DETERMINANTS OF CAPITAL STRUCTURE IN ETHIOPIAN MICROFINANCE INSTITUTIONS

A Research Paper Submitted to Department of Accounting and Finance for the Partial Fulfillment of the Requirement of Bachelor of Art (BA) Degree in Accounting and Finance

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JANUARY, 2021

WOLKITE, ETHIOPIA

Abstract

Capital structure is the mixture of debt and equity financing. Its choice and determinants related to many different factors. Studies indicates that the capital structure of Microfinance Institutions have significant impact on the sustainability and outreach of these organizations. Hence, studying the factors that determine the capital structure of these organizations is essential. Although the capital structure of financial firms has been studied by some scholars, such types of studies are rare in the MFI sector. Thus the purpose of this study is to investigate the determinants of capital structure in the Ethiopia MFI industry. To accomplish the objective of the study the explanatory research design has been employed. The researcher would use secondary data of 8 sample MFIs (Buusa Gonofaa micro finance s.co, Wasasa microfinance Institution, dynamic microfinance Institution s.co, Poverty eradication and community empowerment (Peace) ,Amhara credit and saving institution (ACSI), Dedebit credit and saving institution (DECSI),ossco microfinance institution & Omo microfinance institution.) that fulfill the criteria of data availability from the association of micro finance institutions (AMIS) and annual report of national bank of Ethiopia (NBE) database covering the period of 2010–2018 and the study includes five determined factors. A panel data using Random Effect Multiple Regression model would be used to analyze the standard determinants of capital structure.

Key words Determinants, Capital Structure, MFI, Ethiopia

ACKNWOLEDGEMENT

Alhamdulillah, all praises and gratitude for Allah for allowing and giving me the strength to complete this study. Without his permission, I would not be able to complete this study I would like to express my heart felt gratitude to my Advisor **Delelegn E**. **(MPAcc)** for his professional guidance and valuable support for the completion of this study. I am also indebted to all those who devoted their money and time for the success of this research paper. Last but not the least, my gratitude and hart felt thanks go to my beloved families and friends for their support.

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LISTS OF ACRONYMS AND ABRIVIATION

ACSI: Amhara Credit and Saving Institution

AMIS: Association of Micro Finance Institutions

DECSI: Dedebit Credit and Saving Institution

EBIT: Earnings Before Interest and Tax

GDP: Growth Domestic Production

IFAD: International fund for agricultural development

IFC: International Finance Corporation

MFI: Microfinance Institution

MM: Modigliani and Miller

NBE: National Bank of Ethiopia

NGO: None Governmental Organization

PEACE: Poverty Eradication and Community Empowerment

POT: Pecking Order Theory

RE: Random effect

RUFIP: Rural financial intermediation program

SNNPR: South Nations Nationality and Peoples Region

STT: Static trade-off Theory

USA: United States of America

UK: United Kingdom

Chapter one

1. Introduction

1.1. Background of the study

Any kind of business activity depends on finance to meet its fixed assets and working capital requirements, and finance is accelerating engine of business activities. Whether the businesses are big or small, they need fund to fulfil their business activities. Accordingly, the capital structure decision of a company is at the heart of other decisions in the area of corporate finance (Usman, 2013).

Capital structure of a firm describes the way in which a firm raises capital needed to establish and expand its business activities. It is a mixture of various types of equity and debt capital a firm maintains resulting from its financing decisions. For example, a firm that sells Birr 25 million in equity and Birr 75 million in debts is said to be 25 percent equity financed and 75 percent debt-financed. The firm's ratio of debt to total financing, the leverage, is therefore, 75 percent. Exceptionally crucial is for someone to know how a firm chooses its optimal mix of debt and equity capital. Phrased in another way, what is the optimal capital structure for a firm? Whether or not an optimal capital structure does exist is an issue in corporate finance (Myers, 1984).

Research on the determinants of capital structure was initially directed mainly to firms in the developed countries specifically in United States. One of the classical researches was carried out by Titman and Wessels (1988); where they studied the theoretical determinants of capital structure. The theoretical attributes namely; asset structure, non-debt tax shields, growth, uniqueness, industry classification, firm size, earnings volatility and profitability were tested to see how they affect a firms choice of debt-equity mix. To broader the understanding of capital structure models, Rajan and Zingales (1995) have attempted to find out whether the capital structure choices in other countries are made based on factors that similar to those capital structure influencing ones in U.S firms. Four factors; tangibility of assets, growth, firm size and profitability were tested to see their influences on leverage.

However, there were not many researches directed towards developing countries that saw the applicability of the theories of capital structure developed from the developed nations. Booth et al. (2001), Maghyereh (2005), Amidu (2007), Abor (2008), and Bas et al. (2009) were among the scholars who have studied the capital structure issues in the developing. Thus, one of the prominent studies was done by Booth et al. (2001). They have undertaken an interesting study by taking secondary data from the International Finance Corporation (IFC) for the largest companies in 10 developing countries. Several variables were tested and analyzed to explain capital structure determinants by considering the impact of taxes, agency conflicts, financial distress and the impact of informational asymmetries. The variables mentioned include tax, business risk, asset tangibility, sales, return on assets and market-to-book ratio. On the other side, one of the latest studies was conducted by Bas et al. (2009) in developing countries. This paper examined the determinants of capital structure decisions of firms in developing countries collecting secondary data for 11,125 firms from World Bank of 25 developing countries. Bas et al. draw the following major conclusions from the results.

Regardless of the fact that how a firm defines capital structure, in accordance with the capital structure theories, the importance of firm level variables, such as tangibility and profitability, in determining capital structure decision is confirmed. However, the research scholars have identified some systematic differences in the way debt ratios were affected by GDP growth rates, inflation rates and the development of capital markets.

The determinants of capital structure of Ethiopian firms are still in under-explored areas in the literature of financing decision. As per the researchers access and knowledge, the researchers conducted on determinants of capital structure so far in Ethiopian case are, Ashenafi (2005) a case study in Addis Ababa Small and Medium enterprises, Amanuel (2011) evidence from manufacturing share companies of Addis Ababa city and Mintesinot (2010) has undertaken an attention-grabbing study on the determinants of capital structure evidencing manufacturing firms in Tigray, Ethiopia.

Despite an extensive empirical works that have been conducted on the topic for non-financial firms, little empirical is known in the financial firms sectors. A few research findings have focused on the determinants of capital structure of banking and insurance industries only. The

capital structure of MFI is, however, still a relatively under explored area in the literature. Currently, there is no clear understanding, on how MFI choose their capital structure and what factors affect. In order to understand the capital structure of MFI their unique characteristics require separate study. The determinants of capital structure of MFI are undone in Ethiopia.

Therefore, the main purpose of this study would be to examine the relationship between leverage and determinants of capital structure decision of MFIs in Ethiopia. This will equip financial managers with applied knowledge of determining their capital structure, and play role in filling gap in understanding of the capital structure decision.

1.2 Statements of the problem

While the choice of capital structure is one of the most important strategic financial decisions of firms, it has been the subject of considerable debate and investigation. The debate on what drives capital structure decisions is still open. Following the seminal work of Modigliani and Miller (1958), a vast theoretical literature developed, which led to the formulation of alternative theories, such as the static trade off model, pecking order theory and agency cost theory. These theories point to a number of specific factors that may affect the capital structure of firms such as (profitability, size, tangibility, growth, risk, liquidity, age, dividend payout). However, the empirical evidence regarding the alternative theories is still questionable (Rajan and Zingales 1995). For example, Static trade off-theory assumes a firm's optimal debt ratio is determined by a trade-off between the bankruptcy cost and tax advantage of borrowing, holding the firm's assets and investment plans constant. According to this theory, higher profitability lower the expected cost of distress, therefore, firms increase their leverage to take advantage from tax benefits. Which means in other word profitability is positively related with leverage. As well agency theory supports this positive relation because of the free cash flow theory of Jensen (1986). But, pecking order theory Myers and Majluf (1984) throws doubt on the existence of target capital structure, suggesting that firms use debt only when the internal financing is not available. For this reason profitability is expected to have negative relation with leverage. Because of most empirical studies confirm the negative correlation between profitability and leverage Titman and Wessels (1988), Rajan and Zingales (1995), Wald (1999) etc.

The determinants of capital structure have been debated for many years and still represent one of the most unsolved issues in corporate finance literature. Indeed, what makes the capital structure debates so exciting is that only a few of the developed theories have been tested by empirical studies and the theories themselves lead to different, not mutually exclusive and sometimes opposed result and conclusion (Rajan and Zingales 1995). Morri and Beretta (2008) explained many theoretical studies and much empirical research have addressed those issues, but there is not yet a fully supported and commonly accepted theory; and the debate on the significance of determinant factors is still unfolded.

In Ethiopia there are few empirical studies about determinate of capital structure of microfinance in Ethiopia like Abebaw, (2014) study determinant of capital structure of financial performance of microfinance and Tesfaye, (2017) study determinate of capital structure of microfinance and The study by Yonas, (2012) and Melkamu, (2012) tried to see the determinants of performance by using proxy of financial and operational sustainability of Ethiopian MFIs. They focused only on internal factors and have not considered external factors like macroeconomic and industry and also they have not addressed specifically the idea of determinate of capital structure of MFIS, in addition Sima, (2013) studied determinants of profitability of Ethiopian micro finance by using microfinance specific and macroeconomic factors from secondary data. Therefore, the above studies use limited variables which focus in MFI-specific and macroeconomic factors only and not say anything about industry specific determinants in their study. Specially the studies that conducted by this title didn't incorporate macroeconomic factors. Therefore, this paper would have tried to fill this gap by researching on capital structure in microfinance institution in Ethiopian order to understand how this institution in Ethiopia choose their capital structure and also this studies tried to fill the gap in existing literature and above all underutilization of debt financing in MFIs by identifying the main factors that affect the capital structure of Ethiopian MFIs.

1.3. Objectives

1.3.1. General Objective

The study is investigates the determinants of capital structure of microfinance institution in Ethiopia

1.3.2. Specific Objectives

This study attempted to achieve the following specific objectives:

- To measure the effect of change in profitability on the financing mix (leverage) of MFIs in Ethiopia,
- To determine the consequence of change in the tangibility of assets held by MFIs of Ethiopia on the debt to equity ratio,
- To find out the extent to which variations in MFI size explain the variations in debt to equity ratio of MF business in Ethiopia,
- To find out the response of capital structure to the inflation rate of the MFIs operating in Ethiopia,
- To determine the impact of GDP on financing decision of MFIs in Ethiopia,

1.4. Hypothesis

In many quantitative researches, writers use research questions. However, a more formal statement of research employs hypotheses. These hypotheses are predictions about the outcome of the results, and they may be written as alternative hypotheses specifying the exact results to be expected (more or less, higher or lower of something). They also may be stated in the null form, indicating no expected difference or no relationship between groups on a dependent variable as stated by (Creswell, 2008).

To achieve the intended goal, the researcher has formulated six hypotheses.

H1: There is significant negative relationship between profitability and leverage ratio.

H2: There is a positive relationship between leverage ratios and tangibility

H3: There is a significant positive relationship between leverage ratios and size.

