DETERMINANTS OF CAPITALE STRUCTURE IN CASE OF COMMERCIAL BANK OF ETHIOPA



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ABSTRACT

Determinants of capital structure: An Empirical Study on Ethiopian Banking Industry Determining the optimal capital structure is one of the most fundamental policy decisions faced by financial managers. Since optimal debt ratio influences firm's value, different firms determine capital structures at different levels to maximize the value of their firms. Thus, this study examines the relationship between leverage and firm specific (profitability, tangibility, growth, risk, and liquidity) determinants of capital structure decision, and the theories of capital structure that can explain the capital structure of banks in Ethiopia. More specifically, the study uses ten years (2009 - 2018) data for six banks in Ethiopia.

The findings show that profitability,tangibility and liquidity of the banks are important determinants of capital structure of banks in Ethiopia. However, growth and risk of banks are found to have no statistically significant impact on the capital structure of banks in Ethiopia. In addition, the results of the analysis indicate that pecking order theory is pertinent theory in Ethiopian banking industry, whereas there are little evidence to support static trade-off theory and the agency cost theory. Therefore, banks should give consideration to profitability,liquidity and tangibility when they determine their optimum capital structure.

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Declaration

I, Temesgen bamlaku, declare that this senior essay entitled: Determinants of capital structures of Commercial Banks in Ethiopia and submitted in partial fulfillment of the requirements for bachelor of art degree in Accounting and Finance, is outcome of my own effort & study and that all sources of materials used for the study have been duly acknowledged. I have produced it independently with only guidance and suggestion of my senior essay Advisor M.idris.A (MSc). The study complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

Name: Temesgen bamlaku

Signature_____

Date_____

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List of Acronyms

CLRM = Classical Linear Regression Model

DW = Durbin Watson

GR = Growth

LEV = Leverage

LQ = Liquidity

NBE = National Bank of Ethiopia

OLS = Ordinary least Square

PR = Profitability

RS = Risk

SZ = Size

TA = Tangibility

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the study

Capital structure refers to several alternatives that can be adopted by a firm to get the necessary funds for its invested activities in a way that is consistent with its priorities. Most of the effort of the financial decision making process is center on the determination of the optimal capital structure; where the firms' value is maximizing cost of capital was minimizing. Capital structure theory suggests that firms determine what is often referred to as a target debt ratio; which was based on various trade-off between the costs and benefits of debt versus equity. The modern theory of capital structure was first established by Modigliani and Miller (1963, where they studied the theoretical determinants of Capital structure. The theoretical attributes namely; asset structure, non-debt tax shields, Growth, uniqueness, industry classification, earnings volatility and profitability Would been tested to see how they affect a firm's choice of debt-equity mix. To broader the Understanding of capital structure models, Rajan and Zingales (1995) have attempted to find out whether the capital structure choices in other countries were made based on factors that similar to those capital structure influencing ones in U.S firms. Four factors; tangibility of assets, growth, and profitability would tsted to see their influences on leverage. However, there were not many researches directed towards developed countries that saw the applicability of the theories of capital structure developed from the developed nations.

esBooth et al. (2001), Maghyereh (2005), Amidu (2007), Abor (2008), and Bas et al. (2009) Were among the scholars who have studied the capital structure issues in the developing Nations. Thus, one of the prominent studies was done by Booth et al. (2001). They have Undertaken an interesting study by taking secondary data from the International Finance Corporation (IFC) for the largest companies in 10 develootheroo lates twic onduct(2009 developing countries. This paper examined the determinants of capital structure decisions of

firms in developing countri collecting secondary data for 11,125 firms from World Bank of 25 developed countries. Bas et al. draw the following major conclusions from the results.

Modigliani and Miller (1963) the literature on capital structure has be expand by many theoretical and empirical contributions.For non-financial firms the empirical literature has generally converged on particular variables that have be found to be consistently correlate with leverage such as:risk, growth, profitability, market-to-book ratio, collateral value and dividend policy. Currently, there is no clear understanding on how banks choose their capital structure and what factors influence their corporate financing behavior (Amidu 2007)

In Ethiopia there was few studied which relate with this title these were, Ashenafi (2005) a case study in Addis Ababa, capital structure, Amanuel (2011) evidence from manufacturing share companies of Addis Ababa city and Bayeh (2011) evidence from Ethiopian insurance company. Therefore, given the unique financial features of banks and the environment in which they operate, there are strong grounds for a separate study on capital structure determinants of banks in Ethiopia. Therefore, the main purpose of this study would been examine the determinants of capital structure commercial banks in Ethiopia. This would been equipment financial managers with applied knowledge of determining their capital structure, and play role in fill gap in understanding of the capital structure.

1.2. Statement of the problem

While the choice of capital structure is one of the most important strategic financial decisions of firms, it would been the subject of considerable debate and investigation. The debate on what drives capital structure decisions is still open. Following the seminal work of Modigliani and Miller (1963), a vast theoretical literature develops, which led to the formulation of alternative theories, such as the static trade off model, pecking order theory and agency cost theory. These theories point to a number of specific factors that may affect the capital structure of firms such as (profitability, tangibility, growth, risk, and liquidity,). However, the empirical evidence regarding the alternative theories is still questionable (Rajang and Zing ales 1995). For example, Static trade off-theory assumes a firm’s optimal debt ratio is determined by a trade-off between

the bankruptcy cost and tax advantage of borrowing, holding the firm's assets and investment plans constant. According to this theory, higher profitability lowers the expected cost of distress, therefore, firms increase their leverage to take advantage from tax benefits. Which means in other word profitability was positively related with leverage. As well agency theory supports this positive relation because of the free cash flow theory of Jensen (1986). But, pecking order theory Myers and Mali (1986, The determinants of capital structure have been debated for many years and still represent one of the most unsolved issues in corporate finance literature. Indeed, what makes the capital structure debates so exciting is that only a few of the developed theories have be tested by empirical studies and the theories themselves lead to different, not mutually exclusive and sometimes opposed result and conclusion (Rajang and Zing ales 1995). Morris and Beretta (2008) explained many theoretical studies and much empirical research have addressed those issues, but there is not yet a fully supported and commonly accept theory; and the debate on the significance of determinant factors is still unfolded.

In the prior researcher not study aboutLiquidity variable, therefor this paper would investigated by adding Liquidity variable the capital structure in different country outside of Ethiopia commercial banks this is not given sufficient evidence about capital structure of Ethiopia commercial banks, so the research doing in Ethiopia commercial banks by using the following dependent and independent variables. The dependent variable is capital structure and independent variables are profitability, tangibility, growth, liquidity, risk,

1.3. Objective of the study

1.3.1. General Objectives

The objective of this study was to find out the determinants of capital structure in Ethiopia commercial banks

1.3.2. Specific Objectives

This study will attempt to achieve the following specific objectives:

- ✓ To identify the relationship between profitability and leverage on the commercial banks of Ethiopia.
- ✓ To identify the relationship between growth and leverage on the commercial banks of Ethiopia
- ✓ To identify the relationship between tangibility and leverage on the commercial banks of Ethiopia
- ✓ To identify the relationship between risk and leverage on the commercial banks of Ethiopia
- ✓ To identify relationship between change in liquidity and leverage on commercial banks in Ethiopia

1.4. Hypothesis of the study

HP 1: There is a positive relationship between leverage ratios and profitability.

HP 2: There is a positive relationship between leverage ratios and growth.

HP 3: There is a positive relationship between leverage ratios and tangibility.

HP 4: There is a negative relationship between leverage ratios and Risk.

HP 5: There is a negative relationship between leverage ratios and liquidity.

1.5. Significance of the study

Studies by the researcher investigated the determinants of capital structure of firms in Ethiopia. However, to the best knowledge of the researcher there is no study that has focused on commercial banks of Ethiopia. Thus, this study has significant role to play in filling gap in understanding of the capital structure decision for banks in Ethiopia. Such an understanding is important, because it equips financial managers with appAnd which will maximize the return of the stockholders by increasing the value of the firm. Additionally, this study will be used as an input to researchers for further research on determinant of capital structure.

1.6. Scope of the study

The scope of this study was limited to the determinants of capital structure of commercial banks over the period 2009 to 2018 G.C for ten years data in order strengthen the reliability. Six commercial banks selected from the population of 18 commercial banks This study would limited to firm specific determinants of capital structure (profitability, growth, tangibility,and risk,liquidty, and theories of capital structure that can explain the capital structure of commercial banks.

1 .7. Organization of the Paper

This study would been organized into five chapters. Chapter one presents research introduction, statement of the problem, objective of the study, scope and significance of the study. Following on this, chapter two of the study presents review of theoretical and empirical literatures on determinants of capital structure. Chapter three presents the research methodology chapter four

Data analyisis chapter five conculusion and recommendation,

CHAPTER TWO

Review of Literature

2. INTRODUCTION

This chapters presents the theoretical and empirical literature review over the capital structure including those conducted in Ethiopia and provides conclusions and knowledge gap.

2.1. DEFNITION OF CAPITAL STRUCTURE

Capital structure of a firm describes the way in which a firm raises capital needed to Establish and expand its business activities.Hence, capital structure was one of the effective tools of management to manage the cost of capital. An optimal capital structure is reached at a point where the cost of the Capital is minimal. But what were the potential determinants of such optimal capital Structure.

