DETERMINANTS OF CAPITAL STRUCTURE IN FINANCIAL INSTITUTIONS: EVIDENCE FROM SELECTED MICRO FINANCE INSTITUTIONS OF ETHIOPIA

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ABSTRACT

This study was focused on MFIs specific determinants of capital structure of selected micro finance institutions in Ethiopia. To this end, the researcher employed quantitative research approach with explanatory research design where the effect caused by the independent variable on the dependent variable is observed through random effect model regression analysis. Thus, the result of regression analysis showed that out those variables like growth, profitability, firm size, age, and asset tangibility have positive and statistically significant effect on leverage ratio. Whereas, profitability has statistically significant and negative effect on capital structure or leverage ratio Based on the findings of the study, the researcher concluded that the firm specific determinants of capital structure of micro finance institutions in Ethiopia were growth, profitability, firm size, age, and asset tangibility. So it is better for MFIs in Ethiopia to work on the aforementioned variables in order to have optimum capital structure to provide diversified financial service for public.

KEYWORDS: Capital Structure, Determinants, Microfinance Institutions, Random Effect Model

INTRODUCTION

As an important part of the financial system, the micro finance institutions sector plays a more and more important role in the development of Ethiopians economy. Microfinance institutions are seen as one of the most known financial institutions to promote economic development and to fight poverty in poorer countries. Numerous microfinance institutions (MFIs) all over the world have proven that financial services can be offered on a sustainable basis with high outreach. So the importance MFIs was increased since it distributes small loans to poor people in order for them to generate income and start their own small businesses, it has the capability to lessen poverty as well as promote entrepreneurship, social and economic development in poor communities (Lazar & P., 2008).

Microfinance Institutions (MFIs) have risen to the forefront as invaluable institutions in the development process. Nevertheless, capital constraints have hindered the expansion of microfinance programs such that the demand for financial services still far exceeds the currently available supply. As a starting point many empirical studies were focused on the determinants of capital structure of banking industry but not addressed the determinants of capital structure decisions of MFI. Studying determinants of capital structure is important because it has an effect on the sustainability and outreach of these organizations (Asefa T, 2017).

According to Islam & Nasreen (2018), capital structure of an institution is basically a mix of debt and equity which a firm deems as appropriate to enhance its operations. Capital structure issue of MFIs is one of the core financial decisions and it has become an increasingly prominent issue particularly for lending firms. Recent financial crisis required government to take bailout program and institutional restructuring program which addressed the funding structure of institutions. Optimal capital structure though not measurable within the existing framework of corporate finance, firms always try to set their optimal capital structure because most regulated MFIs have not obtained such high leverage, due to the higher risks typically associated with a microloan portfolio.

This is why capital structure has attracted intense debate and scholarly attention in the financial management arena over the past four decades. However, in the context of sub-Saharan African countries especially, Ethiopia capital structure has received a little attention.

To the best knowledge of the researcher there is no empirical research conducted on the determinants of capital structure among MFI in Ethiopia except study by Asefa T (2017) conducted on same topic before three years. The variables incorporated in the model of study by Asefa T (2017) were only jointly contributed 25.55 % change in leverage since R-squares of model was 0.2555. But, this study is different from prior research in Ethiopia by improving R-squares of model to 52.22. Therefore, this study tries to fill the gap in the existing literature on determinants of capital structure of MFIs by considering the firm specific factors influencing the capital structure of 8 selected MFIs having 2012 up to 2019 G.C audited financial statements in Ethiopia using random effect regression model. So the study was aimed to address the following objectives:

OBJECTIVES OF THE STUDIES

General Objective: The general objective of this study was to identify the determinants of capital structure of financial institution with reference to selected MFIs in Ethiopia.

Specific Objective: In line with above general objective, the study will address the following specific objectives:

- To investigate the relationship between growth and the debt ratio of the selected micro finance institutions

- To examine the relationship between profitability and debt ratio of the selected micro finance institutions

- To determine the relationship between firms size and debt ratio of the selected micro finance institutions

- To analysis the relationship between age and debt ratio of the selected micro finance institutions

- To assess the relationship between asset tangibility and the debt ratio of the selected micro finance institutions

Scope of the Study

The scope of the study is to identify the MFIs specific determinants of capital structure 8 MFIs in Ethiopia. From Micro Finance institution of the selected area the study was observed detail document from periods of last eight year (8) years start from the 2012-2019 G.C data without any missing available document in the selected MFIs. It only limited to identify the effect of five internal factors such as growth, profitability, size, age and asset tangibility on capital structure of MFIs due lack of access to data required on external factors.

Limitation of the Study

- While conducting this study, the researcher faced different limitation which was mention below.

- Due to Sadly pandemic Covid-19 the study was faced different constraint like restriction of the transportation, financial constraint (budget limitation) because of the researcher perform the study by self-sponsor it was difficult to obtain full required/planned / data from all MFIs in the country which related due to COVID -19 problem of the double transportation cost, absence of employees from the office.

- Besides to introductory part, the paper is organized in the following manner. Section 2 presents literature review, section 3 discusses the existing literature on determinants of MFIs capital structure, variable selection as well as the empirical model, followed by Section 4, which describes the materials and methods. Section 6 presents the empirical results. Section7 provides further discussion on the empirical results. Section 8 concludes the paper.

LITERATURE REVIEW

History of Microfinance Institution (MFI)

Thinking globally, microfinance started in Bangladesh and parts of Latin America in the mid-1970s to provide credit to the poor, who were generally excluded from formal financial services (CGAP, 2006). The first organization to receive attention was the Grameen Bank, which was started in 1976 by Muhammad Yunus in Bangladesh. In its modern form, micro financing became popular on a large scale after the 1976. When it comes to Africa, the Nigerian government reminded into this popular thinking in 2005 when it initiated the microfinance banking scheme. This was founded to provide finance to economically active poor excluded from financing by conventional banks, provide employment, stimulate rural development and reduce poverty. One of such living in Nigeria today, and influencing lives positively, is Dr. Godwin Esewei Ehigiamusoe, the Founder of the Lift above Poverty Organization (LAPO) and Managing Director of LAPO Microfinance Bank Limited.

Ethiopia is one of the poorest countries in the world. Following the 1984/85 severe drought and famine, many NGOs started to offer micro credit along with their relief activities although this was on a limited scale and not in a sustained manner (Alemayehu, 2008). Micro financing in Ethiopia was started in 1994/95 to reduce poverty, and since then developing microfinance in Ethiopia has encouraged the further spread of modern financial services in the country. The program believes to reduce the poverty by giving loans for the poor. Although the development of deposit-taking MFIs started only in 1996, the industry has shown outstanding growth Microfinance started in Ethiopia after the issuance of the proclamation of licensing and supervision of microfinance institutions (proclamation number 40/1996) E.C or 40/2004 G.C. After the issuance of this proclamation 30 microfinance institutions (MFIs) such as have been licensed by National Bank of Ethiopia. Currently, there are 35 Micro Finance Institutions operating in different regional states of Ethiopia (Association of Ethiopia Micro Finance Institution, 2020).

