

DETERMINANT OF CAPITAL STRUCTURE IN MICRO FINANCE
INSTITUTION (EVIDENCE FROM LARGE ETHIOPIAN MICRO
FINANCE INSTITUTION)

A SENIOR ESSAY SUBMITTED TO DEPARTMENT OF
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Abstract

The choice of capital structure in microfinance institution is one of the most important strategic financial decisions of firms. Since financing decisions influence microfinance institution and hence firm's value, this study examines the impact of capital structure in microfinance institution of core business operations of micro finance institution in Ethiopia. In order to meet the objectives of this study a quantitative panel data methodology would be employed. The panel data were obtained from the audit 10 microfinance institution of Ethiopia for the period of seven year (2008-2014) the panel data fixed effect estimation model would be applied for the data analysis through statistical package. Moreover, loan to deposit, spread and asset size also had statistically significant and positive relationship would be microfinance institution. Finance should give due consideration to manage their debts properly, mobilize deposit sufficiently, increase loan advances, spread, and size in their financing decisions. Furthermore, finance also advised to reduce non-deposit debt financing and raise equity financing so that to keep costs of financing at minimum level and hence optimize micro finance institution and the value of finance. Besides, the policy maker, capital structure in microfinance institution of Ethiopia also recommended reconsidering to raise the minimum capital requirement for finance. Finally, future researchers also recommended assessing the overall performance of finance and other business sectors in the area of this research.

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Table of Contents

Abstract	i
Acknowledgements	ii
Table of Contents	iii
ACRONYMS	vi
CHAPTER ONE	1
1. INTRODUCTION.....	1
1.1 Back ground of the study	1
1.2. Statement of the problem	3
1.3 Objectives of the study.....	6
1.3.1 General objective.....	6
1.3.2 Specific objective	7
1.3.3 Research hypothesis	7
1.4 Significant of the study	7
1.5 Scope of the study	8
1.6 Organization of the study	8
CHAPTER- TWO	9
2. LITERATURE REVIEW.....	9
2.1. Capital structure theory	9
2.2 .Trade-off theory	9
2.3. Pecking order theory	10
2.4. Agency theory	11
2.5 Stakeholder theory.....	12
2.6. Other corporate governance theories.....	12

2.7 Capital structure evidence	13
2.8 Capital structure of Microfinance institutions evidence	14
2.9 Empirical Review	16
2.10 Summary of the study	23
CHAPTER -THREE	24
RESEARCH METHDOLOGY.....	24
3. INTRODUCTION.....	24
3.1 Type of research design.....	24
3.2 source of data	25
3.3 Population and sampling designing	25
3.4 Econometric model and specification	26
3.5 The model specification	26
3.6 Method of data analysis	27
CHAPTER - FOUR.....	28
4. Finding and discussion	28
4.1 Introduction	28
4.1.1 Discussion descriptive statistics	28
4.2 Correlation Analysis of the explanatory variables	29
4.2.1 Introduction	29
4.3 Test for the Classical Linear Regression Model (CLRM)	31
4.3.1 Normality test.....	31
4.3.2 Heteroscedastisity.....	32
4.3.3. Test for the covariance between the error-term are zero (no autocorrelation).....	32
4.3.4 Multicollinearity.....	34
4.5 Multiple regression of result	35

4.5.1 Impact of profitability on leverage.....	37
4.5.2 Impact of growth on leverage.....	37
4.5.3 Impact of size on leverage.....	38
4.5.4 Impact of risk on leverage	38
4.5.5 Impact of age on leverage	38
CHAPTER -FIVE	40
5. Conclusion and Recommendation.....	40
5.1 Conclusion.....	40
5.2 RECOMMENDATION	41
REFERENCE	43
Appendix	45

ACRONYMS

MFI; Micro finance institution

NBE; National bank of Ethiopia

ROE; Return on asset

NIM; Net interest margin

TDTE; Total debt to total equity

EVA; Economic value added

ROA; Return on asset

ERCA; Ethiopia revenue and customer authority

GLS; General least square

CHAPTER ONE

1. INTRODUCTION

1.1 Back ground of the study

Determinant of Capital structure of Microfinance institution today is a major industry that comprise of thousands of institutions serving around 155 million clients worldwide (Armendariz and Murdoch, 2010). In its modern form, poverty Alleviation practitioners conceived microfinance as a tool to provide sustainable financial services to populations typically excluded from mainstream microfinance institutions (Ditcher, 1999Yunus, 2007). Aside from the growth of microfinance, funding constraints within the industry have Prevented capital structure in microfinance institution from meeting the enormous demands of poverty alleviation (Earned and Shark, 2013). Gosh and Van Tassel (2011) argue that the MFIs with access to cheap external funding Have the capacity to offer cheap credits to impoverished clients, and they promote and support development through income generating activities.

The capital structure of microfinance institution, however, still a relatively under explored area in the literature. Currently, there is no clear understanding, on how capital structure in microfinance institution choose their capital structure and what factors affect. In order to understand the capital structure of micro finance institution their unique characteristics require separate study. The determinants of capital structure of micro finance institution are not much more done in Ethiopia.

Therefore, more or less capital structure in micro finance institution if industry is much related to the financial sector. As a starting point the determinants of capital structure of finance industry result would be taken to study the determinants of capital structure decisions of micro finance institution. Additionally, a few literatures have provide evidence that are converge on a number of standard variables of financial firms that are reliably related to the capital structure of non-financial firms as reporting by group especially, capital structure in microfinance institution would need to share some characteristics of nonfinancial firms. So this indicates there are common determinants of capital structure in microfinance institution other than regulation that affect their financing decision.

Studying determinants of capital structure in microfinance institution is important because it has an effect on the sustainability and outreach of these organizations. This study was important for various stakeholders like management of capital structure in microfinance institution. Practitioners, researchers and policy makers in many ways. Management capital structure in microfinance institution can identify factors that hinder their capital structure in microfinance institution from proper utilization of debt financing so that they can take some corrective actions that help them to their optimal debt-equity. This study was also important for researchers by showing the determinants of capital structure of microfinance institution in a poor country context using advanced econometric methods, panel data so that various extensions of this study be made. The study may also generate valuable information to inform policy makers like National Bank of Ethiopia (NBE) in creating conducive environment for capital structure of micro finance institution to utilize debt as a viable source of finance in the era of increasing capital structure of microfinance and expanding outreach goals. The purpose of this study was to empirically examine determinants of capital structure in microfinance institution 10 Ethiopian microfinance institution that meet the criteria of data availability and to analyze using Panel regression model with a secondary data covering from(2008-2014).

One of the major objectives of a firm is to maximize the wealth of owners or shareholders of the firm. The wealth of shareholders' in turn was define as the current price of the firm's outstanding shares. In order to achieve this objective firm's management should take rational financing decisions regarding optimal capital structure in microfinance institution which in turn would minimize its cost of capital (Goyal, 2013). Capital structure in microfinance institution refers to several alternatives that could be adopted by a firm to get the necessary funds for its investing activities in a way that was consistent with its priorities. Most of the effort of the financial decision making process is centered on the determination of the optimal capital structure in microfinance institution where the cost of capital was minimized and firms' value is maximized. Capital structure in microfinance institution theory suggests that firms determine what was often referred to a target debt ratio; which is based on various trade-off between the costs and benefits of debt versus equity. The theory of capital structure in microfinance institution would be first established by Modigliani and Miller in 1958. Following the seminal work of Modigliani and Miller (1958), a vast theoretical literature developing. Which led to the formulation of alternative theories, such as the static trade off theory, pecking order theory and agency cost theory.

The trade-off theory states that the optimal debt ratio was set by balancing the trade-off between the benefit and cost of debt. According to this theory, the optimal capital structure in microfinance institution would be achieved when the marginal present value of the tax shield on additional debt is equal to the marginal present value of the financial distress cost on additional debt (Myers, 1984). The pecking order theory emphasizes the information asymmetry between the firm insiders and the outside investors suggesting that firms use debt only when the internal financing is not available (Myers & Majluf, 1984). Besides, the agency cost theory predicts the capital structure choice based on the existence of agency cost. This theory investigates the relationship between the manager of the firm, and the outside equity and debt holders (Jensen & Meckling, 1976).

Commencing from Modigliani and Miller (1958), the literature on capital structure in microfinance institution were be expanded by many theoretical and empirical contributions. For nonfinancial firms the empirical literature has generally focused on particular variables that are found to be consistently correlated with leverage such as: age, size, growth, profitability, risk, market-to-book ratio, collateral value and dividend policy. On the other hand, the capital structure of micro finance institution would be still a relatively under-explored area in the microfinance literature. Currently, there is no clear understanding on how micro finance institution choose their capital structure in microfinance institution, what factors influence their corporate financing behavior (Amidu, 2007). Likewise the relationship between capital structures in microfinance institution is one that received considerable attention in finance literature. However, in the context of micro finance industry, the subject has receiving a limiting research attention (Taani, 2013).

In Ethiopia, there are a few studies in relation to determinants of capital structure and determinants of micro finance institution distinctly studied by deferent researchers such as, Ashenafi (2005) a case study in Addis Ababa Small and Medium enterprises, Amanuel (2011) evidence from manufacturing share companies of Addis Ababa city, and Bayeh (2011) evidence from Ethiopian insurance company.

1.2. Statement of the problem

The determinant of capital structure is one of the most important strategic financial decisions of firms. However, it has being the subject of substantial debate and investigation. The debate on what drives capital structure decisions and its impact on capital structure in microfinance institution is still open. Since the seminal work of Modigliani and Miller (1958), a number of

theoretical literatures which led to the formulation of alternative theories were developed such as the static trade off theory, pecking order theory and agency cost theory. These theories state about a number of specific factors that may affect the capital structure of microfinance institution firms such as size, growth, profitability, risk, and age leverage as well as how the capital structure or micro financing decision affects the value of firms.

