ANALYZING DETERMINANTS OF FINANCIAL PERFORMANCE OF MICRO FINANCE COMPANIES IN ETHIOPIA FROM 2010-2018. EMPERICAL EVIDENCE FROM ETHIOPIAN MICRO FINANCE COMPANIES

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Abstract
Microfinance institutions are proved to be a powerful tool for financial inclusion through financing entrepreneurial activities in rural and urban areas. However, to reach at their objectives, microfinance institutions need to be financially sustainable and sustainability largely depends on profitability. Given the above rationality, the purpose of this study is investigating determinants of microfinance institutions profitability in Ethiopia over a period of nine years (2010-2018) in the twelve purposively selected institutions. The study investigated eight microfinance institutions profitability indicators including debt equity ratio, liquidity ratio, operational self-sufficiency ratio, financial self-sufficiency ratio, portfolio at risk, loan loss reserve ratio, operating expense ratio and total assets (size). Profitability of microfinance institutions is measured by return on asset. Quantitative research approach was employed and secondary data were collected from the audited financial statements which were analyzed using multiple regression model. The results of the study show that operational self-sufficiency ratio, financial self-sufficiency ratio and total assets have positive significant relationship with return on assets of microfinance institutions whereas operating expense ratio, debt-to-equity ratio and liquidity ratio have negative significant effects on return on assets of microfinance institutions. However, portfolio at risk ratio and loan loss ratio has no significant effect on the profitability of microfinance institutions. The study recommends that microfinance institutions management shall focuses on ensuring the operational self-sufficiency, financial self-sufficiency and total assets (size) in order to increase their profitability. Moreover, due attention shall be given to well managing their operating expense ratio, debt equity ratio and liquidity ratio.

Keywords: *Microfinance institutions, profitability, financial self-sufficiency, Ethiopia*

JEL Classification: *G10, G19*

I. INTRODUCTION

A large number of the world population especially low income earners have less access to finance and financing. This is because most commercial banks consider the low income earners as un-bankable as a result of information asymmetries and lack of collateral. However, microfinance institutions (MFIs) involve the provision of financial services to low-income people by financing business operations (Otero, 1999 cited in Marzys, 2006). They are helpful tools to fill the gap of mainstream banks' limits in reaching the rural and urban low income people by providing financial services at micro level. Furthermore, they are intended to reduce poverty and mitigate risk by letting the low income people have access to credit, savings and insurance.

In Ethiopia, microfinance services initially started its operations with donated fund as of September 2012. At the period, there were 32 microfinance institutions serving around 2.9 million rural and urban low-income people in Ethiopia. The institutions have been offering broad range of financial services in the entire country. Currently, the microfinance institutions have deposits of ETB 5.3 billion in type of compulsory and voluntary savings. In addition, the total assets, total outstanding loan, and total capital stand at ETB 13.7 billion, ETB 9.8 billion, and ETB 3.9 billion respectively (Biritu, 2012).

Statement of the problem

Microfinance institutions (MFIs) should generate sufficient amount of income to cover their financial costs, administration expenses and loan loss provisions. A MFIs working towards sustainability on market principle is not different from a formal bank except for customers that it serves. Hence, they will face a challenge that a formal banking institution faces in achieving their objectives (Hartung, 2007). Although, a large body of research on determinants of microfinance institutions financial performance have been undertaken in Ethiopia (Belayneh, 2011; Birhanu, 2012; Habtamu, 2012), rigorous empirical evidence on Ethiopian microfinance institutions remains limited due to large number of micro-finance institutions and lack of up to date information. Moreover, it is uncommon to undertake a study to identify factors that affect microfinance institutions financial performance (Letenah, 2009; Malkamu, 2012; and Abebaw, 2014.

In general, the studies conducted in the areas of microfinance institutions in Ethiopia are few in number and couldn't give an emphasis to investigate factors that determine their financial performance. Therefore, it seems essential to study determinants of financial performance-especially the profitability of MFIs by increasing number of explanatory variables including financial self-sufficiency ratio, operational self-sufficiency ratio, debt equity ratio, portfolio at risk, loan loss reserve, operating expense ratio, liquidity ratio and size of microfinance (total assets).

