



THE EFFECT OF DEBT FINANCING ON PROFITABILITY OF
COMMERCIAL BANKS IN ETHIOPIA

A Thesis Submitted to the School of Graduate Studies of Addis Ababa University
in Partial Fulfillment of the Requirements for the Degree of Masters of Science in
Accounting and Finance.

By

Tamirat Lambebo

Advisor: Laxmikantham P. (PHD)

Addis Ababa University
College of Business and Economics
Department of Accounting and Finance

June 2015
Addis Ababa

Statement of Declaration

I, Tamirat Lambebo, hereby declare that the thesis on the topic entitled “The effect of debt financing on profitability of commercial banks in Ethiopia” submitted by me for the award of the degree of Master of Science in accounting and finance from Addis Ababa university, is original work and it hasn’t been presented for the award of any other Degree, Diploma, or other similar titles of any other university or institution.

Declared by:

Name: Tamirat Lambebo

Signature: _____

Date: _____

Statement of Certification

This is to certify that Tamirat Lambebo has carried out a thesis on the topic entitled “The effect of debt financing on profitability of commercial banks in Ethiopia” in the partial fulfillment of the requirements of the MSc degree in accounting and finance complies with the regulations of the university and meets the accepted standards with respect to originality and quality.

Examined by:

Internal examiner: Dr. Degefe Duressa Signature _____ Date _____

External examiner: Dr. Zinegnaw A. Signature _____ Date _____

Advised by:

Advisor: Dr. Laxmikantham P. Signature _____ Date _____

Chair of Department or Graduate Program Coordinator

Abstract

This study was conducted on the effects of debt financing on profitability of Commercial Banks in Ethiopia. For this purpose, sample of eight commercial banks was studied from all commercial Banks engaged in commercial banking activities. The study period covered twelve years from the years (2002-2013). The dependent variable is return on asset (ROA) used to measure the profitability of commercial banks and the independent variable are debt to asset ratio, debt to equity ratio and interest coverage ratio to measure the level of debt on capital structure of the institution. To ensure the accuracy of the results of the regression model used one control variable that is firm size. To address the main objectives of this study and to collect accurate information mainly used secondary data. Primary data was used to support the secondary data. As the result, the research approaches are mixed research approach. The data analyzed by using panel data analysis technique. The descriptive statistics and the correlation analysis were discussed, followed by the diagnostic test, which is necessary to fulfilling the assumption of the classical linear regression model. Then, a fixed effect regression output result was presented and the results of the regression outputs were discussed. Finally, discussion result indicates that all independent variables had positive relationship with profitability and statistically significant.

Keywords: *Debt Financing, profitability, return on asset, debt to asset ratio, debt to equity ratio, interest coverage ratio and firm size.*

Acknowledgements

I would like to express my thanks to Almighty God and heartily grateful to him with his son Jesus Christ, for his bright gifts throughout my life from the beginning to wherever I go.

First, I am heartily grateful to Dr. Laxmikantham P., who gave me unreserved advising with constructive comments, guidance and encouragement from the commencement to the final write-up of my thesis work.

Secondly, I am thankful to Addis Ababa University, Department of Accounting and Finance in particular, for giving the financial support for my thesis work.

Next, I want to express my thanks to finance managers of selected commercial banks for cooperation during interview and for NBE worker for giving me audited financial statement of all commercial banks. Additionally, my special thanks also go to National Bank of Ethiopia for sponsoring me for MSc program.

Then, I like to express my unreserved and deepest love to my family due to for love, encouragement and help throughout my academic life.

.

Lastly, I am pleased to express my sincere thanks to everyone who has contributed for the accomplishment of this study and my post graduate classmates.

Table of Contents	Pages
Abstract.....	iii
Acknowledgements.....	iv
List of Tables.....	viii
List of Figures.....	viii
List of Acronyms	ix
CHAPTER ONE	1
Introduction.....	1
1.1 Background of the Study	1
1.2 Statement of the Problem	6
1.3 Objective of the Study	9
1.3.1 Specific Objectives of the Study	9
1.4 Research Hypothesis.....	10
1.5 Significance of the Study.....	10
1.6 Scope and Limitations of the Study.....	11
1.7 Structure of the Study	12
CHAPTER TWO	13
Review of the Related Literature	13
2.1 Introduction	13
2.2 Theoretical Framework.....	13
2.2.1 Trade-Off Theory	14
2.2.2 Pecking Order Theory	15
2.2.3 Market Timing Theory	15
2.3 Debt Financing	16
2.4 Firm Profitability	18
2.5 Relationship between Debt Financing and Firm Profitability	19
2.6 Measures of Debt Financing and Firm Profitability	19
2.6.1 Measure of Debt Financing	19
2.6.2 Profitability Measure in Banks.....	23

2.6.2.1 Return on Asset	26
2.7 Related Empirical Studies	26
2.8 Related Empirical Studies in Ethiopia.....	34
2.9 Chapter Summary and Knowledge Gap	38
CHAPTER THREE	40
Research Methodology	40
3.1 Introduction	40
3.2 Research Approaches	40
3.3 Methods Adopted	43
3.3.1 Quantitative Aspect of the Study	44
3.3.1.1 Structured Review of Documents	44
3.3.2 Qualitative Aspect of the Study	45
3.3.2.1 In-Depth Interview	45
3.4 Sampling Techniques	46
3.5 Data Analysis Techniques	49
3.5.1 Test for Heteroscedasticity.....	50
3.5.2 Test for Autocorrelation	51
3.5.3 Test for Normality	51
3.5.4 Test for Multicollinearity	51
3.6 Model Specification.....	52
3.7 Study Variables.....	53
3.7.1 Dependent Variable	53
3.7.1.1 Return on Asset	54
3.7.2 Independent Variables.....	54
3.7.2.1 Debt to Asset Ratio.....	55
3.7.2.2 Debt to Equity Ratio.....	55
3.7.2.3 Interest Coverage Ratio	56
3.7.3 Control Variables	57

3.7.3.1 Firm Size	57
3.7.4 Summary of Variables, their Measures and Expected Sign	58
3.8 Conceptual Frame Work.....	60
3.9 Chapter Summery	61
CHAPTER FOUR.....	62
Data Analysis and Presentation	62
4.1 Introduction	62
4.2 Descriptive Statistics	62
4.3 Correlation Analysis	66
4.4 Classical Linear Regression Model Assumption and Diagnostic Test.....	68
4.4.1 Test for average value of the error term is zero assumption	68
4.4.2 Test for homoscedasticity assumption	68
4.4.3 Test for absence of autocorrelation assumption	70
4.4.4 Test for normality assumption.....	71
4.4.5 Test for absence of series multicollinearity assumption	72
4.5 Model Selection; Fixed Effect versus Random Effect Models	74
4.6 Results of the Regression Analysis	75
4.7 In-Depth Interview Results.....	78
4.8 Discussions of the Regression Results	80
4.8.1 Debt to Asset Ratio	80
4.8.2 Debt to Equity Ratio.....	81
4.8.3 Interest Coverage Ratio	82
4.8.4 Firm Size	82
4.9 Chapter Summery	84
CHAPTER FIVE	85
Conclusion and Recommendation	85
5.1 Conclusion	85
5.2 Recommendations.....	86

5.2.1	To Commercial Banks.....	86
5.2.2	Future Research Directions	87
References.....		xi
Appendices.....		xviii

List of Tables	Pages
Table 3.1 The Sample Commercial Banks in Ethiopia.....	49
Table 3.2 Summery of Variables, their Measures and expected sign	59
Table 4.1 Descriptive Statistics of Dependent and Independent Variables	63
Table 4.2 Correlation Matri for Dependent and Independent Variables	66
Table 4.3 Heteroskedasticity Test whit's.....	69
Table 4.4 Heteroskedasticity Test Breusch-Pagan-Godfrey	69
Table 4.6 Correlation Matrix between Explanatory Variables	73
Table 4.7 Hausman test for Fixed, Random Effect.....	75
Table 4.8 Results of the fixed effect panel data regression analysis	76
Table 4.10 Summary of actual and expected signs of variables.....	84

List of Figures	Pages
Figure 3.1 Conceptual Framework	60
Figure 4.1 Rejection and non-rejection regions for Durbin-Watson Test	70
Figure 4.2 Graphical Test of Normality Using Histogram	72

List of Acronyms

BLUE	Best Linear Unbiased Estimators
CA	Capital Adequacy
CEO	Chief Executive Officer
CLRM	Classical Leaner Regression Model
COF	Cost of Fond
DW	Durbin-Watson test
EBIT	Earnings before Interest and Tax
E.C	Ethiopian Calendar
EVA	Economic Value Added
FSIZE	Firm Size
ICR	Interest Coverage ratio
ISHOPA	Imperial Savings and Home Ownership Public Association
IMF	International Monetary Fund
MFIs	Microfinance Institutions
MM	Modigliani and Miller
NBE	National Bank of Ethiopia
NIM	Net Interest Margin
OBS	Off-Balance Sheet
OLS	Ordinary Least Square
PER	Profit Earning Ratio
RAROC	Risk Adjusted Return on Capital
ROA	Return on Asset
ROE	Return on Equity
TDA	Debt to Asset ratio
TDE	Debt to Equity ratio

CHAPTER ONE

Introduction

This chapter introduces briefly about the research background, incorporating the results and problems from theories and past studies. The problem statement is given and research objectives have been clearly described and based on which hypotheses are formed. Apart from this, this chapter also identifies the significance, scope, limitations and structure of the research project.

1.1 Background of the Study

The present era is the era of intense competition and survival of the fittest is the slogan of the corporate world. In such a scenario decision making has emerged as one of the toughest tasks as it decides the fate of every firm. Therefore, managers have to take into consideration the cause effect relationship while making a particular decision. The managers of present corporate world have to follow systems approach in their decision making because a decision taken in isolation can bring a firm to the verge of a disaster, (Khalid A., et al 2013).

In the aspects of investment decision, capital structure decision is one of the major topics among scholars in finance. Capital structure decision in finance term means the way a firm finances assets across the mixture of debt, equity or hybrid securities. The concept is generally described as the combination of debt and equity that make the total capital of firms. The proportion of debt to equity is a strategic choice of corporate managers. Financing decision is the vital one since the

profitability of an enterprise is directly affected by such decision. Hence, proper care and attention need to be given while determining capital structure decision.

Moreover, capital structure decision is among the major issues in business firms both small and large. Most of the business firm's especially small ones are said to die or poorly perform due to different challenges facing managers or owners on the financing decisions. Firm's decision on the use of different forms of financing results into different capital structures which may have different impact on the firm performance. In one way or another, business activity must be financed. Without finance the companies are not support their fixed assets and working capital requirements. Also without finance business could not exist in the business world. Therefore, financing is playing a vital role in the business world, (Erasmus F. and Josephine J. 2014)

Financing a business operation mainly in start-up period by rising the own capital and/or borrowing fund. After operation began, the sources of finance are classified in to three namely: (1) new equity funding, (2) borrowing from bank and non-bank sources and (3) cash surplus from operating activities. By taking into account a company's particular circumstances, management should decide what the most appropriate mix of internal and external funding i.e. how the company should structure the necessary capital to finance its activities. This leads to capital structure decision, which affects the financial performance of the firm and it is one of the tough challenges that firms face, (Abor, 2005).

The issue of value creation for stakeholders of the firm as a result of the composition of the firm's financial mix may be traced to the seminal works of Modigliani and Miller (MM) in 1958. In MM's seminal paper, their argument was whether the firm uses equity or debt, the value of the firm does not change. Since then, many scholars have postulated on the composition of the financial structure and its influence on the value of the firms given rise to the trade-off theory, the pecking-order theory, agency theory and the signaling theory among several theories that have tried to explain the impact of the financing choices of firms on the value of the firm. The firm's financing structure as agreed comprises of debt and equity (Brigham and Gapenski, 1990). It is in line with the firm's basic financial resources are the streams of cash flows produced by its assets and operations and when the firm uses purely equity capital, the cash flows generated by the assets and operations of the firm belong entirely to the equity-holders.

On the other hand, when there is a mix of debt and equity, the cash flows generated by the firms' assets and operations are split into two, a relatively safe stream that goes to the debt holders and a more risky one that goes to the equity holders. In this way, no matter the financing option chosen by the firm, the risky cash flow stream that goes to the equity holders must be maximized. Value must be enhanced for them as the failure of the firm to do so will have a negative impact on the value of the firm. The firm as a going concern must continue to exist and at the same time generate a premium which motivates shareholders to continue to invest.

The roots of the modern capital structure theory can be assumed to be grown up on the seminal paper of Modigliani and Miller (1958) commonly known as the MM theory, dating back to 1958

as one of the most influential papers in the economics literature. In this seminal paper explaining role of debt in firms' performance is one of the primary objectives of contemporary researches for more than fifty years Modigliani and Miller (1958). However, this role remains a questionable subject which attracts the attention of many researchers as Berger and Udell (2006). Indeed, researchers analyze the debt ratio and try to determine whether an optimal debt ratio exists or not. Optimal debt ratio is generally defined as the one which minimizes the cost of capital for the company, while maximizing the value of company. In other words, the optimal debt ratio is the one which maximizes the profitability of company.

Besides, the disagreement between researchers can be observed in theoretical aspect of literature. There are three essential theories which highlight the influence of debt on corporate profitability, namely: signaling theory, the agency costs theory and tax theory. According to signaling theory, the debt financing in the presence of asymmetric information, should be correlated positively to profitability. In the other hand, the agency costs theory, there are two contradictory effects of debt on profitability, firstly it is positive in the case of agency costs of equity between shareholders and managers, secondly its effect is negative, resulting from the agency costs of debt between shareholders and lenders. Finally, the influence of taxation is complex and difficult to predict because it depends on the principles of tax deductibility of interest, income tax and non-debt tax shield. The disagreement between researchers on the effect of debt on profitability is not only in theoretical aspect but also in empirically studies. Several factors may reveal reasons for the contradiction of results in empirical studies. First, these empirical studies focus on different types of sample (countries, sectors, companies and periods). Furthermore, researchers

have used different measures of profitability as a dependent variable and various debt ratios as independent variable.

The impact of debt financing on profitability is considerable importance to all firms. Banks are especially sensitive to changes in financial leverage due to their low level of equity capital to total assets. Banks play a key role in the world economy by improving economic efficiency by directing funds from resource surplus unit to those with better productive investment opportunities. Banks also play key role in trade and payment system by significantly reducing transaction costs and increasing convenience. They are the main intermediaries between those with excess money (depositors) and those individuals and businesses with viable projects but requiring money for their investment (creditors). Banks have at least the following functions: lending money, depositing others' money, transferring money locally or globally and working as paying agent. Moreover, the Banking sector acts as the life blood of economic development by providing them with a major source of finance.

Banking activities in Ethiopia are recently indicates a rapid growth in terms of geographical coverage and number of financial products offered. Moreover, also play big role in the country financial sector and economic development. According to National Bank of Ethiopia (NBE) annual report, eighteen commercial banks are engaged in the commercial banking activities as of June 2013.

In Ethiopian banking sector, different studies are conducted in the area of determinates of capital structure and financial performance. The studies included leverages as one determinant of capital structure as dependent variable or as independent variable. So far, the effect of debt financing on profitability of commercial banks in Ethiopia is not studied directly. According to Kibrom M. (2010), debt financing in the capital structure is important variables that affect the performance of banks due to use more debt financing than equity financing. Therefore, the aim of this research is to find out the effect of debt financing on profitability of commercial banks in Ethiopia over the period of 2002-2013. This helps the banks investors and managers to give due emphasis on their financing decision to enhance their bank performance. Moreover, current work is very important because debt is a risky choice whose consequences on the corporate profitability can be considerable (e.g. the risk of bankruptcy and its consequences for the stakeholders). So I try to find out the effect of debt financing on profitability of Commercial Banks in Ethiopia.

1.2 Statement of the Problem

Financing decision is the vital decision in the profitability of an enterprise and also the performance is directly affected by such decision. The successful selection and use of fund is one of the key elements of the firms' financial strategy. Hence, proper care and attention need to be given for determining financial decision. Moreover, financing decision is among the major issues in business firms both small and large. Most of the business firm's especially small ones are said to die or poorly perform due to different challenges facing managers or owners on the financing

decisions. Firm's decision on the use of different forms of financing results into different capital structures which may have different impact on the firm performance.

However, financing decision in commercial banks is not very similar to other business firms due to the nature of operations of financial institutions. Although commercial banks are able to raise finance using equity and debts, the fact that they mobilize deposits which can act as source of finance, make their capital structure unique as compared to other business firm, (Abdabi & Abu-Rub, 2012); (Taani, 2013). To what extent does capital structure decision in commercial bank affect performance and in which direction, is among the major concern of studies in commercial banks capital structure. Different studies have tried to examine the application of different capital structure theories in banking sector and other financial institutions and their results are diverse for example, Amanuel (2011), Bayeh (2011), Shibru (2012).

Operationally, banks are financial intermediaries which mobilize funds from surplus units and channel of them to deficit units in the society. With such view, banks mobilize funds in terms of deposits which can be used to finance different projects and to provide loans apart from commercial debts financing or equity shares financing. Similarly, due to the nature of the operation, banks are subject to more unique set of laws, regulations and supervisory issues locally and internationally. The uniqueness of bank capital structure is also contributed with fact that bank debts includes deposits from smaller depositors who may not have any motive or expertise to monitor bank operation which limits the disciplinary roles as suggested by the trade-off theory (Dewatripont and Tirole, 1994).

Among the theoretical arguments on banks' capital structure versus performance is that bank with high leverage have greater lender scrutiny which result into high screening, monitoring, efficiency and performance. Likewise, the amount of deposits mobilized in most banks are lower than the amount of loan required by clients hence banks use debts and equity to finance such need as well as investing in other chosen projects, (Yafeh and Yosha, 2003). Hence, banks should have high leveraged as compared to other non-financial institutions to enable them serve more clients' needs, (Inderst and Mueller, 2008), (Flannery, 1994). Although banks need enough capital to finance its operation, most managers often seek to hold less capital due to cost associated with holding capital, as a results most of them hold capital as per requirements of laws and regulation on minimum capital reserves.

