ST. MARY'S UNIVERSITY
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DETERMINANTS OF PROFITABILITY OF MICROFINANCE INSTITUIONS IN ETHIOPIAN

BY
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DECLARATION

I, the undersigned, declare that this thesis is my original work, prepared under the guidance of my advisor Zenegnaw Abiy(Phd.). All sources of materials used for the thesis have been duly acknowledged. I further confirm that the thesis has not been submitted either in part or in full to any other higher learning institution for the purpose of earning any degree.

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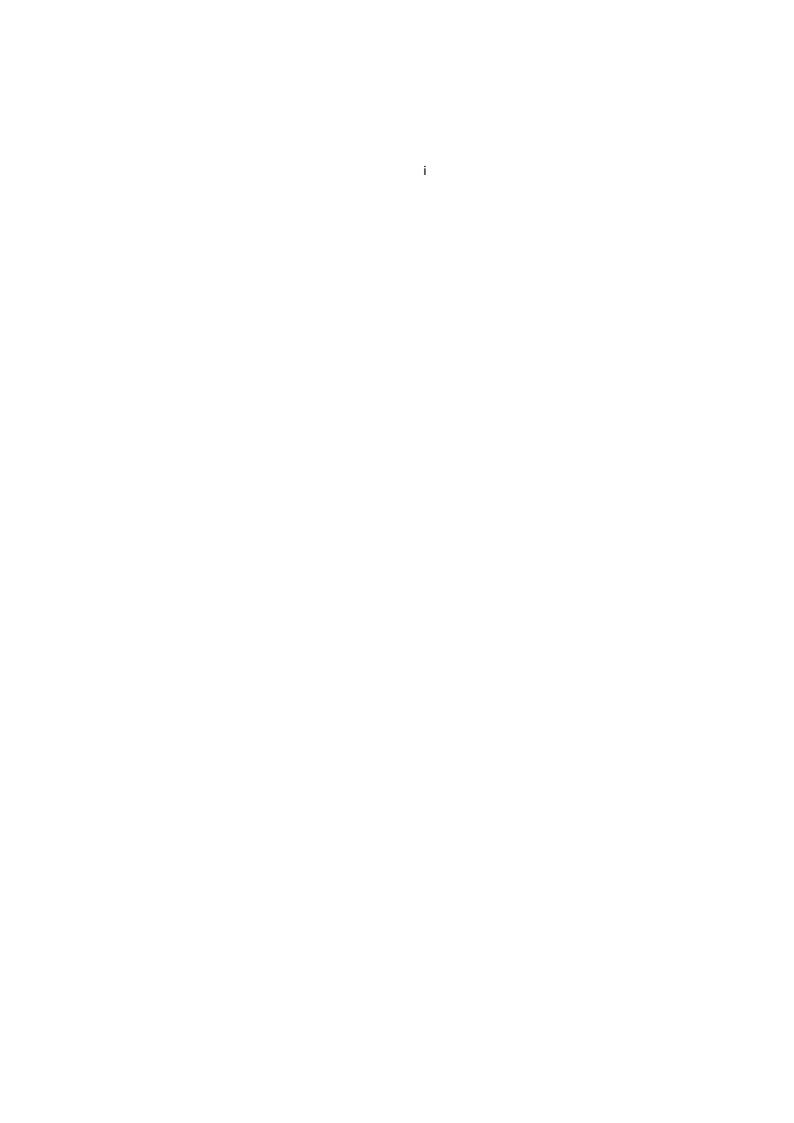**St. Mary's University, Addis Ababa   June, 2016**

ENDORSEMENT

This thesis has been submitted to St. Mary's University, School of Graduate

studies for examination with my approval as a university advisor.

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ABSTRACT

As noted by Muriu (2011), micro finance has attracted significant interest in recent years, both from policy makers and in the academia, hence this study examined the determinants of profitability of Ethiopian micro finance institutions using panel data of 19 micro finance institutions operating in the country over the period of 2004-2015. Since the collected data is secondary in nature, a quantitative approach to research was considered, besides the fixed effect model was used. Under this study both internal and external factors were included, the internal factors used in this study were, gearing ratio, capital adequacy, portfolio quality, efficiency, size and age where as the external factors were real GDP growth, inflation and market concentration. ROA was used as a proxy for profitability measure. Based on the regression result, among the micro finance institution specific variables, age was found to be significant variables with a positive coefficient against ROA whereas portfolio quality, gearing ratio, capital adequacy and operational efficiency (lower cost) were significant variables with a negative coefficient, the remaining one internal variables i.e. size was found to be statistically insignificant. More over the effect of external variables included in the study i.e. except inflation, GDP and market concentration were statistically insignificant. Based on the findings detected, the study suggested that management of microfinance institutions need to search available ways to reduce the operating costs and employ a good credit management policy. On top of this, the government needs to improve different facilities which enable microfinance institutions to be efficient and stable source of finance for the poor.

***KEY WORDS:** Determinants of profitability, internal variables, external variables*

LIST OF ABBREVIATIONS AND ACRONYMS

ACSI	Amhara Credit and Saving Institution, Share Company
ADCSI	Addis Credit and Saving Institution Share Company
AEMFI	Association of Ethiopian Microfinance Institutions
AGE	Age of Micro Finance Institution
AVFS	African village financial service
BENSHANGUL	Microfinance Institution
BSC	Balanced Scorecard
BUUSSA	Busa Gonofa Microfinance S.C
CAR	Capital adequacy ratio
CGAP	Consultative Group to Assist the Poorest
CLRM	Classical linear regression model
CONS	Market Concentration
DEA	Data Envelopment Analysis
DECSI	Dedebit Credit and Saving Institution, Share Company
DIRE	Dire Microfinance S.C
EFF	Efficiency
ESHET	Microfinance Institution
FSS	Financial self-sufficiency
GASHA	Gasha Microfinance S.C
GDP	Gross domestic product
GLP	Gross loan portfolio
GMM	Generalized Method of Moments
GNI	Gross National Income
GR	Gearing Ratio or Debt/Equity ratio
IMF	International Monetary Fund
MEKLIT	Meklit Microfinance S.C institution
METEMAMEN	Microfinance Institution
MFIs	Microfinance Institutions
MIX	Microfinance Information exchange
MoFEC	Ministry of Finance and Economic cooperation

NBE	National Bank of Ethiopia
NGOs	Non-Governmental Organizations
OCSSCO	Oromia Credit and Saving Institution, Share Company
OLS	Ordinary least square
OMO	Omo Microfinance Institution, Share Company
OSS	Operational self-sufficiency
PAR>30	Portfolio at risk past due 30 days
PEACE	Poverty Eradication and Community Empowerment Microfinance
RMP	Relative market power
ROA	Return on Asset
ROE	Return on Equity
SCP	Structure- conduct-performance
SFPI	Specialized Financial and Promotional Institution, Share Company
SHASHEMENE	Microfinance Institution
SIDAMA	Sidama Microfinance Institution
SIZE	Size of Micro Finance Institution
WASASA	Wasasa Microfinance S.C
WISDOM	Wisdom/Vision Fund Microfinance S.C

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CHAPTER   ONE

INTRODUCTION

This chapter begins with discussing background of the study that gives some insight on the issue of MFIs. After giving some insight on the issue of MFIs, statement of the problem part that shows the direction of the study, justifies the reason to carry out the study. Following this both general and specific objectives of the study. Lastly the sub sequent section presents significance of the study, scope and limitation of the study and organization of the paper.

1.1 Background of the Study

Microfinance is the practice of providing loans, along with other basic financial services, to the very poor in an effort to help them achieve economic self-sustainability and remove themselves from poverty. Poverty has continued to be a concern and attracts attention both in the developed world and developing world. Unfortunately, in many poor countries the gap between the poor and the rich is big and growing (Littlefield et al., 2003). Over the years, microfinance has evolved as an economic development approach intended to benefit the low income population. It is not just banking; it is a development tool commonly used by donors. The history of microfinance dates back to about three decades when in 1976, Mohammed Yunus, who is believed to be the founder of formal microfinance, founded Grameen-Bangladesh. Grameen-Bangladesh, began assessing micro finance service to poor women in South Asian Villages. Grameen is a Bengali name which means village. Its evolution, however, dates about 30 or 50 years from the late 1960s with efforts made towards the reduction of poverty through the promotion of income earning activities among the poor. It is thus an up growth of the small enterprise development initiative (Greuning, 2003).

Micro finance however, has a number of origins. For hundreds of years, poor people in Africa and Asia had formed savings and lending groups. Moneylenders and the informal curb market had provided quick services at very high costs to poor households who had no access to mainstream financial institutions. In the last century, cooperatives and credit unions in developing countries have focused on savings mobilization and lending with rural households, many of which are poor. Over the years, governments have created lending programs for poor entrepreneurs and producers; most of these programmers have suffered from subsidized interest rates, political patronage and low repayment (Janson, 2007).

Microfinance is high on the public policy agenda. It has achieved tremendous success in improving the livelihoods of the poor, through the provision of financial services. Such initiatives are widely sponsored by a variety of organizations including; the World Bank, United Nations, national governments and many charitable non-governmental organizations (NGOs). Their aim is to help the poor cope with risk and take advantage of small income generating opportunities, by employing profit-making banking practices amongst low income communities (Banerjee and Duflo, 2009; Ahlin and Jiang, 2008; Arun and Hulme, 2008; Swain and Varghese 2009; Imai et al., 2010). By alleviating financing constraints, microfinance is able to promote small scale investments from otherwise unrealized market activities while yielding a return on their investment (Hartarska and Nadolnyak 2008b; Hilson and Ackah-Baidoo, 2010).

The need for micro finance is highly pronounced due to the fact that the poor are 'un bankable' in the views of the formal financial institutions, because the poor fail to bet collateral which these institutions put as a pre-condition for disbursement of a loan. More than 3 billion poor people seek access to basic financial services worldwide (Helms, 2006) and ignored by commercial banks for a long time. Micro finance institutions (hence forth abbreviated as MFIs in this study) expand the frontier of financial services by providing credit to those who are excluded from financial markets (Muriu,2011). MFIs are defined in terms of the following characteristics: targeting the poor (especially the poor women); promoting small businesses; building capacity of the poor; extending small loans without collaterals; combining credit with savings; and charging commercial interest rates (Dejene, 1998 cited in Alemayehu, 2008). The recent trend of commercialization of MFIs even under lines a run for profits from the business conducted with customers who are poor (Sarah, 2011).

Scholars who studied on the issue like Muriu (2011) and Jorgensen (2012) argue that the concept of profitability is also practicable for MFIs due to the fact that profitable of MFIs reach the larger poor as well as build a sustainable institution with their own resources rather than, with subsidies from external donors. Being synchronize with the concept of profitability, to make MFIs a sustainable cause of finance for the larger poor, this study focused on identifying factors of micro finance profitability which contribute for the sustainability of the MFIs and make them a reliable source of finance for the poor, by taking into account some selected or nominated MFIs operating in Ethiopia.

1.2 Statements of the problem

Microfinance has been used as a powerful tool in alleviating poverty in recent years and this is supported by research (Jonathan &Barbara, 2001). The general objective of microfinance institution is to get rid of poverty by providing the poor with sustainable credit facility to start small business. Bayeh (2012), states that microfinance is a means of poverty reduction strategy for emerging countries. The establishment of sustainable MFI that reach a large number of rural and urban poor who are not aided by the conventional financial institutions, such as the commercial banks, has been a prime component of the new development Strategy of Ethiopia (Alemayehu, 2008). The objective of almost all of the MFIs in Ethiopia is poverty alleviation. To achieve this objective MFIs, have a duty to be financially viable and sustainable.

In the present day, the microfinance industry has grown into more congested and multifaceted. The concept of microfinance no longer just covers microcredit, but also includes the possibilities of saving, insurance and money transfer. Even though MFI's are considered as one type when it comes to financial services, there is a great variation of MFI's in terms of legal form, profit status, degree of sustainability and funding springs. Study by Dieckmann (2007) has shown that MFIs go through an actual transformation from the traditional donor-driven non-governmental organizations (NGO) framework towards a

greater degree of capital market involvement. There are many hypotheses as to why this transformation is happening; one of them being that it is challenging to count on contributions, subsidies and donations by development agencies or private donors. In 1995, the donor community arrived at a consensus that all MFIs should in standard become profitable after seven to ten years of start-up provision (Balkenhol, 2007). On the other hand, it is questionable that whether the MFIs achieve the stated objective of profitability given their different diversity from poverty reduction to profitability (Muriu, 2011).

Advanced economies (formerly well known for their donations) in recent years have suffered a severe financial and economic crisis. Donor countries are engaged in their own internal problems rather than external problems, like helping the poor in third world countries, on the other hand the previous well known aid beneficiary countries are increasingly becoming investment destinations, some countries which were synonymous for poverty before, are now enjoying a promising growth. In light of this, MFIs operating in these countries should be catalysts for change i.e. being a role player in the countries ambition to become a middle

income economy. Ethiopia is not an exception, once it was known for its famine and vicious circle poverty, in recent years the country has enjoyed a double digit economic growth certified by IMF, World Bank etc. Having this big crystal of truth, MFIs operating in Ethiopia should be catalysts in the country's ambition of alleviating extreme poverty and becoming a middle income economy. MFIs should be sustainable and increase their outreach so that they can attain their intended target. Traditionally MFIs operating in third world economies were seen as donor reliant institutions where their sustainability and outreach is dependent upon the goodwill of donor's not on their own internal resources. Such kind of parasitism on donor's aid may create hurdles on the operation of the MFIs because the aid may end accidentally without any prior notification.