However, the empirical evidence regarding the alternative theories was still debatable (Rajan & Zingales, 1995). For instance, static trade off-theory states that a firm's optimal debt ratio was determined by a trade-off between the tax advantage and bankruptcy cost of borrowing, holding the firm's assets and investment plans constant. This theory assumes that higher capital structure in microfinance institution lowers the expected cost of distress; hence, firms increase their leverage to take advantage from tax benefits. That was, capital structure in microfinance institution is positively related with leverage. Due to the free cash flow theory of Jensen (1986) agency cost theory also supports this positive relation. However, the pecking order theory of Myers & Majluf (1984) suggests that firms use debt only when the internal financing is not available and argues against the existence of target capital structure. According to this theory microfinance institution was expected to have negative relation with leverage.

The determinants of capital structure and firm value were contesting for many years and still represent one of the most unresolved issues in corporate finance literature. Only a few of the developing theories are being tested by empirical studies and the theories themselves lead to different, not mutually exclusive and sometimes oppose results and conclusions (Rajan & Zingales, 1995). Morris & Beretta (2008) explained that numerous theoretical studies and much empirical research have addressed those issues, but there is no fully supported and generally accepted theory; and the debate on the significance of determinant factors of capital structure in microfinance institution firm value was still open.

Moreover, although earlier studies are great contributions to the theory of capital structure in microfinance institution they were limited to developing financial system and restriction to nonmicrofinance less developing countries like, Ethiopia, receive little attention in the literature. According to Octavia & Brown (2008), the capital structure of microfinance institution are still a relatively under-explored area in the microfinance literature and the special nature of the deposit contract, the degree of leverage in microfinance institution and the regulatory constraints imposed

on microfinance institution meant that finance (and financial institutions in general) are be exclude in previous empirical studies on standard capital structure in microfinance institution choice. However, understanding the determinants of capital structure of micro finance institutions well as the impact of financing decision or capital structure on microfinance institutions as important for finance for non-finance firms. According to Amide (2007) currently, there is no clear understanding on how finance choose their capital structure in microfinance institution what factors influence their corporate financing behavior. Likewise the relationship between capital structure microfinance institutions is one that receiving considerable attention in the finance literature. However, in the context of finance industry, the subject has received a limited research attention (Tami, 2013).

In the contexts of Ethiopia, there were a few studies in relation to determinants of capital structure microfinance institution distinctly studies by deferent researchers. For example, Ashkenazi (2005) managed a case study in Addis Ababa Small and Medium enterprises, whereas Emanuel (2011) wrote using evidence from manufacturing share companies of Addis Ababa city. In addition, Bayh (2011) assessed using evidence from Ethiopian insurance companies. Moreover, in the finance industry of the country, Weldemikael (2012) studied on determinants of capital structure of microfinance institution in Ethiopia while Amdemikael (2012) assessed factors affecting microfinance institution with a focus on overall performance. However, no one would be emphasized on the core business operations microfinance institution For the purpose of this study core business operations of microfinance institution would be define ‘the finance. Operations of deposit mobilization and providing loans to customers’.

Besides, apart from some studies made outside Ethiopia, most of these studies attempts to test the determinants of capital structure and factors affecting microfinance institution using comprehensive measures of micro finance institution return on asset and return on equity as well as debt to total asset and capital adequacy as measure of leverage. Hence, didn’t take into account other measures of microfinance institution particularly the measure of microfinance institution for core business operations of finance sector, net interest margin .In addition, in relation to explanatory variables past studies failed to investigate the impact of the main source of finance external finance, deposit and other factors such as loan to deposit, spread and growth of banks which believed to have great contribution to the core business operations of micro finance institution.

As to the knowledge of the researcher there were no studies related to this title “The Impact of Capital Structure of micro finance institution in Ethiopia” with an emphasis on the core business operations microfinance institution in the country.

Knowledge of the impact of financing decision or capital structure on microfinance institution would be help financial managers to predict and mitigate potential problems associated with their financing decision. Particularly, acquiring knowledge of the impact of capital structure of micro finance institution core business operations would be significant benefit to manage financing decision in a way that meets the goal of firms; shareholders’ wealth maximization.

Therefore, given the unique features of financial structure and the environment in which they operate, there are strong grounds for a separate study on the impact of capital structure of micro finance institution in Ethiopia by emphasizing on finance core business operations microfinance institution.

Hence, the aim of this study would be to examine the impact of leverage/capital structure of micro finance institution in Ethiopia with an emphasis on finance core business operations as it would be define as the finance operations of deposit mobilization and providing loans to customers. The result intends to equip financial managers with applied knowledge of the potential problems in microfinance institution and capital structure, as well as determining their optimal level of capital structure to achieve optimum level of firm ‘micro finance institution so that to meet wealth maximization goal of firms. Furthermore, it intends to serve as a base for policy makers in considering the minimum capital requirement of finance operating in the country.

Therefore, this study tries to fill the gap by identifying the main factors that affect the capital structure of Ethiopian MFIs using panel data regression model.

1.3 Objectives of the study

1.3.1 General objective

The general objective of the study would be investigate the determinants of capital structure of Micro Finance Institutions in Ethiopia.

1.3.2 Specific objective

- To determine the effect of profitability of capital structure on microfinance institution.
- To examine the effect of growth of capital structure on microfinance institution.
- To determine the risk of capital structure on microfinance institution.
- To determine the effect of size of capital structure on microfinance institution.
- To examine the effect of age of capital structure on microfinance institution.

1.3.3 Research hypothesis

The study examines the determinants of capital structure in microfinance institution that were considered to standard variables from various empirical results of studies that are related to financial institutions. The researcher tests the following alternative hypothesis on the relation between the leverage and the independent variables. On the basis of the research problem identified the hypothesis that guide this research work are:

H1: There is a significant relationship between the MFI profitability and leverage.

H2: There is a significant relationship between the MFI growth and leverage.

H3: There is a significant relationship between the MFI size and leverage.

H4: There is a significant relationship between the MFI risk and leverage. H5:

There is a significant relationship between the MFI age and leverage

1.4 Significant of the study

or financial managers to equip them with applied knowledge of the potential problems in financing decisions or capital structure of micro finance institution, as well as determining their optimal level of capital structure to achieve optimum level of firm's microfinance institution so that to meet wealth maximization goal of firms. In addition, it would be help as a base for policy makers such as National microfinance institution of Ethiopia to look at the appropriate level of capital requirement for finance, besides, it would be also serve as a reference for other researchers in the area of corporate finance. This study have significant role to play in filling the gap in understanding

of the impact of capital structure decisions on micro finance institution of core business operations of micro finance institutions in Ethiopia.

1.5 Scope of the study

This study would be tries to cover the trend of capital structure in microfinance institution. This study included five objective that are profitability, growth, size, risk and age leverage and the second chapter literature review includes theoretical, empirical and summery and the chapter Three methodology research dings, source of data ,population ,sample size, economic model, reasserts analysis

1.6 Organization of the study

This study is organized in three chapters. The first chapter deals about the introduction of the study that is background of the study, statement of the problem, objectives of the study, research hypothesis, significance of the study, scope of the study and organization of the study. The second chapter discusses literature review includes theoretical, empirical and summary and the third chapter is about methodology includes source of design, types of source data, population of sample study, economic model and data analyze

CHAPTER- TWO

2. LITERATURE REVIEW

2.1. Capital structure theory

The modern theory of capital structure started from the seminal work of (Modigliani and Miller, 1958) who initiated an infamous proposition of capital structure irrelevance. They argue on the basis that under perfect capital market, zero taxes, homogenous expectations and zero bankruptcy and transaction cost, the value of firm is totally independent of its capital structure. However, many studies, for instance by Jensen and Meckling, 1976; Groosman and Hart, 1972) have discredited most of these assumptions and several theoretical frameworks have been developed to explain the existence of various financing instrument in firm's capital structure. Rather than waiting for sufficient accumulated profits for financing purpose, firms use different financing instrument such as debt, equity or hybrid securities instead. Through this mechanism, the firm could finance its investment and projects which invariably increases the overall firm's value.

This study is focused on testing the implications of capital structure and corporate governance theories. Most of these theories have succeeded in explaining several broad patterns in observed capital structure, such as the association between leverage and several firm characteristics and the aggregate use of different sources of capital. However, neither group of theories has succeeded in explaining much of the observed heterogeneity in capital structures of microfinance institutions.

2.2 .Trade-off theory

The trade-off theory of capital structure entails that value- maximizing firms achieve an optimal capital structure by striking a balance between the corporate tax benefits of debt and the cost associated with that debt (Agency cost, bankruptcy cost and personal tax) (Kraus and Litzenberger, 1973). In other words, firms dilute these various cost associated with debt with the corporate tax benefit they enjoy. The theory explains the capital structure of firms using leverage and gives a rationale on the various cost (Agency, bankruptcy and personal tax) associated with debt issue.

Although, notable corporate finance papers provide empirical evidence to support the trade-off theory Oscan (2001), Graham et al. (1998), Mackie-Mason, (1990), Bradley et al. (1984) and Schwartz and Aronson (1967). There are criticisms that the theory is not adequately descriptive of observed capital structure (Myers, 1984).

Kraus and Lichtenberger (1973) argue that the tax advantage of debt is offset by increased expected bankruptcy costs. Firms with high level of leverage are faced with increasing probability of bankruptcy (i.e. default on interest payment and debt payment) and thus increase the expected bankruptcy costs. The cost may be of different types with varying degrees of damage, for example, firms with high debt in their capital structure would be forced to deal with creditors on less favorable terms which would result in higher financing cost. In this sense, it can be argued that a firm's leverage level represents its degree of riskiness regarding bankruptcy. Therefore, creditors charge higher cost to cover or compensate any loss should the firm goes into liquidation. Consequently, these cost associated with bankruptcy may cause a substantial reduction in firm's value that shareholders prefer not to suffer.