2.1.1 Benefits of Capital Structure

Capital structure describes how a corporation has organized its capital—how it obtains the financial resources with which it operates its business. Businesses adopt Various capital structures to meet both internal needs for capital and external requirements for returns on shareholders investments. As shown on its balance sheet, a company's capitalization is constructed from three basic blocks:

1. Long-term debt. By standard accounting definition, long-term debt includes obligations that are not due to be repaid within the next 12 months. Such debt Consists mostly of bonds or similar obligations, including a great variety of notes, capital lease obligations, and mortgage issues.

2. Preferred stock. This represents an equity (ownership) interest in the corporation, but one with claims ahead of the common stock, and normally with no rights to share in the increased worth of a company if it grows.

3. Common stockholders' equity. This represents the underlying ownership. On the corporation's books, it is made up of:(1) the nominal par or stated value assigned to the shares of outstanding stock; (2) the capital surplus or the amount above par value paid the company whenever it issues stock;(3) the earned surplus (also called retained earnings), which consists of the portion of earnings a company retains after paying out dividends and similar Distributions. Put another way, common stock equity is the net worth after all the (liabilities including long-term debt), as well as any preferred stock, are Deducted from the total assets shown on the balance sheet. For investment analysis purposes, security analysts may use the company's market capitalization the current market price times the number of common shares outstanding as a measure of common stock equity. They consider this market-based figure a more realistic valuation.

2.2. Theoretical review

The literature shows the existence of different theories related to capital structure. These theories include Modigliani and miller (MM), static trade-off theory, peckingbetween debt financing and

equity financing in the real world with corporate taxes. Dividends paid to shareholders come from the after tax profit. By contrast, interest paid to bondholders comes out of the before-tax profitsThus, Millerand Modigliani (1963) argued that in the resence of corporate taxes, a value-maximizing decision on capital structure can be helpful to minimizing these costs.

2.2.2**.** Static Trade-off Theory

This Trade-off theory claim that a firm's optimal debt ratio is determine by a trade-off between the bankruptcy cost and tax advantage of borrowing, holding the firm's assets and investment plans constant (Myers, 1984). The goal is to maximize the firm value for that reason debt and equity are used as substitutes. According to this theory, higher profitability decreases the expecting costs of distress and let firms increase their tax benefits by raising leverage; therefore, firms should prefer debt financing because of the tax benefit. As per this theory firms can borrow up to the point will the tax benefitAn extra dollar in debt is exactly equal to the cost that comes from the increasing probability of financial distress (Ross, 2002, p.586),Due to the net tax advantage to corporate debt financing, the firm's optimal capital structure will involve distinctions in firm-specific characteristics, target leverage ratios will vary from company to company. Institutional differences, such as different financial systems, tax rate and bankruptcy law etc., will also lead the target ratio to differ across country,The trade-off theory predicts that safe firms, firms with more tangible assets and more taxable income to shield should have high debt ratios. While risky firms, firms with more intangible assets that the value will disappear in case of liquidation, ought to rely more on,equity financing. In terms of Profitability, trade-off theory predicts that more profitable firms should mean more debt-serving capacity and more taxable income to shield, therefore, based on this theory, firms would

prefer debt over equity until the point where the probability of financial distress starts to be important. This is illustrated by figure 2.1

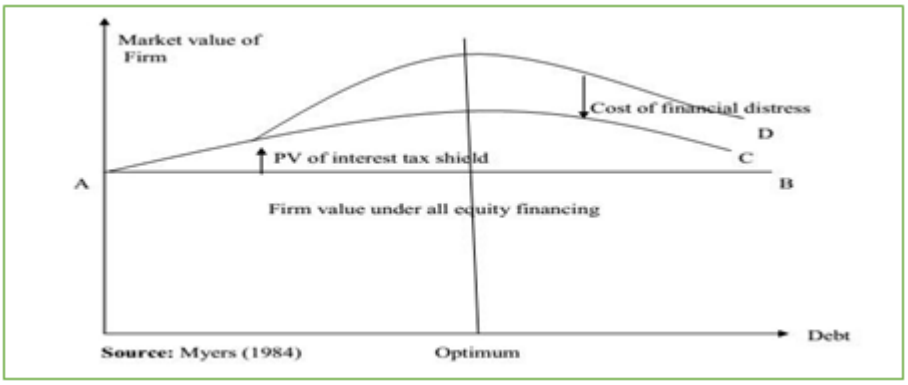


Figure 2.1: The-static-tradeoff theory of capital structure

In figure 2.1 the straight-line AB shows the market value of the firm under the Modigliani and Miller (1963) regime, in which the value of the firm is irrelevant and the capital structure is equal to the value of an all-equity firm. If a firm uses debt in their capital structure, they have to pay interest which is generally tax deductible. Interest payments act as a tax shield and allow the firm to increase its value. As the firm takes more debt its value increases (curve AC). However, after a certain proportion of debt (the optimum level) the value of the firm starts to decrease as the costs of debt start to outweigh the benefits of debt. Curve AD illustrates how the costs of financial distress rise as firms use increasing amounts of debt in their capital structure. At higher levels of debt the interest payments of firms increase to cover for the potential risk of financial distress. Firms trade-off the tax benefits that may be gained through using debt with Costs of financial

distress and agency costs to maintain an optimal level of debt in their capital structure as shown in figure 2.1.

2.2.3. Pecking order theory

Pecking Order Theory is developing by Myers and Mali (1984) which states that capital structure is driven by firm's desire to finance new investments, first internally, then with low-risk debt, and Investment and financing decisions. According to this theory, informational asymmetry, which firm's managers or insiders have inside information about the firm's returns or investment opportunities, increasing the leverage of the firm with the same extent. So due to the asymmetries.

They demonstrate that if this is an asymmetry of information between investors and firm insiders, then the firm's equity may be underpriced by the market. As a result, new equity, which is used to finance new investment projects, will be also underprice. Therefore, if management has favorable inside information and acts in the best interest of the existing shareholders, then management will refuse to issue equity even if it means passing up positive net present value Projects because the net loss to existing shareholders (due to underpricing problem) might outweigh the project's Net present values. On the other hand, Passing up positive net present value projects is contrary to the wealth maximization. Using financial sources that may not be undervalue by the market, particularly internally generating funds will solve this under-investment problem.

2.2.4. Agency cost theory

The next important theory mention in the literature is the agency cost theory. This theory was developing by Jensen and Mackling in their 1976 publications. This theory considering debt to be a necessary factor that creates conflict between equity holders and managers. Both scholars using this theory to argue that the probability distribution of cash flows providing by the firm is not independent of its ownership structure and that this fact may be used to explain optimal capital structure. Jensen and Mackling recommending that, given increasing agency costs with

both the equity-holders and debt-holders, this will be an optimum combination of outside debt and equity to reduce total agency costs.

Ryne et al. (1997) provide a theoretical summary of agency cost theory. According to Ryne et al., two sets of agency problems were faced by firms, conflict between managers and stockholders and conflict between stockholders and bondholders. For the managers and stockholders' conflict, managers usually overspend or take less leverage and these are seen not benefiting the stockholders. Managers take lesser leverage in order to avoid total risk, which comprises of risk of losing job, reputation and wealth. On the other hand, overspending by managers to make opportunity loss of firms' cash flow which could be used on the activities that benefit stockholders Therefore, many studies have been diverted to find out the ways to reduce this agency costs between managers and stockholders. The conflict of shareholders and bondholders is another area of agency cost problem, whereby shareholders have better incentives to maximize their wealth at the expense of the bondholders by the increases in dividend rate, claim dilution, asset substitution and underinvestment. The only way bondholder can limit the action to benefit shareholders is to draft a bond covenants,

2.2.4.1. Shareholders-manager's conflicts

This kind of conflict stems from the separation of ownership and control. If managers do not own 100% of the firm, they can only capture a fraction of the gain earned from their value enhancement activities but they need to bear the entire costs of these activities. The shareholders-manager's conflicts take several distinct forms: According to Jensen and Mackling (1976) managers prefer to make use of less effort and have greater perquisite levels, such as luxuriant office and corporate jets, different from the shareholder's interest of firm value maximization. In this case, increasing the managers' equity holdings will help to align the interests of shareholders and managers. Or, keeping manager's equity investment constant, increasing the debt level also helps to mitigate the loss of conflicts between shareholders and managers. Since debt forces managers to pay out cash, reducing the free cash flow managers can waste on the perquisites.

According to Masalas (1988) conflict may arise because managers may prefer short-term projects, which produce results early and enhance their reputation quickly, rather than more profitable long-term projects. According to Harris and Ravi (1991) managers want to stay in their positions, so they wish to minimize the likelihood of employment termination. As this increases with changes in corporate control, management may resist takeovers, irrespective of their effect on shareholder value. On operating decisions, managers and shareholders may shareholders. A special case of the conflicts between shareholders and managers is the firm to grow beyond topportunities. Issuing debt helps to mitigate agency problems that arise from managerial behavior under divergent interests between shareholders and managers.