Profitability is an appropriate device for achieving long term viability and sustainability of the microfinance industry. At the micro level, profitability is a precondition to a competitive microfinance industry and the cheapest source of capital, without which no firm would attract external capital. MFIs profits are also an important source of equity, if profits are reinvested and this may encourage financial stability (Muriu, 2011). Moreover, market sources of funding are accessible only to MFIs that have demonstrated that they can generate a profit.

Large body of research on financial institutions profitability has been undertaken in the conventional banking industry like (Flarnini, et al., 2009; Garcia Herrero, et al., 2009; Marccucci and Quagliarelio, 2008). But exact empirical evidence on micro finance profitability is insufficient. Except study regarding their sustainability and performance, having this very truth in hand it would be interesting to study determinants of profitability of MFIs since studies in this area are not rife.

In Ethiopia as the rest of the world, studies in relation to determinants of MFIs profitability considering both internal and external factors are rare, but studies regarding performance of MFIs were conducted by various scholars like, Birhanu (2007), Alernayehu (2008) and Letenah (2009). The study by Yonas (2012) and Melkamu (2012) tried to see the determinants of performance by using proxy of financial and operational sustainability of Ethiopian MFIs. They focused only on internal factors and have not considered external factors like macroeconomic and industry besides, they have not addressed the idea of profitability of MFIs specifically. Sima (2013) studied determinants of profitability of Ethiopian microfinance by using microfinance specific and macroeconomic factors.

Therefore, the above studies use limited variables which focuses on MFI-specific and macroeconomic factors only. Though, the industry specific such as market concentration and some of MFI-specific like Gearing and Macroeconomic factors such as inflation determinants in their study was not mentioned but these factors have their own effects on profitability as it was proved by different outsider scholars such as (Muriu,2011), (Sastrosuwito & Suzuki, 2011) and (Ponce, 2012), (Ahlin et al., 2011). Since it is believed that MFIs should be profitable for their healthy operation and attainment of the long term goal which is alleviation of poverty. This study should have tried to find out the MFIs specific, macroeconomic and industry-specific factors affecting their Profitability and fill the gap in the context of Ethiopian MFIs.

1.3 Objective of the Study

1.3.1 General Objective

The primary objective of the study was to examined the factors determining the profitability of Ethiopian Microfinance Institutions.

1.3.2 Specific Objectives

Specific objectives of the study include
  ⇨ Examining the impact of internal factors that affect profitability of Ethiopian MFIs ⇨ Examining the impact of Macroeconomic factors that affect profitability of Ethiopian MFIs
  ⇨ Examining the impact of Industry factors on the profitability of Ethiopian Microfinance Institutions

1.4 Significance of the Study

Several studies were conducted on sustainability and performance of MFIs in Ethiopia, the number of particularly tailored studies on determinants of micro finance profitability were limited until recently considering the internal and external factors simultaneously. In light of this, the finding of the study would be advantageous to the stakeholders like donors, managers and government in that it helps them to detect what factors affect the profitability of MFIs in Ethiopia and what measures should be in use for the yet to come for the accomplishment of the long term objective of MFIs, which is poverty reduction. Furthermore, it should give some supplement motivation for future researchers to conduct a

further cutting-edge study. Finally, it should also contribute additional elements to the existing literature on micro finance profitability.

1.5 Scope of the Study

The study was considered only limited number of internal and external profitability determinants. The internal variables considered by this study includes Financing structure, portfolio quality, Operational efficiency, Gearing, size and age of MFIs. Macroeconomic external variables include GDP and inflation whereas the only industry variable has been used Market concentration. External variable, unemployment rate and internal variables such as depth of outreach, lending methodology, type of institutions and owner ship structure are not included in the study. In addition to this the study was used only the most recent 12 consecutive data (2004-2015). On the top of data limitation, only 19 sample was selected out of a total population of 35. This includes ACSI, ADCSI, DECSI, OCSSCO, OMO, Sidama, Buussaa Gonofaa, Vision Fund, Wasasa, AVFS, SFPI, PEACE, Metemamen, Shashemene, Dire, Gasha, Benshangul, Eshet, and Meklit. Among the 19 MFIs selected, the first 6 MFI's are government owned whereas the last 13 are privately owned.

1.6 Limitations of the Study

Before conducting this study, the researcher was anticipating to include all the 35 MFIs which are registered by NBE in 2015. But the researcher was unable to do so, for limited reasons some MFIs are less than 12 years old and there is also lack of financial data for consecutive 12 years for some MFIs have so this forced the researcher to include only 19 MFIs in the study. The other limitation was lack of related and published literatures in Ethiopian context regarding MFIs profitability.

1.7 Organization of the Paper

The proposed research paper has the following form; chapter one including introduction, statement of the problem, objectives, significance, scope and limitation, and Chapter two consists of literature review both theories and empirical studies, and chapter three Research Methodology, chapter four results and discussion and lastly chapter five: conclusions recommendations and direction for further research.

CHAPTER TWO

REVIEWS OF RELATED LITERATURES

This chapter aimed at providing a theoretical overview and empirical evidences on performance evaluation of MFIs. Some studies made in different countries and in Ethiopia and also studies focus on examine impact of Microfinance institution's profitability reviewed in convenient ways. It recognizing and understanding the underlying concepts and definitions of the Microfinancing sector is essential in order to give an undertaking results and analyses. The first part presents theoretical review, then followed by empirical reviews and finally informs the knowledge gap.

2.1 THEORETICAL REVIEW

2.1.1 The Concept of Profitability

On this topic we have an available profitability theories are talk over. Even though there is no such mainly tailored theory of profitability for MFIs, the current study also took from commercial banking related theories as some of its predecessors used to, since MFIs be responsible for banking service to the poor. According to Harward & Upton (1961) profitability is the ability of a given investment to earn a return from its use. The term Profitability however is not synonymous or the same meaning to the term "Efficiency". Profitability is a measure of efficiency and is regarded as a measure of efficiency and management guide to greater efficiency. Though, profitability is an important yardstick for measuring the efficiency, the degree of profitability cannot be taken as a final proof or indicator of efficiency. Sometimes satisfactory profits can mark inefficiency and conversely, a proper degree of efficiency can be accompanied by an absence of profit. The net profit figure simply indicates that a satisfactory balance between the values receive and value given. The change in operational efficiency is merely one of the factors on which profitability of an enterprise largely depends. Moreover, there are many other factors besides efficiency, which affect the profitability (Harward & Upton, 1961).

2.1.1.1 The market power theories

Tregena (2009) discussed that the banks performance is influenced by the market structure of the industry. Structure-conduct-performance (SCP) and the relative market power (RMP) theory are the two distinct approaches within this theory. SCP approach is that the level of

concentration in the banking market tends to raise profit through raising market power Whereas, as the RMP approach says bank profitability is influenced by market share; which is large banks with differential product can influence prices and increase profit which has no or less competition (Tregena, 2009).

2.1.1.2 The efficiency theory

The efficiency theory articulates the more efficient banks earn high profits. There are two distinct approaches within the Efficient theory; the X-efficiency and Scale-efficiency hypothesis. Under X-efficiency approach, firms with lower costs tend to gain larger market share which implies high concentration but, this concentration do not have any causal relation with their profitability. However, according to Athanasoglou et al. (2006) discussed that the scale- efficiency approach, economies of scale enable the large firms to acquire higher market share which helps them to get high concentration then high profit. The scale approach emphasizes economies of scale rather than differences in management or production technology. Larger firms can gain lower unit cost and higher profits through economies of scale. This make possible to large firms to acquire market shares, which may manifest in higher concentration and then profitability. According to Njerl (2012) efficiency theory is similar to the Portfolio theory largely assume that banks performance is influenced by internal efficiencies and managerial decisions.

2.1.1.3 The Balanced portfolio theory

According to the balanced portfolio theory, the optimum asset balance is a function of rates of return on all assets held in the portfolio, risks associated with the ownership of each financial assets and the size of the portfolio; which requires the decision of the management. As per the Portfolio balance model of asset diversification, the best possible holding of each asset in a wealth holder's portfolio is a function of policy decisions determined by a number of factors such as the vector of rates of return on all assets held in the portfolio, a vector of risks associated with the ownership of each financial assets and the size of the portfolio (Njerl, 2012).The best portfolio composition determined for each and every asset considering risk and return, by the banks management; enables the bank to minimize risk and maximize profit (Nzongang and Atemnkeng, 2006).

2.1.1.4 Risk return trade off theory

The risk return trade off theory describes that as firms increase risk through increased leverage (debt over equity), they have a tendency to earn higher profit. But, according to Van Ommeren (2011) signalling and bankruptcy cost hypotheses are opposite to the above two theories. Berger (1995) Signalling hypothesis says that high equity ratio (equity over debt) leads to high profit and bankruptcy cost hypothesis says that where bank assumes the bankruptcy costs will be high, they accumulate higher equity capital to evade financial distress.

2.1.2 Determinants of MFI Profitability

It is particularly assumed that to decrease poverty by getting higher their outreach, MFIs should be profitable. The existing literature give details about profitability of a financial intermediary as the return on assets (ROA) or the return on equity (ROE). This is measured and/or expressed as a function of internal as well as external factors. Those factors which are influenced by management decisions or within the direct control of firm management are called internal factors. Such factors include firm size, capital adequacy, credit risk provisioning and efficiency in the management of operating expenses. The external determinants which cannot be directly influenced by the firm's internal management (out of the control of the firm's management) include macroeconomic and industry specific factors which reflect the economic, legal and business frame works surrounded by the financial institutions function.

2.1.3 Perspectives on MFIs Performance

The various perspectives on which the MFI performance is to be measured has created two contrasting but having the same goals school of thought about the MFI industry: The Welfarist approach and the Institutionist approach.

The Institutionist: According to the Institutionist school thought financial developing is the main aim of microfinance. That is, the setting up of a separate system of sustainable financial intermediation for the poor who are either neglected or are underserved by the formal financial system. The activists of this school of thought give emphasis to more on the achievement of financial self-sufficiency, breadth of outreach (numbers of clients), depth of outreach (levels of poverty reached) and positive client impact. The interest of the approach

is that the institutions abstain from all kinds of subsidies as they insist on financial self-sufficiency (Nelson, 2011). The institutionists focus and believe that in order to effectively fight the problem of poverty, it is necessary to build a microfinance industry as a system in which able to reach a large number of people. In order to reach a large number of people a huge amount of financial resources should be contributed from MFIs them-self instead of donors provide is necessary. The institutionists start from the basic and obvious assumption that donors cannot subsidize enough MFIs to let them provide financial services to all of the potential microfinance clients. They also believe that the only way to overcome this constraint is to attract private sources of capital and this in turn requires MFIs to be sustainable and profitable (Elia M., 2006). According to this point sustainable financial institutions that provide financial services to the poor are necessary if the main goal is a substantial poverty reduction. The emphasis not on depth of outreach (level of poverty of clients) rather must be put on breadth of outreach (number of clients reached). If the system is not able to increase the number of clients reached, it would fail the target of poverty reduction. Furthermore, institutionists believe and focus that if the approach of building sustainable MFIs is used the poorest will also benefit from it, while the other way around of targeting the poorest with highly subsidized programs will have a low overall impact due to the limited and unstable donor funding. The institutionist position has clearly obtained success within the microfinance community (Elia M., 2006).

The Welfarist School: self-employment of the poorer of the economically active poor, especially women are their main objective. Their interest depends in the "family" and they give more emphasis on the depth of outreach (the levels of poverty reached). They are more concerned with the use of financial services to minimize the effects of acute poverty among individual participants as well as communities. The focus of this school of thought is on the unexpected improvement in the well-being of participants. Though there are significant lines of differences between the two schools of thought, they have some similarities as well. In as much as the two approaches seek to solve the problem of financial needs of the poor, microfinance activities should aim at achieving the objectives of the two approaches (Nelson, 2011). The welfarist approach focuses on depth (number of clients reached) rather than breadth of outreach (poverty level of clients) and accept subsidies on an ongoing basis. Welfarists accept subsidies as they believe and focus that if sustainability is considered as a necessary requirement, the accomplishment of the social mission of microfinance is at risk. The center of attention is now the clients that are served rather than the institution or

developing self-sustained industry and also the welfarist accept the subsidies or required subsidies on ongoing basis and this school not just focuses on financial self-sufficiency as a necessary tool (Elia M., 2006).

2.1.3.1 Sustainability of MFI

CGAP defines sustainability as the ability of an MFI to stand on its own feet financially after a period of operations. According to Letenah, (2009) Sustainability defined as the ability of a MFI to cover its operating and other costs from generated revenue and provide for profit. It is an indicator which shows how the MFI can run independent (free) of subsidies.