Although, several studies have advanced the argument that optimal capital structure could be achieved by balancing the tax advantage of debt with expected bankruptcy cost (Kraus and Lichtenberger, 1973; Stieglitz, 1972). However, some empirical findings have criticized this notion by showing the effect of direct and indirect bankruptcy cost on firms (Warner, 1977). As documented by warner, the cumulative direct costs of bankruptcy are relatively small, at an average of 5.3% of firm's market value. To some extent, the costs are smallest for the larger firms. Moreover, later evidence suggests that both direct and indirect cost of bankruptcy are significant, especially for certain industries (Lichtenberger, 1986; Altman, 1984).

2.3. Pecking order theory

The pecking order theory would be first conceived by Myers (1984) and Mayer's and Majluf (1984). They propose a capital structure model based on the information asymmetry problem. The theory deals with the hierarchal structure of capital formation. The problem arises where firm managers are assumed to possess more information about the firm than the investors. As a result, firm's equity may be mispriced by the investors due to lack of better information, thereby resulting in an inefficient investment decision by firms due to under-investment problem. Under-investment has a tendency to make firm managers to forego profitable project. Thus, in a situation where

equity is under-priced, firms can capture the benefit of investing in a positive project by having new investors rather than the existing shareholders.

Therefore, in order to mitigate these inefficiencies, it is suggested that firms should design their capital structure in a hierarchy of financial securities that is not severely underpriced by investors such as retained earnings or debts. So the pecking order theory predicts that due to asymmetric information, firms prefer internal source of funding than external. In a situation where external funding is necessary, firms prefer debt over equity because the information cost associated with debt issue is lower compared to equity issues. The optimal capital structure of firms depends on the information available to investors and the investor's ability to monitor and enforce compliance through institutions (Demirguc-kunt and maksimovic, 1999; Booth et al., 2001; Antoniou et al., 2008; Li and Ferreira, 2011; Fan et al., 2012).

2.4. Agency theory

The agency theory paradigm was initiated in the early 1970s by Ross, (1973) and Jensen and Meckling, (1976). They study the agency relationship and the cost arising out of the conflict between an agent and his principal. The inherent conflict of interest can exist between either shareholders and managers or shareholders and debtholder. In the case of conflict between shareholders and managers, the theory suggests that managers may prefer to pursue their own personal objectives as against the interest of their shareholders that is to maximize shareholder's wealth. In order to reduce agency cost, firms therefore, introduce debt into their capital structure.

The choice of using debt instrument starves managers of free cash, while on the other hand pressurizes them to generate cash flows used in settling interest expenses and full debt repayment upon maturity (Jensen, 1986). Besides, Grossman and Hart (1982) argue that debt contracts encourage firm managers to be efficient in order to meet their debt commitment or otherwise risk losing their jobs and reputation in the event of firm liquidation. Because debt imposes constraints on managerial discretion, agency theory suggests that managers may be motivated to adopt suboptimal leverage that does not maximize shareholders' wealth. The extent to which managers can take on suboptimal leverage depends critically on the strength of corporate governance. Fama and Jensen (1983) suggest that strong corporate governance characterized by efficient board monitoring and guidance plays an essential role in mitigating agency conflicts.

2.5 Stakeholder theory

Suggest that a firm is characterized by relationships with many constituent groups and individuals (Stakeholders) each with the power to affect firm's performance and decision making. The theory is concerned with the nature of these relationships in terms of both processes and outcomes for the firm and its stakeholders (Freeman, 1984). However, with more influence of stakeholders in firm activities, it is difficult to state the role of stakeholders in determining firm's capital structure. Implicitly, Cornell and Shapiro (1987) suggest that the inclusion of the interest of other stakeholders in the action of the firm leads to "new interpretation of classic problems in finance". A good example of such problem is financing decision.

Titman (1984) was first to point out that the stakeholder's incentives affects firms financing decision. Titman & Wessel (1988) argue that the indirect costs of distress can be high when distress to a given firm would bring about difficulties for its customers (who are hesitant to purchase from a company that might default and not be around to service the product) or suppliers (who might not supply a product to a firm in or near distress). Banerjee et al. (2008) use customer/supplier data from the CompUSA Business Information File (which runs only through 1999) and find that companies use less debt when their suppliers are "dedicated". This behavior is consistent with customers considering their own financial distress risk as a cost to the supplier (perhaps because dedicated suppliers will attempt to charge high-debt customers more). Leverage also increases risk for another important stakeholder: employees, who are exposed to unemployment risk in the event of bankruptcy. This (indirect) cost of financial distress is ultimately borne by the company in the form of higher wages (Bark et al. 2010) and thus discourages the use of debt in a trade-off sense.

2.6. Other corporate governance theories

A number of different theoretical frameworks have evolved to explain and analyses the relationship between corporate governance and firm capital structure. Each of these theories approaches corporate governance in a slightly different way, using different terminology, and views corporate governance from a different perspective and discipline. Although there are clear differences between the various theoretical frameworks, however, they each attempt to analyses the same issue of board effectiveness. They sometimes provide the most convincing basis to analyses the effect of corporate governance on firm capital structure.

Resource dependency theory originates from the study of external control of organizations by Pfeffer and Solanki (1978). The theory emphasizes the interdependence between organizations and entities in their external environment that control important resources. Pfeffer and Solanki (1978) developed the idea that firms can form links with elements of its external environment upon which it depends. They argue that board of directors are important linkage mechanism for connecting a firm with sources of external dependency. By selecting a director with valuable skills, influence, or connections to external sources of dependency, the firm can reduce

2.7 Capital structure evidence

Capital structure research also takes the form of empirical research not only theoretical propositions. Empirical research is carried out to test the validity of theoretical predications which findings are often mixed and generally not consistent with the theoretical predictions. As a result, researchers have suggested that there no dominant theory that can explain the behavior of firm's capital structure mix (Beattie et al., 2006). They argue that capital structure policies of firms are heterogeneous and that some firms do not follow the capital structure theories when deciding on their capital structure mix. Therefore, the applicability of some of these theories in the finance world is debatable. There is considerable amount of literature on firm's capital structure (Gungoraydinoglu and Aztecan, 2011; Group and Header, 2010; de Jong et al., 2008; Frank and Royal, 2004; Booth et al., 2001; Demirguc-Kunt and Maksimovic, 1999; Rajang and Zing ales, 1995) depending on the relevant theoretical considerations (Bankruptcy cost, agency cost, information asymmetry), one can point to two major determinants of firm's capital structure, that is, firm-level and institutional specific determinants. An early study Marsh (1982) measures the probability of issuing debt based on firm's characteristics. He finds that firm with high level of fixed assets and of large size is highly likely to issue debt, while an increase in bankruptcy probability will reduce the probability to issue debt. Rajang and Zing ales (1995) examine the determinants of firm capital structure in an international context. Overall, they find that tangibility of assets, firm size, profitability and growth opportunities are important determinants of firm capital structure. Recent study by Antoniou et al. (2008) supports the findings of Marsh (1982) on level of fixed assets and firm size and oppose Rajang and Zing ales (1995) on profitability and growth. In the banking sector, Group and Header (2010) find evidence that the standard crossectional determinants of non-financial firm's capital structure are also applicable to financial firms such as banks. The sign and significance of the effect of most variables on bank leverage are

identical when compared to the results found in Frank and Goyal (2004) for US firms and Rajan and Zingales (1995) for firms in G-7 countries. However, other interesting firm-level determinants appear to be closely related with capital structure decision. One recent area that has received much attention in the firm-level determinants of capital structure is the corporate governance issues. Several empirical studies have focus on the relationship between capital structure and corporate governance characteristics such as board size, board composition and management compensation (Haque et al., 2011; Ortiz-Molina, 2007; Wen et al., 2002; Berger et al., 1997; Mehran, 1992; Friend and Lang, 1988; Jensen, 1986; Pfeiffer and Salancik, 1978). Rather recently, there is a reduced focus on board gender diversity and firm capital structure (Alvez et al. 2015; Campbell and Vera, 2010). These studies argue that gender diversified board to be more efficient and contribute to lower information asymmetries and increase the firm proportion of risky securities on its capital structure. Evidence show that boards with more women have greater level of public disclosure and better oversight of management reporting that enhances earnings quality (Gull et al., 2011). Similarly, women on corporate boards are found to improve monitoring and board quality (Adams and Ferreira, 2009; Carter et al., 2010). However, Fava and Jensen (1983) and Lorca et al. (2011) argue that effective board monitoring and higher quality of board decision plays an important role in reducing agency cost of debt. They argue that board of directors monitoring role leads to a decrease in opportunistic behavior of managers (agency cost) and information asymmetry. However, other behavioral and organizational theories may explain the effect of female board representation on firm capital structure choice (Jacobsen et al. 2014; Jianakoplos and Bernasek, 1998; Pfeffer and Salancik, 1978; Kanter, 1977).

Turning now to the role of institutional-specific factors in determining firm capital structure. It is observed that the choice of financing reflects actual and perceived transactions cost of resolving asymmetric information (La Porte et al., 1997, 1998; Demirguc-Kunt and Maksimovic, 1999; Booth et al., 2001; Antoniou et al., 2008; Li and Ferreira, 2011; Fan et al., 2012). They converge on the idea that better institutional environment reduces asymmetric information problem between firms and investors.

2.8 Capital structure of Microfinance institutions evidence

Determinant of capital structure in microfinance institution sector, there will be arguments that the application of standard capital structure theories and models to lending institutions such as microfinance institutions is not that straightforward. Cohen (2004) argued that corporate finance

principles is only applicable to lending institutions after accounting for differences in how they operate. For instance, capital structure in microfinance institutions are unique type of lending institutions with risk and return characteristics different from corporate firms. As Cebenoyan and Strachan (2004) observed, risk management greatly influences the capital structure of microfinance institution. Therefore, the theoretical prediction behind the determinants of firm capital structure may not clearly explain the diverse nature capital structure of micro finance institution.

