DETERMINANTS OF CAPITAL STRUCTURE OF COMMERCIAL BANKS IN ETHIOPIA

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A Thesis Submitted to

The Department of Accounting and Finance

Presented in partial fulfillment of the requirement for the Degree of master of business administration in finance

Addis Ababa University

Addis Ababa, Ethiopia

May, 2017

DECLARATION

I, Ahmed Melkie the undersigned, hereby declares that this thesis is my original work, has not been presented in this or any other University and that all sources of materials used for this thesis has been duly acknowledged.

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This is to certify that the thesis prepared by Ahmed Melkie, entitled: Determinants of capital structure of commercial banks in Ethiopia and submitted in partial fulfillment of the requirements for the Degree of Master of Business Administration in Finance complies with the regulations of the University and meets the accepted standards with respect to originality and quality.

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Abstract

Capital structure decision is one of the core decisions that financial managers should care for. Different firms have different choice of funds that are categorized under either debt or equity. But the most important question is what factors determine their choice of finance and how they affect it. In order to give answer for such question, this study examined the effect of firm specific & macroeconomic factors of capital structure on the dependent variable as measured by total debt ratio. It also investigates the theories of capital structure that can best explain the capital structure of private commercial banks in Ethiopia. In order to achieve this objective the researcher fully relied on secondary sources of data such as financial reports of private banks and reports of National Bank of Ethiopia and regressed firm specific factors (profitability, tangibility and age) and macroeconomic factors (GDP growth rate and interest rate) against the dependent variable leverage. The researcher utilized quantitative approach and regressed thirteen years (2004 – 2016) data for six private commercial banks in Ethiopia. The results of this study suggested that profitability, GDP growth rate and interest rate variables were found to be significant factors affecting leverage of commercial banks in Ethiopia confirming tradeoff and pecking order theories as prominent theories for the sector. On the other hand, tangibility and age variables were found as insignificant to affect the dependent variable. Thus, Ethiopian commercial banks' managers are advised to have closer attention on profitability, GDP growth rate and interest rate factors in order to make optimal decision pertaining to capital structure.

Key words: commercial banks, capital structure, leverage, profitability and panel data.

Acknowledgements

Above all in not comparable manner with anyone else, I would like to thank the almighty Allah; creator of the universe, who makes me something from nothing and allowed me to accomplish this thesis.

From personal perspective, there are some distinguishable individuals those helped me throughout my study and their assistance cannot be passed unmentioned. First, I would like to thank my advisor Dr.Laxmikantham.P who is lecture at Accounting and Finance Department of Addis Ababa University for his willingness and positive commitment to advise me without being bored as well as gave me precious comments and suggestions that helped me to accomplish this task.

I would also like to convey my sincere thanks to my mother Momina Seid and my families whose unconditional love and silent prayers encouraged me throughout my life.

Last but not the least, my special thanks goes to my favorite friends who helped me in any form of assistance.

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List of Acronyms and Abbreviations

AIB – Awash International Bank

BJ- Bera Jarque

BOA – Bank of Abyssinia

CLRM-Classical Linear Regression Model

DB – Dashen Bank

DW- Durbin Watson

ETB- Ethiopian Birr

GCC- Gulf Cooperation Countries

GDP- Gross Domestic Product

GLS- Generalized Least Square

GNP- Gross National Product

INT- Interest Rate

LQ- Liquidity

MM- Modigliani and Miller

NBE- National Bank of Ethiopia

NIB – Nib International Bank

OLS- Ordinary Least Square

PR- Profitability

ROA- Return on Asset

SS- Sum Squared

TAN- Tangibility

UK- United Kingdom

UB – United Bank

US- United States

WACC- Weighted Average Cost of Capital

WB – Wegagaen Bank

CHAPTER ONE: INTRODUCTION

For every organization having a good financing strategy is one of among the crucial factors for its success. As a result, the proportion of debt and equity which make up assets of a firm is one major issue that financial managers should worry about in order to make an optimal capital structure decision which minimizes cost of capital thereby maximizing their firm's value. This paper presents and discusses the examination of both firm specific and macroeconomic factors that influence financing decision of Ethiopian banking entities during the period from 2004 - 2016. This very first chapter of the research presents introductory frameworks, those used as a starting point to progress through the other portions of the study.

1.1 Background of the Study

The capital structure of a firm is defined as the permanent financing represented by long-term debt, preferred stock and shareholder equity (Copeland and Weston, 1993). These sources of finance have different levels of risks associated with them and it is important for the managers to be aware of these risks, so that they can determine which source best suits the firms' needs and increases the value of the firm. The capital structure that maximizes the value of a firm is considered as an optimal one. An optimal capital structure not only imparts higher returns to its shareholders, but also improves the competency of a firm. Therefore, in order to improve the performance of firms, it is imperative for them to know how to obtain its finance.

Ever since the publication of Modigliani and Miller (1958)'s "irrelevance proposition", there has been extensive theoretical work on the determinants of firms' capital structures. Financing policy plays a significant role in achieving strong economic fundamentals for the firms in the long-run. The choice of whether to go for debt or equity is impacted by several factors

In this financially integrated world of today, no firm remains unaffected by what happens in the economy, so the better the management of a firm understands the internal firm specific and macroeconomic factors on capital structure, the more efficient they will be in their decision making process. Therefore, by knowing the causal effect of the macroeconomic variables on the choice of capital structure, the management can mitigate the impact of the unexpected fluctuations in the economy and could even take advantage of them.

In the specialized literature, the factors that affect the capital structure of a firm are classified into two categories: (a) the internal (firm specific) to private commercial banks, such as profitability, banks' size, collateral, age, liquidity, etc. and (b) the external (macroeconomic) factors reflecting macroeconomic conditions such as (inflation rate, interest rate, GDP).

Lack of adequate capital has been identified as the major cause of business failure. There is no doubt that the banking sector plays a significant role in the economy of any country. In the effort to raise capital and the pursuance of optimal capital structure and to finance their operations efficiently and effectively, banks need to adjust and mix both debt and equity strategically.

In Ethiopian context, there were few studies that have been conducted in relation with capital structure determinants as compared to other countries. Most of the empirical studies conducted in Ethiopia focuses only on firm specific (internal) factors of capital structure. Therefore, the aim of this paper is to examine both internal (firm specific) and external (macroeconomic) determinants of capital structure decision pertaining to Ethiopian banking sector.

1.2 Statement of the Problem

Over the previous years, numerous studies on capital structure theory have appeared. Following the influential work of Modigliani and Miller (1958), a vast theoretical literatures have been developed, which led to the formulation of alternative theories, such as the static trade off model, pecking order theory, agency cost theory and market timing theory. However, based on the research made by Myers (1984), it was stated that each of the theories on capital structure applied were based on certain circumstances.

As such, the theories are not designed to be general rather they are conditional theories of capital structure; each of which emphasizes on certain costs and benefits of alternative financing strategies.

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 been tested by empirical studies and the theories themselves lead to different, not mutually exclusive and sometimes opposed result and conclusion (Rajan and Zingales 1995). Morri and Beretta (2008) explained many theoretical studies and much empirical research have addressed those issues, but there has been not yet a fully supported and commonly accepted theory; and the debate on the significance of determinant factors is still unanswered.

In light of the above debate, there were few studies in Ethiopian context regarding capital structure determinants in general and particularly in case of financial sector as compared to other countries. Many of the researchers (Bayeh, 2011; Solomon, 2012; Woldemikael, 2012), studied only the impact of firm specific factors of capital structure.

So, the very purpose of this study is to examine side by side both firm specific and macroeconomic determinants of capital structure decision pertaining to the banking sector of Ethiopia, more specifically the study focus on private commercial banks in Ethiopia.

1.3. Research Questions (RQ)

Based on the broad research objectives, the following research questions are developed.

RO1. What are the effects of profitability, tangibility and banks' age on leverage in Ethiopian banking sector?

RQ2. What are the effects of GDP growth rate and interest rate on leverage in Ethiopian banking sector?

RQ3. Which theory of capital structure best explains the financing decision adopted by private commercial banks in Ethiopia?

1.4. Objectives of the Study

The main objective of this study is to examine the effect of both internal (firm specific) and external (macroeconomic) determinants of capital structure on leverage and to understand about the theories of capital structure that can best explain the capital structure of Ethiopian banking industry.

To meet the main objective, this study focuses on the following specific objectives.

(i) To examine the effect of profitability, tangibility and banks' age on leverage in Ethiopian banking sector.

(ii) To examine the effect of GDP growth rate and interest rate on leverage in Ethiopian banking sector.

(iii) To analyze which capital structure theory can best explain in Ethiopian banking sector.

1.5. Research Hypothesis

In order to achieve the objectives of the study, five hypotheses, under two major categories will be tested as presented below;

Hypothesis a: Profitability has a statistically significant and negative effect on leverage.

Hypothesis b: Banks' age has a statistically significant and positive effect on leverage.

***Hypothesis* c:** Tangibility has a statistically significant and positive effect on leverage.

Hypothesis d: Interest rate has statistically significant and positive effect on leverage.

Hypothesis e*:* GDP growth rate has statistically significant and positive effect on leverage.

1.6. Significance of the Study

The study will have significance for various parties. More importantly it will have higher relevance for managers and shareholders of private commercial banks in Ethiopia, potential investors, and researchers.

Firstly, the study will be important for management bodies and shareholders of Ethiopian private commercial banks by suggesting major factors that will influence their financing decision and the most prominent theory they have to care of as well.

Moreover, it will also enable managers to know how they have to treat such factors in order to achieve an optimal capital structure decision thereby enabling to minimize a cost of capital and maximizing their firms' value.

Secondly, the study will have significance for current shareholders of Ethiopian private commercial banks and for potential investors of banking business in Ethiopia by giving an ample knowledge and direction about influential factors that can affect capital structure and their implication for firms in Ethiopian banking sector.

Thirdly, the study will be used as a good reference for other researchers in the future to those who will conduct their research in relation with capital structure determinants in general and in case of Ethiopian banking sector in particular.

1.7. Scope and Limitation of the Study

The scope of the study is limited only on determinants of capital structure of only private commercial banks. Among sixteen private commercial banks only six banks (namely Awash International Bank (AIB), Bank of Abyssinia(BOA), Nib International Bank(NIB), Wegagaen Bank(WB), United Bank(UB) and Dashen Bank(DB), have been taken over the period of thirteen years from 2004 to 2016.

The study have been limited only on private commercial banks since commercial bank of Ethiopia is by far different in its financial position and on the number of branches and since it is financed by the government its financing strategy is different from private banks.

The study have been also limited only on identifying the relationship between leverage and selected internal (firm specific) and external (macroeconomic) factors of capital structure.

Lack of updated market value figures for independent and dependent variables and due to the absence of active secondary market (stock exchange market) in Ethiopia may be the major limitations of the study.

Because the presence of capital market enable investors and other interested bodies to have timely information about any firms' value in order to make decisions of capital structure. But lack of secondary market in Ethiopia resulted in the absence of current information by outsiders, which later result in agency problem among different stakeholders.

1.8. Structure of the Paper

The body of this paper structured with five chapters and different sub sections within. Chapter 1 deals with Introduction parts starting with background of the study then followed by problem statement, study objectives, research questions, hypothesis, conceptual frame work, significance, finally scope and finally limitations of the study. Chapter 2 presents Review of Literature which includes a discussion of theoretical as well as empirical works then end with conclusion and knowledge gap from the literature. Chapter 3 discusses about data and methodologies used by the researcher to conduct multiple linear regression analysis. Chapter 4 is all about data analysis and discussion of results; whereas chapter 5 present conclusions and recommendations of the study.

CHAPTER TWO: LITERATURE REVIEW

The literature review helps in generating a framework for the study by identifying the important issues in capital structure and its theories that are relevant to the study. Therefore, this chapter is divided into several areas; definition and concept of capital structure, theoretical review of capital structure, empirical studies on the determinants of capital structure, Overview of Commercial Banks in Ethiopia. In this chapter, a review of related empirical literature is also presented.

2.1. Theoretical review

Corporate sector growth is vital to economic development. The issue of finance has been identified as an immediate reason why businesses in developing countries fail to start or to progress. It is crucial for firms to be able to finance their activities and grow over time, if they are ever to play an increasing and predominant role in providing employment as well as income in terms of profits, dividends and wages to share holds. So, a path to development could not be realized without enabling to evaluate the business environmental factors, particularly factors affecting access to finance. Consequently, managerial decisions related to finance are at the center of the economic or business activities, which are the subject matter of financial management discipline.

Financial management discipline has three major decision functions/activities:

I. ***Capital budgeting (Investment) decision***: deal with the efficient utilization of capital or funds to acquire assets. It is more concerned with the size, type and percentage composition of assets of a firm.
II. ***Capital structure (financing) decisions***: emphasize on the proper selection of mix of capital i.e. debt vs. equity. It deals mainly with the size, type and percentage composition of capital sources.
III. ***Asset management decision***: is the other decision area that deal with efficient utilization of assets, being acquired through investment decision.

Here, the literature focuses on capital structure decisions', general theories, and particularly the related determinants of capital structure.

Definition and Concept of Capital Structure

There are many definitions given to capital structure of companies. Brealey and Myers (1991) defined capital structure as comprising of debt, equity or hybrid securities issued by the firm. VanHorn (1989) defined capital structure as the proportion of debt to the total capital of the firms. Pandey (2005) defined capital structure as a choice of firms between internal and external financial instruments.

In their attempt to maximize the overall value, firms differ with respect to capital structures. This has given birth to different capital structure theories that attempt to explain the variation in capital structures of firms over time or across regions (Shah & Hijazi 2004). The capital structure of a firm consists of various sources, which are presented in the equity and liability side of the balance sheet. Huang and Vu Thi, (2003) note that a firm has three main sources of financing, also called capital components (at their disposal to fund new investment opportunities. It includes the use of retained earnings (internal equity), issuing new shares (external equity) or borrowing money through debt instruments (debt capital). These sources of financing constitute the capital structure of a firm and also reflect the ownership structure of the firm.