Capital Structure and Micro Finance Institutions

According to Investopedia (2020), the capital structure is the particular combination of debt and equity used by a company to finance its overall operations and growth. Debt comes in the form of bond issues or loans, while equity may come in the form of common stock, preferred stock, or retained earnings.

Both debt and equity can be found on the balance sheet. Company assets, also listed on the balance sheet, are purchased with this debt and equity. Capital structure can be a mixture of a company's long-term debt, short-term debt, common stock, and preferred stock. A company's proportion of short-term debt versus long-term debt is considered when

analyzing its capital structure. When analysts refer to capital structure, they are most likely referring to a firm's debt-to-equity (D/E) ratio, which provides insight into how risky a company's borrowing practices are. Usually, a company that is heavily financed by debt has a more aggressive capital structure and therefore poses greater risk to investors. This risk, however, may be the primary source of the firm's growth.

Debt is one of the two main ways a company can raise money in the capital markets. Companies benefit from debt because of its tax advantages; interest payments made as a result of borrowing funds may be tax deductible. Debt also allows a company or business to retain ownership, unlike equity. Additionally, in times of low interest rates, debt is abundant and easy to access. Equity allows outside investors to take partial ownership in the company. Equity is more expensive than debt, especially when interest rates are low. However, unlike debt, equity does not need to be paid back. This is a benefit to the company in the case of declining earnings. On the other hand, equity represents a claim by the owner on the future earnings of the company (Tchakoute Tchuigoua, H, 2015).

While there is a considerable amount of literature with respect to the optimal capital structure of corporate firms, studies by Lislevand (2012) indicate that most of the MFIs are highly leveraged, they use approximately four times more debt financing than equity. Consequently, there appears to be no well-defined theoretical notion of an optimal capital structure for a lending institution. As an added level of complexity, an MFI is a unique type of lending institution with risk and return characteristics different from standard lending operations. Given this, we take an empirical approach to examining MFI capital structures to identify those with the strongest record of financial sustainability (Bogan et al, 2007).

On other hand, Silva (2008) found that microfinance institutions use long term debt financing for their operations that might have less pressure on the management of MFIs. It also highlights that profitable microfinance institutions depend more on long term debt financing. Finally, Tehulu (2013), examine that leverage has a significant and negative impact on financial sustainability of MFIs. Financial sustainability is positively and significantly influenced by the gross loan portfolio to total asset and size of the firm whereas efficiency and credit risk have a negative and significant impact on financial sustainability of MFIs.

Theories of Capital Structure

In financial management, capital structure theory refers to a systematic approach to financing business activities through a combination of equities and liabilities. There are several competing capital structure theories, each of which explores the relationship between debt financing, equity financing, and the market value of the firm slightly differently (Investopedia, 2020). These are discussed as follow:

Net Income Approach to Capital Structure Theory

David Durand first suggested this approach in 1952, and he was a proponent of financial leverage. He postulated that a change in financial leverage results in a change in capital costs. In other words, if there's an increase in the debt ratio, capital structure increases, and the weighted average cost of capital (WACC) decreases, which results in higher firm value. In this approach to Capital Structure Theory, the cost of capital is a function of the capital structure. It's important to remember, however, that this approach assumes an optimal capital structure. Optimal capital structure implies that at a certain ratio of debt and equity, the cost of capital is at a minimum, and the value of the firm is at a maximum. In summary, Net Income Approach was presented by Durand. The theory suggests increasing value of the firm by decreasing the overall cost of capital which is measured in terms of Weighted Average Cost of Capital. This can be done by having a higher proportion of debt, which is a cheaper source of finance compared to equity finance (Efinance management, 2020).

Modigliani-Miller Theory of Capital Structure

Modigliani and Miller suggest that the composition of the capital structure is an irrelevant factor in the company's market valuation. They have really attacked the traditional position that companies have the optimal capital structure. In Modigliani and Miller (1958) The Cost of Capital, Corporation Finance and the Theory of Investment", they have strengthened the net operating income approach by adding a behavioral dimension to it. They have been awarded the Nobel Prizes (Franco Modigliani in 1985, and Merton Miller in 1990) for their widely recognized contributions to financial theory. On other side the modern theory of capital structure primarily was developed by Modigliani and Miller (1958), with an article in The American Economic Review.

The M&M theorem is a capital structure approach named after Franco Modigliani and Merton Miller in the 1950s. Modigliani and Miller were two professors who studied capital structure theory and collaborated to develop the capital-structure irrelevance proposition. This proposition states that in perfect markets, the capital structure a company uses doesn't matter because the market value of a firm is determined by its earning power and the risk of its underlying assets. According to Modigliani and Miller, value is independent of the method of financing used and a company's investments. The M&M theorem made two propositions:

- **Proposition I:** This proposition says that the capital structure is irrelevant to the value of a firm. The value of two identical firms would remain the same, and value would not be affected by choice of finance adopted to finance the assets. The value of a firm is dependent on the expected future earnings. It is when there are no taxes.

- **Proposition II:** This proposition says that the financial leverage boosts the value of a firm and reduces WACC. It is when tax information is available.

In summary, The Modigliani and Miller Approach further states that the market value of a firm is affected by its operating income, apart from the risk involved in the investment. The theory stated that the value of the firm is not dependent on the choice of capital structure or financing decisions of the firm.

Pecking Order Theory

Myers and Majluf have developed the pecking order theory in 1984. The theory is applicable by financial managers in comparison to the trade-off theory. The pecking order theory underlying assumption is that there exists asymmetric information among the managers of the firm and outside stakeholders. It is assumed that managers who work on behalf of the company's stakeholders have better information than the company's stakeholder and other investors. According to this theory, manager's first choice is to use internal financing or retained earnings. Internal financing indicates that there is no need to issue debt or equity and the firm can inject its own money to finance a project. If the firm does not possess enough internal resources, the second option will be external financing. The external financing is divided into issuing debt and equity, and there is a preference with the issuance of debt and equity. The first choice in external finance is issuing debt. Debt is a safer security and less risky than equity. The pecking order allows issuing equity when the capacity of debt is fully used (Myers and Majluf, 1984). The pecking order theory focuses on asymmetrical information costs. This approach assumes that companies prioritize their financing strategy based on the path of least resistance. Internal financing is the first preferred method, followed by debt and external equity financing as a last resort.

Trade-Off Theory of Capital Structure

The trade-off theory of capital structure is the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. An important purpose of the theory is to explain the fact that corporations usually are financed partly with debt and partly with equity (Frank et al, 2011).