Existing studies that examine the effect of capital structure on microfinance can at least be categorized into five different groups. The first category examines whether financing choice improves capital structure in micro financial institution. Sustainability and efficiency (Kyereboah-Coleman, 2007; Hogue et al., 2011; Hudson and Trace, 2011; Began, 2012). Kyereboah-Coleman, (2007) show that highly leveraged capital structure in microfinance institution perform better socially and enjoy economies of scale by using panel data of 52 microfinance institution Ghana. On the contrary, Hogue et al., (2011) present a robust result that indicates negative relationship between leverage and capital structure of micro finance institution outreach. Hudson and Trace, (2011), find that subsidies have a positive impact on microfinance institution efficiency. Furthermore, Began (2012) explores how changes in capital structure could improve microfinance institution efficiency and financial sustainability using the life cycle theory. They find causal evidence that increased use of grants by large capital structure in micro finance institution negatively related to sustainability and drags down operational self-sufficiency.

The second category explores the effect of rating on capital structure of micro finance institution access to capital. Hiratsuka and Nadolnyak, (2008) show that the impact of rating agencies differs on microfinance institution ability to raise capital.

The result also suggests that subsidizing rating does not help capital structure in micro finance institution raise more capital. Germaine and Natividad, (2010), show that rating cuts the cost of financing to microfinance institution while the impact of supply of credit is mixed. The third category examine the determinants of external funding and find evidence that financial performance and social performance variables are more likely to influence external funding to microfinance institutions (Marshland and Urge he, 2013). The fourth category draw inspiration

from the life cycle theory and describes MFI funding choices to their stages of development (Fernando, 2004; de Sousa-Shields and Gronkiewicz, 2004; Lidgerwood and White, 2006).

Finally, the fifth category addresses the question of whether institutional frameworks affect capital structure of microfinance institution Tchuigoua, (2014), used a sample of 292 Microfinance institution across the world. Findings suggest that strength of legal rights drives capital structure of micro finance institution external debt and donated equity. Microfinance institution in countries with developing microfinance sectors are more levered. This interesting result seems consistent with previous studies (de Jong et al., 2008). This might suggest the evidence of similarity of capital structure determinants between financial and non-financial firms as suggested by Group and Header (2010).

Dependency and gain valuable resources. As environmental dependencies change, so do the resource needs for organizations and thus the needs for specific types of directors (e.g., Hillman et al., 2000). Empirical evidence has confirmed firms observe increase in leverage when they have more board members representing financial institutions (Pfeiffer, 1972). Similarly, Booth and Deli (1999) find that the inclusion of commercial bankers on corporate boards to have positive relationship with short term and long term debt, and total bank debt.

2.9 Empirical Review

Empirical studies on the impact of capital structure in micro finance institution over the past several decades' corporate finance researchers have devoted considerable efforts to transform rationalism of capital structure in to empiricism. The problem of developing a conclusive theory of capital structure and designing empirical tests those are powerful enough to provide a basis for choosing among the various theories is still unresolved. The literature on the relationship between firm performance and capital structure has produced mixed results (Tami, 2013). Hence, the relationship between capital structure and firm value will be the subject of considerable debate. Apart from the seminal work of Modigliani and Miller (1958) emphasizing on the irrelevance theory of capital structure and their subsequent revision taking in to account the tax benefit of debt financing Modigliani and Miller (1963), as well as succeeding arguments and researches such as Static Trade-off Theory of Myers (1984) and pecking order theory of Myers & Mali (1984) which

argues in the contrary of static trade-off theory, there are empirical studies that emphasis on the relationships between capital structure in microfinance institution performance of firms.

Salem & Yadao (2012) examined the relationship between capital structure and firm performance. The investigation will performed using panel data procedure for a sample of 237 Malaysian listed companies on the Bursa Malaysia Stock exchange during 1995-2011. The study used four performance measures including return on equity return on asset .Tobin's Q and earning per share as dependent variable. The seven capital structure measure including long term debt .short term debt total debt ratios and growth as independent variable. Size is a control variable. The data are divided into six sectors which are construction, consumer product, industrial product, plantation, property, trading and service. The empirical tests indicate that capital structure negatively impacts performance measured by ROE. On the other hand capital structure negative significant impact on firm's performance measured by ROA. Furthermore, findings of this study suggest that there is a significantly positive relationship between Tobin's Q (firm performance) and capital structure measured by LTD and STD. Finally, the results show that Tobin Q has a positive and significant relationship with size (as control variable) for all sectors under study except for property sector a negative effect on the Tobin's Q observed.

Farad & Aliasghar (2013) also studied the relationship between capital structure and Profitability using data from 252 non-financial companies in the period from 1999 to 2008 in Tehran Stock Exchange. Consistent with earlier theories, found a positive association between the return on equity (ROE) and short-term debt. This suggests increasing short-term debts with low interest rate will lead to increase in profitability. Furthermore, the results revealed a negative association between ROE and long-term debt. So, when firms increase long-term debts, this results to decrease in profitability. Finally, the results also indicate a positive relationship between ROE and total debt.

Abort (2005) investigated the relationship between capital structure and profitability of listed firms on the Ghana Stock Exchange (GSE) during a five-year period (19982002). Panel data methodology and regression analysis were used in the estimation of functions relating the return on equity (ROE) with measures of capital structure. And, the finding revealed a significantly positive relation between the ratio of short-term debt to total assets and ROE. However, a negative relationship between the ratio of long-term debt to total assets and ROE was found. This implies

that an increase in the long-term debt position is associated with a decrease in profitability. With regard to the relationship between total debt and return rates, the results show a significantly positive association between the ratio of total debt to total assets and return on equity.

Shubuta & alsawalhah (2012) extend Abort's (2005), and Gill (2011) findings regarding the effect of capital structure on profitability by examining the effect of capital structure on profitability of the industrial companies listed on Amman Stock Exchange during a six-year period (2004-2009). The study sample consists of 39 companies and applied correlations and multiple regression analysis. The results revealed significantly negative relation between debt and profitability. These findings imply that an increase in debt position is associated with a decrease in profitability; thus, the higher the debt, the lower the profitability of the firm. The results also show that profitability increases with control variables; size and sales growth. The findings of this paper contradict with prior empirical studies like Abort (2005). Yet recommendations based on findings are offered to improve certain factors like the firm must consider using an optimal capital structure and future research should investigate generalizations of the findings beyond the manufacturing sectors.

In consistent with the Shubuta & alsawalhah (2012) findings, Chechen & Olayiwola (2014) examined capital structure in microfinance institution of the Nigerian listed firms from the Agency Cost Theory perspective with a sample of seventy (70) out of population of two hundred and fortyfive firms listed on the Nigerian stock exchange (NSE) for a period of ten (10) years: 2000 - 2009 with the aid of the NSE Fact Book covering the period under review. Panel data for the firms are generated and analyzed using fixed effects, random-effects and Housman Chi Square estimations. Two independent variables which served as measure of capital structure were used in the study: debt ratio (DR) and equity over the period (EQT) while profitability (PROF) as the only dependent variable. The result showed that DR is negatively related with PROF, but EQT is directly related with PROF.

Nirajini & Praia (2013) studied the Capital structure and financial performance during 2006 to 2010 (05 years) financial year of listed trading companies in Sri Lanka. For the purpose of this study, the data will extracted from the annual reports of sample companies. Correlation and multiple regression analysis were used for analysis. The results revealed a positive relationship between capital structure and financial performance. And also capital structure is significantly impact on financial performance of the firm showed that debt asset ratio, debt equity ratio and long

term debt correlated with gross profit margin, net profit margin, Return on Capital Employed, Return on Asset & Return on Equity at significant level of 0.05 and 0.1.

Mohammadzadeha et al. (2013) in their study scrutinized the relationship between the capital structure and the profitability of pharmaceutical companies in Iran. To meet the purpose of the study, top 30 Iranian pharmaceutical companies defined as study samples and their financial data were gathered for the period of 2001-2010. In this study, the net margin profit and debts to asset ratio respectively and sales growth was used as a control variable. Results showed that there will significant negative relationship between the capital structure and the microfinance institution which means that the pharmaceutical companies established a Pecking Order Theory and the internal financing has led to more microfinance institution.

Apart from non-financial institutions, there are some empirical studies in the financial sectors. Tami (2013) examined the impact of capital structure of micro finance institution performance of Jordanian finance. The annual financial statements of 12 micro finance institution listed on Amman Stock Exchange were used for the study which covers a period of five (5) years from 2007-2011. Multiple regressions was applied on performance indicators such as Net Profit (NP), Return on Capital Employed (ROCE), Return on Equity (ROE) and Net Interest Margin (NIM) as well as Total Debt to Total Funds (TDTF) and Total Debt to Total Equity (TDTE) as capital structure variables. The results showed that microfinance performance, which is measured by net profit, return on capital employed and net interest margin is to be significantly and positively associated with total debt; while total debt is found to be insignificant in determining return on equity in the microfinance industry of Jordan.

Poke, Ado, & Amari (2013) also studied the impact of capital structure and microfinance of listed finance on the Ghana Stock Exchange using a panel data methodology. Capital structure theories were utilized to provide the theoretical basis for the work. The study considered all the microfinance institution listed on the Ghana Stock Exchange over the period 2005-2012. The distribution patterns of data and applied statistical techniques used in the study include descriptive statistics, correlation analysis and regression analysis. The study variables also include Return on Asset, Return on Equity, Tobin's q ratio, Economic Value Added (EVA) being the dependent variables and independent variables are: Total Leverage, Debt to Equity ratio, Total Liability of the microfinance, Size and the Age of the microfinance institution. The finding revealed that,

microfinance measured by returns on equity is inversely and significantly influenced by the total leverage ratio which is also dependent of the capital structure of the microfinance. The debt equity ratio of the finance has a positively significant relationship with returns on equity. The capital structure variable, total liabilities of the list finance also recorded statistics clearly indicating that, the total liabilities of the listed finance does not make a significant contribution on their return on equity. As far as the size of the finance is concerned, the study reveals that the size of the finance does not have a significant impact on their returns on equity. However there will a sort of positive relation between the two variables during the study period. Meanwhile, the results for returns on equity and their years of operation had a significantly negative relationship between them, meaning as the microfinance institution grow in age, their profitability levels reduces significantly. The relationship between Capital Structure of micro finance institution as well as the impact of Capital Structure on Profitability across the microfinance institution by returns on equity, reveals that the profitability of the list microfinance institution on the Ghana Stock Exchange decreases significantly with increase in their total leverage. Therefore there is a clear indication that, Capital Structure has a significant impact on the profitability of the listed microfinance institution on the Ghana Stock Exchange. Also at an average total leverage ratio of about 76%, there exist a negative relationship between profitability and capital structure microfinance institution therefore indicating that, the optimal capital structure for the sector is definitely not 76% or more.