According to Brigham & Daves (2004) absolutely nothing is more important to a new business than raising capital. The way that money is raised can, however, have an enormous impact on the success of a business. This argument may be applicable to all businesses and not only to new businesses. How a firm chooses the combination of debt and equity in their capital structure depends on various factors such as the characteristics of the firm, the economy and the perceptions and objectives of the managers. Karadeniz, Kandir, Balcilar, and Onal (2009) notes that management's first priority is to evaluate the various costs and benefits associated with the use of both debt and equity.

Management will base their decision with regard to the combination of debt and equity on these various costs and benefits. According to these researchers, management will be able to set up an optimal capital structure, which can maximize the value of the firm.

This, however, is only one side of the debate on capital structures. In doing this, management will consider all methods of financing available and use the least expensive source first (Myers, 1984).

Although empirical research (Eriotis, Vasiliou, & Ventoura-Neokosmidi, 2007) provides mixed evidence with regards to the existence of an optimal capital structure, financial theory still provides some help in understanding how the financing mix (i.e debt and equity) could affect the firm's value.

Debt Financing

Zietlow, Hankin, & Seidner (2007) notes that debt is one of the important items in the capital structure of companies and it provides a medium for corporate financing as firms borrow money in order to obtain the capital they require for capital expenditure. It represents any agreement between a lender and a borrower: notes, certificates, bonds, debentures, mortgages and leases.

The main characteristic of debt financing is that the amount borrowed, plus interest, must be paid back to the providers of debt over a given period of time. The interest rate that must be paid on the borrowed money, together with a repayment schedule will be set out in the contract between the lender and the borrower. If the borrower does not fulfill their obligations set out in the contract, it can negatively impact on their credit rating, which in turn can make it more difficult for them to obtain funds in the future and it can also lead to financial failure. Even if a firm suffers financially and is not able to make the scheduled payments, they still have an obligation towards the debt providers (Shah & Hijazi 2004).

Debt can either be short-term or long-term. Short-term debt represents funds needed to finance the daily operations of the firm, such as trade receivables, short-term loans and inventory financing. These types of funds' repayment schedules take place in less than one year. Long-term financing is usually acquired when firms purchase assets such as buildings, equipment or machinery. The scheduled repayments for these funds extend over periods longer than one year (Zietlow, Hankin, & Seidner 2007).

Equity

According to Sibilkov (2009) equity enables the firm to obtain funds without incurring debt. This means that the fund obtained through equity do not have to be repaid at a particular time. The investors who purchase shares in the firm hope to reclaim their investment out of future profits. The shareholders have the privilege to share in the profits of the firm in the form of dividends or future capital gains. However, if the firm suffers a loss, the shareholders have limited liability, which means that the only loss they face is the amount that they had invested in the firm (Sibilkov 2009).

There are two kinds of equity: internal equity and external equity (Myers, 1984). Internal equity refers to the retained earnings of a firm which forms part of the firm's distributable reserves. When distributable profit is determined in the income statement, the firm has to decide what proportion of that profit will be paid out as dividends to the ordinary shareholders.

The remaining amount represents the retained earnings and this amount will be carried over to the firm's distributable reserves in the balance sheet. The retained earnings therefore represent the amount that is reinvested back into the firm. External equity refers to outside capital which is obtained through the issuing of new shares.

It generally consists of ordinary share capital and preference share capital. A firm has to raise external equity when its internal equity (retained earnings) is not sufficient for the required investment opportunity (Graham and Harvey 2001). According to Narayanan (2008) when a firm raises too much capital through equity issues, it could be interpreted as a signal to the market that it does not have sufficient reserves or cash flows, and this could result in the undervaluation of the firm's shares. When investments are financed with external equity, the share prices of firms sometimes fall. Therefore, it is better to build up reserves so that a higher proportion of capital needs can be supplied from internal sources.

Combination of debt and equity

When considering the characteristics of and the various advantages and disadvantages associated with debt and equity, it is clear that firms should consider a combination of these different sources of financing. As already mentioned, using only debt in the capital structure can be very risky (especially due to the risk of bankruptcy, because the more debt a firm uses, the higher the bankruptcy risk) (Huang & Vu Thi, 2003). During periods of high interest rates, it can cause the earnings on an investment to be wiped out by high interest payments (Huang & Vu Thi, 2003). Issuing only shares in an attempt to raise funds can also be a very risky option.

The main reason is because a firm must use cash to fund new investments, while shares may not generate cash at the time the firm needs to pay for the new investment (Huang & Vu Thi, 2003). Theoretical research (Chaplinsky and Niehaus 2003, Rajan and Zingales 2005, Bhaduri 2002) to date has indicated that firms can influence its value by varying its ratio of debt and equity. The main argument is that firms need to find an optimal combination of debt and equity that will ultimately increase the overall value of the firm. Therefore, it appears that the decisions regarding capital structure could impact on the success and future prosperity of the firm.

From the definitions given by many previous researchers, capital structure of a firm describes the way in which a firm raise capital needed to establish and expand its business activities. It is a mixture of various types of equity and debt capital a firm maintains, resulting from the firm’s financing decisions. The amount of debt that a firm uses to finance its assets is called leverage. A firm with a lot of debt in its capital structure is said to be highly levered. A firm with no debt is said to be unlevered.

The term capital structure is used to represent the proportionate relationship between debt and equity. Debt represents the creditors' claim i.e. liabilities or borrowings. Equity includes paid-up share capital, share premium, and reserve and surplus (retained earnings). Managers, in the extent to pursue wealth maximization objective of a firm, should examine the set of theories and at least major factors affecting the decision that help them choose the optimal capital structure. Normally firms have option of choosing debt financing, equity financing, or combination of the two, with the other option of internal financing mainly from the retained earnings. Such dealings of financing decisions are in fact termed as Capital Structure Decisions.

The literature shows the existence of different theories related to capital structure. These theories include Modigliani and miller (MM), trade-off theory, pecking order theory and agency cost theory. The purpose of this section is, hence to review these theories of capital structure in an orderly manner.

2.1.1 Capital Structure Irrelevancy Theory (Modigliani-Miller Theorem)

In the 1950s, two financial economists, Franco Modigliani and Merton Miller, made significant contribution to the corporate finance and were rewarded decades later with a Noble Prize in economics. They came up with the new propositions to explain the capital structure theory and here starts the birth of modern capital structure theory. Their contribution was to show that, under certain assumptions (known as the MM assumptions and MM theory), the capital structure, or mix of debt and equity, does not have an impact on the overall value of the firm. Theory of irrelevancy was presented in an era when research was dominated by assumption that there is no interaction between a firm's investment and financial decisions of the firm.

Modigliani and Miller (1958) demonstrated that the market value of a firm is determined by its earning power and the risk of its underlying assets, and independent of the way it chooses to finance its investments or distributes dividends. Moreover, a firm can choose between three methods of financing: issuing shares, borrowing or spending profits (as opposed to disbursing them to shareholders as dividends). The theorem gets much more complicated, but the basic idea is that under certain assumptions, it makes no difference whether a firm finances itself with debt or equity. Five years later, Modigliani and Miller (1963) introduced corporate taxes into their earlier model by setting free the first assumption of no taxes. They argued that optimal capital structure can be obtained for firms with 100 percent debt financing by having the tax shield benefits of using debt. With tax introduced the value of levered firm becomes higher. This was their correction model. Some researchers felt that Modigliani and Miller failed to discuss in their article on the practical applications of their theory to individual firms and on how well the theory explains observed facts, such as debt ratios, market reactions to security issues and so on.

Thereafter, several empirical researches were conducted on the concept developed by Modigliani and Miller. In most of the later studies, researchers like Durand et al. (1989) accepted the importance of financial leverage in affecting the overall cost of capital, the return to the shareholders and the value of a firm.
Accordingly, if capital structure is irrelevant in a perfect market, then imperfections which exist in the real world must be the cause of its relevance. They criticized the hypothesis of MM theory, and maintained that several factors such as existence of imperfectness in the market, the differences, existence of transaction cost and institutional restrictions and preferences for the present income over the future to affect the capital structure study. These have relevance in affecting the value of a firm and were ignored by MM.

In the next section we look at how, when assumptions in the M&M model are relaxed, imperfections arise and how they are dealt with. Subsequent literatures placed much emphasis on relaxing the assumptions made by Modigliani and Miller, in particular considering agency costs (Jensen and Meckling, 1976; Myers, 1977; Harris and Raviv, 1990), signaling (Ross, 1977), asymmetric information (Myers and Majluf, 1984; Myers, 1984), product/input market interactions (Brander and Lewis, 1986; Titman, 1984), corporate control considerations (Harris and Raviv, 1988) and taxes (Bradley et al., 1984).

The current state of capital structure comprises a wide variety of theoretical approaches but no theory is universally accepted and practically applied (Myers, 2001; Harris and Raviv, 1991). According to Myers 2001 (p.81) "There is no universal theory of the debt-equity choice, and no reason to expect one. There are several useful conditional theories however".

The major reason why financing matters include taxes, differences in information and agency costs. The different theories of optimal capital structure depend on which economic aspect and firm characteristic we focus on.

2.1.2. Tradeoff Theory

Tradeoff theory which was developed by Myers (1984), propose firms will have an optimal capital structure by using debt finance until the present value of benefits from debt equals the present value of costs associated with debt financing. Similarly speaking, this theory stated that an optimal capital structure can be achieved by equating the present value of tax shields on debt with the present value of financial distress (bankruptcy) costs associated with leverage.
Moreover, it assumes that investors are risk-neutral and face a progressive tax rate on end-of period wealth from bonds.

Dividend yields and capital gain yields are taxed at a single constant rate. So, such risk neutrality forces the investor to invest into whichever security offers the better expected after-tax benefit. Tradeoff theory also assumes that until the firm faces a constant marginal tax rate on end-of-period wealth by which it can deduct both interest and principal payments, but the investor must pay taxes as far as these payments are received. According to this theory, non-debt tax shields do exist but it is impossible to arbitrage them across firms or over time. If the firm makes a default in its debt payment, then it will incur high amount of financial distress costs thereby "the optimal capital structure pie shrinks.

In addition, tradeoff model of Myers (1984) explains that an increase in non- debt tax shields and marginal tax rate on bonds will lead to the reduction of optimal debt level; whereas an increase in personal tax rate on debt increases optimal level of leverage. Based on the above stated grounds; trade off theory predicts a positive relationship between profitability and leverage, implying that expected bankruptcy costs are lower and interest tax shields are more valuable for highly profitable firms than less profitable firms. Similarly, this theory predicts that firm size, tangibility of assets, GDP growth rate, interest rate, and expected inflation to have positive impact on firm's leverage. Generally, the tradeoff's prediction of positive relation between size and leverage is interpreted as large firms will have more debt since larger firms are more diversified as well as more matured and will have lower default risk (Frank and Goyal, 2005).

Tradeoff's theoretical prediction of positive relation between GDP growth rate and leverage implies that firms will have more debt in the period of high economic growth than did in lower economic growth. On the other hand, predicted positive relation between interest rate and debt level can be interpreted as firms will prefer more debt than equity in the times of higher interest rates. Because, as interest rate increases; equity has become somewhat more expensive than debt, that leads firms to issue more debt. According to trade off theory positive relationship between inflation and leverage reflects that firms more likely to raise substantial amount of debt in times of inflationary economy than they do in less inflationary state of an economy.

This is due to that the real value of tax deductions on debt will be higher when inflation is expected to be high (Frank and Goyal, 2005).

2.1.3 Pecking order theory

The pecking order theory or pecking order model popularized by Myers and Majluf (1984), postulates that cost of funding increases alongside with asymmetric information. Asymmetric information indicates that managers know about their firm's prospects, values and risks better than do outsiders and investors.

According to pecking order theory, there is no clear cut point for optimal capital structure to exist. However, Pecking order model explains that firms should follow a hierarchy of order to finance their operation. Because, there are two equity types namely; internal and external, one at the top of the pecking orders hierarchy and the other at the bottom. In another word, this theory suggest that firms should prioritize sources of finance by first preferring internal equity or retained cash flow, then debt and thereafter external equity of share issuance as a last resort. Myers and Majluf (1984) argue that the higher the profitable a firm is the lesser a probability of using more debt due to the availability of internal retained earnings to finance its operations. In contrary manner with tradeoff and agency cost theories, this theory predicts that less profitable firms will use more debt finance because they do not have internal funds sufficient for their investment programs and due to that debt financing is first on the pecking order of external financing before equity.

Highly profitable firms with limited investment opportunities work down to low debt ratios. Firms whose investment opportunities exceed internally generated funds are forced to borrow more (Brealey and Myers, 2003). This indicates that unlike trade off and agency cost theories of capital structure, pecking order model predicts the existence of negative relationship between firm's profitability and its leverage implying that more profitable firms will become less levered over time due to utilization of their internally generated cash flows to finance operations. The negative prediction of pecking order theory for the relation of profitability and leverage seems reliable and supported by plenty of empirical studies.

Besides, it predicts that tangibility of assets appears to have negative impact on leverage (Frank and Goyal, 2005). On the other hand, pecking order theory predicts a positive impact of growth opportunities and dividend payout factors on leverage.

2.1.4 Agency cost theory

Another important theory of capital structure is agency cost theory which is developed by Jensen and Meckling (1976). This theory emphasize on the cost associated with conflicting interests between mangers, debt holders and equity holders. Jensen and Meckling (1976) stated shareholders - managers and shareholders – bondholders‟ conflicts as major kinds of conflict those will cause agency problem thereby agency costs.

