



ADDIS ABABA UNIVERSITY

COLLEGE OF BUSINESS AND ECONOMICS

**THE INFLUENCE OF COMPETITION ON PERFORMANCE OF
MICROFINANCE INSTITUTIONS IN ETHIOPIA**

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**THESIS SUBMITTED TO THE ADDIS ABABA UNIVERSITY COLLEGE OF BUSINESS AND
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ADDIS ABABA, ETHIOPIA

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STATEMENT OF DECLARATION

I, Gaim Addisalem, declare that this thesis entitled “THE INFLUENCE OF COMPETITION ON THE PERFORMANCE OF MICROFINANCE INSTITUTIONS IN ETHIOPIA” is my own work and that all sources of materials used for this thesis have been fully acknowledged. I have carried out independently the research work with the guidance and support of the research advisor.

This thesis has been submitted in partial fulfillment of the requirement for the Degree of Master of Business Administration in Finance.

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STATEMENT OF CERTIFICATION

This is to certify that Gaim Addisalem has carried out a thesis on the topic entitled “the influence of competition on performance of microfinance institutions in Ethiopia” in the partial fulfillment of the requirements of the MBA degree in finance complies with the regulation of the university and meets the accepted standards with respect to originality and quality.

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ABSTRACT

The modern microfinance concept is broadening its target from poor clients that have no access to conventional financial services to the idea of financial inclusion. For this reason, commercial banks are downscale their operational activities to the poor to ensure financial inclusion by introducing new technology like mobile banking and these incidents have changed the tendency of competition which attract the attention of investors. This study examined factors that influence financial performance of MFIs in Ethiopian with special emphasis on competition. An econometrics tool (Eviews-7) is used to generate regression of the balanced panel data from 10 MFIs consisting of 100 observations, covering the periods started from 2005 – 2014, and provided the basis for the descriptive and regression analysis. Ethiopian MFIs are yet not financially self sufficient since the mean average of FSS is below breakeven point (100 percent) which is (96.5 percent), this indicated that if subsidy from government or donors might stop at any time; the MFIs would unable to cover their financial and operational costs through their operating revenues. The results indicate that MFIs' financial performance is negatively and significantly influenced by the market concentration ratio, PAR>90 days and operational expense ratio/operational efficiency. Thus, operational efficiency, portfolio quality and competition are important factors of MFIs' financial performance in Ethiopia. The competition has direct impact on the performance of microfinance in Ethiopia so the regulatory body needs to relax the criteria for new entry to the market. MFIs in Ethiopia are high cost sensitive so the boards and senior management of respective MFIs must give due attention to the cost management of MFIs

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ACRONYMS:

ACSI: Amara Credit and Saving Institution

AdCSI: Addis Credit and Saving Institution

AEMFI: Association of Ethiopian Microfinance Institutions

AVFS: Africa Village Financial Services

CGAP: Consultative Group to Assist the Poor

DECSI: Dedebit Credit and Saving Institution

FSS: Financial Self Sufficiency

GTP: Growth and Transformation Plan

MFI: Micro-Finance Institutions

MFIN: Micro-Finance Institutions Networks

MIX: Microfinance Information eXchange

NBE: National Bank of Ethiopia

NGOs: Non Governmental Organizations

OCSSCO: Oromiya Credit and Saving Share Company

OSS: operational Self Sufficiency

PEACE: Poverty Eradication and

ROA: Return on Asset

ROE: Return on Equity

SACCOs: Saving and Credit Cooperatives

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND

Microfinance is the provision of credit, savings and other financial services to very poor people. Providing these services to very poor households creates opportunities for the poor to create, own, and accumulate assets and to smooth consumption. With such primary mission the performance of microfinance institutions was measured by social impact of the services delivered to the welfare of the intended community. Microfinance has also an impact on more than just the income levels of poor clients. It also reduces their vulnerability to shocks and allows them to make investments in better health and education for their families. Now a day, microfinance sector is significantly transforming from earlier practice of providing credit to the poor through public financial institutions at subsidized rates with little or no recovery rates to successful microfinance institutions reaching a significant number of poor people and are commercially viable in Latin America (Christen, 2001).

Traditionally, microfinance is associated with programs that benefit clients with serious subsistence problems in developing countries. For many years microfinance overlapped with microcredit (small loans) often without traditional guarantees, aimed at improving the lives of clients and their families or at sustaining small-scale economic activities. At that time the financial resources were mainly came from funds states and multinational organizations donors were channeled to their recipients most often through nongovernmental organizations (NGOs) and local partners. Now a day, microfinance has turned its attention to shareholder structure with an encouraging participation from micro-

entrepreneurs. Microfinance represents an alternative to credit given by lenders, and often constitutes a way out of the money-lending system (Torre & Gianfranco, 2006).

Currently, potential microfinance beneficiaries include individuals who, although not living in poverty, have general difficulty in gaining access to the financial system.

The modern microfinance concept is broadening its target from 'the poorest of the poor' to all victims of financial exclusion. The phenomenon of financial exclusion is defined as the inability to access financial services in an appropriate way. Now a day, the border between traditional microfinance and the conventional financial institutions is getting narrowed. In most parts of the world, banks and other financial institutions are entering the microfinance industry (Helms, 2006). And this is happening due to the fact that microfinance institutions who adopted a commercial approach are not only more profitable than their peers in other developing regions; in some instances they are even more profitable than traditional commercial banks in the areas where they operate (CGAP, 2001). For this reason, the tendency of unhealthy competition between microfinance providers is growing rapidly to generate patterns of multiple lending in countries where microfinance sector had developed.

MFI's need to focus more on sound practices, ensuring that customers understand their loan terms, and appraising repayment ability to protect both borrowers and the MFI against over-indebtedness. MFI managers need to communicate proactively and openly with lenders and investors about refinancing concerns and other issues related to the impact of the crisis (Elizabeth & Kneiding, 2009).

The sense of competition amongst the banks to provide funds to MFI's resulted in public sector banks becoming eager participants in the process in Latin America (Christen, 2001).

1.2 MICRO FINANCE IN ETHIOPIA

Ethiopia is the second populous country in Africa next Nigeria, 85 percent of them live in the rural areas of the country. This major portion of the population has limited access to financial services to improve their livelihood. With intention of improving the peoples' life style and access to finance. Microfinance services were started after the downfall of Derg regime by government and NGO subsidized credit programs run by specialized financial institutions (Degefa, 2009).

Followed the issuance of Licensing and Supervision of the Business of Micro-financing Institutions Proclamation (proclamation No. 40/1996), things had changed that specialized credit programs were transformed in to licensed deposit taking Microfinance institution and also this proclamation obligated that the form of business participation should be only and only in the form of share company, as what we can see now. Beyond this, the proclamation had set some restriction on the entrance of industry, that any foreign national or organization fully or partially owned by foreign nationals may not be allowed to establish a micro-financing institution, open branches or subsidiaries of a foreign microfinancing institution in Ethiopia or to acquire the shares of an Ethiopian micro-financing institution. This prohibition made the microfinance industry unique from the world. in Ethiopia there are member based institutions delivering microfinance services to their members such as financial cooperatives or SACCOs; this institution have indispensable contribution in achieving the new paradigm in financial sector that is financial inclusion.

Despite the challenges faced, now a day Ethiopia is the home for the African biggest microfinance institutions in terms of outreach like ACSI and DESCI (Wolday, 2008).

As at June 30, 2014, MFIs' total assets, total liabilities, gross loan portfolio, total saving and total capital reached Birr 24.5 billion, Birr 18.9 billion, Birr 16.9 billion, Birr 11.8 billion and Birr 5.7 billion respectively, with an encouraging growth in all aspects. Likewise, the microfinance sector constituting 34 MFIs is providing financial services to its 3.8 million loan clients through 1,489 branch/sub-branch offices (642 branches & 847 sub-branches) in all regional states and city administration councils of the country.

1.3 STATEMENT OF THE PROBLEM

Microfinance has proven to be an effective instrument in poverty alleviation, enabling those without access to conventional financial institutions to borrow. The idea behind microfinance is to provide a means that would enable very poor people to become self-employed so that they can generate their own income. However, as markets developed competition heats up, and credit providers and product diversity increases. As a rule, these measures are more expensive or more challenging to implement and enforce, requiring a greater degree of regulatory capacity (Brix & McKee, 2010).

Economic theory says that competition brings more choices to the consumers and it forces the service providers to re-think about their quality of product and strategy competition is one of the most effective ways to reduce both microcredit costs and interest rates. Likewise, revealing the total costs of credit may help to expand sustainable microcredit while safeguarding consumer interests; in fact lowering interest rate without proper

competition can also lead to less clarity about the costs of loans, as lenders may add unclear fees to their services (Helms, 2006). However, empirical evidences indicated that competition in the area MFI may lead to the problem of information asymmetry that caused multiple loans (over indebtedness) that in return hinder loan repayment. Making too many small loans is more costly than disbursing few large loans to small number of consumers, MFIs have to cover all financial and operational costs and they may become profit oriented institutions. If such situation happens poor clients are either remained with no access to financial services or must divert to informal credit markets.

On the other hand, according to (CGAP, 2012), nearly 3 billion poor people in developing countries live below \$2 a day. They typically live and work in the informal economy, not by choice, but due to lack of the basic financial services needed to help them manage their precarious lives. In economic terms, they are producers and consumers at the same time.

When we come to the competition in our country there is some frustration multiple loans disbursement for the same consumer. As indicated in a conference held by (Meklit MicroFinance Institution, Prognyst and Alisei NGO, 2004) that sometimes MFIs in operating Ethiopia are struggling to retain customers and sometimes compete for the same customer, which creates unhealthy competition in the industry. On the other hand, there is huge amount of unmet demand or only 10-20% of the demand in both rural and urban areas of the country were satisfied yet (Wolday, 2008). Moreover, 86 percent of the Population in Ethiopia has no any access to financial services (African Caribbean Pacific and European Union Microfinance, 2011).

1.4 OBJECTIVES OF THE STUDY

1.4.1 GENERAL OBJECTIVE

To examine the effect competition on performance of micro finance institutions in Ethiopia.

1.4.2 SPECIFIC OBJECTIVES

- a. To investigate the competition among MFIs operating in Ethiopia.
- b. To determine the relationship between competition and performance of MFIs in Ethiopia
- c. To investigate the status of social and financial performance of Ethiopian MFIs
- d. To examine the effect portfolio quality on the financial performance.
- e. To determine the relationship between outreach and sustainability.
- f. To examine the effectiveness of saving mobilization

1.5 HYPOTHESIS OF THE STUDY

As per best suggestion of the author to achieve the objectives of the study; a number of hypotheses had developed regarding the relation between the performance of Ethiopia MFIs and the proposed independent variables based on different empirical research and theoretical review made from banks and MFIs. Six hypotheses were developed:

Hypotheses 1: competition is directly related with financial performance of MFIs in Ethiopia

Hypotheses 2: Size of the MFIs has a positive relationship with financial performance of MFIs in Ethiopia

Hypotheses 3: There is negative relationship between Operational efficiency Ratio and MFIs financial performance in Ethiopia.

Hypotheses 4: Portfolio quality and financial performance of MFIs in Ethiopia are positively related

Hypothesis 5: outreach is inversely related with the financial performance of MFIs in Ethiopia.

Hypothesis 6: saving to loan ratio is positively related with the financial performance of MFIs in Ethiopia.

1.6 SIGNIFICANCE OF THE STUDY

Competition had been cited as one of the major constraints to the operation and growth of microfinance services in the developing countries. A large and growing proportion of today's microfinance services is being provided by institutions that are profitable, even after adjusting for subsidies they may have received. However, until now, microfinance has been seen as a specialized niche of development, not relevant to the larger world of financial markets and systems. Many people think of microfinance as an arena for socially-oriented NGOs, not for banks and other mainstream financial players (Littlefield & Rosenberg, 2004).

In Ethiopia although there is very limited competition among MFIs, between MFIs and formal banks, and between MFIs and SACCOs currently, this will most likely change in the future (Wolday, 2008).

The number of MFIs operating in Ethiopia reached 34 in as of June 30, 2014. This indicates a number of MFIs are entering to the industry. As a result, the regulatory body amended the minimum paid up capital requirement twice over the last five years to limit the number of entrants. So, it is time to test competition status of MFIs in Ethiopia. On the other hand, the importance of competition is well noticed in Ethiopian financial sector policy.

At the end, the researcher has forwarded important recommendations based on the findings that may help the regulator and MFIs in decision making.

1.7 THE SCOPE OF THE STUDY

The study focused on the influence of competition on performance of microfinance in Ethiopia with evidence from ten MFIs using secondary sources. It focused on MFIs licensed by the National Bank of Ethiopia, with a special emphasis of financial performance of ten (10) micro finance institutions for the period 2005 to 2014.