In addition to the above studies in microfinance industries, Goal (2013) also investigated the impact of capital structure on profitability of public sector banks in India listed on national stock exchange during 2008 to 2012. Panel data and multiple regression models were used to find out the association between capital structure characteristics and microfinance institution performance in the context of India. The findings of study validated a strong positive dependence of short term debt to capital on all capital structure in microfinance institution measures (ROA, ROE and EPS). Whereas, Long term debt to capital having a negative relationship with return on assets (ROA), return on equity (ROE) and earnings per share. Firm size (SIZE) experienced an optimistic connection with variables (ROA, and EPS) and negative with ROE. Assets growth (AG) proposed a positive relationship with return on asset and return on equity and earning per share. Besides, Yangon, Chariot, & Sang (2014) empirically investigates the relationship between capital structure and the firm's capital structure microfinance institution industry in Kenya, by using panel data extracted from the financial statements of the companies listed on the Nairobi Stock Exchange

from year 2004-2012. Linear regression model were used to investigate the nature of relationship between Capital Structure and microfinance. The author's rationale behind the industry specific analysis is the fact that exogenous variables appear to force institutions in the same industry in similar fashion, thus leading to the existence of an industry specific capital structure in microfinance institution. On the basis of findings, it is documented that short term debt has significant positive relationship with the microfinance institution. This suggests that short-term debt tends to be less expensive, and therefore incremental short-term debt in capital structure microfinance institution will lead to an increase in profit levels. Therefore short term debt is the preferable source of financing for the profitable institutions. Whereas long term debt has significant negative relationship with the profitability that envisage long-term debts are relatively more expensive due to certain direct and indirect costs, therefore employing high proportions of long term debt in financial structure results in low microfinance institution. Empirical results indicate no significant association between total debt and microfinance institution the inclination of individual results provide the logical justification for surprising result. On the basis of these findings it is clouded that the relationship between short term debt and the microfinance is consistent with the static trade-off theory not because of the tax shield rather some other unexplored factor. The underlying rationality is, interest on long term debt is also tax deductible expense like short term debt but the results are quite opposite in direction. Pecking order theory is true but with the addition of short term debt on top of the hierarchy of preference. Implicit in such testing is that both theories have certain elements that are mutually exclusive. Both the theories as a whole can hold true but with the suggested accompaniments.

In their study of the Effect of Capital Structure of capital structure in microfinance institution on the Performance of Palestinian Financial Institutions, Abad & Abu-Rub (2012) used Return on Equity (ROE) as accounting performance measure while Tobin's Q was used to measure the market microfinance institution of the firms. The independent variables used in both measures were the microfinance institution deposits to total assets, total microfinance institution loans and other investment and net profit. The deposit to total asset was used as a measure of bank leverage. Using Multiple Linear Regression they found strong correlation between return on assets and efficiency; and total deposit to total assets and efficiency. The same variables have the same effect on market value while loans have a weak effect.

In Ethiopia, there is no empirical study directly related with the subject matter of this study, “The impact of capital structure in microfinance of Ethiopia” with an emphasis on core business operations microfinance institution however, there are a few studies in some areas of corporate finance. Usman (2013) examined the determinants of capital structure of microfinance institution large taxpayer share companies in Ethiopia. Econometric analysis were 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 the study, including profitability, size, age, tangibility, risk, and ownership tax shield, growth, and 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 will applied to study the effect of selected independent variables on capital structure in microfinance institution the result showed that size, age, tangibility, liquidity position and non-debt tax shield of a company are positively correlated with leverage, whereas profitability, earnings volatility and dividend payout ratio are negatively associated with leverage. Growth variable was found to be statistically insignificant in affecting leverage of large taxpayer share companies in Ethiopia. Based on the sign of these relations the Author also indicated that, Agency cost theory provide more convincing evidence than other capital structure theories in elucidating the capital structure of microfinance institution large taxpayer share companies in Ethiopia.

Furthermore, from empirical studies in the banking sector of Ethiopia Welds Mikado (2012) examined the relationship between leverage and firm specific (profitability, tangibility, growth, risk, size and liquidity) determinants of capital structure decision, and the theories of capital structure that can explain the capital structure of microfinance institution Ethiopia using a mixed method research approach by combining documentary analysis and in-depth interviews. More specifically, the study used twelve years (2000 - 2011) data for eight microfinance institution in Ethiopia. The findings revealed that profitability, size, tangibility, risk, ownership growth, of the microfinance institution are important determinants of capital structure of banks microfinance institution Ethiopia. However, growth and risk of microfinance institution are found to have no statistically significant impact on the capital structure of microfinance institution Ethiopia. In addition, based on the results of the analysis the Author indicated that pecking order theory is pertinent theory in Ethiopian capital structure of microfinance institution industry, where as there

are little evidence to support static trade-off theory and the agency cost theory. Hence, the author recommended banks to give due consideration to profitability, size, liquidity and tangibility in their determination of optimum capital structure. On the other hand, Amdemikael (2012) also assessed the factors that affect microfinance institution Ethiopia covering the period of 2000-2011. Mixed research approach (data obtained through the structured document reviews and in-depth interviews) were applied. The analysis also managed through the multiple linear regressions model, OLS. The dependent variable will ROA as a single measure of profitability and it will be measured as net profit before tax divided by total assets. The independent variables include; equity-to-total asset ratio (the inverse of the leverage ratio), Operational efficiency, Income diversification, Liquidity risk, Asset Quality, Real GDP growth and Inflation. The result indicated that capital strength is one of the main determinants of capital structure in microfinance institution in Ethiopia.

2.10 Summary of the study

The seminar work by Modigliani and Miller (1958) in capital structure provided a basis for the development of the theoretical framework within which various theories were about to emerge in the future concluded to the broadly known theory of “capital structure irrelevance” where financial leverage does not affect the firm’s value. By incorporating tax benefits as determinants of the capital structure of microfinance institution firms, Modigliani and Miller (1963) proposed to use as much debt capital as possible in order to maximize the value of firms. Furthermore, as stated in the theoretical review section of this paper, subsequently a number of concepts microfinance firm value and theories of capital structure such as the static trade-off theory, pecking order theory and agency cost theory were developed.

These theoretical concepts also tested by different empirical studies of different researchers in different business sectors around the world. In examining the impact of capital structure on microfinance performance as stated above in the empirical review section, a number of variables were used by different authors.

CHAPTER -THREE

RESEARCH METHDOLOGY

3. INTRODUCTION

This section presents the research design and methodology that would be to achieve the objective of the research work. As the study employs a quantitative approach it begins with the quantitative research design, data type and source, population and sample design, goes on describing the econometric model and its specifications, operational definitions and measurements of the variables.

3.1 Type of research design

As noted in Creswell (2003), in an investigative study there are three familiar types of research approaches to business and social research namely, quantitative, qualitative and mixed methods approach. Though, each approach has its own strengths and limitations, Creswell (2003) advocates that certain types of social research problems call for specific approaches. Hence, in selecting an approach one should take in to account the nature of the research problem, the personal experience of the researcher, and the audience for whom the report would be written.

Considering the research problem and objective along with the philosophy of the different research approaches, the quantitative nature of the data collected, quantitative research approach would be found to be appropriate for this study. Hence, to meet the objectives of this study, explanatory research design would be adopted. Besides, this study quantitative research approach to examine a stated objective because quantitative research is a systematic and scientific investigation of quantitative properties and phenomena and their relationships (Abbey, 2009). Panel data of 10 microfinance institution for seven years (2008 to 2014) would be used. This is because of that panel data has the advantage of giving more informative data as it consists of both the cross-sectional information, which captures individual variability, and the time-series information, that captures dynamic natures of the data

3.2 source of data

During conducting a study, there are different ways of approaching the problem. According to Creswell (2009), there are two approaches of research design; quantitative and qualitative. In this study quantitative approach was used. Quantitative research is a means for testing objective theories by examining the relationship among variables (Creswell, 2009). This study would be designed to examine the determinants of capital structure of MFIs in Ethiopia. In this study explanatory research design would be used because the studies analyze the cause and effect relationship of determinants of capital structure. In order to get a general understanding of Ethiopian MFI capital structure level and capital structure determinants, the study take the last seven years financial data and all Micro Finance institutions for adopting a capital structure model. The secondary data for this study would be secure from various sources. Additionally, As the study empirically investigates the determinants of capital structure, the study would be employ 10 microfinance institution from the data base depending on the data availability secondary data is also gathered from individual sample of micro finance institution and authority established of micro finance institution were missing values were file to increase the quality of the data. Of financial statement for the period of 2008-2014.

3.3 Population and sampling designing

The empirical investigation on the determinants of capital structure of Ethiopia microfinance institution includes the institutions operating in the country. There are currently 28 microfinance institution operating in the country. To achieve this goal by using purposive sampling technique that satisfies in terms of data availability of 7 years to the most recent date and 10 MFIs from the industry that include MTMN,AVFS,Buusa,wassasa,SFPI,Wisdom ACSI,DECSI,OCSSCO, and Omo found legible. The data for the remaining Microfinance institutions were not available and accessible in the data base as the criteria employed excludes from the sample. Despite the expectation that all MFI in the industry could meet the criteria employed as the units of analysis, the nature of panel data enables increase in the number of observation as the data are available across firms and over time ($7 \times 10=70$).