2.2.4.2. Shareholder-bondholder conflicts

The typical phenomenon of these conflicts is that the shareholders or their representatives make decisions transferring wealth from bondholders to shareholders. Certainly, the bondholders are aware of the situations in which this wealth expropriation may occur, therefore, will demand a higher return on their bonds or debts. Different fundamental sources of equity-holders and debt-holder's conflicts have been identified in the agency cost literature; the direct wealth-transfer from bondholders to shareholders (Smith and Warner 1979): Shareholders can increase their wealth at the expense of bondholders' interests by increasing the dividend payment; the issuance of debt with higher priority will expropriate wealth from current bondholAsset-substitution is another source of the conflicts (Jensen and Mackling 1976): When Debt will be owned by shareholders and in case of failure, the consequence is mainly born by bondholders because of shareholders' limited liability. This excessive return from risky projects makes safe projects less attractive to shareholders since returns from the increase in risk premium. The increasing costs of debt are then born by shareholders since they are residual claimants of the firm. Under investment problem is another agency problem results in shareholder bondholder conflicts Myers (1977): Underinvestment problem mostly incurs in financial distress. The extension of debt decreases the shareholder's incentives to invest in new projects (even the projects with high growth opportunities will be passing throue

2.3. Empirical studies on the determinants of capital structure

He pioneering work of Modigliani and Miller (1963), the question of what determines firms' choices of capital structure has been a major field in the corporate finance literature. Since then, several studies will have been conduct in developing and developing countries to empirical studies in this section on the determinants of capital structure decision has a particular focus on those that have been conducted since the 1988s. Booth et al. (2001) assessed whether capital structure theory is portable across developing countries with different institutional structures. The sample firms in their study are from Malaysia, Zimbabwe, Mexico, Brazil, Turkey, Jordan, India, Pakistan, Thailand, and Korea. Booth *et al*. (2001) use three measure of debt ratio; total debt ratio, long-term book debt ratio, and long-term market debt ratio with average tax rate, assets tangibility, business risk, profitability, and the market to book ratio as explanatory variables. The study showed that the more profitable the firm, the lower the debt ratio, regardless of how the debt ratio was defined. It also showed that the more the tangible assets, the higher the long-term debt ratio but the smaller the total debt ratio.

Booth et al. (2001) concluded that the debt ratio in developing countries seemed to be affected in the same way by the same types of variables that were significant in developed countries. However, they pointed out that the long-term debt ratios of those countries are considerably lower than those of developed countries. This finding may indicate that the agency costs of debt are significantly large in developing countries or markets for long term debt are not effectively functioning in these countries. Finally, Booth et al. (2001) argued that their results are in line with Rajan and Zingales (1995) except for the tax and the market-to-book ratio.

Bevan and Dan bolt (2002) who extended the work of Rajan and Zingales (1995) tested the determinants of capital structure in the United Kingdom non-financial firms by using four measures of financial leverage. They used non-equity liabilities to total assets, total debt to total assets, and total debt to capital (where capital is defined as total debt plus 26 Common shares with preferred shares), and adjusted debt to adjusted capital. All the measures were regressed on market-to-book value, natural logarithm of sales, profitability, and tangibility of assets. They

found that determinants of capital structure were significantly changed with respect to each measure of debt used. With the same leverage definition as Rajan and Zingales, Bevan and Dan bolt (2002) reported similar results. In their later paper, Bevan and Dan bolt (2004) analyzed the determinants of capital structure of 1054 UK Companies from the period 1991-1997. Secondly, they also investigated the extent to which the influence of these determinants is affected by time-invariant and firm specific heterogeneity. Bevan and Dan bolt (2004) as Bevan and Dan bolt (2002) profitability, and tangibility of assets as determinants of capital structure. In addition to the time invariant and firm specific heterogeneity, the to analyze sample data included 294 Thailand, 669 Malaysian, 345 Singaporean, and 219 Australian firms for the period 1993-2001. Overall they found leverage , nondebt tax shields, liquidity to be negatively related to leverage. Moreover, they also found that capital structure decision was not only the product of the firm's own characteristics but is also affected by the specific corporate governance, legal structure and institutional environment of the countries.

The paper of Huang and Song (2005) employed regression model to document the determinants of capital structure of Chinese listed companies. The data included market and accounting figures of more than 1200 companies for the time period 1994-2003. They find that leverage (long-term debt ratio, total debt ratio, and total liability ratio) decreases with profitability, non-debt tax shield and managerial shareholdings, tangibility. In addition, the tax rate positively affects long-term debt ratio and total debt ratio. Furthermore, they find a negative relationship between leverage and firm growth opportunities.

Gurcharan (2010) analyzed the determinants of capital structure in four countries of the ASEAN members, namely Malaysia, Indonesia, Philippine and Thailand, for the period from 2003 to 2007 with a sample of 155 main listed companies from four selected ASEAN stock exchange index-links. Based on the empirical result, he found that profitability and growth opportunities for all selected ASEAN countries reveal statistical significant with inverse relationship with leverage. Whereas non-debt tax shield has significant negative impact on leverage mainly for Malaysia index link companies. shows a positive significant relationship for Indonesia and Philippine index link companies. Also, he found that country-effect factors; stock market

capitalization and GDP growth rate show significant relationship with leverage and inflation indicate insignificant impacts on leverage.

Recently, Najjar and Petrov (2011) studied capital Structure of insurance companies in Bahrain. The goal of the study was to investigate the effect of specific firm characteristics on capital structure. They used panel data derived from annual reports and financial statements of five insurance companies listed on the Bahrain Stock Exchange for the period of 2005-2009 and apply multiple linear regression analysis using to identify those effects. Najjar and Petrov identified a strong relationship between firm characteristics, such as tangibility of assets, profitability, firm, revenue growth, and liquidity.risk, The results of their study reveal that tangibility , shows a positive significant relationship with the debt ratio which confirms the static trade off theory while liquidity shows negative significant relationship with debt ratio which confirms the pecking order theory. But, profitability and revenue growth are not statistically significant and require further research. More recently, the paper of Olayinka (2011) examine the determinants of capital structure of 66 firms listed on the Nigerian stock Exchange during the period 1999-2007 using panel data. He used five, independent variables namely; sales growth, tangibility, profitability, liquidity, and business environment and leverage as dependent variable. The OLS results showed that there is a negative relationship between leverage and growth opportunities which is consistent with the prediction of the tradeoff theory. In the same way, leverage is negatively related with tangibility and profitability which is consistent with the predictions of pecking order theory but positively related to liquidity as well as which is consistent with trade-off theory. In general as per Olayinka, three of the variables are not significant determinants of capital structure. In the case of Ethiopia, there have be a few studies on determinants of capital structure. These studies include Ashenafi (2005), Amanuel (2011) and Bayeh (2011).

Ashenafi (2005) approached the question of capital structure using data from medium firms in Ethiopia. Ashenafi (2005) took variables like non-debt tax shield, economic risk, age of firms, tangibility, profitability and growth were regressed against leverage. The results showed that

non-debt tax shield, economic risk, profitability, growth, tangibility, and age showed a negative coefficient of correlation with debt to equity ratio. Amanuel (2011) studied determinants of capital structure of manufacturing share companies in Addis Ababa, Ethiopia for the period over 2003-2010. The objective of the study was to examine the relevance of theoretical internal (firm level) factors determine capital structure of manufacturing share companies in Addis Ababa, Ethiopia. Amanuel (2010) used five, dependant variable, tangibility, non-tax shield, growth, earning volatility, profitability, age and, and one, dependent variables: total debt ratio, to establish the determinants of capital structure of manufacturing companies in Ethiopia. In connection to this, samples of 12 companies were taken and secondary data was collected from audited financial statement of the selected companies. The results of OLS, regression showed that tangibility, non-debt tax shields, earning volatility, profitability, the firm variables are the significant determinants of capital structure of Addis Ababa manufacturing share companies at least for one of the model out of the three models employed in the study. But no clear and statistical proved relations were obtained for the variable's growth of the firm and age of the firm in any of the capital structure models.Bayeh (2011) investigated empirically the determinants of capital structure in the case of insurance industry in Ethiopia. In connection to this, nine insurance companies were included in the sample for the period over 2004 - 2010. Bayeh (2011) also used five explanatory variables: , tangibility, growth, profitability, age,risk

and one ,dependent variables: total debt to equity, to test the determinants of capital structure of insurance companies in Ethiopia. The OLS result showed that growth, profitability, and age of the firm were found to have significant influence on capital structure of Ethiopian insurance companies. However,

tangibility and age of the firm were found to have significant influence on capital structure of Ethiopian insurance companies. Profitability:

Capital structure theories have different views on the relationship between leverage and profitability. The trade-off theory argues that firms generally prefer debt for tax considerations. Profitable firms would, therefore, employ more debt because increased leverage would increase the value of their debt tax shield (Myers 1984).In addition to the tax advantage of debt, agency

and bankruptcy costs may encourage highly profitable firms to have more debt in their capital structure.

Tangibility:Tangibility is an important determinant of the capital structure of a firm. The trade-off theory predicts a positive relation between tangibility and debt levels. As the value of intangible assets disappears (almost entirely) in the cases of bankruptcies, the presence of tangible assets was expected to be important in external borrowing as it is easy to collateralize them.