The trade-off theory states that the optimal capital structure is a trade-off between interest tax shields and cost of financial distress. The present value of tax shields is then added to form the red line. Note that PV (tax shield) initially increases as the firm borrows more, until additional borrowing increases the probability of financial distress rapidly. In addition, the firm cannot be sure to benefit from the full tax shield if it borrows excessively as it takes positive earnings to save corporate taxes. Cost of financial distress is assumed to increase with the debt level. .Higher probability of financial distress is in terms of start-ups and high growth businesses. The company is exposed to the risk of uncertain cash flow streams and low tangible asset base. Therefore, these type of companies should not place high confidence on the debt in their capital structure. On the other hand, firms with a stable revenue stream and sound asset base facing a lower risk of bankruptcy. This company can apply a moderately higher level of leverage in their capital structure (Ebrary, 2020).

Agency Theory of Capital Structure

A significant amount of research during the last two decades has been dedicated to models in which capital structure is determined by agency costs, costs due to conflict of interest (Harris and Raviv, 1991). Firstly, conflicts of interest between shareholders and managers begin because managers are not allowed to 100 % of the residual claims. Consequently the managers do not capture the entire gain from the profit enhancement activities, but they do accept the entire costs of these activities. The managers may hence put in less efforts in value enhancement activities and may also undertake to maximize their private gains by lavish perquisites, plush offices, „empire building" through sub-optimal investments (Jensen, 1986). While the managers would have the entire costs of refraining from such inefficiencies, they are entitled to only a portion of the gains. The increase in the manager's stake in the firm decreases these inefficiencies. Accordingly to the agency theory, the optimal financial structure of the capital results from a compromise between various funding options (equity, debts and hybrid securities) that allow the reconciliation of conflicts of interests between the capital suppliers (shareholders and creditors) and managers. In short, the *agency theory*, the optimum *capital structure* comes from settlement among several funding choices like *equity*, debts and other securities and that let the settlement of conflicts of interests among the *capital* providers (stockholders and debt providers) and managers (Nasser M.M. ,2017).

Empirical Literature Review and Hypotheses Development

According to Assefa T (2017), Nguyen and Ramachandran (2006), Saeed (2007) and Smith (2010) the capital structure of MFIs was influenced by growth, profitability, size, risk (earing volatility) and asset tangibility of MFI. In this study, these variables were considered as explanatory variables and hypotheses has been developed as follow:

Growth of Miffs and the Capital Structure

Microfinance institutions are established to promote the financial activities mainly saving and credit in community. Microfinance's activities are focused on reducing poverty level of community people. Poor, disadvantaged, marginalize and women are in mainstream of microfinance's programs. To continue such poverty eradication activity the growth of MFI is crucial issue. Growth of MFIs is defined as a change in the annual percent of total assets, sales and profit or growth shows an expansion in the company's activities in terms of sales, profits and assets.

Empirical evidence seems inconclusive. Some studies found negative relationship between growth and leverage, i.e., support the trade-off and agency theories. The studies Buferna *et al.*, (2005); Eriotis*et al.*, (2007); Shah and Khan, 2007; Kila and Mahmood, 2008; Salawu and Agboola, 2008; Morri and Cristanziani, (2009); and Ramlall, (2009) The result leads them to the conclusion that high-growth firms are most likely to exhaust internal funds and use debt as a good alternative in their search for additional capital, as raising equity may be difficult and time-consuming for smaller firms.

On other way, according to Dang et al., (2019), there was positive relationship between the sales growth and the administrative financial leverage, it is suggested that companies with a higher sales growth can use the debt financial leverage to financing ratio for financing through more funds or financial leverage, it is suggested that companies with a higher asset growth use more leverages for their financing. On the same way, Tchakoute Tchuigoua, H., (2015)., Mohammed (2014), Bas et al. (2009), Michaelaset al. (1999), Hutchinson (2003), Cassar and Holmes (2003) Hallet al. (2004), Nguyen and Ramachandran (2006), Saeed (2007) and Smith (2010) suggest positive relationship between growth and leverage, i.e., support the pecking order theory concluded growth being positively related to long-term debt ratio, while negatively related to short-term debt ratio. Hall et al. (2004) suggest that growth tends to place a greater demand on internally generated funds and push the firm into borrowing. Marsh (1982) also suggests that firms it high growth tend to maintain relatively higher debt ratios. and Smith (2010) suggest positive relationship between growth and leverage, i.e., support the pecking order theory found growth being positively related to long-term debt ratio, while negatively related to short-term debt ratio. Hence, based on the above findings and idea of pecking order theory, the researcher developed the tentative statement to be proofed by regression analysis. This is as follow:

Hypotheses One: MFIs growth has statistically significant positive impact on Leverage

Profitability and The Mfis' Capital Structure

Microfinance institutions with high costs of equity maintain a high level of buffer capital and therefore are less levered. Based on the POT framework, profitable MFIs face lower costs in raising equity. Besides, the result of studies such as Degryse et al, (2012), Smith (2010); Tchakoute Tchuigoua, H. (2015), Lislevand (2012), Asefa T (2017 Mohammed (2014), Dang et al., (2019), suggest negative relationship between growth and leverage, i.e., support the pecking order theory. Because, accordingly, the pecking order model predicts a negative relationship between book leverage and profitability. The pecking order theory predicts that firms with a lot of profits and few investments have little debt. Since the market value increases with profitability, the negative relationship between book leverage and profitability also holds for market leverage. The pecking order theory predicts that firms with a lot of profits and few investments have little debt. Since the market value increases with profitability, the negative relationship between book leverage and profitability also holds for market leverage. Hence, based on the above findings and idea of pecking order theory, the researcher developed the tentative statement to be proofed by regression analysis. This is as follow:

Hypotheses Two: MFI profitability has statistically significant and negative influence on leverage

Size of Mfis and Capital Structure

The size of firm is defined as the logarithm of total sales or the logarithm of the total assets. The effect of size on debt ratios is ambiguous from the theoretical point of view, some authors encountered a positive relation between firm size and leverage. Similarly, empirical studies like Bevan and Danbolt (2002), Bas et al. (2009); Ebru (2011); Tchakoute

Tchuigoua, H (2015); Mary et al. (2011) Mohammed Getahun (2014), Dang et al., (2019), Faris (2010); Dilek et al. (2009); Naveed et al. (2010); Booth et al. (2001); Smith (2010) suggest positive relationship between growth and leverage. It is also argued that larger firms with less volatile benefits also have a greater likelihood of being able to fully use tax shields from interest payments, increasing the expected tax benefits of debt. For small firms, the conflicts between creditors and shareholders are more severe because the managers of such firms tend to be large shareholders and are better able to switch from one investment project to another. According to these point of view, most empirical studies in fact report a positive sign for the relationship between size and leverage.

Thus, the findings of the relationship with the firm size are in line with static trade-off and agency cost theory. Hence, based on the above findings and idea of trade-off theory and pecking order theories, the researcher developed the tentative statement to be proofed by regression analysis. This is as follow:

Hypotheses Three: MFI size has statistically significant and positive effect on leverage

Age and Capital Structure of MFIs

Age of MFI, the number of complete years of operation of MFI since establishment. MFIs often become efficient over time so we expect AGE to be positively related to MFI efficiency and its capital structure While firm age is positively correlated with the use of debt able to explain capital structure decision of firm in MFIs sector Age of the firm, also play an important role in the firm's decision to seek for debt financing in financial sectors.