In Ethiopia, commercial banks are the major player of the country financial sector. Commercial banks recently indicate a rapid growth in terms of geographical coverage and number of financial products offered. There are eighteen commercial banks in Ethiopia as per National Bank of Ethiopia annual report of (2013). Although the banking sector has been growing faster in the country after liberalization of financial institutions, but still most of the population in the country, especially in rural areas are not served with formal banking services hence use informal banking services. As stated in Birritu (2015, pp 17), the Commercial bank branch (per 100,000 adults) ratio in 2012 was 2.94 which is lower than sub-Saharan Africa, 3.71 (World Bank, 2012). In this evidence, till now financial access in Ethiopia is quite limited compared to the financing need of the economy. According to Tsegabirhan (2010) the Ethiopian banking industry is underfinanced itself due to limited capital base relative to the credit demand of the economy. So, the Ethiopian

banking sector in its current capacity cannot be expected to finance major physical infrastructure and credit demand. According to the above issue, this study tries to find out the effect of debt financing on profitability of the commercial banks in Ethiopia is the main concern of the researcher. The essence is to assess the overall effect of debt financing on the profitability of commercial banks.

1.3 Objective of the Study

The general objective of this study is to find out the effect of debt financing on profitability of commercial banks in Ethiopia.

1.3.1 Specific Objectives of the Study

This study attempted to achieve the following specific objectives:

1. To examine the effect of debt to asset ratio on Return on Assets of commercial banks in Ethiopia.
2. To determine whether debt to equity ratio have any effect on Return on Assets of commercial banks in Ethiopia.
3. To establish if there is any effect of interest coverage ratio on Return on Assets of commercial banks in Ethiopia.

1.4 Research Hypothesis

Based on theories and empirical studies develops the following hypothesis to find out the effect of debt financing on profitability given in the study, the following hypotheses are developed for testing.

H₁:- There is a significant positive relationship between debt to asset ratio and profitability.

H₂:- There is a significant negative relationship between debt to equity ratio and profitability.

H₃:- There is a significant positive relationship between interest coverage ratio and profitability.

1.5 Significance of the Study

This study that deals with the effect of debt financing on profitability of commercial banks in Ethiopia is beneficial for different stakeholders such as for commercial banks, future researchers and concerned bodies. For bank managers, this study provides basic information about the effect of debt financing on profitability and understanding on the activities that enhance their banks performance. For future researchers, provide basic information for further study in the sector by developing new hypotheses and design for new variables by using other debt ratio measurements that are not included in this research,. Finally, the finding of the study is used as an input for the concerned bodies (regulator and policy makers) to forecast the overall health and soundness of the commercial banks in Ethiopia.

1.6 Scope and Limitations of the Study

The scope of this study was limited to the effect of debt financing on profitability of sample commercial banks over the period 2002-2013. Even if there are so many factors that affects commercial banks profitability, but this study is limited to only two factors such as, debt to asset ratio, debt to equity ratio and interest coverage ratio to measure the level of debt on capital structure of the institution and firm size was used as a control variable to ensure the accuracy of the results of the regression model.

From the entire banking sector those operating in Ethiopia, this study covers particularly the activities of eight commercial banks as a sample that are registered by NBE and involved in commercial banking activities. Even if currently eighteen commercial banks are operating in Ethiopia, this study includes eight leading commercial banks that are registered by NBE before twelve years ago: namely, Commercial Bank of Ethiopia, Construction and Business Bank, Dashen Bank, Awash international Bank, Bank of Abyssinia, Wegagen Bank, United Bank, and Nib International Bank. There is nothing a study that can be made without constraints. Therefore, there are the following limitation were affect the research significance of expected out comes; this limitation is data unavailability (for example, lack of audited data for financial year 2014).

1.7 Structure of the Study

This study consists of five chapters. The first chapter presents about background of the study, statement of the problem, objective of the study, research hypotheses, and significance of the study, scope of the study and limitations of the study. The second chapter presents review of the related literature. The third chapter focuses on research methodology. The fourth chapter contains data analysis and interpretation, and whereas, the last chapter deals about conclusion and recommendation.

CHAPTER TWO

Review of the Related Literature

2.1 Introduction

In the previous chapter discusses about background of the study, statement of the problem, objectives and hypothesis of the study have been stated. Apart from this, the previous chapter also identifies the significance, scope, limitations and structure of the research project.

This chapter presents the review of the related literature and knowledge gap. A literature review is the backbone of research; it is connected to the research topic and the appropriate research methodology. It is essential for researchers and reader by creating a concrete frame of reference in mind before continuing their search journey. In this chapter, theoretical orientation, overview of commercial banks in Ethiopia and previous studies related to the topic are reviewed. The chapter begins with theoretical framework on capital structure theories to inform the study further. In addition, the researcher discusses various empirical studies done in the same field. Finally, the chapter summery and knowledge gap are stated.

2.2 Theoretical Framework

A theoretical framework is group of related ideas that provides guidance to a research project or business undertaking. It allows researchers to test the theory and describe the results. In this study the three most useful theories were discussed such as Trade-off theory, Pecking order theory and Market timing theory.

2.2.1 Trade-Off Theory

It states that there is an advantage to financing with debt (namely, the tax benefit of debts) and that there is a cost of financing with debt (the bankruptcy costs of debt). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. Empirically, this theory may explain differences in debt to equity ratios between industries, but it doesn't explain differences within the same industry. Implication of this theory is to explain the fact that corporations usually are financed partly with debt and partly with equity. It states that there is an advantage to financing with debt, the tax benefits of debt and there is a cost of financing with debt, the costs of financial distress including bankruptcy costs of debt and non-bankruptcy costs (e.g. staff leaving, suppliers demanding disadvantageous payment terms, bondholder/stockholder infighting, etc.). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing (Linus M. 2013). In addition, Trading-off theory assumes that large firms are more diversified, have lower risk, better reputation, more stable cash flows and fewer hazards to be liquidated. This gives large firms easier access to the capital markets with negligible debt costs. Thus these firms are stronger to face bankruptcy and financial distress (Mohammed G. 2014).

2.2.2 Pecking Order Theory

It states that companies prioritize their sources of financing (from internal financing to equity) according to the law of least effort, or of least resistance, preferring to raise equity as a financing means “of last resort”. Hence: internal debt is used first; when that is depleted, then debt is issued; and when it is no longer sensible to issue any more debt, equity is issued. This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required (equity would mean issuing shares which meant 'bringing external ownership' into the company. Thus, the form of debt a firm chooses can act as a signal of its need for external finance. The implication of this theory is that equity is a less preferred means to raise capital because when managers (who are assumed to know better about true condition of the firm than investors) issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this over-valuation. As a result, investors will place a lower value to the new equity issuance. The pecking order theory of capital structure is among the most influential theories of corporate leverage (Linus M. 2013). According to Myers (1984), due to adverse selection, firms prefer internal to external financial. When outside funds are necessary, firms prefer debt to equity because of lower information costs associated with debt issues. Equity is rarely issued. These ideas were refined into a key testable prediction.

2.2.3 Market Timing Theory

The theory perceives that managers issue securities depending on the time varying costs of relative equity and debt and thus issuance decisions have a long term effect on capital structure

because the observed capital structure at any particular date is the outcome of prior issuance decision thus firms prefer to issue equity when the relative cost is low and prefer to issue debt when equity cost is high (Linus M. 2013).

Since the promised payments to bondholders are fixed, stockholders are entitled to what is left over after the fixed payments; stock prices are more sensitive than bond prices to any proprietary information about the firm's future performance. If management has favorable information that is not yet reflected in market prices, the release of such information will cause a larger increase in stock than in bond prices, and so the current stock price will appear more undervalued to managers than current bond prices (Molyneux and Thornton 1992). Implication of this theory is that for a firm to avoid diluting the value of existing stockholders claims, the companies that are profitable uses for more capital but believe their shares not to be undervalued will generally choose to issue debt rather than equity. Conversely, managers who think their companies are overvalued are more likely to issue equity and, what amounts to the same thing, to make stock-for-stock acquisitions. The importance for management is to recognize here is that most companies issuing new equity those that are undervalued as well as those that are overvalued should expect a drop in their stock prices when they announce the offering.

2.3 Debt Financing

According to Bichsel & Blum, (2005), debt financing takes many forms. The essence of debt is that the borrower must repay the funds along with agreed-upon service charges such as interest and loan origination fees. If the money is not repaid as promised, the lender can start collection

proceedings. This process can become very uncomfortable for the entrepreneur, who could stand to lose the business and any non-business assets pledged to secure the loan. A long-term loan usually has a payback period between one to five years. Depending upon the deal negotiated, these loans are normally secured (collateralized by assets) and guaranteed by the entrepreneurs. Rates and terms on long term loans vary greatly based on the lending institution's policies and the business's age and financial status.

The capital requirement is a bank regulation, which sets a framework on how banks and depository institutions must handle their capital. The categorization of assets and capital is highly standardized so that it can be risk weighted. Internationally, the Basel Committee on Banking Supervision housed at the Bank for International Settlements influence each country's banking capital requirements. In 1988, the Committee decided to introduce a capital measurement system commonly referred to as the Basel Accord. A significantly more complex capital adequacy framework commonly known as Basel II has replaced this framework. After 2012, Basel III will replace it. Capital adequacy (CA) has been the focus of many studies and regulator as it is considered to be one of the main drivers of any financial institution's profitability (Bourke, 1989); (Berger and Bonaccorsi 2006); (Navapan and Tripe, 2003); (White and Morrison, 2001). In contrast, other studies argue that in a world of perfect financial markets, capital structure and hence capital regulation is irrelevant (Modigliani and Miller, 1958). However, White and (Morrison 2001) posited that the regulator ensures that banks have enough of their own capital at stake.

2.4 Firm Profitability

Profitability is the primary goal of all business ventures. Without profitability the business will not survive in the long-run. So measuring current and past profitability is very important. Profitability is measured with income and expenses. Income is generated from the activities of the business. A business that is highly profitable has the ability to reward its owners with a large return on the investment (Brealey and Myers 2003)).

A profitable banking sector is better able to withstand negative shocks and contribute to the stability of the financial system. Important changes in the operating environment particularly credit risk is likely to affect bank profitability. Empirical analysis finds that both bank specific as well as macroeconomic factors are important determinants in the profitability of banks, (Westerfield, 2008). (Brealey and Myers 2003) argue that there are various important measures in determining profitability of an organization. These include; Return on Assets (ROA) and Return on Equity (ROE). In 1972 David Cole introduced a procedure for evaluating bank performance via ratio analysis (MacDonald and Koch, 2006). This procedure enables an analyst to evaluate the source and magnitude of banks' profits relative to selected risks taken. David Cole employed return on equity model to analyze bank profitability and identified specific measures of credit risk, liquidity risk, interest rate risk, operational risk and capital risk (MacDonald and Koch, 2006).

2.5 Relationship between Debt Financing and Firm Profitability

Explaining role of debt in firms' profitability is one of the primary objectives of contemporary researches for more than fifty years (Modigliani and Miller 1958). However, this role remains a questionable subject which attracts the attention of many researchers as (Margaritis and Psillaki 2012) and (Kebewar 2012).

2.6 Measures of Debt Financing and Firm Profitability

The next sections were discusses about the measurements of debt and profitability ratio was presented.

2.6.1 Measures of Debt Financing

It's measured by the following debt ratios; cost of funds ratio which measures the average cost of the banks borrowed funds. This is one of the most important input costs for a financial institution, because a lower cost will generate better returns when the funds are deployed in the form of short-term and long-term loans to borrowers. The spread between the cost of funds and the interest rate charged to their borrowers represents one of the main sources of profit for most financial institutions.

When comparing banks, cost of funds ratio shows weather they have gained access to low cost funding sources or not, such as savings. Banks that can mobilize savings often have a relatively low cost of funds, but this advantage is to some extent offset by higher administrative costs of

mobilizing savings. Costs of funds (COF) are calculated using the following formula: (Lee J, (2009).

$$COF = \frac{\text{Interests and fees paid on loans excluding payments on savings}}{\text{Average outstanding loans from creditors}}$$

The capitalization ratio compares total debt to total capitalization (capital structure). The capitalization ratio reflects the extent to which a company is operating on its equity. It tells the investors about the extent to which the company is using its equity to support its operations and growth. This ratio helps in the assessment of risk. The companies with high capitalization ratio are considered to be risky because they are at a risk of insolvency if they fail to repay their debt on time. Companies with a high capitalization ratio may also find it difficult to get more loans in the future. A high capitalization ratio is not always bad; however, higher financial leverage can increase the return on a shareholder's investment because usually there is tax advantages associated with the borrowings. The capitalization ratio is calculated by dividing the long-term debt by the total shareholder's equity and long-term debt, (Silva 2008). This can be expressed as:

$$\text{Capitalization Ratio} = \frac{\text{Long-Term Debt}}{\text{Long-Term Debt} + \text{Shareholder's Equity}}$$

The capitalization ratio is a very meaningful debt ratio because it gives an important insight into the use of financial leverage by a company. It focuses on the relationship of long-term debt as a component of the company's total capital base. The total capital is the capital raised by the shareholders and the lenders.

The company's capitalization (it should not be confused with the market capitalization) explains the make-up of the long-term capital of the company. Capitalization is also known as capital

structure. A company's long term capital consists of long-term borrowings and shareholder's equity. There is no standard or benchmark for setting the right or optimum amount of debt. Leverage will depend on the type of industry, line of business and the stage of development of the company (and its products). However, it is commonly understood that low debt and high equity levels in the capitalization ratio indicates good quality of investment. In finance, equity multiplier is defined as a measure of financial leverage. Like to all debt management ratios, the equity multiplier is a method of evaluating a company's ability to use its debt for financing its assets.

The equity multiplier is also referred to as the leverage ratio or the financial leverage ratio. As explained by (Silva 2008), the equity multiplier shows a company's total assets per shilling of stockholders' equity. The higher the equity multiplier, the higher is the financial leverage, which indicates that the company relies more on debt to finance its assets. The equity multiplier is calculated by dividing total assets by the common stockholder's equity. The common formula used for calculating equity multiplier is:

$$\text{Equity Multiplier} = \text{Total Assets} / \text{Stockholder's Equity}$$

The debt to equity ratio is another leverage ratio that compares a company's total liability to its total shareholders' equity. This is a measurement of how much suppliers, lenders, creditors and obligors have committed to the company vs. what shareholders have committed. To a large degree, the debt to equity ratio provides another vantage point on a company's leverage position, in this case, comparing total liabilities to shareholder's equity, as opposed to total assets in the debt ratio. Similar to debt to asset ratio, a lower the percentage means that a company is using

less leverage and has a stronger equity position. The debt to equity ratio is a common measure used to assess a firm's leverage, or in other words the extent to which it relies on debt as a source of financing. Debt to equity ratio is calculated using the following formula:

$$\text{Debt to equity ratio} = \text{Total debt} / \text{Total equity}$$

Another measure of leverage is the debt to asset ratio it compares a company total debt to its total asset, which is used to gain a general idea as to the amount of leverage being used by a company.

A low percentage means that the company is less dependent on leverage, i.e. money borrowed from and/or owned to others. The lower the percentage, the less leverage a company is using and the stronger its equity position. In general, the higher ratio, the more risk that company is considered to have taken on. Debt to asset ratio is calculated using the following formula:

$$\text{Debt to Asset Ratio} = \text{Total Liabilities} / \text{Total Assets}$$

Interest coverage ratio is one of the other meaning full measure of debt ratio it determine how easily a company can pay interest expenses on outstanding debt. The lower the ratio, the more the company is burdened by debt expense. When a company's interest coverage ratio is only 1.5 or lower, its ability to meet interest expenses may be questionable. Interest coverage ratio is calculated using the following formula:

$$\text{Interest Coverage Ratio} = \text{Earnings before Interest and Taxes} / \text{Interest Expense}$$

Pringle (1971) observed that an undercapitalized bank will find itself subjected to high levels of short-term borrowing at potentially high excess costs during periods of tight money. Flamini et al. (2009) postulated that bank returns are affected by macroeconomic variables, suggesting that macroeconomic policies that promote low inflation and stable output growth do boost credit expansion.

2.6.2 Profitability Measure in Banks

The two major methods of measurements of profitability are: the traditional accounting based measurements and economic measurements of profitability. In economic measurements of profitability the two common methods are: Risk-Adjusted Return on Capital (RAROC) and economic value added (EVA), which are the economic based metrics of economic profits. Following Kimball study as cited in (Ommeren, 2011) these metrics are take into account risks and opportunity costs of equity when measuring the profitability.

But related to Ommeren (2011) study, although, numerous banks disclose RAROC and EVA economic profit metrics, academic literature does not use these measures to analyze banks' profitability, because the disclosed parameters are subject to internal policies and assessments which cannot be generalized or validated. So, this thesis attempts to discuss more on accounting measurements of profitability.

The traditional accounting based measures are easy proxies of banks' profitability, obtainable from public disclosed information. As concluded by extensive Prior academic researches there are different accounting based measures for banks' profitability. For instance, Return on Equity (ROE) used by (Goddard et al, 2004), Return on Assets (ROA) used by (Flamini et al., 2009, return on equity and Return on Assets (ROA) used by (Athanasoglou et al, 2006), Ommeren (2011) and Demirguc-Kunt and Huizinga (1999) uses as proxy for banks' profitability.

According to their investigation those accounting based measurements of bank profitability are nearer to accurate and proxies to measures profitability, even if, they have their own drawbacks. Study examined by Flamini et al. (2009) proved that return on assets (ROA) as a measure of bank profitability. It defined as the banks' after tax profit over total assets. In principle, ROA reflects the ability of a bank's management to generate profits from the bank's assets. It shows the profit earned per dollar of assets and most importantly, reflects the management's ability to utilize the bank's financial and real investment resources to generate profits, although it may be biased due to off-balance-sheet activities. For any bank, ROA depends on the bank's policy decisions as well as uncontrollable factors relating to the economy and government regulations. Many regulators believe return on assets is the best measure of bank efficiency and it emerges as the key ratio for the evaluation of bank profitability (IMF, 2002) cited in (Flamini et al. 2009).