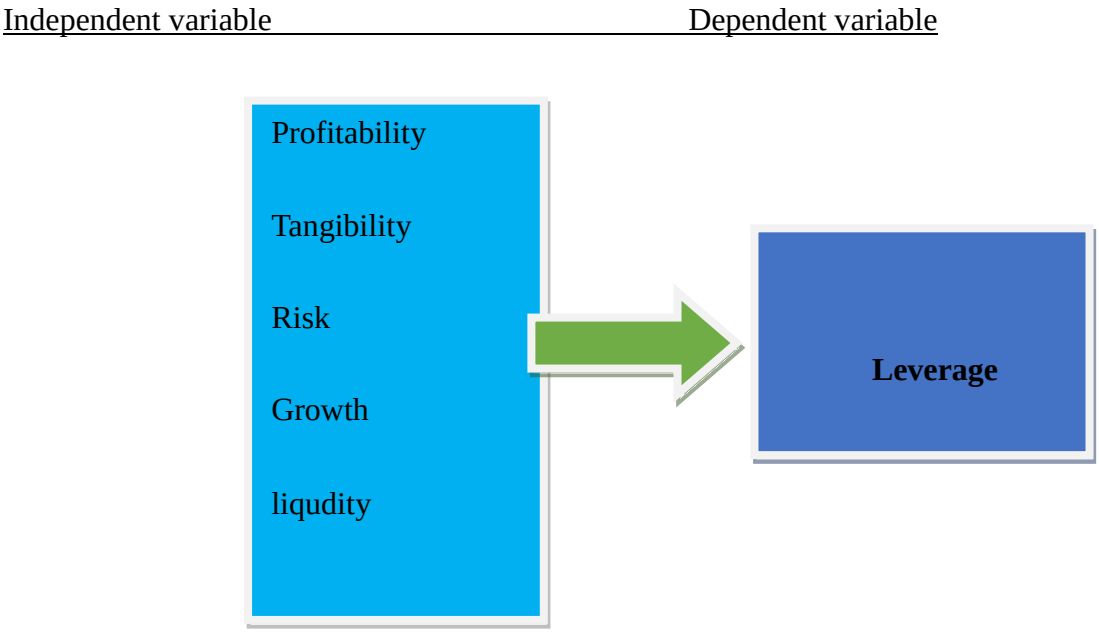
Growth:According to pecking order theory firms with high growth will tend to look toexternal funds to finance the growth. Myers (1977) confirms this and concludes that firms

Risk ;Given agency and bankruptcy costs, there are incentives for the firm not to utilize the tax benefit of debt within the static framework model. Firms with high earnings volatility face a risk of the earnings level dropping below their debt servicing commitments, thereby incurring a higher cost of financial distress. Accordingly, these firms should reduce their leverage level to avoid the risk of bankruptcy. Therefore, the trade-off theory predicts a negative relationship between leverage and earning volatility of a firms. The pecking order theory allows the same prediction. Empirical evidence suggests that there is a negative relationship between risk and leverage (Titman and Wessels, 1988). Hence, risk was expected to have negative impact on leverage ratio with a higher proportion of their market value accounted for by growth opportunity will have debt capacity. Therefore, it is expected that there is a positive relationship between growth and leverage ratio.

Liquidity; Liquidity is the amount of short term responsibilities that could been met with the amount of liquid assets. It measures the ability of banks to meet short-term obligation or commitments when they fall due. Molyneux and Thorton (1992), Samuel (2015) and Amdemichael (2012) come to a conclusion that there is a negative and significant relationship between level of liquidity and profitability. Guru et al. (2002) also find a negative relationship between liquidity and bank profitability.

2.4 Conceptual frame work

According to Mugged et.al (2000) a conceptual frame work helps the reader to quickly see the proposed relationship between the this tudy independent variable whereas profitability, tangibility, growth and affirms age whereas dependent variable is leverage ratio.



This chapter reviewed the literature on determinants of capital structure decision, starting with the famous irrelevance theory of Modigliani and Miller (1963). However, by relaxing the theory of Modigliani and Miller's (1963) assumptions of perfect capital markets, several theoretical frameworks have been developed to explain the firm's capital structure such as static trade-off theory, pecking order theory, and agency theory.

Static trade off-theory assumes that a firm's optimal debt ratio was determined by a tradeoff between the bankruptcy cost and tax advantage of borrowing, holding the firm's assets and

investment plans constant. Whereas, pecking order theory is another dimension of the capital structure theories. According to this theory capital structure is driven by firm's desire to finance new investments, first internally, then with low-risk debt, and finally if all fails with equity. Therefore, the firms prefer internal financing to external financing.

Agency theory focuses on the costs which are created due to conflicts of interest between shareholders, managers and debt holders. According to this theory capital structures are determined by agency costs, which includes the costs for both debt and equity issue. This shows that theories of capital structure have been resulting in different conclusions.

Similarly, the findings of prior eto Turkish banks. Besides, Buferna et al. (2005) provided evidence that trade of theory and agency are pertinent theories of the capital structure to a developing country. On the other hand, Amidu (2007) on Ghanaian banks supports the static trade-off and pecking order argument. However, in the context of Ethiopia as to the knowledge of the researcher there is no study conducted on the capital structure of the banking industry. In addition, most empirical work on capital structure has predominantly relied on quantitative analysis of secondary data to examine the determinants of capital structure commercial banks ,this paper will investigate by adding Liquidity variable the capital structure in different country outside of Ethiopia commercial banks this is not given sufficient evidence about capital structure of Ethiopia commercial banks, so the research doing in Ethiopia commercial banks by using the follovariables are profitability, tangibility, growth, liquidity, ristudy will fill the gap by examining the determinants of capital structure in the context of Ethiopian commercial bank.

CHAPTER THREE

RESEARCH METHDOLOGY

3. RESEARCH METHODOLOGY

The purpose of this chapter is to present the research approach adopt by the research. The first part presents the model and hypothesis to be test. The second part present the study design use for the research. Target population and sample present in the third part and the final part discuss the method use for data collection, analysis and presentation.

3.1. RESEARCH DESIGN

Quantitative research approach is use since it helps to conduct systematic empirical study of observable phenomena via statistical or mathematical techniques (Creswell, 2009). The objective of quantitative research is to develop and employ mathematical models, theories and hypotheses pertaining to phenomena. The process of measurement is central to quantitative research because it provides the fundamental connection between empirical observation and mathematical expression of quantitatve of instruments and methods for measurement, Experimental control and manipulation of variables, Collection of empirical data and Modeling and analysis of data.

This study follows a deductive reasoning in describing the event. By applying the selected theory to explain the event, event characteristics will serve as empirical facts supporting the validity of the theory. Deduction is also the most commonly use research approach in combination with

positivism (Sutrisna, 2009). However, it is believe the study is purely deductive as part of the research purpose is to figure out determinants of capital structure in Ethiopia commercial banks.

A quantitative strategy is best suit as the research have a large focus on numbers and the use of hypothesis and statistical tools to analyze them. The knowledge that is sought-after have to been measure in order to answer the research problem and the knowledge gap. In this study, this approach enable to seen the determinants of the major bank specific and macroeconomic factors affecting Ethiopian commercial banks. Thus, this enable to test the theory in the context of Ethiopia.

3.2. TARGET POPULATION AND SAMPLE

Target Population

The target population in this study covers commercial banks that are operating in the country during the sample period (i.e., 2009 to 2018). That means, it covers 18 banks of which three are state owned banks, namely Commercial Bank of Ethiopia, Awash international Bank and Development Bank of Ethiopia. However, Awash international Bank, merged with another state owned bank, Commercial Bank of Ethiopia in the year 2018.

. Thus the research use Purposive sampling method. Besides, since the number of banks in the country is small and due to the data nature (panel data), the sample should contain banks that have longer period so as to get sufficient observation, therefore, the research would taken six commercial banks, namely Awash international Bank (AIB), Dashen Bank (DB), Bank of Abyssinia (BOA), United Bank (UB), Wegagen bank (WGB), Nib International Bank (NIB).

3.3. METHOD OF DATA COLLECTION AND ANALYSIS

Data collection: Since the research use secondary data the study will use data source from National bank of Ethiopia (NBE) for capital structure data and from banks include in the sample for bank specific data. In order to increase the credibility and reliability of the research findings the study use audit financial statements (balance sheet and income statement) of each bank.

Data process: A description of data preparation processes such as checking, editing, coding, and transcribing as well as specifying any special or unusual treatments of data before they are analyze. To get a robust result, the model has to be free from any capital structure problems such as multicollinearity, Heteroskedasticity, autocorrelation, and must make sure the error term for each variable is stationary. This part of study is dedicated to describe the said capital structure problem.

3.4. Data analysis method

Survey data collected through document review was analyzed statistically using dependent variable were calculated over the sample period. In addition, Correlation matrix was used to identify the relationship of each variable among them and with dependent variable. Then, using statistical package EVEW 8‘ OLS (ordinary least squares) multiple regressions and t-statistic were carried out to test the relationship between leverage and their potential determinants capital structure.

Data presentation: Data will be present in a way that users or readers can easily understand and interpret. Particularly for the first objective the study will use tabular presentation of data.

That means the results capital structure measurement and regression output will be discuss

3.5 . MODEL SPECIFICATION AND HYPOTHESIS PRESENTATION;

Based on the discussion, theoretical and empirical, that we have in the previous chapter, the study come up with the following model, variables and hypotheses that will bthe estimation model, is taken to be constant overtime and specific to the individual cross-sectional unit, If is taken to be the same across units, then, provides a consistent and efficient estimate of Therefore, the model for this study, was based on the one used by Amidu (2007) with some modification to explain the relationships between leverage and determinants of capital structure as shown below.

$$CSi,t=\beta o+\beta 1(PT,it)+\beta 2(TAi,t)+\beta 3(GRi,t)+\beta 44(SZi,t)+5(LQ)+e$$

Where:

PR = profitability

TA = tangibility

GR = growth

RS = Risk

LQ = liquidity

E=errors

As noted in Brooks (2008) the model should follow the classical linear regression model (CLRM) assumptions, which were required to show that the estimation technique, had a number of desirable properties, and also so that hypothesis tests regarding the coefficient estimates could validly be conducted. In doing so, different test of the CLRM assumptions were made. Among them the major ones are: test for Heteroskedasticity, autocorrelation, multicollinearity and normality. Accordingly, to perform a Heteroskedasticity test the popular white test was used. In this test, if the p-value is very small, less than 0.05 the null hypothesis of the variance of the residuals is homogenous must be rejected. As noted in brooks (2008) this test is the most popular because it makes few assumptions about the likely form of the Heteroskedasticity. Gujarati (2004) indicates that Heteroskedasticity is a systematic pattern in the errors where the variances of the errors are not constant. Similarly, Brooks (2008) noted that if the errors do not have a constant variance, they are said to be heteroscedastic.