1.8 ORGANIZATION OF THE THESIS

The thesis had organized into five chapters including the introduction part of the study. The first chapter deals with the background of the study, statement of the problem, objective of the study, hypothesis of the study, significance of the study and scope of the study. The second chapter, literature review, dealt with the theoretical and empirical literature review on factors affecting MFIs' performance with especially emphasis on competition. The theoretical review that explains what the theoretical literature says about the relationship between the sustainability of MFIs and the factors affecting it; while empirical review deals with findings of different scholars in the area. The third chapter dealt with the data source and methodology of this study. The sources of quantitative data of the study had indicated. The fourth chapter deals with testing validity of the model, analysis of the data and presentation of the output. In the fifth chapter the researcher concludes the findings of the study and forward recommendations based on the findings.

CHAPTER TWO: LITERATURE REVIEW

2.1 THEORETICAL LITERATURE REVIEW

2.1.1 PERFORMANCE IN MICROFINANCE

As microfinance institutions are viewed predominantly as instruments of social change, their performance has been mostly measured by non-financial parameters. The concept of social performance seemed to have overshadowed the state of financial health of these enterprises (Pankaj & Sinha, 2010). It seems this is due to the branding and common perception of MFIs as non-profit organization. However, the long term viability of any business model depends as much on the financial viability especially as competition has become more antagonistic. These developments have induced MFIs to become more financially-focused and to broaden their services and activities

I. Social Performance in Microfinance.

Microfinance services have an important role in Meeting the Millennium Development Goals (MDGs). Access to financial services forms a fundamental basis on which many of the other essential interventions depend. Moreover, improvements in health care, nutritional advice and education can be sustained only when households have increased earnings and greater control over financial resources. Financial services thus reduce poverty and its effects in multiple concrete ways.

The social performance of an organization comprises the relations of the organization with its clients and with other stakeholders. Now a day, many people think that social

performance in MFI should be measured (Helms, 2006). In the recent past, assessment of social performance into MFI's regular management systems have been developed (Hashemi, 2007). Social performance is the change in welfare and quality of life among clients and non-clients due to the activities of an organization. Following the Structure-Conduct-Performance (SCP) paradigm of industrial organization, the impact of an organization on socio-economic and environmental dimensions follows from its structure, conduct and performance and is influenced by the external environment of the organization (D.George & Joll, 1992). Thus, social performance precedes social and economic impact. This simply implies that the measurement of social performance involves investigating the structure of an organization and its conduct in the market, local and wider community.

Recently, a common consensus around the definition of social performance by an industry-wide task force was attained. Social performance is defined as the effective translation of a MFI's social mission into practice; this is in line with accepted social values. These values include increasing outreach, bettering economic and social conditions of clients and enhancing social responsibility of MFI towards clients, employees and the community (Hashemi, 2007).

The number of customers is taken as an indicator of the breath of outreach; the higher the number of customers, the higher the breath of outreach. Average loan per customer is also usually taken as an indicator of depth of outreach; An MFI with smaller average loan per customer understood to have more depth of outreach. However, Commercialization and the related need to increase efficiency involve many risks and create a conflict between efficiency and outreach, implying that the strife to increase efficiency reduces the scope for lending to the poor (Armendáriz & Labie, 2011).

On the other hand, we can measure social responsibility in microfinance through its direct contribution to the financial inclusion of people. And the rating could be as follow:

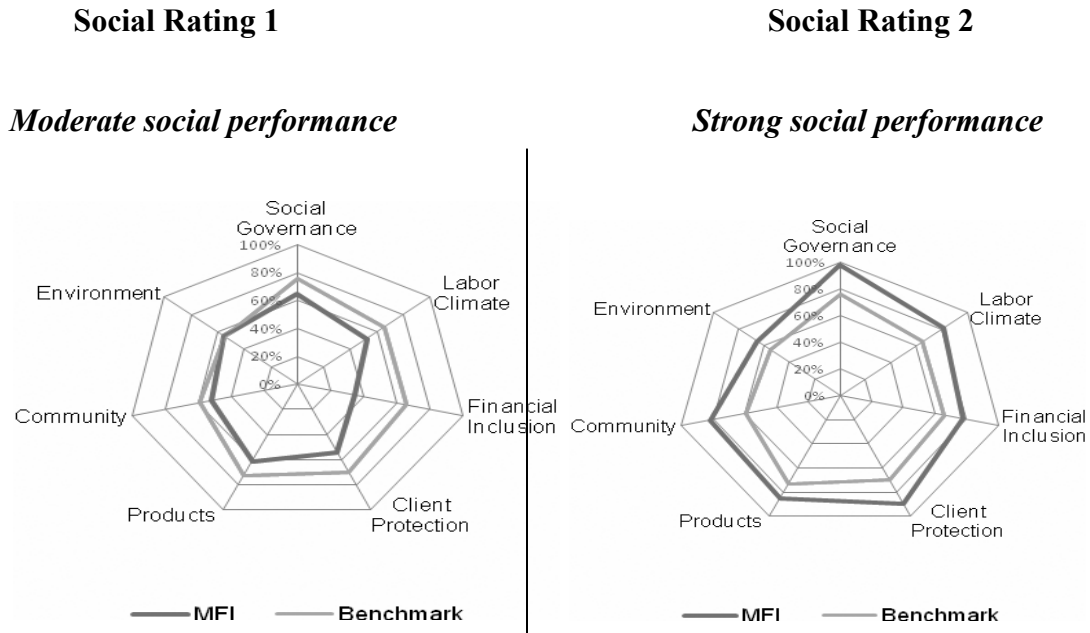


Figure 2.1: Rating Social Performance (taken from hand book of microfinance).

II. Financial Performance in Microfinance

A second important issue raised in the literature on microfinance deals with the financial performance of microfinance programs. Within the industry, financial performance is viewed from the perspective of microfinance sustainability.

i) Profitability in Microfinance

Providing microfinance is a costly business due to high transaction and information costs. At present, a large number of programs still depend on subsidies to meet high cost that is, they are not yet sustainable. The sustainability of the credit programs did not receive much

attention in the beginning of the movement. And yet this is one of the debatable important factors that increase the criticism for failed subsidized credit programs is financial self sufficiency. As confirmed by the Rural Finance Program the building of long lasting, permanent financial institution requires that they become financially sufficient. Consequently, international organizations such as the World Bank, USAID, concluded that commercialization is the only way microfinance could ever serve a large number of people. (Rosenberg, 2009), provided a guide for measuring indicators of MFI sustainability.

He identified five broad indicators of MFI financial performance: the Return on Asset (ROA), Return on Equity (ROE), and Adjusted Return on Asset (AROA), Financial Self-Sufficiency (FSS) and Subsidy Dependency Indicator (SDI). ROA and ROE are considered to be the standard profitability measures. However, the existence of recurrent subsidies and grants from social investors allowing MFIs to provide funding at rates better than market conditions. Those interventions are said to artificially inflate the above financial indicators and thus hide an MFI's real capacities of generating income from its operations. The use of FSS partially solves this problem by relying on subsidy-free indicators for computation. However, the FSS is itself subject to criticism since unadjusted financial expenses are included in its calculation, which renders it unable to show the impact of soft loans. FSS measures the extent to which an MFI's business revenue mainly interest received cover the MFI's adjusted expenses. If an MFI's FSS is below 100%, that means the MFI has not yet achieved financial breakeven.

The main reason to support this view is that large-scale outreach to the poor on a long term basis cannot be guaranteed if MFIs are not self sufficient. However, a greater emphasis on

financial performance and the trend towards commercialization of microfinance has raised concerns as to the effect on outreach.

ii) **Portfolio Theory**

The portfolio theory approach is the most important and plays a great role in bank performance studies. 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. The portfolio theory further explained as portfolio diversification and the desired portfolio composition of commercial banks are results of decisions taken by the bank management. Further, the ability to obtain maximum profits depends on the feasible set of assets and liabilities determined by the management and the unit costs incurred by the bank for producing each component of assets. Portfolio theory largely supposes that bank performance is influenced by internal efficiencies and managerial decisions (Kane & Malkiel, 1965).

2.1.2 COMPETITION IN MICROFINANCE

Commercial banks initially were deterred to entering the microfinance niche by the small scale of the transactions that define it, but the concept of commercialization of microfinance has started to change that mindset. A growing number of commercial banks are extending their operations, opening up services to poorer segments of the population and competition is emerging as a result. An increase in competition could change the industry in a number of ways, some for the better and others less favorably (Cull, Demirgüç-Kunt, & Morduch, 2009).

Competition is a means to reduce the cost of the microcredit and consequently the interest rates. In several markets where competition exists, operations have been more efficient and at the same time, interest rates have decreased. However, we can observe that competition alone is not efficient to reduce rapidly the interest rates of every MFI. Most of the times, it is the mechanism used in the processes in addition to the willingness of the management to lower the interest rate that actually entails a significant reduction.

If subsidies were used by MFIs to keep the intermediation costs low, the effect of this policy would be to distort allocation processes, to alter market competition, and probably to worsen the portfolio quality in the long run. (Torre & Gianfranco, 2006)

On the other hand, efficient competition among MFIs with excellent operations has driven the interest rates charged to Micro-entrepreneurs to some of the lowest levels in Latin America and worldwide (Microfinance Information exchange, 2008). However, according to the (Centre for the Study of Financial Innovation (CSFI), 2014), the concern about the growth of competition in the microfinance market is showing rebirth, mainly because the lending capacity improves.

As a result, competition is rated as the third major source of risk of microfinance as the entry of new institutions into the microfinance market; include commercial banks and also non-banks such as telecom companies with mobile payment systems. The fact is that many of them are not regulated as banks, or do not stick to industry rules, makes this competition unfair.

2.1.3 MEASURING COMPETITION

In measuring empirical factors driving competition one can consider three types of approaches:

Market structure

A healthy and sustainable economy requires a financial system that helps in effective and efficient utilization of scarce resources. For many years the banking sector was largest and sole credit provider. But now a day, microfinance institution becomes crucial allies of the rural poor by providing small loans based on the need and capacity of consumer. However, according to studies in some countries like India, Bangladeshi and Bolivia market saturation brought problem of the over-indebtedness that mainly caused due to lack information sharing among MFIs and growth of the adverse selection and moral hazard problem inherently. While measuring competition among the MFIs working the country any one had to consider the structure- Conduct-Performance (SCP) paradigm.

The paradigm hypothesized that i) Structure influences Conduct (e.g., lower concentration leads to more competitive the behavior of firms); ii) Conduct influences Performance (e.g., more competitive behavior leads to less market power and greater social efficiency). And iii) Structure therefore influences Performance (e.g., lower concentration leads to lower market power).

However, there are theoretical and empirical problems with the SCP-paradigm that directly and indirectly, structure determines performance. For one, structure could be dependent or independent as market structure itself is affected by firms' conduct and hence by performance. Another conceptual problem is that industries with rapid technological

innovation and much creative destruction, likely the financial sector, may have high concentration and market power, but this is necessary to compensate these firms for their innovation and investment and does not mean reduced social welfare. Actual the former conceptual problem is not much concern for this study since the microfinance sector in Ethiopia is less like to adapt and or invent new technology in the sector.

Contestable

The theory contestability in contrary to the SCP paradigm; suggests that market structure and actual degree of entry or exit are not necessarily the most important factors in determining competition. Because, if firms in a market with no entry or exit barriers raise their price above marginal cost and begins to earn abnormal profits, potential rivals will enter the market to take advantage of these profits. When the existing firms responds by returning prices to levels consistent with normal profits, the new firms will exit. In this manner, even a single-firm market can show highly competitive behavior.

In general the theory of contestable markets has also drawn attention to the fact that there are several sets of conditions that can yield competitive outcomes, with competitive outcomes possible even in concentrated systems since it does not mean that the firm is harming consumers by earning super-normal profits. On the other hand, collusive actions can be sustained even in the presence of many firms. However, practically much attention in policy context and empirical tests is given to market structure and the actual degree of entry and exit in particular markets as determining the degree of competition.

Performance

There is no appropriate competition measurement established microfinance institutions. Here, the researcher borrowed from banking literature. But, you need to be careful while applying the banking literature because the nature and objective of banks and MFIs have somewhat different. For this thesis the problem has no effect since NGO MFIs are not allowed to operate in Ethiopia. Moreover, MFIs' ownership is required to be only and only share company. So, according to the banking literature there are three approaches that have been proposed for measuring competition.

The first empirical approach considers factors such as financial system concentration, the number of MFIs, or Herfindahl indices. It relies on the SCP paradigm to measure the relationships between structure-conduct-performance. As mentioned in US Merger Guidelines¹, a HHI index below 0.01 indicates a highly competitive market, the HHI index below 0.1 indicates an un-concentrated market and HHI index between (0.1 - 0.18) indicates moderate concentration; and a HHI index above 0.18 indicates high concentration. However, using this approach measuring the degree of competition, its determinants and its impacts can be complicated. One because of the competitiveness of an industry cannot be measured only by market structure indicators and there is no one best market concentration measure.