II. OBJECTIVE OF THE STUDY

The main objective of this study is to investigate the determinants of financial performance of microfinance institutions in Ethiopia. Specifically, conducted to examine the effects of financial self-sufficiency ratio, operational self-sufficiency ratio, debt to equity ratio, portfolio at risk ratio, loan loss ratio, operating expense ratio, and size of microfinance (measured in term of total asset) on financial performance of microfinance institutions.

III. RESEARCH HYPOTHESIS

To achieve the aforementioned aims of the study, the following research hypotheses were formulated based on previous empirical studies and the researchers' insight.

H1: Debt to equity ratio and return on assets of Ethiopian microfinance institutions has negative relationship.
H2: Liquidity ratio has negative effect on return on asset of Ethiopian microfinance institutions.
H3: The operational self-sufficiency ratio has positive effect on return on asset of Ethiopian microfinance institutions.
H4: Financial self-sufficiency ratio has positive effect on return on asset of Ethiopian microfinance institutions.
H5: Operating expense ratio contributes negatively to return on assets of Ethiopian microfinance institutions.
H6: Portfolio at risk and return on assets of Ethiopian microfinance institutions has negative relationship.
H7: Loan loss ratio negatively affects return on assets of Ethiopian microfinance institutions.
H8: Microfinance institutions' size (total asset) contributes positively to return on assets of Ethiopian microfinance institutions.

IV. REVIEW OF RELATED LITERATURES

Concepts of Microfinance Institutions

Although the definitions of microfinance institutions given by various authors and organizations seem to be different from one another, in essence they are similar. The term microfinance refers to the provision of financial services primarily savings and credit to the low-income households that don't have access to commercial banks (Arsyad, 2005). According to Otero (1999) microfinance institutions provide financial services to low income and self-employed people at house holding level. These financial services generally include savings, credit, insurance, payment, and money transfer services (Ledgerwood, 1999). Schreiner and Colombet (2001) define microfinance institutions as "the attempt to improve access to small deposits and small loans for poor households neglected by banks." Therefore, microfinance institutions are understood in this study as an entity engaged in the provision of financial services such as savings, loans and insurance to low income people living in both urban and rural areas who are unable to obtain such services from the formal financial sectors.

Financial Performance Indicators

Financial performance of institutions is measured in terms of their profitability and success achieved to create wealth to invested capital. In turn, the profitability of institutions can be measured in terms of Return on Assets (ROA) and Return on Equity (ROE). ROA is a percentage that expresses earned net income in terms of total assets deployed to generate the net income. Mathematically, ROA equals net income excluding donation divided for

average total assets. It is the ratio that measures the overall financial performance or profitability of institutions reflecting both the profit margin and efficiency. In addition, it tells us the extent of management's effectiveness in generating earnings from investment. Return on assets is straightforward and more inclusive than ROE because return on equity values profitability only in terms of partial invested capital i.e.; equity by excluding cost of funds and operational efficiency.

Empirical Studies

Various studies have been undertaken on the area of microfinance institutions by different scholars across the world. Trong (2012) has conducted a research on capital structure and microfinance institutions financial performance. The study investigated the link between funding and microfinance performance and reached at the conclusion profitable and more regulated microfinance institutions are highly sustainable, efficient and outreach.