Financial sustainability indicates the ability of an MFI to survive in the long- run by means of its own income generating activities, i.e. without any contributions from donors (AEMFI, 2014). Financial sustainability refers that the ability of a microfinance provider to cover all of its costs on an unsubsidized basis or without accepting donation. According to the United Nations sustainability is necessary to reach a larger number of people on an ongoing basis (Elia M., 2006). As the notion of microfinance came into consideration, the question of whether donor support is necessary in the long term and the issue of sustainability of such institutions came up as well. It could be argued that the long term sustainability of MFIs is not important as long as money was given to micro entrepreneurs and a start-up assistance was given, this would imply that sustainability of the micro enterprises is more important than the long term existence of the financial institution that stood behind the start-up (Sarah, 2011). As MFIs seek to reach as many poor people as possible in the long run to fulfil their goal to fight against the worldwide poverty, it became clear that this outreach is only possible on a sustainable and efficient basis.

One might undertake that sustainable MFIs are typically for-profit commercial companies, on the other hand this is not true. Actually, just about two-thirds of the sustainable MFIs are NGOs, cooperatives, public banks, or other not-for-profit organizations (Rosenberg et al., 2009). Generally, Sustainability means the ability of a program to uninterruptedly carry out activities and services in pursuit of the statutory objectives. To analyse the sustainability of MFI the two known a set of ratios have been developed. These are widely accepted and they enable a comparison among MFIs all over the world. These two most important ratios are Financial Self -Sufficiency (FSS) and Operational Self Sufficiency (OSS):

Financial Self Sustainability

To capture the broader notion of sustainability, it is necessary to take into account subsidies from soft loans and investments. The financial self-sufficiency (FSS) ratio corrects for soft loans by making adjustments that price capital at its market cost.

As noted by Armendariz and Morduch (2010) FSS takes into account additional adjustments to operating revenues and expenses that is good for the MFI could cover its costs if its operations were unsubsidized and if it were funding its spreading out with liabilities at market prices. Subsidy adjustments serve two purposes. First, since institutions show a discrepancy considerable with the amount of subsidy they receive, adjustments that account for subsidies allow for useful comparison across institutions. Second, to the extent that operating on a commercial basis, free from subsidy, is an objective, subsidy adjustments represent how close an institution is to addressing this goal.

The query responded by FSS is roughly, whether an institution can increase without subsidy. There are two types of subsidy adjustments. The first is subsidized cost of funds adjustment, also called an adjustment for concessionary borrowing. It captures the difference between what an institution pays in borrowing expenses, and what it would pay if all of its borrowing liabilities were priced at market rates. The difference is supplementary to financial expense. A second type of subsidy adjustment takes into account in kind donations, or goods and services provided to the institution at no cost or at below market cost. If FSS is below 100 percent, that is if adjusted income is below adjusted cost, the institution is reflected subsidy dependent.

Over all, financial sustainability describes the ability to cover all costs on adjusted basis and point toward the institution's ability to activate without ongoing subsidy (i.e. including soft loans and grants) or losses. At this point UNCDF (2009) make a distinction for FSS and OSS only by the fact of an adjusted basis. Ledgerwood (1999) as well states that the FSS indicator should show whether an adequate amount of revenue has been received to cover direct costs, (including financing costs, provision for loan losses and operating expenses) and indirect costs (including adjusted cost of capital). In line to the fact that donor support is not unlimited in reality, financial practicability of microfinance services is essential for getting higher outreach to large numbers of the world's poor. In addition, the retention of profits of microfinance operations is important to capitalize growth, (CGAP, 1998).

Operational sustainability

As noted in Armendariz and Morduch, (2010, pp 243-244) Operational self-sufficiency (OSS) ratio measures the extent to which the operating revenues of MFI cover its operating cost. Revenues mainly come from interest and fees paid by borrowers, on the other hand typical institution also generates income from investment and other services.

The financial expense in the denominator of OSS ratio refer to the cost of raising capital. It takes account of the interest and fee that the institution pays to commercial banks, shareholders and other investors. CGAP (2003) suggested that expenses for loan loss provisions also be incorporated in the denominator. The loan-loss provision expense is the amount set aside to cover the cost of loans that the MFIs do not expect to recover. The third item in the denominator captures basic operating expenses including rent, staff wages and transportation cost among others. The nominator one which means operating revenue is calculated net of subsidy.

OSS ratio is most often presented as a percent. A value of 100 percent for OSS ratio point toward full operational self-sufficiency, while a value under 100 percent point toward that the institution must rely on continued outside funding to maintain its current level of operation. Operational sustainability actually refers to the future maintainability of the MFIs OSS. For MFIs it is one of the major goals to achieve OSS in order to maintain practical and further grow in their operations.

It is noticeable that MFIs essential to cover both operational as well as financial costs in order to keep up their position in the market in the long run. Mainly by covering the financial costs they come to be access to the capital markets and to commercial capital which then allow MFIs to increase and grow their loan portfolio and clients outreach. MFIs know how to as a rule serve their poor customers best by operating sustainably, rather than by generating losses that require constant infusions of undependable subsidies, (Rosenberg et al., 2009).

2.1.4 Concepts and Developments of MFIs

2.1.4.1 Concepts of Microfinance

The definition of Microfinance anticipated by different scholars and organizations are to some extent different from one another. However, the basic concepts of the descriptions are similar. Let's start from the terms microfinance and microcredit are often used interchangeably, it is important to define each term separately and thereby see what they cover. Microfinance is the practice of providing a variety of financial services that target low-income and poor clients whereas microcredit is one of the financial services namely the loans which include the act of providing loans of small amounts to the poor and other borrowers that have been ignored by commercial banks Accordingly, microcredit is just one type of service under microfinance.

Robinson (2001) define microfinance as all types of financial intermediation services (savings, credit, funds transfer, insurance, pension remittances, etc.) offered to low-income households and enterprises in both urban and rural areas, including employees in the public and private sectors and those who are self-employed. Churchill & Frankiewicz (2006) articulate microfinance as commonly associated with small, working capital loans that are invested in microenterprises or income-generating activities. Hossain & Knight (2008) also defined microfinance as the supply of loans, savings, and other basic financial services to the poor and they noted that microcredit, a central theme of microfinance, is broadly recognized as the practice of offering small, collateral-free loans to members of cooperatives who otherwise would not have access to the capital necessary to begin small businesses.

Ledgerwood (1999) and Arsad (2005) defined it as the setting up of financial services (in the main saving and credit) to low income consumers. Jorgensen (2012) also tried to define MFI as an organization that make available the microfinance services to low income consumers.

Different institutions also define MFI in their own way. Microfinance institution is remarks more in the main as the provision of financial services to those left out from the formal financial system (UNCDF, 2002). The Microfinance information exchange (MIX) defined the microfinance institutions as a variety of financial services that target low income clients, particularly women. Since the clients of microfinance institutions have lower incomes and often have limited access to other financial services, microfinance products have a tendency

to be for smaller monetary amounts than traditional financial services. These services take account of loans, savings, insurance, and remittances. Microloans are given for a variety of purposes, frequently for microenterprise development. The diversity of products and services obtainable reflects the fact that the financial necessities of individuals, households and enterprises can change significantly over time, especially for those who live in poverty. Because of these varied needs, and because of the industry's focus on the poor, microfinance institutions often use non-traditional methodologies, such as group lending or other forms of collateral not employed by the formal financial sector. Asian Development Bank (2000) defines; microfinance is the provision of a broad range of financial services such as deposits, loans, payment services, money transfers, and insurance to poor and low-income households and, their microenterprises.

The typical users of microfinance services are traders, street vendors, small farmers, service provider's hairdressers, artisans and small producers, such as blacksmiths and seam stresses and belong to the economically active poor population that are living close to the poverty line and are therefore self-employed, low income entrepreneurs in both urban and rural areas (Ledgerwood, 1999).

As described by Alemayehu (2008), Microfinance services that might be understood in terms of four main mechanisms (Loans, Savings, Insurance and Pensions). (1) Loans; agree to a lump sum to be enjoyed now in exchange for series of savings to be made in the future in the form of repayment instalments. (2) Savings; agree to a lump sum to be enjoyed in future in exchange for a series of savings made now. (3) Insurance; agree to a lump sum to be received at some unspecified future time if needed in exchange for a series of savings made both now and in the future. Insurance also involves income pooling in order to spread risk between individuals on the assumption that not all those who contribute will necessarily receive the equivalent of their contribution. (4) Pensions; agree to a lump sum to be enjoyed as a specified and generally distant date in future in exchange for a series of savings made now.

Dejene (1998) as well defined Microfinance Institution (MFI) in terms of the following features: targeting the poor mainly the poor women; promoting small businesses; building capacity of the poor; encompassing small loans without collaterals; merging credit with savings; and charging commercial interest rates and also they are often innovative and flexible in their design and implementation.

In a nut shell from all the above definitions, it is possible to conclude that MFI is financial service centred on the poor and the typical microfinance clients are low income employed persons or house hold based entrepreneurs, those do not have possibilities to practice in formal financial institutions.

2.1.4.2 History of Microfinance

The concepts and objectives headed for microfinance are not new. According to Helms (2006) Small, informal savings and credit groups have functioned for centuries from corner to corner in the world, from Ghana to Mexico to India and beyond. In Europe, as early as the 15th century, the Catholic Church founded pawn shops as an alternative to usurious moneylenders. These pawn shops spread throughout the urban areas in Europe throughout the 15th century. Formal credit and savings institutions for the poor have also been around for generations, offering financial services for customers who were traditionally neglected by commercial banks. The Irish Loan Fund system, started in the early 1700s, is an early (and long-lived) example. Helms (2006) stated in 1840s, this system had about 300 funds throughout Ireland. But, in the early 1800s a financial organization that was credit association to serve predominantly farmers in rural areas based on cooperative principles was founded by Friedrich Wilhelm Raiffeisen in Germany and expanded rapidly within Germany and later since it was successful also to the rest of Europe, North America and developing countries beyond. Ledgerwood (1999) defined the focus of these cooperative financial institutions as savings mobilization in rural areas that attempt to teach poor farmers how to save money and utilize it. In the early 1900s the concept of Raiffeisen began to appear with adaptations in parts of rural Latin America (Helms, 2006). Helms (2006) stated that another milestone in the history of microfinance was the opening of the Indonesian People's Credit Bank in 1895 that became the largest microfinance system in Indonesia.

In Bangladesh Professor Muhammad Yunus who was the Nobel Prize winner in 2006, disbursed first loans from his own pocket to a group of rural women in Jobra in 1976 and successfully developed the concept of microfinance with his Grameen Bank throughout the country and later the whole world (Ledgerwood, 1999). The Grameen bank, which is now serves more than 2.4 million clients (94 % of them women) and is a model for many countries (Ledgerwood, 1999). Other examples of early pioneers besides Grameen Bank are ACCION International in Latin America, Self-employed Women's Association Bank in India and many more (Helms, 2006). Beginning in the mid-1980s, the subsidized, targeted credit

model supported by many donors was the object of steady criticism, because most programs accumulated large loan losses and required frequent recapitalization to continue operating. It became more and more evident that market-based solutions were required. This led to a new approach that considered microfinance as an integral part of the overall financial system. Emphasis shifted from the rapid disbursement of subsidized loans to target populations toward the building up of local, sustainable institutions to serve the poor.

According to Elia M. (2006) in the early 1990s the term "microcredit" was replaced by "microfinance" which included not only credits but also other financial services for poor people. The introduction of the term microfinance followed the success of many microcredit programmes around the world and in 1997, during the first Microcredit Summit, 2,900 delegates from 137 countries representing around 1,500 organizations gathered in Washington, D.C. During that occasion the birth of the global industry of microfinance was officially recognized.

Today there is a strong trend in the direction of commercialization and transformation of providers of microfinance into formal financial institutions. This stems from the motivation of profitability and sustainability of microfinance institutions. More and more institutions became independent from donor funds and raise their capital from the capital markets while increasing their outreach. As noted in Sudaresan (2008) the year 2005 was declared as the "Year of microfinance" and attracted even more private investors to invest their funds into microfinance sector.

2.1.5 Micro Finance and Poverty Reduction

Bamako (2000) discussed that MFIs have encouraged the poor households to practice the variety of saving services and products. Deposit services helps low income households to save for different purposes, including, accumulate funds for future investment such as purchasing livestock, children's education, housing construction, purchase of machinery, handling irregular income streams and social and religious commitments, such as life crises, ceremonies, religious holidays, contribution to local funds and functions, old age and disability.

Webster and Filder (1996) discussed that lack of savings and capital make it challenging for many poor who wants jobs to turn into self-employed and take part on income generating activities. Providing credit seems away to generate self-employment opportunities for the

poor. But, due to lack of physical collateral, they do not have access to institutional credit. Microfinance agendas provide credit by means of social mechanisms such as group based targeted lending to spread the poor including women, who lack access to formal financial institutions (Khandker, 1998; Hossain, 1988).

Wolday (2001) discussed that even if microfinance is not the only solution for poverty and all other development related challenges, it is nevertheless an important instrument in the poverty reduction programs.

Khandker (1998) tried to discussed that when poverty results from being without a job, decreasing poverty requires getting higher the opportunity of jobs, where poverty is the result of low productivity and low income, decreasing poverty requires investing in human and physical capital to escalating worker's productivity. But in most of developing countries poverty is caused by lack of both physical and human capitals. For that reason, increasing productivity by creating employment and developing human capital is undeniable. Hence, providing the poor with access to financial services is one of the mechanisms to increase their incomes and productivity.