On the other hand, according to (Ommeren 2011) ROE reflects how effectively a bank management is using shareholders' funds. ROE indicates the return to shareholders on their equity and equals net income divided by total equity capital or ROA times the total equity ratio-to-asset. The latter is often referring to as the bank's equity multiplier, which measures financial leverage. Banks with lower leverage (higher equity) will generally report higher ROA, but lower ROE. It reflects how effectively a bank management is using shareholders' funds. A bank's ROE is affected by its ROA as well as by the bank's degree of financial leverage (equity/ asset). Since returns on assets tend to be lower for financial intermediaries, most banks utilize financial leverage heavily to increase return on equity to a competitive level.

According to (Athanasoglou et al, 2006), many scholars remind that ROA is the key ratio for the evaluation of bank profitability given that ROA is not distorted by high equity multipliers, while ROE disregards the risks associated with high financial leverage. In this respect, it is rarely to find the paper utilizes ROE as a single measure of profitability. Most of the time papers utilize ROE for checking the consistency with ROA.

The rate of return on assets (ROA) is the most comprehensive accounting measure of a bank's overall performance. Because of this, the majority of studies employed ROA as profitability measure, for instance, (Flamini et al 2009)). Many Empirical researches proposed to use the net interest margin to overcome the off balance sheet (OBS) bias. (Demirguc-Kunt and Huizinga 1999), use the net interest margin (NIM) as proxy for banks' profitability. The net interest margin can be calculated as interest income (income from loans and securities) minus interest expense (the interest the bank must pay to its depositors and creditors from whom it has borrowed funds) expressed as a percentage of earning assets (i.e. earning assets are the sum of all banks assets that earn interest, including loans and investment in fixed income securities).

In line with earlier studies that examined the determinants of banks' profits this research rely on one commonly used measures of profitability by using the traditional accounting method. That is the return on assets (ROA), calculated as net profit after tax divided by total assets. This is probably the most important measure used in comparing the operating performance of banks, and uses the average value in order to control for differences that occur in assets during the fiscal year. The analysis towards determinants of banks' profitability uses only ROA and not ROE

since (Gerhard, 2002); suggest that the results by using either ROE or ROA are comparable because the yearly variation in the numerator (net income) is greater than the yearly variation in the denominator (assets or equity).

2.6.2.1 Return on Asset

ROA is also another major ratio that indicates the profitability of a bank. It is a ratio of Income to its total asset. It measures the ability of the bank management to generate income by utilizing company assets at their disposal. In other words, it shows how efficiently the resources of the company are used to generate the income. It further indicates the efficiency of the management of a company in generating net income from all the resources of the institution. It state that a higher ROA shows that the company is more efficient in using its resources (Flamini et al 2009).

2.7 Related Empirical Studies

In this section the empirical studies reviewed the relationship between debt financing and profitability was presented.

In the seminal article, presented by (MM's 1958) irrelevance theory, they argued that capital structure is unrelated to firm's value. In the presence of corporate income tax and the cost of capital in (MM's 1963) they argued that the market value of the firm is positively related to the amount of long term debt used in its capital structure.

Wipperfurth (1966) investigated the relationship between financial leverage and firm value on some industries which marked on high degree in difference characteristics from where growth and demand. The study used debt to equity ratio as financial leverage indicator and earnings to market value of common stock as performance indicator. Results revealed that leverage effect positively on firm value and this traditional evidence which said that shareholders wealth can enhance by using outside financing.

In a seminal paper Myers (1977) suggests that firms that employ shorter-maturity debt are likely to have more growth options in their investment opportunities. Debt that matures before execution of investment options cannot lead to sub optimal investment decisions. There could also be a conflict between stockholders and bondholders that might lead to an underinvestment problem if long term debt is issued. Managers acting on behalf of their stockholders might reject projects with positive net present values because risky debt absorbs a portion of stockholders' benefits. Given that underinvestment deteriorates profits in the long run, such behavior implies a negative relationship between liability maturity and firm performance. The signaling hypothesis views issuance of short-term debt as a positive signal of the firm's low credit risk. Many empirical analyses have dealt with capital structure, corporate governance and firm value, but most of them have concentrated on only one of the equity. Thus only one aspect of the relation has been taken into account and the presence of reciprocal causations and complementarily between capital structure and other governance instruments have not been considered important in determining firm value (Heinrich 2000).

According to Ferri and Jones, (1979); Titman & Wessels, (1998) the large firms are more diversified and use more debt in their financing structure because financial markets are more accessible to them compared to small firms and face friendly interest rates when borrowing. In this study, the natural logarithm of market capitalization is used as a proxy for size and a positive relationship between size and short-term debt is hypothesized.

Bourke (1989) found that debt to asset ratios are positively related to profitability under the assumption that well capitalized banks may enjoy access to cheaper and less risky sources of funds.

Capon et al. (1990) conducted a meta- analysis from 320 published studies related financial performance, and found a positive relationship between usage of leverage levels and financial performance.

Holz P. (2002) found that capital structure (debt ratio) related positively with the firm performance, the result ascribes to the willing of firms managers to finance their projects by borrowing and then use theses money optimally to maximize the performance. Accordingly to this result, if the banks want to lend money, it shall study the feasibility of projects that want to finance accurately before offer loans until that the firms can achieve required returns to meet their obligations.

The study by Abai (2003) investigated on the determinants of corporate debt maturity structure for companies quoted at the Nairobi Security Exchange (NSE). He attempted to reconcile the diverging evidence on the motives for equity financing and determinants of stock price reactions to equity financing announcements. He analyzed the impact of issuer characteristics on the size of the wealth effect associated with the announcement of equity financing offers. He again split the issues according to the previously mentioned delta measure into more equity- and more debt-like issues.

According to Atanasova and Wilson, (2004) examined 78 financially constrained firms Using firm-level data from 1989 to 2009 in the United Kingdom, where financing here was defined as access to internally generated funds, bank lending and accounts payable (or trade credit), using a disequilibrium model of lending. Their empirical analysis suggests that firm total assets, as a proxy for available collateral, is an important determinant of bank loan availability. With respect to monetary policy factors, they found that tight monetary conditions lead to increased demand for bank financing, but a reduced supply. In addition, they found that although trade credit was the least desirable funding option, firms tend to have a higher rate of substitution between loans and trade credit than between loans and internally generated funds. They conclude that trade credit plays a special role in alleviating credit rationing since firms switch from bank credit to trade credit when faced with borrowing constraints.

Abor (2005) has reported a significantly positive relationship between the ratios of short term debt to total assets & profitability but a negative association between the ratio of long term debt to total assets and profitability.

Berger, A. and Bonaccorsi di Patti, E., (2006), found a significantly positive association between profitability and debt to asset ratio in a study designed to investigate the relationship between debt to asset ratio and profitability. A negative effect of debt on profitability was confirmed by Majumdar and Chhibber (1999).

Bougheas et al. (2006) using data from 136 U.K. manufacturing firms over the period from 1989 to 1999 used measures of external financing were the ratio of a firm's short term debt to total external debt, which they assume is a measure of bank financing, and the ratio of a firm's total external debt to its total liabilities, which more closely tracks overall access to external financing. The authors found that several firm-specific characteristics, such as size, collateral, riskiness, age and profitability were important determinants of access to short-term and long-term credit. In addition, they found monetary policy conditions had a greater impact on smaller, riskier and younger firms.

A study done by Munene and Hebid (2006), using a sample of 96 financially distressed companies and 96 healthy companies find that large shareholder ownership, state ownership, and the proportion of independent directors are negatively associated with the probability of distress. Additionally, managerial agency costs are badly detrimental to a company's financial status.

However, the degree of balanced ownership, managerial ownership, board size, and CEO duality do not significantly affect the probability of default. Furthermore, they test the influence of state-controlling right by sub-grouping the sample into state-controlled and non-state-controlled companies. The results indicate that corporate-governance attributes act differently on the status of financial distress between the two sub-samples.

Dimitris, M. & Maria, P. (2008) investigated the relationship between capital structure, ownership structure and firm performance across different industries using a sample of French manufacturing firms. They found that a negative relationship between past profitability and leverage and there will be a positive relation between profitability and leverage.

Onaolapo and Kajola (2010) found a significantly negative relationship between profitability and firm size. On the other hand, Zeitun and Tian (2007), found a significantly positive relationship between profitability and firm size.

Margraves and Psillaki (2007) found that financial leverage affect positively on the expected performance, where they explained this result to that low growth firms attempt to depend on the borrowing for utilizing the expected growth opportunities and investing borrowing money at the profitable projects, therefore it will increase the financial leverage (debt to asset ratio) correlated positively and significantly with firm performance (added value, labor and capital).

Lee (2009), and Vijayakumar and Tamizhselvan (2010), found that a positive relationship between firm size and profitability. On the other hand, a negative relationship between firm size and profitability was found by Amaton and Burson (2007).

Velnampy and Nimalathasan (2010) studied the relationship between firm size and profitability of all the branches of Bank of Ceylon and Commercial Bank in Sri Lanka over the period of 10 years from 1997 to 2006. They observed that there was a positive relationship between firm size and profitability in Commercial Bank, but there was no relationship between firm size and profitability in Bank of Ceylon.

Aloy N. (2012), in his study on capital structure and profitability in Srilankan banks; he argued that large corporations are more profitable due to the great increasing in their proportion of wealth and income. They found that corporations increased their wealth by reinvesting its earnings, by raising new capital through the sale of securities in the public markets, and by acquiring control of other corporations through purchase or exchange of securities. In that century, they also found that industry by industry has increased its wealth, as what they called as “corporate sway”. However, they revealed that most of the corporations have growth through funding their new capital by issuing securities in the public markets. They witnessed that the tendency of the dispersion will be higher when the size of the corporation is larger. Factor that contributed to the increment of the number of stockholders during that time was the ownership offered to customers and employees. As such, dispersion has been seen as a continuous process.

According to Kebewar (2012) found a significantly positive relationship between profitability and debt to asset ratios in a study designed to investigate the relationship. A negative effect of debt to asset ratio on profitability was confirmed by Onaolapo and Kajola (2012).

Khalid et al (2013) studied the impact of capital structure on profitability of listed companies in India over the period of five years from 2008 to 2012. They observed that there was a positive and statistically significance relationship between debt to asset ratio and interest coverage ratio on selected automobile industry, but there was negative relationship between debt to equity ratio and firms profitability on selected Indian automobile industry.

Muhammad W. (2013) investigated the effect of leverage on firm performance: evidence from the Karachi stock exchange. This study tested a sample of 400 firm-year among companies listed in the Karachi Stock Exchange from the years 2007 to 2012. In this study, used dependent variables of return on asset ratio (ROA) and return on equity ratio (ROE) used to measure the performance of companies while independent variable, the debt ratio (DR) as capital structure. Also is used from independent variables of asset turn over, firm size, firm age, and asset tangibility and growth opportunity as control variable. Results suggest that there is significant negative relationship between debt ratio and financial performance of companies, but as significant positive relationship asset turnover, firm size, and asset tangibility ratio and growth opportunity.

Enugu S. and Amorji (2014) found a significantly negative relationship between profitability and debt to equity ratio while the interest coverage ratio has a significantly positive relationship between profitability.

According to Enekwe, et al (2014), the effect of financial leverage on financial performance: evidence of Quoted pharmaceutical companies in Nigeria over the period of 12 years from 2001-2012 for the three selected companies. This work employed three financial leverage ratio as independent variables such as debt to asset ratio (DAR), debt to equity ratio (DER) and interest coverage ratio (ICR) in determining their effect on financial performance for return on asset (ROA) as a dependent variable. The result of the analysis showed that debt to asset ratio (DAR) and debt to equity ratio (DER) have negative relationship with return on asset (ROA) while interest coverage ratio (ICR) has positive relationship with return on asset (ROA).

2.8 Related Empirical Studies in Ethiopia

In the case of Ethiopia, there have been a few studies conducted on determinants of capital structure on profitability. These studies include Ashenafi (2005), Amanuel (2011), Bayeh (2011), Shibru (2012), Yuvaraj S. and Abate G (2013) approached the question of capital structure using data from medium firms in Ethiopia.

Ashenafi (2005) took variables like non-debt tax shield, economic risk, age of firms, 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 show 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. He 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 growth, profitability, and age of the firm were found to have significant influence on capital structure of Ethiopian insurance companies. However, tangibility and size of the firm were found to have insignificant influence on capital structure of Ethiopian insurance companies.

Shibru (2012) who is investigates the relationship between leverage and firm specific (profitability, tangibility, growth, risk, size and liquidity) determinants of capital structure decision, and the theories of capital structure that can explain the capital structure of banks in Ethiopia. In order to investigate these issues a mixed method research approach (quantitative and qualitative) is utilized, by combining documentary analysis and in-depth interviews. More specifically, the study uses twelve years (2000 - 2011) data for eight banks in Ethiopia. The findings show that profitability, size, tangibility and liquidity of the banks are important determinants of capital structure of banks in Ethiopia. However, growth and risk of banks are found to have no statistically significant impact on the capital structure of banks in Ethiopia. In addition, the results of the analysis indicate that pecking order theory is relevant theory in Ethiopian banking industry, whereas there are little evidence to support static trade-off theory and the agency cost theory. Therefore, banks should consider profitability, size, liquidity and tangibility when they determine their optimum capital structure.

Yuvaraj S. and Abate G. (2013) examine the performance of insurance companies in Ethiopia. This paper examined the effects of firm specific factors (age of company, size of company,

volume of capital, leverage ratio, liquidity ratio, growth and tangibility of assets) on profitability proxies by Return on Assets. Profitability is dependent variable while age of company, size of company, volume of capital, leverage, liquidity ratio, growth and tangibility of assets are independent variables. The sample in this study includes nine of the listed insurance companies for nine years 2003-2011. Secondary data obtained from the financial statements (Balance sheet and Profit/Loss account) of insurance companies, financial publications of National Bank of Ethiopia are analyzed. From the regression results; growth, leverage, volume of capital, size, and liquidity are identified as most important determinant factors of profitability hence growth, size, and volume of capital are positively related. In contrast, liquidity ratio and leverage ratio are negatively but significantly related with profitability. The age of companies and tangibility of assets are not significantly related with profitability.

Those the above researches were focus on relationship between capital structure determinants (i.e. firm specific and external determinates) and profitability. Moreover, the relationship between capital structure and profitability has been tested indifferent studies for different companies. Furthermore, in developed and developing countries were conducted the capital structure and the impact on performance have been investigated for many years, but researchers have found different results with different contexts. Accordingly, there is no specific result, which can be generalized on the extent of the relationship between capital structure and firm performance. Thus, there is a continual for new research in different context for achieving a more complete understanding for the changing aspects of the capital structure and firm performance

relationship. Therefore, it is very interesting to see the impacts of capital structure on profitability in Ethiopian companies, particularly in commercial banks.

2.9 Chapter Summary and Knowledge Gap

This study was conducted in the effect of debt financing on profitability of commercial banks in Ethiopia. In other words, this study focuses on the influence of debt financing on profitability. In this chapter discusses about the three most essential theories which influence the effect of debt financing on corporate profitability, namely: Trade-off theory, Pecking order theory and market timing theory and most related empirical studies. From the theoretical and empirical studies point view, there are disagreements existed between theories and also empirically studies about the effect of debt financing on corporate profitability. In line with the above theoretical as well as empirical review, debt financing affect performance of the firms weather positively or negatively. Therefore, evaluations of the effect of debt financing on profitability are important to all business organization, especially for banking industry. The banks performance can be affected by different factors such as bank specific, macroeconomic and regulatory factors. From those factors the firm financing decision is the most crucial parts in a bank business activity.

According to the empirical study, few studies have done on the area of commercial banks capital structure determinates. This indicates the banking industry is unexplored area in developing countries, especially in Ethiopia. To this end, there is no direct empirical literature which related with effect of debt financing on profitability of commercial banks in Ethiopia. So far, to the knowledge of the researcher, the effect of debt financing on profitability of commercial banks is

not studied directly. Even the existed study was concentrated on determinates of capital structure and financial performance of commercial banks, insurance company, constriction and other listed firms. To this end, the researcher interested to put his own contribution on effect of debt financing on profitability of commercial banks in Ethiopia.

Lastly, the next chapter discusses about the research methodology that are applied for the study along with proper justification for the selection of appropriate research methods.

CHAPTER THREE

Research Methodology

3.1 Introduction

The preceding chapter discusses about both theoretical and empirical studies and it tried to give a brief summary of the chapter and dig out the gap in the existing knowledge.

This chapter explains the research methodology that was used to conduct the research, procedures and modalities of data collection. It gives details information about the procedures used in conducted research. The research methodology section covers the research approach, source of data and data collection methods, sampling techniques, data analysis techniques, model specification, study variables, conceptual frame work and summery of the chapter.

3.2 Research Approaches

As noted in Creswell (2009) in terms of research study there are three familiar types of research approaches to business and social science researches namely: quantitative, qualitative and mixed research approaches. Therefore, the following discussion briefly presents the basic nature of quantitative, qualitative and mixed research approaches along with their respective merits and demerits.

Quantitative research approach is one in which the researcher mainly uses post positivist claims for developing knowledge (Creswell, 2009). Post positivism on which quantitative research design is based holds a deterministic philosophy in which causes probably determine effects or

outcomes. Thus, the problems studied by post positivists reflect the need to identify and assess the causes that influence outcomes. As a result, quantitative research is a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analyzed using statistical procedures (Creswell, 2009). The goal is to measure and analyze causal relationships between variables within a value free framework. In line with this Creswell (2009) also noted that researchers who engage in quantitative research form of inquiry have assumptions about testing theories deductively, building in protections against bias, controlling for alternative explanations, and being able to generalize and replicate findings.

In quantitative research approach there are two strategies of inquiries namely, survey design and experimental design. The chief advantage of this approach is that numbers are easy to work with data are readily collected, coded, summarized and analyzed (Dunn 1999, p. 37). Further quantitative research approach has the advantage of being able to make generalizations, for a broader population, based on findings from the sample. Apart from of its advantages, as noted by Dunn (1999) quantitative research approach has the following disadvantages. For example, the sample selected may not represent the total population and the researchers know much about the collective or average experience of research participants, but not their individual experiences (Dunn 1999).