H4: There is a significant positive relationship between leverage ratios and GDP

H5: There exists a significant positive relationship between inflation rate and MIFs leverage

1.5. Significance of study

The study of Determinant of capital structure is important because it has an effect on sustainability and outreach of the organizations. this study will have significant role to play in filling gap in understanding of the capital structure decision for MFIs in Ethiopia. Such an

understanding is important, because it equips financial managers with applied knowledge of determining their capital structure. As an appropriate capital structure is important to a firm as it will help in dealing with competitive environment within which the firm operates, and which will maximize the return of the stockholders by increasing the value of the firm. Additionally, this study will be used as an input to researchers for further research on determinant of capital structure. It also important for police makers like national bank of Ethiopia (NBE) in creating conducive environment for MFI to utilize debt as viable source of finance in era increased commercialization of microfinance and extended outreach goal.

Last but not least, the study notably contributes to other studies to be made in different economic sectors by providing the picture of the firm level factors determining capital structure decisions of MFIs in Ethiopia by serving as a reference point.

1.6. Scope and limitation of the study

This study was scope to specific determinant of capital structure (e.g. profitability, tangibility, size,) and macroeconomic variables (GDP and inflation rate) and theories of capital structure that can explain the Structure of Ethiopian MFI industry. The major limitations that hamper the study will be unavailability of active secondary data which will forces the researcher to measure the dependent measures of leverage as well as the proxies of the independent variables in terms of book values rather than market values.

1.7 Organization of the paper

This study would focus on examining the effects of firm specific and macro-economic factors on the capital structure decisions of MFIs sector. This research proposal is organized into three chapters. The first chapter deals with introduction of the study, statements of the problem, objectives of the study, hypothesis, significance of the study and scope and limitation of the study. The second chapter presents the review of related literature on the theoretical framework of capital structure and prior empirical findings on the determinants of capital structure decisions. Then, the third Chapter deals about research methodology of the study which consists of research design, research approach, source of data, data collection method, target population, and sampling techniques and procedures, sample sizes, variable description and measurements and model specification the and lastly presents information about time and cost budget. The fourth

chapter was provided results and discussion. The final chapter includes conclusion and recommendations and at the end references and appendixes were attached.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1. Introduction

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

2.2. Definition of Capital Structure

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

From the definitions given by many previous researchers, capital structure of a firm describes the way in which a firm raise capital needed to establish and expand its business activities. It is a mixture of various types of equity and debt capital a firm maintains, resulting from the firms financing decisions. The amount of debt that a firm uses to finance its assets is called leverage. A firm with a lot of debt in its capital structure is said to be highly levered. A firm with no debt is said to be unlevered. For example, a firm that sells Birr 20 million in equity and Birr 80 million in debts is said to be 20 percent equity-financed and 80 percent debt-financed. The firm's ratio of debt to total capital is 80 percent and is referred to as the firm's leverage.

The term capital structure is used to represent the proportionate relationship between debt and equity. Debt represents the creditors' claim i.e. liabilities or borrowings. Equity includes paid-up share capital, share premium, and reserve and surplus (retained earnings).

Managers, in the extent to pursue wealth maximization objective of a firm, should examine the set of theories and at least major factors affecting the decision that help them choose the optimal capital structure. Normally firms have option of choosing debt financing, equity financing, or combination of the two, with the other option of internal financing mainly from the retained earnings. Such dealings of financing decisions are, in fact, termed as Capital Structure Decisions.

2.3 Capital Structure Theories

Beginning from Modigliani and Miller (1958)s irrelevance proposition, capital structure puzzle has drawn a lot of attention. How do firms choose their capital structure? What are the determinants of firm capital structure decisions? Numerous researches study in these questions, however, the results are still ambiguous. This Section starts with the capital structure irrelevancy theory. Following subsections give the overview of theories and empirical studies that suggest that capital structure affects firms value.

2.3.1. Capital Structure Irrelevancy Theory (Modigliani – Miller Theorem)

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

Modigliani and Miller (1958) demonstrated that the market value of a firm is determined by its earning power and the risk of its underlying assets, and independent of the way it chooses to finance its investments or distributes dividends. Moreover, a firm can choose between three methods of financing: issuing shares, borrowing or spending profits (as opposed to disbursing them to shareholders as dividends). The theorem gets much more complicated, but the basic idea is that under certain assumptions, it makes no difference whether a firm finances itself with debt or equity.

Five years later, Modigliani and Miller (1963) introduced corporate taxes into their earlier model by setting free the first assumption of no taxes. They argued that optimal capital structure can be obtained for firms with 100 percent debt financing by having the tax shield benefits of using debt. With tax introduced the value of levered firm becomes higher. This was their correction model. Some researchers felt that Modigliani and Miller failed to discuss in their article on the practical applications of their theory to individual firms and on how well the theory explains observed facts, such as debt ratios, market reactions to security issues and so on.

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

Accordingly, if capital structure is irrelevant in a perfect market, then imperfections which exist in the real world must be the cause of its relevance. In the next section we look at how, when assumptions in the M&M model are relaxed, imperfections arise and how they are dealt with. Subsequent literatures placed much emphasis on relaxing the assumptions made by Modigliani and Miller, in particular considering agency costs (Jensen and Meckling, 1976; Myers, 1977; Harris and Raviv, 1990), signaling (Ross, 1977), asymmetric information (Myers and Majluf, 1984; Myers, 1984), product/input market interactions (Brander and Lewis, 1986; Titman, 1984), corporate control considerations (Harris and Raviv, 1988) and taxes (Bradley et al., 1984).

The current state of capital structure comprises a wide variety of theoretical approaches but no theory is universally accepted and practically applied (Myers, 2001; Harris and Raviv, 1991). According to Myers 2001 (p.81)

“There is no universal theory of the debt-equity choice, and no reason to expect one. There are several useful conditional theories however”.

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

2.3.2. Capital Structure Relevancy Theories

According to Buferna et al (2005), in the literature of capital structure, three important and popular but conflicting capital structure relevancy theories have been developed, which includes the Static trade-off theory, Pecking order theory and Agency costs theory. These theories are explained below:

2.3.2.1. Static Trade-off Theory

The Static trade-off theory (STT) came as a reaction on the Miller and Modigliani theory, presenting the benefits of debt financing via debt related tax shields. Doubts were raised over the fact that there was no offsetting cost to debt. Therefore, a discussion followed saying that the optimal leverage should be found where a trade-off between tax shield benefits of debt and costs of financial distress was found (Shyam-Sunder and Myers, 1999). Debt enables the possibility to deduct interest charges raising incentive for higher leverage in order to maximize the tax shield. By doing this the firm value increases with the value of the tax shield (Graham, 2000). Damodaran (2001) stretches the increased financial discipline for managers as a consequence of higher debt levels. However there have been raised concerns on increasing risks of bankruptcy with increasing debt levels and likelihood of raising agency costs occurring between owners and managers. An underlying reason for this is a conflict of interests generated by debt (Myers, 1984). Therefore, according to the tradeoff theory, an optimal debt level which maximizes the value of the firm does exist, when attaining a trade off as balancing the benefits of debt against the cost of financial distress. The trade-off model assumes that companies have an optimal capital structure and they aim to attain this through a target debt level. This is the reason why the Trade-off Theory is often referred to as the ‘Static Trade-off Theory in the literature.

Debt has the disadvantage that it increases the probability of firms becoming financially distressed. The costs of debt include potential bankruptcy costs. Repayment of interest on debt is an obligation that a firm has to fulfill whatever its financial state. Hence, if a firm is unable to undertake its debt obligation it will obviously face bankruptcy.

Another cost of debt is the agency conflicts that can arise between stockholders/shareholders and bondholders/debt holders (Fama and French, 2002). This can be explained by the fact that if an investment pays off equity holders are the ones to benefit as they are entitled to the residual profits after interest on debt has been repaid. Risky investments are the ones that normally have higher returns and therefore equity holders will prefer these types of investment. Debt holders on the other hand, are only concerned with their interest payments. They would prefer firms to choose less profitable but safe investments. This explains the conflict that may arise between stockholders and bondholders.

The benefits of debt include the tax deductibility of interest payments (Benito (2003). As argued by Benito firms use debt as a means of limiting the interest of managers which may diverge from the interests of shareholders. In fact, debt reduces free cash flow problems as excess cash is used to repay debt, rather than managers using it to consume bonuses (Fama and French, 2002; Harris and Raviv, 1991).

2.3.2.2. Pecking Order Theory

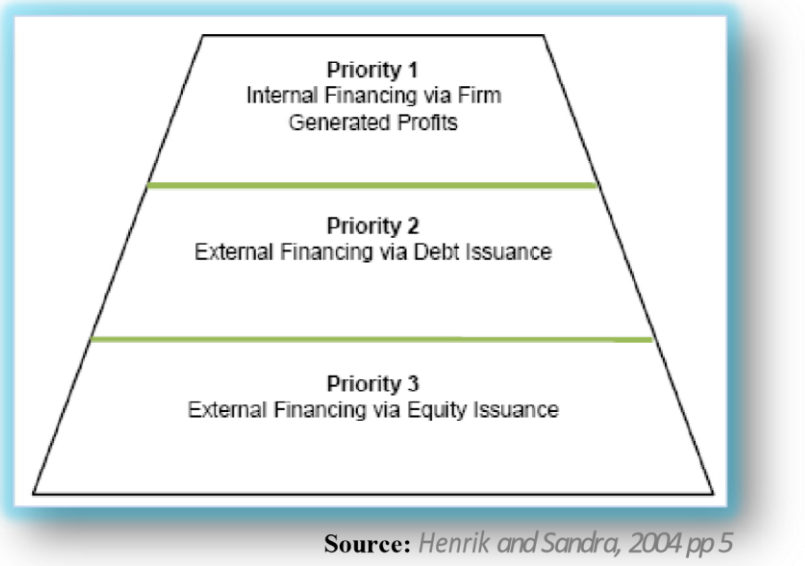
Firm managers or insiders are assumed to possess private information about the characteristics of firm's returns and the investment opportunities available to them (Harris and Raviv, 1991). Various theories have been developed that have attempted to explicitly model this private information which has consequently given rise to theories other than the Trade-off Theory. The Pecking Order Theory (POT) is one such theory that attempts to explain capital structure decisions by formally taking into account the inherent information asymmetry that exists between different parties. The pioneers that have explicitly accounted for asymmetric information in their work have been Ross (1977) and Leland and Pyle (1977). However, the first ones to actually take into account asymmetric information in the area of capital structure have been Myers (1984) and Myers and Majluf (1984). They showed that the choice of capital structure mitigates inefficiencies in the firm's investment decisions that are caused by information symmetry.

According to the Pecking Order theory, firms have a strong preference for internal finance (Myers, 1984) as it is believed to have a cost advantage over new debt and equity. If external finance is required, firms first issue debt and when all other "safe" options are exhausted; they

issue equity as a last option. The literature regarding the Pecking Order theory has been dormant since its inception in the early 1980's when it was first proposed by Myers (1984) and Myers and Majluf (1984).

The Pecking Order Theory proposed by Myers (1984), prescribes a strict ordering or hierarchy of finance: firms use internal finance first then debt and only when such options are exhausted, equity finance is used. This is explained by the fact that internal and external finance are not perfect substitutes.