Similarly, Wolday (2001) discussed that even if microfinance alone cannot provide infrastructures such as roads, housing, health, water supply and education services, it contributes significant role in order to comprehend the above interventions. In addition, it empowers the poor and be responsible for them with confidence, self-esteem and financial resources to increase income and access to social services.

The purpose of microfinance is much more than an income generation mechanism; it has considered as one of the key driving mechanisms towards meeting the millennium development goals.

Cross (2003) agreed that in the line with reducing extreme poverty and hunger, evidences demonstrate that microfinance helps reduce poverty through increased income, allowing people to accumulate assets and reduce their vulnerability. In achieving universal education, he maintained that households that have access to microfinance spend more on education than non-members and participating in credit and saving programs has aided many families to send several children to school and reduce failure rates.

2.1.6 Microfinance in Ethiopia's

The manifestation of financial markets accomplished of mobilizing financial resources is broadly accepted as essential for economic development of any country. On the other hand, the credit market in the country is greatly fragmented; this constraint the financial flows between formal and informal sectors (Mengistu, 1999).

Itana (2001) discussed that the poor in Ethiopia are over and over again self-employed in small scale businesses due to lack of education as well as skills and restricted employment opportunities. In addition to this, Hayat (1997) indicated that the poor mainly women create their own jobs in very small agricultural, manufacturing service and inappropriate trading.

In Ethiopia, conventional banks are not in a position to be responsible for financial services to the poor   because of high transaction cost for small loans, impracticable collateral requirement and shortage of financial resources (Seifu, 2002, cited in Asmelash, 2003). Furthermore, the structure and location of these institutions is also another reason to limits access to finance, particularly, to the rural poor. A number of Woredas in the country, which have formal banks (such as commercial banks and development banks) are limited. Although there are branches in some Woredas due to high collateral requirements, the poor have limited access to credit.

Informal financial lending has been considered as the most significant source of finance both in urban and rural poor in Ethiopia (Solomon, 1996). It assumed that the increased prominence, mostly due to excessive rules and regulations of the formal financial sector.

Andualem (1997); Mengistu (1999) and Itana (2001) discussed that raising investment, capital and lack of adequate loanable funds and facilities are among the obstructions cope with by micro enterprises sector particularly, informal sector. Since microenterprises have very restricted to access from conventional banks particular financing scheme should be developed to facilitate credit access to poor, increasing their productivity and income generating activity.

The function of Iqquib and Iddir as the basis of finance in informal sector in Ethiopia (Dejene, 1993). On the other hand, they have certain limitations, related with the inadequacy of loanable funds for investment.

In general microfinancing started on March 30/1990 following the signing of credit contract between the government of Ethiopia and the international Development association (IDA). The credit scheme intended at financing the market towns to improve infrastructure in towns, in market and service centres for the agricultural surrounding area and to alleviate problems of urban poverty (Mengistu, 1997).

In the earlier, micro credit service and saving mobilization in Ethiopia were presence supported by NGOs, government departments, cooperatives and others in fragmented and inconsistent way. But according to Wolday (2000), the government took the initiative to establish a regulator frame work in order to facilitate sound development of micro finance industry.

The National Bank of Ethiopia (NBE) supervises MFI in Ethiopia. The Ethiopian government has laid down a regulatory frame work for the establishment of MFI by issuing a proclamation No.40/1996 that provide for the licensing and supervision of MFIs. Nowadays, there are 35 MFIs in Ethiopia regulated under NBE (NBE, 2015) operating in the urban and rural areas of the country. They are sponsored by regional governments, local associations, NGOs, and government departments (Seifu, 2002).

2.2 Empirical Review

2.2.1 Studies on determinants of profitability of MFIs

Empirical literatures in relations to determinants of MFIs profitability are very limited. The earlier studies conducted in the area were highly dependent up on theory of retail banking profitability, by assuming that MFIs also provide banking services to the poor. The empirical studies available and access able to the researcher that is applicable with the determinants of MFIs profitability are presented in the following paragraphs.

Muriu (2011) The primeval empirical study on the determinants of profitability of African MFIs is done by Birmingham University in England. Muriu, under the study entitled 'what explains the low profitability of MFIs in Africa tried to find the factors contributing to profitability of MFIs. Muriu used Generalized Method of Moments (GMM) system using an unbalanced panel dataset comprising of 210 MFIs across 32 countries operating from 1997 to 2008. The proxies for profitability were both ROA and ROE. The factors studied are classified into three categories: Firstly, MFIs specific including capital, credit risk, size, age

efficiency and gearing ratio; secondly, macroeconomic factors including Gross National Income (GNI) per capita and inflation; thirdly, freedom from corruption was used as a proxy for institutional developments. The data for the study were gathered from MIX database, world development indicator and Heritage foundation for the three categories of determinants. In concluding his study Muriu stated that; capital, size (scale of economy) and freedom from corruption had significant positive relationship with profitability. Factors such as credit risk and efficiency have significant negative relation with profitability. As the study also revealed; Gearing ratio, inflation, GNI per capita and age were insignificant factors among others.

Anne Norgaard (2011) tried to examine the factors that determine profitability of MFIs and the relationship between profitability and yield on gross profitability. The data used in the study was found through mix market and a sample of 879 MFIs was processed and analysed to test two profitability models with return on assets and profit margins as the dependent variables. The study findings revealed that factors that statistically influenced profitability positively was the capital asset ratio, age (new) and gross loan portfolio, factors with a statistical negative influence were legal status (credit union), cost per borrower, and two other variables showed statistically significant but with opposite influences: operating expense over loan portfolio which had a positive influence, and a number of active borrowers, with a negative influence.

Dissanayake (2012) tried to examine the determinants of profitability proxies by ROE for eleven MFIs operating in the Asian country of Sri-Lanka for the period covering 2005-2011. He tried to see the relationship between different internal or firm specific factors and ROE; for his study, Dissanayake used data from MIX market database and performed regression analysis. The outcome showed that, debt to equity ratio and operating expense ratios have negative statistical significance in relation with ROE. Write-off ratio and cost per borrower ratios have a positive and statistically significant relationship with ROE. The other internal variable which is the personnel productivity ratio is not statistically significant determinant of ROE.

Jorgensen (2012) studied the profitability in connection with yield on gross profit by taking sample of 879 MFIs all over the world. The objective was to find factors that determine profitability and to find weather high interest rates go hand in hand with high profits for MFIs. His study focused on factors such as outreach, financing structure, expense, revenue,

efficiency, quality of portfolio and different peer group comparisons like age, deposit taking, legal status and profit status. The data source was MIX for the 879 MFIs for the study year i.e. 2009 and ROA and profit margin were used as the proxies for profitability and gross yield portfolio respectively. The finding of the study depicted that number of active borrowers, cost per borrower, deposit and legal status have negative significant relation with ROA. The factors having positive and significant impact on ROA includes gross loan portfolio, capital to asset ratio, gross loan portfolio to asset, operating expense to gross loan portfolio and age of new MFI. In conclusion Jorgensen put; yield on gross portfolio did not show a significant explanatory variable for profitability, hence, there is no general trend between increase in profitability and increase in interest rate.

2.2.2 Studies On MFIs Performance

For the fulfilment of the long term objectives of the MFIs mainly in poverty reduction, studies in relation to performance measure are done by drafting different policies for the sake of helping the institutions to make the right move to achieve their goals. To mention some of the studies:

Kipesha (2013b) conducted a study on performance of MFIs in Tanzania by applying integrating financial and non-financial Metrics. The study used BSC approach with five dimensions financial, social, customer, learning and growth and internal business process. A total of 29 Microfinance institutions operating in Tanzania were involved in the study and both primary data and secondary data were used. The findings of the study indicate low average financial performance among MFIs reviewed. On average, the institutions reviewed were not sustainable with low relative productivity and low profitability. The average nonfinancial performance was high indicating that Microfinance institutions were better performing in nonfinancial measures compared to financial measures. The findings also show a positive correlation between overall financial performance with nonfinancial performance and overall performance. This indicates that trade-off does not exist on financial and nonfinancial performance when measured in a collective way. The results on individual financial performance metrics show a positive correlation with internal business process and learning and growth, and negative correlation with social and customer perspective. The results also show a positive correlation between the four dimensions of nonfinancial performance and with the overall financial performance.

Cull et al (2009) tried to see the impact of regulatory supervision on profitability and outreach of MFIs, where they examined using 346 MFIs from 67 developing countries. The study found that regular on site supervision is positively associated with average loan size and negatively associated with the share of lending to women; there is no significant relationship between supervision and profitability in treatment. The pattern of the acquired results is compatible with the idea that profit-oriented MFIs that have to comply with prudential supervision respond by minimizing their outreach to segments of the population that are costlier to render micro finance services. In contrast, MFIs that rely on non-commercial sources of funding (e.g., donations), and thus are less profit-oriented, do not adjust loan sizes or lend less to women when supervised, but their profitability is significantly diminished.

Ayayi (2009) the studied emphasis on whether debt or equity has good implication on profitability and social welfare for MFIs. The results found in the study showed that, equity contract generate more social welfare and profit than debt contract. By becoming a stakeholder in the micro-venture rather than a lender, the MFI is in a more tightly coupled relationship, providing knowledge and guidance necessary for ensuring success of the venture. An MFI providing micro-equity receives equity in the micro-business in return for its investment; the return is entirely dependent on the success of the micro venture, whereas an MFI providing a loan gets paid first regardless of the profit conditions encountered. The detected results also showed that microcredit financing places a heavy cash drain on micro-enterprises because the coupon is a precious resource needed to nurture and sustain the growth of micro-enterprises to propel them to the next developmental stage.

Coleman (2007) tried to see the impact of capital structure on performance of MFIs in the west African nation of Ghana. Coleman used ten years' data (1995-2004) using fixed and random effect regression analysis for 52 MFIs. The source of data was the financial statements of the selected institutions for the study. The study concluded that; most of the MFIs employ high leverage and finance their operations with long-term as against shortterm debt. And Also, highly leveraged MFIs perform better by reaching out to more clientele, enjoy scale economies, and therefore are better able to deal with moral hazard and adverse selection, promoting their ability to deal with risk.

Lafourcade et al. (2005) conducted a study entitled overview of the outreach and financial performance of MFIs in Africa and 163 MFIs provided information for the study. As per this

study MFIs in sub-Saharan Africa include a broad range of diverse and geographically dispersed institutions that offer financial services to low-income clients and they are NGOs, non-bank financial institutions, cooperatives, rural banks, savings and postal financial institutions, and commercial banks. Based on this study more than 70 percent of the reporting African MFIs offer savings as a core financial service for clients and use it as an important source of funds for lending. The other findings of this study showed MFIs in Africa tend to report lower levels of profitability, as measured by ROA, than MFIs in other global regions. Among the African MFIs that provided information for this study 47 percent post positive unadjusted returns; regulated MFIs report the highest ROA of all MFI types, averaging around 2.6 percent. On the other side African MFIs are among the most productive globally, as measured by the number of borrowers and savers per staff member. MFIs in Africa also demonstrate higher levels of portfolio quality, with an average portfolio at risk over 30 days of only 4 percent.

Michael and Gerard (2004) tried to compare financial performance of MFIs with commercial banks, they used 57 self-sufficient MFIs and banks from Africa, Asia, Europe and Latin America. Their study focused mainly in measuring efficiency, profitability and leverage of both the institutions and finally to compare the two. The finding shows that self-sufficient MFIs are strong performers' in terms of ROA and ROE compared to their commercial peers. Their ultimate conclusion was that; majority of MFIs are very weak and in need of continued outside funding for their operations.

2.2.3 Studies on Performance of MFIs in Ethiopia

Different researches have been done so far conducted by different scholars on the subject of microfinance. The review starts from the very recent studies conducted in Ethiopia:

Sima (2013) tried to see determinants of profitability, an empirical study on Ethiopian MFIs examined internal and external factors affecting profitability of Ethiopian MFIs for a total of 13 MFIs for the period of 2003-2010. The regression result using fixed effect model showed up, operational efficiency and portfolio quality to have a negative statistically significant effect on profitability while age of MFIs has a positive statistically significant effect, whereas capital adequacy, size and the only macroeconomic variable used in the study i.e. GDP were found to be statistically insignificant variables.

Bayeh (2012) conducted the study in examined factors affecting financial sustainability of microfinance institutions in Ethiopia. The study followed a quantitative research approach using a balanced panel data set of 126 observations from 14 MFIs over period 2002-2010. The study showed that microfinance breadth of outreach, depth of outreach, dependency ratio and cost per borrower affect the financial sustainability of microfinance institutions in Ethiopia; however, the study revealed that capital structure and staff productivity has insignificant impact on financial sustainability.

Yonas (2012) the study focused on determinants of financial sustainability of Ethiopian MFIs, using 6-year data for 12 MFIs from AEMFI. In his study, Yonas concluded three things. Firstly, a high quality credit portfolio, coupled with the application of sufficiently high interest rates that allow a reasonable profit and sound management are instrumental to the MFIs financial sustainability. Secondly, the percentage of women among the clientele has a statistically insignificant negative effect on financial sustainability of MFIs and finally, on attainment of financial sustainability, client out reach of micro finance program and the age of MFIs have a positive but lesser impact.