The second, traditional performance measures used in finance do not necessarily indicate the competitiveness of a financial system. The second considers regulatory indicators to measure the degree of contestability. It takes into account entry requirements, formal and informal barriers to entry for domestic and foreign banks. It also considers changes over

time in financial instruments, innovations, etc. as these can lead to changes in the competitive landscape.

The third is formal competition measures, such as the so-called H-statistics, that proxy the reaction of output to input prices. These formal competition measures are theoretical well-motivated, and have often been used in other industries, but they do impose assumptions on cost and production functions. This approach emphasized on the degree of competition requires specific measures and techniques has become more used. These formal empirical tests for competition are being applied to the financial sector; mostly to banking systems in individual countries. (Bikker & Spierdijk, 2009)

The PR model provides a measure H-statistics of the degree of competitiveness of the industry, which is calculated from reduced form bank revenue equations as the sum of the elasticity of the total revenue of the banks with respect to the bank's input prices. The H-measure is between 0 and 1, when $H \leq 0$, the characterized as a collusive (joint monopoly) competition. When $0 < H < 1$, the market is of monopolistic competition and when $H = 1$, there is perfect competition in the market. Generally, the magnitude of H can be interpreted as an inverse measure of the degree of monopoly power, or alternatively, as a measure of the degree of competition. (Poshakwale & Qian, 2009), (Claessens, 2009)

Empirically, studies conducted used this methodology mostly reject both perfect collusion as well as perfect competition (i.e., they find mostly evidence of monopolistic competition) in both developed and under developing countries. Though there are large variations from countries to country.

2.2 EMPIRICAL LITERATURE

Debt struggles in a microfinance market that, while starting to experience competition, is far from the exceptional levels of debt found in recent crisis countries. On a global scale, it is worth noting that saturated environments are mainly found in urban areas and the freedom to set interest rates that enables MFIs to become rapidly profitable and sustainable is a tangible factor in the establishment of a competitive environment. The paradox here is that the poorest people, especially in rural areas, are not always covered and many MFIs have not made this segment their objective. (Duquet, 2006)

Competition

The introduction of competition into the microfinance world means the beginning of a market driven practice. Traditionally, creation of markets is associated with an array of benefits, such as a sustainability and efficiency. Therefore, the creation of competition is encouraged amongst economists so MFIs can have the absolute highest level of productivity within MFIs. The competition encourages MFIs to broaden their product range which will benefit micro and small enterprises. The MFI can identify markets that are not served and therefore design new products for these markets. If the MFI wants to be different from other MFIs, it should diversify its product range (specific loans, micro-insurance, money transfers ...etc) including loan products. It should also offer new products to micro-entrepreneurs. Through competition resources gravitate towards their most productive use and price is forced to the lowest level to be sustained over the long run (Deb & Murthy, 2008).

A number of studies on Microfinance Institutions (MFI) have been done. The study of (Porteous, 2006) looked at the key issues related with competition in microfinance

institutions. The research focused at three the world in Latin America, Africa and Asia and stated that the conventional approach assumes competition is best suited for profit-maximizing firms. However, nongovernmental organizations (NGOs) that do not seek to maximize profit have been dominant or at least important players in many microcredit markets. Moreover, in some markets, donors and government-controlled funders have influenced lender behavior through their control of fund. Moreover, too much competition amongst MFIs had a negative impact, as the empirical evidence from Bolivia, India, Bangladesh and other part of the world told us. As competition increased clients may have many credit options as new institutions enter the market. Research has shown that increased loan supply may lead to multiple-loan taking by clients, resulting in heavy debt burdens and low repayment rates (McIntosh & Wydick, 2005), (Assefa, Hermes, & Meesters, 2010), (Walczak, 2013). According to (Armendáriz & Labie, 2011), increased competition led to decrease in profit. The rationale is that through the entry of new actors or increasing competition, interest rates would automatically decrease. As a result, MFIs are expected to report lower profit rates, to the point where it is no longer attractive for new institutions to enter the microfinance market. Likewise, the major urban centers of Uganda and Kenya are becoming saturated by competition among numerous MFIs. And, the previous dominance of grant-funded, socially motivated lenders is now being contested by private institutions. Consequently, there is an increasing competitive pressure on socially motivated MFIs, whose interest rates may be higher than the new competition.

Major MFIs operating in both Uganda and Kenya are troubled by the multiple borrowers. Kenyan MFIs have employed risk management network based on the country's national ID system to detect clients within their own portfolio. However, Uganda has no such national

ID system, and so they are powerless to monitor the problem, even within their own institutions (McIntosh & Wydick, 2005).

In Ethiopia also the findings confirmed that competition has negative impact on financial performance of MFIs (Yenezew, 2014). On the other hand, increased competition may also put pressure on MFIs to increase output and lower costs, which may lead them to relax lending and client selection standards and reduce costly monitoring and screening procedures. This in turn may increase default rates. I therefore expect a negative association between increased competition and loan repayment performance and/or loan portfolio quality due to increased default rates.

The competition encourages MFIs to broaden their product range which will benefit micro and small enterprises. The MFI can identify markets that are not served and therefore design new products for these markets. If the MFI wants to be different from other MFIs, it should diversify its product range (specific loans, micro-insurance, money transfers ...etc) including loan products. It should also offer new products to micro-entrepreneurs.

Portfolio Quality

Outstanding loan portfolio indicates to total loans available on the hands of clients refundable to the MFI. Portfolio quality is a measure of how well or how best the institution is able to protect this portfolio against all forms of risks. However, as competition increased clienteles may have many credit options as new institutions enter the market. Research has shown that increased loan supply may lead to multiple-loan taking (referred to as “multiple loan” or “double-dipping” in the literature) by clients, resulting in heavy debt burdens and low repayment rates (McIntosh and Wydick, 2005). Moreover, over indebtedness may also put pressure on MFIs to decrease output and increase expenses. I

therefore expect a negative association between PAR>90 and financial performance or sustainability of MFIs. Increased PAR and the associated deterioration of lending portfolios of MFIs is a growing concern and some microfinance experts have expressed their frustration regarding the upward trend in defaults and over-indebtedness (Kar & Swain, 2014) (Gwasi & Ngambi, 2013).

There have recently been concerns about over-indebtedness risks in Ghana, one study raising concerns about multiple borrowing, another applying high-level early-warning indicators to the market and concluding that over-indebtedness risks in Ghana are not yet extreme but on a medium to high level given market characteristics. Also, local MFIs are aware of increasing competition and borrowers struggling to repay their loans (Center for Financial Inclusion , 2011). This scenario is applicable in Ethiopia, since it is consistent with the findings of (Befekadu, 2007).

Operational Efficiency

Now a day MFIs face stringent competition from commercial banks; the growth of microloan activities of commercial banks may confront MFIs with increased competition for borrowers. This may force them to reduce costs and improve the quality of services delivered. Second, the presence of commercial banks may lead to usage of modern and more efficient banking techniques that may be copied by MFIs. Moreover, it may improve the skills of loan officers and managers working at MFIs, since it enlarges the pool of financially educated people. Any Changes with respect to the demand for MFI services and/or the repayment performance of existing clients also affects the cost structure of MFIs, i.e., their cost efficiency may change as well. Moreover, changing competition in

microfinance markets directly affects cost structures and cost efficiency. All these arguments suggest there is a negative relationship between competition and the costs efficiency (Armendáriz & Labie, 2011). The operational expense ratio is always negatively related with the financial performance in Ethiopia as empirically findings of (Yenesew, 2014) (Tehulu, 2013) and (Befekadu, 2007) argued.

Depth of Outreach

Outreach is a hybrid measure that assesses the extent to which MFI has succeeded in reaching its target clientele and the degree to which the MIs has met the demand of financial services. The assessment of MFIs can only be good as the information available; requires adherence to generally accepted accounting principles and be subject to regular external auditing. Some theories depicted that there may be trade- off between outreach and self sustainability, but many institutional policies that improve outreach also improve self sustainability; improvement in performance at least in one criterion, while performance can be monitored on the other.

The relationship between performance and outreach of microfinance institutions is ambiguous. But, financial performance or profitability decreases as MFIs' expand their market base and explore new markets and (poorer) clients, implying an increase of outreach (McIntosh & Wydick, 2005), (Muriu, 2011). However, if increased competition is associated with rising defaults and falling profits, MFIs may engage in more cautious lending by extending loans only to borrowers they consider safe and cost effective. This may reduce outreach, as lending to new and unexplored markets, as well as lending to poorer clients, is generally considered to be more risky and costly. The financial

performance of Ethiopian MFIs is negatively affected by outreach of MFIs as confirmed by the findings of (Befekadu, 2007) and (Tehulu, 2013).

Savings Mobilization

According to (Lengwiler, 2004), total saving determines the amount of investment that the economy as a whole can realize and thus affects future production possibilities. As well, in expansion of microfinance services to more poor society MFIs need trusted and long lasting funds to ensure their sustainability. So, savings mobilization may provide MFIs with inexpensive and sustainable source of funds for lending. Moreover, higher deposit to total assets ratio is associated with improved profitability, assuming that the deposits program is efficient.

Deposits may however require widespread branching and other expenses. In such situation, the deposit mobilization may in contrary diminish the profitability. Many MFIs in Africa remain unregulated with NGO structures. This implies that Africa MFIs may be constrained in financing options, with no shareholder structure for attracting equity or license to mobilize deposits (Muriu, 2011).

Generally, the key performance of top MFIs in Ethiopia evidences that the operational self sufficiency (OSS) and return on assets (ROA) for a number of MFIs in this largely unknown market are above the world median (Microfinance Information exchange, 2008).

Recently, MFIs were aware that the need to deliver microfinance services to underserved regions and areas. At the same time this requires a systematic method to identify underserved areas. MFIN guidelines limiting recruitment of staff from other MFIs have

low application in a situation where MFIs have to consolidate if not cut back their operations. However, the principle is recognized and will require internal monitoring as part of human resource systems. (MFIs in a Regulated Environment financial and social analysis, 2012)

The development and duration of the action carried out by MFIs on the long run can be secured in any environment and especially in competitive environments with efficient governance. Good practices imply transparency and ethics. Therefore the microcredit institutions have to share information about the cost and the loan rate that is actually charged, the rights and responsibilities of the clients and the MFI to their clients and to other MFIs. They have to take into account ethical aspects when conducting actions, funding the goods but also when dealing with the stakeholders. The implementation of communication tools between MFIs enables to set an environment of 'fair competition' focused on mutual respect.

Regulatory bodies like the Central bank or Ministry of the Treasury can play a significant role: oblige financial actors to abide by the rules for good behavior among themselves, prohibition to default loan. So, competition is one of the main reasons for the growing concern and some microfinance experts have expressed their frustration regarding the upward trend in defaults and over-indebtedness. However, the participation of commercial banks and other telecom operators in the microfinance market may lead to usage of modern and more efficient banking techniques that may be copied by MFIs.

2.3 CONCEPTUAL FRAMEWORK

Different empirical evidences suggested that financial performance of financial institutions specifically MFIs is affected by internal and external factors. This study used both internal and external determinants of MFIs financial performance includes portfolio quality, operational Efficiency, outreach, MFIs size, saving mobilization/source of financing, market concentration/competition, growth in real GDP and annual inflation rate. The study was identify how these variables are determined the financial performance of MFIs in Ethiopia.