On the other hand, multicollinearity means that there is linear relationship between explanatory variables which may cause In addition, it's important that the residuals from the regression models should follow the normal distribution. Normality assumption of the regression model was tested with the Jarque- Bera measure. If the Jarque Bera value is greater than 0.05, the hypothesis of the normality must be fail to rejected (Brooks, 2008).

Chapter Four

4 Results and Analysis

The preceding chapters presented the orientation of the study, literature review and the research methodology adopted in the study. This chapter presents the research hypotheses, results and analysis of data from both documentary analysis and in depth interview with financial managers of selected commercial banks of Ethiopia. The chapter is organized into three sections. The first section 4.1 presents research hypotheses as presented in the previous chapter. This is followed by the results of both documentary analyses (structured review of documents) and in-depth interview in section 4.2. Section 4.3 discusses the results of the study.

4.1. Research hypotheses

As stated in the previous chapter this study intended to examine the relationship between leverage and firm specific (profitability, tangibility, growth, risk and liquidity) determinants of capital structure decision and to understand about theories of capital structure that can explain the capital structure of banks in Ethiopian.

In addition, as noted previously, in order to achieve this broad objective the study developed the following hypotheses and research questions.

HP 1: There is a negative relationship between leverage ratios and profitability.

HP 2: There is a positive relationship between leverage ratios and growth.

HP 3: There is a positive relationship between leverage ratios and tangibiliy

HP 4: There is a negative relationship between leverage ratios and Risk

Hp 5 There is a negative relationship between leverage ratios and liquidity.

4.2. Results

This section discusses the results of the different data sources. Accordingly, the results of the documentary analysis (structured reviews of documents) and in depth interviews were presented in the following subsections.

4.2.1. Documentary analysis (structured review of financial records)

Documentary analysis was mainly used for this study, to investigate the determinants of capital structure of banks in Ethiopia. To this end, the data related to banks which were necessary to undertake the study was gathered from the financial statements of six banks and NBE for ten consecutive years (2009-2018). Balance sheet and income statement were predominantly used to analyze the determinants of capital structure of Ethiopian banks.

Based on the above data source, the following discussions present the results of the documentary analysis. Accordingly, the result of descriptive statistics, correlation analysis, the test of CLRM assumption and result of the regression analysis are presented in the following sub-sections.

4.2.1.1. Descriptive statistics

The study examined the determinants of capital structure for six banks over the time period from 2010-2018 The descriptive statistics of the dependent and explanatory variables for the sample banks were summarized in table 4.1. The total observation for the each dependent and explanatory variable was 60. Moreover, the table also shows the mean, standard deviation, minimum, median and maximum values for the dependent and independent variables.

The mean leverage (total debt to total asset) of banks was percent with the standard deviation of 2.69 percent of the banks in Ethiopia were financed by debts. This highlights that debt ratio was high in this study. Leverage for the sample period was ranged from 0.16 percent to 16.65 percent with a standard deviation of 2.27 percent.

Profitable firms are stronger to face financial distress and stronger to continue more than unprofitable firms in the future. Profitability, given as the ratio of pre-tax profits plus interest expense to total assets, registered a mean value of 0.84 percent indicating a percent, and median of 0.03 percent with a standard deviation of 1.64 percent and profitability for the sample was ranged from 0.13 percent to 4.44 percent. This shows the existence of great variation in profit among banks in Ethiopia. Growth was measured as the annual percentage change in total asset and this shows a mean of

1.01 percent and growth in total asset for the sample period were ranged from 0.95 percent to 1.57percent with standard deviation of 0.07 percent. This indicates the existence of high variation in growth rate among banks in Ethiopia. Tangibility, measured by fixed asset to total

asset shows that on average, 8.06 percent of the firms' assets were fixed. The fixed assets to total asset for the sample were ranged from 0.003 percent to 18.89 percent with standard deviation of 4.36 percent. Concerning, the firms risk which was presented by the standard deviation of operating income (volatility of earning). The mean of this variable was 4.12percent and the median was 4.10 percent with a standard deviation of 0.2 Firms vary in adopting risk; for the study sample, risk was ranged between 3.6 to 4.7 percent.

DESCRIPTIVE

	LEV	RK	TA	PR	LQ	GR
Mean	2.692670	4.126329	8.060623	0.848146	47.56856	1.012717
Median	2.805940	4.107101	9.265686	0.030892	56.28361	1.000000
Maximum	16.65000	4.742475	18.89172	4.447637	73.80083	1.575000
Minimum	0.016700	3.667611	0.003097	0.013200	0.033370	0.958000
Std. Dev.	2.275983	0.265338	4.363553	1.646103	24.74478	0.076312
Skewness	3.675028	0.237870	-0.795529	1.514441	-1.254908	6.878046
Kurtosis	24.76128	2.252456	3.258325	3.323272	2.943618	50.86866
Jarque-Bera	1318.942	1.962877	6.495500	23.19659	15.75589	6201.596
Probability	0.000000	0.374772	0.038862	0.000009	0.000379	0.000000
Sum	161.5602	247.5798	483.6374	50.88878	2854.113	60.76300
Sum Sq. Dev.	305.6257	4.153855	1123.395	159.8696	36125.94	0.343586
Observations	60	60	60	60	60	60

4.2.1.2. Correlation analysis

Table 4.2, shows the correlation between the explanatory variable and leverage in this study. As noted in Brooks (2008), Correlation between two variables measures the degree of linear association between them. To find the association of the independent variables with the leverage, Pearson product moment of correlation coefficient was used. Values of the correlation coefficient are always ranged between positive one and negative one. A correlation coefficient of positive one indicates that a perfect positive association between the two variables; while a correlation coefficient of negative one indicates that a perfect negative association between the two variables. A correlation coefficient of zero, on the other hand, indicates that there is no linear relationship between the two variables.

The correlation matrix in Table 4.2 shows that leverage (dependent variable) was negatively correlated with profitability, growth, tangibility, risk and liquidity of the firm. Which indicates that firm with higher leverage have less profitability, growth, tangibility, risk and liquidity. However,have a positive correlation with leverage. The result also shows that leverage was correlated at 0.5 with profitability and had statistically significant correlation. Similarly, leverage was correlated at and had statistically significant correlation. Besides, leverage was correlated at 0.79400066, 0.6880 7465,0.52666714, 0.05549309 with growth, tangibility, liquidity, and risk respectively and had statistically insignificant correlation.

4.2.1.3. Tests for the Classical Linear Regression Model (CLRM) Assumptions

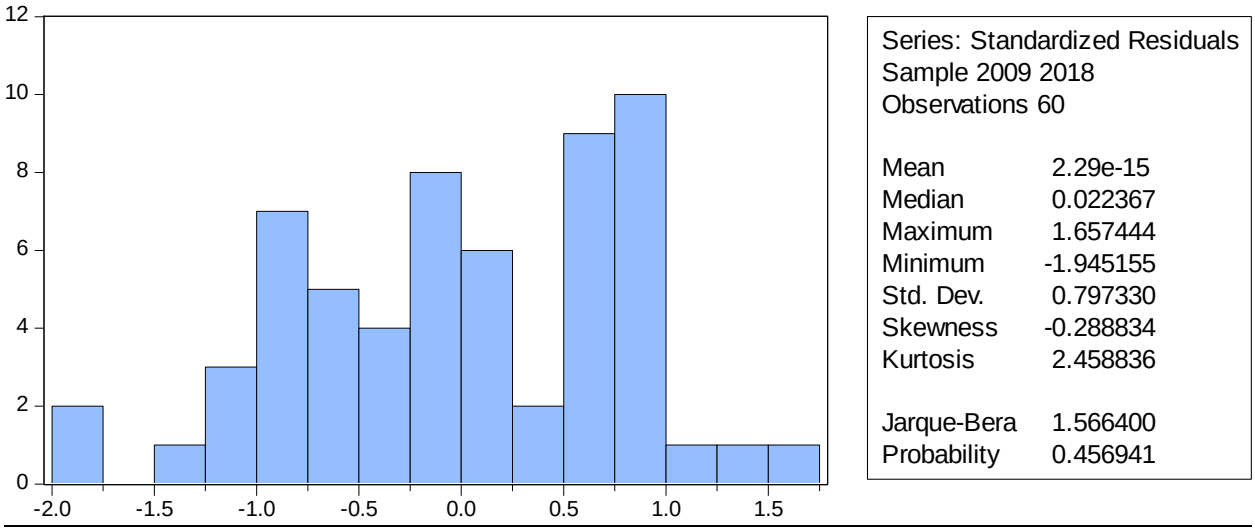
Different tests were run to make the data ready for analysis and to get reliable output from the research. These tests were intended to check whether the CLRM assumptions,

i.e. the OLS assumptions, are fulfilled when the explanatory variables are regressed against the dependent variables. Accordingly, the following sub-section presents tests of CLRM;

Test of Normality

The normality tests for this study as shown in figure 4.1 the kurtosis is close to 2, and the Bera-Jarque statistic has a P-value of 0.456 which was greater than 0.05 implying that the data were consistent with a normal distribution assumption.