3.4 Econometric model and specification

Econometric model: In this study a Panel Regression Model is 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. 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:

$Y_{it} = \alpha + \beta X_{it} + \mu_{it}$ 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-equity ratio. X_{it} contains the set of explanatory variables in the estimation model, α is the constant and β_i represents the coefficients.

3.5 The model specification

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

$DE_{it} = \beta_1 AG_{it} + \beta_2 SZ_{it} + \beta_3 PR_{it} + \beta_4 GR_{it} + \beta_5 R_{kit} + \beta_6 OWN_{it} + \beta_7 TG_{it} + \epsilon_{it}$ Where:

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

AG_{it} =number of years functioning as MFI

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

GR_{it}=growth rate in total asset for MFI *i* in time *t*
RK_{it}=absolute coefficient of variations in profit

3.6 Method of data analysis

The data analysis technique follows a quantitative approach by making use of quantitative analysis. The secondary data are collected and summarized in an excel data base containing the variables identified and exported to statistical software package known as STATA. Descriptive statistics such as percentage, mean, and frequencies, and graphical presentations and tables are used to decode the data which are collected from both sources. The quantitative analyses in assessing the determinants the capital structure of Ethiopian MFI. Panel data allows us to control for variables we cannot observe or measure like cultural factors or differences in business practice across firms, or variables that change overtime. Thus, it accounts for individual heterogeneity. However, there are two techniques used to analyze panel data: Fixed Effects and Random Effects Model. When using panel regression model, we assume that something within the individual may impact the predictor variable and we need to control for this. This is the rationale behind the assumption of the correlation between entity's error term and predictor variables. The variation across entities was assumed to be random and uncorrelated with the predictor variables included in the model. The crucial distinction random effect is whether the unobserved individual effect embodies elements that are correlated in the model, not whether these effects are stochastic or not.

CHAPTER - FOUR

4. Finding and discussion

4.1 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.

4.1.1 Discussion descriptive statistics

In this section the researcher presents the main results and discussions of quantitative findings. Thus, the first part of the chapter deals with presentation of quantitative analysis of the study related to the first specific objective. The contents that are presented includes the descriptive statistics, tests of OLS assumptions, choice between fixed and random effect models and the findings of regression result. This part presents the descriptive statistics that summarizes the minimum, maximum, standard deviation, mean, median, and coefficient variations result of both the independent variables and dependent variable.

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, profitability has Mean 0.059436, Maximum 1.2 and Minimum -0.11 with the standard deviation of 0.145474.

The second variable is the size of the micro finance institutions that is computed as the natural log of their total assets, has a mean of 1.06, maximum 8.46 and the minimum value of 7237545 with the standard deviation of 1.65. a standard deviation of 3.248188.

Source of E-view 8 out, 2019

The third independent variable, growth has a mean of 0.408871, a maximum of 5 and a minimum of -0.5 with a standard deviation of 0.620695.

The fourth independent variable, risk has a mean of 0.712071, a maximum of 3.307 and a minimum of 0 with a standard deviation of 0.556535.

The fifth independent variable, age has a mean of 12, a maximum of 17 and a minimum of 3 with

	LEA	PRO	GROW	RISK	SIZE	AGE
Mean	2.165957	0.059436	0.408871	0.712071	1.06E+09	12
Maximum	5.835	1.2	5	3.307	8.46E+09	17
Minimum	0.27	-0.11	-0.5	0	7237545	3
Std. Dev.	1.252216	0.145474	0.620695	0.556535	1.65E+09	3.248188
Observations	70	70	70	70	70	70

4.2 Correlation Analysis of the explanatory variables

4.2.1 Introduction

The correlation between two variables measures the degree of linear association between them. If it is stated that y and x are correlated, it means that y and x are being treated in a completely symmetrical way. Thus, it is not implied that changes in x cause changes in y , or indeed that changes in y cause changes in x . rather, it is simply stated that there is evidence for a linear

Relationship between the two variables, and that movements in the two are on average related to an extent given by the correlation coefficient Chris Brooks (2008).

The correlation between the explanatory variables that are; Profitability, growth, risk, size and age would be presented and analyzed below. 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.

Table 2 Correlation Analysis of the explanatory variables

Source of E-view Result

	LEA PRO	GROW	RISK	SIZE	AGE
LEA	1				
	-				
	0.045953409				
PRO	82106197	1			
	-				
	0.166614586	0.113947258			
GROW	0622401	9141786	1		
	0.352439287	0.078370575	0.061249387		
RISK	9941118	95847449	33562387	1	
	-	-			
	0.560872283	0.059994426	0.100563236	0.169789989	
SIZE	0450438	09532919	3771802	0562955	1
	-				
	0.460782869	0.114340720	0.079029171	0.139686049	0.563222042
AGE	1229222	602598	27296251	518588	9960995
	1				

4.3 Test for the Classical Linear Regression Model (CLRM)

4.3.1 Normality test

There are different test of CLRM. Among these normality test, hausman test.

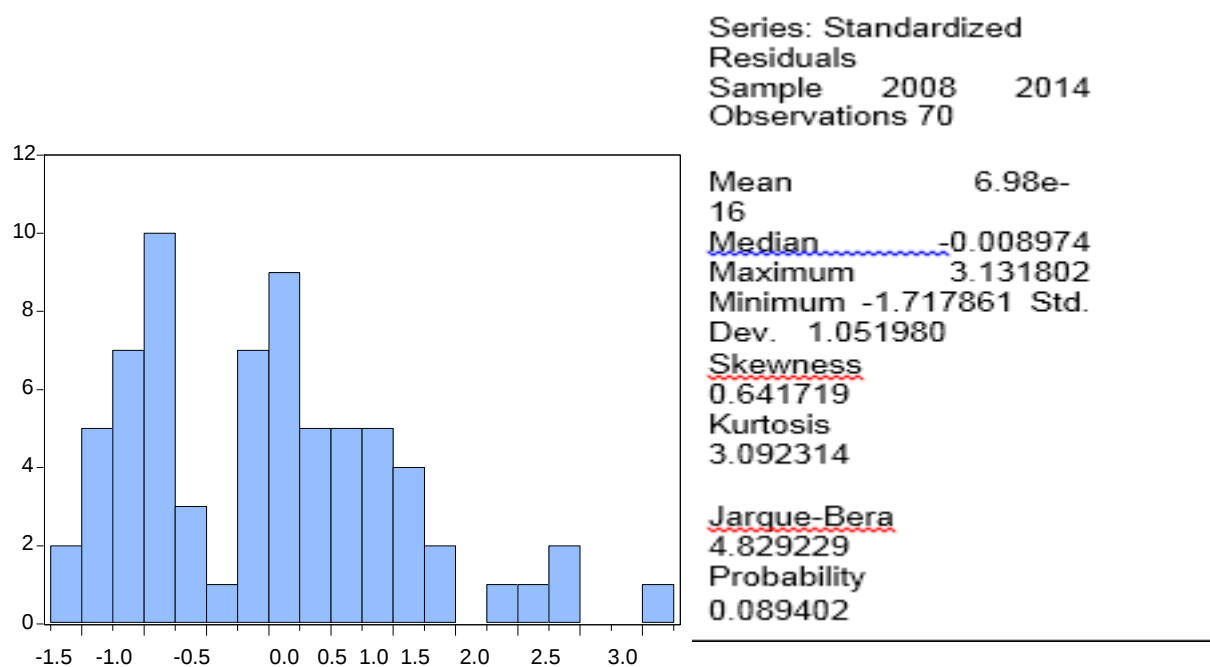
The Bera--Jarque normality tests results can be viewed by selecting View/Residual Tests/Histogram – Normality Test.

- The histogram should be bell-shaped and the Bera--Jarque statistic would not be significant.

This means that the p -value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level.

□ A normal distribution is not skewed and is defined to have a coefficient of kurtosis of 3.

- The kurtosis of the normal distribution is near to 3 and skewness is near to zero.
- Skewness and kurtosis are the (standardised) third and fourth moments of a distribution. From the table shows the p -value is 0.089402 is greater than 5% and kurtosis is 3.092314 and skewness is 0.641719. Table 3 Normality test of data



4.3.2 Heteroscedasticity

It is also known as the assumption of homoscedasticity. The second assumption of classical linear regression model (CLRM) which explains, that the variance of the error-term is constant. If the errors do not have a constant variance or if the residual of the regression have systematically changing variability over the sample, they are said to be homoscedasticity means the estimated parameter would be not BLUE because of the inefficient parameter. To test the assumption White test would be used, it states that if the P value is significant at 95 confidence interval, the data has heteroscedasticity problem, whereas if the value is insignificant (greater than 0.05). Both F-statistics and Chi-square (χ^2) tests were applied to decide whether to reject the null hypothesis by comparing p-value with significant

Heteroskedasticity Test: White

Is constant or homoscedasticity.