Melkamu (2012) tried to see determinants of operational and financial self -sufficiency of Ethiopian MFIs. he used 6 years' data of 12 MFIs from MIX data base where he used two multiple regression analysis for OSS and FSS independently. The outcome of the study revealed that average loan per borrower, size of MFIs, cost per borrower and yield on gross loan portfolio affect the operational self-sufficiency of the institutions in a significant manner. Additionally, cost per borrower, number of active borrowers and yield on gross loan portfolio GLP are found to be determinants of financial self-sufficiency with a significant effect. Generally, the following conclusions are attained from the study: Ethiopian MFIs are operationally self- sufficient but, they are not financially self- sufficient; Ethiopian MFIs are young in terms of duration of time (but benchmark used is not cited), the average loan size of Ethiopian MFIs is small compared to other MFIs in Africa, Ethiopian MFIs are efficient in cost management; this is compatible with the findings of Letenah in 2009 and finally, in terms of asset size Ethiopian MFIs are big enough relative to African peer groups. The tests of classical linear regression model are performed in the study and all the variables met the assumptions of CLRM; but in the comparisons made with African countries, the benchmarks used for comparison were not enumerated.

Yitay (2011) also studied in assess institutional performance and sustainability of selected MFIs in Ethiopia using a sample of six. Mixed research methods employed and conventional financial performance and sustainability indicators and non-parametric DEA-based Malmquist total factor productivity index model used. The study period covers 2003 to 2009. As indicated in this study conventional financial performance and sustainability indicators revealed that all MFIs outreach performance has increased during the study period. Despite the increase in outreach performance, it is difficult for the institutions to operate and expand without subsidies. The other findings are technological change has higher value relevance than technical efficiency gain, and the intermediation services which is the responsibility of the MFIs to transfer funds from surplus groups such as from savers and donors to the deficit groups particularly borrowers or investors are more productive than the production responsibility of MFIs which considers the institutions as producers of deposits and loans.

Letenah (2009) tried to see in performance analysis of sample MFIs of Ethiopia evaluated both outreach and sustainability and explored the relationship between them. The study was conducted on 16 MFIs whose reports were available on Mix Market data. Data were analysed using statistical analysis techniques specifically one sample t test, one-way ANOVA with Scheffe Post Hoc Comparison tests, Kruskal-Wallis test and Pearson correlation coefficients. The outcome of the study showed that; Ethiopian MFIs are poor performers on depth of outreach; hence, they are not reaching the poorest of the poor. However, they are good at breadth of outreach. The study also concluded that the MFIs are poor in terms of gross loan portfolio (GLP) to asset, allocating a lower proportion of their total asset into their loan portfolio. The finding on Letenah also confirmed Alemayehu (2008) in that the performance of MFIs related with size where the higher the size the better the sustainability. Large and small MFIs allocate more loan loss provision expense than industry average and also portfolio at risk is high for these MFIs. Ethiopian MFIs are good in cost management, efficiency and productivity. The MFIs charge lower interest rate compared to the benchmarks used in the study. The results also depicted that, profitability is dependent on size of institutions. There is a trade-off between serving the poor and operational self-sufficiency; in contrary to the findings of Birhanu in 2007. Age of the institutions is positively correlated with efficiency, productivity, debt financing and operational self-sufficiency. And finally, the use of debt financing makes the institutions more efficient and enables them to increase productivity.

Alemayehu (2008) also studied in examine the performance of MFIs in Ethiopia by taking six institutions. The study focused on analysis of profitability and sustainability, asset and liability management, and efficiency and productivity of MFIs in Ethiopian using a descriptive analysis of data collected from audited annual reports of 6 microfinance institutions covering a period of five years (2002-2006). The result of the study showed that most of the MFIs were doing well in terms of Operational self-sufficiency and financial self-sufficiency though both operational and financial self-sufficiency declined with the size of the institutions. The analysis of asset and liability management also showed that most of them used their asset for undertaking primary activity of lending. They also have a low cost capital which is below the commercial bank lending rate, but the debt to equity ratio was high in most of the cases. With respect efficiency large MFIs had a better operational efficiency than their small counter parts as measured by the ratio of operating expense to gross loan portfolio and cost of serving a single client. Yet, small ones were good in outreach measured by average loan size. In general, Alemayehu concluded that the sustainability of large and medium MFIs in Ethiopia were encouraging, but the case in small MFIs demands consideration for the fact their good outreach measures are not accompanied with good sustainability indicators.

Birhanu (2007) tried to see the study in outreach and financial performance analysis of MFIs found that outreach of Ethiopian MFIs is increasing from 2003 up to 2007 on average by 22.9%. Birhanu also concluded that the institutions financial sustainability is improving from time to time as measured in terms of ROA and ROE. Additionally, his study revealed that there is no trade-off between outreach and financial sustainability of Ethiopian MFIs. The study noted that the credit access of women is still limited (34%) and also default rate of some not all MFIs is increasing steadily so care should be taken. Finally, he concluded that Ethiopian MFIs are increasingly becoming profitable.

2.3 Conclusions and Knowledge Gap

To have a quick bird's eye view of the literatures, starting from abroad, Muriu of Birmingham University in England developed a model based on the retail banking theories since there are no developed theories for the MFIs profitability, in this regard the works of Anne Norgaard (2011), Jorgenson (2012) and Dissanayake (2012) could be cited too. These studies were conducted abroad and they were not particularly tailored to an Ethiopian case. While turning to the studies that took place in Ethiopia, Sima (2013) used only limited

number of internal variables leaving some key determinants of profitability like gearing ratio and some other macroeconomic as well as industry variables from macroeconomic like inflation and also from industry like market concertation etc. Looking into the study of Yonas (2012); he used only six years' data (which is too small) to assess the determinants of financial sustainability of MFIs. Regarding to the study of Yitay (2012) tried to used only a sample of six selected MFIs in Ethiopia (which is too small) to assess institutional performance and sustainability of MFIs. Melkamu's (2012) the study was concerning determinants of operational and financial self-sufficiency of Ethiopian MFIs. His ultimate conclusion was Ethiopian MFIs are performing well compared to their African counterparts but he hasn't cited the benchmark used. To have roughly round about on the study of Letenah (2009), he made a comparative study on the performance of Ethiopian MFIs with the micro bulletin benchmarks and accordingly, he found Ethiopian MFIs to be poor performers. While Alemayehu (2008) the study looked at asset, liability, efficiency and productivity and used only internal factors leaving no place for external factors in assessing the performance of MFIs, and Birhanu (2007) the study used some internal factors to assess the performance of MFIs but kept muted on the determinants of MFIs profitability.

To sum up; in some of the studies, inconsistency is witnessed in the results found; simply internal determinant factors are taken into account, most of the studies kept silent on external factors like inflation and market concentration etc. Again some studies took only narrow observation which can contribute to the variance of the results detected. Operational selfsufficiency or financial self-sufficiency were used as a proxy to assess performance of MFIs and they kept muted on profitability parameters like ROA and ROE, most of the studies came absence of giving emphasis in black and white about the importance of being profitable in order to be sustainable MFI and increase in outreach.

Having all this facts, the current study has something to minimize the vacuum or the knowledge gap available in microfinance profitability studies in Ethiopia. Specifically, this study tries to incorporate internal factor like gearing ratio and external factors such as inflation and market concentration in the impact of microfinance profitability and this should add some value to the recent need of having this study. To the best of the researcher's knowledge there is no prior studies on the determinants of MFIs profitability which took gearing ratio, inflation, and market concentration simultaneously as internal and external microfinance profitability determining factors in Ethiopia

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

The literature review part above, tried to discuss the theories in relation to determinants of profitability and also the knowledge gap. Here under the research methodology and the reason for the appropriate research method used for the current study are discussed.

3.1 Research Design and Approach

As noted in Kothari (2004), explanatory research design examines the cause and effect relationships between dependent and independent variables Therefore, in order to achieve the main objective of this research, the study adopted quantitative research approach. Quantitative research is the numerical representation and manipulation of observations for the purpose of describing and explaining the phenomena that those observations reflect. It is a means for testing objective theories by examining the relationship among variables (Creswell, 2009, page 4). It uses statistical procedures to analyse numbered data. It also follows positivist thought that can be verified by observation and experimentation. Despite that of qualitative study there is less interaction between the researcher and subjects. To increase the quality of finding, standardized procedures are used in sample selection, instrument design, analysis and implementation in this approach. There are two strategies of inquiry in quantitative approach: survey design and experimental design. The former provides a quantitative or numeric description of trends and opinions of a population by studying a sample of that population whereas the latter is used to test the impact of a treatment on an outcome, controlling for all other factors that might influence the outcome (Creswell, 2009, p.145).

So in this study the main reason for adopting quantitative method is that the objective of the research is to see the relationship between profitability of MFIs and factors affecting it then to generalize about the population based on sample. In order to collect the necessary data, the study adopted survey design through structured document review.

3.2 Sample design

As noted by Kothari (2004), good sample design must be viable in the context of identified gaps to fill for the research study. Besides, for this study the target population used all the Microfinance institutions registered by NBE. when population elements are selected for

inclusion in the sample based on the ease of access, but to select items for the sample, concerning the choice of items as supreme based on the selection criteria set by the researcher. Thus the researcher set a criterion of exclusive based on the MFI's under operation in the country at least for the last 12 years. Hence, based on the availability of data for the time period of 12 years (2004-2015) that is required for the analysis purpose in most of the newly established MFIs, the number of sample MFIs are reduced. Accordingly, from the 35 MFIs registered by NBE the study should be selective and the sample of 19 MFIs which fulfilled the researcher's exclusive criterion.

3.3 Data collection

In order to analyse the effect of MFI specific factors (financing structure (CAR), Gearing ratio, quality of portfolio, age, size, operational efficiency) and industry variable (market concentration) on profitability of MFIs, the study was used 19 MFIs data for 12 consecutive years. i.e. from 2004-2015 which would have collected from performance analysis report (published bulletin) of each of the Micro finance institutions included in the sample and AEMFI. The analysis basically concentrated on the data available in financial statement of MFIs. Regarding macroeconomic variables GDP and Inflation covering the period 2004 - 2015 is collected from Ministry of Finance and Economic Cooperation of Ethiopia (MoFEC) and National Bank of Ethiopia (NBE).

3.4 Data Analysis

As noted by Kothari (2004), data has to been analysed in line with the purpose of the research plan after data collected. Thus, this study was utilized both descriptive and econometric analysis based on a panel data from 2004-2015 to examined the relationship between profitability of MFIs and its potential determinants. The data collected from different sources coded, checked and entered in to MS- Excel program to made the data should be ready for analysis. Then the collected data should have processed and analysed through E-views version 8.1 software packages.

3.5 Determinants Selection and Hypotheses

Based on the formulated objective of this particular research in chapter one, i.e. identifying factors that could have impact on the profitability of MFIs in Ethiopia, this study formulated

around 9 hypothesises for the purpose of investigation of the relationship between the dependent and independent variables.

3.5.1 Dependent variable

For the purpose of this study, return on assets (ROA) used as proxy of MFI profitability. The Microfinance Financial Reporting Standards recommends the use of ROA and ROE as measures of profitability rather than financial self-sufficiency (FSS) and operational self-sufficiency (OSS) (Muriu, 2011). ROA may be biased due to off balance-sheet items; It can be deal with such activities may be negligible in MFIs. It is known that most of the studies undertaken in similar industries like banking and insurance employ ROA as a measure of profitability; Olweny & Shipho (2011) and Sufian (2011) are some. Even though much is not done in case of MFIs, Muriu (2011) and Jorgensen (2012) used the same approach for microfinance. Therefore, this study should be measure profitability using ROA similar to the above-mentioned researches. According to AEMFI, ROA is measuring as adjusted net operating income, net of tax divided by adjusted average total assets.

Regarding the determining factors of profitability, the study identified the following explanatory variables under MFIs specific, industry specific and macroeconomic determinants.

3.5.2 Independent variables

MFIs profitability could be affected by a number of determining factors. In most literatures MFIs profitability usually expressed as a function of internal and external determinants. Muriu (2011) also point out that the determinants of MFIs profitability can be divided into two main categories namely the internal determinants which are management controllable and the external determinants, which are beyond the control of management. In addition, this subsection present hypotheses by proposing the expected sign of the coefficients, as per the academic literature available and accessible to the researcher. Note that some relationships between selected independent variables and profitability are rather straightforward. However, the presence of irrelevant variables does not lead to biased coefficients or standard deviations while the absence of relevant variables does. Hence, some variables that look rather predictable at first sight are included to prevent biased results.

3.5.2.1 Firm (MFI) specific variables

As it was cited in the literature review in chapter two most theories of profitability are fetched from the retail banking industry. The theories that are formulated to the retail banking industry are in planted to MFIs presuming that they are also workable to MFIs. MFIs specific factors included in the study were, gearing ratio, financing structure, portfolio quality, operational efficiency, size and age.