The trade-off and agency theory of capital structure is the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. An important purpose of the theory is to explain the fact that corporations usually are financed partly with debt and partly with equity. Accordingly to the agency and trade off theories suggest the optimal financial structure of the capital results from a compromise between various funding options (equity, debts and hybrid securities) that allow the reconciliation of conflicts of interests between the capital suppliers (shareholders and creditors) and managers. The theories postulates that age has positive effect on capital structure decisions because more the longer age of firms in industry have high credit worthiness of borrowing from different companies. In similar way, the findings debt Degryse et al, (2012), Ezeoha and Botha (2012); Adams Abdulai & Devi Datt Tewari. (2016); Tchakoute Tchuigoua, H (2015), Lislevand (2012), Asefa T, (2017), Mohammed (2014), Dang et al., (2019), and Smith (2010) found out that Age of MFIs has positive effect on capital structure of MFIs. Hence, based on the above findings, the researcher developed the tentative statement to be proofed by regression analysis. This is as follow:

Hypotheses Four: Age of MFIs has statistically significant and positive effect on Leverage of selected MFIs

Tangibility of Asset and Capital Structure of MFIs

From a pecking order theory perspective, firms with few tangible assets are more sensitive to informational asymmetries. These firms will thus issue debt rather than equity when they need external financing (Harris and Raviv, 1991), leading to an expected negative relation between the importance of intangible assets and leverage. According to trade-off hypothesis, tangible assets act as collateral and provide security to lenders in the event of financial distress. Hence, the tradeoff theory predicts a positive relationship between measures of leverage and the proportion of tangible assets. On the relationship between tangibility and capital structure, theories generally state that tangibility is positively related to leverage. Tangibility is almost always positively correlated with leverage. This supports the prediction of the trade-off theory that the debt-capacity increases with the proportion of tangible assets on the balance sheet. The tangibility of assets represents the

effect of the collateral value of assets of the firms gearing level.

Study by Huang and Song (2002) found that debt ratio was positively correlated with tangibility, the change of total liabilities ratio was significantly positively correlated with the change of tangibility. Empirical studies like Kashefi-Pour and Lasfer (2010); Esperança*et al*., (2003); Hovakimian*et al*., (2004); Shah and Khan, (2007); Salawu and Agboola, (2008); Ramlall, (2009); Daskalakis and Thanou (2010); Teker*et al*., (2009); Smith, (2010), Buferna*et al*. (2005),Tchakoute Tchuigoua, H., 2015)., Mohammed (2014), Dang et al., (2019), Smith (2010) and Fersi and Mouna, (2017) were confirmed a positive relationship consistent with theoretical argument between tangibility and leverage of the firms, i.e., support the trade-off, and pecking order theory agency theories suggest the positive relationship between growth and leverage.

Hypotheses Five: MFI Asset tangibility has statistically significant and positive effect on leverage

Research Gap and Conceptual Framework of the Study

Most of prior studies covered a considerable period of time 1972-2013 G.C. To the best of authors' knowledge; this is the first study in Ethiopia to identify the firm specific determinants of capital structure with reference to MFIs in Ethiopia based on latest data covers from 2012-2019. So it is believed that this study would contribute to literature on the determinants of capital structure while offering recommendations for future studies. It also create the findings on firm specific determinants of capital structure in MFIs since the topic was not well researched in Ethiopia. The following figure shows the expected relationship between five independent variables and one dependent variable.
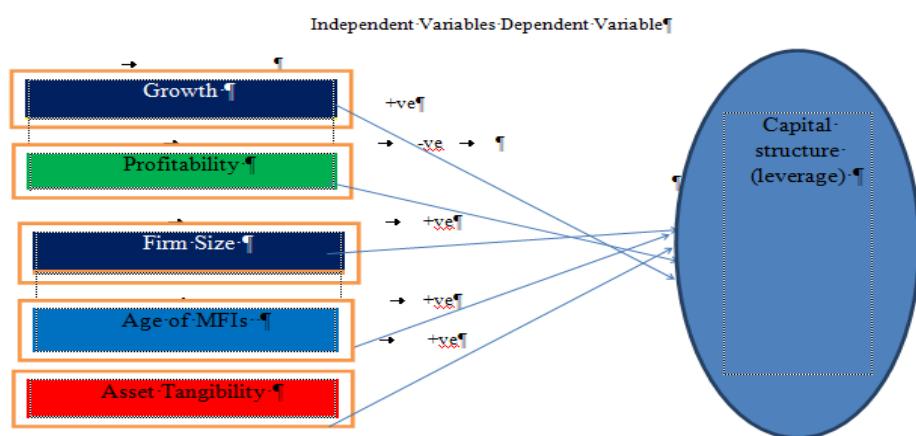
Figure 1: Conceptual Framework.
Source:-Researchers own Design based on empirical and theoretical review (2020.

MATERIALS AND METHODS

Research Design and Approach

A research design is a plan, structure and strategy of investigation so conceived as to obtain answers to research hypotheses. The purpose of this research is to identify the effect of MFIs specific determinants of the capital structure or leverage (LEV). Therefore, the explanatory research design was the well suited method for this study to explain the effect of five explanatory variables such as MFI growth, profitability, size, earring volatility and asset tangibility on one dependent variable which was capital structure. Concerning research approach, this study employed the quantitative research approach due to fact that data available in the audited financial statements of selected MFIs can be quantified or can be expressed in terms of quantity.

Study Population and Sample Design

The population of this study was 35 micro-finance institutions in Ethiopia. The empirical investigation on the determinants of capital structure of Ethiopia MFIs includes the institutions operating in the country. There are currently 35 MFIs operating in the country. To achieve this goal, MFIs that satisfies in terms of data availability of 8 years and with a 4 and 5-diamond rating are used as a unit of analysis. Using purposive sampling technique 8 MFIs from the industry where the financial statements required for 8 years to the most recent date were found legible. The sampling units that satisfy the criteria are: Omo Micro Finance, Sidama Micro Finance, Vision Fund Micro Finance, Agar Micro Finance, Kendile Micro Finance, Wisdom, Addis Credit and saving Institutions and Poverty Eradication and Community Empowerment Microfinance Institutions. The data for the remaining Microfinance institutions were not accessible in the data base as the criteria employed excludes from the sample. Despite the expectation that all MFIs 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 (8×8=64). Additionally, the employed sampling units are geographically disbursed throughout the country and have similar characteristics in terms of the governance structure and regulatory adherence, regional base which enables them to have similar ecological validity for a given industry to hold and supports the generalization of the finding of the study to the population. Besides, the RE model enables us to infer the results of sampling units to the population.