F-statistic	0.083324	Prob. F(15,53)	1.0000
Obs*R-squared	1.589682	Prob. Chi-Square(15)	1.0000
Scaled explained SS	12.14951	Prob. Chi-Square(15)	0.6677

T- Level

Referring to the above test both the F-test- and χ^2 versions of the test statistic give the same conclusion that there is no evidence for the presence of homoscedasticity for L, since the p-values 100% which is considerably in excess of 0.05 and below 95 confidence level. In general, the entire regression model used in this study reveals that the variance of the error term

4.3.3. Test for the covariance between the error-term are zero (no autocorrelation)

It is the third assumption of the CLRM. In other words, it is assumed that the errors are uncorrelated with one another. If the errors are not uncorrelated with one another, it would be stated that they are 'auto correlated' or they are 'serially correlated'. The study used Durbin and Watson (1951) (DW), is a test for first order autocorrelation - i.e. it tests only for a relationship between an error and its immediately previous value ($u_t = \rho u_{t-1} + v_t$). DW is approximately equal to $2(1-\rho)$, where

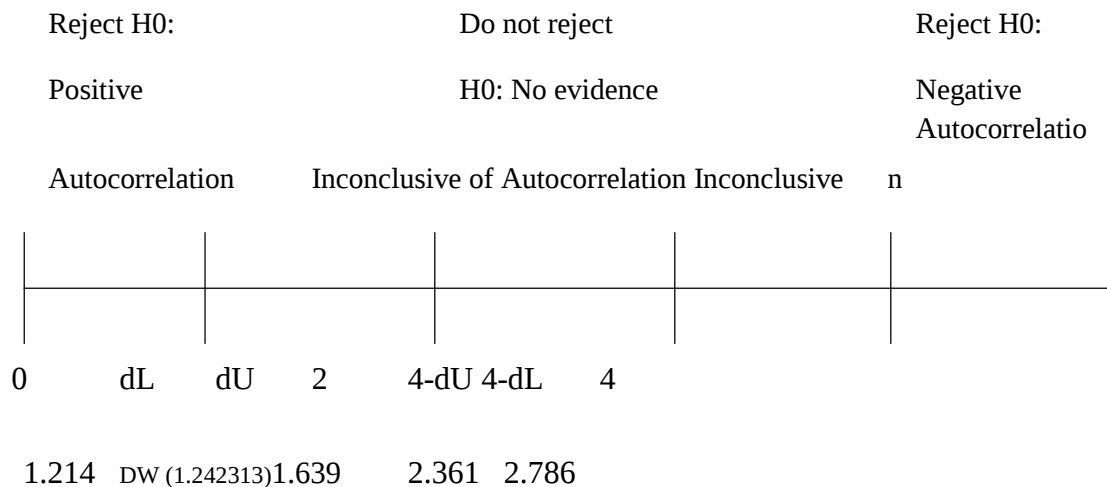
ρ is the estimated correlation coefficient between the error term and its first order lag (Brooks 2008).

According to Brooks (2008), the DW test does not follow a standard statistical distribution such

as a t , F , or χ^2 . DW has 2 critical values: an upper critical value (d_U) and a lower critical value

(d_L), and there is also an intermediate region where the null hypothesis of no autocorrelation can neither be rejected nor not rejected. The rejection, non-rejection, and inconclusive regions are shown on the number line in table 4

Rejection and non-rejection regions for DW test



$K = 5$ and with 70 observation.

Durbin wat test

Test	Test statistics
Dw result	1.242313

The null hypothesis is rejected and the existence of positive autocorrelation presumed if DW is less than the lower critical value (d_L); the null hypothesis is rejected and the existence of negative autocorrelation presumed if DW is greater than 4 minus the lower critical value ($4-d_L$); the null

hypothesis is not rejected and no significant residual autocorrelation is presumed if DW is between the upper critical value (DU) and 4 minus the upper critical limits (4-dU) (Brooks 2008).

This study have six explanatory variables(k) with sixty observations and as per the DW table in the above for 60 observations with six explanatory variables at, the dL and dU values are 1.214 and 1.639, respectively. Accordingly, the value of 4-dU and 4-dL are 2.361 and 2.786, respectively. The DW values of L for 70 observations in this study are 1.242313. The DW value of L lies a little far from no evidence of autocorrelation region, but actually in the inconclusive area where the null hypothesis of no autocorrelation still do not be rejected. The value of Durbin value fails between DL and DU that is 1.902771 is between 1.611 and 2.687 so there is not out autocorrelation.

4.3.4 Multicollinearity

If the summation result of dependent variable is less than 0.8 if so there is not multicollinearity problem. Table 5

PRO	GROW	RISK	SIZE	AGE
1				
0.11157	1			
0.0843	0.073966	1		
-0.05666	-0.0967	0.181585	1	
0.128299	-0.06813	0.221203	0.562145	1

4.4 Test of regression model

According to Chris brooks (2008), if the p -value for the Hausman test is less than 1%, indicating that the random effects model is not appropriate and that the fixed effects specification is to be preferred. Due to this fact, after running random effect model regression, p -value for the Hausman test was more than 1%, therefore running random effect model is appropriate. Table. 6

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	4.821622	5	0.4380

Cross-section random effects test comparisons:

Propriety.

4.5 Multiple regression of result

This section presents and analyses the regression output for the determinants of Capital structure Ethiopian Micro Finance Institution. The minimum capital structure of the micro finance institutions is 0.27 and the maximum capital structure that they face is 5.835. The average or the mean of their capital structure is 2.165957 with 1.252216 of standard deviation. This shows highest variation on the capital structure exposure between Ethiopian MFI. The regression results of the factors influencing capital structure of Ethiopian Micro Finance institution (represented by 10 MFIs). Five variables i.e. Risk, size, age, profitability, growth, are significantly influencing the capital structure of Ethiopian Micro Finance Institutions. Risk, size, age and profitability have a positive relationship with capital structure. However, growth has a negative coefficient to capital structure.

Dependent Variable: LEA

Method: Panel EGLS (Cross-section random effects)

Date: 06/01/19 Time: 09:30

Sample: 2008 2014

Periods included: 7

Cross-sections included: 10

Total panel (balanced) observations: 70

Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.242726	0.524113	2.371101	0.0208
PRO	0.455982	0.513296	0.888341	0.3777
GROW	-0.045658	0.111928	-0.407921	0.6847
RISK	0.302086	0.125741	2.402440	0.0192
SIZE	1.25E-10	8.41E-11	1.481752	0.1433
AGE	0.047330	0.037853	1.250390	0.2157

Effects Specification

		S.D.	Rho
Cross-section random	0.993825	0.7864	
Idiosyncratic random	0.517912	0.2136	

Weighted Statistics

R-squared	0.215651	Mean dependent var	0.418583
Adjusted R-squared	0.154374	S.D. dependent var	0.562420
S.E. of regression	0.517190	Sum squared resid	17.11905
F-statistic	3.519271	Durbin-Watson stat	1.902771
Prob(F-statistic)	0.007137		

Unweight Statistics

R-squared	0.294240	Mean dependent var	2.165957
Sum squared resid	76.35972	Durbin-Watson stat	0.639845

4.5.1 Impact of profitability on leverage

The results show that the coefficient of profitability is positive, and is highly significant at 1% level of significance with leverage. The coefficient magnitudes for the profitability are 0.520359 in specifications respectively with the same level of significance. As a result, the alternate hypothesis has been accepted that is profitability has a significant positive impact on leverage of MFI. The estimation results are consistent with our expectation that profitability is associated with a reduction of leverage. The findings of this study are consistent with prior empirical studies that leverage is positive correlated with profitability that is, higher profitable firms use less debt. This shows that MFI with higher profits increase the level of internal financing. This means that retained

Earnings are preferred to debt because it is the easiest and quickest source of finance for most MFI in Ethiopia. The test of this hypothesis is in line with pecking order financial theory of capital structure. Also, in general, this finding is consistent with other empirical studies of bankin however, the pecking order theory of capital Structure micro finance institution of Ethiopia. Earnings are preferred to debt because it is the easiest and quickest source of finance for most MFI in Ethiopia. The test of this hypothesis is in line with pecking order financial theory of capital structure. Also, in general, this finding is consistent with other empirical studies of bankin however, the pecking order theory of capital Structure micro finance institution of Ethiopia.

4.5.2 Impact of growth on leverage

The regression results show that growth has a negative effect on leverage of MFI with coefficient values of -0.028418. Therefore, the alternate hypothesis that states growth has significant impact on the capital structure of MFI has been accepted with 10% level of significance. This indicates that faster growing MFI are less relying on external debt as the firms face greater uncertainty they tend to reduce their willingness to use debt. Pecking order theory suggests that a firm's growth is negatively related to its capital structure. Myers and Mali indicate that information asymmetry demands an extra premium for firms to raise external funds, irrespective of the true quality of their investment project. In the case of issuing debt, the extra premium is reflected in the higher required yield. High-growth firms may find it too costly to rely on debt to finance growth.

4.5.3 Impact of size on leverage

The results indicate positive relationship between size and leverage with coefficient value of 9.54. Therefore, the alternate hypothesis that states size of MFI has a significant impact on their capital structure has been accepted at 1% level of significance as it is indicated in the model.

The implication of this finding is the larger (bigger) the MFI, the more external funds it would be use. One reason is that, larger MFIs are more diversified and hence have lower variance of earning, enable them to manage high leverage. The providers of the debt capital are more willing to lend to larger MFIs as they are perceived to have lower risk levels. Besides, the size of MFI is highly correlated with the ownership of the MFI. In general, the correlation of ownership and size of MFI in Ethiopia can be explained in such a way that the larger is the size of MFI, the higher tendency that it indicates they are governmentally backed Microfinance Institutions. Therefore, it isn't surprising that the larger the MFI is highly levered as they are governmentally backed institutions they enjoy the benefits of being guaranteed in accessing the commercial debt in relation to others. This result supports the financial theory and is consistent with empirical evidence. Larger size firms enjoy economies of scale and creditworthiness in issuing debt and have bargaining power over creditors.

4.5.4 Impact of risk on leverage

The regression result shows a positive relationship between MFI risk and leverage with coefficient values of 0.285075. Though the regression result found that MFI risk shows a positive impact on leverage it remains statistically significant. Therefore, the alternate hypothesis that states risk of MFI has a significant impact on their capital structure has been accepted because it is statistically significant as it is presented in the model. This implies that the business risk (earning volatility) of MFI has significance effect in determining their capital structure as they are regulated business.