Figure 4.1: Normality test



Test of multicollinearity

In order to examine the possible degree of multicollinearity among the explanatory variables, correlation matrixes of the selected explanatory variables were presented in table 4.3. Usually the multicollinearity exists if the correlation between two independent variables is more than 0.75 (Malhotra, 2007). As it appears in the correlation matrix table 4.3, there were no such high correlation between the explanatory variables. Thus, there is no problem of multicollinearity for this study.

Tabel 4. 1: Correlation matrix between explanatory variables

	LEV	RK	TA	PR	LQ	GR
LEV	1					
RK	0.05549309203837573	1				
TA	0.688074654409121	0.08106110723255645	1			
PR	-0.5505127783318749	-0.0132183448185608	-0.9225567456890763	1		
LQ	0.5266671428357159	0.007729375025440095	0.8738557155467104	-0.9630721345579269	1	
GR	0.7940006619213411	0.08245324259428248	0.3636614906510219	-0.08506902173792576	0.07694380632695775	1

Source: Structured review of financial statements and own computations

Test of Heteroscedasticity

Table 4.4 presents three different types of tests for heteroscedasticity and then the auxiliary regression in the first results table displayed. The test statistics give us the information we need to determine whether the assumption of homoscedasticity is valid or not, but seeing the actual auxiliary regression in the second table can provide useful additional information on the source of the heteroscedasticity if any is found. In this case, both the *F*- and $\chi 2$ versions of the test statistic give the same conclusion that there is no evidence for the presence of heteroscedasticity, since the *p*-values are considerably in excess of 0.05. The third version of the test statistic, 'Scaled explained , which as the name suggests was based on a normalized version of the explained sum of squares from the auxiliary regression, similarly suggests in this case that there is no evidence of heteroscedasticity problem.

Heteroskedasticity Test: White

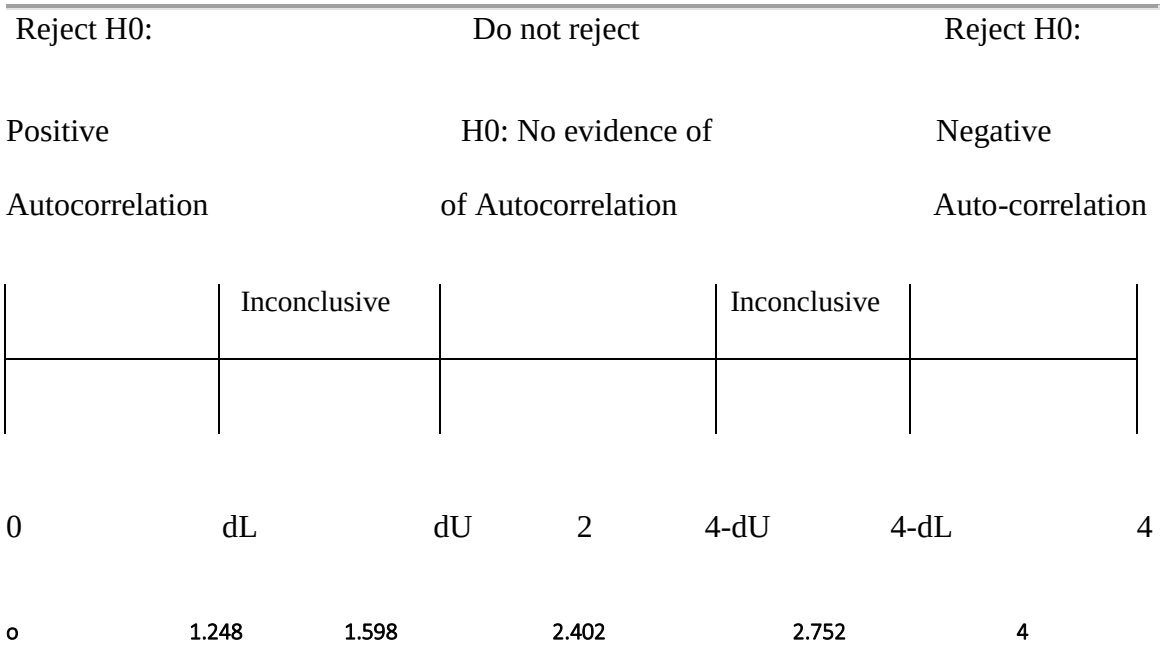
F-statistic	8.578063	Prob. F(19,40)	0.0000
Obs*R-squared	48.17636	Prob. Chi-Square(19)	0.0002
Scaled explained SS	42.36729	Prob. Chi-Square(19)	0.0016

Test for Assumption of Autocorrelation

As noted in Brooks (2008) this is an assumption that the covariance between the error terms over time (or cross-section ally, for that type of data) is zero. In other words, it was assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they ware 'auto correlated' or that they ware serially correlated.

Table 4.6 presents the Durbin-Watson test value for the autocorrelation of residual which is 1.41. The relevant critical values for the test are dL= 1.248, dU = 1.598, and 4 - dU = 4-1.598=2.402; 4 - dL = 4-1.248=2.752. Accordingly, Durbin-Watson test value is clearly between the lower limit (dL) which is 1.284 and the upper limit which is 1.589 and thus the null hypothesis is neither rejected nor not rejected

Figure: 3.1: Rejection and Non-Rejection Regions for DW Test



Random Effect versus Fixed Effect Models

Table 4.5, presents the Hausman specification test which suggests model was better than Quantatative random effects model as the p-value (0.0000), is less than 0.05 for dependent variables which imply that the random effects model should be rejected.

Tabel 4. 2 : Correlated Random Effects - Hausman Test

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	5	1.0000

4.2.4. Results of Regression analysis

As shown in chapter three, the model used to find out and explain the association between the dependent variable and the independent variables was:

$$LEVit=\beta o+\beta 1(PR\ it)+\beta 2(TAit)+\beta 3(GRit)+\beta 4((RSit)\beta 5(LQ)+error$$

Where:

LEV= leverage

PR = profitability

TA = tangibility

GR = growth

RS =Risk

LQ = liquidity

This study used panel data models where the random Quntitative effect models could be used to estimate the relationships among variables. An appropriate model for this analysis, was selected. To perform this comparison, the character of the individual effects was tested through the Hausman's specification test.

The random effect results in table 4.6 indicates that profitability was strongly statistically significant (p-value = 0.0000) at 1 percent level and had negative relation with leverage ratio. Similarly, liquidity was strongly statistically significant (p-value = 0.4160) at 1 percent level and had negative relation with leverage ratio. In the same way, was statistically significant (p-value = 0.0000) at 1 percent level and had positive relation with leverage ratio. Besides, the

random effect table 4.6 reveals that tangibility was statistically significant (p-value = 0.0012) at 5 percent level and had negative relation with leverage ratio. But risk and growth do not have statistically significant relationship with leverage with a p-value of 0.5556 and 0.0000 respectively. Furthermore the table 4.6 shows that the adjusted R square is 0.86 which indicates that about 86 percent of the variability in leverage is explained by the selected firm-specific factors (Profitability, Tangibility, risk, Growth, liquidity,)

REGG (RANDOM)

Dependent Variable: LEV
Method: Panel EGLS (Cross-section random effects)
Date: 12/24/20 Time: 05:55
Sample: 2009 2018
Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60
Wallace and Hussain estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RK	0.236902	0.399402	0.593143	0.5556
TA	-0.372187	0.108413	-3.433058	0.0012
PR	-1.684387	0.341946	-4.925885	0.0000
LQ	-0.014787	0.018052	-0.819133	0.4163
GR	27.97738	1.962624	14.25509	0.0000
C	-21.48598	2.267752	-9.474573	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.467815	0.2934
Idiosyncratic random	0.726049	0.7066

Weighted Statistics			
R-squared	0.872207	Mean dependent var	1.186346
Adjusted R-squared	0.860375	S.D. dependent var	1.940670
S.E. of regression	0.725160	Sum squared resid	28.39627
F-statistic	73.71189	Durbin-Watson stat	1.569167
Prob(F-statistic)	0.000000		

4.2.2. In-depth interview results

In order to deeply understand how banks choose between different types of finance and its determinants unstructured interviews were utilized with some selected Ethiopian commercial banks finance managers. The interviews were conducted with five finance managers of Ethiopian commercial banks namely, Construction and Business Bank, Commercial Bank of Ethiopia, United bank, Bank of Abyssinia and Wegagen bank. The finance managers were chosen as they are believed to be the most knowledgeable parties about the determinants of capital structure. Beside, the interviews were conducted independently with the official. They were asked unstructured interview questions in relation to the financing of their company. These interview questions were designed to find out the main factors that determine the capital structure of banks, the source of

finance that bank mainly use, factors responsible to make equity issue, factors responsible to determine appropriate amount of debt and the influence of on the source of finance.

According to an interview with financial managers of the banks, the factors that can determine the capital structure of banks in Ethiopia were; profitability,liquidity, ownership structure, maintaining a target debt-to equity ratio, technology, and government regulation. In addition to this the interviews result indicted that the main sources of finance for their company were deposit, retained earnings, and equity. Regarding factors responsible for making equity issue, the most important factor was to fund a major expansion.

As per the interview with the financial managers, profitability increases the level of leverage in Ethiopian banking industry. According, to the officials profitability increases the goodwill of the bank in the eyes of the public which will increases their deposit this means in other word profitability has a positive relationship with leverage ratio.

