the results vary depending on which component of long-term or short-term debt is being studied.

Table: 8 Determinant of short term debt

Variable	Coefficient	t-Statistic	Prob.
TAG	-1.3465	-3.6016	0.0006
GRO	0.0169	2.54108	0.0207
NDTS	0.1184	0.5583	0.5779
RISK	-0.0011	-0.9967	0.3219
PRO	-0.708650	-2.172772	0.0312
SIZE	-0.0337	7.4053	0.0000
AGE	0.07723	0.85297	0.4863
LIQ	-0.0238	-6.8674	0.0000
INF	0.06792	0.16830	0.7427
GDP	-1.5799	-0.7423	0.6171

Table: 9 Determinant of long term debt

Variable	Coefficient	t-Statistic	Prob.
TAG	0.46605	3.5606	0.0006
GRO	0.504032	2.154108	0.0327
NDTS	-0.0008	-0.7896	0.4321
RISK	-0.0008	-0.7896	0.4321
PRO	0.4540	5.4811	0.0000
SIZE	0.086283	2.51307	0.0004
AGE	0.006617	0.532964	0.6675
LIQ	-0.3016	-3.7711	0.0003
INF	0.05783	0.4268	0.6529
GDP	-2.1678	-0.5732	0.5238

Source: *Regression output of Eview 6*

Conclusions

Capital structure has attracted intense debate in the financial management arena for nearly half-century. The basic question of whether a unique combination of debt and equity capital maximizes firm value, and if so, what factors determine a firm's optimal capital structure have been the subject of frequent debate in the capital structure literature. While, most of the literature seeks the nature of relations between the capital structure and the firm specific characteristics as well as country specific factors in developed economies and developing countries, unfortunately, Ethiopia, as an emerging market, has rarely been the subject of research in this field. Therefore, this study examined the determinants of capital structure decisions of Construction Company in Ethiopia, using the methodology of panel data estimation to extend empirical work on this area of corporate financing behavior. For this purpose, eight firm-specific determinants (internal factors); namely tangibility, non tax shields, growth, earning volatility, profitability, liquidity, age and size of the firm as well as two macroeconomic (external factors); i.e. GDP and inflation were selected from the existing prominent capital structure literature to see their effect on leverage (debt ratio). For analysis purpose descriptive statistics and random effect multiple regression were used. A panel regression analysis result revealed that, debt ratio (leverage) have: a positive relation, with asset tangibility, growth opportunity, and size of the firm. But, have a negative relation, with profitability, liquidity and risk (earning volatility). However, in contrast to the findings of existing literature, this study found that; age of a firm, non-debt tax shield, inflation and GDP have no statistically significant impact on a firm's choice of debt ratio. This implies that, firm-specific factors are significant factors influencing capital structure decision of construction companies in Ethiopia, as compared to macroeconomic condition which were insignificantly associated to firm leverage. It should be noted, however, that the appropriate measure of leverage depends on the purpose of the analysis. That means the significant differences between leverage measures and their determining factors illustrate that the perceived fundamental relations in corporate financing depend crucially upon which element of capital structure one wishes to

examine. These differences result from the fact that alternative definitions of leverage reflect differing aspects of capital structure. So that, by decomposing total liabilities into its sub-components, this study uncovered significant differences in the determinants of long and short-term debt components.

These empirical results were consistent with a number of theoretical propositions typically associated with the determinants of debt-equity choice of non-financial firms. Specifically, the finding supports that, among the six statistically significant firm-specific determinants, three firm-specific determinants such as: growth opportunity, profitability, and liquidity particularly supported a literal prediction of the pecking order theory. While, the two firm-specific determinants i.e. risk and size: supported the combined prediction of, trade-off, pecking-order and agency cost theory. And the remaining significant firm specific factor i.e. tangibility, supports the combined prediction of, both trade-off and agency cost theory. But the results were different if the company's leverage was separately analyzed.

This clearly implies that, the pecking order theory appears to be dominated in the Ethiopian capital structure story. Thus, the findings of the study therefore suggested that, some of the insights from the modern finance theory were portable to the Ethiopia in that certain firm specific factors that were relevant for explaining capital structure in the developed countries were also relevant in Ethiopian context even if, institutional differences exist between Ethiopia and the developed countries. Therefore, based on the result of the study, it is confirmed that: profitability, tangibility, liquidity, Size, growth and earnings volatility; were very important factors, which affects financial decision (leverage) in either of both directions i.e. positively and negatively or, play determining roles in accessing debt finance within the Ethiopian context particularly; construction sector. Hence, knowing these factors could help, a financial manager to predict the financial pattern of a firm.

Research implications and Recommendations

The results of this study have brought some insights on the capital structure of Ethiopian firms. From the view point of the determinants of capital structure, the findings of this study would assist in establishing financial policy guidelines that will mitigate financial risk in the various firms. Similarly, given the outcome of this study, the model used in this study could be used as a basis for formulating debt equity policy in Ethiopia that will maximize the wealth of shareholders and increase the value of firms. For this reason, on the basis of the findings of this study and literature reviewed the following points were recommended by the researchers; to improve the decision of capital structure choice of the firm or, to increase the Company's financial performance.

As per the result of descriptive statistics', Construction Companies highly depends on debt financing to cover their huge finance need. Given that, collateral value (tangibility) is the major determinant of the level of debt financing for Construction Company in Ethiopia, Thus, it is recommended that firms in construction industry should, kept more and more fixed assets, in order to become attractive to debt finance. Or, firms tend to match their duration of assets and liabilities by financing their fixed assets with long-term debt and their current assets with short-term debt instead of accumulating excess current assets. And also, Management of the construction company should keep track of the firm's capital structure, and ensure that changes in various policies affecting the factors that determine the capital structure does not affect the firm. This is not only for the single variable i.e. tangibility but also for all significant factors.

Based on the result of the study, it is clearly observed that; the pecking order theory appears to dominate the construction company's capital structure story. It is therefore important for company's policy to be directed at improving the information environment. This is whey; the theory is designed to minimize the inefficiencies in the firms' financing decisions due to the asymmetry of information. Simultaneously Firms, especially construction companies, were expected to maintain accurate and proper records which discloses there true status to the public.

In deciding the capital structure choose, firms; particularly construction companies should separately consider the determinants of short term and long term debt to measure their effect on the entire financing decisions. This is because, analyses of leverage only on long term debt provide only part of the story, and a fuller understanding of capital structure and its determinants requires a detailed analysis of all forms of corporate debt. Finally the study also recommend that; in carrying out their debt financing decision, Construction Companies in Ethiopia, should carefully ascertain and properly measure the impact of those significant variables like profitability, tangibility, liquidity, growth, earnings volatility and Size of the firm, on the leverage in order to set the best possible mix of debt and equity that maximum their value. The last but not the least is, even if, the study includes many variables and seems to confirm the most important and widespread prescriptions of the theory of capital structure, but at the same time it stresses the fact that further research to identify the fundamental determinants of capital structure is still called for. Therefore, it is recommended that future studies on capital structure determinant should accommodate other external variables like; interest rate, corporate governance, legal framework.

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