4.5.5 Impact of age on leverage

The result shows a positive relationship between Micro finance institutions. Age and leverage with coefficient values of 0.045274. Hence, the alternate hypothesis that states age of MFI has a significant impact on their capital structure has been accepted at a 10%

level of significance as it is statistically significant as reported in the model. This implies that the larger the size of the institutions, the higher age that they dates back in operating in the country. More specifically the sampled MFI that were purposively selected on the basis of data availability and accessibility could show significant differences as larger institutions have many years of experience in operating in the industry which tend to give the opportunity to the access of external source of finance due to the experience curve they accumulate. So the regression result has shown significant impact age has on the leverage of Ethiopian MFI.

CHAPTER -FIVE

5. 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 are affected by collateral provision, capital adequacy (regulation), governance and ownership structure, business risk, historical records and outreach (women mix) in addition to the above standard determinants of capital structure.

It would be noted that capital structure choice, as it was hypothesized, shows some consistency with a number of theoretical propositions. From this view the implication that the theories which explain the debt-equity choice in financial firms seem to be able to accommodate MFI capital structure decisions. However, ownership structure and governance consequences appear to be a material element for the understanding of unique behavior of MFI. Further studying of this fact had to be properly taken into consideration while drawing conclusions from the results.

The following conclusion have been drawn from the study:

The empirical results provide that there exist significant impacts of size, profitability, age and growth on the capital structure of Ethiopian MFIs whereas risk has no significant impact on leverage of Ethiopian MFI industry.

Though debt financing has been accepted by the result to be beneficial for MFI industry to increase large scale of outreach and ensure the sustainability of the institutions in the long term. However, the practice of debt financing in the industry suffers from a number of factors in addition to the above empirically tested determinants. These includes: The ownership and governance structure are also the most determining factors for Ethiopian MFI capital structure dynamics. As the result

indicates institutions that are government backed are guaranteed well than the others which are not. Therefore, when we relate this finding with the empirical result of size, have positive impact on the leverage of MFI, significantly affected positively by being government backed in accessing the commercial loans provision from the providers of capital to serve as a guarantee.

The creditworthiness of the institutions is checked by the providers of their capital and usually perceived as charitable institutions not viable business. The providers of capital don't see MFI as viable business because the operating costs of the MFI are believed to be high. The lenders attitude towards the institutions severely constrained the debt financing need MFI. This factor is related to the quantitative findings of profitability of MFI.

For institutions to be legible for the commercial debt at least nonperforming loan should be less than 5%. This implies the business risk although it isn't significant affects the MFIs capital structure negatively.

Currently, the industry practiced 15% of saving mobilization (both voluntary and compulsory) over the period. This low performance of low saving in the industry is due to lack of promotion by the institutions for their business and products. Mainly, the roles of the institutional investors and such as small and medium financial institutions are not their focal point.

The institutions also can borrow only 5% of their equity capital (regulatory constraint). Above all this factors constraint the growth of MFIs industry in debt utilization unless the regulatory organ considers need to respond by relaxing the regulations.

5.2 RECOMMENDATION

On the basis of the above conclusions the following recommendations are forwarded by the researcher.

The majority of Ethiopian MFIs are lagging behind the industry average debt-equity ratio and other benchmarks reported and recommended by the sector analysts, and the industry report globally. Therefore, those MFIs which are highly profitable should use equity finance (less debt) as the finding indicates. Alternatively, as more profitable MFIs use retained earnings as a major means of financing they employ less debt. This implies that the industry is using more of donated equity,

shareholder's capital and/ or retained earning rather than debt financing. This means those MFIs which have more preference towards equity should work aggressively to be profitable. To be profitable, the MFIs should manage their revenues and costs. Revenues should be pushed much whereas costs should be managed.

The most important factor that affects the debt equity (capital structure) of MFI is size. The results show that MFI size has a positive and highly significant impact on leverage of the sampled MFI. This means those MFIs who have more preference for debt should increase their size significantly by raising more external finance that is debt.

Of Micro finance institutions. Though both variables have similar signs with the empirical finding of other study they failed to show significant impact consistently in the models to affect MFI capital structure. This implies that either the appropriate measurement proxy is not employed for MFI unique nature for the first variable or there exists absence of significant difference in accessing debt financing that would affect the leverage of the institution. Therefore, studying the impact of these variables on capital structure of MFI should consider the industry peculiarity rather than standard determinants of capital structure proxy used for all other firms.

Saving mobilization is hampered by lack of promotion on the part of MFIs about their products and the MFI are not using the potential of saving to the maximum. Therefore, the institutions should aggressively mobilize saving from institutional investors and promote themselves to the general public to exercise their power by the NBE regulation 40/96 as a financial intermediary.

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. 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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Appendix

Mfi	year	LEA	pro	grow	risk	Size	age
ACSI	2008	2.2	0.08	0.54	0.42	1968580729	11
ACSI	2009	2.8	0.06	0.19	0.86	2338007889	12
ACSI	2010	2.6	0.04	0.08	0.6	2533220850	13
1ACSI	2011	2.59	0.066	0.3	1.2335	3279192202	14
ACSI	2012	2.58	0.071	0.34	0.188	4382000000	15
ACSI	2013	2.75	0.06	0.34	0.832	5875241345	16
ACSI	2014	3.167	0.06	0.4	0.9552	8460216309	17
DECSI	2008	4.01	0.1	0.2	2.44	1849157100	11
DECSI	2009	4.01	0.03	0.13	2.44	2083341702	12
DECSI	2010	3.13	0	0.03	0.66	2137258700	13
DECSI	2011	3.16	0.019	0.3	0.9972	2704178174	14
DECSI	2012	3.06	0.025	0.11	0.724	2991000000	15
DECSI	2013	3.64	0.0155	0.2	0.8247	3564333126	16
DECSI	2014	3.651	0.03	0.2	0	4198502058	17
AVFS	2008	0.61	0.01	0.14	0.51	16583680	10
AVFS	2009	0.6	0.03	1.05	0.55	17469356	11
AVFS	2010	0.8	-0.02	-0.135	0.22	19826901	12
AVFS	2011	0.8	-0.018	0	0.1081	19826901	13
AVFS	2012	2.88	0.032	0.06	0.132	21000000	14
AVFS	2013	1.25	-0.02	0.2	0.3776	25192831	15
AVFS	2014	0.403	-0.11	0.7	0.6689	7237545	16
BUUSA	2008	0.28	0	0.31	0.52	11778190	6

BUUSA	2009	1.2	-0.01	0.29	0.46	15162988	7
BUUSA	2010	0.27	-0.02	1.18	0.76	16268100	8
BUUSA	2011	0.97	0.005	0.06	0.1737	17238857	9
BUUSA	2012	0.63	0.006	0.33	0.394	23000010	10
BUUSA	2013	1.14	0.07	0.6	0.43	35937027	11
BUUSA	2014	0.539	0.06	0.8	0.4137	64589478	12
MTMN	2008	1.95	0	0.54	0.6	12143526	3
MTMN	2009	1.4	0	0.35	0.39	16449096	4
MTMN	2010	1.35	0.01	0.1	0.27	18153261	5
MTMN	2011	0.93	0.116	0.7	1.785	30054018	6
MTMN	2012	2.02	0.12	0.7	0.763	51000000	7
MTMN	2013	2.18	0.01	0.2	0.7039	60927711	8
MTMN	2014	1.9	0.09	0.03	0.1768	62967453	9
WASAS A	2008	1.95	0.06	0.4	0.04	53237876	8
WASAS A	2009	2.2	0.08	0.59	0.97	84441028	9
WASAS A	2010	2.19	0.03	0.13	0.78	95162636	10
WASAS A	2011	1.88	0.064	0.3	0.9201	127656983	11
WASAS A	2012	2.08	0.075	0.54	0.1049	192000000	12
WASAS A	2013	2.15	0.06	0.24	0.899	238820224	13

6WASA SA	2014	2.372	0.05	0.29	0.0004	309331652	14
SEPI	2008	0.44	0.07	0.5	0.7	43197354	9
SEPI	2009	1	0.07	0.4	0.86	60137624	10
SEPI	2010	1.02	0.07	5	0.82	60137627	11
SEPI	2011	0.9	0.141	0.4	0.8759	83601961	12
SEPI	2012	1.15	0.23	0.5	0.763	124000000	13
SEPI	2013	1.55	0.07	0.54	1.0179	191002713	14
SEPI	2014	1.695	1.2	0.82	0.8243	34567640	15
WISDO M	2008	1.17	0.03	0.3	0.72	43101463	10
WISDO M	2009	1.3	0.01	0.24	0.68	53603247	11
WISDO M	2010	1.23	0.07	-0.14	0.53	61356680	12
WISDO M	2011	1.16	0.068	0.14	0.3616	69884320	13
WISDO M	2012	1.34	0.076	0.33	0.858	93000000	14
WISDO M	2013	1.78	0.08	0.52	0.994	140984345	15
WISDO M	2014	1.599	0.08	0.17	1.6754	164347228	16
OCSSCO	2008	3.48	0.04	0.54	0.86	782424506	11
OCSSCO	2009	3.1	0.03	0.152	0.33	901144034	12
OCSSCO	2010	3.14	0.03	0.54	0.4	1388149603	13

OCSSCO	2011	2.8	0.054	0.22	0.5291	1690984565	14
OCSSCO	2012	2.47	0.065	0.31	0.0213	2209000000	15
OCSSCO	2013	3.13	0.04	0.134	0.7086	2901898049	16
OCSSCO	2014	4.112	0.04	0.6	0.6098	4566488272	17
OMO	2008	4.112	0.02	0.52	0.58	468089124	11
OMO	2009	5.132	0.02	0.09	0.4	511045896	12
OMO	2010	2.66	0.03	0.54	0.63	633155638	13
OMO	2011	3.09	0.014	-0.5	0.8104	737095007	14
OMO	2012	4.62	0.026	0.8	0.813	1325000000	15
OMO	2013	4.33	0.03	0.5	0.87	1944344190	16
OMO	2014	5.835	0.02	0.4	3.307	2710586819	17