They also recognized an agency problem in relation with debt known as risk shifting. Their point is that if the firm is operated with equity finance, only cash flows in non-bankrupt conditions matter. Thus, such firm will tend to accept projects of higher risk but with large payoffs in good conditions as well. It is obvious that

this type of behavior is occasionally observed when a firm is in bad conditions but its general importance is debatable. If both kinds of agency conflicts occur, then their relative importance will become ambiguous.

According to agency theory, with the issuance of debt in exchange for stock, managers can bond their promise to pay out future cash flows in a manner that is impossible to achieve by slight dividend increases. By doing so, they can give debt holders the right to put a firm into bankruptcy court if they default with their promise to make the interest plus principal payments. As a result, debt lowers the agency costs associated with free cash flows by decreasing the cash flow available for spending based on the managers' judgment. These effects of debt considered as a potential determining factor of a firm's financial mix (Jensen, 1986). This theory emphasized that firms with more debt as compared to their equity will benefit from the tax advantages in that interest payments are tax deductible.

On the other hand, this theory also suggests that increasing leverage will have costs as well. Similarly speaking, as a firm becomes more leveraged, the ordinary agency costs associated with debt finance (including bankruptcy costs) tend to increase. Thus, according to agency cost theory one firm can achieve an optimal capital structure thereby maximizing its value by balancing the marginal costs of debt with the marginal benefits (Jensen, 1986).

Agency theory of Jensen and Meckling (1976) also suggest that to control the agency costs caused by free cash flow, firms with more profitable assets will tend use a larger portion of their earnings for debt payments.

This will give such firms a debt capacity thereby they can leverage themselves by using such debt capacity due to their good credit ratings. Similarly speaking, according to agency theory firms with higher profits as compared to their investments also benefit from debt which in turn reduces the problem associated with free cash flow (Jensen, 1986). Thus, agency theory predicts a positive relation between firm's profitability and its leverage. Besides, as per this theory, agency costs associated with debt are lower for firms with more tangible assets implying a positive relationship between tangibility of assets and leverage.

Conversely, agency theory predicts an inverse relation of firm's growth opportunity and its debt level emphasizing that the underinvestment problem is more serious for growing firms that leads them to be less leveraged (Frank and Goyal, 2005).

2.2 Empirical Review

Over the past several decades' corporate finance researchers have devoted considerable efforts to transform rationalism of capital structure into empiricism. The problem of developing a conclusive theory of capital structure and designing empirical tests those are powerful enough to provide a basis for choosing among the various theories is still unresolved. On the following portion of the study the researcher explained briefly both firm specific and macroeconomic determinants of capital structure.

2.2.1 Firm Specific Determinants of Capital Structure

Since the pioneering work of Modigliani and Miller (1958), the question of what determines firms' choices of capital structure has been a major field in the corporate finance literature. Since then, several studies have been conducted in developing and developed countries to identify those factors that have an effect on firms' choice of capital structure. Given the time constraint and the amount of empirical literature available on the topic of this research it would have been quite difficult to present the results of all the studies. Thus, the review of the 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.

Titman and Wessels (1988) studied the determinant of capital structure choice by examining them empirically. They extended empirical work on capital structure theory in three ways. First, they examined a much broader set of capital structure theories, many of which have not previously been analyzed empirically. Second, since the theories have different empirical implications in regard to different types of debt instruments, the authors analyzed measures of short-term, long-term, and convertible debt rather than an aggregate measure of total debt. Third, they used a factor-analytic technique that mitigates the measurement problems encountered when working with proxy variables.

Titman and Wessels (1988) specifically tested how asset structure, non-debt tax shields, growth, uniqueness, industry classification, firm size, earnings volatility and profitability can affect the firm's debt-equity choice. Their results indicated that debt levels are negatively related to the uniqueness of a firm's line of business. The short-term debt ratio was negatively related to firm size. Besides that, a strong negative relationship was noted between debt ratios and past profitability which is consistence with pecking order theory Myers and Majluf (1984). However, they did not provide strong empirical support on variables like non-debt tax shields, volatility, collateral value and future growth.

In a comparative study, Rajan and Zingles (1995) investigated whether the capital structure in other developed countries is related to factors similar to those influencing the US companies for the period of 1987-1991. Tangible assets, market to book ratio, firm size and profitability are suggested as determinants of capital structure in these countries. They find that firms with more collateralized assets are not highly levered. In addition, they found that profitability and market to book ratio are negatively related to leverage.

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, size, 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.

Bevan and Danbolt (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, total debt to capital (where capital is defined as total debt plus 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 (size), 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 Danbolt (2002) reported similar results.

In their later paper, Bevan and Danbolt (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 Danbolt (2004) as Bevan and Danbolt (2002) use market-to book value, natural logarithm of sales (size), profitability, and tangibility of assets as determinants of capital structure. In addition to the time invariant and firm specific heterogeneity, the focus was on the variety of long - run and short run debts components rather than on the aggregate measures. They found that large firms use long and short term debt more than small ones. Tangibility is found to be positively related to both short and long-term debt, while profitability is found to

be negatively related. However, they find that profitable firms tend to use short-term debt more than less profitable one.

The paper of Deesomsak (2004) investigated the determinants of capital structure of firms operating in the Asia Pacific region, in four countries with different legal, financial and institutional environments, namely Thailand, Malaysia, Singapore and Australia. Ordinary least square (OLS) estimation model was used to analyze sample data included 294 Thailand, 669 Malaysian, 345 Singaporean, and 219 Australian firms for the period 1993-2001. Overall they found leverage to be positively related to firm size and growth opportunities, non debt tax shields, liquidity to be negatively related to leverage. Moreover, they also found that capital structure decision is 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 found that leverage (long-term debt ratio, total debt ratio, and total liability ratio) decreases with profitability, non-debt tax shield and managerial shareholdings, while it increases with firm size and tangibility. In addition, the tax rate positively affects long term debt ratio and total debt ratio. Furthermore, they found a negative relationship between leverage and firm growth opportunities.

Buferna (2005) provided further evidence of the capital structure theories pertaining to a developing country and examined the impact of lack of a secondary capital market by analyzing a capital structure question with reference to the Libyan business environment. They developed four explanatory variables that represent profitability, growth, tangibility and size to test which capital structure theories best explained Libyan companies' capital structure. The results of cross-sectional OLS regression showed that both the static trade-off theory and the agency cost theory are pertinent theories to the Libyan companies' capital structure whereas there was little evidence to support the asymmetric information theory. Lack of secondary market may have an impact on agency costs, as shareholders who are unable to offload their shares might exert pressure on management to act in their best interests.

A study made by Amidu (2007) examined the determinants of capital structure of Ghanaian banks by employing panel regression model. Amidu (2007) has highlighted the importance of distinguishing between long and short forms of debt while he made inferences about capital structure.

Amidu (2007) specifically tested the significance of bank size, profitability, corporate tax, growth, asset structure, and risk in determining bank capital structure. The result showed that short-term debt of banks is negatively related to banks profitability, risk, and asset structure and positively related to bank size, growth and corporate tax. On the other hand, the long-term debt of the banks is positively related to banks' asset structure and profitability and inversely related to bank risk, growth, size and corporate tax. Generally, the variables examined were consistent with the static trade-off and pecking order arguments, with the only exception being risk.

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

Caglayan and Sak (2010) studied the determinants of capital structure of banks in Turkish. The objective of the study was to examine the relationship between the leverage level and a set of explanatory variables (Tangibility, Size, Profitability, and Market to book ratio) by using panel data analysis to establish the determinants of capital structure of bank over the period 1992-2007. The main results of their study reveal that size and market to book have positive and statistically significant impact on the book leverage while the variables of tangibility and profitability have negative and significant impacts on the book leverage. These findings strongly confirm the pecking order theory; except the relationship with tangibility which weakly confirms the agency cost theory.

Khrawish and Khraiwesh (2010) examined the determinants of capital structure; evidence from Jordanian industrials companies over the period (2001- 2005). Using panel data, Leverage ratio, Long-term debts/total Debts and five explanatory variables that represent size, tangibility, profitability, long-term debt and short-term debt were calculated. Based on the statistical analysis, they found that there was a significant positive relationship between leverage ratio and size, tangibility, long-term debt and short-term debt and there was a significant negative relationship between leverage ratio and Profitability of the firm.

Ahmed et al, (2010) investigated the impact of firm level characteristics on capital structure of life insurance companies of Pakistan over the period of seven year from 2001 to 2007. For his purpose, leverage was taken as dependent variable while profitability, size, growth, age, risk, tangibility of assets and liquidity were

selected as independent variables. The result of OLS regression model indicated that profitability, liquidity, risk and age have negative relationship with leverage which follows pecking order theory while size indicated positive relationship with leverage which shows consistency with trade- off theory. The results also indicated that leverage has statistically insignificant relationship with growth and tangibility of assets.

A study by Najjar and Petrov (2011) studied capital Structure of insurance companies in Bahrain. The goal of the study was to investigate the effect of firm specific 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 SPSS to identify those effects. Najjar and Petrov identified a strong relationship between firm characteristics, such as tangibility of assets, profitability, firm size, revenue growth, and liquidity. The results of their study reveal that tangibility and size 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.

Another researcher, Cekrezi (2013) found that asset tangibility, profitability, size of firm, risk, and non-debt tax shields were major internal factors those have a significant impact on capital structure of small non listed firms in Albania.

In more specific manner, results of similar study explain significant and positive impact of tangibility, risk, and firm's size on leverage of Albanian small non listed firms. On the other hand, it uncovered profitability and non-debt tax shields to have a significant negative relationship with leverage of firms in the sample. Beyond this Cekrezi (2013) also found that liquidity factor had a negative but insignificant relation with the dependent variable of leverage as represented by total debt ratio.

For non-financial sector environment of Africa a study made by Tesfaye and Minga (2012) in context of nine African countries including Botswana, Egypt, Ghana, Kenya, Mauritius, Morocco, Nigeria, South Africa, and Tunisia found size, tangibility, profitability, dividend payout, and non-debt tax shields as major firm specific factors affecting financing choice of firms in these nine countries. They also found profitability to have a negative association with leverage; whereas size appears a positive impact on leverage of firms operating in the countries investigated. Furthermore, their paper explained that both non-debt-related tax-shield and asset tangibility were directly related to long-term debt while they were negatively related with

short term debt. Tesfaye and Minga (2012) also emphasized that dividend payout factor negatively influences leverage in terms of long-term debt.

The paper of Olayinka (2011) examined the determinants of capital structure of 66 firms listed on the Nigerian stock Exchange during the period 1999-2007 using panel data. He used six independent variables namely; sales growth, tangibility, profitability, liquidity, size 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 trade off 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 size which is consistent with trade-off theory. In general as per Olayinka, three of the variables are not significant determinants of capital structure.

A study conducted by Ayanda et al. (2013) in case of Nigerian banking sector examined the relationship between total leverage ratio with independent variables of Size, Dividend Payout, Profitability, Tangibility, Liquidity, Growth, and Tax charge over the period of five years from 2006-2010. Their regression result implied that firm size, dividend payout, profitability, tangibility of assets, growth opportunity, risk, and tax charge were significant factors that influence financing decision of firms in Nigerian banking sector during the study period. More specifically, they found out that tangibility, tax charge, growth opportunity, profitability, and risk to have a negative impact on leverage while firm size and dividend payout factors appeared a direct relationship with total leverage.

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

In the case of Ethiopia, there have been a few studies on firm specific determinants of capital structure. These studies include Ashenafi (2005), Amanuel (2011), Bayeh (2011), Weldemikael (2012) and Usman (2013).

Ashenafi (2005) approached the question of capital structure using data from medium firms in Ethiopia. He took variables like non-debt tax shield, economic risk, age of firms, size 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. He used seven explanatory variables: tangibility, non-tax shield, growth, earning volatility, profitability, age and size, and three dependent variables: total debt ratio, short term ratio and long term 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, and size of 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 variables 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 seven explanatory variables: liquidity, tangibility, growth, business risk, profitability, age and size, and three dependent variables: total debt to equity ratio, total debt ratio and long term ratio to test the determinants of capital structure of insurance companies in Ethiopia. The OLS result showed that firm's growth opportunity, profitability, liquidity, risk and age of the firm were found to have significant influence on capital structure of Ethiopian insurance companies. More specifically, his study results suggested that liquidity to have a significant positive impact on long term debt and debt to equity ratios while business risk appeared a significant positive impact on debt to equity and debt ratio. On the hand, he revealed that growth to have a significant negative impact on long term debt and total debt ratios while profitability appear a significant negative impact on long term debt ratio and significant direct impact on total debt ratio. Furthermore, he emphasized a positive and significant impact of firm age variable on all the three dependent variable proxies of long term debt, total debt, and debt to equity ratios. However,

tangibility and size of the firm were found to have insignificant influence on capital structure of Ethiopian insurance companies recommending static trade off theory as a dominant theory for the sector.

Weldemikael (2012) investigated empirically the Determinants of Capital Structure of Commercial Banks in Ethiopia focused only on firm specific factors. For his study Weldemikael uses eight commercial banks in the sample for the period of 2000 - 2011. He used six explanatory variables: - (profitability, tangibility, growth, risk, size and liquidity) and one dependent variable that is leverage. The result of his study showed that profitability, liquidity, tangibility, and bank size 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 result 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.

Usman (2013), for his study in case of large tax payer share companies in Ethiopia for the study period of 2006-2011 used explanatory variables of profitability, size, age, tangibility, liquidity, non-debt tax shield, growth, dividend payout ratio, and earnings volatility then regressed them against the dependent variable of leverage as represented by long term debt ratio. Usman (2013) found that size, age, tangibility, liquidity, and non-debt tax shield of a firm were positively associated with leverage whereas; profitability, earnings volatility, and dividend payout ratio established an inverse relation with leverage. Moreover, he revealed that among the regressed variables, only growth opportunity variable was statistically insignificant in affecting capital structure of large taxpayer share companies in Ethiopia, suggesting that, Agency cost theory as more relevant theory for the sector.