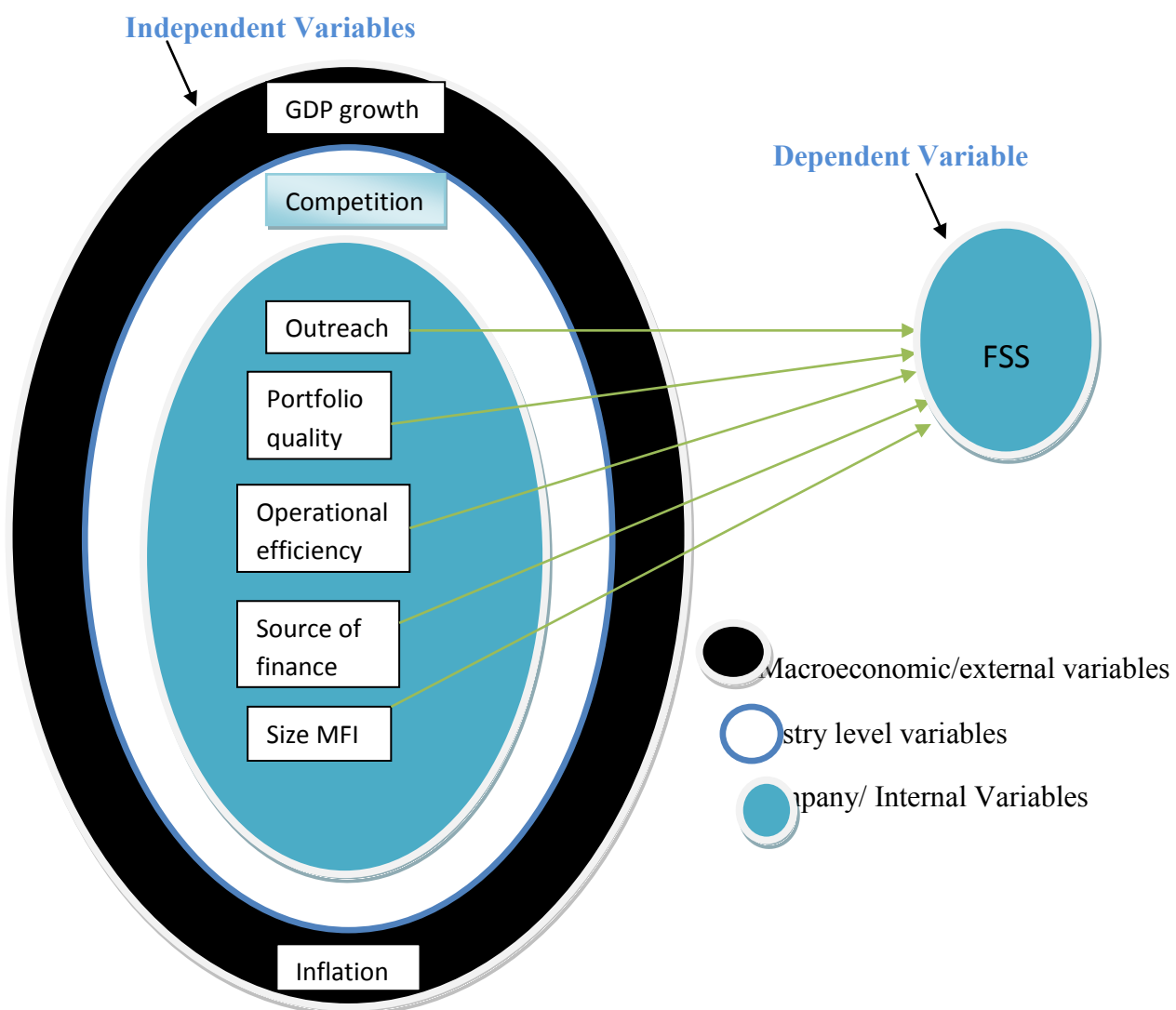


Figure 2.2: conceptual frame of regression model

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

This chapter outlines the general methodology used to conduct the study. It specifies the research design, target population, sampling design, data source method and instruments.

3.1 RESEARCH DESIGN

Research design is the plan and structure of investigation so conceived as to obtain answers to research questions. The research design is an overall scheme or program of the research. The researcher was used Explanatory research design.

3.2 TARGET AND SAMPLE POPULATION

3.2.1 TARGET POPULATION

Target population is all MFIs currently registered at the National Bank of Ethiopia. This population does not include microfinance institutions licensed but not started operation yet. Moreover, as per the definition microfinance broad enough that includes small money lenders, mutual funds, cooperatives and other informal financial service providers.

But for the purpose of this t the researcher targets only on those registered deposit taking MFIs. Currently, there are 34 MFIs registered at NBE, of them four MFIs have not started operation yet.

3.2.2 SAMPLE POPULATION

Sample population of this study was selected purposive sampling technique. This due to the data requirement as ten years data is required; the sample population was selected from those MFIs started to report before ten years. Based on the selection criteria ten MFIs were

selected namely: ACSI, OCSSCO, AdCSI, Gasha, PEACE, Wasasa, Eshet, Meklit, Vision fund and AVFS.

3.2.3 DATA SOURCES

The study uses comprehensive panel data set of Ethiopian MFIs ranging from 2005 to 2014. The data was collected from the balance sheets and income statements reported by MFIs to the National Bank of Ethiopia. In addition, secondary data from the central bank (National Bank of Ethiopia), Association for Ethiopia Micro-Finance Institutions (AEMFI) and Micro-Finance Information Exchange (MIX) and other readymade data like inflation rate, and GDP real growth rate that was collected from NBE.

3.3 METHODOLOGY

This study was analyzed using Eview-7 by taking balanced panel data from 10 MFIs for the period from 2005 to 2014. The data was collected using secondary data sources, from 10 MFIs (ACSI, OCSSCO, AdCSI, Gasha, PEACE, AVFS, Wasasa, Eshet, Meklit and Vision fund).

Market concentration ratio of sample MFIs was evaluated by taking average market shares of the selected MFIs. The researcher used $MCR = 3$ and $MCR=10$, that is, $MCR3$ is the Market concentration ratio of three big MFIs (government backed MFIs) and $MCR10$ stands for the market ratio of the ten sample MFIs concentration index, by taking average market concentration for assets, deposits and loans. This method although provides a measurement of competition, it ignores the size distribution of MFIs or inequality in given market. On the other hand, the Hirschman- Herfindahl index (HHI) captures the number of institutions in the industry which is not considered in sample selected MFIs concentration

ratios. So, this can solve the limitation of the P-R approach. In the H-H index an increasing HHI indicates a decrease in market competition and increase in the market power of larger firms and vice versa.

The HHI is computed as,

$$HHI = \sum_{i=1}^n MS^2$$

Where,

MS: is the market share of the MFI

N: is the number of target population

According to the US Merger Guidelines¹ as cited on (Zemzem & Gashaw, 2014) , a HHI index below 0.01 indicates a highly competitive market, the HHI index below 0.1 indicates an un-concentrated market and HHI index between (0.1 up to 0.18) indicates moderate concentration; and a HHI index above 0.18 indicates high concentration. In this study three HHI indices are developed based on three variables total assets, total loans and total deposits.

3.3.2 MODEL ESTIMATION

Microfinance industry is comprised of different corporate entities like that of micro bank these are profit seeking firms and that of NGO microfinance their entire goal is social motive. To empirically ascertain significant determinants of financial performance in microfinance institutions, a multivariate linear regression model has been used. While specifying certain tests to support the use of a linear function, it is evident that the linear

functional form is widely used in the literature and produces good results. One of the most useful aspects of a regression model is its ability to identify the independent effects of a set of variables on a dependent variable William H. (2008) (i.e. as cited in (Gwasi & Ngambi, 2013) . The model takes the following form:

$$Y_{it} = \alpha_0 + \beta_1 X_{it} + \beta_2 X_{it} + \beta_3 X_{it} + \beta_4 X_{it} + \beta_5 X_{it} + \beta_6 X_{it} + \beta_7 Z_t + \beta_8 Z_t + u_{it}$$

Where,

i : refers to an institution;

t : refers to year;

Y_{it} : refers to sustainability of financial institution i in a particular year t ;

X : represents independent variables;

Z : is a vector of control variables representing macroeconomic indicators;

u_{it} : is a normally distributed disturbance/error term.

The linear regression model is based on the following assumptions:

- 1) $E(u_t) = 0$, this assumption is that the average value of the errors is zero. In fact, if a constant term is included in the regression equation, this assumption will never be violated.
- 2) $Var. (u_t) = \sigma^2 < \infty$, It has been assumed thus far that the variance of the errors is constant, σ^2 this is known as the assumption of homoscedasticity. If the errors do not have a constant variance, they are said to be heterocedastic.
- 3) $Cov (u_i, u_j) = 0$ for $i \neq j$, this Assumption is made of the CLRM's disturbance terms is that the covariance between the error terms over time (or cross-sectional, for that type of data) is zero. In other words, it is assumed that the errors are uncorrelated with one another. If

the errors are not uncorrelated with one another, it would be stated that they are 'auto-correlated' or that they are 'serially correlated'. A test of this assumption is therefore required.

- 4) **The X_t are non-stochastic**, Fortunately, it turns out that the OLS estimator is consistent and unbiased in the presence of stochastic regressors, provided that the regressors are not correlated with the error term of the estimated equation.
- 5) **The disturbances are normally distributed**, Recall that the normality assumption ($u_t \sim N(0, \sigma^2)$) is required in order to conduct single or joint hypothesis tests about the model parameters.

The theoretical model presented above in equation (1) can be re-written as follows:

$$FSS_{it} = \alpha_0 + \beta_1 MCR_t + \beta_2 PAR>90_{it} + \beta_3 OER_{it} + \beta_4 ASSET_{it} + \beta_5 AVL_{it} + \beta_5 SLR_{it} + \beta_7 GDPG_t + \beta_8 INFL_t + u_{it}$$

Where:

FSS_{it}: Financial Self Sufficiency for MFI i in year t

PAR>90: it is portfolio at risk due over 90days for MFI i in year t

ASSET_{it}: it is size (i.e. total asset) of MFI i in year t

AVL_{it}: it is the outreach (i.e. average loan size/ gross loan over number of active clients) of MFI i in year t

OER_{it}: ratio of operational efficiency ratio for MFI i in year t

SLR_{it}: Savings to loan ratio of MFI i in year t

MCR_t: Market concentration index representing industry competition in year t

INFL_t: annual inflation rate for year t

GDPG_t: real GDP growth for year t , and

Where $t = 2005$ to 2014 , $\alpha = \text{constant}$, β coefficient of variables.

The dependent variable used in this study to measure performance is the Financial Self Sufficiency (FSS). This research used FSS as an indicator of internal self sufficiency based on data available. Because, FSS indicates whether an MFI is cover all financial and operational costs incurred only by its financial revenues. FSS provides MFIs non-distortionary financial viability in the context of zero subsidies and expansion only through the institutions commercial-cost liabilities (Annim, 2009).

The independent variables selected in the study are as follows:

✚ **Portfolio at Risk (PAR>90 days):** the relationship between non-performing loan and the performance of the MFIs have negative correlation. Provides that as the percentage of non-earning assets increases, in turn decreases the revenue and liquidity position of MFIs. According to (Ledgerwood, 1999), the profitability of an MFI is affected if interest revenue is not received on delinquent loans. However, the most significant effect on profitability occurs when the loan principal is not repaid and loan loss provisions must be made. This variable is a very important performance indicator. A lender's ability to collect loans is crucial for its success, given that loan granting is the principal source of revenue of these lending institutions. On the other hand, loan collection has proved to be a strong proxy for general management performance. There exist several indicators for portfolio quality: portfolio at risk, loan at risk, write-off, and current recovery rate. In this study, I use portfolio at risk, which is the standard measure of portfolio quality in the banking industry. Thus PAR>90 represents portfolio quality beyond 90 days.

✚ **Size of institution (total asset of MFI):** large firms are more diversified than small ones, and their reported profit is an average of the profits of the various branches and

subsidiaries. Provided that the profits attributable to individual products do not show perfect positive correlation, the variation in profits will be less for a diversified firm producing, say, five products than it will be for individual specialized firms producing one of those products. This is because in the diversified firm the variations in the profits on individual products will tend to be offsetting. Moreover, the management of large firms may be more skilful at avoiding projects that result in losses, but also less adventurous and thus less likely to take advantage of opportunities of making exceptional gains. Furthermore, large firms have greater market power and during good times may have relatively more organizational slack. During a downturn in demand they may be more successful in maintaining profits, both because they can use their power in the market and also because they have greater scope for increasing internal efficiency (D.George & Joll, 1992). So, any one can say that as MFI size increased, the profitability of MFI as well improves. Smaller MFIs in particular are at a disadvantage, struggling to cover the industry's high operational costs and diversify their products in order to compete with larger microfinance providers. (Muriu, 2011)

✚ ***Outreach/Depth of outreach / outstanding loan portfolio divided by number of active credit clients (average outstanding loan size):*** The outreach to financial performance trade-off is an issue that has received attention from all stakeholders who are concerned about the social performance of microfinance providers. The concern largely comes from proposition that focus on financial performance may ignore the small loans demanded by the poor, as they are costly to service. Recently, the issue becomes more pressing following the growing commercialization, competition and regulation in the microfinance industry that affected the way microfinance institutions do business and resulted in a shift in performance assessment criteria (Christen, 2001). Although outreach often is measured

by the depth of outreach to see to what extent the MFIs reach the targeted poor clients. Because, the depth of outreach is understood as average loan size or average loan size as a percentage of GDP per capita. Although useful measures, these indicators can sometimes be misleading, because the loans are for different terms and uses and may not reflect the income level of the clients. Depth of outreach can have many different meanings (Ledgerwood, 1999).

✚ **Competition/ Concentration Ratio (MCR):** a concentration index is used to measure competition in the microfinance industry. The researched used the Herfindahl-Hirschman index (HHI) as a measure of competition. A low concentration index is associated to high competition and vice versa. HHI is frequently used by researchers in studies pertaining to banking and microfinance industries. Low competition or high concentration ratio may hinder profitability of the microfinance institutions by increasing the transaction of many small loans. Because, small MFIs should not compete with those MFIs which have high market, so they must search smalls that are not target market to the big MFIs. Or if the worst option is happened they may disburse their loan to clients who already borrowed from other MFIs this leads to over indebtedness.