Qualitative research approach is one in which the investigator often makes knowledge claims based primarily on the multiple meanings of individual experiences, socially and historically

constructed meanings, participation in issues, collaboration or change oriented with an intent of developing a theory or pattern (Creswell 2003, p. 18). As noted in Sarantakos (2005, p. 45 cited in Yesegat 2009, p. 73) qualitative research approach uses strategies of inquiry such as narratives, ethnographies, grounded theory studies, or case studies. The key advantage of qualitative research design is that it discloses the richness of human experience (Lincoln and Guba 1985, cited in Dunn, 1999, p.37). Moreover, qualitative research design has advantages like flexibility and emergent without being constrained by standardized procedures (Liamputtong and Ezzy 2005, p. 204, cited in Yesegat 2009, p. 74). A part from the above mentioned advantages, qualitative research design has also its own weaknesses. As noted in Dunn (1999) the demerits of this approach includes; absence of quick response, difficulty, inefficiently, and lack of generalization among others.

Mixed research is an approach to inquiry that combines or associates both qualitative and quantitative forms (Creswell, 2009). As a major advantage, when the investigator uses this approach can learn more about the research problem (Leedy and Ormrod, 2005 cited in Semu 2010, p. 44). In connection to this, Greene et al. (1989, p. 256, cited in yesegat, 2009, p. 75) also emphasized that as all methods have inherent biases and limitations, so use of only one method to assess a given phenomenon will inevitably yield biased and limited results. Besides, as an additional merit, the approach is not limited to one method or the researcher is not committed to only one method which means the investigator is flexible. Considering the research problem and objective along with the philosophy of the different research approaches, mixed research

approach was found to be appropriate for this study. The following section hence presents the methods adopted in the study.

3.3 Methods Adopted

Research designs are plans and the procedures for research that span the decisions from broad assumptions to detailed methods of data collection and analysis (Creswell 2009, p. 3). Therefore, in order to achieve the objective stated in the preceding section, considering the nature of the problem and the research perspective this study used mixed research approach. Accordingly, the quantitative method was primarily used to find out the effect of debt financing on profitability of banks in Ethiopia, and the financial data were collected through document survey. Following this, the qualitative method was used to support the quantitative findings and to gain additional insight into the effect of debt financing on profitability of banks in Ethiopia. The qualitative data were collected through in-depth interviews with the finance managers of Ethiopian commercial banks.

A mixed approach was chosen as it increases the likelihood that the research generates more accurate results than is the case if a single method had been adopted. As noted in Creswell (2009) mixed research is an approach that combines or associates both qualitative and quantitative research methods. It is also more than simply collecting and analyzing both kinds of data, it involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research. As a result, mixed methods provide a more accurate picture of the phenomena being investigated. The subsequent discussions provide the

quantitative aspect of the study, the qualitative aspect, in-depth interviews in particular, and data analysis methods.

3.3.1 Quantitative Aspect of the Study

The quantitative aspect of the research method intends to obtain data needed to generalize about the effect of debt financing on profitability of banks in Ethiopia. Specifically, the current study employed a survey design that was administered through structured review of documents. Hence, the next section presents the survey design.

3.3.1.1 Structured Review of Documents

The purpose of survey research is to generalize or makes claim from the sample to the population so that inferences can be made about some characteristic, attitude or behavior of the population (Creswell 2009). In connection to this, Leedy and Ormord (2005, p.183 cited in semu. 2010, p. 45) also noted that survey research involves acquiring information about one or more group of people perhaps about their characteristics, opinions, attitudes, or previous experiences-by asking them questions and tabulating their answers. Generally, the ultimate goal is to learn about a large population by surveying a sample of that population.

The researcher selected survey design because surveys are relatively inexpensive and it enables to gather enough information, which may not available from other sources. Accordingly, the survey was carried out by means of a document review. The data related to a documentary analysis which is necessary to undertake this study were gathered from the financial statements of eight

banks from National Bank of Ethiopia (NBE) for twelve consecutive years (2002-2013), and the data was the audited financial statements particularly balance sheet and income statement. This was done to avoid the risk of distortion in the quality of data.

3.3.2 Qualitative Aspect of the Study

Qualitative research approach is a means for exploring and understanding individuals or groups scribe to a social or human problem (Creswell, 2009). Qualitative research is typically used to answer questions of complex phenomena on which data can be collected using instruments like structured and unstructured interviews, group discussions, observation and reflection field notes, various texts like reflexive Journals, pictures, and analysis of documents and literature. Thus, in the current study the qualitative data needed for supporting the finding of the quantitative analysis, in- depth interviews with finance managers of selected banks were employed. The next section presents the in-depth interviews.

3.3.2.1 In-Depth Interview

An interview is a purposeful discussion and/or conversation with two or more people, and helps the researcher to gather valid and reliable data that are relevant to achieve research questions and objectives. Interviews might be structured (using standardized questions), semi-structured, and unstructured (in-depth) conversations (Saunders et al. (2003)). Structured interview uses pre-established questions, asked in a predetermined order, using a standard mode of delivery. On the other hand, unstructured interview attempts to draw out information, attitudes, opinions, and beliefs around particular themes, ideas, and issues without the aid of predetermined questions

Leary (2004). This study applied in-depth interview to gain the information that support the data that collected through document analysis.

Interviews were conducted with selected commercial banks finance managers to gain a greater understanding into the findings from documentary analysis. The eight finance managers were chosen from other staff due to they are the most knowledgeable parties about the effect of debt financing on profitability and they have knowhow about the capital structure of banks. Generally, based on the objective and research questions presented in the preceding section a number of unstructured interview questions were asked to better understand about the effects of debt financing on profitability in sample commercial banks in Ethiopia.

3.4 Sampling Techniques

According to Mugenda and Mugenda (1999), a target population is the researcher wants to generalize the result of the study. Therefore, for this study the researcher was used all commercial banks as the target population those engaged in commercial banking activate in Ethiopia as at 30 June 2013, licensed and registered under the Banking proclamation no. 84/ 1984. According to the National Bank of Ethiopia report, there are eighteen licensed commercial banks in Ethiopia as at 31 October 2014(Birritu, No 118)(i.e. Commercial Bank of Ethiopia, Constriction and Business Bank of Ethiopia, Awash International Bank S.C, Dashen Bank S.C, Bank of Abyssinia S.C, Wegagen Bank S.C, United Bank S.C, NIB International Bank S.C, Cooperative Bank of Oromia S.C, Lion International Bank S.C, Zemen Bank S.C, Oromia International Bank S.C, Berhan International Bank S.C, Bunna International Bank S.C, Abay Bank S.C, Addis

International Bank S.C, Debub Global Bank S.C and Enat Bank S.C) those are engaged in the commercial banking activities. The next part discusses about sample design).

A sample design is a definite plan for obtaining a sample from the sampling frame. It refers to the technique or the procedure the researcher would adopt in selecting some sampling units from which inferences about the population is drawn. Therefore, this study also goes through all the necessary steps of sampling design. First, the sample frame is determined. Then, from the sample frame, proper size of the sample, which can represent the population, is determined. Once the sample size is determined, then the researcher also clearly stated the procedures of selecting participants of the study (Sample).

Sampling frame is a complete list of the study population. For this study, the sample frame including the banks, which was established before twelve years ago. In this case, the total study population is not included in this study, because the remaining ten newly established banks are commencement their commercial banking activity after twelve years.

Determination of economical sample size is a major challenge for a researcher in conducting a survey. There is no a standard rule for the determination of sample size. Both large and small sample sizes have their own limitations. Too large a sample might become unwieldy and too small a sample might be unrepresentative. What matters in the determination of sample size is representativeness of the sample to a population. Therefore, the correct sample size depends on the purpose of the study and the nature of the population under scrutiny. By convenience, most

researchers take 10 percent of a population to determine their sample size. Therefore, the researcher also believed that taking about 44.4 percent (eight commercial banks) of the sample size is representative.

There are two main types of sampling procedures: probability sampling and purposive sampling. Choosing the type of sampling technique depends upon the area of research, research methodology, and preference of the researcher, (Dawson 2002). Probability sampling involves selecting elements randomly in that the selection of any one element is independent of the selection of the other elements while purposive sampling is used to make description. As stated above, the results of the study would be descriptive. Therefore, purposive sampling is employed. Hence, purposive sampling is appropriate based on sample frame, and the researcher used this method for this study.

Sampling is the process of choosing smaller and more manageable number of study units from a defined study population. The sample should be selected carefully using the correct procedure. The sampling strategy adopted can affect the quality of a piece of research. Thus, attention should be paid to sampling; otherwise, the basis of the survey's applicability to wider contexts is seriously undermined. Finally, from the total population of eighteen commercial banks both public and private, eight commercial banks (two public and six private commercial banks) was selected as a sample, based on purposive sampling.

Table 3.1 The Sample Commercial Banks in Ethiopia

S.No	Banks	Year of Establishment	Ownership
1	Commercial Bank of Ethiopia	1963	100% state owned
2	Constriction and Business Bank	1975	100% state owned
3	Awash International Bank S.C	1994	100% private owned
4	Dashen Bank S.C	1995	100% private owned
5	Bank Of Abyssinia S.C	1996	100% private owned
6	Wegagen Bank S.C	1997	100% private owned
7	United Bank S.C	1998	100% private owned
8	Nib International Bank S.C	1999	100% private owned

Source: *National Bank of Ethiopia Annual report 2013/2014* (<http://www.nbe.gov.et>)

3.5 Data Analysis Techniques

To achieve the objective of the study, primarily used panel data analysis method (Comprising cross-sectional and time-series data) of eight commercial banks in Ethiopia from the years 2002-2013, for collected data from secondary source. As Saona (2011) observes, the main advantage of using panel data is that it allows overcoming of the unobservable, constant, and heterogeneous characteristics of each bank included in the study. Similarly, Baltagi (2005) noted that the main advantage of using panel data is that it controls for individual heterogeneity, less co linearity among variables. The regressed panel data output was analyzed by using descriptive statistics (Mean values, maximum, minimum and standard deviations); correlations and multiple linear regression analysis were used to analyze the general trends of the data obtained from sample Commercial banks. Correlation matrix was used to examine the relationship between the dependent variable and explanatory variables. A multiple linear regression model was used to

determine the relative importance of each independent variable in influencing profitability. The multiple linear regressions model was performed and thus ordinary least square (OLS) was conducted using EViews 7 econometric software package, to test the casual relationship between the Commercial banks profitability and their potential debt ratios.

As noted in Brooks (2008) there are basic assumptions required to show that the estimation technique, ordinary least square (OLS), had a number of desirable properties, and also that hypothesis tests regarding the coefficient estimates could validly be conducted. If these Classical Linear Regression Model (CLRM) assumptions hold, then the estimators determined by OLS have a number of desirable properties, and are known as Best Linear Unbiased Estimators (BLUE). Therefore,¹diagnostic tests were performed to ensure whether the assumptions of the CLRM are violated or not in the model. Thus, the following section discusses about the nature and significance of the model misspecification tests.

3.5.1 Test for Heteroscedasticity

To test for the presence of heteroscedasticity, the popular White and Breusch-Pagan-Godfrey tests were employed. This test involves testing the null hypothesis that the variance of the errors is constant (homoscedasticity) or no heteroscedasticity versus the alternative that the errors do not have a constant variance.

¹*The diagnostic test results for CLRM assumptions are provided in detail in chapter four.*

3.5.2 Test for Autocorrelation

This is an assumption that the errors are linearly independent of one another (uncorrelated with one another). If the errors are correlated with one another, it would be stated that they are autocorrelated. To test for the existence of autocorrelation or not, the popular Durbin-Watson test was employed.

3.5.3 Test for Normality

As noted in Brooks (2008) a normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3. One of the most commonly applied tests for normality; the Bera-Jarque formalizes these ideas by testing whether the coefficient of skewness and the coefficient of excess kurtosis are zero and three, respectively. Brooks (2008) also states that, if the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant at 5% significant level.

3.5.4 Test for Multicollinearity

To test the independence of the explanatory variables or to detect any multicollinearity problem in regression model the study used a correlation matrix of independent variables. The problem of multicollinearity usually arises when certain explanatory variables are highly correlated. Usually, as noted by Gujarati, (2003), Hair et al. (2006) and Pallant, (2005) cited on Mohammed G. (2014), inter-correlation among the independent variables is a threat above from 0.9 but correlation coefficient below 0.9 not cause serious multicollinearity problem.

3.6 Model Specification

In this section discuss about model specification of the study in detailed. Bank profitability is represents with Return on Asset (ROA) as dependent variable and the independent variables; namely: debt to asset ratio (TDA), debt to equity ratio (TDE) and interest coverage ratio (ICR). The study contains three independent variables to find out the effect of debt financing on profitability of banks (ROA).

The model is specified on an empirical framework using the variables mentioned for this study were investigated the effect of debt financing on profitability of Ethiopian commercial banks. In this study, the models in the following form according to, (Weldemikael Sh. 2012), (Muhammad W.2013), (Aloy N. and Velnampy T., 2014), (Erasmus F. and Josephine J. 2014).

$$Y_{i,t} = \alpha + \beta X_{i,t} + \mu_{i,t}$$

Where:

Y Is dependent variable

μ Is the error terms.

α Is the intercept (constant variable)

I Is the number of firms and

β Is coefficient of independent variable

t Is the number of time period

X Is independent variable

$$ROA_{i,t} = \alpha + \beta_1 (TDA)_{i,t} + \beta_2 (TDE)_{i,t} + \beta_3 (ICR)_{i,t} + \beta_4 (FSIZE)_{i,t} + \varepsilon_{i,t}$$

Where, “ i ” denote the studied banks and “ t ” represent the time period.

The dependent variable is the ratio of profitability (ROA). Moreover,

a) TDA is debt to asset ratio

- b) TDE is debt to equity ratio
- c) ICR is interest coverage ratio
- d) FSIZE is the natural logarithm of total asset
- e) ϵ is represent the error term
- f) α is Constant
- g) $\beta_1-\beta_4$ is parameters to be estimated.

3.7 Study Variables

In this study, the researcher used one dependent variable (Return on Asset) and four explanatory variables such as; debt to asset ratio, debt to equity ratio, interest coverage ratio and firm size from most prominent and recent empirical studies. The dependent variable (which is proxy to bank profitability) and independent variables are detailed as follows.

3.7.1 Dependent Variable

Bank profitability is the dependent variable in this study. Bank performance is usually measured by three alternative measures ROA, ROE or NIM. Studies conducted on the determinants of banks performance use one or a combination of these ratios as a measure of performance in their analysis. According to Mohana et al. (2012), the choice of the financial performance ratios (ROA, ROE, NIM) depends on the objective of the performance measure since the output of each of the performance measure differs. From bank profitability masseurs alternatives ROA was

chosen because it is important accounting based and widely accepted measures of financial performance.

3.7.1.1 Return on Asset

The return on asset (ROA) reflects the ability of a bank's management to generate profits from the bank's assets. It shows the profits earned per birr of assets and indicates how effectively the bank's assets are managed to generate revenues, although it might be biased due to off-balance sheet activities. This is probably the most important single ratio in comparing the efficiency and operating performance of banks as it indicates the returns generated from the assets that bank owns, (Tan et al. 2012). ROA is the most comprehensive accounting measure of a bank's overall performance Birhanu (2012). Because of this, the majority of studies employed ROA as performance measure, for instance, (Belayneh 2011), (Sufian 2011), (Amdemikael (2012), and Mohanaet al. (2012), syafri (2012). Calculating the return on asset (ROA) by using the following formula:

$$ROA = \text{Net income} / \text{Total asset}$$

3.7.2 Independent Variables

The explanatory (independent) variables in this study are debt to asset ratio, debt to equity ratio and interest coverage ratio. These serve as a proxy for debt financing.

3.7.2.1 Debt to Asset Ratio

Debt to asset ratio is a ratio that indicates the proportion of a company's debt to its total assets. It shows how much the company depends on debt to finance the firm's asset. The debt to asset ratio gives users a quick measure of the amount of debt that the company has on its balance sheets compared to its assets. The higher the ratio, the greater the risk associated with the firm's operation. A low debt ratio indicates conservative financing with an opportunity to borrow in the future at no significant risk.

Debt to asset ratio is similar to debt to equity ratio which shows the same proportion but in different way. The debt ratio is calculated by dividing total liabilities (i.e. long-term and short-term liabilities) by total assets:

$$\text{Debt to Asset ratio} = \text{Total Liabilities} / \text{Total Assets}$$

3.7.2.2 Debt to Equity Ratio

It is a measure of the proportion of debt to shareholders funds (i.e. Net worth) in the total financing of a business. Items such as accumulated losses and deferred expenditures are eliminated from the shareholders' funds before using it as denominator. The ratio indicates how much money was raised as debt. It is the ratio which indicating the relative proportion of equity and debt used to finance a company's asset which is an indicator of the financial leverage. It is equal to total debt divided by shareholders' equity. The two components are often taken from the firm's statement of financial position (balance sheet). When used to calculate a company's

financial leverage, the debt usually includes only the total debt. This is a useful measure as it helps the investor see the way management has financed operations.