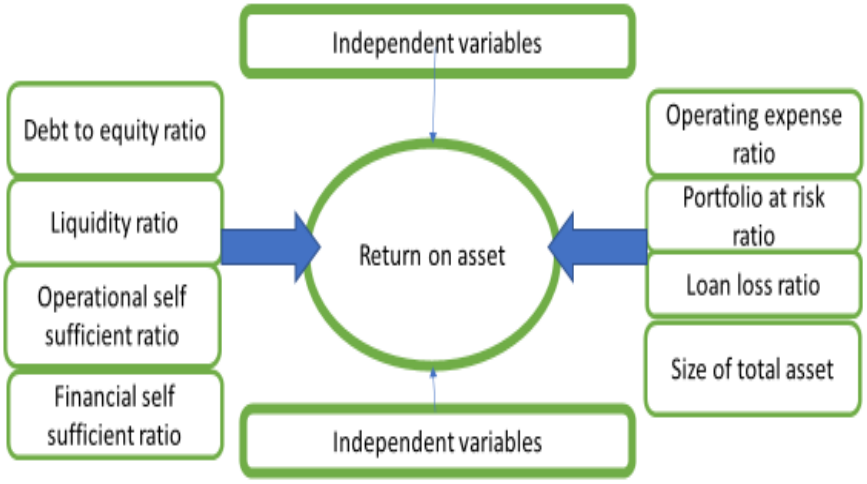
Jordan (2008) has analyzed the impacts of macroeconomic environment variables on sustainability of Latin American MFIs by selecting 85 MFIs. The result shows that, none of the macro economic factors have significant impact on repayment rate. However, ROE is highly influenced by per capita GDP. Dissanayake (2012) has also tried to investigate the determinants of profitability of MFIs in Sri-Lanka. The findings show that, debt to equity ratio and operating expense ratios have negative significance relation with ROE. On the other hand, write-off ratio and cost per borrower ratios have a positive significant relationship with ROE. However, personnel productivity ratio is not statistically significant determinant of ROE.

Gibson, (2012) has also conducted a research titled "determinants of operational sustainability of micro finance institutions" in Kenya. Accordingly, the research revealed that the factors that affect the operations and financial sustainability are capital/ asset ratio and operating expenses/loan portfolio. The study also suggested the inclusion of these indictors along with operational self -sufficiency to create sustainability index.

On other hand, few studies have been conducted in Ethiopia related to the financial performance of microfinance institutions. Melkamu (2012) has conducted a research on the determinants of operational and financial self-sufficiency of Ethiopian microfinance institutions. The outcome of the study demonstrated that age of MFIs has a positive but insignificant effect on their financial performance; and portfolio at risk, gearing ratio and market concentration negatively and insignificantly affect financial performance. Furthermore, Muhidin (2015) concludes that increased reliance on donor funds erodes sustainability while maintaining higher percentage of deposits as a percent of loans lead to improved sustainability of microfinance institutions.

V. CONCEPTUAL FRAMEWORK

The study was considered eight explanatory variables such as, portfolio at risk, loan loss reserve ratio, operating expense ratio, operational self-sufficiency ratio, financial self-sufficiency ratio, debt equity ratio, liquidity ratio and size (total assets) of microfinance institutions operating in Ethiopia. These variables were prepared on the basis of major performance indicators of MFIs which are stated by Ledgerwood (1999). The conceptual framework of the research, which describes the relationship of explanatory and explained variables, is presented in the following diagram.



Adopted by researchers, 2019

VI. RESEARCH DESIGN AND METHODOLOGY

Explanatory research design and quantitative research approach were employed to examine the relationship among explanatory variables and return on assets (ROA). Purposive sampling technique was used to draw samples from the total population of microfinance institutions currently operating in Ethiopia. There are 34 registered and licensed microfinance institutions currently operating in Ethiopia as per the annual report of National Bank of Ethiopia (NBE, 2018) and 12 microfinance institutions functional for more than 9 years, from 2010 to 2018 were purposively sampled based on their financial statements availability. Thus, the total number of observation is 108 which is 12*9. Annual financial reports of microfinance institutions published by NBE are used as a source of data. In line with the study objectives, quantitative data analysis was used through running ordinary least square (OLS) regression model on E- View 9 software application.

Dependent and Independent Variables

Return on assets (ROA) is an overall measure of profitability that reflects both the profit margin and the efficiency of institutions (Eakins, 2012). ROA was the dependent variable in this study. Eight independent variables namely, financial self-sufficiency ratio, operational self-sufficiency ratio, debt equity ratio, portfolio at risk, loan loss reserve ratio, operating expense ratio, liquidity ratio and size of microfinance were investigated in this study.