✚ **Operational Efficiency Ratio (OER):** refers to the cost per unit of output. Common efficiency ratios include operating expenses ratio, salaries and benefits to average portfolio outstanding, cost per unit of currency lent, and cost per loan made. But the researcher used the operating expenses ratio (OER) to measure the efficiency cost management.

✚ **Saving to Loan Ratio (SLR):** is the ratio of total deposit to gross loan portfolio. It is included as an independent variable since savings mobilization in MFIs has become an integral part of a viable microcredit delivery system.

Macroeconomic indicators are control variables integrated in the model to account for the economic environment in which microfinance institutions operate. More specifically, I attempt to control for inflation and for GDP growth. High inflation makes it difficult for borrowers and lenders to contract with one another, though the impact on lending by microfinance institutions is somewhat a petite. On the other hand, high real GDP growth creates an opportunity to the lenders and borrowers because there is high economic transaction if there is growth in real Gross Domestic Products (GDP).

TABLE 3.1: LIST OF VARIABLES

VARIABLE	DEFINITION
Financial Self Sufficiency (FSS)	Adjusted financial revenue divided to (Adjusted Financial Expense + Adjusted Net Impairment Losses on Loans + Adjusted Operating Expense)
Independent variables:	
Concentration ratio (CR)	HHI for annual deposits of a MFI on total deposit of the market. The index ranges from 0 to 1, indicating a competitive to an uncompetitive market.
Portfolio at risk (PAR>90 days) ratio	(Portfolio past due >90 days +rescheduled portfolio) to gross loan portfolio
Operational efficiency ratio (OER)	Total operating expenses to Average portfolio balance
Saving to Loan ratio (SLR)	Net deposit to gross loan portfolio ratio
<i>Outreach (average outstanding loan balance)</i>	Average Outstanding loan to active loan clients ratio(in thousands of Birr)
<i>Size of institution</i>	Measured by total asset of MFIs(asset in millions of Birr)
External (macroeconomic) variables:	
<i>Inflation</i>	<i>General annual Inflation rate</i>
<i>GDP growth</i>	<i>Real (GDPG) growth</i>

3.4 ECONOMETRICS ISSUE

Some econometric issues may arise when linear regressing of a dependent variable on some independent variables. For the purpose of this study, I have checked whether our empirical model is free from multicollinearity and autocorrelation. If any one of those phenomenon turns out to be present, this would be a violation of a key assumption of statistical regression.

I have tested for multicollinearity by using the matrix of correlations; in an implicit assumption that is made when the explanatory variables are not correlated with one another. If there is no relationship between the explanatory variables, they would be said to be orthogonal to one another. If the explanatory variables had no relationship 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.

In any practical context, the correlation between explanatory variables sense that a small degree of association between explanatory variables will almost always occur but will not cause too much loss of precision. However, a problem occurs when the explanatory variables are very highly correlated with each other, and this problem is known as multicollinearity. Measuring near multicollinearity is surprisingly difficult, and hence all that is presented here is a simple method to investigate the presence or otherwise of the most easily detected forms of multicollinearity. This method simply involves looking at the matrix of correlations the between the individual variables.

Likewise the researcher has tested the Durbin-Watson to test for the existence of autocorrelation of errors. Specifically, this module is important for testing whether the assumption of independence of errors is reasonable.

The statistic used in the literature is d or DW and defined as:

$$DW = \frac{\sum_{t=1}^T (\hat{u}_t - \hat{u}_{t-1})^2}{\sum_{t=2}^T \hat{u}_t^2}$$

The procedure therefore tests the null hypothesis (H0) that the errors are uncorrelated against the alternative hypothesis (H1) that errors are correlated one and other. Thus if ρ_s are the error autocorrelations, then we have H0: $\rho_s = 0$, and H1: $\rho_s \neq 0$ for some nonzero ρ with $|\rho| < 1$. To test H0 against H1, we get the least square estimates for the parameters and their corresponding estimated errors $e_1, e_2 \dots e_n$.

The statistic can vary between 0 and 4 with a value of 2 meaning that the residuals are uncorrelated. A value greater than 2 indicates a negative correlation between adjacent residuals whereas a value below 2 indicates a positive correlation. The size of the Durbin-Watson statistic depends upon the number of predictors and the number of observations. However, values less than 1 or greater than 3 are definitely cause for concern; on one hand, values closer to 2 do not call for too much concern. If these rules are valid next step is result analysis.

CHAPTER FOUR:

DATA PRESENTATION, ANALYSIS AND DISCUSSION

This chapter deals with the results of study which include analysis of competition, descriptive statistics of variables, correlation results for dependent and explanatory variables, model misspecification tests (tests for the Classical Linear Regression Model assumptions), and finally presentation of panel data regression analysis and discussion of results.

4.1 ANALYSIS OF COMPETITION

Table 4.1: MFIs Share

year	No. MFIs	Asset		Loan		Deposit	
		CR3	CR10	CR3	CR10	CR3	CR10
2005	24	0.4464	0.4954	0.4332	0.4804	0.5490	0.5905
2006	26	0.4533	0.5142	0.4768	0.5425	0.5900	0.6337
2007	28	0.5105	0.5729	0.5291	0.5970	0.6099	0.6507
2008	28	0.5081	0.5603	0.5294	0.5831	0.6339	0.6710
2009	30	0.5281	0.5778	0.5374	0.5942	0.6315	0.6654
2010	30	0.5596	0.6071	0.5531	0.6039	0.6184	0.6483
2011	31	0.5526	0.5960	0.5419	0.5933	0.6005	0.6265
2012	32	0.5707	0.6188	0.5790	0.6328	0.6221	0.6490
2013	31	0.5829	0.6317	0.6016	0.6547	0.6079	0.6407
2014	34	0.6199	0.6614	0.6128	0.6583	0.6596	0.6854
Average		0.5332	0.5836	0.5394	0.5402	0.6123	0.6461

Author: computation

The Ethiopian MF industry is generally characterized by oligopolistic competition structure as market is concentrated by the large Government backed MFIs. The share of

these MFIs in the overall assets of the industry was 44.64 percent in 2005. Since then, the structure of the MF sector has increased significantly to 61.99 percent in 2014. The key feature of the MFIs sector is the degree of concentration on all asset, loan and deposit sides, reflecting both the structure of the market and the size of the sector.

Hirschman-Herfindahl Index

While three-MFIs and ten- MFIs concentration ratios provide useful information about the market structure, these measures do not take into account the number of MFIs operating in the MFIs sector. As is well known, the number of market participants in the industry has a direct bearing on issues of concentration and competition. Another widely used measure of market concentration which overcomes this problem is the Herfindahl-Hirschman Index (HHI). The HHI takes into account both the relative size and number of MFIs in the industry.

Table 4.2, summarizes Herfindahl-Hirschman Index on deposit, loan and total assets of Ethiopian MFIs for the period of 2005-2014. The HHI summarize how deposit, loan and total assets concentration vary over the sample period.

The industry level market concentration ratio of total asset, outstanding loan and total deposit were declined from 27%, 28% and 25% in 2005 to 20%, 19% and 23% in 2014, respectively. This shows that the competition within the Ethiopian microfinance industry is improving from period to period. This means that the oligopoly competition may change in the long run as market concentration ratio was diminishing over the period in review starting from 2005 to 2014.

Table 4.2: HERFINDAHL-HIRSCHMAN INDEX

Herfindahl-Hirschman Index				
Year	No. MFIs	Asset	Loan	Deposit
2005	24	0.27	0.28	0.25
2006	26	0.25	0.25	0.27
2007	28	0.22	0.23	0.27
2008	28	0.23	0.23	0.28
2009	30	0.23	0.21	0.27
2010	30	0.22	0.21	0.25
2011	31	0.22	0.20	0.24
2012	32	0.21	0.20	0.23
2013	31	0.20	0.20	0.21
2014	34	0.20	0.19	0.23
Average		0.23	0.22	0.25

Author: computation

MFIs concentration Ratio Ethiopia's MFIs sector is highly concentrated. However, concentrated market does not necessarily mean uncompetitive actually and it does not necessarily mean in concentrated market customers are over charged; for instance, in open systems; the threat of entry can restrain incumbents from overcharging (Claessens, 2009); (Cull, Demirgüç-Kunt, & Morduch, 2009). Likewise, high governments subsidized MFIs may also restrict price (interest) rate increase not go beyond some extent (Helms, 2006). However, according (BAUER & MEIER, 2012) with more MFIs entering the market, one would expect outreach to be positively correlated with competition, meaning more people can be served when competition increases. But, with rising default rates and falling profits the MFIs prefer to stick with existing markets, where borrowers are considered safe and bring them good return, this in turn will discourage lowering outreach. On the other hand,

information asymmetry, borrower over-indebtedness and changing clients behavior leads to a decline in efficiency and profitability of MFIs.

4.2 DESCRIPTIVE STATISTICS

The descriptive statistics of variables has been summarized and some interesting reservations exist in Ethiopian MFIs industry. The mean market concentration ratio is 25 percent; this indicates there is high degree of domination of large MFIs of Ethiopia during the years of sample period.

The descriptive statistics explores and presents an overview of all variables used in the analysis. Table 4.3, shows the mean, standard deviation, maximum and minimum for the all variables.

FSS measures the institution's ability to operate without ongoing subsidy, including soft loans and grants (Microbanking bulletin, 2005). The financial performance of Ethiopian Micro Finance institutions which is measured by FSS for 100 observations indicates that the mean FSS was 96.5%, during the study period of (2005-2014). This clearly shows Ethiopian MFIs are not internally self sufficient (i.e. all off a sudden if the subsidies from donors/partners has stopped their sustainability would be questionable). This is consistent with the finding of (Degefa, 2009) that even though the microfinance industry in Ethiopia is approaching maturity in terms of age; MFIs are not yet self sufficient or sustainable without subsidy. However, this ratio is slightly higher than the African average FSS (92.5 percent) as per the MIX 2010 MFIs benchmark. This could be partially attributed from the Government scheme make MFIs free from corporate profit tax if their earnings are reinvested as per the Microfinance business proclamation No. 626/2009, article (23) sub-article (2). On the other hand, the maximum and minimum values are stood at 176 percent

and 29.6 percent respectively. The maximum and minimum values indicates that in every one Birr investment the highly performing or self sufficient MFIs made profit of 0.76 cents after covering all financial expenses. On the contrary, subsidy dependent MFIs need above 0.70 cents to cover financial costs incurred for one Birr investment made on portfolio of the institution. The Standard deviation of FSS is 29.6 percent this clearly illustrates there is notable disparity of FSS among the sample MFIs.

The descriptive statistics of the Herfindahl-Hirschman index shows that there is high market concentration in Ethiopia the MFI industry with an average of 0.25 percent, maximum 0.28 percent and minimum of 0.21 percent market concentration. 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 less concentrated market, when the value is between 0.1 to 0.18 indicted that moderate market concentration and when H-H index above 0.18 indicates that high market concentration (Gajure and Pradhan, 2012) as cited on (Yenesew, 2014). Therefore the results indicate the existence of market concentration in the market.

Loan portfolio is the most important and major asset of MFIs. Portfolio quality reflects the risk of loan delinquency, determines future revenues and an institution's ability to increase outreach and serve existing clients. Regarding the variable Par>90 days, the higher its value, the riskier the credit portfolio, which must have a negative influence on the financial performance of the MFI direct or indirect. As sited in table4.3, the average PAR>90 ratio is 4.07 percent over the last ten years, which indicated of the disbursed loan around 4 percent did not covered over the last ten years.

The Ethiopian MFIs portfolio quality is relatively best or the lower PAR>90 days ratio compared with both the continental and international ratios, which were 5.3 percent and 5.0 percent respectively, in 2010 MIX MFIs' benchmark. As per the NBE any portfolio at risk (PAR>90 days) exceeding 5 percent should be a serious concern of the regulatory body; because unlike loans of commercial banks, most loans are not backed by acceptable collateral*.

Therefore, the result of study shows that from loan portfolio the portion of the outstanding non performing portfolio is 4.07 percent averagely within the NBE standard interval. Hence, much attention should be given to loan delinquency management by MFIs.

The Operational expense ratio (OER) averagely stands at 11.12 percent which is efficient than any region as MIX published in 2010 MFIs bench mark. But, I have observed from the table 4.3, the maximum and minimum values of MFIs' operational expense ratio ranges from 27.50 percent to 2 percent; this means that to disburse one Birr loan efficient MFIs incur only 0.02 cents while MFIs with weak cost management practices spent around 0.28 cents to administer one Birr loan. This indicates there is huge cost management gap among MFIs. So, those MFIs with high operational expense ratio or less efficient in cost management practices need to work harder so as to ensure cost efficiency.

* Acceptable collateral is cash and cash equivalent (deposit and Federal government securities) according NBE directive No.MFI/18/2006, article 7.2.3

The Association for Ethiopian Microfinance Institutions (AEMFI) should play an important role in sharing the best cost management practices from efficient MFIs to fix the cost management problem small MFIs.