Saddam (2014) for his study on Factors Affecting Capital Structure Decision: Evidence from Ethiopian Insurance Firms for the period of 2007- 2013 used nine explanatory variables (six firm specific and three macroeconomic). Based on his regression result over the firm specific variables of capital structure business risk, firm size, and age were found to have a positive and statistically significant relationship while the remaining variables of profitability, liquidity and growth opportunity were found to have insignificant relationship with the dependent variable which was represented by total leverage, confirming trade off and pecking order theories as prominent theories for the sector. More specifically, among the two; Tradeoff Theory is found as the most influential theory for firms than Pecking Order Theory in context of Ethiopian insurance sector.

2.2.2 External (Macroeconomic) Determinants of Capital Structure

It is observed that there were relatively few studies that have been conducted in relation with macroeconomic or external determinants of capital structure as compared to firm specific determinants. Similarly speaking, majority of empirical studies in the past were focused only on assessing firm specific determinants of capital structure.

But, some researchers assessed the relationship between macroeconomic or external variables and firms' leverage and they found their significance in determining a capital structure. For instance, Muhammad et al. (2009) on their study from three Asian countries of Japan, Malaysia, and Pakistan; examined the impact of per capita GNP, prime lending rate, financial liberalization, efficiency of financial markets, enforcement, and creditor's rights on leverage as measured by total debt, long term debt, and debt to equity ratios for the period of ten years from 1996-2005.

Their study result pointed out per capita GNP growth, prime lending rate, financial liberalization, financial markets efficiency, enforcement, and creditors‟ rights as major macroeconomic or external factors that affect firms' leverage on aggregate in the three countries. More specifically, their study revealed that financial liberalization and efficiency of financial markets had a significant positive relationship with leverage whereas; creditors‟ rights and enforcement appeared a significant negative relationship with the dependent variable. Muhammad et al. (2009) also found that per capita GNP and prime lending rate were major determinants of capital structure for Japan and Malaysia while financial liberalization was the most decisive factor that affects leverage in all of the three countries.

Bokpin (2009) evidence from 34 emerging market economies; found bank credit, GDP per capita, inflation, and interest rate as significant factors that determine capital structure. More specifically, the findings of similar study revealed that bank credit had a positive and statistically significant impact on financial leverage and the choice of short-term debt over equity. He also indicated a significant negative relationship between GDP per capita and capital structure choices; whereas inflation on the other hand found to have positive influence on the choice of short-term debt over equity. Furthermore, Bokpin (2009) also found that stock market development was insignificant in predicting capital structure decision of firms; while increasing interest rate positively influences firms to substitute long-term debt for short-term debt over equity in the countries investigated.

Another study by Mehdi et al. (2012), in case of Iranian publicly listed firms assessed the impact of GDP growth rate, inflation rate, interest rate, and exchange rate on total leverage by using both questionnaires of qualitative inquiry and regression analysis. The result of their regression analysis shows that there was no significant relationship between the perceived macroeconomic variables and the way Iranian firms adjust their capital structure. However, majority of questionnaires filled by financial managers listed out the significant effect of exchange rate, inflation rate, and interest rate on capital structure of firms in their order of importance. Furthermore, Mehdi et al. (2012) revealed that GDP growth rate had no any significant impact on corporate capital structure according to the results of both questionnaires and regression analysis.

A study result of Sbeiti (2010), in case of Gulf Cooperation Countries (GCC) shows that external factor of stock market development as indicated by market capitalization ratio, value traded ratio, and turnover ratio was negatively and significantly correlated with leverage ratios of firms operating in both Kuwait and Saudi Arabia. This implied the more developed a stock market in these countries and their liquidity improves, the lower will be usage of debt as a source of finance.

Furthermore, Sbeiti (2010) suggest that interest rate factor was significant for affecting capital structure of firms in Kuwait negatively; whereas it was found as insignificant to affect the dependent variable in Saudi Arabia and Oman.

Given particular attention for Africa, there were few studies conducted in relation with external determinants of capital structure including Muthama et al. (2013) evidence from Kenya and Tesfaye and Minga (2012) evidence from nine African countries. Muthama et al. (2013) in case of publicly listed companies in Kenya; investigated the impact of GDP growth rate, inflation rate, and interest rate on the dependent variable proxies of total debt, long term debt, and short term debt ratios over the decade from 1999-2008. Based on their findings all the three independent variables of GDP growth rate, inflation rate, and interest rate appeared as significant factors that influence capital structure decision of publicly listed firms in Kenya. Specifically, they emphasized that GDP growth rate found to have a positive impact on long term debt and a negative impact on total debt as well as short term debt ratios. Inflation on the other hand established a negative influence on short term debts.

Tesfaye and Minga (2012) on their evidence from nine African countries of Botswana, Egypt, Ghana, Kenya, Mauritius, Morocco, Nigeria, South Africa, and Tunisia; found overall size of an economy, GDP growth rate, inflation rate, investors rights protection, stock market development, rule of law, and size of banking sector as significant factors for determining financial structure of firms. Specifically, their study result uncovered

that size of banking sector, rule of law, and real GDP per capita factors to have a negative impact on leverage; whereas inflation and investor rights protection positively affect capital structure of firms in countries studied. Similar study also found that overall size of an economy was positively related with long-term debt-ratio; while it was negatively correlated with short-term and total debt-ratios.

Tesfaye and Minga (2012) also observed that stock market development influence long-term debt-ratio positively; whereas its relationship with short-term debt and total debt ratios was negative and statistically insignificant.

In Ethiopian case, a study conducted by Saddam (2014) for his study on Factors Affecting Capital Structure Decision: Evidence from Ethiopian Insurance Firms for the period of 2007- 2013 as mentioned above he investigated three macroeconomic factors.

Among the three macroeconomic determinant factors of capital structure only inflation rate were found to have a positive and statistically significant relationship with leverage while the other two (i.e. GDP growth rate and interest rate) were found to have a positive and insignificant relationship with the dependent variable, confirming trade off and pecking order theories as prominent theories for the sector. More specifically, among the two; Tradeoff Theory is found as the most influential theory for firms than Pecking Order Theory in context of Ethiopian insurance sector.

2.3. Conclusion and literature gap

As discussed above in the literature review there are numerous theories including MM propositions, tradeoff, pecking order, and agency cost theories those express what determines capital structure and the issue of optimal capital structure differently.

Various empirical studies also conducted regarding determinants of capital structure but almost all they were debating each other. Most of those studies were also limited only on investigating internal determinants of capital structure, excluding external determinants of capital structure assessment, which is a potential gap for further study. Such knowledge gap is even wider in Ethiopian context as compared to other countries. In more specific manner, besides lack of assessment in relation with external factors' impact on capital structure decision, as compared to other countries there was also insufficiency of empirical studies regarding firm specific (internal) factors' impact on capital structure of financial sector and overall in Ethiopia as well.

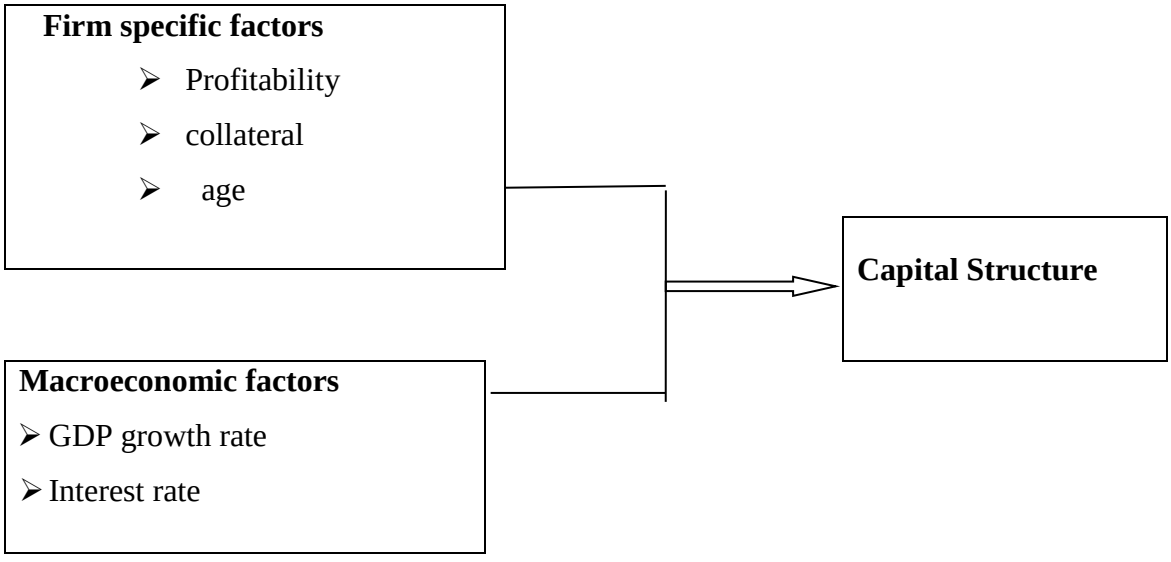
From the empirical studies mentioned above, the researcher concludes that there is no clear cut and mutually accepted conclusions on the determinants of capital structure and on the theories that best explains the capital structure of corporate firms in Ethiopia.

So, the issue of capital structure still continues as the most debatable issue researchers are interested to go through. It is mentioned above that capital structure is determined by both internal (firm specific) and external (macroeconomic) factors but most of the studies in Ethiopia is focused only on firm specific variables. Thus, the researcher in his paper try to play his role to reduce the literature gap by investigating both firm specific and macroeconomic variables of capital structure and try to investigate theories that best explains determinants of capital structure taking the case of private commercial banks in Ethiopia.

2.4. Conceptual Framework

Conceptual framework as depicted in figure 1.1 below demonstrate a potential link between independent variables with the dependent variable. In other word, it indicates the cause and effect relationship between selected firm specific as well as macroeconomic factors with capital structure of private commercial banks in Ethiopia.

Figure 1.1: Conceptual Framework



Source: Researcher's own construction based on his literature review

CHAPTER THREE: RESEARCH METHODOLOGY

This paper presents an empirical analysis of both internal (firm specific) and external (macroeconomic) determinants of capital structure for six private banks in Ethiopia with most recent available data. In order to achieve the objective stated in the preceding section, considering the nature of the problem and the research perspective, the study used an explanatory research and employed quantitative method of approach.
The researcher used structured documents gathered from the financial statements of private banks and from National Bank of Ethiopia (NBE) for thirteen consecutive years (2004 – 2016).

A multivariate regression model is used to analyze the data collected from the financial statements of six private commercial banks operating in Ethiopia for the last thirteen years starting from 2004 to 2016.

3.1 Research Approach

As described by Creswell (2009), there are three common approaches to conduct a research project in the area of business and social sciences researches namely; quantitative, qualitative, and mixed research approaches. With quantitative approach, the researcher primarily uses postpositive claims for developing knowledge, employs inquiry strategies such as experiments and surveys, and also collects data on pre specified instruments that yield statistical data. In order to achieve the objectives of the study and thereby to give answer for its problems, quantitative research approach was used by the researcher. By using such research approach the researcher enable to establish a cause-effect relationship between the independent and dependent variables of the study, testing various hypothesis and theories there by generalized about factors affecting capital Structure decision in Ethiopian banking sector by using a quite large enough sample size.

3.2 Study Population, Sampling, and Sample Size

According to National Bank of Ethiopia annual report of 2016/17, 16 private banks have been found in operation. Consequently these 16 private banks were taken as population of the study to which generalization could be made. Hence, the study time is between 2004 to 2016, the researcher uses six private commercial banks (i.e. Awash International Bank, Bank of Abyssinia, Wegagaen Bank, United Bank, Nib International Bank and Dashen Bank. which were established before 2004 were taken as a research sample. This composition accounts 37.5 % of the total population of private banks operating in Ethiopian banking sector. By using such sample the researcher believed to make good generalization about the population of Ethiopian private banks since sample banks which are selected are big banks in the country.

3.3 Data Sources

In order to achieve objectives of the study, the researcher fully relied on secondary sources of data from financial reports of private banks and reports of National Bank of Ethiopia (NBE). Panel raw data for empirical analysis in relation with firm specific and macroeconomic variables was obtained from audited financial statements of private commercial banks for the period of thirteen years (2004 - 2016).

Financial statement of commercial banks, particularly balance sheet and income statement was used to calculate profitability and tangibility of each bank entity for the study period. Pertaining to macroeconomic figures, the researcher directly took them from annual reports of NBE. In addition to the above core data sources, previous related empirical studies, books, and other important documents were referred by the researcher to make the study robust.

3.4 Method of Data Collection

Document review method of data collection was used by the researcher in order to collect all the necessary information thereby to achieve objectives of the study. As a secondary data collection tool for the study, document review mainly focused on reviewing audited financial statements of six private commercial banks to obtain necessary figures those enable the researcher to calculate the dependent variable as well as firm specific variables. In addition to audited financial statements of private banks, NBE's reports were collected and reviewed by the researcher in order to get necessary figures regarding macroeconomic variables.

3.5 Description and Measurement of Variables

3.5.1 Dependent Variable

According to corporate finance literatures, there are three proxies that commonly used to measure capital structure including market value leverage, book value leverage, and interest coverage ratios. Among those three measures, book value leverage is used in a repeatable manner to measure capital structure in majority of empirical studies pertaining to capital structure determinants.