Financing structure:

The capital to assets ratio is a simple measure of the creditworthiness of MFIs. This ratio helps an MFI consider its ability to come across its obligations and absorb unexpected loss. The determination of an acceptable capital to asset ratio level is generally based on a MFIs assessment of its expected losses as well as its financial strength and ability to absorb such losses. Expected losses should generally be covered through provisioning by the MFI's accounting policies, which removes expected losses from both assets and equity. Thus, the ratio measures the amount of capital required to cover additional unexpected losses to ensure that the MFI is well capitalized for potential shocks. This study used this variable to measure how much of the MFIs assets are funded with owner's fund (inverse to leverage ratio). The ratio selecting to measure the capital structure of MFIs is capital to asset ratio measured as adjusted total equity divided by adjusted total assets (AEMFI). According to Muriu, (2011) study that is determinants of profitability of MFIs, based on a panel data set of 210 microfinance institutions Muriu conclude that capital adequacy has robust and significant positive association with MFI profitability. This is depicted by the relatively high coefficient of the equity to assets ratio across the specifications this effect remains so even after the inclusion of the external factors. Intuitively, this is an indication that well capitalized MFIs are more flexible in dealing with problems arising from unexpected losses and are confronted with a reduced cost of funding or lower external funding.

The risk return trade off assumes high leverage (more debt financing) do have higher return whereas signalling and bankruptcy hypothesis says high equity ratio leads to high profitability due to signalling effect and lower financial distress.so the expected sign of capital adequacy for this study is determinate. Hence the hypothesis is stated as follows:

H1. There is a significant positive relationship between amount of capital and profitability of MFIs

Portfolio quality:

It is vivid that as the asset quality increases profitability increases since they are directly related; that is poor credit quality has negative effect on profitability and vice versa (Ayayi and Sene, 2010). This relationship exists because an increase in the doubtful assets, which do not accrue income, requires the financial institutions to allocate a significant portion of their gross margin to provisions to cover expected credit losses; thus, profitability will be lower. This is in line with the theory that increased exposure to credit risk is normally associated with decreased firm profitability. Thus to capture the quality of portfolio for MFIs the study used portfolio at risk past due 30 days (PAR>30). This theory was also used in Muriu (2011). This theory was also used in Muriu (2011); hence the hypothesis is stated as follows:

H2. There is a significant negative relationship between quality of portfolio and MFIs profitability.

Operating efficiency:

Efficiency in expense management should ensure a more effective use of MFIs loan able resources, which may enhance profitability. Higher ratios of operating expenses to gross loan portfolio imply a less efficient management. Empirical evidence points to the fact that providing microfinance is a costly business perhaps due to high transaction and information costs (Hermes and Lensink, 2007; Gonzalez, 2007 as cited in Muriu, 2011). Because the administrative costs per dollar lent are much higher for small loans than for large ones; to maintain the same level of profitability, the interest rates necessary to cover all costs including costs of funds and loan losses are much higher for MFI loans than for conventional bank loans (Cull et al., 2007). A well-managed MFI that applies best practices can effectively control its operating expenses. X-efficiency theory also states that the more efficient firms will generate higher profit. This is in line with Muriu (2011) and Dissanayake (2012). Operating efficiency is proxied by operating expense ratio which is adjusted operating expense divided by adjusted average gross loan portfolio(AEMFI). The hypothesis is that

good management of operating expenses (lower cost) can increase profitability and vice versa. Therefore, the hypothesis is stated as:

H3. There is a significant negative relationship between operational efficiency and MFIs profitability

Size:

This variable is included to capture the economies or diseconomies of scale. There is consensus in academic literature that economies of scale and synergies arise up to a certain level of size. Beyond that level, financial organizations become too complex to manage and diseconomies of scale arise. The effect or size could therefore be nonlinear (Amdemikael, 2012). Natural logarithm of total asset of MFIs was used as a proxy of size. The study observed that since the dependent variable in the model (ROA) can be deflated by total assets it would be appropriate to log total assets before including it in the model. Since the expected sign of the effect of size on profitability is indeterminate as per the literatures available the formulated hypothesis is:

H4. There is a significant relationship between size and profitability of MFIs

Age:

Age is another variable that influences profitability. There has been an enormous progress in the existence of MFIs and client outreach. As more and more MFIs start up, it is also interesting to investigate whether only the mature MFIs have found their way to profitability, or whether the new MFIs entering the industry has different set of goals and operational set of skills leading to profitability, (Jorgensen, 2012). Therefore, the expected sign of age is unpredictable. In this study Age is denoted by the number of years MFI has been in operation in order to capture learning effect in MFI performance. Therefore, the hypothesis is stated as:

H5. There is a significant relationship between age and MFIs profitability

Gearing:

The debt to equity ratio is calculated by dividing total liability by total equity. Total debt includes everything the MFI owes to others, including deposits, borrowings, account payable

and other liability accounts. The debt/equity ratio is the simplest and best-known measure of capital adequacy because it measures the overall leverage of the MFIs (AEMFI, 2012). The debt to equity ratio is a common measure used to assess a firm's leverage, or in other words the extent to which it relies on debt as a source of financing (Lislevand, 2012). Microfinance institutions that employ higher debt in their capital structure are more profitable, and highly leveraged microfinance institutions are more profitable, (Muriu, 2011). Besides, a higher debt ratio can enhance the rate of return on equity capital during good economic times (Muriu, 2011). Moreover, it also appears that NGO type of microfinance institutions rely more on debt financing relative to other type of microfinance institutions, perhaps because many are not regulated to mobilize deposits. The significant relationship between profitability and gearing ratio is an indication that perhaps more debt relative to equity is used to finance microfinance activities and that long term borrowings impact positively on profitability by accelerating MFIs growth than it would have been without debt financing (Muriu, 2011). Therefore, the hypothesis is stated as:

H6. There is a significant negative relationship between rate of Gearing ratio and profitability of MFIs.

3.5.2.2 Macroeconomic variables

The macroeconomic and industry variables are external for the MFIs managers and uncontrollable. This study used real GDP and Inflation for the macroeconomic variables and market concentration for the industry variable.

Real GDP

The gross domestic product (GDP) is among the most commonly used macroeconomic indicators for measuring total economic activity. The GDP is expected to influence numerous factors related to the supply and demand for loans and deposits. As GDP growth slows down particularly during recessions, credit quality deteriorates, and defaults increase, thus reducing bank returns. Arguably, this is the most informative single indicator of progress in economic development. Poor economic conditions can worsen the quality of the loan portfolio, thereby reducing profitability. In contrast, an improvement in economic conditions has positive effect on the profitability of MFIs, (Muriu, 2011). GDP in this study measured by the real GDP growth rate, thus from the above literatures the study expected

sign of GDP is determinate with positive relationship. hence the hypothesis is stated as follows:

H7. There is a significant positive relationship between real domestic product (GDP) growth and profitability of MFIs

Inflation

To capture the inflation for MFIs the study used annual inflation rate. According to Ahlin et al. (2011) inflation can hinder the microfinance lending mission and may also impact on microfinance cost of funds and borrowers' incentives for defaults. Moreover, unanticipated inflation lowers MFIs' returns, and in response, MFIs may build (conservatively) large Inflation premia into interest rate. Inflation has a significant negative impact, Athanasoglou, et al. (2008). find in nation and cyclical output to affect the performance of the banking sector negatively. Pasiourasa and kosmidou (2007) find inflation to be positively related to domestic banks, implying that during the period of their study the levels of inflation were anticipated by domestic banks. This gave the banks the opportunity to adjust the interest rates accordingly and consequently, earn higher profits. With regard to foreign banks, inflation triggered a higher increase in costs than revenues as the negative relationship between inflation and foreign banks profits show. These mixed results can be attributed to different levels of country-specific macroeconomic conditions and expectations concerning inflation rate between domestic and foreign banks. As per the above literatures, the study expected sign of the effect of inflation on profitability is indeterminate. Hence the hypothesis is stated as follows:

H8. There is a significant relationship between rate of inflation and profitability of MFIs

3.5.2.3 Industry Specific Variable

Market Concentration:

It is the number, size and distribution of MFIs in a particular market or country. This study used the most popular measure of industry concentration level namely, Herfindahl-Hirschman index (HHI) to measure industry concentration similar to Sastrosuwito & Suzuki (2011) and Ponce (2012) among others. Thus in this study Market concentration captured by

using Herfindahl-Hirschman (H-H) index which is the sum of the square of market share of the sample MFIs include in this particular study. Market share of each MFI in this study measured by using the ratio of a MFI's total asset to total asset of all MFIs. If highly concentrated market lacks proper competition as to setting the price of microfinancing services, it makes the existing MFIs more profitable. On the other hand, when the concentration of the market reduced and the size and distribution of MFIs become more dispersed, the microfinancing sector profitability is expected to reduce. According to Flamini, (2009) study determinants of profitability commercial bank in sub-sharan Africa and conclude that market concentration has no direct effect on bank profitability. Athanasoglou et al, (2005) the empirical results show that market concentration affects bank profitability negatively, but this effect is relatively insignificant. As per the above literature, in this study market concentration and MFIs profitability expected to be negative. Hence the hypothesis is stated as follows:

H9. There is a significant negative relationship between market concentration and profitability of MFIs

3.6 Variables and Measurements

Variables that are used and affect the profitability of microfinance which are shown below respectively in table 3.1.

Table 3.1   Description of the variables

VARIABLES	MEASUREMENT
DEPENDENT VARIABLES	
ROA	Adjusted operating income, net of tax/adjusted average total assets
INDEPENDENT VARIABLES	
MFIs specific factors	
1. Financing structure	Adjusted total equity/ adjusted total assets
2. Quality of portfolio	Outstanding balance, loans overdue> 30 Days/adjusted Gross Loan Portfolio
3. Operational efficiency	Adjusted operating expenses/adjusted average gross loan portfolio
4. Size	Natural log of total assets
5. Age	Number of years of operation
6. Gearing	Debt to equity
Macroeconomic factors	
1. GDP	Real GDP growth (in %)
2. Inflation	The annual inflation rate
Industry factor	
1. Market concentration	HH Index

3.7 Model Specification

This section covers the operational panel fixed regression model (multiple regression model) that was used in the study. The multiple regression model used for this study to determine the factors affecting the profitability of MFIs in Ethiopia. Thus, to investigate the effect of MFI-specific, industry specific and macroeconomic determinants of MFIs profitability, the following general multivariate regression equation used as a base equation for this study similar to Muriu or Birmingham University (2011):

$$ROA_{it} = \beta_0 + \beta_1 CR_{it} + \beta_2 PAR_{it} + \beta_3 EFF_{it} + \beta_4 SIZE_{it} + \beta_5 AGE_{it} + \beta_6 GDP_{it} + \beta_7 GR_{it} + \beta_8 INFL_{it} + \beta_9 CONS_{it} + \varepsilon_{it}$$

Where: -

ROA_{it} = Return on asset for MFI i at time t

CR_{it} = Capital strength for MFI i at time t

PAR_{it} = Portfolio quality of MFI i at time t

EFF_{it} = Operating efficiency for MFI i at time t

$SIZE_{it}$ = The natural logarithm of total asset for MFI i at time t

AGE_{it} = Age of MFI i at time t

GDP_{it} = Real GDP growth for MFI i at time t

GR_{it} = Gearing of MFI i at time t

$INFL_{it}$ = Inflation for MFI i at time t

$CONS_{it}$ = Market concentration of MFI i at time t

= the error term

3.8 Interpretation

Various diagnostic tests such as, Heteroskedasticity, autocorrelation, normality and multicolinearity conducted to decide whether the model used in the study is appropriate and fulfill the assumption of classical linear regression model. Results of the descriptive statistics such as mean, standard deviation, minimum and maximum values would be reported to describe the characteristics of variables under investigation. Thus, in order to examined the possible degree of Multicolinearity among variables, correlation matrix used.

To this end the researcher used fixed effect regression model analysis to examine the effect of each explanatory variable on the profitability of Ethiopian MFIs. Thus, regression results

presented in a tabular form with the appropriate test statistics and then an explanation of each parameter should give in line with the evidence in the literature.

CHAPTER 4

RESULTS AND DISCUSSION

In the previous chapter detail insight was given concerning the research methodology, this chapter presents the results of documentary reviews and the different tests made to ascertain the fulfillment of classical linear regression model assumptions.

4.1 Documentary analysis

It is clear that the objective of this study is to identify the internal and external determinants of profitability of MFIs in Ethiopia. The secondary data for the analysis purpose are collected through structured documentary review from performance analysis report published by AEMFI, NBE, MoFEC and MFIs. The following discussion presents respectively the tests for the classical linear regression model assumptions, the descriptive statistics and the outcomes of the panel data regression analysis.

4.1.1. Test results for the classical linear regression model assumptions

As it is stated in methodology part, diagnostic tests were carried out to confirm that the data fits the basic assumptions of classical linear regression model. Hence, the outcomes for model misspecification tests are presented as follows:

A. Test for Hetroscedasticity

One of the CLRM assumptions articulates the variance of the errors is constant. This is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heteroscedastic (Brooks, 2008, p 132). In this study as shown in table 4.1, both the F-statistic and Chi-Square versions of the test statistic presented the same conclusion that there is no evidence for the presence of heteroscedasticity, since the p-values were in excess of 0.05.

Table 4.1 **Heteroskedasticity Test: ARCH**

F-statistic	1.911836	Prob. F(1,206)	0.1683
Obs*R-squared	1.912647	Prob. Chi-Square(1)	0.1667

Source: AEMFI, NBE, MoFED, MFIs and own computation via E-views 8.1

B. Test for Autocorrelation

To identify determinants of Ethiopian micro finance profitability 228(19*12) observations were used in the model. The researcher tested the autocorrelation assumptions that imply zero covariance or error terms. That means errors associated with one observation are uncorrelated with the errors of any other observation. As noted in Gujarati (2004), the best well-known test for detecting serial correlation is the Durbin Watson test. Accordingly, as it is shown in table 4.2 the Durbin Watson test statistic value for this study was 1.63, that it is clearly between the DL and DU which is 1.358 and l.715 respectively hence there is no evidence for the presence of autocorrelation.