Table 2: Summary of Target Population, Sampling Techniques and Sample Size

Target Population	Sampling Techniques	Sample Size
35 MFIs operating in Ethiopia	Purposive	8 MFIs or 64 number of observation (8 MFIs *8 years audited F/S)

Source: Own Construction, 2020

Source of Data, Method of Data Collection and Analysis

They are two types of the data. Those are Primary data and secondary data. To achieve the purpose of the study, the researcher was used secondary data which would be obtained from companies annual financial reports. The criterion for MFIs to be included in the study required companies to have an Eight year audited financial statements particularly balance sheet and income statements covered a period from 2012 to 2019 inclusive, which have been collected through detail document review. Also, both descriptive and inferential statistics have been employed in order to get reliable findings.

Econometric Model Specification

- The multiple linear regression analysis has been used to determine whether the group of five variables together predicts the MFIs capital structure. The following model of the linear regression has been used:

- $LEV_{it} = \beta_0 + \beta_1 GR_{it} + \beta_2 PRO_{it} + \beta_3 FS_{it} + \beta_4 ERV_{it} + \beta_5 AT_{it} + \mu_{it}$

Whereas

- LEV_{it} = debt equity ratio for MFI i in time t

- GR_{it} = Growth of the for MFI i in time t

- PRO_{it} = Profitability of for MFI i in time t

- FS = Firms Size for MFI i in time t

- ERVit = Earnings volatility for MFI i in time t

- ATit= Asset Tangibility for MFI i in time t

- μ = error term

- β0= constant term.

Table 1: Operational Definitions of Variables

Variables of the Study	Measurement	Expected relationship
Dependent Variable		
Capital structure /Leverage (LEV): is the extent to which fixed-income securities and preferred stock are used in a company's capital structure	Total debt/Total equity	
Independent Variables		
Growth: Change in asset or profit from year to year expressed as percentage.	Percentage change of asset	+
Profitability: Profitability is a business's ability to produce a return on an investment based on its resources in comparison with an alternative investment.	Earnings after interest and taxes divided by total assets	-
Firm Size: increasing sales and market share. Firms can grow through internal expansion, external growth (merger) or diversification into related industries. The motives for increasing in size can include: Greater sales lead to greater profit, making the firm more attractive to shareholders	Natural logarithm of total asset	+
Age: Age of MFI, the number of complete years of operation of MFI since establishment. MFIs often become efficient over time so we expect age to be positively related to MFI Capital structure.	Absolute coefficient of variations in profit	+
Asset Tangibility: calculated as the total assets of a company, minus any intangible assets such as goodwill, patents, and trademarks, less all liabilities and the par value of preferred stock the divided by total assets of the MFI .tangible can serve as collateral for loans and make it easier for companies to get the financing they need to continue operations.	Tangible net fixed assets divided by total assets for MFI	+

Source: own construction based on literature review, 2020

RESULTS AND DISCUSSIONS

This section presents the result of study concerning the determinants of capital structure of selected MFIs in Ethiopia using the annual balanced panel data, where all the variables were observed for each cross-section and each time period. The study has a time series segments panning from the period 2012 up to 2019 and a cross-section segment which considered 8 branches. The results are presented in the form of summary tables and figures. Correlation and regression analysis are used to analyses the data to achieve the research objective and the findings were discussed

Descriptive Statistics

This section presents the descriptive statistics of dependent and independent variables used in the study for the sampled MFIs in Ethiopia. The dependent variables used in this study was capital structure /leverage/ while the independent variables were growth, profitability, size of firm, age of firm, and asset tangibility of selected MFIs. Table 2 demonstrates the mean, median, maximum and minimum values and standard deviation of the dependent and independent variables over the study period.

According to Table 2 above, capital structure (leverage) of selected MFIs 64 observations (panel data of 8 selected MFIs for 8 years) has a mean value of 63.8 percent. The result indicates that, the sampled selected MFIs on average capital structure with more debt. The maximum value of the capital structure was 89.20 percent and the minimum value of 51.56 percent with the standard deviation of 0.075. In relation to explanatory variables deployed in table 2 above, the mean value of growth was 0.5473 percent indicating that on averaged sampled selected MFIs were showed growth of 0.5473 cents to generate one birr operating income. The maximum value of growth was 0.54 percent and the minimum value of 0.35 percent. With a standard deviation 0.96 percent Profitability has also has the mean value of 26.59 percent. The mean value result suggested that 0.2659 cent of one birr asset invested. The maximum value of profitability was 76.10 percent and the minimum value of 11.47 percent with a standard deviation of 0.96058.percent. Another explanatory variable also size of selected MFIs played an important role for organizations maintain their market position. The mean value of this variable was 90.40 percent in its natural logarithms value. The maximum value of size was 99.9100 percent and the minimum value of 72.93 percent with standard deviation value of 8.4180 percent. In regard to age of firm has the mean value of 2.6598 percent. The mean value of earning volatility indicates that, sampled selected branch of MFIs were average 0.8928 cent of one birr asset. The maximum value of age was 14.4600 percent and the minimum value 0.1300 percent with a standard deviation of 2.6735 percent. Finally, asset tangibility has the mean value of 1.9052 percent the mean value of indicates that, sampled selected MFI were average 0.8928 cent of one birr asset. Maximum values of asset tangibility were 4.7500 percent and minimum values of 0.1300 percent with standard deviation of 1.5810 percent.

Table 2: Summary of Descriptive Statistics

Variables	Capital Structure (Leverage)	Growth	Profitability	Size of Firm,	Age of MFIs	Asset Tangibility
Mean	0.638197	0.005473	0.265977	0.904023	0.026598	0.019052
Median	0.632000	0.003500	0.244000	0.930150	0.030100	0.020950
Maximum	0.892000	0.057200	0.761000	0.999100	0.145400	0.047500
Minimum	0.514600	0.001200	0.114700	0.729300	0.001300	0.001300
Std. Dev.	0.075254	0.008158	0.096058	0.084180	0.026735	0.015810
Observatios	64	64	64	64	64	64

Source: Computed from E-views 9 results, 2020

Testing Assumption of Classical Linear Regression Model Assumptions

Before going further in to panel data econometric procedures, diagnostic tests were undertaken to ensure that the assumptions of classical linear regression model were fulfilled or not, the coefficient estimators of both α (constant term) and β (independent variables) that are determined by ordinary least square (OLS) have a number of desirable properties and usually known as Best Linear Unbiased Estimators (BLUE). Hence, the following sections discuss results of the diagnostic tests (i.e., normality, autocorrelation, multi-co linearity, heteroscedasticity,) that were conducted to ensure whether the data fits the basic assumptions of classical linear regression model or not.
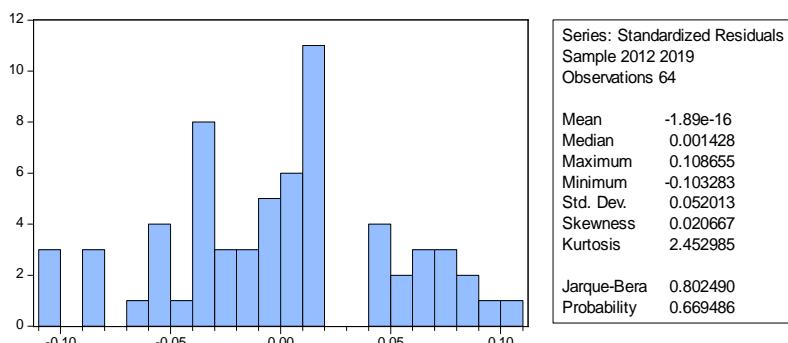
Test for Normality