Book value of leverage differed from its market value counterpart in that the former uses book value of equity to determine a capital structure instead of market value of equity that used by the later. Three ratios namely long term debt, total debt (total leverage), and debt to equity ratios are the most widely used ratios to represent book value leverage, in majority of empirical researches in relation with capital structure

determinants. However, researchers of previous studies in this area divided to choose among these leverage ratios as a proxy for capital structure. However, majority of researchers including Najjar and Petrov (2011), Solomon (2012), Woldemikael (2012), Saddam (2014), Mohamed and Mahmoud (2013), and Tornyeva (2013) employed total debt ratio (also known as total leverage) calculated as total debt divided by total assets to measure leverage of firms. Some other researchers like Bayeh (2012), incorporate long term debt and debt to equity ratios, Lim (2012) incorporate long term debt ratio whereas Amanuel (2011) incorporate short term and long term debt ratios besides total debt ratio as a measure of leverage.

As it's used by majority of previous researchers; including Najjar and Petrov (2011), Solomon (2012), Woldemikael (2012), saddam (2014) Mohamed and Mahmoud (2013), and Tornyeva (2013) the researcher of this study employed total debt ratio (also known as total leverage) to measure leverage of Ethiopian private commercial banks which in turn represent their capital structure calculated as follows:

Total Debt Ratio = Total Liabilities/Total Assets

3.5.2 Independent Variables

Based on the reviewed empirical as well as theoretical literatures, for the sake of conducting this study the researcher used three firm specific variables (i.e. profitability, collateral (asset tangibility) and bank's age) and two macroeconomic variables (i.e. GDP growth rate and interest rate) those regressed against the dependent variable. Accordingly, the researcher expected these selected variables to have a potential influence on capital structure decision of private commercial banks in Ethiopia. Description of each selected explanatory variables for this study; including their measurement and expected relationship with the dependent variable is discussed next.

3.5.2.1 Firm Specific Variables

Profitability

According to Chen & Hammes (2004) Profitability indicates how efficiently management utilizes its total assets in order to generate earnings. Shareholders are concerned with the profitability of a firm because this can predict the future earnings of that firm. Outside investors will, therefore, include profitability in their analysis of the firm when making investment decisions.

According to various theories and empirical researches, profitability factor is considered as one of the major firm specific factors that determine capital structure of a firm. Trade off theory predicts a positive relationship between profitability and leverage of a firm. This postulates that profitable firms to have more debt implying expected bankruptcy costs are lower and interest tax shields are more valuable for profitable firms which lead them to be more leveraged. Similarly, agency cost theory predicts a positive association of profitability with leverage. According to agency cost theory, firms that generate higher profits relative to their investments also benefit from the discipline that debt provides in reducing the problem of free cash flows (Jensen, 1986).

On the other hand, pecking order theory argues a negative relation of profitability and leverage, implying that more profitable firms will become less levered through time due to utilization of internally generated cash flows for financing their operation. In line with pecking order theory, majority of empirical researches including Naveed et al. (2010), Bayeh (2011), Woldemikael (2012) and Saddam (2014) confirmed such a negative relation between profitability and leverage.

Profitability can be expressed in terms of ROA (Return on Assets), which in turn implies a firm's ability to generate profits by using its assets. In order to measure profitability of a firm, majority of researchers in the past employed ROA as measured by net profit before tax over total assets and net profit before interest and tax over total assets.

Thus, the researcher of this study measured profitability as the ratio of operating income over total assets, which is similar with Ayanda et al. (2013) and Muhammad et al. (2013). Furthermore, in this study profitability was expected to have a negative relationship with leverage, in line with pecking order theory as well as majority of empirical evidences.

Hypothesis a*:* Profitability has a statistically significant and negative effect on leverage.

Age

There are controversies between trade-off and pecking order theories on the effect of age on leverage. The trade-off theory suggested that as the firm become mature, its borrowing capacity increases implying a positive relation between leverage and age of the firm. Additionally, Berger and Udell (1998) states that as the firm matures it could have increased fixed assets in the form of land and building on which it may secure mortgage finance an long-term debt and also may accumulated assets uses as debt collateral in the form of inventory, account receivable and equipment. However, pecking order theory argued that as the firm matures, it builds its reputation. Which means the good name a firm built up over the years; the name is recognized by the market, thus leading to better and easier to raise equity finance than debt capital.

A study by Petersen and Rajan (1994) reveals that mature firms have higher debt ratio since they are supposed of high quality firms. Furthermore, Hall, Hutchinson and Michaelas (2004) agreed that age is positively related to long-term debt but negatively related to short-term debt.

According to various researchers, how much one firm stay in a particular business is one factor that can influence on decision of capital structure. For instance; Solomon (2012) and Faris (2011) found an inverse but insignificant relationship of firm's age and its leverage.

On the opposite side; researchers including Bayeh (2011), Usman (2013) and Saddam (2014) found a statistically significant as well as positive association of firms' age and their debt level, implying that aged firms are well known and matured then they can raise more debt. Even though, various researchers measured age in different ways, the researcher of this study measured age as number of years in business and hypothesized it to have a positive impact on leverage level of firms.

Hypothesis b*:* Banks' age has a statistically significant and positive effect on leverage.

Collateral (tangibility)

Tangibility is an important determinant of the capital structure of a firm. From the perspective of trade-off theory and agency theory, tangible assets as collateral help to reduce the financial distress costs and agency costs of debt, hence increase the leverage capacity for firms. Such anticipation of positive relationship between collateral and leverage ratio has been confirmed consistently in studies by Rajan and Zingales (1995), Titman and Wessels (1988), Aggarwal and Jamdee (2003) and Frank and Goyal (2005), etc. The opposite conclusion of inverse relationship between collateral and capital structure was made by Pandey (2001), Correa et al. (2007), Mazur (2007), Mitton (2008), Ullah and Nishat (2008).

Gropp and Heider (2007) and Octavia and Brown (2010) (Herein after also referred to as "two previous papers on banks' capital structure" interchangeably) have opposite conclusion on this, where Gropp and Heider only a negative relation between collateral and leverage whilst Octavia and Brown concluded a statistical insignificance.

As the value of intangible assets disappears (almost entirely) in the cases of bankruptcies, the presence of tangible assets is expected to be important in external borrowing as it is easy to collateralize them.

Tangible assets often reduce the costs of financial distress because they tend to have higher liquidation value (Titman and Wessels 1988; Harris and Raviv 1991). Pecking order theory of Myers and Majluf, (1984) conclude that issuing debt secured by property, avoids the costs associated with issuing shares.

This suggests that firms with more collateralized assets (fixed assets) will be able to issue more debt at an attractive rate as debt may be more readily available. This results in a positive association between leverage and tangibility. Therefore, it is expected that there is a positive relationship between tangibility and leverage ratio.

Hypothesis c: Tangibility has a statistically significant and positive effect on leverage.

3.5.2.2 Macroeconomic Variables

As the researcher tried to observe there were relatively few studies that have been conducted in relation with macroeconomic or external determinants of capital structure as compared to firm specific determinants. Similarly speaking, majority of empirical studies in the past focused only on assessing firm specific determinants of capital structure. But, some researchers assessed the relationship between macroeconomic or external variables and firms' leverage and they found their significance in determining a capital structure.

Interest Rate

In studies pertaining to capital structure determinants, most commonly interest rate factor is measured with lending rate of commercial banks within a country. Interchangeably, lending rate represents a cost that firms incur in order to raise debt. Under pecking order theory, there is no effect, or else an increase in the interest rate will tend to reduce debt level (Frank and Goyal, 2004). On the other hand, trade off theory predicts a positive relationship between interest rate and leverage of firms, in that firms will prefer more debt because an increase in interest rate would highly increase the cost of equity (Frank and Goyal, 2004). Researchers including Bas et al. (2009), Cekrezi (2013) and Saddam (2014) confirmed such a positive prediction of trade off theory for the relationship between interest rate and leverage.
Thus, in the present study, interest rate as measured by the cost of borrowing capital for a given period of time and expected to have a positive relation with the dependent variable.

Hypothesis d: Interest rate has statistically significant and positive effect on leverage.

GDP Growth Rate

GDP growth rate as measured by annual real gross domestic product reflects how much a country's overall economy is growing as compared to its own one year lagged value. During economic downturn, due to bad performance and increase in bankruptcy costs, firms would hesitate to borrow. Reversely, companies would borrow more in good economic condition given more investment opportunities. As noted in Frank and Goyal (2004), Trade off theory predicts a positive impact of GDP growth rate of a country on leverage of firms operate within that country. This positive prediction implies that firms will have more debt level in the period of higher economic growth than did in lower economic growth. Results of empirical studies including Booth et al. (2001), Deesomsak et al. (2004), de Jong et al. (2008), Mitton (2008), Cekrezi (2013) and Bas et al. (2009), confirmed positive relationship between GDP growth rate and leverage.

Gropp and Heider (2007) also conclude a positive relation, while Octavia and Brown (2010), Saddam (2014) found GDP growth statistically insignificant in determining bank leverage. Consequently, in this study GDP growth rate as represented by the market value of all final goods and services produced in a country in a given time period and hypothesized to have a direct impact on leverage.

Hypothesis e: GDP growth rate has statistically significant and positive effect on leverage.

In more precise manner, based on the reviewed theoretical as well as empirical literatures; description, measurement, and their expected sign of independent variables employed for the purpose of this study summarized in table 2.1 below.

Table 2.1: Summary of independent variables of the study, their measurement, and hypothetic relationship with the dependent variable

Determinant factors	Variables	Measurement	Expected signs on leverage
Firm specific variables	Profitability	Net profit after tax & provision divided by total assets	Negative
	Banks' age	number of years in business	Positive
	Tangibility	the ratio of tangible (fixed) assets to total assets	Positive
Macroeconomic variables	GDP growth rate	the market value of all final goods and services produced in a country	Positive
	Interest rate	Average lending rate of commercial banks	Positive

3.6 Data Analysis Method

The panel data that was collected for the purpose of this study was analyzed using descriptive statistics, correlations, and multiple regression analysis through statistical software package of EVIEWS 9.

First, based on the collected and processed firm specific as well as macroeconomic data, several descriptive measures were analyzed. These descriptive measures include mean, minimum, standard deviation and maximum values of each explanatory variables as well as the dependent variable of total leverage.

Following the descriptive analysis, correlations between all variables including the dependent variable were calculated and analyzed. By using such correlation statistics, the degree of association between explanatory variables themselves as well as with the dependent variable was analyzed.

Thirdly, before running a multiple regression analysis, one model specification test namely hausman test was carried out to choose an appropriate estimation technique among fixed or random effects models.

Fourthly, based on the regression result, diagnostic tests will be made by the researcher in order to assure classical linear regression model (CLRM) assumptions will not be violated. Among others; normality, hetroscedasticity, autocorrelation and multicolinearity tests were employed by the researcher.

Finally, the researcher run regression thereby analyze the impact of firm specific as well as macroeconomic factors on the dependent variable and discuss results accordingly based on the selected panel estimation model.

3.7 Model Specification

The data type consumed for the purpose of the study was a balanced panel, by which the same number of time-series observations for each cross-section or the same number of cross-sectional units at each point in time, were taken. As Brooks (2008) stated, there are three important merits of a panel data.

The first and may be the most important one is that the possibility of addressing a broader range of issues and deal with more complicated problems with panel data that would be impossible with pure time-series or cross-sectional data alone.

Secondly, with panel data it is possible to examine how variables or correlation between them, change over time. Doing this with pure time-series data would often need a long run of data in order to get a sufficient number of observations in order to allow researchers to run any valuable hypothesis tests.

But, by summing up cross-sectional and time series data, it is possible to inflate number of degrees of freedom thereby the power of a test, by using information on the dynamic behavior of a quite large number of cross sections at the same point in time.

Furthermore, panel data can also enable to cope with problems of multicolinearity that may present if time series are modeled alone.

At third instance, employing a panel data rather than time series or cross sectional data alone; enables to structure the model in proper way and thus to remove the effect of some types of omitted variables bias in regression outputs. By saying this, as one employed in majority of previous panel studies in relation with capital structure determinants including Amidu (2007) and Tornyeva (2013); the general panel equation for this study was:

$Yi,t = \alpha + \beta Xi,t + \varepsilon i,t$ Where subscript Yi,t represent total debt ratio for each cross sectional unit i in each time series observation t. From the right hand side of the equation, α represent a constant or intercept term and β represent slope coefficients, $\beta 1$-$\beta 5$ of each of the five explanatory variables.

Whereas Xi,t represent a set of independent variables, X1- X5 for each cross section at each time series observation year. The final subscript of εi,t represent an error term for each cross section at each time period observation.

As brooks (2008) stated, there are two major panel estimation techniques that widely used in research in the area financial namely: fixed effects model and random effects model. In order to choose from this two estimation models, the researcher employed a hausman's correlated random effects test. From the hausman test result, random effects model was found as an appropriate model of estimation.

So, the fixed effects equation employed for this study, which is based on Saddam (2014) with some purposive modifications to analyze side by side both firm specific and macroeconomic factors' impact on capital structure (represented by total debt ratio) of Ethiopian private bank entities look as follows:

LEVERAGE = Function of (Profitability, collateral(tangibility), Age, GDP growth rate and interest rate)

LEVi,t=α+β1(PRit)+β2(AGE i,t)+β3(TAN i,t)+β4(GDPt)+β5(INTt)+ εi +uit

Where:

LEVit = the dependent variable represented by total leverage (total debt ratio) for company i at time t

α = the constant (intercept)

β1, β2…..β5= represent coefficients for measuring independent variables, out of this **β1- β3** represent slope coefficients for firm specific variables and **β4 and β5** represent coefficients for macroeconomic factors.

PRi,t = profitability of private bank i, in year t

AGE I,t = age of private bank i, in year t

TAN i,t = tangibility of private bank i, in year t

GDPt = real GDP growth rate in year t

INTt = interest rate in year t

εi, = cross sectional random disturbance term which is constant over time

Uit = an error term which varies with each cross section and throughout time

3.8 Summary of variables

In this study, the researcher use one dependent variable (Leverage = Debt to Equity Ratio) and three firm specific explanatory variables (profitability, collateral and age) and two macroeconomic variables (GDP growth rate and interest rate).