Figure 2.1: Pecking Order of Financial Hierarchy



Source: *Henrik and Sandra, 2004 pp 5*

The Pecking Order Theory is diagrammatically illustrated above. The hierarchy shown in Figure 2.1 above can be explained by number of factors. These factors include the costs associated with each form of finance which are related to the degree of information asymmetry, the "safeness" of each form of finance or the signal that the issuance of some form of finance gives to the market. Internal finance is believed to be the cheapest source of finance followed by debt and equity. The availability of internal funds allows firms to undertake investment without having to resort to external finance which is relatively more expensive due a number of factors.

Additionally, Myers (1984), explains this hierarchy by the fact that firms follow the rule of "issue debt when investors undervalue the firm and issue equity or some other security when they over-value it." Investors are aware of this and do not buy securities unless they are convinced that the firm has exhausted its "debt capacity". Hence, investors typically ensure that firms follow a pecking order.

Also the issuance of debt or equity can cause agency problems to arise. The issuance of debt can cause conflicts to arise between managers and debt holders while the issuance of equity can cause conflicts to arise between debt holders and equity holders. Furthermore, the issuance of external finance namely debt, involves repayment of capital and interest which the firm has to pay whatever its financial state. This increases the risk of financial distress. All these factors explain why a firm would prefer internal finance over external finance.

Another explanation for the pecking order is provided by Myers and Majluf (1984) that draws from an asymmetric information framework. The management is assumed to know more about the firms' value than the potential investors. Only insiders know the quality of a firm or its investment projects. Therefore, outsiders require a premium if they are asked to fund these projects. The degree of information asymmetry regarding equity is higher when compared to debt. Financial intermediaries are able to monitor the firm and gain access to information that outside investors cannot get. Outsiders are normally not able to monitor firms and thus require a much higher premium on equity finance than debt since they are in the dark regarding the growth prospects of firms.

Asymmetric information increases the cost of debt but, on the other hand, tax advantages have an opposing effect, which reduce the cost of debt relative to equity issues (Myers, 1984). The most expensive source of finance is believed to be equity finance due to various costs associated with new equity issues. These costs include underwriting discounts, registration fees, taxes and selling and administrative expenses. Also, firms tend to issue 'safe' securities first, namely in the form of debt rather than equity. Here 'safe' implies that the terms are not affected by managers inside information (Shyam- Sunder and Myers, 1999). Debt cannot be regarded as a 'safe' security as there are costs of financial distress associated with it, but it is still considered safer than equity.

2.3.2.3. Agency cost theory

Agency theory focused on the costs which are created due to conflicts of interest between shareholders, managers and debt holders. According to Jensen and Meckling (1976), capital structures are determined by agency costs, which includes the costs for both debt and equity issue. The costs related to equity issue may include: The monitoring expenses of the principal (the equity holders), the bonding expenses of the agent (the manager), reduced welfare for principal due to the divergence of agent's decisions from those which maximize the welfare of the principal. Besides, debt issue increases the owner-manager's incentive to invest in high-risk projects that yield high returns to the owner-manager but increase the likelihood of failure that the debt holders have to share if it is realized. If debt holders anticipate this, higher premium will be required which in turns increase the costs of debt. Then, the agency costs of debt include the opportunity costs caused by the impact of debt on the investment decisions of the firm; the monitoring and bond expenditures by both the bondholders and the owner-manager; and the costs associated with bankruptcy and reorganization. Since both equity and debt incur agency costs, the optimal debt-equity ratio involves a trade-off between the two types of cost.

Jensen and Meckling (1976) introduced two types of conflicts that are a major source of agency costs and these are: agency costs that arise due to the conflicts of interest between managers and shareholders and agency costs that arise as a result of the conflicts of interest between shareholders and debt holders. The subsequent discussions present shareholders-managers conflicts and shareholder-bondholder conflicts in an orderly manner.

2.3.2.3.1. Shareholders-managers' conflicts

This kind of conflict stems from the separation of ownership and control. If managers do not own 100% of the firm, they can only capture a fraction of the gain earned from their value enhancement activities but they need to bear the entire costs of these activities. The shareholders-managers' conflicts take several distinct forms:

According to Jensen and Meckling (1976) managers prefer to make use of less effort and have greater perquisite levels, such as luxuriant office and corporate jets, different from the shareholder's interest of firm value maximization. In this case, increasing the managers' equity

holdings will help to align the interests of shareholders and managers. Or, keeping manager's equity investment constant, increasing the debt level also helps to mitigate the loss of conflicts between shareholders and managers. Since debt forces managers to pay out cash, reducing the free cash flow managers can waste on the perquisites.

According to Masulis (1988) conflict may arise because managers may prefer short-term projects, which produce results early and enhance their reputation quickly, rather than more profitable long-term projects.

According to Harris and Raviv (1991) managers want to stay in their positions, so they wish to minimize the likelihood of employment termination. As this increases with changes in corporate control, management may resist takeovers, irrespective of their effect on shareholder value. On operating decisions, managers and shareholders may also have different preferences: Harris and Raviv (1991) observed that managers will typically wish to continue operating the firm even if liquidation is preferred by shareholders.

A special case of the conflicts between shareholders and managers is the over investment problem. Jensen (1986) argued that, instead of working under shareholder's interests to maximize firms value, managers prefer to increase firms size to enjoy the benefit of control. In this case, managers have incentives to cause their firm to grow beyond the optimal size and accept negative net present value (NPV) projects. Jensen (1986) argued that the overinvestment problem can be motivated by more free cash flow and less growth opportunities. Issuing debt helps to mitigate agency problems that arise from managerial behavior under divergent interests between shareholders and managers. For example, the overinvestment problem can be mitigated by issuing debt since debt obligates firm to pay out cash so prevents managers from investing in negative NPV projects. Jensen (1986) refers to the non-discretionary nature of debt as the disciplining role of debt. As Hunsaker (1999) pointed out, an increase in debt also increases the risk of bankruptcy, therefore limits managements consumption of perquisites. Besides, issue convertible debt also helps to discipline managers' behavior because they give managers a chance to share in a firm's profits in case of good performance and thus reduces the monitoring costs.

2.3.2.3.2. Shareholder-bondholder conflicts

The typical phenomenon of these conflicts is that the shareholders or their representatives make decisions transferring wealth from bondholders to shareholders. Certainly, the bondholders are aware of the situations in which this wealth expropriation may occur, therefore, will demand a higher return on their bonds or debts. Different fundamental sources of equity-holders and debt-holders' conflicts have been identified in the agency cost literature;

The direct wealth-transfer from bondholders to shareholders (Smith and Warner 1979): Shareholders can increase their wealth at the expense of bondholders' interests by increasing the dividend payment; the issuance of debt with higher priority will expropriate wealth from current bondholders.

Asset-substitution is another source of the conflicts (Jensen and Meckling 1976): When signing debt contracts, bondholders demand an interest rate according to the riskiness of the firm's investment activities. While debt contracts give shareholders an incentive to invest in risky projects because if it succeeds the returns above the face value of debt will be owned by shareholders and in case of

failure, the consequence is mainly born by bondholders because of shareholders' limited liability. This excessive return from risky projects makes safe projects less attractive to shareholders since returns from the safe projects are sufficient to pay the bondholders. If bondholders can anticipate shareholders' incentive of substituting safe projects by risky projects, they will ask for a higher risk premium. Also the anticipation of wealth expropriation will lead to the increase in risk premium. The increased costs of debt are then born by shareholders since they are residual claimants of the firm.

Underinvestment problem is another agency problem results in shareholder-bondholder conflicts Myers (1977): Underinvestment problem mostly incurs in financial distress. The extension of debt decreases the shareholder's incentives to invest in new projects (even the projects with high growth opportunities will be passed through) because the profits from these projects will be exhausted in debt repayment.

One way to minimize these conflicts is that firms with high growth opportunities should have lower leverage. The conflicts can also be mitigated by adjusting the properties of the debt contracts, for example, the adjustment can be done by including covenants such as adding limits on the dividends payment or setting restrictions on the disposition of assets. Alternatively, debt can be secured by collateralization of tangible assets in the debt contracts.

2.4. Theoretical Determinants of Capital Structure

Following from the above theoretical standpoints, a number of empirical studies have identified firm-level characteristics. As a result of these studies, some broad categories of capital structure determinants have emerged. Titman and Wessels (1988), and Harris and Raviv (1991), however, point out that the choice of suitable explanatory variables is potentially debatable. In this study, to identify the determinant factors and which of the capital structure theories is applicable in the Ethiopian MFI context, the researcher have concentrated on 6 (six) key variables as identified in studies by Titman and Wessels (1988) in USA, Ashenafi (2005) in Ethiopia, Buferna et al (2005) in Libya, Rajan and Zingales (2006) in G7 countries, Gropp and Heider (2007) in developed countries, Octavia and Brown (2008) in developing countries, Al-Dohaiman (2008) in Saudi Arabia and Mintesinot (2010) in Ethiopia (Tigray Region). The selected six variables are Profitability, Collateral value (Tangibility), Size, Growth, GDP and inflation. However, there is significant disagreement among the capital structure theories, in particular, between the trade-off and the pecking order theories about the influence of some factors on the firm's capital structure. In this section, therefore the discussion involves the viewpoints of the capital structure theories about the effect of these attributes on leverage ratio from the view of different prior empirical researches.

2.4.1. Firm Specific Factors

2.4.1.1. PROFITABILITY

One of the main theoretical controversies is the relationship between leverage and profitability of a firm. Profitability is a measure of earning power of a firm. The earning power of a firm is the basic concern of its shareholders. The effect of profitability on leverage was well explained by the "pecking order" theory that was suggested by Myers (1984). According to this theory, firm has an ordered preference for financing whereby they prefer retained earnings as their main

source of funds for investment which is followed by debt. The last resort sought by a firm would be external equity financing. The reason for this ranking was that internal funds were regarded as 'cheap' and not subject to any outside interference. External debt was ranked next as it was seen cheaper and having fewer restrictions than issuing equity and the issuance of external equity is seen as the most costly way of financing a firm. Therefore, when firms which was profitable is seen to have more retained earnings and choose to have lower leverage, hence a negative relationship between profitability and leverage is expected.

However, according to the static trade-off theory, high profitability level gives high level of borrowing capacity. This situation promotes the use tax-shield. Firms normally have to pay taxes on their profits. To avoid this, they prefer to take more debt in their capital structure as interest payments on debt are generally tax deductible. Agency costs theories also predict that profitable firms would take more debt in their capital structure to control the activities of managers. Hence, the more profitable a firm is, the more debt it will have in its capital structure. Thus, the trade-off theory hypothesizes a positive relationship between profitability and debt level (Frank and Goyal, 2003).

2.4.1.2. COLLATERAL VALUE OF ASSETS

Collateral value of assets, also known as Asset Composition or Tangibility; are those assets that creditors can accept as security for issuing the debt. In an uncertain world, with asymmetric information, the asset structure of a firm has a direct impact on its capital structure since firms tangible assets are the most widely accepted sources for the bank borrowing and secured debts. If banks have imperfect information regarding the behavior of the firm, firms with few tangible assets find it difficult to raise funds via debt financing. The type of assets the firm holds plays a significant role in determining that firm's capital structure. The reason can be that when a large fraction of the firm's assets is tangible, assets can serve as collateral, which diminishes the risk of the lender suffering agency costs of debt.