The OLS model assumes that the error term is normally distributed with the mean of error being zero as positive error will offset the negative error. In this study, the normality of the data was checked with the popular Jarque-Bera test statistic. If the residuals are normally distributed, the Jarque-Bera statistic would not be significant at 5 percent significant level meaning disturbance to be normally distributed around the mean. This means that the *p*-value given at the bottom of the normality test screens should be bigger than 0.05 to not reject the null hypothesis of normality at 5 percent significant level. Jarque-Bera also

formalized this by testing the residuals for normality and testing whether the coefficient of skewedness and kurtosis are close to zero and three respectively. The hypotheses for the normality test were formulated as follow:

- H_0: Error term is normally distributed

- H_1: Error term is not normally distributed

- Decision Rule: Reject H_0, if P-value less than significant level 0.05. Otherwise, do not reject.

The normality test result of LEV model in figure 2 above shows, the histogram was bell-shaped and the Jarque - Bera statistic has a P-value of (0.669) implies that the p-value for the Jarque-Bera test for this models is greater than 0.05. So, the result indicates that the errors were normally distributed and there was no problem of normality on the LEV model. Based on the statistical result, the study failed to reject the null hypothesis of normality at the 5 percent significance level.

Series: Standardized Residuals	
Sample 2012 2019	
Observations 64	
Mean	-1.89e-16
Median	0.001428
Maximum	0.108655
Minimum	-0.103283
Std. Dev.	0.052013
Skewness	0.020667
Kurtosis	2.452985
Jarque-Bera	0.802490
Probability	0.669486

Figure 1: Normality Test for Residuals of LEV Model
Source: Computed from E-views 9 result, 2020

Test for Heteroscedasticity

In the classical linear regression model, one of the basic assumptions is Homoscedasticity assumption that states as the probability distribution of the disturbance term remains same for all observations. That is the variance of each of disturbance term is the same for all values of the explanatory variable. However, if the disturbance terms do not have the same variance, this condition of non-constant variance or non-homogeneity of variance is known as heteroscedasticity. Accordingly, in order to detect the heteroscedasticity problems, Breach-Pagan test was utilized in this study. This test states that if the p-value is significant at 99 confidence interval, the data has Heteroscedasticity problem, whereas if the value is insignificant (greater than 0.01), the data has no Heteroscedasticity problem. It is hypothesized that as follows;

- Ho: There is no Heteroscedasticity problem

- Ha: There is Heteroscedasticity problem

- Decision Rule: Reject H0, if P-value less than significant level 0.01. Otherwise, do not reject.

Accordingly, Table 3 shows that, both the F-statistic and Chi-square tests give the same conclusion that there was no significant evidence for the presence of Heteroscedasticity in LEV model. Since the p-values in all of the cases were above 0.05, the null hypothesis of there is no Heteroscedasticity problem is failed to reject at 5 percent significant level.

Table 3: Heteroscedasticity Test for LEV Model

Heteroscedasticity Test: Breach-Pagan-Godfrey			
F-statistic	0.917027	Prob. F(5,58)	0.4765
Obs*R-squared	4.688792	Prob. Chi-Square(5)	0.4550
Scaled explained SS	2.797617	Prob. Chi-Square(5)	0.7312

Source: Computed from E-Views 9 Results (2020)

Test for Auto Correlation

In the case of autocorrelation problem, the estimated parameters can still remain unbiased and consistent, but it is inefficient. The result of t-test, F-test or the confidence interval will become invalid due to the variances of estimators tend to be underestimated or overestimated. Due to the invalid hypothesis testing, it may lead to misleading results on the significance of parameters in the model. Breach-Godfrey Serial Correlation LM Test was used in this study to detect the autocorrelation problem. It is hypothesized that as follows;

- Ho: no serial correlation

- H1: presence of serial correlation

- Decision Rule: Reject H_0, if P-value less than significant level 0.05. Otherwise, do not reject

Table 4 shows, the P-value of both F-statistic and Chi-Square for LEV model were (0.7531) and (0.7244) respectively, which were greater than the significance level of 5 percent. Hence, the null hypothesis of no serial correlation is failed to reject at 5 percent of significant level, the result supports the absence of serial correlation in this model. Therefore, it can be concluded that, the covariance between residuals is zero and absence of serial correlation problem was found conclusively from the LM tests.

Table 4: Test for Serial Correlation of LEV Model

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.285007	Prob. F(2,56)	0.7531
Obs*R-squared	0.644880	Prob. Chi-Square(2)	0.7244

Source: Computed from E-Views 9 Results (2020).

Correlation Analysis among Variables

According to (Brooks, 2008), Correlation between two variables measures the degree of linear association between them. To find the association of the independent variables with the dependent variable Pearson product moment of correlation coefficient was used. Values of the correlation coefficient between two variables are always ranged from positive one to negative one. A correlation coefficient of positive one indicates that a perfect positive association between the two variables; while a correlation coefficient of negative one indicates that a perfect negative association between the two variables. A correlation coefficient of zero, on the other hand, indicates that there is no linear relationship between the two variables. As noted in (Brooks, 2008), 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 movement in the two variables are on average related to an extent given by the correlation coefficient. The following tables shows the result of correlation analysis to determine the relationship between dependent variable (LEV) and explanatory variables (i.e., growth, profitability, firm size, age, and asset tangibility).

Table 5 shows, growth, firm size, earning volatility and asset tangibility were positively correlated with capital structure with a correlation coefficient 0.304759, 0.390897, 0.200533 and 0.152681 respectively. This correlation shows that, growth, firm size, Age of MFI and asset tangibility and capital structure also moves to the same direction. Profitability is negatively correlated with LEV with a correlation coefficient of (-0.159370). This implies that, as the profitability increases, and leverage ratio moves to opposite direction. The result of the above correlation matrix shows that the highest correlation coefficient was (-0.573703) which is between age and firm size, Margaritas (2010), and Hair, (2006) argued that correlation coefficient below 0.9 may not cause serious multicollinearity problem, it is conclude that there was no serious of multicollinearity problem in this study and adding or removing a variable from a regression equation would not cause the values of the coefficients on the other variables to change.