The high debt to equity ratio generally means that a company has been aggressive in financing its growth with debt. This can result volatile earning as a result of the additional interest expenses as well as volatile cash flow as principal payments on debt come due. If a lot of debt is used to finance increased operations (high debt to equity), the company could potentially generate more earning per share than it would have without this outside financing. However, as stated increased interest and the need to repay the principal on borrowed fund can for outweigh the benefit, it is used to measure the net worth of the organization.

$$\text{Debt to Equity Ratio} = \text{Total Liabilities} / \text{Total Equity}$$

3.7.2.3 Interest Coverage Ratio

The interest coverage ratio (ICR) is a measure of a company's ability to meet its interest payments. Interest coverage ratio is equal to earnings before interest and taxes (EBIT) for a time period, often one year, divided by interest expenses for the same time period. The interest coverage ratio is a measure of the number of times a company could make the interest payments on its debt with its EBIT. It determines how easily a company can pay interest expenses on outstanding debt. Interest coverage ratio is also known as interest coverage, debt service ratio or debt service coverage ratio. The interest coverage ratio is calculated by dividing a company's earnings before interest and taxes (EBIT) by the company's interest expenses for the same period. Pandey (2010) indicates the ratio of net operating income (or EBIT) to interest charge i.e.

$$\text{Interest Coverage Ratio} = \text{EBIT} / \text{Interest expense}$$

The lower the interest coverage ratio shows the higher the company's debt burden and the greater the possibility of bankruptcy or default. A lower ICR means less earnings are available to meet interest payments and that the business is more vulnerable to increases in interest rates. When a company's interest coverage ratio is only 1.5 or lower, its ability to meet interest expenses may be questionable. An interest coverage ratio below 1.0 indicates the business is having difficulties generating the cash necessary to pay its interest obligations (i.e. interest payments exceed its earnings (EBIT)). A higher ratio indicates a better financial health as it means that the company is more capable to meeting its interest obligations from operating earnings. On the other hand, a high ICR may suggest a company is "too safe" and is neglecting opportunities to magnify earnings through leverage.

3.7.3 Control Variables

There are a number of factors that affect the bank's profitability rather than debt financing; this is why control variables are included in the model. In this study the researcher employed the firm size as a control variable.

3.7.3.1 Firm Size

It is a control variable which measure by natural logarithm of total assets Onaolapo and Kajol (2010) and King and Santor (2008). In most previous studies, firm size is expressed by the logarithm of total assets. This indicator is the most suitable measure of a firm's size. Total assets are defined as the sum of net fixed assets, total intangibles, total investments, net current assets,

and other assets. It assesses whether the size of the firm is related to performance. Trading-off theory assumes that large firms are more diversified, have lower risk, better reputation, more stable cash flows and fewer hazards to be liquidated. This gives large firms easier access to the capital markets with negligible debt costs. Thus these firms are stronger to face bankruptcy and financial distress. Consequently, positive relationship between a firm's size and debt level is expected.

The impact of size on firm performance is strongly debated among researchers. In the study, Aloy N. (2012) shows the negative effect of firm size on performance. The authors point out that, the more a firm size is, the more difficult it is to manage. In contrast, Sufian et al. (2009) and Flamini et.al (2009) found a positive impact of firm size on performance. In their study they conclude that a large firm size reduces costs due to economies of scale that this entails, large firms can also raise capital at a lower cost. It is used by many scholars in their studies and for the purpose of this study, the researcher used as a control variable; it is calculated by the following formula.

$$\text{Firm Size} = \text{natural logarithm of total asset}$$

3.7.4 Summary of Variables, their Measures and Expected Sign

In this section, the summary of variables, their measure and expected sign was discussed. The dependent variable in this study is Return on Asset (ROA) and explanatory variables are; debt to asset ratio, debt to equity ratio and interest coverage ratio while firm size used as control variable. The selection measures for dependent variable is Return on Asset (ROA), which is proxy to bank profitability and for independent variables are detailed as follows, which is measure the level of

debt on capital structure of the institution The description of each variable and their expected signs are given below in the following tables:

Table 3.2 Summery of Variables, their Measures and expected sign

Variable		Definition	Mathematical Expiration	Exp. sign
Dependent variable	Return on asset (ROA)	The ratio of net income after tax divided by total asset	$ROA = \frac{\text{Net Income}}{\text{Total Asset}}$	NA
Explanatory Variable	The debt ratio (DTAR)	Total Debt Divided by Total Asset	$TDA = \frac{\text{Total Debt}}{\text{Total Asset}}$	+
	The debt to equity ratio (DTER)	Total Debt Divided By Total Asset	$TDE = \frac{\text{Total Debt}}{\text{Total Capital}}$	-
	The interest coverage ratio (ICR)	Earnings before interest and tax divided by interest expense	$ICR = \frac{\text{EBIT}}{\text{Interest Expense}}$	+
Control variable	The Firm Size	Natural Logarithm of Total asset	$FSIZE = \text{Ln}(\text{Total Asset})$	+

Source: Compiled by researcher

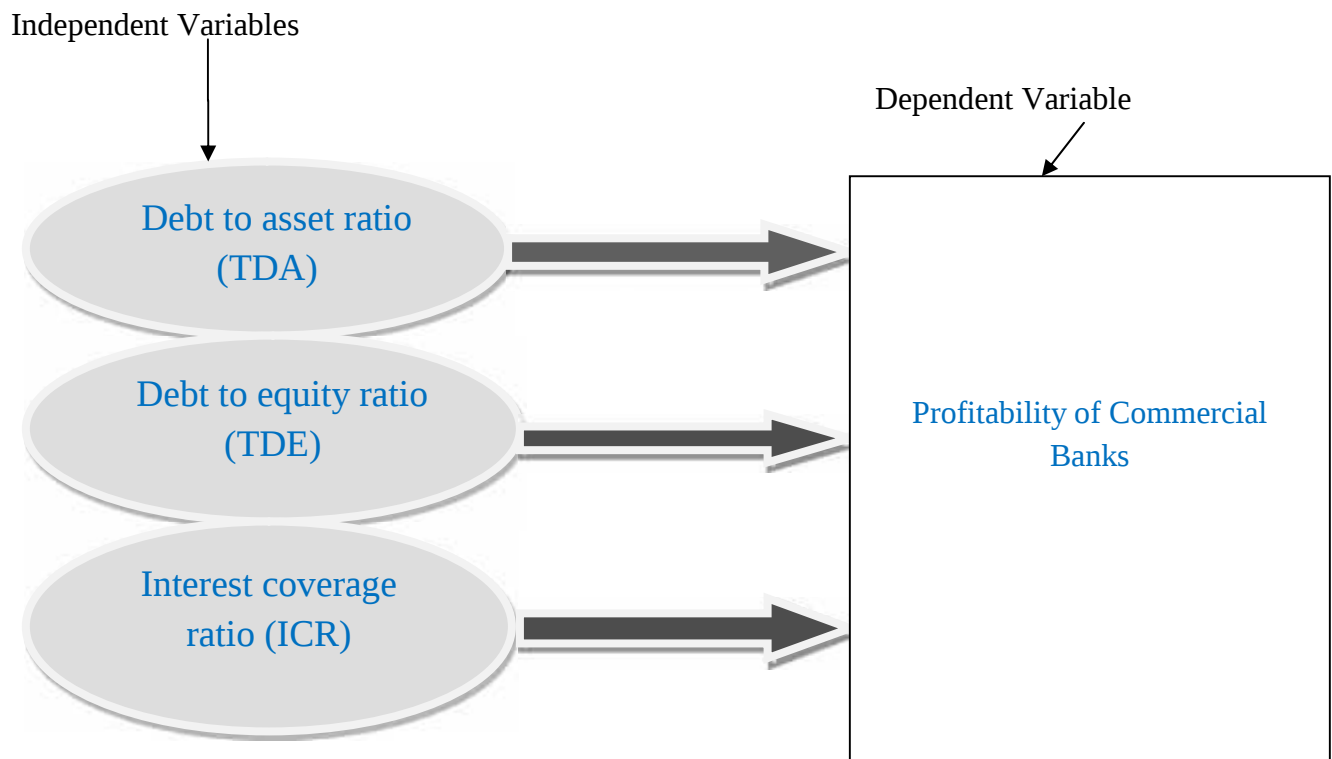
Note: (+) when the independent variable increases (decreases) the dependent variable will increase (decrease)

(-) When the independent variable decreases (increases) the dependent variable will increase (decrease)

3.8 Conceptual Frame Work

After careful study of literature review, the following conceptual framework is formulated to illustrate the effects of debt financing and its impact on the profitability of commercial banks in Ethiopia. The following diagram discusses about the conceptual framework:

Figure 3.1 Conceptual Framework



Source: Compiled by researcher

The above diagram shows that the effect of debt financing (independent variable) and profitability of the firm (ROA) as dependent variable. The researcher expect the independent variable have significant impact on profitability of the firm namely, debt to asset ratio, debt to equity ratio and interest coverage ratio. Return on Assets (ROA) measures of firm performance.

Although there is no unique measurement of firm performance in the literature, ROA was chosen because it is important accounting based and widely accepted measures of financial performance. ROA can also be viewed as a measure of management's efficiency in utilizing all the assets under its control, regardless of source of financing.

3.9 Chapter Summery

In this chapter, the research methodology, research approach, methods of data collection, sampling procedure and data analyzing techniques are discussed. The link of research model and conceptual framework adopted in this particular study is also presented with proper justification. The method selection is in line with the advantage and disadvantage of research approach and data analysis technique. For this study mixed research approach is opted that helps the researcher to achieve the research objectives and the required data is collected through in-depth interview and survey of documentary analysis. With this end, the next chapter discuss about data analysis and presentation.

CHAPTER FOUR

Data Analysis and Presentation

4.1 Introduction

In preceding chapter discusses about research methodology which includes: research approaches, research methods, sampling techniques, and data analysis techniques, model specification and conceptual framework to achieve the objective of the study.

This chapter presents the results of the regression model and their corresponding discussions, which analyzed by using evIEWS' software version 7. The descriptive statistics and the correlation analysis were discussed, followed by the diagnostic test, which is necessary to fulfill the assumption of the classical linear regression model. Then, econometric analysis and discussion of the main finding of the study was presented. Finally, the result of the regression analysis was discussed by supporting empirical evidence and concluded the study finding.

4.2 Descriptive Statistics

This section presents the descriptive statistics of dependent and independent variables used in the study for the sample banks. The dependent variable used in this study was ROA; while the independent variables are debt to asset ratio, debt to equity ratio, interest coverage ratio and firm size. Thus, the total observation for each dependent and independent variable was 96 (panel data of 8 commercial banks for 12 years). The table 4.1 demonstrates the mean, median, maximum, minimum and standard deviation values for dependent and independent variables for sample

banks over the year 2002-2013. The descriptive statistics for the dependent and independent variables are presented in Table 4.1 below:

Table 4.1 Descriptive Statistics of Dependent and Independent Variables

	ROA	TDA	TDE	ICR	FSIZE
Mean	0.025730	0.77254	3.69167	3.45696	22.2172
Median	0.027800	0.79903	3.90742	3.17625	22.1575
Maximum	0.04030	0.87152	6.78322	9.4775	26.007
Minimum	0.003400	0.16568	0.19858	1.2222	19.565
Std. Dev.	0.00812	0.12949	1.32983	1.53793	1.23723
Observations	96	96	96	96	96

Source: Computed from Eviews result

As it is shown in table 4.1 above, ROA represents the profitability of Ethiopian commercial banks. It is measured by the net income after tax divided by total asset has a mean value of 0.025730. This indicates that the sample commercial banks on average earned a net income of 2.6 percent of the total asset. The result of ROA indicates the efficiency of the management of a company in generating net income after tax from all the total asset of the institutions. The higher ROA shows that the company is more efficient in using its resources and reflects the ability of a bank's management to generate profits from the bank's assets. In addition, it shows the profits earned per Birr of assets and indicates how effectively the bank's assets are managed to generate revenues. The maximum value of ROA was 0.04030 and minimum value of 0.003400. This

means the most profitable bank among the sample commercial banks earned 4.03 cents of net income for a single Birr invested in the assets of the firm. On the other hand, the least profitable bank of the sample commercial banks earned 0.34 cents of net income for each Birr investment in the assets of the firm. The standard deviation is 0.8 percent from the average value, which reflects the presence of variation earned profit among across the sampled commercial banks.

As it is shown in table 4.1 above, regarding the independent variables the debt to asset ratio is one of the independent variable, which is measured by the total debt divide by total asset, has a mean value of 0.77254. The mean value 0.77254 shows that during the study period the sample commercial banks finance their total assets by using 77 percent of debt. In addition, the maximum and minimum values are 0.87152 and 0.16568, respectively, with the standard deviation of 0.12949. This indicates that in the study period the sample commercial banks have variation in using debt and equity on their total assets or finance their operation. In general, the mean value of debt to total asset ratio 77 percent, indicates the fact that banks are highly levered institutions in Ethiopia.

As it is shown in table 4.1 above, the other independent variable used in the study was the debt to equity ratio, which is measured by total debt divided by total equity, has a mean value of 3.69167. The mean value 3.69167 shows that during the study period the sample commercial banks finance their capital structure by using 369.2percent debt in the capital structure. It also suggests that on average the commercial banks in Ethiopia are more debt than equity financing. The ratio shows on average 3.692 times more debt than equity capital in the banks' capital

structure. The fact shows that banks in Ethiopia depend more on debt financing rather than equity financing. This is because the capital structures of the banks were dominated by debt and this debt comes from mainly customer's deposit. The maximum and the minimum value are 6.83426 and 0.19858, respectively, with a standard deviation of 1.32983. This value for debt to equity ratio indicates that in the study period the banks have the debt to equity ratio composition is high and there are also variation in using debt and equity substantially among the sampled banks in Ethiopia.

As it is shown in table 4.1 above, another important variables used in the study was the interest coverage ratio, which is measured by earnings before interest and taxes (EBIT) for a time period, often one year, divided by interest expenses for the same time period. The interest coverage ratio has with a mean value of 3.45696. This result shows that on average the sample commercial banks are more capable to meeting its interest obligations from operating earnings and also indicates that the commercial banks in Ethiopia are having lesser burdens of interest expenses. Taking into consideration the standard deviation of the commercial banks under study, it is clear that standard deviation of 1.53793, implying that the commercial banks are paying the interest payments on its debt with its EBIT in a regular manner.

As it is shown in table 4.1 above, the control variable in my study was firm size, which was measured by the natural logarithm of total asset, has a mean value of 22.2 with a maximum and minimum value of 26.0 and 19.6, respectively. In addition, the standard deviation of the bank size

was 1.237. This implies that in the study period the sample commercial banks on average have a variation in their total asset.

4.3 Correlation Analysis

Correlation and regression analyses are related in the sense that both deal with relationships among variables. The correlation coefficient is a measure of linear association between two variables. Values of the correlation coefficient are always between -1 and +1. A correlation coefficient of +1 indicates that two variables are perfectly related in a positive linear sense; while a correlation coefficient of -1 indicates that two variables are perfectly related in a negative linear sense. A correlation coefficient of 0, on the other hand, indicates that there is no linear relationship between the two variables. For simple linear regression, the sample correlation coefficient is the square root of the coefficient of determination. The correlation coefficient measures only the degree of linear association between two variables. The analysis of the relationship between dependent variable (ROA) and independent variables (TDA, TDE, ICR, and FSIZE) is detailed in Table 4.2 as follows using the correlation matrix.

Table 4.2: Correlation Matrix for Dependent and Independent Variables

	ROA	TDA	TDE	ICR	FSIZE
ROA	1	0.41662	0.24525	0.16727	0.42462
TDA	0.41662	1	0.78743	0.26507	0.30314
2TDE	0.24525	0.78743	1	0.00449	0.20953
ICR	0.16727	0.26507	0.00449	1	0.34309
FSIZE	0.42462	0.30314	0.20953	0.34309	1

Source; Computed from Eviews result

The correlation matrix in Table 4.2 shows that the debt to asset ratio, debt to equity ratio, interest coverage ratio and firm size has positive relationship with Return on Asset (dependent variable). The strength of their relationship is indeed at 0.41662, 0.24525, 0.16727 and 0.42462; for debt to asset ratio, debt to equity ratio, interest coverage ratio, and firm size, respectively. This positive relationship indicates that as debt to asset ratio and debts to equity ratio increase the profitability also increase in commercial banks and vice versa. In addition, profitability increase the interest coverage ratio also increases. The positive relationship between interest coverage ratio and profitability indicates that commercial banks are capable to meeting its interest obligations from operating earnings. Also, the positive relationship between firm size and profitability indicates that larger size of commercial banks tend to have higher profit than smaller commercial banks.

The researcher also observed that debt to asset ratio has strong positive relationship with debt to equity ratio at 0.78743 and weak positive relationship with interest coverage ratio and firm size at 0.26507 and 0.30314, respectively. It means that an increase debt to asset ratio leads to increase the debt to equity ratio in strong way and vice-versa. The interest coverage ratio and firm size are weak relationship with debt to asset ratio, but positively related in the above correlation matrix Table 4.2.

To conclude the results of correlation matrix table 4.2 above indicate that a positive correlation exists between dependent variables (ROA) and independent variables (debt to asset ratio, debt to equity ratio, interest coverage ratio and bank size). As a result, the correlation coefficients

indicates that an improvement needs in debt to asset ratio, debt to equity ratio, interest coverage ratio and bank size leads to higher profits for the banks.

.

4.4 Classical Linear Regression Model Assumption and Diagnostic Test

In this section different tests were run to make the data ready for analysis and to get reliable output from the research. From different tests the five most critical assumptions related to classical linear regression model (CLRM) are the most critical on econometric analysis. These tests were proposed to check whether the CLRM assumptions, i.e. the OLS assumptions, are fulfilled when the explanatory variables are regressed against the dependent variables. Accordingly, the following sub-section presents tests of CLRM assumptions.

4.4.1 Test for average value of the error term is zero ($E(u_t) = 0$) assumption

The first assumption required is that the average value of the errors is zero. In fact, if a constant term is included in the regression equation, this assumption will never be violated. Therefore, since the constant term was included in the regression equation, the average value of the error term in this study is expected to be zero.

4.4.2 Test for homoscedasticity assumption ($Var(u_t) = \sigma^2$)

The second assumption says that the variance of the errors is constant. This is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heteroscedasticity (Brooks, 2008, p 132). To test this assumption both whit's and Breusch-Pagan-

Godfrey test were used to check either heteroscedasticity problem present or not. As a result, the following table 4.3 and table 4.4 present both tests of heteroscedasticity.