Harris and Raviv (1991) predicts that firm with higher liquidation value will have more debt. On the other hand, based on the previous research by Titman and Wessels (1988) argue that the ratio of fixed to total assets (tangibility) should be an important factor for leverage. The tangibility of assets represents the effect of the collateral value of assets of the firms gearing level. As such,

firms with a higher proportion of tangible assets are more likely to be in a mature industry thus less risky, which affords higher financial leverage.

Findings by Rajan and Zingales (1995) are consistent with the Static trade-off theory saying that tangible assets are appropriate for the purpose of raising debt since it act as good collateral. It also seems to reduce the cost of financial distress. Concluding this, firms with large ratios of tangible assets would be expected to raise more debt. On the other hand, the pecking order theory stretch that firms with few tangible assets faces larger asymmetric information problems and will therefore tend to raise more debt over time and become more levered (Frank and Goyal, 2003).

2.4.1.3. SIZE OF THE FIRM

Size is one of the most widely accepted determinants in research of capital structure. Relationship between size and leverage is mixed. Researchers who focus on bankruptcy cost (static trade-off theory), they justify the positive relationship between size and financial leverage like this: as large firms are more diversified, have low transaction costs for issuing new equity, and probability of bankruptcy for large firms is less than smaller firms therefore size positively relate to leverage.

Theories based on asymmetric information, state that large firms have to inform more to their investors therefore they prefer equity over debt. Therefore, size and leverage holds negative relationship between them. Pecking order theory also agrees on negative relationship.

Furthermore, in the research made by Rajan and Zingales (1995), indicate that including size in their cross sectional analysis, they found that the effect of size on equilibrium leverage is more ambiguous. Thus, larger firms tend to be more diversified and because of that, size may then be inversely related to the probability of bankruptcy.

2.4.2. Macroeconomics factors

2.4.2.1. GDP Growth

Gross Domestic Product (GDP) was one of the macroeconomic variables tested by very few studies (Booth et al., 2001 and Muhammad, 1999). As noted in Frank and Goyal (2004), Trade off theory predicts a positive impact of GDP growth rate of a country on leverage of firms

operate within that country. This positive prediction implies that firms will have more debt level in the period of higher economic growth than did in lower economic growth. Results of empirical studies of Balla and Mateus (2004) confirmed positive relationship of GDP growth rate and leverage. They) undertook a research on capital structure in Hungary and Portugal. The financial statements were collected for the listed corporations in Hungary and Portugal between 1995 and 1999 and leverage was defined from the data collected. GDP was examined to see the effect on leverage. The results indicated that the growth of GDP or gross domestic product was a significant positive effect on corporate leverage of both firms.

2.4.2.2. Inflation Rate

Gulati (1997) developed a general case model to identify the effect of inflation on capital structure. In his study, the inflation was represented by the percentage increase in product prices and production costs and was "adjusted" accordingly to get the effect of inflation. The result indicated that inflation is significantly affecting leverage. In another study, Frank and Goyal (2004), confirmed such a positive relation of inflation rate and debt level. Empirical studies made in Ethiopia by Tesfaye and Minga (2012) also found a positive relation of inflation rate and debt level

2.5. Empirical Evidences of Determinants of Capital Structure

2.5.1. In Developed Countries

After the influential introductory paper on capital structure by Modigliani and Miller, there were quite a number of researches directed towards finding the determinants of capital structure choice. Research on the determinants of capital structure initially was aimed at mainly in the United States' firms. One of the classical researches was carried out by Titman and Wessels (1988); where they studied the theoretical determinants of capital structure by examining them empirically. The theoretical attributes namely; asset structure, non-debt tax shields, growth, uniqueness, industry classification, firm size, earnings volatility and profitability were tested to see how they affect the firms' debt-equity choice. The results indicated consistencies with the theories of capital structure for the factors affecting capital structure choices of firms. One of the few interesting conclusion drawn from the studies in US include the negative relationship of debt to "uniqueness" of a firm's line of business. The short-term debt ratio was negatively related to

firm size. Besides that, a strong negative relationship was noted between debt ratios and past profitability. The study of Titman and Wessels, however, did not provide strong empirical support on variables like non-debt tax shields, volatility, collateral value and future growth.

As stated previously, there were many papers written by research scholars on capital structure choices that are mostly based on empirical data of firms in the United States only. To broader the understanding of capital structure models, Rajan and Zingales (1995) have attempted to find out whether the capital structure choices in other countries is based on the similar factors of those influencing capital structure of U.S firms. For this purpose, the accounting data and monthly stock prices for five years, from 1987 till 1991 were collected from the international financial database all the G7 countries; namely the U.S, Japan, Germany, France, the U.K, Italy and Canada. Banks and insurance companies were eliminated from the sample collected as their leverages are affected by government regulations.

three factors; tangibility of assets, firm size and profitability were tested to see its influences on leverage. A cross-sectional basic regression model of leverage was developed with four of the factors mentioned above as independent variables. Rajan and Zingales noted that across the countries, the asset tangibility was positively correlated with leverage for all the countries as theory supported the notion that firms having more fixed assets in their assets mix will use that as collateral to get more loans or debt. The market to book ratio seemed to be negatively correlated with leverage except for Italy. Having high market value of the stocks would enable firms to issue more stocks and not seeking debt. Size of firm was positively correlated while profitability was negatively correlated with leverage in all countries except Germany. As a conclusion, this paper found that at an aggregate level, firm leverage was fairly similar across the G-7 countries. This study also pointed out some avenue for future research especially on the unbiased sample selection, the actual determinants of capital structure and deeper consideration of institutional influences.

After Rajan and Zingales, there were several research papers made on capital structure by testing the applicability on other countries apart from United States alone. One of the prominent researches was carried out by Gropp and Heider (2007) approached the issue of Bank Capital Structure using banks from developed countries (US and 15 EU members, for 14 years). They

specifically tested the significance of size, profitability, market-to-book ratio, asset tangibility, and dividend paying status in determining bank leverage. Their results provided strong support for the relevance of standard determinants of capital structure on bank capital.

2.5.2. In Developing Countries

There were many empirical researches undertaken by scholars on capital structure choices in the developed nations. But, there were not many research directed towards developing countries that saw the applicability of the theories of capital structure generated from the developed nations. Booth et al. (2001), Maghyereh (2005), Amidu (2007), Abor (2008), and Bas et al. (2009) were among the scholars who have studied the capital structure issue in the developing nations. One of the prominent studies was done by Booth et al. (2001). They have undertaken an interesting study to see whether the capital structure theory could also be applicable in the developing countries irrespective of different institutional structures. The readily available balance sheets and income statements were collected by the researchers from the International Finance Corporations (IFC) for the largest companies in 10 developing countries, namely; India, Pakistan, Thailand, Malaysia, Turkey, Zimbabwe, Mexico, Brazil, Jordan and Korea. Several variables were tested and analyzed to explain capital structure determinants by considering the impact of taxes, agency conflicts, financial distress and the impact of informational asymmetries. The variables mentioned include tax, business risk, asset tangibility, sales, return on assets and market-to-book ratio. A basic cross regression model of three different measures of firm's debt ratio against those variables was developed.

From their analysis, the authors have concluded that the variables that explained the capital structures in developed nations were also relevant in the developing countries irrespective of differences in institutional factors across these developing nations. The same types of variables, which affect developed nations, were significant in developing nations too. This research supports the argument of asset tangibility in financing decisions which indicates that firm's long-term debt ratio increases while total-debt ratio decreases as more tangible the asset mix becomes. It is interesting to note that the estimated empirical average tax rate does not affect the financing decisions except for becoming as a proxy for profitability. The research also indicated that knowing the nationality of the firm is at least important as knowing the size of independent

variables for both the total and long-term book debt ratios. The authors have outlined their recommendation for further studies or research in this area with an increase in the quality international database. They too suggested that a theoretical model to be developed to study the direct link between profitability and capital structure choices.

One of the latest studies was conducted by Bas et al. (2009). This paper examined the determinants of capital structure decisions of firms in developing countries collecting secondary data for 11,125 firms from World Bank for 25 developing countries. They discussed about capital structure decisions of firms in developing markets covering countries from different regions. They analyzed whether the determinants of capital structure show differences among small, medium and large firms. Bas et al. draw the following major conclusions from the results. Regardless of how the firm defines, in accordance with the capital structure theory, the importance of firm level variables, such as tangibility and profitability is confirmed. According to the results, private, small, medium and large firms follow the pecking order on their debt financing decisions. But listed firms prefer equity financing to long term debt financing. Moreover, internal funds do not have an impact on the debt financing decisions. Another major finding was the size effect. They saw different responses from small and large firms towards debt financing. As firms become larger, they become more diversified and risk of failure is reduced as a result of that they can have higher leverage. According to their results, small and large companies have different debt policies. Due to the information asymmetries, small firms have limited access to finance; therefore, they face higher interest rate costs. Also, they are financially riskier compared to large firms. As a result of that, small companies have restricted access to debt financing which may influence their growth.

2.5.3. In Ethiopia

Most capital structure studies to date are based on data from developed countries. There are few studies that provide evidence from developing countries. The determinants of capital structure of Ethiopian firms are still under-explored area in the literature of financing decision. As per the researcher access and knowledge, the researches on determinants of capital structure so far done in Ethiopian case are by Ashenafi (2005) and Mintesinot (2010). Ashenafi (2005) approached the question of capital structure using data from medium firms in Ethiopia. He take a sample of 50

medium enterprises and made multivariate regression analysis based on financial data of Ethiopian medium enterprises over the period 1991 to 1996 E.C. Variables like non-debt tax shield, economic risk, age of firms, size of firms, tangibility, profitability and growth were regressed against leverage. The outcome of the multivariate regression analysis was consistent with earlier studies for variables like non debt tax shield, economic risk, size of firms and profitability.

Mintesinot (2010) has undertaken an attention-grabbing study entitled, "The Determinants of Capital Structure: Evidence from Selected Manufacturing Private Limited Companies of Tigray Region, Ethiopia''. Mintesinot have used eight explanatory variables: Tangibility, Profitability, Growth, Age, Uniqueness, Size, Earnings Volatility, and Non-Debt Tax Shields, and were regressed against dependent variables: Total Debt Ratio, Long-Term Debt Ratio and Short-Term Debt Ratio. He also used secondary data collected from audited financial statements of selected 14 companies for the period of five years (2004-2008). After analyzing the data, he came up with this result: Tangibility, Firm Growth, Age of the Firm, Firm Size, Earnings Volatility and Non Debt Tax Shields variables are the significant determinants of capital structure in at least one out of the three models for capital structure employed in the study.