Furthermore, the official's revealed banks with high liquidity ratios or more liquid assets prefer to utilize these assets to finance their investments and discourage to raise external funds. Thus, this indicates as liquidity has a negative relationship with leverage ratio. Regarding to the officials suggests that as the banks become large there levels of leverage ratio also become high which shows a positive relationship between growth and leverage ratio.

4.3. Discussions of the Results

The preceding sections present the overall results of the study. Thus, this section discusses in detail the analyses of the results for each explanatory variable and their importance in determining leverage ratio. In addition, the discussions analyses the statistical findings of the study in relation to the previous empirical evidences. Hence, the following discussions present the relationship between explanatory variables and

leverage ratio.

Profitability

The results of fixed effect model in table 4.6 indicated that profitability had a negative relationship with leverage, and statistically significant (p-value = 0.000) at 1% level. Thus, the result was in accordance with the expected sign. This implies that every one percent change (increase or decrease) in bank's

profitability keeping the other thing constant has a resultant change of 121 percent on the leverage in the opposite direction. This result also shows that, higher profits increase the level of internal financing in Ethiopian banking industry. Beside, the result revealed the suggestions that profitable banks accumulate internal reserves and this enables them to depend less on external funds. Even though, profitable banks may have better access to external financing, the need for debt finance may possibly be lower, if new investments can be financed from accumulated reserves.

The result of this study is consistent with the pecking order theory that suggests profitable firms prefer internal financing to external financing. Beside, a negative relationship between profitability and leverage was observed in the majority of empirical studies Rajan and zingales (1995), Amidu (2007), and Caglayan and Sak (2010) were some of them. However, Regardless of the above fact, the interview result revealed that profitability had a positive effect on the leverage ratio. This comment suggested that banks with higher profitability will have more leverage in their capital structure, which is in contrary to the above findings of the regression result. This is may be because of the increased goodwill that profitable banks have in the eyes of the public, which in turn resulted in an increased level of deposits for them.

Tangibility

table 4.6 indicated that the relationship between tangibility and leverage was found to be negative and statistically significant (p-value =

0.0012) at 5% level. Therefore, the result was not in accordance with the expected sign. The result also implies that every one percent change (increase or decrease) in the banks tangibility keeping the other thing constant had a resultant change of 37.2 percent on the leverage in the opposite direction. This significant negative relationship between tangibility and leverage contradicts with various previous research findings like Rajan and Zingales (1995), Amidu (2007), and Frank and Goyal (2009) which suggest that firm's borrowing capability depends upon collateralizable value of assets (tangibility) and with theories (Static trade-off theory and asymmetric theory) which stated the positive relation between leverage and tangibility.

The likely reason of this relationship might be that banking industry in Ethiopia had a close relationship with creditors, because the relationship can substitute for collateral. In contrary to the above findings of regression result, the findings from the interview result indicates tangibility was not a proper determinant of bank capital structure. As per the interviews with the finance managers of banks, one possible explanation for this was the use of ownership structure and reputation, in which fixed asset are not used as security.

Risk

Risk was considered to be one of the key factors that can affect the capital structure of banks in Ethiopia. Both theories i.e., static trade of theory and pecking order theory predict a negative relationship between risk and leverage

ratio for at least two reasons: first, earnings volatility reduces investors ability to predict about future performance and earnings; second, the higher volatility lead to higher probability of default.

However, there was no support of risk influencing the level of leverage of banks in Ethiopia. The coefficient for risk on leverage was negative and statistically insignificant with the p-value of 0.55. Though, negative sign confirms that risky banks are expected to have less leverage ratio which was consistent with Pecking Order Theory and trade-off theory, but insignificant result indicates that risk was not considered as a proper explanatory variable of leverage in Ethiopian banking industry. This insignificant result was also consistent with the findings of Titman and Wessels (1988) and Amidu (2007). Similarly, the findings from interviews data were also provide further support for the findings of the regression result which demonstrates that risk was not a proper factor that determine the capital structure of banks in Ethiopia.

Liquidity

The results of fixed effect model table 4.6 indicated that liquidity had a negative relationship with leverage, and statistically significant (p-value = 0.4160) at 1% level. Thus, the result was in accordance with the expected sign which state that

there is negative relationship between leverage and liquidity. This negative sign shows the inverse relationship between the liquidity and leverage. In other word it implies that every one percent change (increase or decrease) in the bank liquidity keeping the other thing constant had a resultant change of 4.9 percent on the leverage in the opposite direction.

The negative and statistically significant influence of liquidity in this study was consistent with a theoretical analysis of pecking order and agency cost theory, which state that high liquidity firms use internal resources instead of external to finance their projects. Therefore, this negative effect of Liquidity on leverage was also largely consistent with the empirical evidence of Deesomsak et al. (2004), Ahmed et al., (2010), and Najjar and Petrov (2011). In the same way, the interview with the finance manager of banks indicates banks with high liquidity ratios or more liquid assets were prefer to utilize these assets to finance their investments and discourage to raise external funds. Thus, the findings from interviews support the findings of the regression result which demonstrates a negative relationship between liquidity and leverage.

Growth

According to the trade-off theory, firms holding future growth opportunities, which are intangible assets, tend to borrow less than firms holding more tangible assets because growth opportunities cannot be collateralized Myers

(1977). However, the pecking order theory of Myers and Majluf (1984) predicts that leverage and growth are positively related. For growing firms, internal funds may be insufficient to finance their positive investment opportunities and, hence, they are likely to be in need of external funds. According to the pecking order theory, if external funds are required, firms will prefer debt to equity because of lower information costs associated with debt issues. This results in a positive relationship between leverage and growth opportunities.

table 4.6 revealed that there was a negative and statistically insignificant relationship between leverage and growth of banks. The negative coefficient of growth indicates a negative relationship between growth and leverage. However, this negative relationship is found statistically insignificant with the p-value of 0.0000 Though negative sign confirms that growing banks are expected to have less debt ratio which was consistent with trade of theory and previous empirical findings of Huang and Song (2005) and Olayinka (2011) the insignificant result indicates that growth was not considered as a proper explanatory variable of leverage in Ethiopian banking industry. This insignificant result was also consistent with the previous empirical findings of Titman and Wessels (1988), Ahmed et al., (2010) and Najjar and Petrov (2011).

The possible reason may be that the measure (percentage change in total asset) used in this study did not reflect the growth of banks fully. Other more significant results might be obtained by using another measure (market-to-book ratio) for growth which was difficult to use it for this study where there is no active secondary market. In the same way, the findings from interviews data were also provide further support for the findings of the regression result which demonstrates that growth was not a proper factor that determine the capital structure of banks in Ethiopia.

This chapter discussed the results of the documentary analysis and in depth interview results, and then presented the discussions of these results using the appropriate method.

Accordingly, the chapter discussed the descriptive analysis, correlations between the variables and through the regressions analyses; it illustrates how the independent variables influence the dependent variable. Thus, a discussion of the result indicates that profitability, tangibility, and liquidity were statistically significant factors that determine the capital structure of banks in Ethiopia. However, discussions of the result indicate that growth were not an important explanatory variable of leverage in Ethiopian banking industry. The next chapter presents conclusions and recommendations of the study.

Chapter Five:

Conclusions and Recommendations

The preceding chapter presented the results and discussion, while this chapter deals with the conclusions and recommendations based on the findings of the

study. Accordingly this chapter is organized into two sub-sections. Section 5.1 presents the conclusions and section 5.2 presents the recommendations.

5. 1. Conclusions

Since the seminal work of Modigliani and Miller (1963), the issue of capital structure has attracted intense debate in the field of financial management. The whether there exists an optimal capital structure and what might be its determinants. Extensive research has attempted to identify these factors; however, the findings of prior empirical studies have provided varying evidence related to the impact of these factors on capital structure. Furthermore, the majority of these studies have been conducted in developed countries that have many institutional similarities.

In light of the above, the main objective of this study was to examine the relationship between leverage and firm specific (profitability, tangibility, growth, risk, and liquidity) determinants of capital structure decision, and to understand about theories of capital structure that can explain the capital structure of banks in Ethiopian. To achieve the intended objective the study used quantitative approaches. The quantitative data were collected from a sample of six banks over the time period from 2009-2018 The collected data were analyzed by employing multivariate OLS, model 'EVIEW 8'.

In order to conduct the empirical analysis, one dependent variable (at book value), and five independent variables were selected from prominent previous research works on capital structure; namely profitability, growth, tangibility, risk, and liquidity.

Profitability had statistically significant positive relationship with leverage, which wa s not in line with prior expectation. This result also supports the static trade-off theory. Similarly, liquidity had a negative and statistically significant relationship with leverage, which was also in line the expected sign. A negative sign suggests that banks with high liquidity ratios or more liquid assets are prefer to utilize these assets to finance their investments and discourage to raise external funds. Moreover, the result for liquidity clearly supports the pecking order and agency theories.

Regarding to the effect of tangibility on the capital structure of banks in this study, the result shows that as there was negative and statistically significant relationship with leverage, which is in line with the extended form of pecking order theory. Beside, the results of study indicated that statistically significant positive relationship with leverage, which was consistent with trade- off theory and the expected sign. The result also implies that the bigger the bank, the more external funds it would be used.

Surprisingly, Growth and risk had a negative relationship with leverage, and statistically insignificant. profitability, and liquidity were the main factors that determine the capital structure of banks in Ethiopia.