Table 4.3 Heteroscedasticity Test whit's

Heteroscedasticity Test Whit's			
F-Statics	1.812875	Prob. F (14,81)	0.056
Obs*R-Squared	22.90373	Prob. Chi-square (14)	0.0619
Scaled Explained SS	19.79840	Prob. Chi-square (14)	0.1366

Source; Computed from Eviews result

Table 4.4 Heteroscedasticity Test Breusch-Pagan-Godfrey

Heteroscedasticity Test Breusch-Pagan-Godfrey			
F-Statics	2.337572	Prob. F (14,81)	0.0612
Obs*R-Squared	8.944943	Prob. Chi-square (14)	0.0625
Scaled Explained SS	7.732172	Prob. Chi-square (14)	0.1019

Source; Computed from Eviews result

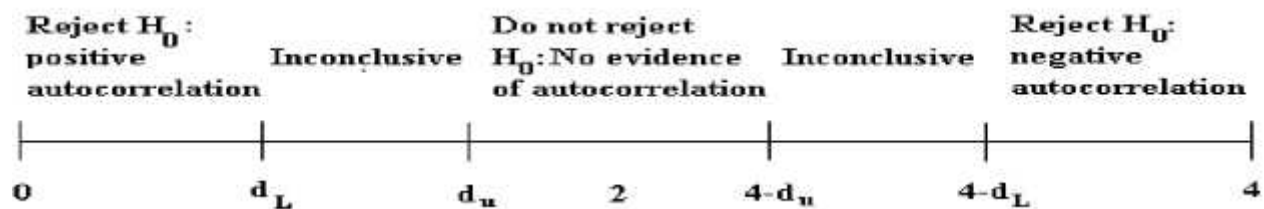
The above two tables show that both Whit's and Breusch-pagan Godfrey test of heteroscedasticity. Both tests shown in table 4.3 and table 4.4, the F-statistic and Chi-Square versions of the test statistic gave the same conclusion that there is no evidence for the presence of heteroscedasticity, since the p-values were in excess of 0.05.

4.4.3 Test for absence of autocorrelation assumption ($\text{cov}(u_i, u_j) = 0$ for $i \neq j$)

According to Brooks (2008), the covariance between the error terms over time (or cross-sectional, for that type of data) is zero. That means, it is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are auto correlated or they are serially correlated.

To test the presence of autocorrelation, the Durbin-Watson test is used. As noted in Brooks (2008), Durbin Watson is a test for first order autocorrelation (it is a test for a relationship between an error and its immediate previous value). The null hypothesis for the DW test is no autocorrelation between the error term and its lag. According to Brooks (2008), DW has two critical values: an upper critical value (d_U) and a lower critical value (d_L), and there is also an intermediate region where the null hypothesis of no autocorrelation cannot be rejected. The rejection, non-rejection, and inconclusive regions are shown on the number line in figure 4.1 below.

Figure 4.1 Rejection and Non-Rejection Regions for DW Test



The study used the d_L and d_U values for 95 observations as approximation of 96 observations. As per the Durbin-Watson test (DW) table for 95 observations with 4 explanatory variables at 1%

level of significance, the d_L and d_U values are 1.446 and 1.618, respectively. The DW values for model and for 96 observations were 1.841266. The relevant critical values for the test are $d_L = 1.446$, $d_U = 1.618$, and $4 - d_U = 4 - 1.618 = 2.382$; $4 - d_L = 4 - 1.446 = 2.554$. Accordingly, Durbin-Watson test value is clearly between 1.618 and 2.382 which is 1.841266 and the DW value is lies in the non-rejection region, where as the null hypothesis do not reject. The Durbin Watson test is an indication of the absence of autocorrelation. In this study the Durbin Watson test of 1.841266, this shows the absence of auto-correlation problem in the model.

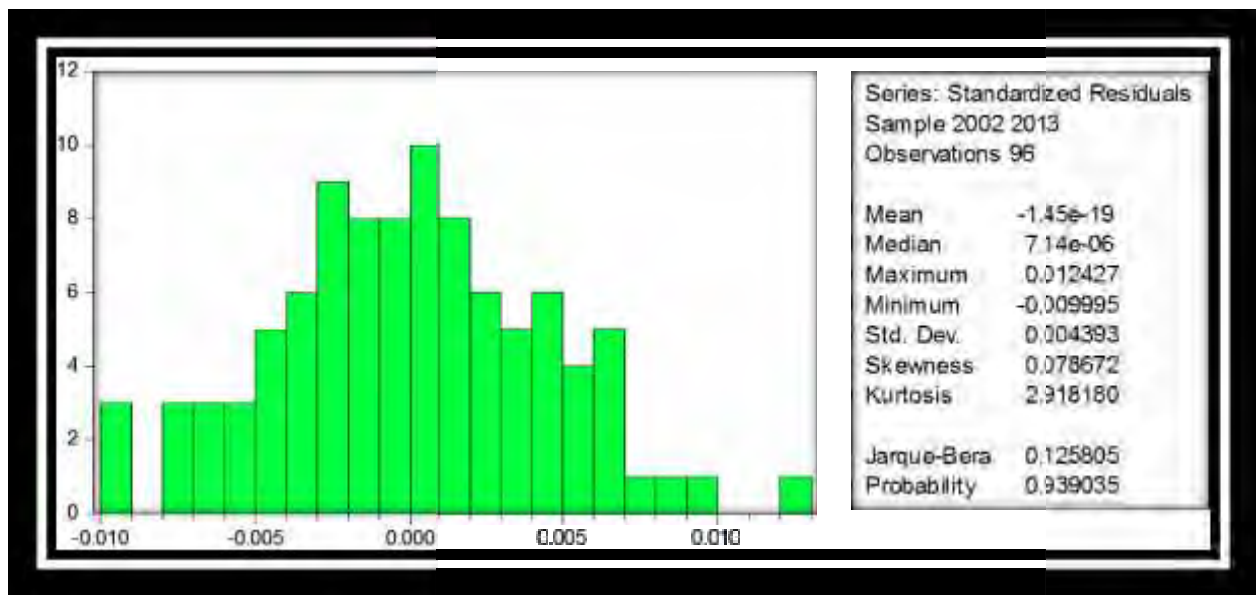
4.4.4 Test for normality assumption ($ut \sim N(0, \sigma^2)$)

The most fundamental assumption in data analysis is normality, which considers the benchmark for statistical methods. Normality refers to the shape of data distribution for an individual metric variable. Normality is tested using graphical and statistical tests. The simplest test for normality is a visual check of the histogram that compares the observed data values with distribution approximating the distribution.

This method is another important diagnostic test conducted in this study (i.e. the normally distributed errors). Brooks (2008) stated that the normality assumption ' $(ut \sim N(0, \sigma^2))$ ' is required in order to conduct single or joint hypothesis tests about the model parameters. One of the most commonly applied tests for normality is the Bera-Jarque (BJ) test. Bera-Jarque uses the property of a normally distributed random variable that the entire distribution is characterized by the first two moments the mean and the variance (Brooks, 2008, p.161). In case of this study, the researcher used Bera-Jarque test to check normality assumptions.

As shown in the histogram in the graph 4.2 below kurtosis approaches to 3 (i.e. 2.918180), and the Bera-Jarque statistic p-value was not significant even at 10% significance level as per the P-values shown in the histogram below, has a P-value of 0.939035. Hence, the null hypothesis that is the error term is normally distributed should not be rejected and it seems that the error term in all of the cases follows the normal distribution. So, the residuals are normally distributed in this study, concluded that there is no the problem of normality on models.

Figure 4.2: Graphical Test of Normality Using Histogram



Source; Computed from Eviews result

4.4.5 Test for absence of series Multicollinearity assumption

Multicollinearity means that there is linear relationship between independent variables which may cause the regression model biased (Gujarati, 2003, pp. 342). In order to examine the possible degree of multicollinearity among the explanatory variables, and to test the independence of the

explanatory variables or to detect any multicollinearity problem in regression model the study used a correlation matrix of independent variables.

The problem of multicollinearity usually arises when certain explanatory variables are highly correlated. Pair-wise correlation matrixes of the selected variables (i.e. evIEWS-7 output of the multicollinearity are shown in Table 4.6).It can be seen that there is no strong pair-wise correlation between the explanatory variables (TDA, TDE, ICR, and FSIZE) except for debt to asset and debt to equity ratio of 0.78743. As noted by Gujarati, (2003), Hair et al. (2006) and Pallant (2005) cited on Mohammed G. (2014), inter-correlation among independent variables is above from 0.9, it cause serious multicollinearity problem but correlation coefficient below 0.9 not cause serious multicollinearity problem. As concluding the analysis of correlation power, all independent variables have low correlation power. And this implies no multicollinearity problem among explanatory variables.

Table 4.6: Correlation Matrix between Explanatory Variables

	TDA	TDE	ICR	FSIZE
TDA	1	0.78743	0.26507	0.30314
TDE	0.78743	1	0.00449	0.20953
ICR	0.26507	0.00449	1	0.34309
FSIZE	0.30314	0.20953	0.34309	1

Source; Computed from EvIEWS result

4.5 Model Selection; Fixed Effect versus Random Effect Models

The panel data analyses model used to examine the effect of debt financing on profitability of commercial banks in Ethiopia. As noted in Brooks (2008), there are two panel data estimator approaches that can be employed in financial research: fixed effects model and random effects model. The fixed effect regression model is the model to use when researcher wants to control for omitted variables that differ between cases but are constant over time. It allows using the changes in the variables over time to estimate the effects of the independent variables on dependent variables (Li Yuqi, 2007). It allows using the variation between cases to estimate the effect of the omitted independent variables on dependent variable. In contrast, if have reasons to believe that some omitted variables may be constant over time but vary between cases and others may be fixed between cases but overtime, then can include both types by using random effects (Li Yuqi, 2007).

For choosing the best way for data analysis running the Hausman test, it is distinguish the appropriate model. The Hausman test checks a more efficient model against a less efficient but consistent model to make sure that the more efficient model also gives consistent results (Li Yuqi, 2007). According to Brooks (2008), if the p-value for Hausman test is less than 5%, this shows the fixed effects model is appropriate but the random effects model is not appropriate.

According to Table 4.7 below, the Hausman specification tests shows that the model has a p-value of (0.0000) for the regression model of ROA, TDA, TDE, ICR, and SIZE. This indicates that the fixed effect model is preferred. On the other hand, the p-value is more than 5%, the

random effect is the appropriate model. Therefore, in this study fixed effect model was used to test the effect of debt financing on commercial banks profitability. The Hausman test result supports the use of fixed effect panel regression model. The Hausman test results presented in table 4.7 below:

Table 4.7: Hausman test for Fixed, Random Effect

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	33.965283	4.0	0.0000*

Source; Computed from Eviews result

*statically significant at 1% level

4.6 Results of the Regression Analysis

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

$$ROA_{i,t} = \alpha + \beta_1 (TDA)_{i,t} + \beta_2 (TDE)_{i,t} + \beta_3 (ICR)_{i,t} + \beta_4 (FSIZE)_{i,t} + \varepsilon_{i,t}$$

Where:

ROA = Return on assets

ICR = interest coverage ratio

TDA= Debt to asset ratio

FSIZE= Firm Size

TDE = debt to equity ratio

ε = the Error Term

Under the following fixed effect regression out put all the beta coefficient are positive. Beta coefficient indicates the level of influence of independent variables. P-value indicates at what percentage or precession level of each variable is significant. R^2 values indicate the explanatory

power of the independent variables over dependent variable. Therefore, the next part discusses the output of fixed effect model in detail.

In this the following table 4.8 below fixed effect panel data regression model was implemented to identify the relationship between the dependent variable and the independent variables.

Table 4.8: Results of the fixed effect panel data regression analysis

Variables	Coefficient	Std.err	t-Statistic	Prob.
C	-0.075035	0.01313	-5.71245	0.00000
TDA	0.014488	0.00808	1.79384	0.0764**
TDE	0.001813	0.00096	1.88963	0.0623**
ICR	0.002099	0.00059	3.52662	0.0000*
FSIZE	0.003404	0.00064	5.34037	0.0000*
R-squared	0.7070			
Adjusted R-squared	0.6686			
S.E. of regression	0.0046			
Sum squared residual	0.0018			
Log likelihood	385.345			
F-statistic	18.4270			
Durbin-Watson stat	1.84127			
Prob(F-statistic)	0.00000*			

Source; Computed from Eviews result

*statically significant at 1% significance level

** Statically significant at 10% significance level

The R^2 is the indicator of coefficient determination, also known as the goodness of fits that describes how well the model fits a set of observation, was employed to measure the degree of relationship existing among the variables. In addition, the R^2 value is giving details about the independent variables that were used in this study are explained in what degree of the dependent variable.

The fixed effect regression result shown in the table 4.8, the R^2 is 0.7070 this values indicate that the independent variables that was used in this study explain 70.7 percent of the dependent variable. The remaining 29.3% is influenced by other factors that are not used in this study. This means that other factors not studied in this research affect 29.3 percent of commercial bank profitability, which is giving room for further research to investigate the other factors that affect profitability of commercial banks in Ethiopia. Hence, this area is indicated as a scope for future research.

The above table 4.8 presents debt to asset ratio, debt to equity ratio, interest coverage ratio and firm size are statistically significant factors affecting profitability of commercial banks in Ethiopia. Debt to asset ratio and debt to equity ratio had positive and statistically significant impact on bank profitability at 10% significant level. And interest coverage ratio and firm size had positive and statistically significant influence on banks profitability in Ethiopia at 1% significance level. However, the coefficient sign of debt to equity ratio was opposite from my expectation.

4.7 In-Depth Interview Results

In order to understand the banks source of finance and its effects on profitability, the researcher used unstructured interviews with selected Ethiopian commercial banks finance managers.

In-depth interviews were conducted with selected commercial banks finance managers to gain a greater insight into the findings that dig out from documentary analysis. The finance managers were chosen from other staff due to they are the most knowledgeable parties about the effect of debt on profitability and they have knowhow about the capital structure of banks. In addition, the interviews were conducted independently with the official and each respondent was contacted at different times. This allowed the interview time to be utilized effectively and improved the efficiency of the interview process by helping the interviewees' to save time. Generally, based on the objective and research hypothesis presented in the preceding section a number of unstructured interview questions were asked to better understand about the effects of debt financing on profitability of commercial banks in Ethiopia.

The interview questions were designed based on the objective and research hypothesis to find out the effect of debt financing on profitability of commercial banks. These interview questions more focuses on the source of finance that bank mainly use, debt financing affect the profitability and changes in size that leads to profitability or not .

As per the interview result the main sources of finance for their banks were customer deposit, followed by retained earnings, shareholder equity and commercial borrowing. Regarding about

the effects of debt financing on profitability, their responses are the most important source of fund for expansion and major loan outstanding fund is generated from saving. To this end, the customer deposit is the main source for expansion and commercial banks profitability.

As per the interview result the relationship between debt financing and profitability on commercial banks. The respondents said that profitability increases in banks, the level of debt from customer deposit increase. According to the official's response, this is due to the profit increases in particular commercial bank the images of that bank in the eyes of the public directly increase. To this end, the depositor build the good image for that particular bank for saving their money without any apprehensive in that good imaged bank. This means in other word, profitability has a positive relationship with debt financing in commercial banks. Additionally, regarding to the size of banks the officials suggests that as the sizes of the banks become large there levels of debt (customer deposit) also become high; it is effectively invested in profitable product the banks generate profit from that investment. This shows a positive relationship between size and profitability.

Lastly, as per the interview results of financial managers, profitability increase in banks indicates the lower company is burdened by interest expense. This means in other word, profitability has a positive relationship with interest coverage ratio.

4.8 Discussions of the Regression Results

The preceding section presents the overall results of the study. Thus, this section discusses the general result of each explanatory variables based on fixed effect regression results indicated in the table 4.8 above each variable was presented by supporting the result with theories and previous empirical studies made in this area.

4.8.1 Debt to Asset Ratio

The results of fixed effect model in table 4.8 indicated that debt to total asset ratio had a positive relationship with profitability, and statistically significant ($p\text{-value} = 0.0764$) at 10 percent significant level. Thus, the result was in accordance with the expected sign. This implies that every one percent change (increase or decrease) in bank's debt to asset ratio keeping the other thing constant has a resultant change of 1.5 percent on the profitability in the same direction. This result also shows that, the level of external financing in Ethiopian banking industry increase the level of profit also increase. Besides, the result revealed the profitable banks have better access to external financing, (i.e. the possibility by debt financing will be high in banking sector).

The result of this study indicates a positive relationship between debt to asset ratio and bank profitability based on tax considerations. The findings were consistent with the trade-off theory. In addition, a positive relationship between debt to asset ratio and profitability was observed in following empirical studies, such as (Bourke 1989), (Berger and Bonaccorsi 2006), (Margrate and psillaki 2007), (Kebewar 2012) and (Khalid et al 2013) were some of them. Additionally, Regardless of the above fact, the interview result revealed that deposit had a positive effect on the

profitability. This suggests that banks with higher profitability will have more deposit in their capital structure that is similar to the above findings of the regression results. This is because the goodwill increases for those profitable banks in the eyes of the public, which resulted in an increased level of deposits for them.

4.8.2 Debt to Equity Ratio

The results of fixed effect model in table 4.8 indicated that debt to total equity ratio had a positive relationship with profitability and statistically significant ($p\text{-value} = 0.0623$) at 10 percent significant level. However, the result was inconsistent with the hypothesis of the study (i.e. the result was not in accordance with the expected sign). The positive relationship between debt to equity ratio and profitability implies that every one percent change (increase or decrease) in bank's debt to equity ratio keeping the other thing constant has a resultant change of 0.2 percent on the profitability in the same direction. This result also shows that, the level of profit increase, the level of external financing in commercial banks also increase. Besides, the result revealed the profitable banks have better access to external financing, (i.e. the possibility by debt financing will be high in banks).

The result of this study indicates a positive relationship between debt to equity ratio and bank profitability based on tax considerations. The findings were consistent with the trade-off theory. Additionally, a positive relationship between debt to equity ratio and profitability was observed in some empirical studies, such as (Wipperf 1966), (Capon et al 1990) (Margrate and psillaki 2007), some of them.

4.8.3 Interest Coverage Ratio

The results of fixed effect model in table 4.8 shows that the relationship between interest coverage ratio and profitability was positive and statistically significant (p-value = 0.0000), even at 1% significant level. Furthermore, the results are consistent with the expected sign. It implies that every one percent change (increase or decrease) in the bank's interest coverage ratio keeping the other thing constant had a resultant change of 0.21 percent increase interest expense payments on its debt with its EBIT. On the other hand, the positive relationship indicates the banks in Ethiopia borrow the fund by low cost.