Usman (2013) tried to identify the determinants of capital structure of large taxpayer share companies in Ethiopia. In his paper, econometric analysis was performed for a panel of 37 listed companies in Ethiopian Revenue and Customs Authority (ERCA) large taxpayers' branch office in Addis Ababa for the study period of 2006–2010. Nine conventional explanatory variables were adopted in his study, including profitability, size, age, tangibility, liquidity, non-debt tax shield, growth, dividend payout ratio and earnings volatility. As a result of the improvement in the existing estimation methods that enables to employ cross-sectional and time-series data concurrently, random-effect panel data regression was applied to study the effect of selected independent variables on capital structure.

Abebaw (2014) study determinant of capital structure of financial performance of microfinance by using 6 firm specific factors (Capital Asset ratio, Operational efficiency, Portfolio quality, Size, Gearing ratio ,Age) , 1 macroeconomic factor and one industry specific factor.

Melkam (2012) Determinants of Operational and Financial Self-Sufficiency: he uses quantitative research approach using panel data regression as the main data analysis technique. The study was based on a six years secondary data obtained from the mix-market database for twelve selected MFI in Ethiopia. The study found that average loan balance per borrower, size of a MFI, cost per borrowers and yield on gross loan portfolio affects the operational sustainability of Ethiopian MFIs significantly. Whereas cost per borrower, number of active borrowers and yield on gross loan portfolio affect their financial sustainability. The Study also found that MFIs in Ethiopia are operationally self-sufficient while they are not financially self-sufficient.

Yonas, (2012) on his study regarding determinants of financial sustainability of Ethiopian MFIs, using 6 years' data for 12 MFIs from AEMFI; he concluded three things. First, a high quality credit portfolio, coupled with the application of sufficiently high interest rates that allow a reasonable profit and sound management are instrumental to the financial sustainability of MFIs. Second, the percentage of women among the clientele has a weak statistically non-significant negative effect on financial sustainability of MFIs and finally, client outreach of microfinance programs and the age of MFIs have a positive but lesser impact on attainment of financial sustainability.

Sima, (2013) on his study examined internal and external factors affecting profitability of microfinance institutions in Ethiopia by including a total of thirteen microfinance institutions covering the period of 2003-2010. The researcher uses quantitative research mainly documentary analysis. The outcome of the study indicates that Age of microfinance institutions has a positive and statistically significant effect on their profitability. However, Operational efficiency and portfolio quality have a negative and statistically significant effect. However, capital adequacy, size and GDP are found to be statistically insignificant variables.

2.6. Conclusion and knowledge gap

This chapter reviewed the literature on determinant of capital structure decision starting with the famous irrelevance theory of Modigliani and miller's (1958) assumptions of perfect capital markets. Several theoretical frameworks have been developed to explain the firm's capital structure such as static trade -off theory, pecking order theory, and agency theory. Static trade-off theory assumes that a firm's optimal debt ratio is determined by trade -off between the

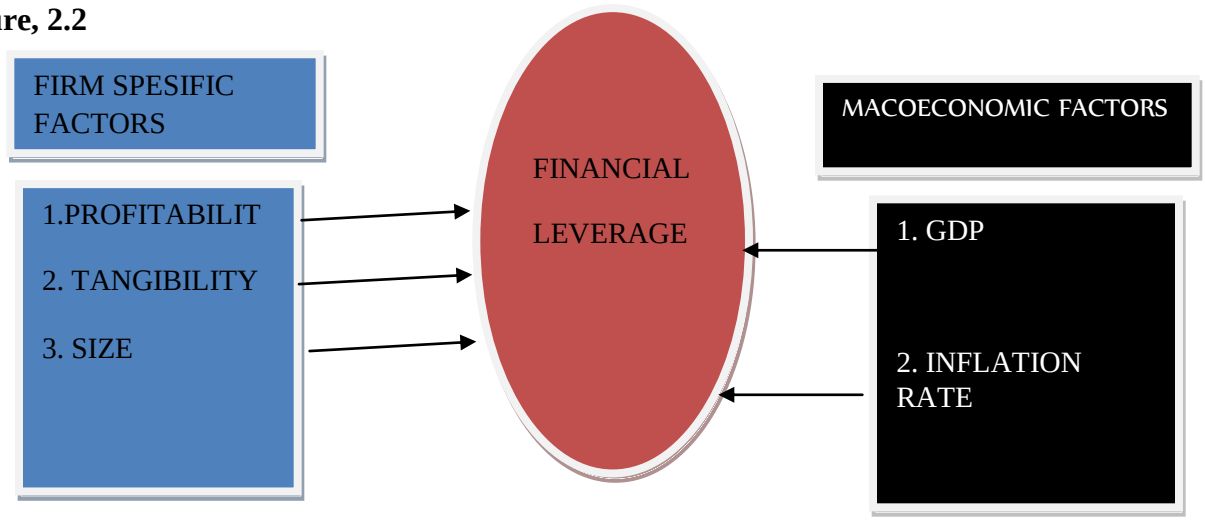
bankruptcy cost and tax advantage of borrowing. holding the firm's assets and investment plans constant. Whereas, pecking order theory is another dimension of the capital structure theories. According to this theory capital structure is driven by firm's desire to finance new investments, first internally, then with low-risk debt, and finally if all falls with equity. Therefore, the firms prefer internal financing to external financing. Similarly, the findings of prior empirical studies have provided varying evidence related to the determinate of capital structure For instance, Caglayan and Sak (2010) have studied the determinants of capital structure of MFIs in Turkish and provided evidence that pecking order theory is pertinent theory to Turkish MFI.

Beside, Buferna et al. (2005) provided evidence that trade of theory and agency are pertinent theories of the capital structure to a developing country. On the other hand, Amidu (2007) on Ghanaian MFIS supports the static trade-off and pecking order argument. However, in the context of Ethiopia as to the knowledge of the researcher there are a few studies conducted on the capital structure of the MFI industry, like Abebaw, (2014) study determinant of capital structure of financial performance of microfinance and Tesfaye, (2017) study determinate of capital structure decision among Ethiopian microfinance institutions and The study by Yonas, (2012) and Melkamu, (2012) tried to see the determinants of performance by using proxy of financial and operational sustainability of Ethiopian MFIs. In addition, most empirical work on capital structure specially the studies that conducted on the MFIs side has predominantly relied on firm specific factors to examine the determinants of capital structure. Therefore, this study will fill the gap by examining the determinants of capital structure in the context of Ethiopian MFI industry.

2.7. Conceptual framework

According to Mugenda et al (2003), a conceptual framework helps the reader to quickly see the proposed relationships between the variables in the study and show the same graphically. This study will use both firm specific and macroeconomic determinants of MFIs capital structure include profitability, tangibility, growth, size, GDP and inflation rate. The study would identify how these variables are determining the capital structure of MFIs in Ethiopia.

Figure, 2.2


FIRM SPESIFIC FACTORS
1.PROFITABILIT
2. TANGIBILITY
3. SIZE
FINANCIAL
LEVERAGE
MACOECONOMIC FACTORS
1. GDP
2. INFLATION RATE

Chapter three

Research Methodology

3.1. Introduction

This chapter discuss about the methodology by which the researcher has been used to conduct this study. This section explains Research design, source and methods of data collection, provides details regarding the target population, sample frame and sampling technique and the sample size, description of variable and hypotheses of the study, model specification and method of data analyses.

3.2. Research Design

Research design is the blueprint for fulfilling research objectives and answering research questions (John A.H. et al., 2007:20-84). In other words, it is a master plan specifying the methods and procedures for collecting and analyzing the needed information. It ensures that the study will be relevant to the problem and that it uses economical procedures. The same authors discussed three types of research design, namely exploratory (emphasizes discovery of ideas and insights), descriptive (concerned with determining the frequency with which an event occurs or relationship between variables) and explanatory (concerned with determining the cause and effect relationships). The types of Research design that would be employed under this study was explanatory research in that the relationship between variables is correlated with an aim of estimating the integrated influence of the determinants on financial leverage

3.3. Research approach

To conduct a research, there are different ways of approaching the problem. According to Creswell (2009), there are three approaches of research; quantitative, qualitative and mixed. The following discussions briefly presents the basic features of these research approaches.

Quantitative research is a means for testing objective theories by examining the relationship among variables. On the other hand, qualitative research approach is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem with intent of developing a theory or pattern inductively. Finally, mixed methods approach is an approach in which the researchers emphasize the research problem and use all approaches available to understand the problem (Creswell, 2009).

In this study, to investigate determinants of capital structure in Ethiopian MFIs, quantitative research approach was employed and panel data would be used to analyze the resulting estimates so that stated objectives and hypothesis are addressed accordingly. According to Shikur (2015), a quantitative panel data gives more informative data, more variability, less linearity among variables, more degrees of freedom and more efficiency. Moreover, repeated cross section of observations over a range of years are better suited to study the dynamics of change, can better detect and measure effects that simply cannot be observed in pure cross-section or pure time series data. All this indeed minimizes the bias that might result if we aggregate individuals or firms into broad aggregates.

3.4. Source and Method of Data Collection

The sources of data for this research were secondary sources. Datas are collected from the association of micro finance institutions (AMIS) and annual report of national bank of Ethiopia (NBE) on each selected microfinance included in the sample and related other researches. The data will be collects from 2004 to 2014 on annual bases. as the study needs historical financial data, which are audited financial report, accessing publicly available data is assumed as the suitable method for the accuracy of the data. According to Bryman & Bell, 2007 (cited in Thanh & Carl, 2014), using secondary data can save cost and time and it has very high quality.

3.5. The target population and sampling frame

The empirical investigation on the determinants of capital structure of Ethiopia MFIs includes the institutions operating in the country. According to NBE and Association of Ethiopian microfinance institution report at the end of June 30, 2017 there are thirty-three microfinance institutions are operating in Ethiopia.

3.5.1 The Sampling technique and the sample size

The sampling techniques that was used in this research is a non- probabilistic methods and among the non-probabilistic sampling methods, the researcher would have been used purposive sampling. As stated by Saunders (20pp.232), purposive sampling is often used when working with small samples and when we wish to select cases that are particularly informative. Thus the researcher used purposive sampling by considering the availability of full data for the selected time period. According to national bank of Ethiopia (NBE) and association of Ethiopian

microfinance institution report at the end of June 30, 2017 there are 33 microfinance institutions in Ethiopia. These studies consider seven (8) microfinance institutions (since they have been in operation for the last five years (2002-2006). The paper would have organized to study that determinants capital structure of Microfinance Institutions in Ethiopia. The selected microfinance institutions will be: Buusa Gonofaa micro finance s.co, Wasasa microfinance Institution, dynamic microfinance Institution s.co, Poverty eradication and community empowerment (Peace), Amhara credit and saving institution (ACSI), Dedebit credit and saving institution (DECSI),Ocssco microfinance institution & Omo microfinance institution.

The micro finance institutions would be selected based on different criterion: the first criteria is the size of the institutions (small, medium and large), the second criteria is geographical distributions (to include at least major regions of Amhara, Tigray, Oromia, SNNPR and Addis Ababa) and the third criteria is their affiliations (some of them are government affiliated, while others are NGO affiliated and privately owned).