Table 5: Correlation Matrix of LEV and Explanatory Variables

Variables	Capital Structure	Growth	Profitably	Firm Size	Age of MFI	Asset Tangibility
Capital Structure	1	0.304759	-0.15937	0.390897	0.200533	0.152681
Growth	0.304759	1	0.035795	0.180933	0.1139018	0.052309
Profitability	-0.159370	0.035795	1	-0.412407	0.196723	-0.044742
Firm Size	0.390897	0.180933	0.412407	1	-0.573703	0.267703
Age of MFI	0.200533	0.113901	0.196723	-0.573703	1	-0.3723713
Asset Tangibility	0.152681	0.052302	-0.044742	0.267703	-0.372371	1

The Analysis made based on 1 %, 5 %, 10 % percent significant level.
Source: computed from E-views 9 result (2020)

Random Versus Fixed Effect Model

The results so far indicates that all CLRM assumptions were not violated, the OLS regression was BLUE and can be safely applied. However, since this study used panel data, there are two types of panel estimator approaches that can be employed, namely: fixed effects models (FEM)and random effects models (REM) in order to robust the OLS regression results and give more valid results.

According to Brooks (2008), there are broadly two classes of panel data estimator approaches that can be employed in financial research. These are fixed effect model and random effect model. Fixed effects models allow the intercept in the regression model to differ cross-section ally but not over time, while all of the slope estimates are fixed both cross-section ally and over time. An alternative to the fixed effects model described above is the random effects model, which is sometimes also known as the error components model. As with fixed effects, the random effects approach proposes different intercept terms for each entity and again these intercepts are constant over time, with the relationships between the explanatory and explained variables assumed to be the same both cross-section ally and temporally. The problem with above pooled model is that is neglecting the cross-section and time series nature of data. It assumes that all MFIs used in the observation are the same. In order to choose and apply the appropriate model, the hypothesis was developed and tested by Haussmann specification test. The null hypothesis is: random effect model is appropriate and alternative hypothesis is: fixed effect model is appropriate. If the p-value is greater than 5 Percent, the null hypothesis should be accepted otherwise alternative hypothesis. Based on Haussmann specification test in the model, random effect model can be appropriate for the estimation of the model since the p-value of the model is greater than 5 Percent.

- H_0: Random Effects model is appropriate

- H_1: Fixed Effects model is appropriate

- Decision Rule: Reject H_0 if p-value less than significance level 0.05. Otherwise, don't reject.

Table 6 shows the Hausman specification test tables 4 above, the P-value for LEV model was (0.5637), which is more than 0.05. Hence, the null hypothesis of the random effect model is appropriate and failed to reject at 5 percent of significant level. This implying that, random effect model is more appropriate than fixed effect model in order to make robust the OLS regression results and gives more valid results.

Table 6: Haussmann Test on LEV Model

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	8.714321	5	0.1210

Source: Computed from E-Views 9 Results, 2020

Random Effect Regression Results

Table 7 shows the R-squared statistics of the model were 52.22 percent. This result indicates that 52.22 percent of variation in the dependent variable is explained by the explanatory variables. That means the explanatory variables (such as, growth, profitability, firm size, age, and asset tangibility are jointly explain about 52.22 percent of the variation in the leverage. The remaining 47.78 percent of the variation in the capital structure of selected MFIs in Ethiopia explained by other variables which are not included the model during the study period. Beside this, F- statistics (12.68185) which is used to test the overall significance of model was presented and null hypothesis can be clearly rejected at 1 percent level of significant, since the p-value was (0.0000) which was sufficiently low, indicates the reliability and validity of the model at 1 percent level of significance. From table 5 above, the researcher found the following estimated regression equation;

$$LEVit=0.000541+2.307091*GRit-0.011244*PROit+0.614203*FSit+1.991009*AGit+ 1.039672*ATit (E)it……………..(2)$$

Based on the above equation, the coefficients growth (+2.307091, firm size(+0.614203), age of firm(+1.991009), and asset tangibility (+ 1.039672) tell us on percent increases in the mean value explanatory variables such as growth, firm size, age and asset tangibility leads to 230.7091 %, 61.4203 %, 199.101 %, and 103.96 % increases in the mean value of capital structure of selected MFIs in Ethiopia. On the other hand, profitability coefficient value of the variable is (-0.011244) indicates that as the value of the profitability decreases, the mean of the capital structure of MFIs in also tends to decreases by 1.1244.

Table 7: Random Effect Regression Results on LEV Model

Dependent Variable: LEV			
Method: Panel EGLS (Cross-section random effects)			
Date: 05/30/20 Time: 08:34			
Sample: 2012 2019			
Periods included: 8			
Cross-sections included: 8			
Total panel (balanced) observations: 64			
Swamy and Arora estimator of component variances			
Variable	Coefficient	Std. Error	t-Statistic	Prob.
Growth	2.307091	0.844091	2.733225	0.0083***
Profitability	-0.011244	0.077647	-0.144810	0.0088***

<div align="center"><strong style="color:red">Table 7: Contd.,</div>

Firm Size	0.614203	0.107173	5.730972	0.0000***
Age of MFI	1.991009	0.319616	6.229379	0.0000***
Asset Tangibility	1.039672	0.460092	2.259704	0.0276**
C	0.000541	0.109992	0.004915	0.9961
	Effects Specification			
			S.D.	Rho
Cross-section random			0.000000	0.0000
Idiosyncratic random			0.053342	1.0000
	Weighted Statistics			
R-squared	0.522277	Mean dependent var		0.638197
Adjusted R-squared	0.481094	S.D. dependent var		0.075254
S.E. of regression	0.054209	Sum squared resid		0.170440
F-statistic	12.68185	Durbin-Watson stat		1.838287
Prob(F-statistic)	0.000000			0.000000

The Analysis made based on 1(***), 5(**) & 10(*) percent significant level
Source: computed from E-views 9 result, 2020

Discussion for Random Effect Regression Result (Hypotheses Testing)

The main objective of this study is to analyze the determinants of capital structure. The discussion is focused on four significant variables such growth, profitability, firms size, age of firm and asset tangibility. This has been shown as follow:

The result of this study shows that support from growth with coefficient of regression [β=2.307091] has a positive and statistically significant at 1 % level of significance since (p-value of 0.0083 < 0.01). Hence, hypothesis H1 is accepted. This finding is consistent with idea of pecking order theory and empirical finding of studies by Smith (2010), Bas et al (2009), Morri & Cristonizia (2009); Dang et al., (2019), Tchakoute Tchuigoua, H., (2015)., Mohammed (2014), Bas et al. (2009), Michaelaset al. (1999), Hutchinson (2003), Cassar and Holmes (2003) Hallet al. (2004), Nguyen and Ramachandran (2006), Saeed (2007) and Smith (2010) who found there was positive relationship between the growth and the capital structure. This indicates that as the value of the growth increases, the mean of the capital structure (leverage) also tends to increase. The companies in high growth rate has chance to access to capital in the form of loan from bank or bond issue which leads to more leverage ratio.