The MFIs size plays an important role to maintain the position of a MFI in the market. The mean, the maximum and minimum values are Birr 581.32 million, Birr 8,460.21 million and Birr 5.17 million, respectively. But, the standard deviation value is Birr 1,307.66 million which indicates there is visible variation of MFI_i asset in year t , from the average asset of sample MFIs in observation period (2005-2014). Likewise, the maximum value is Birr 8,460.21 million and minimum value is Birr 5.17 million. This indicates that there is big disparity of size (total asset) among sample MFIs in Ethiopia. To this end, any one can say that the random sampling includes large and small size MFIs. To compare the mean average across Africa and world, simply by dividing the Birr amount of average asset (Birr 581.32 million) by the US Dollar exchange rate as at June 30, 2014, (assume Birr 20.0135 = 1 US Dollar); I found that the mean value of Ethiopian MFIs total asset is USD 29.07 million over the review period covered (2005-2014), which is by far below the African and world average total asset stand at USD 54.23 million and USD 61.79 million respectively, in 2010 MIX MFIs benchmark. This indicates MFIs in Ethiopia have limited source of fund, which negatively affects the future expansion MFIs'.

Outreach measures how deep is MFIs' outreach, by looking at the targeting the client groups that are most vulnerable such as women and/or people with very low incomes. In this thesis, the researcher used average outstanding loan size (i.e. outstanding loan balance divided by number of active clients) to measure the depth of outreach; the mean of average

loan size is Birr 2,092.12, this is the deepest outreach in the world as can see MIX 2010 MFI benchmark. However, there is big gap between maximum and minimum range of MFIs' average outstanding loan balance. This indicates that the social responsibility differs from MFI to MFI.

To see the financing structure let us use an indicator saving to loan ratio (SLR) measures the capacity of these institutions in mobilizing resource. So, the average saving to loan ratio of Ethiopian MFIs proves that only 36.51% of the loan financed through saving mobilization. I can conclude that almost all MFIs are weak in terms of savings mobilization. Moreover, the portion of compulsory-saving which is tied to loan disbursement as cash collateral is not insignificant. Furthermore, this ratio is far below the African average 61.6 percent in 2010 MFIs benchmark (MIX).

The average mean of macroeconomic variables inflation and real GDP growth is 10.76 percent and 17.05 percent respectively. This indicates the macro economics variables recorded double digit growth over the last ten year. On the other hand, if you look at the maximum (36.40 percent) and minimum (2.80 percent) annual inflation rate there is big gap, and this could be challenge for the sector as MFIs have no power to fix the situation. Whereas, the difference between maximum (12.60 percent) and minimum (8.70 percent) growth in real GDP minimal this may helps MFIs to deliver their loans and to mobilize saving from the society easily.

TABLE 4.3: DESCRIPTIVE STATISTICS VARIABLES

Variables Stat. meas*	FSS	MCR	PAR_90	OER	ASSET	AVL	SLR	GDPG	INFL
Mean	0.9650	0.2500	0.0407	0.1112	581.3247	2.0921	0.3651	0.1076	0.1705
Median	0.9045	0.2500	0.0275	0.1125	55.4585	1.9814	0.3290	0.1080	0.1465
Maximum	1.7600	0.2800	0.2040	0.2750	8460.2163	4.9308	0.8322	0.1260	0.3640
Minimum	0.2900	0.2100	0.0000	0.0200	5.1670	0.6210	0.1077	0.0870	0.0280
Std. Dev.	0.2960	0.0216	0.0470	0.0606	1307.6578	0.9988	0.1506	0.0109	0.1093
Observations	100	100	100	100	100	100	100	100	100

Source: Sources: author's computation (Evies-7)

4.3 MODEL DIAGNOSIS AND CORRELATION ANALYSIS

Balanced cross sectional data panel regression was used in this study to see whether there is a significant relationship between dependent variable and its independent variables. In order to ensure the appropriateness (Random Effects or fixed effects) model, I have applied the Housman test for the random effects estimation output. Unfortunately, the researcher found a statement it said like that cross sectional test variance is invalid. Housman test statistic set to zero.

* Statistical measurements

4.3.1 Test Regression assumptions: Correlation analysis

According to (Brooks, 2008), the correlation between two variables measures the degree of linear association between them. Thus, it does not imply that changes in x cause changes in y , or vice versa. Rather, it is simply stated that there is evidence for a linear relationship between the two variables, and that movements in the two are on average related to an extent given by the correlation coefficient.

From our correlation result which is presented all (MCR, PAR>90 days, operational expense ratio, Total asset, average outstanding loan size and inflation rate) independent variables, except Saving to loan ratio and real GDP growth are negatively correlated to the dependent variable (Financial Self Sufficiency Ratio) of an MFI.

The competition of MFIs' (MCR) is negatively correlated all other predictors except with portfolio at risk>90 (0.0612) and real GDP growth (0.4880). This goes in line with many findings of empirical studies in microfinance industry that competition and portfolio quality related negatively.

The operational efficiency is also negatively correlated all other predictors except with portfolio at risk>90 (0.2457) and real GDP growth (0.0457).

Table 4.4: Correlation analysis

Variables	FSS	MCR	PAR 90	OER	ASSET	AVL	SLR	INFL	GDPG
FSS	1.0000								
MCR	-0.1891	1.0000							
PAR 90	-0.2991	0.0613							
OER	-0.4361	-0.0729	0.2457	1.0000					
ASSET	-0.3048	-0.2702	-0.1983	-0.4604	1.0000				
AVL	-0.2306	-0.6596	-0.0950	-0.1397	0.3523	1.0000			
SLR	0.2046	-0.3697	-0.0295	-0.2658	0.6821	0.4155	1.0000		
INFL	0.1579	-0.2993	0.1527	-0.1120	0.0944	0.2599	0.0850	1.0000	
GDPG	-0.1733	0.4880	-0.0526	0.0457	-0.2094	-0.5490	-0.2115	-0.6045	1.0000

Sources: author's computation (Evies-7)

Test for Assumption of Autocorrelation

It is assumed that the errors term are uncorrelated with one another. If the errors are correlated with one another, it would be stated that they are auto correlated. This is an assumption that the errors are linearly independent of one another (uncorrelated with one another). The simplest test is due to Durbin and Watson (Brooks, 2008). To test this assumption, the DW stat value in the main regression table should be considered. The Durbin-Watson test statistic value in the regression result was 2.01.

Ho: Errors are uncorrelated

Ha: Errors are correlated

To identify determinants of Ethiopian MFIs financial performance, 100 (10*10) observations were used in the model. Therefore, to test for autocorrelation, the DW test critical values were used. Then relevant lower value (dL) and upper value (dU) for the test are $dL = 1.402$ and $dU = 1.71$ respectively. The values of $4 - dU = 4 - 1.702 = 2.298$; $4 - dL = 4 - 1.401 = 2.598$. The Durbin-Watson test statistic of 2.01 is clearly between the upper limit (dU) which is 1.702 and the critical value of $4 - dU$ i.e. 2.298; moreover, our result fall on the DW "2" as a bench mark when the correlation coefficient is zero. This indicates that there is no evidence for the presence of autocorrelation as the result is within the non-rejection region. Consequently, I failed to reject the null hypothesis of no autocorrelation.

Normality Assumption

If the residuals are normally distributed, the histogram should be bell-shaped and the Jarque–Bera statistic would not be significant meaning disturbance to be normally distributed around the mean. The p -value given at the bottom of the normality test screen

should be significantly less than 0.05 to reject the null hypothesis of normality at the 5% level (Brooks, 2008).

Ho: Normally distributed errors

Ha: Non-Normal Distribution error

As shown from the figure below, the normality tests for this study fails to reject the null hypothesis for residual normality distribution since the p -value 0.7574 Jarque-Bera test for models is by far greater than 0.05 and the kurtosis is 3.17 implying there is normal distribution of errors which indicates that the inferences I made about the coefficient estimates could be witnessed with evidence.

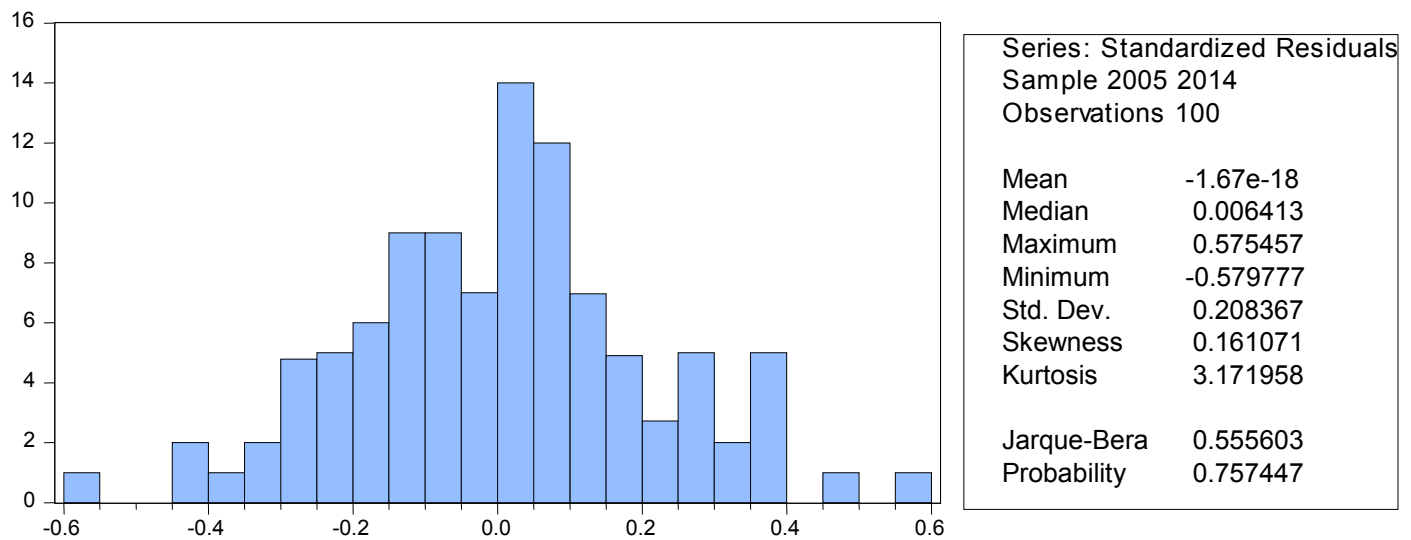


Figure 4.1: Regression model normality test

Multicollinearity analysis

Any statistical regression assumes the independence of explanatory variables; however it needs to test for the presence of multicollinearity. A significant level of dependency would compromise the results and bias regression estimates. Multicollinearity exists when one or more of the explanatory variables are highly correlated with other variables in the regression model. Multicollinearity can be assessed by examining correlation matrix. A high correlation among the predictors indicates that the variable under consideration is

almost a perfect linear combination of the independent variables already in the equation and that it should not be added to the regression equation.

The correlation matrix in table 5 exhibits the extent to which the independent variables relate to each other. Indeed, the independent variables (Competition; Operational expense ratio; Portfolio at risk; Depth of outreach; Size of the institution; Savings mobilization; annual inflation and the growth in GDP are supposed to be independent on each other or statistically unrelated to each other. However, what can be observed from table 5 is that, there is a little bit correlation between size (asset) and saving to loan (SLR) (0.6821). However, the researcher believe even this correlation can be ignored as it is no serious significant.

TABLE 4.6: CORRELATION MATRIX

variables	MCR	PAR>90	OE	ASSET	AVL	SLR	GDPG
MCR	1.0000						
PAR>90	0.0613	1.0000					
OER	-0.0729	0.2457	1.0000				
ASSET	-0.2702	-0.1983	-0.4604	1.0000			
AVL	-0.6596	-0.0950	-0.1397	0.3523	1.0000		
SLR	-0.3697	-0.0295	-0.2658	0.6821	0.4155	1.0000	
GDPG	0.4880	-0.0526	0.0457	-0.2094	-0.5490	-0.2115	1.0000

Sources: author's computation (Evies-7)

According to (Brooks, 2008), If there is multicollinearity but it had ignored; this may lead to wide confidence intervals of parameters and significance tests might therefore give inappropriate conclusions, and so make it difficult to draw exact recommendation. On the other hand, if variables are not correlated then using several simple regressions or one multiple regression models could give the same results.

4.4 RESULTS ANALYSIS

The R-square is a measure of the goodness of fit of the independent variables in explaining the variations in FSS of MFIs.

As indicated in table 4.7, the R-square is 50.45 percent, this shows that all of the independent variables (Market concentration ratio, PAR>90 days, Operational Efficiency ratio, Size, Outreach, Saving mobilization, real GDP growth and annual inflation rate) collectively explain by 50.45 percent the variability in FSS of MFIs in Ethiopia. The remaining 49.55 percent of change is explained by other factors not captured in the model. The overall test of significance of R-square (i.e. Prob. (F-statistic)) value is 0.000000 which indicates strong statistical significance, which enhanced the reliability and validity of the model.