3.6. Description and Measurement of Variables

3.6.1. Dependent Variable

According to corporate finance literatures, there are three ways that commonly used to measure capital structure including market value leverage, book value leverage, and interest coverage ratios. Among those three measures, book value leverage is used in a repeatable manner to measure capital structure in majority of empirical studies pertaining to capital structure determinants. Three ratios namely long term debt, total debt (total leverage), and debt to equity ratios are the most widely used ratios to represent book value leverage, in majority of empirical researches in relation with capital structure determinant. Previous research work that include Najjar and Petrov (2011), Solomon (2012), Woldemikael (2012), Mohamed and Mahmoud (2013), and Tornyeva (2013) employed total debt ratio (also known as total leverage) calculated as total debt divided by total assets to measure leverage of firms.

For this study, the researcher was used the leverage ratio as a dependent variable which is measured by the ratio of total debt to total equity.

3.6.2. Independent Variables

As an independent variable the researcher has assumed to test a total of four firm- specific explanatory variables i.e. Profitability, size, and asset tangibility and two macroeconomic variables that include GDP and Inflation. The description of those explanatory variables and related hypothesis is described as follows;

3.6.2.1. Profitability

In many of empirical researches and financial theories, profitability factor is one of the major firm specific factors that determine capital structure of a firm. Trade off theory predicts a positive relationship between profitability and leverage of a firm. On the other hand, pecking order theory argues a negative relation of profitability and leverage, implying that more profitable firms will become less levered through time due to utilization of internally generated cash flows for financing their operation. In literatures, various measures such as ratio of operating income over sales and operating income over total assets (Titman and Wessel (1988)), the return on total assets, which is calculated as the ratio of EBIT to total assets (Rajan & Zingals (1995), Ozkan (2001), Gaud et al (2005) were used as a measure of profitability.

Profitability in this study will be measured as a ratio of earnings after interest and tax to total asset. Furthermore, in this study profitability is expected to have a negative relationship with leverage, in line with pecking order theory as well as majority of empirical evidences. Therefore, on the ground of the above analysis, research hypotheses is developed as below

H1: There is negative relationship between profitability of the MFIs and its leverage ratio

3.6.2.2. Size of the firm

According to major theories of capital structure as well as respective empirical investigations, firm's size is one of the few powerful internal factors that can determine capital structure of firms. Trade-off theory predicts a direct relation of leverage and firm size implying that larger firms are typically more mature firms with a reputation in debt markets and consequently face lower agency costs of debt (Frank and Goyal, 2005). On the other hand, pecking order theory postulates an inverse association of firm's size and its leverage implying that large firms will

have easy access to financial markets and can raise cheaper equity. Besides theoretical debate, vast majority of empirical studies reviewed by the researcher including Amanuel (2011), Woldemikael (2012), and Cekrezi (2013) found a robust positive association of firm size (measured by natural logarithm of total assets) and leverage. As a result, in line with trade off theory and empirical evidences, size represented by natural logarithm of total assets was expected to have a positive relationship with firms‟ leverage in this study. For this study the ratio of total fixed assets to total assets is used as a proxy for tangibility of assets taking the tradeoff's view and many of the studies mentioned above, the research hypothesis is formulated as below:

H2: There is a significant positive relationship between the firm size and the debt level of the Ethiopian microfinance institutions

3.6.2.3. Asset Tangibility

The trade-off theory, states that higher levels of collateral contribute to the firm tending more to debt. In relation to this, Scott (1977) stated that, companies with higher levels of collateral find it easier to access debt, given that companies' fixed assets contribute to reduced information asymmetry. Most of the empirical studies evidenced a positive influence of asset tangibility on leverage. Booth et al. (2001) state:

For this study the ratio of total fixed assets to total assets is used as a proxy for tangibility of Asset. The hypothesis is formulated as

H3: A firm with higher percentage of fixed assets will have higher leverage ratio.

Macroeconomic variables

3.6.2.4. Gross Domestic Product (GDP)

GDP growth factor as measured by annual real gross domestic product growth rate reflects how much a country's overall economy is growing as compared to its own one year lagged value. As noted in Frank and Goyal (2004), Trade off theory predicts a positive impact of GDP growth rate of a country on leverage of firms operate within that country. This positive prediction implies that firms will have more debt level in the period of higher economic

growth than did in lower economic growth. Results of empirical studies including Cekrezi (2013) and Bas et al. (2009), confirmed positive relationship of GDP growth rate and leverage. In this study GDP or gross domestic product considered to have a significant positive effect on corporate leverage of firms. Hence, the hypothesis is:

H4: Growth of GDP has a positive impact on leverage of MFIs in Ethiopia

3.6.2.5. Inflation

Gulati (1997) developed a general case model to identify the effect of inflation on capital structure. In his study, the inflation was represented by the percentage increase in product prices and production costs and was "adjusted" accordingly to get the effect of inflation. The result indicated that inflation is significantly affecting leverage. In another study, Frank and Goyal (2004), confirmed such a positive relation of inflation rate and debt level. Empirical studies made in Ethiopia by Tesfaye and Minga (2012) ascertained also that there was a positive relation of inflation rate and debt level. Inflation rate is measured by annual general inflation rate in Ethiopia. Hence, the hypothesis for this variable is formulated as;

H5: There exists a significant positive relationship between inflation rate and MFIs leverage in Ethiopia

3.7 Econometric Model and Specification

3.7.1 Econometric Model

In this study a Panel Regression Model was employed. In line with the previous determinants of capital structure of banking literature and other industries, the study employs Panel Data Multiple Regression Model to investigate the relationship between the explanatory variables and leverage.

Panel data can also control for individual heterogeneity due to hidden factors, which, if neglected in time series or cross-section estimations leads to biased results (Baltagi, 2005). The panel

regression equation differs from a regular time-series or cross-section regression by the double subscript attached to each variable.

This study examines the determinants of the capital structure of sampled Ethiopian MFIs overtime using the following multiple regression model:

The general form of the model can be specified as:

$Yit=\alpha+\beta Xit+\mu it$

with the subscript i denoting the cross-sectional dimension and t representing the time-series dimension. The left hand variable, Y_{it}, represents the dependent variable in the model, which is the firm's leverage measured as debt to asset ratio. X_{it} contains the set of explanatory variables in the estimation model, α is the constant and β_i represents the coefficients.

3.7.2. The Model Specification

The regression model that was employed for this study is also in line with what was used in previous studies of banking sector, with some modifications. The empirical model is given as:

$DAit=\alpha+\beta 1SZit+\beta 2PRit+\beta 4TGit+\beta 5GDPit+\beta 6INFit+eit$ Where:

DA_{it}= debt equity ratio (Total debt /Total Asset) for MFI i in time t

SZ_{it} = the size of the firm (log of total assets) for MFI i in time t

PR_{it} = earnings after interest and taxes divided by total assets for MFI i in time t

TG_{it} = tangible net fixed assets divided by total assets for MFI i in time t

GDPit = gross domestic production i in time t

INFit = inflation rate i in time t

e_{it} = the error term

Table 3.1: Variable-Indicator List

Variables	**Indicators**	**Expected signs**

Dependent variable		
Leverage	Total debt/total asset	**NA**
Independent variables:		
Profitability	Ratio of net income after tax /total asset	-
Tangibility	Fixed Assets / Total Asset	+
Size	Natural Logarithm of Total Asset	+
GDP	GDP growth rate	+
Inflation rate	Annual Inflation rate	+

3.8. Method of Data Analysis

The researcher was used quantitative research method for analysis in order to achieve the objective of the study. Therefore, econometric model would be used to identify and measure the effect of the determinants of capital structure in Ethiopian MFIs and will use Ordinary Least Square (OLS) method using Eviews-8 econometric software package for the study.

According to (Brooks, 2008) regression was concerned with describing and evaluating the relationship between a given variable (assumed that the dependent variable) and one or more other variables (assumed that independent variables). Thus, the researcher will be use panel data regression model to examine effect of the determinants of capital structure of MFIs.

According to (Brooks 2008) panel data was advised for situation often arises in financial modeling where would have data containing both time series and cross-sectional elements.

Chapter - Four

Data analysis and Discussion

4. Introduction.

The determinants of Ethiopian MFI are analyzed using Multiple Regression models with various assumptions about the relationships of the variables. To estimate the parameters in the model GLS technique helpful from the retained earning estimators on the basis of the test result. To test the relationship of independent variables with the dependent variable, the study employs some known statistical techniques that would enable the research finding be more accurate and reliable. Generally, the researcher uses E-views 8 for the major two parts of the finding section namely descriptive statistics and empirical result. The first section descriptive statistics helps to measure the central tendency and dispersion. It helps to know frequencies, minimum, maximum, means and standard deviations for the dependent and independent variables. In the second section of the empirical result of the regression results of the study are reported.

4.1. Descriptive statistics

The study examined the determinants of capital structure for eight MFIs over the time period from 2010-2018. The descriptive statistics of the dependent and explanatory variables for the sample MFIs were summarized in table 4.1. The total observation for each dependent and explanatory variable was 72. Moreover, the table also shows the mean, standard deviation, minimum, median and maximum values for the dependent and independent variables.

The mean leverage (total debt to total asset) of MFIs was 68.2 cent per birr with the standard deviation of 12.8 cent per birr. This means that more than 68.21cent per birr of the MFIs in Ethiopia were financed by debts.

As per the bellow table (table 1.) the descriptive statistics of the explanatory (independent) variables for capital structures of Ethiopian Capital Structure Micro Finance Institutions are described below. The first explanatory variable is the size of the micro finance institutions that is

computed as the natural log of their total assets, has Mean 5.80, Maximum 7.28 and Minimum 4.65 with the standard deviation of 0.8 The second independent variable, tangibility has a mean of 0.028868, a maximum of 0.060607 and a minimum of 0.003491 with a standard deviation of 0.015247

Profitable firms are stronger to face financial distress and stronger to continue more than unprofitable firms in the future. Profitability, given as the ratio of net income after tax to total asset of the micro finance institutions of Ethiopia has a mean of 0.135875, maximum 0.431662 and the minimum value of 2.2005 with the standard deviation of 0.115346

The mean real GDP growth of Ethiopian economy in the last 9 years of observation period was 887716.8 annum with a standard deviation of 493586.8 During the study period a maximum real GDP growth was registered with 1719491. whereas the minimum was 419217.8

Average inflation rate of Ethiopian economy during the last nine years of observation was 13.86765 percent per annum whereas the standard deviation was 8.142746 percent.