The selection measures for dependent variable (leverage) and independent variables (firm-specific) and (macroeconomic) are detailed as follows.

A. ***Dependent Variable (LEVERAGE***)

Total liability to total assets ratio

$$Leverage = \frac{Total\ Liability}{Total\ asset}$$

B. ***Independent Variables***

I. Profitability

Profitability is measured as the ratio of operating income to total assets. Return on Assets (ROA)

$$PROFITABILITY = \frac{profit\ after\ tax\ and\ provision}{Average\ asset}$$

II. Tangibility

Tangibility is defined as the ratio of tangible (fixed) assets to total assets.

$$TANAGIBILITY = \frac{Fixed\ Assets}{Total\ Assets}$$

III. Age

Age is measured by the number of years each bank stays in business.

AGE = Number of years in business

IV. *GDP growth rate*

GDP or gross domestic product, is the market value of all final goods and services produced in a country in a given time period.

V. *Interest rate*

Interest rate represents average lending rate of commercial banks for a given period of time.

CHAPTER FOUR: EMPIRICAL ANALYSIS AND DISCUSSION OF RESULTS

The preceding chapter determined the way a researcher used to conduct an empirical analysis and discussion. Consequently, this chapter presents an empirical analysis as well the discussion of results. Specifically, this chapter is composed of five major sections including section 4.1 which is about descriptive analysis, section 4.2 which present correlation analysis, section 4.3 representing model specification test, section 4.4 presents CLRM assumptions and diagnostic tests. Finally, section 4.5 of the chapter presents regression analysis results as well as their discussion.

4.1 Descriptive Analysis

Here in this section, results pertaining to various descriptive measures of total debt or total leverage ratio as well as for the firm specific and macroeconomic explanatory variables were discussed. Table 4.1 below depicts mean, minimum, maximum and standard deviation values of leverage, profitability, tangibility and age of the sample firms as well as macroeconomic indicators of real GDP growth rate and interest rate. The total observation for the dependent variable of leverage as well as for independent variables was 78, composed of six cross sections multiplied by 13 years data for each cross section.

Table 4.1 Summary of descriptive statistics

Variables	Observation	Mean	Maximum	Minimum	STD. DEV.
LEV	78	77.3388	87.1500	64.9200	4.9493
PR	78	3.0807	4.7000	0.4000	0.7474
TAN	78	1.9775	6.4200	0.0000	1.2708
AGE	78	13.1666	23.0000	2.0000	4.6999
GDP	78	10.3285	11.8000	6.5000	1.4166
INT	78	11.5688	12.7500	10.5000	0.7336

Source:- Researcher's own computation through EVIEWS 9 based on financial statements of Commercial banks and NBE reports.

As stated in the above table 4.1, it was found that the mean leverage (total debt divided by total assets) of commercial banks in the sample was 77.38 %, meaning on average those sample Commercial banks generated over three fourth of their financing need for operation from debt sources of finance. Maximum and minimum leverage ratios, as measured by total debt ratio for a sample was 87.54 % and 64.92 % respectively whereas the dispersion of debt ratios among the sample measured with standard deviation was 4.95 % which

shows that there is no as such big different between private commercial banks in Ethiopia in financing their firm using debt.

In table 4.1 above, it is also stated that during the study period, sample commercial banks' average Profitability was 3.08 % as measured by Return on Asset (ROA). This indicates that those Commercial banks under study earned 3.08 cents Net Income after Taxes & provisions on every single ETB of their asset investment. Besides, the sample's maximum profitability record was a ROA of 4.7 % while the minimum appeared with a loss of 0.4 %per every ETB investment of asset. The dispersion of ROA for a sample, measured by standard deviation was 0.74 %.

Tangibility, as measured by fixed asset to total asset shows on average, 1.97 % of the banks' assets were fixed. The fixed assets to total asset for the sample were ranged from 0.00 % to 6.42 % with standard deviation of 1.27 % which shows; there is no great difference between those commercial banks which has higher fixed asset and lower fixed asset in financing their firm using debt.

It was also found that from 2004 - 2016, according to descriptive statistics for age variable which was represented by the number of years in operation; the mean was 13.16 whereas the standard deviation of age difference was 4.69. For the sample throughout a study period the maximum age of commercial banks were 23 years, while the minimum age was 2 years.

Tables 4.1 also summarize descriptive statistics pertaining to macroeconomic explanatory variables of real GDP growth rate and interest rate. The mean real GDP growth rate of Ethiopian economy in the last thirteen years of observation period was 10.33 % per annum with a standard deviation of 1.42 %. During the study period a maximum real GDP growth rate was 11.80 % where as the minimum was 6.50 %.

The mean interest rate represented by average lending rate of commercial banks, during the study period was 11.57 %.

This implies that on average commercial banks in Ethiopia charged nearly 12 cents per annum for every single ETB they borrowed throughout thirteen years of investigation period.

It was also found that during thirteen years of study period, average lending rate of commercial banks ranged from a minimum of 10.50 % to a maximum of 12.75 %. The standard deviation of average lending rate during the period was 0.73 %, which indicates the existence of relative stability in interest rate structure of commercial banks in Ethiopia.

4.2 Correlation Analysis

Here in this section the associations of independent variables with the dependent variable (Leverage) as well as the independent variables themselves were analyzed and discussed by using a correlation matrix. As described by Brooks (2008), correlation measures the extent of linear relationship between two or more variables. If two variables are correlated, it doesn't mean that one variable affects the other and vice versa, rather it means that they are being treated completely in the same manner. Similarly speaking, once we are sure for a linear association between the two variables and on average their movements are related to an extent which is given by the correlation coefficient. A correlation coefficient of two variables ranges between -1 and +1. A correlation coefficient of negative one implies that a perfect negative linear relationship between the two variables while positive one indicates a perfect positive linear association. On the other extreme, a correlation coefficient of zero indicates that the absence of any linear relationship between two variables.

Table 4.2 below presents a correlation matrix which shows the degree of linear relationship between the dependent and independent variables of the study.

Table 4.2 Correlation Matrix of Dependent and Independent Variables

	LEV	**PR**	**TAN**	**AGE**	**GDP**	**INT**
LEV	1.000					
PR	-0.394	1.000				
TAN	0.139	-0.137	1.000			
AGE	-0.033	-0.044	0.579	1.000		
GDP	0.066	0.193	-0.462	-0.540	1.000	
INT	-0.147	-0.030	0.290	0.654	-0.704	1.000

The correlation matrix in table 4.2 shows that the dependent variable (leverage) has negatively correlated with the independent variables profitability, age and interest rate and positively correlated with the independent variables tangibility and GDP growth rate.

4.3 Model Specification Test

The first step before running a regression analysis and thus to investigate significant factors that can affect financing decision of Ethiopian commercial banks, is to specify an estimation model.

As noted by Thomson et.al. (2013) panel data can be estimated using four distinctive estimation models including pooled cross section estimation, fixed effect estimation, random effect estimation, and first difference estimation techniques. As per Brooks (2008), pooled regression estimation assumes that the intercepts are the same for each firm and throughout each year of observation period. This could be improper assumption, because it might create firm specific effect called heterogeneity which is constant over time. On the other hand, in first difference estimation the intercept and the unobserved effect are differenced away.

Moreover in first difference estimation we have to lag the model one period and subtracted it from the original model to obtain a first difference equation. But, first difference panel estimation is appropriate if and only if a strong autocorrelation between the residuals observed.

According to Brooks (2008), among others the two most widely used panel estimation approaches that can be appropriate for a research in the area of finance are fixed effects model and random effects model. Fixed effects model allow the intercept in the regression model to differ throughout cross-sections but not over time, whereas all of the slope estimates are fixed both for individual cross sections as well as over time. Random effects model also known as the error components model, as of fixed effects; propose that different intercepts for each cross section that do not vary over time, with the relationships between independent and dependent variables assumed to be the same both for each cross-section and over time. However, the difference between the two is that under a random effects model, the intercepts for each cross sectional unit are assumed to arise from a common intercept α (which is the same for all cross sections as well as over time), plus a random variable εi that varies cross-sectionally but not over time.

As per Brooks (2008), the random effects model is more proper when the cross sections in the sample are randomly selected from the population; while a fixed effect model is more efficient when cross sectional units in the sample effectively comprise the entire population.

More specifically, the GLS transformation procedure involved under the random effects model will not eliminate the explanatory variables that are constant over time, and then their impact on the dependent variable can be accounted. Furthermore, since there are fewer parameters to be estimated in random effects model (due to the absence of dummy variables) and thereby degrees of freedom are saved, the random effects model should yield more efficient estimation than the fixed effects one.

Moreover, random effects model is appropriate if number of cross sections is larger and time period observations are smaller, and if the assumptions underlying random effects model hold, random effect estimators are more efficient than fixed effect estimators (Gujarati, 2004). On the other hand, the random

effects approach has a major problem that it is appropriate only when the composite error term is not correlated with all of the independent variables. This assumption of random effect is more stringent than its correspondent one in the fixed effects occasion, because with random effects we thus require both cross sectional error term and new individual observation error term to be uncorrelated with all explanatory variables. This can also be interpreted as a consideration of whether any unobserved omitted variables (that were allowed to have different intercepts for each cross section) are not correlated with the selected explanatory variables. If error terms and independent variables are not correlated, a random effects model can be better to use; if not the fixed effects one is appropriate (Brooks, 2008).

In order to test validity of the above assumption thereby to choose appropriate model for the study, a hausman test was carried out by the researcher. Table 4.5, presents the Hausman specification test which suggests the fixed effects model was better than random effects model as the p-value (0.00), is less than 0.05 for dependent variables which imply that the random effects model should be rejected and thus, the analysis is based on the fixed effects estimates.

Table 4.3: Correlated Random Effects - Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	92.003649	5	0.0000

Source: Researcher's own computation through EVIEWS 9 based on random effects estimation

4.4 CLRM Assumptions and Diagnostic Tests

One last step before discussing the results of a regression analysis thereby to conclude about what factors to determine capital structure of commercial banks in Ethiopia was to assure that whether the model was consistent with classical linear regression model (CLRM) assumptions. Basically, there are five major assumptions underlying CLRM as described by Brooks (2008). The first of this assumptions required that the average value of an error terms to be zero.

This assumption is no more vulnerable for violation, if a constant term is included in the regression equation. The second assumption holds that variance of the error terms is constant. This second assumption is known as the assumption of homoscedasticity. If the variance of the errors is constant, it is said to be homoscedastic.

On the other hand, the violation of this assumption is known as hetroscedasticity. The test associated with this assumption also called heteroscedasticity test.

The third assumption stated that covariance between the error terms is zero over time for time series data or over individual cross sections, for cross sectional data. Similarly speaking, this assumption holds that the errors are uncorrelated with one another.

If the errors are correlated with one another, they are known to be „auto correlated" or „serially correlated" and the test to detect such problem is called autocorrelation tests. The fourth major assumption that underlies CLRM stated that the explanatory variables are not correlated with the errors of an estimated model.

Whereas, the fifth and the last major assumption of CLRM hold that the disturbances are normally distributed. To check whether the disturbances are normally distributed, a normality tests can be made.

Beyond the above five major assumptions, there are also other few important implicit assumptions that bounds CLRM. The first one is that the explanatory variables are not correlated each other. If there is no relationship between the explanatory variables, they are known to be orthogonal each other. If explanatory variables highly correlated each other, it is called a multicollinearity problem.

This problem can be checked by running a multicollinearity test. The second implicit assumption holds that the appropriate „functional form" is linear.

This implies that the appropriate model is assumed to be linear in the parameters as well as in the bivariate case; the relationship between the dependent and independent variables can be depicted with a straight line.

The linearity and appropriateness of a functional form can be tested using Ramsey reset test. The third implicit assumption of CLRM is that the parameters or coefficients of repressors are constant for the whole sample, both for the data period used for model estimation and for any subsequent period used in the construction of estimations. This assumption can be tested using parameter stability tests (Brooks, 2008).

In line with majority of previous researchers pertaining to capital structure determinants like Woldemikael (2012), Bayeh (2011) and saddam (2014) the researcher of this study employed four diagnostic tests with respect to four major CLRM assumptions. These four tests were normality, heteroscedasticity, autocorrelation, and multicollinearity tests. Consequently, the following section presents the discussion of results from such diagnostic tests.

4.4.1 Hetroscedasticity Test

In order to assure whether the model used for this study is in line with the assumption of homoscedasticity, a hetroscedasticity test was conducted by the researcher. Specifically, the researcher conducted the most popular test for hetroscedasticity; namely white's general test for hetroscedasticity. As per Brooks (2008), white's test is particularly useful because it makes fewer assumptions about the possible form of hetroscedasticity. Table 4.4 below presents a white's general test for hetroscedasticity, with a null hypothesis (H0): variance of the error terms is constant (i.e. there is homoscedasticity) by using 5% significance level of test.

Table 4.4 Hetroscedasticity Test: White test

F-statistic	0.603605	Prob. F(20,57)	0.8938
Obs*R-squared	13.63247	Prob. Chi-Square(20)	0.8486
Scaled explained SS	7.805811	Prob. Chi-Square(20)	0.9931

Table 4.4 presents tests for hetroscedasticity 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 that the variance of the errors is constant, which is known as homoscedasticity is valid or not, but seeing the actual auxiliary regression in the above table can provide useful additional information on the source of the hetroscedasticity 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 hetroscedasticity, since the p-values are considerably in excess of 0.05 then we should reject the null hypothesis that the disturbances are homoscedastic.

The third version of the test statistic, 'Scaled explained SS', which as the name suggests is 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 hetroscedasticity problem.