Based on the regression results presented in table 4.7, the model of this study can be written as follows:

$$\text{FSS} = 2.29399 - 3.10936*\text{MCR} - 132928*\text{PAR}>90 - 1.84487*\text{OER} - 0.00003*\text{SIZE} - 0.01933*\text{AVL} + 0.01020*\text{SLR} + 0.15448*\text{INFL} - 2.42941*\text{GDPG}$$

I. Competition

Competition is one of the critical factors in affecting performance of microfinance institutions around the world. To measure the impact of competition Herfindahl-Hirschman (H-H) index (market concentration ratio) is taken as one explanatory variable for the financial performance of MFIs. Accordingly, the regression result indicates that market concentration has an inverse relationship on the financial performance of MFIs and this is

significant at 10%. This result goes with the first hypothesis in the study which stated that competition has direct relationship with MFIs' financial performance. The result suggest that the more concentrated (less competitive) the microfinance market, the lower the sustainability of MFIs. This result consistent with many empirical results from MFIs (Yenesew, 2014), (Kar & Swain, 2014) (Smith, 2011) and (Assefa, Hermes, & Meesters, 2010) that competition has negative impact on financial performance of MFIs. This means that financial performance MFIs declines as the microfinance industry becomes more concentrated (uncompetitive or monopolistic).

II. Portfolio at risk > 90 days

Portfolio quality is a measure of how well an institution is able to protect the funds available for loan disbursements to its clients against all forms of risks. The coefficient of the PAR>90 days is negative and statistically significant at 10%. This confirms our hypothesis, that a portfolio-at-risk at>90 days should have a negative impact on the MFIs' financial performance in Ethiopia. Consequently, defaulting loan repayment for more than 90 days would reduce the revenue derived from micro-financing operations and therefore decrease the amount of loanable fund. As a result, expanding MFIs' outreach would be questionable. Moreover, the inability to collect overdue loans has negative impact on MFIs' financial performance. The negative value of the coefficient of PAR>90 days (-1.32928) boldly shows this problem. In connection with the portfolio at risk (PAR >90) days as per the NBE's licensing and supervision the business of micro-financing institutions: directive No. MFI/18/06, article 7 (7.2.1), MFIs should made a provision of loan loss allowance on non-performing loans (i.e. loans past due for more than 90 days) after deducting any cash deposit balances and Federal government securities held as

collateral against the loan from outstanding loan balances and the result should be directly deducted from that period income. On the other hand, the PAR>90 ratio is the inverse reflection of loan repayment rate as PAR increases, repayment rate decreases; so as the repayment rate declines there is no financing resources to disburse for the existing clients or new customers. If this situation happens, it indirectly hinders the expansion as well as financial performance of MFIs. In general it shows that the portfolio-at-risk (Par>90) is the most vibrant indicator of the financial performance of Ethiopian MFIs. The result goes hand to hand with the findings of (Muriu, 2011), (Tehulu, 2013) (Yenesew, 2014), but inconsistent (Befekadu, 2007) finding that's non-performing loan encourages financial sustainability.

III. Operational Efficiency

Operational Efficiency is performance measure that shows how well MFIs is overcome its operations challenges taking in to account the cost of the input and/or the price of output. Operational expense ratio of MFIs' is measured by dividing adjusted operating expense to adjusted average gross loan portfolio. Our results period reviewed from 2005 to 2014 indicates that coefficient of -1.844871 and it was statistically significant at 1% significance level (P-value 0.009) this result shows that 1 percent increase in operational expense ratio cause a decline in FSS nearly by 1.84 percent. And, this is a good indicator that MFIs should give due attention for cost management practices. The result ensures our hypothesis that there is a negative relationship between Operational efficiency and MFIs financial performance in Ethiopia. Generally as per the literature and regression results operational efficiency is one of the key factors strongly affect the performance of MFIs' in Ethiopian

for the period covered from 2005-2014. This result is consistent with findings of (Muriu, 2011) and (Tehulu, 2013).

IV. MFIs' Size

Total asset (millions of Birr) of MFIs is used as measurement of size of MFIs. The size of a firm expands its market power and profits increases. The finding of this study is against the theory and most empirical findings; because the coefficient is negative (-0.00003) and statistically insignificant at 10 % (p-value 0.2647). This could be mainly due to the fact that most of the large MFIs in Ethiopia are government back and they disburse small loans for the poor clients.

The result indicated that size of MFIs have not significant influence on the performance of MFIs. This indicates that in an MFIs economies of scale have much less impact on efficiency; and small MFIs can often be more efficient than their much larger peers. This indicated result failed to reject the null hypothesis or goes against my hypothesis that the size of MFIs has positive relationship with the financial performance MFIs in Ethiopia. Moreover, this result help us to understand that large MFIs in Ethiopia are not necessarily sustainable and the regulatory body should give due attention them than that of small MFIs. This finding is consistent with the findings of (Muriu, 2011) and (Yenesew, 2014)

V. Depth of outreach

Outreach is one of the instrument in which the mission of MFIs should be reflect through it. And this could be measured by number of active borrowers, percent of women borrowers, and average loan balance per borrower and others.

The average loan balance per borrower is one of popularly used to measure the depth outreach that determines how many of the loans go to poor clients, lower average outstanding loan sizes justifies there is high outreach (i.e. the loan fortunately gone to the poor clients) and vice-versa.

Based on the regression results average loan size has negative coefficient -0.019333 and statistically insignificant at 10% (p-value 0.6632) the negative sign implies that outreach of MFIs has not significant influence on the MFIs' financial performance in Ethiopian for the period in review (2005-2014). This could be due to the existence of lowest operational expense ratio in Ethiopia than region in the world.

Though, it is statistically insignificant the finding failed to reject the null hypothesis that outreach and financial performance has direct relationship or it means that regression outcome is against the hypothesis that outreach and financial performance have inverse relationship. This finding is consistent with the findings of (Tehulu, 2013) and (Befekadu, 2007).

VI. Saving Mobilizations

Savings mobilization is the most important activity in the microfinancing business because savings are suitable financing sources that have advantages in matching the short term investments and relatively inexpensive. Moreover, financing operational and financial activities by savings rather than subsidized would allow MFIs to become financial self sustainable (i.e. to cover financial and operational costs by operating incomes). The regression results indicates that coefficient of saving to outstanding loan ratio is 0.0102 and it is statistically insignificant at 10% significance level (P-value 0.9718), this result shows that 1 percent increase in saving to loan ratio lead grow FSS nearly by 1.02 percent.

Though, it is statistically insignificant the result is as expected that as saving to loan ratio increases, the financial self sufficiency increases as well. This supports my hypothesis is that saving to loan ratio has a positive relationship with the financial performance of MFIs in Ethiopia. This result is consistent with many empirical finding like (Tehulu, 2013), (Assefa, Hermes, & Meesters, 2010) and other. While the regression result assures that saving mobilization has an important role in ensuring financial self sufficiency; the mean saving to loan ratio of the industry in Ethiopia is lower than any region in the world. So, board of directors and managements of MFIs' need to develop an enabling strategy and mobilize intensively.

Table 4.7: Regression Result

Dependent Variable: FSS
 Method: Panel Least Squares
 Sample: 2005 2014
 Periods included: 10
 Cross-sections included: 10
 Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.293985	0.695033	3.300541	0.0014
MCR	-3.109362	1.719008	-1.808812	0.0741
PAR_90	-1.329276	0.700899	-1.896529	0.0614
OER	-1.844871	0.693488	-2.660277	0.0094
AVL	-0.019333	0.044237	-0.437023	0.6632
ASET	-3.56E-05	3.17E-05	-1.123045	0.2647
SLR	0.010198	0.287388	0.035484	0.9718
INFL	0.154481	0.279262	0.553177	0.5816
GDPG	-2.429415	3.238959	-0.750060	0.4554

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.504536	Mean dependent var	0.964970
Adjusted R-squared	0.401817	S.D. dependent var	0.296021
S.E. of regression	0.228949	Akaike info criterion	0.050916
Sum squared resid	4.298256	Schwarz criterion	0.519847
Log likelihood	15.45419	Hannan-Quinn criter.	0.240701
F-statistic	4.911840	Durbin-Watson stat	2.007409
Prob.(F-statistic)	0.000000		

Sources: author's computation (Evies-7)

CHAPTER FIVE:

CONCLUSIONS AND RECOMMENDATION

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

5.1 CONCLUSIONS

Based on the findings I conclude that:

- ✚ The microfinance business in Ethiopia is controlled by few regional government microfinance institutions. So, the competition type in Ethiopia is oligopoly competition.
- ✚ Ethiopian MFIs are operating under serious concern of sustainability as the mean FSS is 96.5 percent, yet they were unable achieve breakeven point (i.e. 100%). However, this could be an indication that MFIs in Ethiopia are focused more on poverty reduction than on profit earning.
- ✚ High market concentration ratio reduces the performance of MFIs in Ethiopia. Consequently, this may lead to mission drift in a fight to be sustainable.
- ✚ The portfolio-at-risk>90 days ratio had negative impact on the revenue derived from microfinance operations. Therefore, this can cause reduction in lendable funds. Moreover, as per the NBE directive MFIs need to hold loan loss provision allowance for non performing loans which should be direct deducted from the period revenue as loss provision expense.
- ✚ Operational Expense Ratio of the MFIs' in Ethiopia is a bit better than any other part of the world. However, the OER has negative impact on the performance of MFIs in Ethiopia.
- ✚ Size and outreach have no significant influence on performance MFIs in Ethiopia. This is out of the researcher's expectation; but this could duet the fact that almost all of the

large MFIs in Ethiopia are government backed MFIs and due their nature they are targeting in empowering the rural poor clients. Also the saving to loan ratio has in significant influence on performance MFIs in Ethiopia.

5.2 RECOMMENDATIONS

Based on the findings of the study, the following recommendations have been given.

- ✚ The regulatory body should improve competition than restricting entry in to the industry. However, the regulatory body should have to strengthen the initiations of establishment of Credit information center for MFIs and need to foster credit information sharing between the MFIs.
- ✚ Portfolio quality the major and chronic factor in microfinance industry, comprehensive credit risk management should be deploying by MFIs and by AEMFI. Likewise, MFIs should work hard on rigorous client screening and close clients' follow-up.
- ✚ Operational efficiency is the bottleneck of MFIs in Ethiopia; the management should give great attention to a good expense management policy and should introduce new technology that can minimize cost example mobile money.
- ✚ In generally, according to the GTP-I, MFIs required to cover 80 percent of their outstanding loan portfolio through mobilization of saving at the end of the five year of the GTP. So, it's better if MFIs should keep working to achieve the prescribed goal.

5.3 LIMITATION OF THE STUDY

The researcher experienced various challenges while conducting this study.

- ✚ Lack of easily accessible theoretical frame work and concrete benchmark in the area of Microfinance.
- ✚ Lack of necessary data challenged the researcher from employing additional variables.

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APPENDIXES

Annex-I

Correlated Random Effects - Hausman Test

Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	8	1.0000

* Cross-section test variance is invalid. Hausman statistic set to zero.