Table 4.2 **Autocorrelation Test: Durbin Watson**

Variables	DW test statistics result
All specific and macroeconomic factors	1.63

Source: AEMFI, NBE, MoFED, MFIs and own computation via E-views 8.1

C. Test for normality

The normality test for this study is shown in figure 4.1 below. If the residuals are normally distributed, the histogram should be bell-shaped and the Bera-Jarque statistic would not be significant meaning disturbance to be normally distributed around the mean. This means that the P-value given at the bottom of the normality test screen should be bigger than 0.05 to not reject the null of normality at the 5% level (Brooks, 2008). Therefore, the normality tests for this study the coefficient of kurtosis was 3.25, and the Bera-Jarque statistic has a P-value of 0.168 indicates that the p-value for the Jarque-Bera test for models is greater than 0.05 which indicates that the errors are normally distributed. Based on the statistical result, the study failed to reject the null hypothesis of normality at the 5% significance level this implying that the data were normally distributed.

Figure 4.1 **Normality test for residuals**

Series: Standardized Residuals
Sample 2004 2015
Observations 214
Mean	1.43e-18
Median	0.002389
Maximum	0.077120
Minimum	-0.108380
Std. Dev.	0.032504
Skewness	-0.290039
Kurtosis	3.252696
Jarque-Bera	3.569752
Probability	0.167818

Source: Eviews 8.1 output (2016)

D. Test for Multicollinearity

An implicit assumption that is made when using the panel LS estimation method is that the explanatory variables (independent variables) are not correlated with one another. If there is no relationship between the explanatory variables (independent variables), they would be said to be orthogonal to one another. If the explanatory variables were orthogonal to one another, adding or removing a variable from a regression equation would not cause the values of the coefficients on the other variables to change (Brooks, 2008). According to Gujarati, (2004) multicollinearity could only be a problem if the pair-wise correlation coefficient among regressors is above 0.90 (Hailer et al, 2006) *cited in* Birhanu (2012) which is not more or less the case in the study variables.

Table 4.3 **Correlation matrixes of independent variables**

	SIZE	PAR_30	INFL	GR	GDP	EFF	CONS	CAR	AGE
SIZE	1.0000								
PAR_30	-0.2007	1.0000							
INFL	0.0303	0.0552	1.0000						
GR	0.3562	0.0461	0.0248	1.0000					
GDP	-0.2063	-0.0729	-0.3343	-0.0163	1.0000				
EFF	-0.6743	0.0181	-0.0490	-0.3863	0.0639	1.0000			
CONS	0.7685	-0.2445	-0.0074	0.3010	0.0206	-0.5381	1.0000		
CAR	-0.3701	-0.1146	-0.0517	-0.7282	0.1193	0.4099	-0.3121	1.0000	
AGE	0.5631	0.0076	0.0124	0.1983	-0.4993	-0.2336	0.1939	-0.3575	1.0000

Source: Eviews 8.1 output (2016)

4.1.2 Model selection

Random effect versus Fixed effect models

Econometrics model used to examine the effect of gearing, capital adequacy, portfolio quality, efficiency, size, age, GDP, inflation and Market concentration on profitability of MFIs in Ethiopia was panel data regression model which is either fixed-effect or random-effect model. The fitting test used to decide whether fixed effect or random effect model is appropriate was Hausman Specification Test. Thus Hausman Specification Test identifies whether fixed-effect or random-effect model is most appropriate under the null hypothesis that unobservable individual effects (u_i) are uncorrelated with one or more of explanatory variables (Xi). As noted by Gujarati (2004) fixed effect model is most appropriate when null hypothesis is rejected whereas random effect is appropriate when null hypothesis is not rejected. For Hausman test, the null and alternative hypotheses are as follows:

Ho: u_i is not correlated with Xi (random - effects model appropriate) HI:

u_i is correlated with Xi (fixed-effects model appropriate)

Thus, to test the null hypothesis. it requires comparing the estimates from the random-effects and the fixed-effects estimator. Random-effect estimator is consistent under the null hypothesis, but inconsistent under the alternative hypothesis whereas fixed-effect estimator is consistent under both the null and alternative hypothesis. If the estimates for the random-effects estimators are not significantly different from the estimates for the fixed-effects estimator, then the null hypotheses are accepted and conclude that it is not correlated with Xi, and therefore the random-effect model is the appropriate model. If the estimates for the random effect estimator are significantly different from the estimates for the fixed-effect estimator, the null is rejected and conclude that u$_i$ is correlated with Xi and then the fixed effect model is appropriate. As cited in Muriu (2011) fixed effect is further reinforced by the absence of heteroskedasticity in the residuals. therefore, under the null hypothesis the two estimates differ systematically as indicated by the P- values in table 4.4. This means that the coefficients of interest are statistically different in the two estimates hence, the random effect solution is rejected both on substantive and statistical grounds, as a result the fixed-effect model is the appropriate model for this study.

Table 4.4 **Test of Hausman**

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	39.872049	9	0.0000

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
SIZE	-0.013887	-0.003742	0.000043	0.1232
PAR_30	-0.120720	-0.207166	0.002097	0.0591
INFL	0.057294	0.051801	0.000021	0.2295
GR	-0.007990	-0.009875	0.000003	0.2605
GDP	-0.129071	-0.320000	0.001878	0.0000
EFF	-0.245996	-0.223688	0.000905	0.4584
CONS	0.186396	-0.055937	0.011711	0.0251
CAR	-0.146963	-0.129554	0.000233	0.2538
AGE	0.011630	0.008712	0.000002	0.0484

Source: Eviews 8.1 output (2016)

4.2 Descriptive statistics

This section presents the results of the descriptive statistics for main variables involved in the regression model. Key figures, including mean, median, standard deviation, minimum and maximum value were reported. This was generated to give general description about data used in the model and served as data screening tool to spot unreasonable figure.

As it is shown table below, profitability of Ethiopian MFIs measured in terms of ROA for the total 228 observations showed up averagely a positive value of 1.5% during the study period (2004-2015), with a maximum value of 12.4% and a minimum of -20%. This shows the profitable MFIs earned 12.4 cents of profit after tax for a single Birr investment they made on total asset. On the other hand, not profitable MFIs lost 20 cents from profit for 1-Birr investment made on total assets of the firm. The standard deviation statistics for ROA was 0.060 representing the profit variation between the selected MFIs was slightly lower compared to other variables.

The overall statistical result for ROA implies the MFIs in Ethiopia need to efficiently utilize their assets to increase their profitability.

Table 4.5 **Descriptive statistics**

	ROA	CAR	PAR>30	EFF	Age	SIZE	CONS	INFL	GDP	GR
Median	0.026	0.375	0.040	0.120	10.00	17.80	0.008	0.108	0.109	1.575
Mean	0.015	0.401	0.062	0.124	10.44	18.21	0.052	0.152	0.110	1.929
Maximum	0.124	0.967	0.380	0.418	18.00	23.31	0.407	0.364	0.133	10.39
Minimum	-0.200	0.000	0.000	0.013	2.000	13.970	0.001	0.028	0.086	0.030
Std. Dev.	0.060	0.179	0.0713	0.074	3.787	1.878	0.098	0.106	0.013	1.551
Observation	228	228	228	228	228	228	228	228	228	228

Source: AEMFI, NBE, MoFED, MFIs and own computation via E-views 8.1

Looking into the independent variables, even though there was much deviation in capital to asset ratio of selected MFIs were the maximum was 96.7% and the minimum was 0%, the average capital to asset ratio showed a value of 40.1% which is above the statutory requirement of 12% set by NBE. The standard deviation between the MFIs regarding capital adequacy was 17.9% indicating the existence of large deviation for the study period.

Quality of Portfolio measured in terms of portfolio at risk greater than 30 days for the selected MFIs was on average 6.2%. The range was between 38% and 0%. The standard deviation in relation to quality of portfolio was 7.13% showing the large deviation among the MFIs. This result shows that MFIs presenting highest PAR>30 (lower portfolio quality) are in higher default risk and hence lowering their profitability compared to others. On the other hand, the average efficiency of selected MFIs was 12.4%, were the maximum efficiency was 41.8% and the minimum was 1.3%. The standard deviation showed 7.4% indicating the large disparity in terms of operational efficiency (operating expense management). Here, the result showed that the most efficient MFIs have a larger tendency in managing their operating expenses in connection to their loan portfolio in relation to least efficient MFIs. The size of the MFIs measured in natural logarithm of their total assets had the second largest standard deviation (187.8%) next to number of years of operation (age)

of the institutions which was 378.7%. Both results indicate the existence of large deviation in size and age of operation between selected MFIs; which is practically visible in Ethiopia.

In regard to gearing ratio or Debt to equity ratio indicates that the average value of 1.929 and maximum value of 10.39 and 0.03 minimum value. Meaning as per the mean value of this variable (1.929) shows, MFIs in Ethiopia are leveraged on average than financed through equity capital because the AEMFI's suggested standard of debt to equity is 1.5. On the other side the minimum gearing ratio (debt to equity) is 0.03 showing few MFI are financed more through equity capital than debt. However, the maximum value for this variable is 10.39 which indicate that debt financing is more considered instead of having proportional financing structure, therefore highly leveraged. The Standard deviation of gearing ratio is 1.551 this illustrates the disparity of gearing ratio by MFIs. According to AEMFI, (2013) report Ethiopian micro finance institution on average debt to equity ratio was able to maintained 1.5 of their equity. Therefore, the result of the study shows the value higher than the minimum requirement.

The descriptive statistics of the Herfindahl - Hirschman index shows that there is high concentration of MFIs in the MFI industry in Ethiopia that is average market concentration has 0.052 and maximum 0.407 and also minimum score of 0.001. According to H-H index when H-H index value is below 0.01 indicates that highly competitive market, when the value is below 0.1 shows that unconcentrated market, when the value is between 0.1 to 0.18 indicated that moderate market concentration and when H-H index above 0.18 indicates that high market concentration (Gajure and Pradhan,2012). Therefore, the results indicate there is existence of market concentration in the market.

Economic growth proxied by real GDP growth showed a mean value of 0.11 during the study period with a maximum of 0.133 and a minimum of 0.086. The standard deviation for GDP is 0.013 which is the smallest of all other deviations in this study, indicating that Economic growth in Ethiopia during the study period of 2004-2015 remains fairly stable and the result is more or less in line with the government's report in relation to the improvement in the economic conditions of the country. Finally, Inflation during the study period on average was 0.152 with maximum of 0.364 and minimum of 0.028 showing unstable price level during the study period.

4.3 Finding of the Regression

This section presents the regression result of fixed effect model that was made to examine the determinants of profitability of MFIs in Ethiopia. Accordingly, the regression result was made and coefficients of the variables were estimated via E-views 8.1 software package. As stated above, fixed effect regression model is an appropriate model used in this study. Thus, the model used to examine the determinants of profitability of MFIs in Ethiopia in this study was:

$$ROA_{it} = \beta_0 + \beta_1 R_{it} + \beta_2 PAR_{it} + \beta_3 EFF_{it} + \beta_4 SIZE_{it} + \beta_5 AGE_{it} + \beta_6 GR_{it} + \beta_7 GDP_{it} + \beta_8 INFL_{it} + \beta_9 CONS_{it} + \varepsilon_{it}$$

Table 4.6: **Regression Results for Determinants of profitability of Ethiopian Microfinance Institutions.**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.252393	0.129834	1.943963	0.0534
SIZE	-0.013887	0.007748	-1.792361	0.0747***
PAR_30	-0.120720	0.062642	-1.927142	0.0555***
INFL	0.057294	0.024750	2.314957	0.0217**
GR	-0.007990	0.003073	-2.599964	0.0101*
GDP	-0.129071	0.242184	-0.532945	0.5947
EFF	-0.245996	0.061757	-3.983293	0.0001*
CONS	0.186396	0.121618	1.532634	0.1271
CAR	-0.146963	0.028775	-5.107285	0.0000*
AGE	0.011630	0.001931	6.023311	0.0000*

Effects Specification				

Cross-section fixed (dummy variables)

R-squared	0.686458
Adjusted R-squared	0.640944
S.E. of regression	0.034784
F-statistic	15.08228
Prob(F-statistic)	0.000000
Durbin-Watson stat	1.632402

Source: AEMFI, NBE, MoFED, MFIs and own computation via E-views 8.1

*Significant@1%
**Significant@5%
***Significant@10%

4.4 Discussion of the Results

Based on the regression result, the R^2 value is 0.686 (68.6 %) which implies that 69% of fitness can be observed in the sample regression line. This can be further explained as, 69% of the total variation in the profitability that is ROA is explained by the independent variables (Capital to Asset ratio, Size, Age, GDP, Inflation, Gearing ratio, Operational efficiency, Portfolio at Risk>30 days and Market concentration) jointly. The remaining 31% of change is explained by other factors which are not included in the model. The Prob (F-statistic) value is 0.000 which indicates strong statistical significance, which enhanced the reliability and validity of the model. Each variable is described in detail under the following sections.