This significant positive relationship between interest coverage ratio and profitability constant with various previous research findings like, (Khalid et al 2013), (Enugu and Amorji 2014) and (Enekwe, et al 2014) some of them

4.8.4 Firm Size

The result of fixed effect model in table 4.8 indicated that firm size had positive relationships with the profitability of commercial banks, and statistically significant (p-value = 0.0000), even at 1% significant level. This implies that every one percent change (increase or decrease) in the banks size keeping the other thing constant had a resultant change of 0.34 percent on the profitability in the same direction. The results also suggested that the bigger the bank, the more profitable. The possible reason is that, large firms are more diversified, have lower risk, better reputation, more stable cash flows and fewer hazards to be liquidated as per Trading-off theory. This gives large

firms easier access to the capital markets with negligible debt costs. Moreover, the sizes of the banks become large there levels of debt (customer deposit) also become high.

In addition, the results confirm the concept that large firms can earn more profit, either because of a better reputation or because of a perceived lower risk due to better diversification. This is largely consistent with the Trade-off Theory. Additionally, many previous studies indicated a similarly strong significant positive relationship, for example, (Zeitun and Tian 2007), (Lee 2009), (Velnampy and Nimalathasan 2010), (Vijayakumar and Tamizhselvan 2010) and (Muhammad W. 2013) same of them.

The findings from interviews results were also provide further support for the findings of the regression result which demonstrates a positive relationship between firm size and profitability. Therefore, based on this finding the relationship between firm size and profitability was in accordance with the expected sign. To conclude the presentation of fixed effect regression output results by discussing each explanatory variable by including the expected sign and actual sign. The summery of actual and expected sign is presented in the following Table 4.10 below:

Table 4.10 The Summary of expected and actual signs of explanatory variables.

Explanatory Variables	Expected Impact on Profitability	Actual Impacts
Debt ratios		Profitability
TDA	Positive & Sig	Positive & Sig
TDE	Negative & Sig	Positive & sig
ICR	Positive & Sig	Positive & Sig
FSIZE	Positive & Sig	Positive & Sig

Note: Sig- statistically significant

Ins- statistically insignificant

4.9 Chapter Summery

This chapter discussed about the results of the documentary analysis and interview results, and then presented the discussions of the result by using the appropriate method. Thus, a discussion of the result indicates that debt to asset ratio and debt to equity ratio were positively and statistically significant variables that affect the profitability of commercial banks in Ethiopia. Moreover, discussions of the result indicate that interest coverage ratio and firm size were an important explanatory variable of profitability of commercial banks in Ethiopian. The next chapter presents conclusions and recommendations of the study.

CHAPTER FIVE

Conclusion and Recommendation

The preceding chapter discusses about the results and finding of the study while this chapter deals about conclusions and recommendations based on the results and findings. Accordingly this chapter is organized into two sub-sections. Section 5.1 presents the conclusions and section 5.2 presents the recommendations.

5.1 Conclusion

The information or data collected were presented and analyzed accordingly and from the analysis, the researcher now concludes as follows:

- a. The descriptive statistics shows the debt to asset ratio (TDA) and debt equity ratio (TDE) have the mean value of 0.77 and 3.69 while standard deviation of 0.129 and 1.329 respectively for selected commercial banks in Ethiopia.
- b. Those debts to asset ratio (TDA), debt equity ratio (TDE), interest coverage ratio (ICR) and firm size (FSIZE) have positive relationship with Return on Assets (ROA) of selected commercial banks in Ethiopia.
- c. That debt to asset ratio (TDA) has positive relationship with debt to equity ratio (DER) also interest coverage ratio (ICR) and firm size (FSIZE) has negative relationship with debt to asset ratio (TDA) of selected commercial banks in Ethiopia. .
- d. That coefficient of multiple determinations (R^2) is 70.7% of the variations in the dependent variable are explained by the independent variables while 29.3% of the variations are

affected by other factors outside the model. It also shows that independent variables are the major determinant factors of profitability of commercial banks in Ethiopia.

- e. That debt to asset ratio (TDA) and debt-equity ratio (TDE) bear a positive relationship with the Return on Assets (ROA) and significance at 10% level and important factors for profitability of commercial banks in Ethiopia.
- f. The interest coverage ratio (ICR) and firm size (FSIZE) shows positive relationship with Return on Assets (ROA) and significant even at 1% significance level and consider as an important variable affecting the profitability of commercial banks in Ethiopia.

5.2 Recommendations

In light of the major finding obtained from the results, which are confirmed by this study and discussed in detail in previous chapters, the following recommendation can be stated.

5.2.1 To Commercial Banks

Most empirical studies on capital structure reveal that a negative correlation between leverage and profitability of the firm. In this study the commercial banks are employing more debt than equity in their capital structures, which are significant positive effect on their profitability. This indicates that increasing debt financing in their capital structure profitability also increase in commercial banks. This high amount of debt is mainly composed from deposit mobilization.

1. Thus, the managements of commercial banks should give attention on the deposit mobilization to maximize the firm's profitability. This deposit is cheapest source of fund, it

helps commercial banks to expand their operation and creates greater market share for them. Moreover, commercial banks must be fretful with utilizing these deposits effectively and efficiently to achieve the goal of the institution.

2. Interest expenses affect a company's profitability, so the cost-benefit analysis dictates that borrowing money to fund a company's assets has to have a positive effect. An appropriate interest coverage ratio would be an indicator of this circumstance, as well as indicating substantial additional debt capacity. Obviously, in this type of investment quality, the management of commercial banks should make cost-benefit analysis before borrowing money to fund a company's asset.

5.2.2 Future Research Directions

The purpose of this section is to serve as a source of inspiration for further researchers who want to write research papers within this area of work. Specify the following recommendations for further researches.

1. The study has put some ground work to explore the effect of debt financing on profitability of commercial banks in Ethiopian by using debt to asset ratio, debt to equity ratio and interest coverage ratio to measure the level of debt on their capital structure. Further work is required to develop new hypotheses and design new variables by using other debt ratio measurements, like; capitalization ratio, equity multiplier and cash flow to debt ratio, to reflect the effect of debt financing on banks profitability related with theory of capital structure.

6 References

- Abai, I. (2003). The Determinants of Corporate Debt Maturity Structure for Companies Quoted At the NSE, Unpublished MBA Thesis, and University of Nairobi.
- Abdabi, S & Abu-Rub, N (2012), The effect of Capital Structure on the Performance of Palestian Financial Institutions, *British Journal of Economics, Finance and Management Sciences*, Vol 3(2), pp 92-101.
- Abor, J. (2005).“The effect of capital structure on profitability: empirical analysis of listed firms in Ghana”, *Journal of Risk Finance*, vol.6, pp. 438-45.
- Aloy N. (2012), Capital Structure and Profitability in Srilankan Banks: *Journal of Management and Business Research*, Volume 12, ISSN: 2249-4588.
- Aloy N. and Velnampy T. (2014) , The effects of firm size on profitability of quoted manufacturing firms in Sri Lanka: *International Journal of Business and Management*; Vol. 9, No. 4, ISSN 1833-3850.
- Amanuel, M (2011), 'The determinants of capital structure evidence from manufacturing share companies of Addis Ababa city', Master's thesis, Addis Ababa University.
- Amato, L. H., & Burson, T. E. (2007).The Effects of firm size on profit rates in the financial services. *Journal of Economics and Economic Education Research*, 8(1), 67–81.
- Amdemikael, A (2012), 'Factors Affecting Profitability of Ethiopian Banking Industry', Msc Thesis, Addis Ababa University.
- Ashenafi, B (2005), 'Determinants of capital structure in medium enterprises in Ethiopia', Master's thesis, Addis Ababa University.
- Atanasova, C.V. and Wilson, N., (2004).Disequilibrium in the U.K. Corporate Loan Market, *Journal of Banking and Finance*, 28,595-614.
- Athanasoglou, P., Delis, M. and Staikouras C. (2006).Determinants of Bank profitability in the South Eastern European region, *Munich Personal REPEC Archive (MPRA)* Paper No. 10274.
- Baltagi, B. (2005), *Econometric analysis of panel data*, 3rd end, John Wiley & Sons, Ltd, Chic ester.

- Basel Committee (1999): Risk in the Banking Industry. *Published by the Basel Committee.*
- Basel Committee (2004): Basel 11 Accord. *Published by the Basel Committee.*
- Bayeh, A (2011), ‘Capital structure determinants: an empirical study on insurance industry in Ethiopia’, Master’s thesis, Addis Ababa University.
- Belayneh, H.(2011), ‘ Determinants of Commercial Banks profitability of Ethiopian Commercial banks’, Msc thesis, School of Business and Public Administration , Ababa University.
- Berger, A. and Udell, P., (2006). “Capital structure and firm performance: a new approach to testing agency theory and an application to the banking industry”, *Journal of Banking and Finance*, 30, pp, 1065-102.
- Bichsel G. and Blum N. (2005), *Capital structure and financing of SMEs: Australian evidence, Accounting and Finance*, 43,123-47.
- Birhanu, T. (2012), ‘Determinants of Commercial Banks Profitability of Commercial Banks in Ethiopia’, Msc thesis, Addis Ababa University.
- Biritu (2014), *Financial Sector Development in Ethiopia*; NBE, December, No. 118,
- Birritu (2015), “The mobile banking service in Ethiopia is endowed with huge potential as the sector remains untapped....” No. 119, pp.17.
- Bourke, P. (1989), Concentration and Other Determinants of Bank Profitability in Europe, North America and Australia, *Journal of Banking and Finance*, 13, 65-67.
- Brealey A and Myers S (2003), *Principles of Corporate Governance*. Tata McGraw—Hill, 7th Edition
- Brooks, C (2008), *Introductory Econometrics for Finance*, 2nd ed., Cambridge University, New Work.
- Capon, N., Farley, J., &Hoenig, S. (1990). Determinants of financial performance: a meta-analysis. *Management Science*.
- Creswell, JW (2003), *Research design: qualitative, quantitative and mixed methods approaches*, 2nd end, Sage Publications, California.
- Creswell, JW (2009), *Research design: quantitative, qualitative and mixed methods approaches*, 3rd end, Sage Publications, California.

- Dawson, C 2002, *Practical Research Methods: A user-friendly guide to mastering research techniques and projects*, How To Books Ltd, Oxford OX4 1RE, UK.
- Demirguc-Kunt, Ash and Huizinga, Harry (1999) Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence. *The World Bank Economic Review*, 132, 379–408.
- Dewatripont, M., & Tirole, J. (1994). *The prudential regulation of banks*: MIT Press, Cambridge, M.A.
- Dunn, S D (1999), *The practical researcher: a student guide to conducting psychological research*. 1st ed. McGraw, Hill, United State of America.
- Enugu S. and Amorji S. (2014). The effect of financial leverage on financial performance: Evidence of quoted pharmaceutical company in Nigeria, *journal of economics and finance*, volume 5, pp17-25.
- Erasmus F. and Josephine J. (2014), Capital Structure and Firm Performance: Evidences from Commercial Banks in Tanzania: *Journal of Finance and Accounting*, Vol.5, No.14..
- Ferri, M. G., & Jones, W. H. (1979). Determinants of financial structure: A new methodological approach. *Journal of Finance*, 34, pp 631-644.
- Flamini L., Hitchings J. and Brock K. (2009) Preventing Systematic Crisis through Bank Transparency, *Economic Notes by Bancamonte Del Paschi Disiena SPA*. 33
- Flannery, M. (1994). Debt Maturity and the Deadweight Cost of Leverage: Optimally Financing Banking Firms. *American Economic Review*, 84, 320- 331.
- Gerhard. S (2002) Risk management and value creation in financial institutions illustrated edition, *Published by John Wiley and Sons* 239.
- Goddard, J. Molyneux P. and Wilson, S. J. (2004). The profitability of European Banks: a cross sectional and dynamic panel analysis. *The Manchester School*, Vol. 72, No. 3, pp. 363–381 and pp. 1463–6786.
- Heinrich P. (2000), *Allowing For Risk Choices in Diamonds, Financial Intermediation As Delegated Monitoring*. *Working Paper 98-04*, University’ at Mannheim.
- Holz. (2002). The Impact of the Liability-Asset Ratio on Profitability in China's Industrial State-Owned Enterprises, *China Economic Review*, 13: 1-26.

- Inderst, R., & Mueller, H. (2008). Bank capital structure and credit decisions, *International Journal of Industrial Organization*, 26(2), 607-615.
- Kebewar, Shah, A. (2012). The effect of debt on corporate profitability: Evidence from French service sector, *MPRA paper 43304, University library of Munich*
- Kibrom M. (2010), the Determinants of Capital Structure: *Evidence from Commercial Banks in Ethiopia*: Msc thesis, College of Business and Economics, *Mekelle University*
- King, M. and Santor, E. (2008). Family Values: Ownership Structure, Performance and Capital Structure of Canadian Firms, *Journal of Banking and Finance*, 32:2423-2432.
- Khalid A., et al (2013), Impact of Capital Structure on Profitability of Listed Companies: Evidence from India, the *USV Annals of Economics and Public Administration*, volume 13, Issue 1(17).
- Kwast, Mayron L., and John T. Rose (1982), Pricing, Operating Efficiency, and Profitability among Large Commercial Banks, *Journal of Banking and Finance*, 6, No 2, 233-254.
- Leary, Zina 2004, *The Essential Guide to Doing Research*, Sage Publications, London, UK.
- Lee, J. (2009). Does Size matter in Firm Performance? Evidence from U.S Public Firms. *International Journal of the Economics of Business*, 16(2), 189–20.
- Li , Y (2007), ‘Determinants of Banks’ Profitability and Its Implication on Risk Management Practices’, Panel Evidence from the UK, the University of Nottingham.
- Linus M. (2013) “The Effect of Debt Financing On Firm Profitability of Commercial Banks In Kenya” The Degree of Masters of Business Administration Of The University Of Nairobi
- MacDonald S. and Koch B. (2006), *The Professional Handbook of Finance Risk Management*, Oxford: *Butterworth Heinemann*.
- Margaritis, D. and Psillaki, M. (2007). Capital Structure and Firm Efficiency, *Journal of Business Finance & Accounting*, 34: 1447–1469.
- Modigliani, F. and M. Milliner, (1958), the Cost of Capital, Corporation Finance and the Theory of Investments *American Economic Review*
- Modigliani, F. and M. Milliner, (1963) Corporate Income Taxes and the Cost of Capital. A *Correction*, *American Economic Review*,

- Mohana, K and Tekeste, B (2012), 'Determinants of profitability of Commercial Banks in Developing country', Evidence from Ethiopia, *International Journal of Accounting and Finance*, Vol.2, Issue 3.
- Mohammed G. (2014), Determinants of capital structure and its impact on the performance of Ethiopian insurance industry: MSc thesis, College of Business and Economics, Jimma University.
- Molyneux, P. and Thornton, J. (1992), Determinants of European Bank Profitability: A Note, *Journal of Banking and Finance*, 16, 6, 1173-1178.
- Mugenda M. and Mugenda A. (1999), Research Methods: Qualitative and Quantitative Approaches, *African Centre for Technology Studies*, Nairobi, Kenya.
- Muhammad W. (2013), Effect of financial leverage on firm performance. Empirical evidence from Karachi Stock Exchange. MPRA Paper No. 50383 11:17 UTC.
- Munene Kloein ,Hebid. (2006). Impact on profitability on Capital Structure of Companies Listed at the Nairobi Stock Exchange. *Unpublished MBA Thesis, University of Nairobi*.
- Myers, S. C. (1977), 'Determinants of corporate borrowing', *Journal of Financial Economics* 25, 25-43.
- Myers, S. (1984), The Search for Optional Capital Structure, *Midland corporate Financial Journal*, 6-16
- Navapan G. and Tripe D., (2003), Agency Costs of Free-Cash-Flow, Corporate Finance, and Takeovers, *American Economic Review*, 76, 323-329.
- Ommeren, S. (2011).An examination of the Determinants of Banks' Profitability in the European Banking sector. Unpublished Master's thesis, Erasmus University, school of Economics, departments of Finance, Rotterdam.
- Onaolapo A. and Kajola O. (2010), Capital Structure and Firm Performance: Evidence from Nigeria, *European Journal of Economics, Finance and Administrative Sciences*, 25-70
- Pandey, I. (1981) , Capital Structure and the Cost of Capital. Delhi: *Sharma Publishers*.
- Pringle V. (1971), Management Credit Risk, A Challenge For The New Millennium. *Economic Notes* 31(2), 201-214. Blackwell Publishers.

- Saona, P. H. (2011). Determinants of the Profitability of the US Banking Industry. *International Journal of Business and Social Science*, 2(22), 255 - 269.
- Saunders M, Lewis P and Thornhill A 2003, *Research Methods for Business Students*, 3rd ed, Harlow, Prentice Hall, England.
- Semu, S Z (2010), 'Impact of reducing loan by Ethiopian banks on their own performance', Master's thesis, University of South Africa.
- Shibru, W. (2012) Determinants of Capital Structure of Commercial Banks in Ethiopia. Master's thesis, Addis Ababa University.
- Silva, M. (2008). *The effect of capital structure on microfinance institutions performance*. Master's thesis, University of Agder, Kristiansand.
- Sufian , F (2011), 'Profitability of The Korean Banking Sector', Panel Evidence on Bank Specific and Macroeconomic Determinants, *Journal of Economics and Management*, vol.7, No.1, 43-72.
- Syafri N. (2012), 'Factors Affecting Bank Profitability in Indonesia', The International Conference on Business and Management 6-7 sep.2012, Phuket-Thailand.
- Taani, K. (2013). Capital Structure Effects on Banking Performance: A Case Study of Jordan. *International Journal of Economics, Finance and Management Sciences*, 1(5), 227-233.
- Tan, Y and Floros, Ch. (2012), 'Bank profitability and Inflation', the case of China, *Journal of Economic Studies*, vol.39 No.6, pp.675-696.
- Titman, S., & Wessels, R. (1998). The determinants of capital structure choice. *Journal of Finance*, 43, 1-19.
- Tsegabirhan W. (2010), Stretching-out to reach the Potential to Mobilize Domestic Financial Resources of Africa low Income Economies: Case study of Ethiopia, The North-South Institute (NSI), Dec. 2010.
- Velnampy, T., & Nimalathasan, B. (2010). Firm Size on Profitability: A Comparative Study of Bank of Ceylon and Commercial Bank of Ceylon Ltd in Sri Lanka. *Global Journal of Management and Business Research*, 10(2), 96–100.