4.4.2 Autocorrelation Test

Autocorrelation test is a test that can be used to check whether the errors are uncorrelated each other thereby to assure whether the model was in line with the fourth assumption that required not serially correlated error terms. The researcher of this study applied a Durbin Watson or DW test in order to detect the problem of autocorrelation. As per Brooks (2008), DW test is a valid test until three conditions are met. First, there must be a constant term in the regression equation.

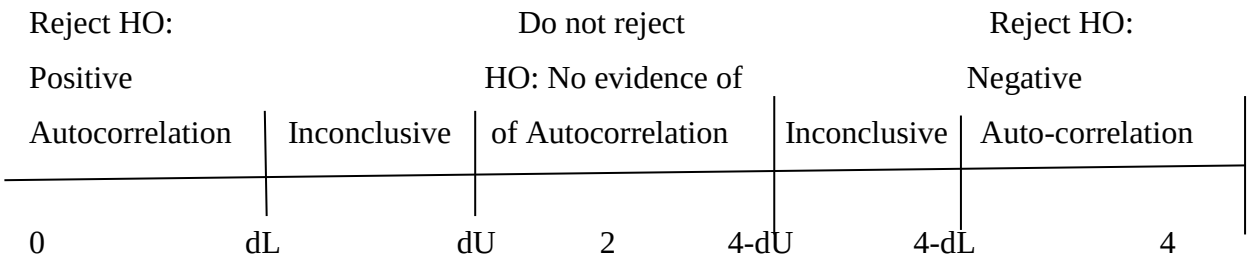
Secondly, the explanatory variables of a model must be non-stochastic (i.e. not correlated with the error terms). The third and final condition to be met, in order to use a DW test as a valid test for autocorrelation is that there must be no lags of the explained variable in the equation.

The model used for the purpose of this study met the above three conditions. As a result, DW test was used by the researcher to detect autocorrelation.

As Brooks (2008) stated, the non-rejection region for a DW test is between the upper limit (i.e.dU) and 4 minus the upper limit (i.e. 4-dU). More specifically if DW is equal or near to 2, there is no or little evidence of autocorrelation between the residuals. Similarly speaking, the null hypothesis would not be rejected if DW is equal or near 2. On the other hand, if the DW stat falls between dL and 0, the null hypothesis of no autocorrelation is to be rejected in favor of positive autocorrelation. If DW falls between 4-DL and 4, the null hypothesis of no autocorrelation will be rejected in favor of negative autocorrelation of residuals. However, if the DW stat result is between the upper critical value dU and the lower critical value of dL, the null hypothesis of no autocorrelation will neither be rejected nor not rejected.

The DW stat value from the fixed effect regression output of this study as presented in table 4.6 below was 1.76 which is around 2 so, we do not reject the null hypothesis because there is no evidence of autocorrelation.

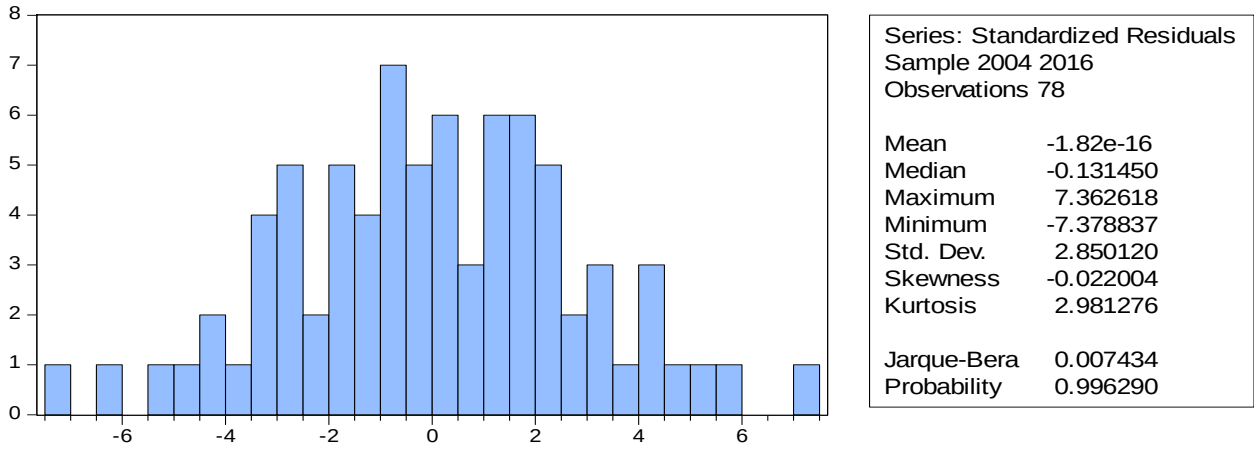
Figure: 4.1: Rejection and Non-Rejection Regions for DW Test



4.4.3 Normality Test

The assumption of normality holds that the disturbances of a regression equation are normally distributed. The normality can be fulfilled with a bell shaped distribution which has a kurtosis of 3 and a skeweness value of 0. As per brooks (2008), the most widely applied test for normality is a Bera Jarque or BJ test. Accordingly the researcher employed this test in order to check normality by using random effect regression output.

Figure 4.2 Normality Test- BJ



Source: Researcher's own computation through EVIEWS 9 based on fixed effects regression result

The normality can be safe until the probability of Bera Jarque (BJ) is in excess of 0.05 and kurtosis close to 3, which means the null hypothesis of normally distributed error terms is not to be rejected. On the other hand, if the p value of a BJ test is below 0.05, the null hypothesis of normally distributed error terms to be rejected.

Thus, as figure 4.1 depicts above, the probability of BJ is 0.99, which is sufficiently in excess of 0.05 and kurtosis of 2.98, the null hypothesis was not to be rejected, confirming that the residuals were normally distributed.

4.4.4 Multicollinearity Test

To recall that one of among the implicit assumptions of CLRM is orthogonality, which required the independent variables of the study to be uncorrelated each other. In order to assure this implicit assumption, the researcher of present study used a correlation matrix of explanatory variables as presented in table 4.5 below.

Table 4.5 Correlation Matrix of Explanatory Variables

	PR	**TAN**	**AGE**	**GDP**	**INT**
PR	1.0000				
TAN	-0.1370	1.0000			
AGE	-0.0446	0.5791	1.0000		
GDP	0.1935	-0.6426	-0.5403	1.0000	
INT	-0.0309	0.2901	0.6540	-0.7048	1.0000

Source: Researcher's own computation through EVIEWS 9 based on NBE reports

As per Gujarati (2004), multicollinearity is a severe problem if the correlation between two independent variables is greater than 0.8. But, as it is shown in table 4.5 above, the highest observed correlation for explanatory variables of this study was -0.7 between firm GDP and Interest rate variables, which is below 0.8 and can be reasonably ignored. Thus, there was no evidence of multicollinearity among explanatory variables. In other words, multicollinearity was not a serious problem for this study.

4.5 Regression Analysis and Discussion of Results

Here in this section of the study, the regression analysis presented which is followed by discussion of results obtained from the analysis based on random effects model of panel estimation. Thus, the next two sub-sections, represent regression analysis and discussion of results from which conclusion to be made about factors affecting capital structure decision as represented by leverage of Ethiopian private commercial banks..

4.5.1 Regression Analysis

To recall from chapter three the fixed effects model used throughout this study which equates firm specific plus macroeconomic explanatory variables with the dependent variable is:

$LEV_{i,t}=\alpha+\beta1(PR_{i,t})+\beta2(TAN_{i,t})+\beta3(AGE_{i,t})+\beta4(GDP_t)+\beta5(INT_t+\varepsilon_i+u_{i,t}$

Where $LEV_{i,t}$ = the dependent variable represented by total leverage (i.e. total debt ratio) for company i at time t

α= the constant (intercept) term

$\beta1$, $\beta2$…..$\beta5$ = respective coefficients for independent variables, out of this $\beta1$- $\beta3$ represent slope coefficients for firm specific variables and $\beta4$ and $\beta5$ represent coefficients for macroeconomic factors.

$PR_{i,t}$ = profitability of insurance firm i, in year t

$AGE_{i,t}$ = age of commercial bank i, in year t

GDP_t = real GDP growth rate in year t

INT_t = interest rate in year t

ε_i = random disturbance term for each cross section which is constant over time

$u_{i,t}$ = an error term which varies across each cross section and throughout time

The regression analysis as well as discussion of results regarding factors that influence capital structure decision of commercial banks in Ethiopia was made based on the fixed effects estimation results which is presented in table 4.6 below.

Table 4.6 Fixed Effects Estimation Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PR	-1.414520	0.552396	-2.560700	0.0127*
TAN	-0.363910	0.409449	-0.888781	0.3773
AGE	0.276526	0.185589	1.489994	0.1409
GDP	1.045898	0.464524	2.251547	0.0277*
INT	-1.975937	0.953010	-2.073364	0.0420*
C	101.3350	12.37297	8.190031	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.668389	Prob(F-statistic)		0.000000
Adjusted R-squared	0.618895	Durbin-Watson stat		1.761824
F-statistic	13.50438			

* denotes significant at 5 %

Source: Researcher's own computation through EVIEWS 9 based on financial statements of Commercial banks and NBE reports

The fixed effect result in table 4.6 indicates that profitability was strongly statistically significant with (p-value = 0.0127) at 5 percent level and had negative effect on leverage. Similarly, interest rate and GDP growth rate were found to be statistically significant with p-value = 0.0420 and 0.0277 respectively at 5 % level but interest rate had negative effect while GDP growth rate had positive effect on leverage.

On the other hand it was also found that age had positive and insignificant effect on leverage; whereas tangibility has a negative and insignificant impact on the dependent variable with a p-value of 0.1409, and 0.3773 respectively.

Furthermore table 4.6 shows R-squared of 0.668389, which implies that around 67% of the variations in leverage, was explained by the independent variables (i.e. profitability, tangibility, age, GDP growth rate and interest rate) used for the model.

The adjusted R-squared figure of 0.618895 indicates that around 62% of the variations in leverage were explained by the three significant factors (i.e. profitability, GDP growth rate and interest rate).

4.5.2 Discussion of Results

The previous sub-section highlighted the regression analysis results based on fixed effects estimation. Here in this sub-section, detailed discussions of findings pertaining to firm specific and macroeconomic determinants for capital structure of commercial banks in Ethiopia presented.

4.5.2.1 Firm Specific Variables

On this part the researcher will explain briefly the result of the study on firm specific (internal) determinants of capital structure together with other empirical studies and theoretical review of capital structure.

Profitability

Based on previous theoretical and empirical works, profitability variable was expected and hypothesized to be one of the most significant factors to affect capital structure of Ethiopian commercial bank entities. According to hypothesis a, it was expected that profitability has a negative and statistically significant impact on leverage of Ethiopian commercial banks. In line with the hypothesis, the results of fixed effects model as presented in table 4.6 also indicated that the coefficient of profitability variable was negative and statistically significant at 5% level with p-value of 0.0127. Thus, hypothesis a, which holds the existence of negative and statistically significant effect of profitability on leverage in Ethiopian banking sector, was not to be rejected. This implies that every one percent change (increase or decrease) in bank's profitability keeping the other thing constant has a resultant change of 141 % on the leverage in the opposite direction. This result also shows that, higher profits increase the level of internal financing in Ethiopian banking industry. Besides, the result revealed that the higher the profitable a firm is the lesser a probability of using more debt due to the availability of internal retained earnings to finance its operations.

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.

Besides the researchers finding, a negative relationship between profitability and leverage was observed in the majority of empirical studies, such as Rajan and Zingales (1995), Amidu (2007) on his study on the determinants of capital structure of Ghanaian banks by employing panel regression model, Khrawish and Khraiwesh (2010) on their investigation over the determinants of capital structure; evidence from Jordanian industrials companies, Ahmed et al., (2010) under his investigation on the impact of firm level characteristics on capital structure of life insurance companies of Pakistan, Tesfaye and Minga (2012) and Caglayan and Sak (2010) on their study focused on determinants of capital structure of banks in Turkish were some of them. The study also is consistent with a study conducted by Woldemikael (2012).

Age

According to hypothesis b, it was expected that banks' age has a positive and statistically significant effect on leverage in Ethiopian commercial banks. While, the fixed effects regression result in table 4.6 showed that the coefficient of banks' age variable was positive as expected but statistically insignificant with p-value of 0.1409. Thus, hypothesis b, which holds the existence of positive and statistically significant effect of banks' age on leverage in Ethiopian banking sector, should be rejected. The result of the study in its insignificancy is in line with former studies by Solomon (2012) and Faris (2011) and its positive relationship is consistent with the studies of Bayeh (2011), Usman (2013), Mohamed and Mahmoud (2013) and Saddam (2014). The result of the study implies that whether banks stay in business for many or fewer years it did not affect its decision of capital structure.

Collateral (Asset Tangibility)

Regarding to the effect of tangibility hypothesis c, there exists a positive and statistically significant effect on leverage. The result of fixed effect in table 4.6 shows that there was negative and statistically insignificant impact on leverage with p - value of 0.3773. Thus hypothesis c, which holds a positive and statistically significant impact of tangibility on leverage in Ethiopian banking sector, should be strongly rejected. .

Finding of the study is in line with the empirical study of Ahmed et al., (2010) under his investigation on the impact of firm level characteristics on capital structure of life insurance companies of Pakistan, woldemicheal (2012) and is consistent with the predictions of pecking order theory. Its negative coefficient is consistent with the study of Gropp and Heider (2007), Caglayan and Sak (2010) but different in its significance. The result of the study implies that whether commercial banks in Ethiopia own more tangible asset or not, there is no impact on their decision of capital structure.