Secondly, the result of this study show profitability with coefficient of regression [β=-0.144810] has a negative and statistically but insignificant at 10 % level of significance since (p-value of 0.0088 <0.01). Hence, hypothesis H2 is accepted. This finding is related with empirical literature of Degryse et al, (2012), Smith (2010); Tchakoute Tchuigoua, H. (2015), Lislevand (2012), Asefa T (2017); Mohammed (2014), Dang et al., (2019), suggest negative relationship between growth and leverage. This result also supported by idea of pecking order theory which suggests that higher earning leads to less leverage. Microfinance institutions with high costs of equity maintain a high level of buffer capital and therefore are less levered. Higher profits reduce the necessity to raise debt which implies that that there is negative relationship between MFIs capital structure and profitability.

Thirdly, the result of this study concerning size of firm with coefficient of regression [β=0.614203] has a positive and statistically significant effect on capital structure at 1 % level of significance since (p-value of 0.0000 < 0.01). Hence, hypothesis H3 is accepted. This finding is consistent with similar previous researches by Mary et al., (2011), Neveed et al (2010); Bevan and Danbolt (2002), Bas et al. (2009); Ebru (2011); Tchakoute Tchuigoua, H (2015); Mary et

al. (2011) Mohammed Getahun (2014), Dang et al., (2019), Faris (2010); Dilek et al. (2009); Naveed et al. (2010); Booth et al. (2001); Smith (2010) suggest positive relationship between growth and leverage. It is also argued that larger firms with less volatile benefits also have a greater likelihood of being able to fully use tax shields from interest payments, increasing the expected tax benefits of debt. According to these point of view, most empirical studies in fact report a positive sign for the relationship between size and leverage. Thus, the findings of the relationship with the firm size are in line with suggestions trade-off and agency cost theory which supports idea that larger the size of the firm more it employs the debt. This makes the firms faced with less risky. As the result he concluded that increase in size of firm has positive influence on capital structure.

Fourthly the results of study employ age of MFIs with coefficient of regression (B=1.9991009) has positive and statistically significant effect on capital structure at 1 % level of significance since (p-values 0.0000) which less than 0.01signifince level. Therefore hypothesis H4 is accepted. The result is supported by empirical evidence literature of Degryse et al, (2012), Ezeoha and Botha (2012); Adams Abdulai & Devi Datt Tewari. (2016); Tchakoute Tchuigoua, H (2015), Lislevand (2012), Asefa T, (2017), Mohammed (2014), Dang et al., (2019), and Smith (2010) found out that Age of MFIs has positive effect on capital structure of MFIs. Also, trade-off and agency theories postulates that age has positive effect on capital structure decisions because more the longer age of firms in industry have high credit worthiness of borrowing from different companies. Hence, based on the above findings, the researcher concluded that aged MFIs have change to more leverage their capital.

Finally the results of study employ asset tangibility with coefficient of regression (β=1.039672) has positive and statistically significant effect on capital structure at5 % level of significance since (p-value of 0.0276) which less than 0.05 significant level. Hence, hypothesis H5 is accepted .The finding was supported by the ideas of empirical evidence from Fama and French, (2000) ;Huang and Song,(2002); Kashefi-Pour and Lasfer (2010); Esperançaet al., (2003); Hovakimianet al., (2004); Shah and Khan, (2007); Salawu and Agboola, (2008); Ramlall, (2009); Daskalakis and Thanou (2010); Tekeret al., (2009); Smith, (2010), Bufernaet al. (2005), Tchakoute Tchuigoua, H., 2015)., Mohammed (2014), Dang et al., (2019), Smith (2010) and Fersi and Mouna, (2017) were confirmed a positive relationship between leverage. It also, consistent with theoretical argument between tangibility and leverage of the firms, i.e., support the trade-off, agency cost; and pecking order theories which suggest the positive relationship between growth and leverage. This implies that more the tangibility of assets of the firm, more the chance of the firm to use debt financing.

CONCLUSIONS

A company's capital structure is arguably one of its most important choices. From a technical perspective, the capital structure is defined as the careful balance between equity and debt that a business uses to finance its assets, day-to-day operations, and future growth of business. Optimum capital structure maximizes the market value of a firm, i.e. in a firm having a properly designed capital structure the aggregate value of the claims and ownership interests of the shareholders are maximized and cost was minimized. So it is very important to identify the determinants of capital structure with reference to MFIs in Ethiopia. In order to meet the objective of this study, researcher employed quantitative research approach with explanatory research design where the effect caused by the independent variable on the dependent variable is observed through random effect model regression analysis. Secondary data sources of selected 8 MFIs over eight years from 2012 up to 2019 G.C were used. Based on the findings from the random effect model regression analysis the researcher concludes that the capital structure of MFIs was best explained by the explanatory variables incorporated in the model.

The conclusion that can be drawn from the findings in the first hypotheses, confirmed that growth has positive and statistically significant impact on leverage ratio; which means one unit increase on the value of this variable leads to an increase on capital structure of the firm debt to equity ratio.

Based on the findings related to the second hypothesis, the result of this study showed that profitability has a negative and statistically significant effect on leverage ratio. This implies that that there is negative relationship between MFIs capital structure and profitability. A negative coefficient suggests that as the profitability increases, the capital structure tends to decrease while holding other variables in the model constant.

The conclusion that can be drawn from the findings of the third hypotheses it can be conclude that increase in size of firm has positive and statistically significant impact on capital structure; which means an increase on the value of this variable leads to an increase on leverage ratio.

Fourthly, the result of this study concerning age of MFIs with coefficient of regression has a positive and statistically significant effect on Leverage ratio because (p-value of $0.0000 < 0.01$). Hence, hypothesis H4 is accepted. The result shows a positive relationship between MFI age and leverage. Hence, more aged MFIs may have ability to borrow more money from outsiders in order to meet financial needs of their business that improves leverage ratio firms.

Based on the findings related to the fifth hypothesis, it can be conclude that increase in asset tangibility has positive and statistically significant impact on capital structure of selected of MFIs in Ethiopia. Which mean that increase on the value of this variable leads to an increase by capital structure due to fact that tangible assets of the firm are used as guarantee in order to obtain more debt that leads to increases in leverage ratio. So, the MFIs have to increase debt capacity in proportion to tangible asset on the balance sheet because the tangible asset used as collateral and provides security to lender in occurrence of financial stress.

Suggestions for Further Research

This study was not an end to itself. There are many issues that arise from the findings and may require further research in order to address them. For instance a study can be carried out to establish the other factors that can explain 51.89 percent variation in the capital structure regression models. So, this study faced some limitations that can be filled by future researchers. New researchers can conduct further study by including more macroeconomic variables such as GDP, Political issues and Inflation that affect the capital structure of MFIs. And they can be carried out by increasing the sample size as well as the study area at international level because this study only focused on Eight consecutive year data (2012-2019) for 8 selected of MFIs in Ethiopia due to lack of audited data in other MFIs. This same study may be replicated later in order to find out if the situation remain the same or there will be substantial changes by incorporating secondary sources of 35 MFIs.

Acknowledgements

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