Table 4.1. Descriptive statistics

	LVRG	SZ	TANG	PRT	INF	GDP
Mean	0.682113	5.802582	0.028868	0.135875	13.86765	887716.8
Median	0.713674	5.741751	0.025924	0.126255	12.60000	626977.4
Maximum	0.922390	7.285776	0.060607	0.431662	34.10000	1719491.
Minimum	0.345501	4.655654	0.003491	2.20E-05	7.400000	419217.8
Std. Dev.	0.128081	0.831871	0.015247	0.115346	8.142746	493586.8
Observations	72	72	72	72	72	72

Note: *LVRG refers to total leverage. Profitability (Prt), tangibility (Tang), Sz (SIZE) and inflation (INF) gross domestic production (GDP)*

Source: E-view 8 output,

4.2. Correlation analysis

Multiple correlation is a measure of the degree of association between dependent and all the independent (explanatory variables) jointly (Gujirati, 2004). The analysis was meant to first, indicate whether variables were correlated or not. If variables are not correlated then using several simple regressions or one multiple regression models could give the same results (Dougherty 2006 as cited Yonas, 2012). The main aim of conducting correlation is whether multicollinearity is strong enough to invalidate the simultaneous inclusion of the explanatory variables in regressions. According to Gujarati, (2004) multicollinearity could only be a problem if the pair-wise correlation coefficient among regressors is above 0.80 and according to Hailer et al, 2006 *cited in* Birhanu, (2012) Multicollinearity could only be a problem if the pair wise correlation coefficient among regressors is above 0.90 which is not more or less in the case of this study variables. By taking a correlation result which is presented below from 2010 up to 2018 the study period the independent variables to dependent variable which is the debt to asset ratio (LVRG), except PRT and INF, which are negatively correlated to debt to asset ratio of an MFI, implies the change in these explanatory variables negatively contributes towards the change in debt to asset ratio of sample MFIs, other variables have positively correlated with LVRG, implies that when SZ, GDP and TANG increases LVRG move in the same direction.

The size of all MFIs (log of total asset) which are included in this study shows improvement. Increase in the size of the MFIs shows a higher negative correlation with profitability (-0.552), and inflation (-0.1889) and it shows positive correlation with GDP (0.243) and (0.159). Except PRT and INF the other variables have positively correlated with LVRG, imply that when SZ, GDP and TANG increases LVRG move in the same direction.

In addition, tangibility has had inversely correlated with variables, PRT (-0.049) and GDP (-0.321). This is because the tangibility of Ethiopian MFIs industry is reduced through time and contrary GDP and PRT of the MFIs increases.

profitability (PRT) is negatively correlated with LVRG (-0.482) indicating that when profitability of MFIs increases financial leverage decreases because negative relation of profitability and

leverage, implying that more profitable firms will become less levered through time due to utilization of internally generated cash flows for financing their operation. By the same token, as GDP increases, LVRG moves in the same direction which is indicated by (0.269) This positive prediction implies that firms will have more debt level in the period of higher economic growth than did in lower economic growth.

On the other hand, SZ and TANG indicated that a positive correlation with LVRG (0.807) and (0.012) respectively indicating that the increase in size (total asset) of MFIs and the increase in number of years of their operation will tend financial leverage to increase.

Table 4.2. Correlation Matrix

	LVRG	SZ	TANG	PRT	INF	GDP
LVRG	1					
SZ	0.807713	1				
TANG	0.012790	0.159968	1			
PRT	-0.482444	-0.552078	-0.049677	1		
INF	-0.200478	-0.188970	0.112704	0.005036	1	
GDP	0.269589	0.243398	-0.321603	-0.170750	-0.282966	1

Source: E-view 8 output

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

Normality Assumption

If the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant meaning disturbance to be normally distributed around the

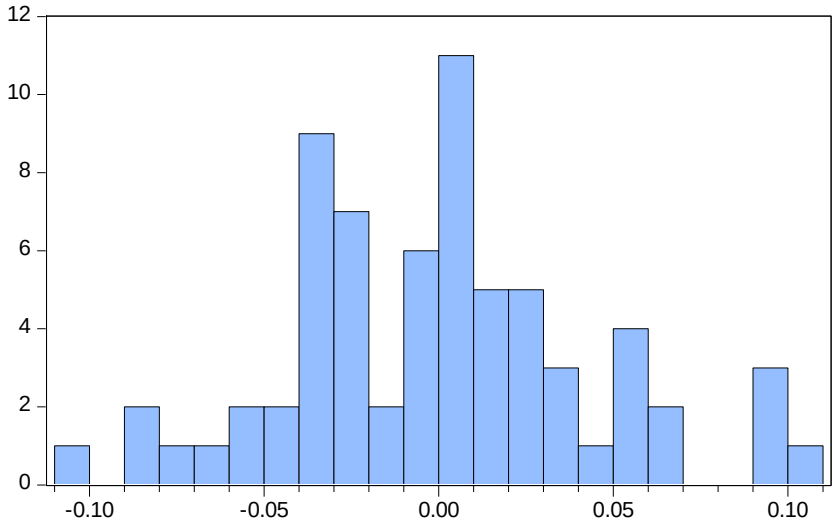
mean. This means that the *p*-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level (Brooks, 2008).

Ho: Normally distributed errors

Ha: Non-Normal Distribution error

Therefore, the normality tests for this study as shown in table below, the Bera-Jarque statistic has a P-value of 0.71 implies that the p-value for the Jarque-Bera test for models is greater than 0.05 which indicates that the errors are normally distributed. Based on the statistical result, the study failed to reject the null hypothesis of normality at the 5% significance level.

Figure 1 Normality Test for Residuals



Series: Standardized Residuals	
Sample 2010 2018	
Observations 72	
Mean	-5.31e-18
Median	0.001547
Maximum	0.109937
Minimum	-0.104045
Std. Dev.	0.044101
Skewness	0.241891
Kurtosis	3.070780
Jarque-Bera	0.677322
Probability	0.712724

Source: E-view 8 output

B. Homoscedasticity Assumption (variance of the errors is constant)

According to Brooks, (2008) it has been assumed thus far that the variance of the errors is constant, $\sigma 2$ - this is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heteroscedastic. To test for the presence of heteroscedasticity, the popular white test was employed.

It is hypothesized that as follows

Ho: There is no heteroscedasticity problem (homoscedasticity)

Ha: There is heteroscedasticity

Table 4.3 Heteroscedasticity Test: White

Heteroscedasticity Test: White

F-statistic	6.853425	Prob. F(20,47)	0.0000
Obs*R-squared	50.63690	Prob. Chi-Square(20)	0.0002
Scaled explained SS	40.36618	Prob. Chi-Square(20)	0.0045

Source: E-view 8 output

According to Brook, (2008) indicated that if the P-values of these test statistics are considerably below 0.05, then the test give conclusion that there is evidence for the presence of heteroscedasticity. It is clear evident that the errors are heteroskedastic. Therefore, based on this statistic we reject the null hypothesis that is indicated as there is no Heteroscedasticity for the models.

C. Multicollinearity Test

An implicit assumption that is made when using the panel LS estimation method is that the explanatory variables (independent variable) are not correlated with one another. If there is no relationship between the explanatory variables (independent variable), they would be said to be orthogonal to one another. If the explanatory variables were orthogonal to one another, adding or removing a variable from a regression equation would not cause the values of the coefficients on the other variables to change (Brook, 2008). The highest correlation in the explanatory variables is 0.56087 that is the correlation between size and leverage. However, this cannot affect the regression because a correlation that does not exceed 0.8 can be tolerated since Cooper & Schindler (2009) suggested that a correlation above 0.8 between explanatory variables should be corrected for. The lowest correlation between the explanatory variables is positive 0.04595 i.e. the correlation coefficient of profitability and leverage.

According to Gujarati, (2004) multicollinearity could only be a problem if the pair-wise correlation coefficient among regressors is above 0.90 Hailer et al, 2006 *cited in* Birhanu, (2012) which is not more or less the case in the study variables.

Table4.4. Multicollinearity test

	SZ	TANG	PRT	INF	GDP
SZ	1.000000	0.159968	-0.552078	-0.188970	0.243398
TANG	0.159968	1.000000	-0.049677	0.112704	-0.321603
PRT	-0.552078	-0.049677	1.000000	0.005036	-0.170750
INF	-0.188970	0.112704	0.005036	1.000000	-0.282966
GDP	0.243398	-0.321603	-0.170750	-0.282966	1.000000

Source: E-view 8 output

D. Test for Autocorrelation:

This was the last assumption of CLRM for this study and states that CLRM‟s disturbance term is the covariance between the error terms over time (or cross-sectionals, for that type of data) is zero. In other words, it is assumed that the errors are uncorrelated with one another. Besides if the errors are not uncorrelated with one another it would be stated that they are „auto correlated‟ or that they are „serially correlated‟ (Brooks 2008).

This test was made by using Durbin and Watson test. Durbin-Watson (DW) is a test for first order autocorrelation i.e. it tests only for a relationship between an error and its immediately previous value. DW is approximately equals to $2(1 - \hat{\rho})$, where $\hat{\rho}$ is the estimated correlation coefficient between the error term and its first order lag (Brooks 2008).

Therefore, from table 4.5 fixed effect regression result the value of Durbin-Watson stat (i.e. 1.655487) this revealed that there was no serious evidence of autocorrelation in the data since the DW test result approaches two (2) because as per Brook (2008) stated above there is no autocorrelation problem if the *DW* is near 2. To make it more convincible for the absence of autocorrelation problem a formal test so called Breusch-Godfrey was made because as stated

above the Durbin-Watson tests‟ only for the first order autocorrelation. Hence, the BG- test was made, found the result was given below in table 4.5. Since the p-value of F-stat was 0.5148, we fail to reject the null hypotheses in that the p-value was above 5% which indicated that there is no autocorrelation problem.

Table 4.5 Breusch-Godfrey test for the absence of serial autocorrelation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.992212	Prob. F(35,27)	0.5148
Obs*R-squared	38.25633	Prob. Chi-Square(35)	0.3239

Source: E-view 8 output

4.4. Finding of the Regression

This part presents the empirical findings from the econometric results on the determinants of capital structure of microfinance institutions in Ethiopia. The section covers the operational panel data regression model used and the results.

Operational model: The specific panel fixed regression model used to study the determinants of capital structure was:

$DEit=\alpha+\beta 1SZit+\beta 2PRit+\beta 4TGit+\beta 5GDPit+\beta 6INFit+ \mu it.$

4.4.1 Choosing Random Effect (RE) Versus Fixed Effect (FE) Models

According to (Gujarati, 2004), if T (the number of time series data) is large and N (the number of cross-sectional units) is small, there is likely to be little difference in the values of the parameters estimated by fixed effect model/FEM and random effect model/REM. Hence the choice here is based on computational convenience. On this score, FEM may be preferable. Since the number of time series (i.e. 9 year) is greater than the number of cross-sectional units (i.e. eight MFIs), FEM is preferable in this case. According to Verbeek (2004); Wooldridge (2006), Brooks (2008); it is often said that the REM is more appropriate when the entities in the sample can be thought of as having been randomly selected from the population and the number of cross-

sectional units is greater than the number of time series. Hence, this study chose to use FEM since the sample for this study was not selected randomly and the number of time series is greater than the number of cross-sectional units.

Table 4.6 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	13.230854	5	0.0213

Source: E-view 8 output,

Figure 4.6 show the p-value for the test i, less than 5% which indicates that the random effect model is rejected. Hence, the fixed effects method was preferable. Accordingly, FEM was employed to estimate the relationship between the dependent variable and the independent variables.

Table 4.7: Regression Results for Determinants capital structure of Ethiopian Microfinance Institutions.