A. Capital to Asset ratio

The coefficient of the capital to asset ratio (CAP) is negative (-0.146963) and it is statistically significant variable even at 1% significance level (P-value 0.0000) This confirms that for the study period 2004 up to 2015 capital strength of Ethiopian MFIs have a negative relationship with their profitability or holding constant all other variables, increasing CAP by one unit causes to decrease the ROA nearly 0.146963 Birr. Hence, the hypothesis saying there is a significant positive relationship between capital adequacy and profitability of MFIs is rejected or data did not support the hypothesis. The result of this study is similar to the findings of Muriu (2011), Jorgenson (2012) and Ayayi (2009) but opposite to Sima (2013). In general, capital strength can affect profitability, the current study proved that there is significant relationship between the two.

B. Portfolio quality

Loan overdue greater than 30 days to gross loan portfolio was used to measure the quality of portfolio of Ethiopian MFIs. The ratio was used to check whether there is a relationship between quality of portfolio and profitability. The negative coefficient of the ratio (-0.120720) was in line with the prior expectations of the study and also the theory which indicates negative relationship between profitability and portfolio quality. The coefficient was statistically significant at 10% significance level (P-value of 0.0555). Thus this implying the increase in uncollectable balances will tend to decrease profitability. The result is similar to Muriu (2011), Yonas (2012), Sima (2013) but inconsistent with Dissanayake (2012) finding. In general, it can be said that the quality of portfolio was a key determinant of profitability of Ethiopian MFIs. Therefore, this study failed to reject the hypothesis which

says there is a significant negative relationship between profitability and portfolio quality of Ethiopian MFIs.

C. Operating efficiency

Operational Efficiency is performance measure that indications how well MFIs is streamlining or reforms its operations and takes in to account the cost of the input and/or the price of output. And Efficiency of the MFIs management measured in terms of adjusted operating expense to adjusted average gross loan portfolio. By taking the above formula as the tool to calculate, the current study which covers the time period from 2004 to 2015 shows that coefficient of (-0.245996) and it was statistically significant at 1% significance level (P-value 0.0001) this result shows that holding constant all other variables, increasing operational expense in one unit on gross loan portfolio cause to decrease ROA nearly by 0.245996 birr it is an indication that MFIs should give great attention in cost minimization technique. The result indicated that there was a negative relationship between efficiency and profitability of Ethiopian MFIs during the study period. The result confirms the common rule of thumb that the higher our expense the lower our profitability. Based on the finding the study fails to reject null hypothesis namely there is a negative relationship between Operational efficiency and MFIs profitability in Ethiopia because the result supports the expectation. Generally operational efficiency was a key determinant of profitability of Ethiopian MFIs for the study period 2004-2015 The perception of managers towards operational efficiency result supports the regression finding which is minimizing expense to loan portfolio have a significant role to achieve the profitability of their MFI. The result was consistent with findings many research like, Dissanayake (2012), Muriu (2011) and Sima (2013) but inconsistent with Jorgensen (2011).

D. Size

As the study measured size by taking the natural logarithm of total assets of the MFIs, the coefficient was negative (-0.013887) and was statically insignificant to be encompassed as a significant variable in this study. Size is significant at 10% significance level (P-value of 0.0747), which indicates less significance or size as a profitability determinant factor during the study period compared to the other key significant determinant variables. The result is opposite to prior expectations and also with relative market power theory and scale efficiency theory; this indicates that Ethiopian MFIs has not yet well exploited the benefit of

economies of scale. The result is similar with Sima (2013) and opposite to Melkamu (2012), Muriu (2011), Letenah (2009) and Cull et al. (2007). Accordingly, the hypothesis which says, there is a significant relationship between size and profitability of MFIs is rejected. Off course, the real practice in Ethiopia shows that the large MFIs constitute the largest portion of the market share from the industry; this study found that size was not a key determinant of profitability of Ethiopian MFIs.

E. Age

The researcher included this variable to check whether there is a learning effect in the operations of the MFIs in Ethiopia. The coefficient was positive (0.011630) and it is statistically significant at 1% significance level (P-value of 0.0000). This indicates the fact that age was a key determinant of profitability of Ethiopian MFIs having a direct relationship with ROA. Accordingly, the study failed to reject the formulated hypothesis which says, there is a significant relationship between age and profitability of MFIs during the study period of 2004 up to 2015. The finding is similar with Sima (2013), Joergenson (2012) and Yonas (2012).

F. Gearing ratio/Debt to Equity ratio

The debt to equity ratio is a common measure used to assess a firm's leverage, or in other words the extent to which it depends on debt as a source of financing. The ratio indicated a negative coefficient (-0.007990) and it was statistically significant at 1% significance level (P-value 0.0101). The result is inconsistent with Dissanayake (2012) and Muriu (2011) that is perhaps more debt relative to equity is used to finance microfinance activities and that long term borrowings impact positively on profitability by accelerating MFIs growth than it would have been without debt financing. The result is consistent with Melkamu (2012). Therefore, based on the regression result from the study, the study failed to reject the hypothesis namely gearing ratio has negative relationship with profitability of Ethiopian MFIs which was formulated to show the significant relationship between debt to equity ratio and profitability of Ethiopian microfinance institutions.

G. GDP

Economic growth (GDP) is among the most commonly used macroeconomic indicators, as it is a measure of total economic activity within an economy and the study used real GDP

growth as a proxy of the macroeconomic environment. The Result shows that a negative coefficient of (-0.129071) but it was statistically insignificant (P-value 0.5947) which indicates that improvement in economic conditions did not significantly affect profitability of Ethiopian MFIs during the study period 2004-2015. The result was consistent with Muriu (2011), Jordan (2008) and Sima (2013) and inconsistent with Belayineh (2011). Therefore, the current study found that real GDP growth is not positively affect the profitability of MFIs in Ethiopia. Therefore, the study rejects the hypothesis namely real GDP has positive relationship with profitability of Ethiopian MFIs because the data did not support the result.

H. Inflation

The other macroeconomic factor included in the study was inflation as measured with consumer price index. had a positive coefficient of (0.057294) and it was statistically significant at 5% significance level (P-value of 0.0217). Inflation showing that during the study period of 2004-2015 inflation was a key determinant of profitability of Ethiopian MFIs. Accordingly, the hypothesis saying, there is a significant relationship between inflation and profitability of Ethiopian MFIs not rejected as per the findings of the study. The result is opposite with the findings of Muriu (2011) and. Jordan (2008) and inconsistent with Belayineh, (2011).

I. Market Concentration (CONS)

According to Herfindahl-Hirschman (H-H) index, market concentration is measured with the sum of the square of market share of the sample banks included in the particular study and the researcher adopt from different literatures in the banking industry and look MFIs market concentration in the same fashion. The banking theories on market concentration argue that if the size and firm distribution of a specific sector is concentrated, the profitability of firms becomes high because they could get monopoly power to set the price of their products/service and determine their desired level of profit. This empirical results show that market concentration affects MFIs profitability positively (0.186396), but the effect was statistically insignificant (p-value 0.1271). The study is consistent with banking sector result Athanasoglou (2005) Birhanu (2012) but inconsistent with Belayineh (2011) and Habtamu (2012). Therefore, the study rejects the hypothesis namely Market concentration has negative relationship with profitability of Ethiopian MFIs because the data did not support the result.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This chapter presents conclusions and recommendations based on the analysis made in previous chapter.

5.1 Conclusions

The main objective of this study was to examine the internal and external factors affecting profitability of Ethiopian MFIs. Even though previous studies in relation to MFIs profitability are scant, the study reviewed the available studies and used commercial banking theories as a base ground, presuming they are also workable for MFIs. Profitability is anticipated to be highly dependent on internal (firm specific) factors, external factors can also contribute to the profitability of a given firm. The internal factors include, capital adequacy, portfolio quality, efficiency, size, Age, gearing and other variables which are under the control of the managerial organ of the firm. External factors include macro-economic conditions like GDP, inflation and other industry specific factors like market concentrations.

Based on the previous studies the study examined the effect of internal and external factors of profitability of Ethiopian MFIs for the study period of 2004-2015, The firm specific factors included in this study were gearing (Debt to Equity), capital adequacy, portfolio quality, efficiency, size and age of MFIs. The external macroeconomic variables included in the study were GDP and inflation and also industry specific factor include market concentration.

To accomplish the stated objective of the study, quantitative research method was adopted. The data for the study were gathered from performance analysis report annual bulletins by AEMFI and MFIs for the internal factors and industrial factor for the selected 19 MFIs; and the macroeconomic factors were extracted from the annual reports of NBE and MOFEC. As per the collected quantitative data, multiple regression analysis was run to test the different hypotheses formulated in the study. The empirical findings of the study provided the following conclusions.

Gearing showed a negative coefficient against ROA, which is in line with prior expectations and the variable was statistically significant; indicating that the increment in the debt to equity increases the profitability of Ethiopian MFIs.

Portfolio quality showed up a negative coefficient against ROA which is in accordance with prior expectations and also the variable was statistically significant, this implying the increase in uncollectable balances will tend to decrease profitability of Ethiopian MFIs.

The outcome of the study showed that size was a negative coefficient and statistically less significant variable. Thus The result was opposite to prior expectations and also with relative market power theory and scale efficiency theory; this indicates that Ethiopian MFIs has not yet well exploited the benefit of economies of scale.

Efficiency as measured in terms of operating expense to gross loan portfolio showed a negative coefficient against ROA and the variable was statistically significant as it was predicted. This depicts that the higher the cost the lower the profitability of Ethiopian MFIs.

Age of MFIs as measured with the number of years a MFI is under operation showed a positive coefficient and statistically significant variable as it was expected; implying that the more the maturity of the MFIs the more the profitability will be get.

Rate of inflation showed a positive coefficient against ROA which is in line with prior expectations and the variable was statistically significant; implying that the increment of rate of inflation is increases the profitability of Ethiopian MFIs.

Capital adequacy of Ethiopian MFIs showed on average a result greater than the statuary requirement set by NBE which is 12%, as the study verifies on average 40.1% of the MFIs asset is funded by owners' equity and the fund found that capital adequacy is a statistically significant profitability determinant of Ethiopian MFIs during the study period of 2004-2015.

The other variables included in the study, GDP and Market concentrations were found to be statistically insignificant profitability determinants for Ethiopian MFIs. The study tried to see the effect of economies or diseconomies of scale for Ethiopian MFIs, the macro economic variables included in this study such as GDP was found to be statistically insignificant profitability determinants for Ethiopian MFIs and finally the industry specific

variable included in the study Market concentrations was found statistically insignificant profitability determinants for Ethiopian MFIs.

5.2 Recommendations

Based on the findings of the research, the researcher has recommended certain points what he thought to be very critical if considered and implemented by the microfinance institutions accordingly and properly. Therefore, the following recommendations have been given.

⇨ Quality of portfolio, Operational Efficiency, Capital Adequacy, Gearing, Age and Inflation are significant determinants of profitability of MFIs in Ethiopia. Therefore, the management may need to develop a good credit management policy, inefficiency is the bottleneck of MFIs in Ethiopia, the management should give great attention to a good expense management policy or reduce operating costs and credit risk management by employing different technologies which can minimize cost example mobile banking and Gearing, Since Microfinance institutions that employ higher debt in their capital structure are more profitable, and highly leveraged microfinance institutions are more profitable so the management should give a great attention and finally the matured MFIs have found their way to profitability so the new MFIs entering the industry must have different set of goals and operational set of skills leading to profitability.

⇨ The MFIs have to compete with profit-making banking practices by implementing a sound financial management and good managerial governance to assure their financial sustainability in the long run profitability.

⇨ The MFIs managers and policy makers should give high concern in the motives of MFIs that is MFIs should be perform their activity with comprising the two motives together. Meaning the government and policy makers should give due attention for both poverty reduction and financial self-sufficiency of MFIs.

⇨ Since MFIs in Ethiopia is in infant stage the government should avail different facilities or infrastructures to reduce inefficiencies.

5.3 Direction for Further Research

This study examined only limited internal and external variables by using 12 years' data. There are other variables which are not included in this study like, depth of outreach, breadth

of outreach, lending methodology, type of institutions, ownership structure from internal factors and unemployment rate, interest rate, from external factors. Having further investigation with the inclusion of the above variables might have a better role in identifying other factors which contribute for the profitability of Ethiopian MFIs.

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Appendix i

Heteroskedasticity Test: ARCH

F-statistic	1.911836	Prob. F(1,206)	0.1683
Obs*R-squared	1.912647	Prob. Chi-Square(1)	0.1667

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 06/20/16   Time: 16:24
Sample (adjusted): 2 228
Included observations: 208 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001327	0.000182	7.271104	0.0000
RESID^2(-1)	0.094610	0.068424	1.382692	0.1683

R-squared	0.009195	Mean dependent var	0.001468
Adjusted R-squared	0.004386	S.D. dependent var	0.002184
S.E. of regression	0.002179	Akaike info criterion	-9.410273
Sum squared resid	0.000978	Schwarz criterion	-9.378181
Log likelihood	980.6684	Hannan-Quinn criter.	-9.397297
F-statistic	1.911836	Durbin-Watson stat	1.953814
Prob(F-statistic)	0.168256		