In conclusion, the finding of the study suggests that profitability, liquidity, tangibility, were important variables that influence banks' capital structure. However, there were no support of banks' risk and growth influencing the level of leverage of banks in Ethiopia. The results also, confirms that pecking order theory was pertinent theory in Ethiopian banking industry, while there were little evidence to support static trade-off theory and the agency cost theory.

5.2. Recommendations

In light of the major finding obtained from the results, the following recommendations were made. The analyses indicated that the variables of profitability, liquidity, risk, and tangibility were significantly related to leverage ratio. Therefore, banks should pay greater attention to these significant variables in determining their optimal capital structure

The analyses indicated that the variables of profitability, liquidity, risk, and tangibility were significantly related to leverage ratio. Therefore, banks should pay greater attention to these significant variables in determining their optimal capital structure.

The study also shows that, banks in Ethiopia mainly use debt as external source of finance. Thus, the managements of Banks should place greater emphasis on the facilitation of equity capital in order to obtain sufficient capital to expand their branch network which in turn creates greater market share for them.

This study examined only firm specific determinants of capital structure of banks in Ethiopia because of resource and time limitation. Thus, future researcher may address these deficiencies by including external variable like inflation, GDP, interest rate and ownership structure, in order to demonstrate the impact of both internal and external variables on the choice of capital structure.

Reference

Amanuel, M 2011, 'the determinants of capital structure evidence from manufacturing share

American Economic Review, vol. 76, no. 2, pp. 323-329.

Amidu, M 2007, 'Determinants of capital structure of banks in Ghana', Baltic Journal of

Analyses', Applied Financial Economics, vol. 12, no. 3, pp. 159-170.

And ownership structure', Journal of Financial Economic and ownership

approaches, 3rd ed., Sage publications, United State of Americ

Ashenafi, B 2005, 'Determinants of capital structure in medium enterprises in Ethiopia', Master's

Bayeh, A 2011, 'Capital structure determinants: an empirical study on insurance industry in

Bevan, A and Dan bolt J 2002, 'Capital structure and its determinants in the UK: a decomposition Bevan, A and Danbolt J 2004, 'Testing for inconsistencies in the estimation of UK capital

Booth, L., Aivazian, V., Demirguc-Kunt, V., & Maksimovic, V. (2001). Capital structures

Brooks, C 2008, Introductory Econometrics for Finance, 2nd ed., Cambridge University,

Creswell, J W 2009, Research design: qualitative, quantitative and mixed methods

Deesomsak R, Paudyal K and Pescetto G 2004, 'the determinants of capital structure: evidence from the Asia Pacific region', Journal of Multinational Financial ManagmenetVol.14,pp.387-405

Gurcharan, S 2010, 'A review of optimal capital structure determinant of selected ASEA Ethiopia', Master's thesis, Addis Ababa University, Economic Review, vol. 17, pp. 14-36.

Huang, G and Song, F M 2005, 'the determinants of capital structure: Evidence from China', China

In developing countries. Journal of Finance, 56, 87-130

Jensen, M 1986, 'the agency costs of free cash flow: corporate finance and takeovers',

Jensen, M and Meckling, W 1976, 'Theory of the firm: managerial behavior, agency costs

Jensen, M and Meckling, W 1976, 'Theory of the firm: managerial behavior, agency costs Management, Vol.2 No. 1, 2007, pp 67-79

Modigliani, F and Miller, M 1963, 'The Corporate Income Taxes and the Cost of Capital': no.4, pp. 305-360.

Morri, S C and Beretta, C 2008, 'the capital structure determinants of REITs, is it a peculiar Industry?' Journal of European Real Estate Res; vol. 1, pp. 6-57.

Myers, S C 1984, 'The capital structure puzzle', Journal of Finance, Vol. 39, pp. 575-92

New Work

Olayinka, A 2011, 'Determinants of capital structure: evidence from Nigerian panel data Thesis, Addis Ababa University

Rajan, R. and Zingales, L. (1995). What Do We Know about Capital Structure? Some Evidence from International Data. Journal of Finance, 50, 47-81.

Ross S A Westerfield, R W and Jaffe, J 2002, corporate finance, McGraw – Hill, USA.

structure determinants', Applied Financial Economics, vol. 14, no.1, pp. 55-66

Structure', Journal of Financial Economics, vol. 3,

APPENDIXE

DESCRIPTIVE

	LEV	RK	TA	PR	LQ	GR
Mean	2.692670	4.126329	8.060623	0.848146	47.56856	1.012717
Median	2.805940	4.107101	9.265686	0.030892	56.28361	1.000000
Maximum	16.65000	4.742475	18.89172	4.447637	73.80083	1.575000
Minimum	0.016700	3.667611	0.003097	0.013200	0.033370	0.958000
Std. Dev.	2.275983	0.265338	4.363553	1.646103	24.74478	0.076312
Skewness	3.675028	0.237870	-0.795529	1.514441	-1.254908	6.878046
Kurtosis	24.76128	2.252456	3.258325	3.323272	2.943618	50.86866
Jarque-Bera	1318.942	1.962877	6.495500	23.19659	15.75589	6201.596
Probability	0.000000	0.374772	0.038862	0.000009	0.000379	0.000000
Sum	161.5602	247.5798	483.6374	50.88878	2854.113	60.76300
Sum Sq. Dev.	305.6257	4.153855	1123.395	159.8696	36125.94	0.343586
Observations	60	60	60	60	60	60

CLRM

HETT

Heteroskedasticity Test: White

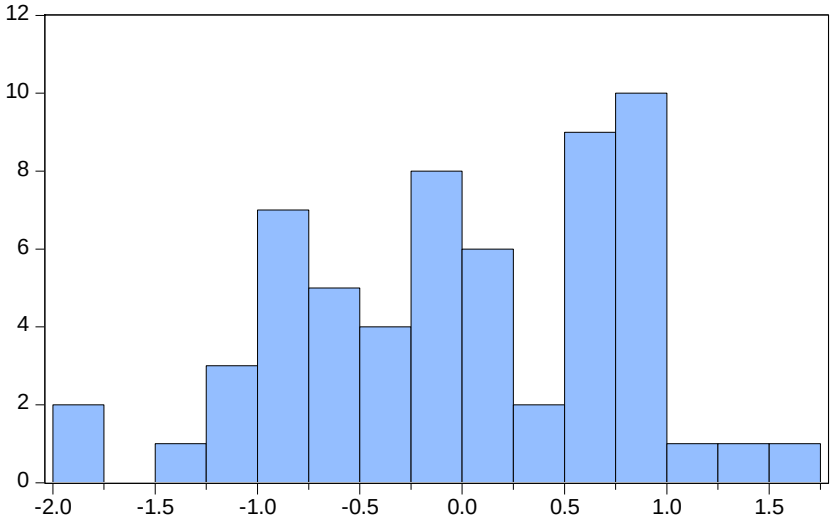
F-statistic	8.578063	Prob. F(19,40)	0.0000
Obs*R-squared	48.17636	Prob. Chi-Square(19)	0.0002
Scaled explained SS	42.36729	Prob. Chi-Square(19)	0.0016

AUTO

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	3.148042	Prob. F(2,52)	0.0512
Obs*R-squared	6.480110	Prob. Chi-Square(2)	0.0392

NORMALITY



Series: Standardized Residuals
Sample 2009 2018
Observations 60

Mean	2.29e-15
Median	0.022367
Maximum	1.657444
Minimum	-1.945155
Std. Dev.	0.797330
Skewness	-0.288834
Kurtosis	2.458836
Jarque-Bera	1.566400
Probability	0.456941

MULT

	RK	TA	PR	LQ	GR
RK	1				
TA	0.081061107232 55645	1			
PR	- 0.013218344818 5608	- 0.922556745689 0763	1		
LQ	0.007729375025 440095	0.873855715546 7104	- 0.963072134557 9269	1	
GR	0.082453242594 28248	0.363661490651 0219	- 0.085069021737 92576	0.076943806326 95775	1

CORR

	LEV	RK	TA	PR	LQ	GR
LEV	1					
RK	0.05549309203837573	1				
TA	0.688074654409121	0.08106110723255645	1			
PR	-0.5505127783318749	-0.0132183448185608	-0.9225567456890763	1		
LQ	0.5266671428357159	0.007729375025440095	0.8738557155467104	-0.9630721345579269	1	
GR	0.7940006619213411	0.08245324259428248	0.3636614906510219	-0.08506902173792576	0.07694380632695775	1

HUSMAN

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	5	1.0000

REGG (RANDOM)

Dependent Variable: LEV
Method: Panel EGLS (Cross-section random effects)
Date: 12/24/20 Time: 05:55
Sample: 2009 2018
Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60
Wallace and Hussain estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RK	0.236902	0.399402	0.593143	0.5556
TA	-0.372187	0.108413	-3.433058	0.0012
PR	-1.684387	0.341946	-4.925885	0.0000
LQ	-0.014787	0.018052	-0.819133	0.4163
GR	27.97738	1.962624	14.25509	0.0000
C	-21.48598	2.267752	-9.474573	0.0000

Effects Specification	S.D.	Rho
Cross-section random	0.467815	0.2934
Idiosyncratic random	0.726049	0.7066

Weighted Statistics

R-squared	0.872207	Mean dependent var	1.186346
Adjusted R-squared	0.860375	S.D. dependent var	1.940670
S.E. of regression	0.725160	Sum squared resid	28.39627
F-statistic	73.71189	Durbin-Watson stat	1.569167
Prob(F-statistic)	0.000000		