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
MCR	-3.109362	-2.782115	0.164235	0.4194
PAR_90	-1.329276	-1.372446	0.068395	0.8689
OER	-1.844871	-1.930109	0.104022	0.7916
ASSET	-0.000036	-0.000025	0.000000	0.2445
AVL	-0.019333	-0.014954	0.000199	0.7563
SLR	0.010198	0.048418	0.010654	0.7112
INFL	0.154481	0.166982	0.000493	0.5733
GDPG	-2.429415	-2.048466	0.231232	0.4282

Cross-section random effects test equation:

Dependent Variable: FSS

Method: Panel Least Squares

Sample: 2005 2014

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.293985	0.695033	3.300541	0.0014
MCR	-3.109362	1.719008	-1.808812	0.0741
PAR_90	-1.329276	0.700899	-1.896529	0.0614
OER	-1.844871	0.693488	-2.660277	0.0094
ASSET	-3.56E-05	3.17E-05	-1.123045	0.2647
AVL	-0.019333	0.044237	-0.437023	0.6632
SLR	0.010198	0.287388	0.035484	0.9718
INFL	0.154481	0.279262	0.553177	0.5816
GDPG	-2.429415	3.238959	-0.750060	0.4554

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.504536	Mean dependent var	0.964970
Adjusted R-squared	0.401817	S.D. dependent var	0.296021
S.E. of regression	0.228949	Akaike info criterion	0.050916
Sum squared resid	4.298256	Schwarz criterion	0.519847

Log likelihood	15.45419	Hannan-Quinn criter.	0.240701
F-statistic	4.911840	Durbin-Watson stat	2.007409
Prob.(F-statistic)	0.000000		

Annex –II

Regression Model output

Method: Panel Least Squares

Sample: 2005 2014

Periods included: 10

Cross-sections included: 10

Total panel (balanced) observations: 100

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.293985	0.695033	3.300541	0.0014
MCR	-3.109362	1.719008	-1.808812	0.0741
PAR_90	-1.329276	0.700899	-1.896529	0.0614
OER	-1.844871	0.693488	-2.660277	0.0094
AV	-0.019333	0.044237	-0.437023	0.6632
ASET	-3.56E-05	3.17E-05	-1.123045	0.2647
SLLR	0.010198	0.287388	0.035484	0.9718
INFL	0.154481	0.279262	0.553177	0.5816
GDPG	-2.429415	3.238959	-0.750060	0.4554

Effects Specification

Cross-section fixed (dummy variables)

R-squared	0.504536	Mean dependent var	0.964970
Adjusted R-squared	0.401817	S.D. dependent var	0.296021
S.E. of regression	0.228949	Akaike info criterion	0.050916
Sum squared resid	4.298256	Schwarz criterion	0.519847
Log likelihood	15.45419	Hannan-Quinn criter.	0.240701
F-statistic	4.911840	Durbin-Watson stat	2.007409
Prob(F-statistic)	0.000000		

Annex-III

Cross sectional data of sample MFIs

MFI	YEAR	FSS	MCR	OER	PAR>90	ASSET (Birr in millions)	AVL (Birr in thousands)	SLR	INFL	GDPG
ACSI	2005	1.50	0.25	0.05	0.00	592.64	1.02	0.48	0.08	0.13
ACSI	2006	1.46	0.27	0.06	0.01	844.02	1.27	0.51	0.06	0.12
ACSI	2007	1.39	0.27	0.06	0.00	1,277.26	1.69	0.51	0.11	0.12
ACSI	2008	0.88	0.28	0.07	0.01	1,666.10	2.10	0.47	0.16	0.11
ACSI	2009	1.68	0.27	0.04	0.00	2,227.80	2.11	0.55	0.25	0.10
ACSI	2010	1.76	0.25	0.02	0.01	2,533.22	2.11	0.60	0.36	0.10
ACSI	2011	1.23	0.24	0.03	0.03	3,248.67	2.97	0.70	0.03	0.11
ACSI	2012	1.34	0.23	0.02	0.03	4,378.14	2.80	0.60	0.18	0.09
ACSI	2013	1.26	0.21	0.03	0.01	5,875.24	3.10	0.57	0.34	0.10
ACSI	2014	1.15	0.23	0.03	0.01	8,460.22	3.53	0.83	0.14	0.10
AdCSI	2005	1.07	0.25	0.08	0.01	141.76	2.18	0.34	0.08	0.13
AdCSI	2006	0.50	0.27	0.04	0.02	174.04	2.19	0.32	0.06	0.12
AdCSI	2007	0.49	0.27	0.05	0.02	234.19	2.87	0.31	0.11	0.12
AdCSI	2008	0.29	0.28	0.06	0.02	292.78	2.04	0.26	0.16	0.11
AdCSI	2009	1.46	0.27	0.03	0.04	385.28	2.58	0.24	0.25	0.10
AdCSI	2010	1.37	0.25	0.03	0.03	530.14	2.25	0.26	0.36	0.10
AdCSI	2011	1.09	0.24	0.04	0.03	763.18	2.54	0.30	0.03	0.11
AdCSI	2012	1.01	0.23	0.05	0.03	1,007.58	2.91	0.51	0.18	0.09
AdCSI	2013	1.21	0.21	0.03	0.03	1,536.88	3.36	0.77	0.34	0.10
AdCSI	2014	1.28	0.23	0.04	0.03	2,183.62	3.68	0.76	0.14	0.10
AVFS	2005	0.62	0.25	0.147	0.03	7.96	0.89	0.34	0.08	0.13
AVFS	2006	0.61	0.27	0.151	0.03	11.84	1.02	0.28	0.06	0.12
AVFS	2007	0.74	0.27	0.13	0.04	14.61	1.07	0.31	0.11	0.12
AVFS	2008	0.34	0.28	0.14	0.09	16.58	0.98	0.35	0.16	0.11

MFI	YEAR	FSS	MCR	OER	PAR>90	ASSET (Birr in millions)	AVL (Birr in thousands)	SLR	INFL	GDPG
AVFS	2009	0.87	0.27	0.18	0.06	17.47	0.99	0.36	0.25	0.10
AVFS	2010	0.78	0.25	0.18	0.02	19.83	0.95	0.38	0.36	0.10
AVFS	2011	0.71	0.24	0.20	0.06	20.21	1.11	0.38	0.03	0.11
AVFS	2012	0.65	0.23	0.24	0.08	21.04	1.14	0.40	0.18	0.09
AVFS	2013	0.79	0.21	0.15	0.04	25.21	1.15	0.38	0.34	0.10
AVFS	2014	0.75	0.23	0.28	0.03	25.78	1.30	0.37	0.14	0.10
Eshet	2005	1.17	0.25	0.118	0.00	18.14	0.93	0.14	0.08	0.13
Eshet	2006	1.23	0.27	0.11	0.00	31.25	1.01	0.11	0.06	0.12
Eshet	2007	0.87	0.27	0.0617	0.00	38.89	1.14	0.11	0.11	0.12
Eshet	2008	0.62	0.28	0.07	0.01	42.20	1.21	0.15	0.16	0.11
Eshet	2009	0.82	0.27	0.07	0.01	44.68	1.33	0.15	0.25	0.10
Eshet	2010	0.94	0.25	0.06	0.20	45.97	1.42	0.17	0.36	0.10
Eshet	2011	0.81	0.24	0.11	0.13	45.74	1.68	0.17	0.03	0.11
Eshet	2012	0.76	0.23	0.15	0.05	54.05	2.14	0.20	0.18	0.09
Eshet	2013	0.71	0.21	0.23	0.03	62.50	2.56	0.31	0.34	0.10
Eshet	2014	0.85	0.23	0.20	0.05	65.41	2.95	0.45	0.14	0.10
Gasha	2005	0.76	0.25	0.14	0.10	15.08	1.39	0.42	0.08	0.13
Gasha	2006	0.61	0.27	0.14	0.10	16.11	1.38	0.45	0.06	0.12
Gasha	2007	0.73	0.27	0.14	0.10	18.65	1.10	0.38	0.11	0.12
Gasha	2008	0.49	0.28	0.15	0.18	21.16	2.01	0.37	0.16	0.11
Gasha	2009	1.07	0.27	0.12	0.18	21.65	2.17	0.35	0.25	0.10
Gasha	2010	0.66	0.25	0.22	0.15	20.68	2.47	0.33	0.36	0.10
Gasha	2011	0.77	0.24	0.18	0.08	24.14	3.19	0.38	0.03	0.11
Gasha	2012	0.79	0.23	0.15	0.08	23.35	3.40	0.46	0.18	0.09
Gasha	2013	0.80	0.21	0.11	0.07	28.34	3.69	0.44	0.34	0.10
Gasha	2014	0.74	0.23	0.23	0.05	32.53	4.50	0.48	0.14	0.10
Meklit	2005	0.79	0.25	0.17	0.06	5.17	0.79	0.76	0.08	0.13
Meklit	2006	1.43	0.27	0.14	0.03	10.13	1.12	0.25	0.06	0.12
Meklit	2007	1.11	0.27	0.15	0.02	16.09	1.25	0.35	0.11	0.12
Meklit	2008	0.72	0.28	0.10	0.13	19.31	1.34	0.33	0.16	0.11

MFI	YEAR	FSS	MCR	OER	PAR>90	ASSET (Birr in millions)	AVL (Birr in thousands)	SLR	INFL	GDPG
Meklit	2009	1.12	0.27	0.09	0.16	22.22	1.60	0.37	0.25	0.10
Meklit	2010	0.88	0.25	0.11	0.20	24.75	1.63	0.38	0.36	0.10
Meklit	2011	1.07	0.24	0.16	0.17	27.67	2.28	0.32	0.03	0.11
Meklit	2012	1.27	0.23	0.15	0.05	32.47	2.90	0.35	0.18	0.09
Meklit	2013	0.90	0.21	0.16	0.04	44.77	4.26	0.31	0.34	0.10
Meklit	2014	1.30	0.23	0.15	0.03	52.96	4.04	0.28	0.14	0.10
OCSSCO	2005	0.83	0.25	0.08	0.05	184.50	1.08	0.41	0.08	0.13
OCSSCO	2006	0.96	0.27	0.06	0.00	256.15	1.19	0.36	0.06	0.12
OCSSCO	2007	0.90	0.27	0.07	0.01	509.27	1.50	0.33	0.11	0.12
OCSSCO	2008	0.73	0.28	0.07	0.03	782.43	1.81	0.35	0.16	0.11
OCSSCO	2009	0.84	0.27	0.05	0.04	901.14	1.90	0.51	0.25	0.10
OCSSCO	2010	0.95	0.25	0.05	0.02	1,389.76	2.25	0.47	0.36	0.10
OCSSCO	2011	0.78	0.24	0.06	0.03	1,600.39	2.55	0.57	0.03	0.11
OCSSCO	2012	0.81	0.23	0.04	0.02	2,208.74	3.34	0.73	0.18	0.09
OCSSCO	2013	1.1	0.21	0.02	0.03	2,881.34	3.32	0.60	0.34	0.10
OCSSCO	2014	1.02	0.23	0.11	0.04	4,566.08	3.65	0.63	0.14	0.10
PEACE	2005	0.81	0.25	0.12	0.00	19.38	1.15	0.22	0.08	0.13
PEACE	2006	1.41	0.27	0.08	0.00	29.34	1.41	0.22	0.06	0.12
PEACE	2007	1.37	0.27	0.08	0.00	36.95	1.64	0.24	0.11	0.12
PEACE	2008	0.78	0.28	0.09	0.00	43.88	1.51	0.25	0.16	0.11
PEACE	2009	1.01	0.27	0.11	0.00	49.14	2.15	0.26	0.25	0.10
PEACE	2010	1.01	0.25	0.14	0.02	52.96	2.34	0.29	0.36	0.10
PEACE	2011	1.00	0.24	0.15	0.00	56.87	2.60	0.28	0.03	0.11
PEACE	2012	1.00	0.23	0.13	0.00	64.40	2.87	0.29	0.18	0.09
PEACE	2013	1.19	0.21	0.05	0.00	83.79	3.23	0.32	0.34	0.10
PEACE	2014	1.11	0.23	0.17	0.00	99.04	3.77	0.34	0.14	0.10

MFI	YEAR	FSS	MCR	OER	PAR>90	ASSET (Birr in millions)	AVL (Birr in thousands)	SLR	INFL	GDPG
Wasasa	2005	0.76	0.25	0.19	0.07	13.43	0.62	0.23	0.08	0.13
Wasasa	2006	0.91	0.27	0.15	0.01	26.12	0.82	0.21	0.06	0.12
Wasasa	2007	1.02	0.27	0.11	0.02	38.24	0.90	0.22	0.11	0.12
Wasasa	2008	0.78	0.28	0.08	0.02	53.24	1.23	0.26	0.16	0.11
Wasasa	2009	1.52	0.27	0.06	0.01	84.44	1.53	0.28	0.25	0.10
Wasasa	2010	1.30	0.25	0.04	0.04	95.16	1.95	0.29	0.36	0.10
Wasasa	2011	1.18	0.24	0.05	0.03	127.48	2.11	0.28	0.03	0.11
Wasasa	2012	1.28	0.23	0.05	0.01	191.86	2.55	0.28	0.18	0.09
Wasasa	2013	1.03	0.21	0.05	0.01	239.00	3.03	0.31	0.34	0.10
Wasasa	2014	0.97	0.23	0.09	0.05	309.22	3.64	0.33	0.14	0.10
Vision fund	2005	0.91	0.25	0.20	0.02	31.89	0.98	0.29	0.08	0.13
Vision fund	2006	1.05	0.27	0.18	0.02	53.56	1.04	0.26	0.06	0.12
Vision fund	2007	0.73	0.27	0.20	0.01	69.28	1.25	0.25	0.11	0.12
Vision fund	2008	0.56	0.28	0.17	0.02	89.60	1.45	0.24	0.16	0.11
Vision fund	2009	0.88	0.27	0.20	0.04	107.45	1.70	0.25	0.25	0.10
Vision fund	2010	0.65	0.25	0.19	0.08	120.61	1.88	0.25	0.36	0.10
Vision fund	2011	0.67	0.24	0.17	0.02	138.75	2.11	0.28	0.03	0.11
Vision fund	2012	0.82	0.23	0.16	0.01	252.87	3.06	0.31	0.18	0.09
Vision fund	2013	1.70	0.21	0.14	0.01	382.10	4.32	0.44	0.34	0.10
Vision fund	2014	1.11	0.23	0.15	0.01	433.37	4.93	0.48	0.14	0.10