- Vijayakumar, A., & Tamizhselvan, P. (2010). Corporate Size and Profitability: An Empirical Analysis. *College Sad Hana-Journal for Bloomers of Research*, 3(1), 44–53.
- Weldemikael Sh. (2012), *Determinants of capital structure: An Empirical Study on Ethiopian Banking Industry*, Master's thesis, Addis Ababa University.
- Westerfield, F. (2008), Regulations, Market Structure, Institutions and the Cost of Financial Intermediation, *Journal of Money, Credit and Banking*, 36,593-626.
- White D. and Morrison, U. (2001).Financial performance and outreach, a global analysis of leading micro banks. *Working paper may 25, 2006*.
- Wipperf, R. (1966).Financial Structure and the Value of the Firm, *The Journal of Finance*, 21(4):615-633.
- Yafeh, Y., & Yosha, O. (2003). Large shareholders and banks: Who monitors and how? *Economic Journal* 113, 128-146.
- Yesegat, W A (2009), 'value added tax in Ethiopia: a study of operating costs and compliance', PhD thesis, University of New South Wales, Australia.
- Yuvaraj & Abate. G, (2013): The performance of insurance companies in Ethiopia: International Journal of Marketing, Financial Services & Management Research, Vol.2, No. 7.
- Zeitun, R and Tian, G.G (2007): Capital structure and corporate performance: evidence from Journal of Finance 39(3), (December): 575-92.

Web-Sits

<http://www.investopedia.com/university/ratios/landing.asp>

<http://dx.doi.org/10.1080/13571510902917400>

<http://mpa.ub.uni-muenchen.de/50383/>

<http://www.nbe.gov.et>

7 Appendices

Appendix 7.1 Heteroscedasticity Test White

Heteroscedasticity Test: White

F-statistic	1.812875	Prob. F(14,81)	0.0560
Obs*R-squared	22.90373	Prob. Chi-Square(14)	0.0619
Scaled explained SS	19.79840	Prob. Chi-Square(14)	0.1366

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

Date: 04/24/15 Time: 09:10

Sample: 2002 2013

Included observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000569	0.002177	0.261342	0.7945
TDA	0.002244	0.003037	0.738920	0.4621
TDA^2	0.000165	0.000885	0.186301	0.8527
TDA*TDE	8.86E-05	0.000175	0.507024	0.6135
TDA*ICR	-0.000164	0.000109	-1.503093	0.1367
TDA*FSIZE	-0.000111	0.000153	-0.724917	0.4706
TDE	-0.000130	0.000256	-0.507316	0.6133
TDE^2	-5.66E-06	7.72E-06	-0.733708	0.4652
TDE*ICR	-3.19E-06	8.99E-06	-0.355001	0.7235
TDE*FSIZE	6.11E-06	1.18E-05	0.517746	0.6060
ICR	-9.75E-05	0.000174	-0.560417	0.5767
ICR^2	8.34E-07	3.10E-06	0.268663	0.7889
ICR*FSIZE	1.07E-05	8.11E-06	1.319447	0.1907
FSIZE	-6.76E-05	0.000189	-0.358160	0.7212
FSIZE^2	1.69E-06	4.69E-06	0.361226	0.7189
R-squared	0.238581	Mean dependent var		4.62E-05
Adjusted R-squared	0.106977	S.D. dependent var		6.44E-05
S.E. of regression	6.08E-05	Akaike info criterion		-16.43426
Sum squared resid	3.00E-07	Schwarz criterion		-16.03358
Log likelihood	803.8443	Hannan-Quinn criter.		-16.27229
F-statistic	1.812875	Durbin-Watson stat		1.880196
Prob(F-statistic)	0.050461			

Appendix 7.2 Heteroscedasticity Test: Breusch-Pagan-Godfrey

Heteroscedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.337572	Prob. F(4,91)	0.0612
Obs*R-squared	8.944943	Prob. Chi-Square(4)	0.0625
Scaled explained SS	7.732172	Prob. Chi-Square(4)	0.1019

Test Equation:

Dependent Variable: RESID^2

Method: Least Squares

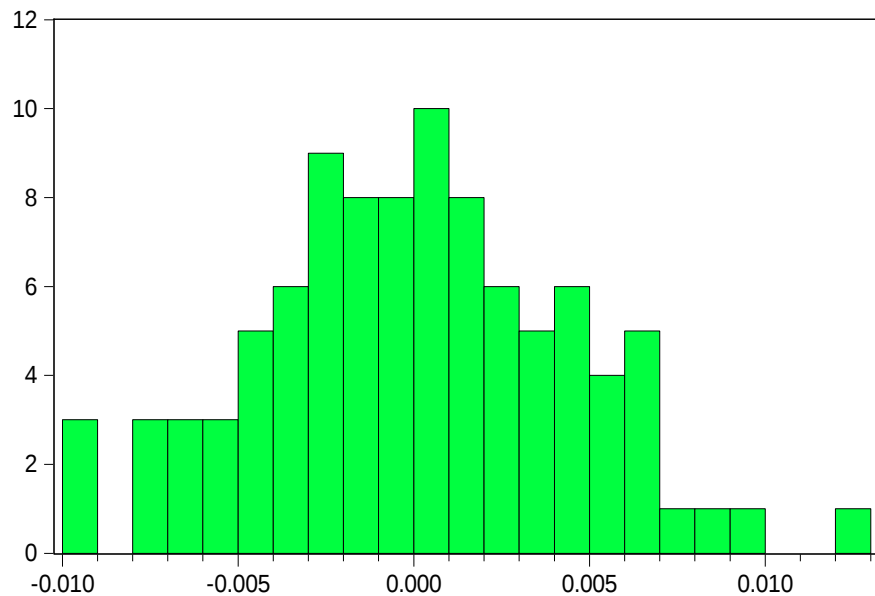
Date: 04/24/15 Time: 09:18

Sample: 2002 2013

Included observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000341	0.000122	2.803572	0.0062
TDA	-9.88E-05	8.93E-05	-1.105970	0.2717
TDE	1.48E-05	8.36E-06	1.769546	0.0802
ICR	-3.55E-07	4.82E-06	-0.073621	0.9415
FSIZE	-1.22E-05	5.70E-06	-2.150169	0.0342

R-squared	0.093176	Mean dependent var	4.62E-05
Adjusted R-squared	0.053316	S.D. dependent var	6.44E-05
S.E. of regression	6.26E-05	Akaike info criterion	-16.46783
Sum squared resid	3.57E-07	Schwarz criterion	-16.33427
Log likelihood	795.4556	Hannan-Quinn criter.	-16.41384
F-statistic	2.337572	Durbin-Watson stat	1.614573
Prob(F-statistic)	0.061176		



Series: Standardized Residuals
Sample 2002 2013
Observations 96

Mean -1.45e-19
Median 7.14e-06
Maximum 0.012427
Minimum -0.009995
Std. Dev. 0.004393
Skewness 0.078672
Kurtosis 2.918180

Jarque-Bera 0.125805
Probability 0.939035

Dependent Variable: ROA

Method: Panel Least Squares

Date: 04/24/15 Time: 08:35

Sample: 2002 2013

Periods included: 12

Cross-sections included: 8

Total panel (balanced) observations: 96

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.075035	0.013135	-5.712447	0.0000
TDA	0.014488	0.008076	1.793838	0.0764
TDE	0.001813	0.000960	1.889631	0.0623

ICR	0.002099	0.000595	3.526616	0.0007
FSIZE	0.003404	0.000637	5.340373	0.0000

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.707008	Mean dependent var	0.025733
Adjusted R-squared	0.668640	S.D. dependent var	0.008116
S.E. of regression	0.004672	Akaike info criterion	-7.778030
Sum squared resid	0.001833	Schwarz criterion	-7.457487
Log likelihood	385.3455	Hannan-Quinn criter.	-7.648461
F-statistic	18.42702	Durbin-Watson stat	1.841266
Prob(F-statistic)	0.000000		

Appendix 7.5 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	33.965283	4	0.0000

Appendix 7.6 Ratio Data

YEAR	FIRMS	ROA	TDA	TDE	ICR	FSIZE
2002	CBE	0.0212680	0.8322000	4.959634	2.2835000	23.8210000
2003	CBE	0.0225000	0.8166100	4.4529070	3.8526000	23.9100000
2004	CBE	0.0119000	0.8054000	3.2513460	2.8172000	24.0550000
2005	CBE	0.0172000	0.7647800	3.2513460	3.7113000	24.2250000
2006	CBE	0.0224000	0.7890300	3.7400500	4.3939000	24.3030000
2007	CBE	0.0199000	0.7564700	3.1062080	4.3333000	24.4950000
2008	CBE	0.0270000	0.7464500	2.9440580	4.4981000	24.6440000
2009	CBE	0.0323000	0.7320000	2.7314030	5.4223000	24.8080000
2010	CBE	0.0265000	0.7366000	2.7965320	4.7732000	25.0300000
2011	CBE	0.0251000	0.7421200	2.8778030	4.7930000	25.4620000
2012	CBE	0.0342000	0.7341400	2.7613570	5.7313000	25.7910000
2013	CBE	0.0310000	0.7731300	3.4077110	4.7045000	26.0070000
2002	CBB	0.0042000	0.1656800	0.1985820	1.2222000	20.6800000
2003	CBB	0.0117000	0.1751600	0.2123550	1.6087000	20.6640000
2004	CBB	0.0038000	0.6471100	1.8337800	1.3500000	20.7790000
2005	CBB	0.0093000	0.5764200	1.3608250	2.1818000	21.3290000
2006	CBB	0.0312000	0.5414600	1.1808250	4.2917000	21.3090000
2007	CBB	0.0296000	0.6013800	1.5086320	4.0000000	21.3590000
2008	CBB	0.0352000	0.6226200	1.6496460	3.5992000	21.5950000
2009	CBB	0.0284000	0.7075300	2.4192060	3.1984000	21.6760000
2010	CBB	0.0290000	0.7446600	2.9163880	3.1418000	21.8740000
2011	CBB	0.0245000	0.7153400	2.5129800	2.5488000	21.9770000
2012	CBB	0.0193000	0.5914600	1.4477650	2.5234000	22.5060000
2013	CBB	0.0176000	0.6116300	1.5748490	2.5539000	22.7920000
2002	AIB	0.0108000	0.8363300	5.1098900	1.6552000	20.8290000
2003	AIB	0.0100000	0.8308400	4.9113920	1.6923000	21.0610000
2004	AIB	0.0147000	0.8435000	5.3898920	2.1667000	21.2940000

2005	AIB	0.0171000	0.8715200	6.7832170	2.6176000	21.5230000
2006	AIB	0.0264000	0.8689900	6.6330750	3.3125000	21.8060000
2007	AIB	0.0373000	0.8125300	4.3342620	4.2903000	22.0660000
2008	AIB	0.0296000	0.8027700	4.0701590	2.9245000	22.2960000
2009	AIB	0.0223000	0.7726600	3.3986710	2.6865000	22.5830000
2010	AIB	0.0312000	0.7685400	3.3204090	3.2646000	22.7960000
2011	AIB	0.0356000	0.7655200	3.2646710	3.4111000	23.0370000
2012	AIB	0.0330000	0.7711000	3.3687370	2.8622000	23.2030000
2013	AIB	0.0316000	0.8442900	5.4223720	2.7978000	23.5010000
2002	BOA	0.0162000	0.7959700	3.9012880	1.2353000	20.8560000
2003	BOA	0.0136000	0.8072000	4.1867700	1.2963000	21.0110000
2004	BOA	0.0209000	0.8044200	4.1129030	2.8621000	21.1840000
2005	BOA	0.0208000	0.7909600	3.7837210	3.4848000	21.4450000
2006	BOA	0.0293000	0.7681700	3.3135460	3.9756000	21.7650000
2007	BOA	0.0310000	0.8012400	4.0311110	2.5833000	21.9460000
2008	BOA	0.0305000	0.8144900	4.3906070	1.2348000	22.1750000
2009	BOA	0.0257000	0.8206200	4.5747150	2.2986000	22.4240000
2010	BOA	0.0262000	0.8183000	4.5034620	2.5423000	22.5610000
2011	BOA	0.0307000	0.8347500	5.0513840	2.5781000	22.7080000
2012	BOA	0.0372000	0.8217800	4.6111680	2.3843000	22.8320000
2013	BOA	0.0307000	0.8388000	5.2034540	2.3612000	23.0420000
2002	WBE	0.0049000	0.7972100	3.9312980	1.6000000	20.2860000
2003	WBE	0.0045000	0.7919000	3.8054050	3.8235000	20.6060000
2004	WBE	0.0240000	0.7684200	3.3181820	5.3333000	20.8540000
2005	WBE	0.0297000	0.7970300	3.9268290	5.7273000	21.2030000
2006	WBE	0.0300000	0.7870700	3.6964660	6.2000000	21.5380000
2007	WBE	0.0197000	0.7826200	3.6001320	6.5818000	21.9700000
2008	WBE	0.0034000	0.7191200	2.5602450	5.0273000	22.1400000
2009	WBE	0.0183000	0.7284500	2.6824950	5.7687000	22.3560000

2010	WBE	0.0224000	0.6831900	2.1564510	8.9209000	22.4710000
2011	WBE	0.0249000	0.7390500	2.8321840	9.4775000	22.8100000
2012	WBE	0.0263000	0.6898400	2.2241880	7.7023000	22.8450000
2013	WBE	0.02690000	0.7264600	2.6557980	7.5220000	23.0650000
2002	UB	0.0093000	0.6019100	1.5120000	2.1667000	19.5650000
2003	UB	0.0124000	0.6119400	1.5769230	2.1667000	19.9660000
2004	UB	0.0281000	0.7893200	3.7464790	1.9091000	20.3290000
2005	UB	0.0297000	0.8061500	4.1586540	3.5294000	20.7940000
2006	UB	0.0314000	0.7629800	3.2189970	3.0690000	21.1930000
2007	UB	0.0322000	0.7060700	2.4021820	3.1750000	21.5040000
2008	UB	0.0337000	0.7517900	3.0287590	3.0028000	21.9020000
2009	UB	0.0353000	0.7773100	3.4904910	2.5234000	22.2610000
2010	UB	0.0389000	0.8013500	4.0338940	3.3747000	22.4980000
2011	UB	0.0401000	0.7851600	3.6545370	3.2269000	22.7680000
2012	UB	0.0403000	0.7690400	3.3298020	3.0462000	22.8970000
2013	UB	0.0330000	0.8081500	4.2124650	2.2371000	23.0240000
2002	DB	0.0127000	0.8014800	4.0372880	2.0833000	21.1190000
2003	DB	0.0107000	0.8141600	4.3810810	2.2333000	21.4120000
2004	DB	0.0104000	0.8136000	4.3647290	2.9024000	21.7080000
2005	DB	0.0289000	0.8283600	4.8262350	2.8654000	21.9530000
2006	DB	0.0275000	0.8121400	4.3231850	3.7612000	22.2380000
2007	DB	0.0293000	0.8046700	4.1194920	3.7742000	22.5220000
2008	DB	0.0280000	0.7857700	3.6679390	3.0510000	22.7810000
2009	DB	0.0201000	0.8142900	4.3848620	2.7673000	22.9990000
2010	DB	0.0296000	0.8211900	4.5925570	2.8464000	23.2370000
2011	DB	0.0300000	0.8077300	4.2010930	2.9365000	23.4080000
2012	DB	0.0339000	0.8028300	4.0717920	3.1775000	23.5870000
2013	DB	0.0214000	0.8027100	4.0687130	2.6595000	23.7060000
2002	NIB	0.0243000	0.6460700	1.8253970	3.2000000	20.0960000

2003	NIB	0.0147000	0.6644100	1.9797980	2.7273000	20.6010000
2004	NIB	0.0281000	0.6672000	2.0048190	4.2667000	20.9440000
2005	NIB	0.0266000	0.7061200	2.4027500	3.7500000	21.2730000
2006	NIB	0.0286000	0.7163300	2.5252170	3.4545000	21.4300000
2007	NIB	0.0292000	0.7207500	2.5810440	3.5238000	21.6810000
2008	NIB	0.0310000	0.6766700	2.0927810	3.5519000	22.0180000
2009	NIB	0.0320000	0.6858200	2.1829020	3.9206000	22.2930000
2010	NIB	0.0336000	0.6912700	2.2390280	4.1795000	22.5100000
2011	NIB	0.0347000	0.7252200	2.6392710	3.8812000	22.6850000
2012	NIB	0.0346000	0.7054500	2.3950200	3.5639000	22.8370000
2013	NIB	0.0256000	0.7277800	2.6735230	3.6274000	22.9360000

Appendix 7.7 In-Depth Interview Questions

Addis Ababa University
School of Business and Economics
Department of Accounting and Finance

This questionnaire contain open-ended question, you are requested replay the entire question. There is no right or wrong answers, simply answer the question based of your working experience and the current knowledge about the business environment of your bank in particular and Ethiopia in general. You are kindly request to give your honest opinion on each of questions. The information from respondents will be keep confidentially and no any effect on respondents. So, please answer the entire question frankly and honestly, your frank and sincere responses will be highly appreciated.

Thank you in advance

Questionnaire prepared to ask the financial managers of the selected commercial banks. Interview questions which were conducted on the effects of debt financing on profitability of commercial banks in Ethiopia.

1. What sources of finance does your company mainly use?
2. What are the main factors that can affect the profitability of your company?
3. How does your company determine the appropriate amount of debt financing?
4. If profitability increases in your bank, it is the indication of easily paying the interest expense?
5. Does bank has grown in size, the profitability of your company increase?

If you have any opinion regarding the effect of debt financing on profitability please specify...