4.5.2.2 Macroeconomic Variables

Interest rate

According to hypothesis d, the hypothesis was expected that interest rate have a positive and statistically significant effect on leverage of banks. While the result of fixed effects model shows that interest rate has a negative and statistically significant at 5% level with a p - value of 0.0420 influence financing decision of commercial banks in Ethiopia. Thus, hypothesis d, which holds the existence of positive and statistically significant effect of interest rate on leverage in Ethiopian banking sector, should be rejected. The result of the study implies that every one percent change (increase or decrease) in interest rate keeping the other things constant has a resultant change of 197 % on leverage in the opposite direction. This argument of negative impact of interest rate on leverage matches with findings in previous researches by Sbeiti (2010). While it is in opposite to researchers including Bas et al. (2009), Cekrezi (2013) and Saddam (2014) who confirmed a positive prediction of trade off theory for the relationship between interest rate and leverage. The result of the study implies that when the lending interest rate in Ethiopian financial sector increases, private commercial banks prefer to finance their banks through equity rather than debt. Finding of the study on lending interest rate is consistent with the pecking order theory.

GDP Growth Rate

As per hypothesis e, the hypothesis of real GDP growth rate of Ethiopian economy was expected to have a significant and positive effect on leverage of commercial banks within the country. In line with the hypothesis, the results of fixed effects model as presented in table 4.6 also indicated that the coefficient of GDP growth rate variable was positive and statistically significant at 5% level with p-value of 0.0277. Thus, hypothesis e, which holds the existence of positive and statistically significant impact of GDP growth rate on leverage in Ethiopian banking sector, was not to be rejected. This implies that every one percent change (increase or decrease) in GDP growth rate keeping the other things constant has a resultant change of 105 % on leverage in a similar direction. During economic downturn, due to bad performance and increase in bankruptcy costs, firms would hesitate to borrow. Reversely, companies would borrow more in good economic condition given more investment opportunities. This argument of positive impact of GDP growth rate on leverage is supported by trade-off theory and matches with findings in previous researches by Booth et al. (2001), Deesomsak et al. (2004), de Jong et al. (2008), Mitton (2008), Bas et al. (2009), Nuño et al (2013), etc.

Gropp and Heider (2007) also conclude a positive relation, while Octavia and Brown (2010) and saddam (2014) found GDP growth statistically insignificant in determining bank leverage.

Table 4.7 Summary of expected and actual signs of explanatory variables

Variables	Expected Signs	Actual Signs
Profitability	Negative & Significant	Negative & Significant
Tangibility	positive & Significant	Negative & insignificant
Age	Positive & Significant	Positive & Insignificant
Lending Interest Rate	Positive & Significant	Negative & Significant
Real GDP Growth Rate	Positive & Significant	Positive & Significant

CHAPTER FIVE: SUMMARY OF MAJOR FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

The preceding chapter analyzed and discussed major findings of the study. Consequently, this final chapter of the paper presented conclusions based on results found and suggests possible recommendations for concerned bodies.

5.1 Conclusions

Capital structure decision sometimes referred as financial structure decision is one of among the three key decisions in strategic financial management. Capital structure as represented in this study by leverage measure of total debt ratio; is a composition of debt and equity that a firm uses to make up its assets. Following a stepping stone work of Modigliani and Miller (1958), plenty of theoretical as well as empirical works were conducted in relation with capital structure in general and regarding its determinant factors in particular. However, those theoretical and empirical works were almost contrary to each other. In relation with theoretical works, the researcher reviewed; Capital Structure Irrelevancy Theory (Modigliani-Miller Theorem), tradeoff theory, pecking order theory and agency cost theory. More specifically, among the theories of capital structure reviewed; tradeoff and pecking order theories are the two most powerful contenders with a tremendous support of empirical literatures. Consequently, explanatory variables (including their signs) of this study were selected based on tradeoff and pecking order theories as well as the findings from majority of previous empirical studies pertaining to capital structure determinants.

The general objective of this study was to examine firm specific (i.e. profitability, age and tangibility) and macroeconomic (i.e. GDP growth rate and interest rate) factors' impact on financing decision of commercial banks in Ethiopia thereby to identify prominent theory for banking sector of the country. In order to achieve such aim, the researcher used quantitative research approach and selecting six commercial banks which were established before 2004 as a sample. The nature of data used by this study was a panel data mainly composed of financial statements of sample commercial banks and NBE reports over the period of 2004 – 2016.

The researcher regressed firm specific variables of profitability, tangibility and age plus macroeconomic variables of GDP growth rate and interest rate against the dependent variable as measured by total debt ratio. More specifically, the researcher hypothesized significant and negative impact of profitability on leverage. On the other hand, it was hypothesized that tangibility, age, GDP growth rate and interest rate to have significant as well as positive relationship with the dependent variable.

In order to examine this relationship and thereby to find out significant factors that affect capital structure decision of Ethiopian commercial banks, the researcher employed fixed effects model of panel estimation with the help of EVIEWS 9 software package.

So, based on fixed effects model estimation, a researcher found out the following relationship of firm specific plus macroeconomic factors on the dependent variable.

- Profitability as represented by return on asset (ROA); was found to have a negative and statistically significant relationship with leverage of Ethiopian private commercial banks. In other words, commercial banks having more profit will prefer to finance their business through internal sources of finance rather than debt. The result of this study is consistent with the pecking order theory that suggests profitable firms prefer internal financing than external financing.
- GDP growth as measured by the market value of all final goods and services produced in a country in a given time period, found to have a positive and statistically significant relationship with the dependent variable which was represented by total leverage. This implies that throughout the study period, Ethiopian private commercial banks borrowed more in the year when GDP growth was high than in the year when GDP growth was low. Private commercial banks would borrow more in good economic condition to benefit more from investment opportunities. This result of the study is consistent with trade off theory of capital structure.
- Interest rate as measured average lending rate of commercial banks for a given period of time was found to have a negative and statistically significant relationship with the dependent variable. This implies that when there exists higher interest rate in the country, private commercial banks prefer to finance their firm through internal financing rather than debt, which is consistent with the pecking order theory.

The rest two variables of the study (i.e. tangibility and age) were found to have insignificant relationship with the dependent variable. In more specific manner, tangibility was found to have negative but not significant relationship with leverage of commercial banks in Ethiopia. On the other hand, age was found to relate positively and insignificantly with debt level of Ethiopian commercial banks.

To conclude, based on the regression results; profitability, GDP growth and interest rate variables were found to be significant factors that affect capital structure decision (as represented by total leverage) of Ethiopian commercial banks, confirming trade off and pecking order theories as prominent theories for the

sector. More specifically, among the two; pecking order is found as the most influential theory for firms than trade off theory in context of Ethiopian banking sector.

5.2 Recommendations

As per the study results and conclusions presented in preceding sections, a researcher made the following recommendations.

- Among the explanatory variables that were used for this study; profitability, GDP growth and interest rate were the significant factors that can influence firms' financing decision in Ethiopian banking sector.
- Accordingly, managers, shareholders, and potential investors of commercial banks in Ethiopia, are recommended to give closer consideration for such factors in order to gather the fruits of an optimal capital structure.
- Based on the regression results found, among the major theories of capital structure, trade off and pecking order theories appeared as prominent theories for Ethiopian banking sector. More specifically, pecking order theory was found as the most influential theory from the two theories. Therefore, managers of Ethiopian commercial banks are advised to act accordingly by giving due attention first and most importantly for pecking order theory thereafter for trade off theory while making their financing decision.

Furthermore, other determinants of capital structure, factors affecting working capital management decision and factors affecting investment decision of banking sector or other sectors in Ethiopia are recommended as promising research areas for future research.

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Appendics

Appendix 1: 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	92.003649	5	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
PR	-0.829922	-2.389238	0.074278	0.0000
TAN	-0.429630	0.557687	0.057362	0.0000
AGE	0.555819	-0.281387	0.414383	0.1934
SZ	-3.028952	0.871426	7.365201	0.1507
LQ	-0.043125	-0.035081	0.000124	0.4708

Cross-section random effects test equation:

Dependent Variable: LEV

Method: Panel Least Squares

Date: 05/26/17 Time: 03:46

Sample: 2004 2016

Periods included: 13

Cross-sections included: 6

Total panel (balanced) observations: 78

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	101.7596	15.61366	6.517343	0.0000

PR	-0.829922	0.573869	-1.446188	0.1528
TAN	-0.429630	0.420858	-1.020845	0.3110
AGE	0.555819	0.653221	0.850890	0.3979
GDP	-3.028952	2.770385	-1.093333	0.2782
INT	-0.043125	0.028771	-1.498914	0.1386

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.665185	Mean dependent var	77.33885
Adjusted R-squared	0.615213	S.D. dependent var	4.949354
S.E. of regression	3.070144	Akaike info criterion	5.211361
Sum squared resid	631.5274	Schwarz criterion	5.543717
Log likelihood	-192.2431	Hannan-Quinn criter.	5.344409
F-statistic	13.31107	Durbin-Watson stat	1.273042
Prob(F-statistic)	0.000000		

Appendix 2: Heteroscedasticity Test-White

Heteroscedasticity Test: White

F-statistic	0.603605	Prob. F(20,57)	0.8938
Obs*R-squared	13.63247	Prob. Chi-Square(20)	0.8486
Scaled explained SS	7.805811	Prob. Chi-Square(20)	0.9931

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 05/26/17 Time: 01:38

Sample: 1 78

Included observations: 78

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1766.281	4393.665	-0.402006	0.6892
PR^2	1.173571	3.611522	0.324952	0.7464
PR*TAN	9.311926	5.623962	1.655759	0.1033
PR*AGE	-3.566904	1.915458	-1.862168	0.0677
PR*GDP	1.116106	5.144713	0.216942	0.8290
PR*INT	16.20538	11.61451	1.395270	0.1683
PR	-170.5082	161.2796	-1.057221	0.2949
TAN^2	-0.608392	1.861721	-0.326790	0.7450
TAN*AGE	2.767857	1.578275	1.753723	0.0849
TAN*GDP	-3.848582	3.605332	-1.067469	0.2903
TAN*INT	-17.05960	11.57370	-1.473997	0.1460
TAN	169.9231	147.8830	1.149037	0.2553
AGE^2	-0.219782	0.259579	-0.846689	0.4007
AGE*GDP	1.179059	1.220227	0.966262	0.3380
AGE*INT	2.191940	2.882918	0.760320	0.4502
AGE	-26.71768	39.56532	-0.675280	0.5022
GDP^2	-3.599692	4.214401	-0.854141	0.3966
GDP*INT	-12.49734	15.03937	-0.830975	0.4095
GDP	199.9282	244.2900	0.818405	0.4165
INT^2	-4.656235	20.16631	-0.230892	0.8182
INT	187.2596	587.3101	0.318843	0.7510

R-squared	0.174775	Mean dependent var	19.09137
Adjusted R-squared	-0.114777	S.D. dependent var	22.27603

S.E. of regression	23.51970	Akaike info criterion	9.378358
Sum squared resid	31531.06	Schwarz criterion	10.01286
Log likelihood	-344.7560	Hannan-Quinn criter.	9.632360
F-statistic	0.603605	Durbin-Watson stat	1.465999
Prob(F-statistic)	0.893775		

Appendixes 3. Fixed Effects Estimation Results

Dependent Variable: LEV

Method: Panel Least Squares

Date: 05/26/17 Time: 01:49

Sample: 2004 2016

Periods included: 13

Cross-sections included: 6

Total panel (balanced) observations: 78

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PR	-1.414520	0.552396	-2.560700	0.0127
TAN	-0.363910	0.409449	-0.888781	0.3773
AGE	0.276526	0.185589	1.489994	0.1409
GDP	1.045898	0.464524	2.251547	0.0277
INT	-1.975937	0.953010	-2.073364	0.0420
C	101.3350	12.37297	8.190031	0.0000

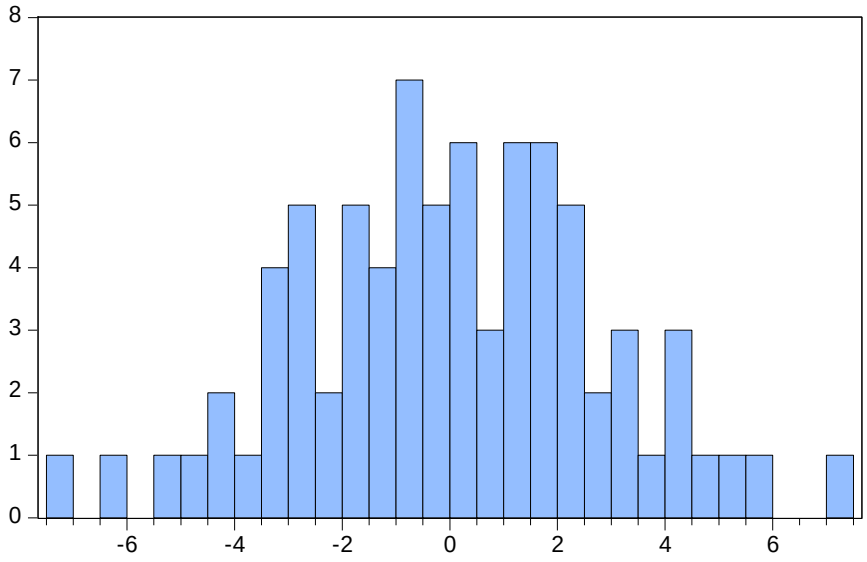
Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.668389	Mean dependent var	77.33885
Adjusted R-squared	0.618895	S.D. dependent var	4.949354
S.E. of regression	3.055421	Akaike info criterion	5.201747
Sum squared resid	625.4852	Schwarz criterion	5.534104
Log likelihood	-191.8681	Hannan-Quinn	5.334796

		criter.	
F-statistic	13.50438	Durbin-Watson stat	1.761824
Prob(F-statistic)	0.000000		

Appendices 4.Normality test



Series: Standardized Residuals
Sample 2004 2016
Observations 78

Mean	-1.82e-16
Median	-0.131450
Maximum	7.362618
Minimum	-7.378837
Std. Dev.	2.850120
Skewness	-0.022004
Kurtosis	2.981276
Jarque-Bera	0.007434
Probability	0.996290