Dependent Variable: LVRG
Method: Panel Least Squares
Date: 12/30/20 Time: 04:32
Sample: 2010 2018
Periods included: 9
Cross-sections included: 8
Total panel (unbalanced) observations: 72

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.756789	0.158822	4.765004	0.0000
SZ	-0.022066	0.029577	-0.746054	0.4588
TANG	-0.718253	0.637379	-1.126885	0.2647

PRT	0.232605	0.148398	1.567439	0.1227
INF	0.001874	0.000818	-2.291553	*0.0258
GDP	7.71E-08	2.03E-08	3.797584	**0.0004

Effects Specification
Cross-section fixed (dummy variables)

R-squared	0.881445	Mean dependent var	0.682113
Adjusted R-squared	0.855578	S.D. dependent var	0.128081
S.E. of regression	0.048674	Akaike info criterion	-3.037152
Sum squared resid	0.130305	Schwarz criterion	-2.612834
Log likelihood	116.2632	Hannan-Quinn criter.	-2.869024
F-statistic	34.07661	Durbin-Watson stat	1.655487
Prob(F-statistic)	0.000000		

Source: E-view 8 output,

4.5. Discussion of the Results

Based on the regression result, the R^2 value is 0.881 (88.1 %) which implies that 88% of fitness can be observed in the sample regression line. This can be further explained as, 88 % of the total variation in the capital structure that is LVRG is explained by the independent variables (Capital to Asset ratio, Size, profitability, tangibility, inflation, and GDP) jointly. The remaining 12 % of change is explained by other factors which are not included in the model. The Prob (F-statistic) value is 0.000 which indicates strong statistical significance, which enhanced the reliability and validity of the model. Each variable is described in detail under the following sections.

Impact of size on capital structure

Natural logarithm of total asset of MFIs is used as a proxy of size of MFIs. Researchers who focus on bankruptcy cost (static trade-off theory), they justify the positive relationship between size and financial leverage. The finding of the study had opposite to the theory that is negative coefficient -0.022 and statistically in significant at (p-value 0.4588) the negative sign implies that size of MFIs does not determine MFIs capital structure in Ethiopian during the study period, indicates that large MFIs in the industry have not significantly enjoyed in low transaction costs for issuing new equity, and probability of bankruptcy for large firms is lower than smaller firms therefore size negatively relate to leverage.

The result was in contrary with hypothesis no.3 There is a significant positive relationship between the firm size and the debt level of the Ethiopian microfinance institutions**.**

Therefore, the study rejected the hypothesis because the data did not support the result. Concerning the size of total asset branch managers oppositely believed that an increase in total asset would have positive impact in financial leverage of their MFI. This can be managers are highly focusing on increasing in asset by giving less attention to an increase operating expense as asset of their MFI is increased.

Impact of tangibility on capital structure

The results of fixed effect model table 4.6 indicated that the relationship between tangibility and leverage was found to be negative and statistically insignificant (p-value = 0.2647). Therefore, the result was not in accordance with the expected sign. The result also implies that every one percent change (increase or decrease) in the MFIs tangibility keeping the other thing constant had a resultant change of 71.8 percent on the leverage in the opposite direction. This significant negative relationship between tangibility and leverage contradicts with various previous research findings like Rajan and Zingales (1995), Amidu (2007), and Frank and Goyal (2009) which suggest that firm's borrowing capability depends upon collateralizable value of assets (tangibility) and with theories (Static trade-off theory and asymmetric theory) which stated the positive relation between leverage and tangibility.

The likely reason of this relationship might be that MFI industry in Ethiopia had a close relationship with creditors, because the relationship can substitute for collateral.

Impact of profitability on capital structure

According to the Tradeoff Theory, a positive relationship between a firm's profitability and leverage ratio is expected on account of the advantage of taxes shield. More profitable firms should prefer debt to benefit from the tax shield. On the other hand, the Pecking Order theory predicted a negative relationship between firm's profitability and leverage. According to this argument, firms passively accumulate retained earnings, becoming less levered when they are profitable, and accumulate debt, becoming more levered when they are unprofitable.

In this study, the regression result shows there is a positive relationship between profitability of the Ethiopian MFIs and their level of leverage. Though it is insignificant (p value = 0.122) Therefore, the result was not in accordance with the expected sign. The result also implies that every one percent change (increase or decrease) in the MFIs profitability keeping the other thing constant had a resultant change of 23.2 percent on the leverage in the same direction. the positive result can be concluded that according to the static trade-off theory, high profitability level gives high level of borrowing capacity. This situation promotes the use tax-shield. Firms normally have to pay taxes on their profits. To avoid this, they prefer to take more debt in their capital structure as interest payments on debt are generally tax deductible. Agency costs theories also predict that profitable firms would take more debt in their capital structure to control the activities of managers. Hence, the more profitable a firm is, the more debt it will have in its capital structure. The result was in contrary with hypothesis no.1 There is negative relationship between profitability of the MFIs and its leverage ratio. Therefore, the study rejected the hypothesis because the data did not support the result.

Impact of Inflation on capital structure

In this study, inflation was predicted to have a positive correlation to leverage of the MFI. The result indicated that the hypothesis which states that inflation has a significant positive relation with the leverage of the MFI resulted in a p value of (0.0258) at 5%. Results of this study are consistent with empirical studies conducted by Mohammedamin (2014) which implies inflation affects leverage of the firm. This can be explained from the results that the increase in the inflation rate actually increases the value of firm's properties increase which is a significant source of debt financing to institutions.

Impact of GDP on capital structure

The Macroeconomic variable of real GDP growth rate of Ethiopian economy was expected to have a significant and positive relationship with leverage of microfinance institutions within the country. As expected, the regression result in table 4.6 shows that the GDP growth has a direct significant and positive relation to the leverage of MFI. The coefficient of GDP was positive as expected and found statistically significant to explain the dependent variable

measured as total leverage, with p-value of 0.0004 at 1%. The positive coefficient of GDP growth rate is in support of tradeoff theory which predicts positive relationship between GDP growth rate and firm's leverage. In empirical perspective, this finding is consistent with Muthama et al. (2013, Cekrezi (2013) and Bas et al. (2009)

CHAPTER FIVE

Conclusion and Recommendation

5.1 Conclusion

This study has taken empirical step to examine capital structure of Microfinance Institution in Ethiopia. The study employs Panel Data Multiple Regression in analyzing the firm level determinants of capital structure of MFIs using Random Effects Model.

The result shows an empirical link between the determinants of capital structure of MFI and the capital structure theory. The key informant's perspective suggest that capital structure of Ethiopian MFIs industry is affected by collateral provision, capital adequacy (regulation).

This study aimed at conducting an empirical study to examine the determinants of capital structure decisions of MFIs in Ethiopia. The study was made using data computed from the financial statements of MFIs in Ethiopia during nine-year period from 2010-2018 using descriptive statistics and multiple regressions. The sample taken for the study was eight MFIs selected from thirty-three micro finance institutions that operate currently in Ethiopia. Fixed effect model was applied to estimate the regression equation.

In this study, both firm specific and macroeconomic explanatory variables were considered. These include Profitability, size of the company, tangibility of assets, real GDP growth rate and inflation were considered as independent variables while leverage measured by total assets to total liabilities was considered as dependent variables. The empirical findings on the determinants of capital structure of the MFIs in Ethiopia for the sample suggested the following conclusions

- ✓ The profitability level of the MFIs affects their leverage ratio positively though insignificant, which supports the static trade-off theory and the it didn't support hypothesis formulated for the study. Thus, from the result it can be concluded that highly profitable micro finance institutions are more likely relied on externally generated funds and debt capital than equity capital as the source of financing.

- ✓ As regards to the effect of tangibility on the capital structure of institutions in this study, the regression result of asset tangibility was negative and insignificant contrary to

the expected positive relationship, but it is in line with the pecking order theory. This means the relationship is insignificant implying that tangibility is not one of the major determinates of the leverage of MFI in Ethiopia such that as this variable decrease, the leverage of MFI increase.

✓ The regression result shows a positive impact of GDP growth rate on the leverage of MFIs and in consistent with the research hypothesis that GDP has a positive relationship with leverage of institution.

✓ Inflation was predicted to have a positive correlation to leverage of the microfinance institution. The result indicated that inflation has a significant positive relation with the leverage of the MFIs resulted in a p value of (0.0258) at 5%.

✓ In general, the finding of the study suggests that, size, tangibility of assets, and macroeconomic factors: GDP and inflation were important variables that influence MFI's capital structure. Moreover, though result of profitability was insignificant it was positive not as hypothesized and influencing the financial decision of the MFIs. The overall results also, confirms that pecking order theory was pertinent theory in Ethiopian micro finance industry, while there was little evidence to support trade-off theory.

5.2 Recommendations

On the basis of the findings of this study, the researcher has drawn the following recommendations

✓ The analyses indicated that the independent macroeconomic variables of GDP and inflation were significantly related to leverage. Therefore, managers of the MFIs companies should consider the impact of these significant variables in determining their financing needs so as to maximize the value of the company and meet the shareholders return to the extent that gives value for their invested money.

✓ The regression result of the variables applied in this study indicated that the pecking order theory exceedingly appears to exert influence on the MFI's capital structure. It is, therefore, important for managers of this sector to formulate a policy that promote the

need to enhance the equity capital and the internal growth and to use for future financing needs of the company.

✓ Regarding tangibility of assets, the statistical result shows that the percentage of fixed assets to total assets was 2.8% and a negative sign which implies that MFIs might not have enough tangible assets so as to use collateral for debt financing and increase the leverage The reason for holding less fixed assets by the companies is a statutory requirement with expected benefit of holding a large amount of liquid assets is that it can offset any unexpected and large claims costs without reverting to asset sales or emergency funding. If assets have to be sold at short notice, institutions may not obtain a fair market value. It is more prudent to anticipate unexpected losses and keep liquid assets to meet the demand. On the other hand, liquid assets provide lower yields, so the opportunity cost for holding a large amount of liquid assets is high. So the regulatory authority should consider to relax the amount of liquid assets to optimum level that balances the tradeoff between the opportunity cost of holding too much liquid assets versus expected benefit of holding these assets and allow institutions to improve holding of their fixed assets in proportion of the total assets they hold thereby manage their capital structure using hedge these assets security for loan to be acquired from the bank market used as an alternative way of debt financing .

✓ The significant part of the debt composition of the MFIs is deposit of customer which is a short term liabilities payable to creditor. The companies do not hold long-term debt because of the absence of long-term financing entities as long term debt is the major issue for any firm for the expansion of its business. This type of debt financing can be facilitated from bond markets. The decision to develop a market-based system seems to be of a priority. Therefore, the government should consider the establishment of capital market in Ethiopia as this greatly contributes to the development of the economy in general and to the MF sector in particular to access their financing needs.

✓ The Ethiopian MFI industry should aggressively use debt financing as they are far away from the industry average and other benchmarks recommended by the sector analysts. The regulatory authorities of these sectors (NBE) should relax regulations for these sectors in

order to achieve their major objectives of the institutions. At least the leverage of MFI should be relaxed to the Basel accord agreement allow for financial institutions to the maximum of 12x leverage rather than 5% of their equity capital as per NBE. The major providers of capital in the industry are rural financial intermediation program (RUFIP), CBE and international fund for agricultural development (IFAD) should be empowered in borrowing from international finance organization which lend for MFIs at a very subsidized rate.

- ✓ The government should consider the role of MFI industry playing in alleviating poverty and economic growth of the country by supporting and facilitating investment opportunities available for private investors in the sector. The participation of international NGOs as shareholders in the MFIs.

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