Regression Model

In order to achieve the aims of the study, the ordinary least square (OLS) regression model was adopted as presented below.

$$ROA_{it} = \beta_0 + \beta_1 DER_t + \beta_2 LR_t + \beta_3 OSS_t + \beta_4 FSSR_t + \beta_5 OERI_t + \beta_6 PAR_t + \beta_7 LLR_t + \beta_8 LN_i + e_t$$

Where:

ROA = Return on asset at time t
DER = Debt to equity ratio at time t
LR = Liquidity ratio
OER = Operating expense ratio at time t
OSS = Operational self-sufficiency at time t
FSS = Financial self-sufficiency at time t
PAR = Portfolio at risk at time t
LLR = Loan loss ratio at time t
LN = Natural Logarithm of total assets (size of microfinance) at time t
e = Error term at time t

VII. REGRESSION RESULTS AND DISCUSSION

The basic assumptions of classical linear regression model are tested for normality, multicollinearity, autocorrelation and heteroskedastcity. All tests were fit the basic assumptions of OLS and no evidence found for the existence of violation of these assumptions.

Regression results

Dependent Variable: ROA
Method: Panel Least Squares
Date: 05/13/19 Time: 13:36
Sample: 2010 2018
Periods included: 9
Cross-sections included: 12
Total panel (balanced) observations: 108

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DER	-0.098068	0.048259	-2.032125	0.0452
LR	-0.032490	0.008656	-3.753538	0.0003
OSS	0.029976	0.006991	4.287939	0.0000
FSSR	0.022112	0.008223	2.689059	0.0086
OER	-0.027007	0.010918	-2.473568	0.0153
LLR	0.000955	0.004205	0.227091	0.8209
PAR	0.001515	0.034271	0.044219	0.9648
LN	0.010317	0.002558	4.032853	0.0001
Constant	0.070318	0.043646	1.611089	0.1107

R-squared	0.772710	Mean dependent var	0.038010
Adjusted R-squared	0.723635	S.D. dependent var	0.042116
S.E. of regression	0.022140	Akaike info criterion	-4.617248
Sum squared resid	0.043137	Schwarz criterion	-4.120557
Log likelihood	269.3314	Hannan-Quinn criter.	-4.415857
F-statistic	15.74578	Durbin-Watson stat	1.153180
Prob(F-statistic)	0.000000		

Result Discussion

Debt to equity ratio was one of the explanatory variables proposed to test in this study. As the regression result depicts, the ratio (-0.098068, p = 0.0452) has negative & significant effect on financial performance of MFIs. The result is in consistence with previous studies (Zingales, 1995; Wald, 1999; Boothetal, 2001; French, 2002). Microfinance institutions shall focus on wise management and utilization of debt financing by generating additional earnings that at least can cover debt financing costs.

Liquidity ratio was the second explanatory variable selected to examine its relationship with financial performance of MFIs. The regression outcome shows that liquidity ratio (-0.032490, p = 0.0003) affects the financial performance of MFIs significantly with a negative relationship and the finding is similar with the former research findings (Eljelly, 2004 and Don, 2009). This indicates the existence of less engagement of current assets on generating additional cash inflows. In addition, most MFIs are holding excess amount of current assets particularly cash without utilizing for bringing additional gain. As a result, the existence of inefficient utilization of current assets is generating less return on assets. In general, MFIs are not in the status of most efficient utilization of their current assets in Ethiopia.

As it was stated in hypothesis section, operational self sufficiency ratio was the third independent variable in this study. The regression outcome reveals the existence of positive significant relationship between operational self sufficiency and return on assets of MFIs (0.029976, p = 0.000). The finding shows the ability to generate adequate amount of earnings contributes to the financial performance of MFIs. This implies MFIs are currently generating sufficient amount of earnings that can cover their operational costs.

Financial self sufficiency ratio was the fourth explanatory variable analyzed in this study. Financial self sufficiency ratio (0.0221, p = 0.0086) has positive significant contributions to the financial performance of MFIs. This finding is in consistent with previous empirical studies (Tilahun, 2013). This implies MFIs in Ethiopia are on good status to generate adequate amount of funds that enabling them to internally finance their operations. In addition, MFIs in Ethiopia are assuring their sustainability by improving their financial performance from time to time.

Operating expense ratio measures the proportion of total operating expenses in terms of operating income. Regarding to this variable, the regression result reveals that operating expense ratio (-0.027007, p = 0.0153) has negative significant effect on return on assets of MFIs. The finding is similar to former empirical study's findings (NDIG, 2014; Kosmidou, 2007; Bourke, 1989; Kosmidou, 2008). This implies the existence of high operating expense ratio which is an indication of inefficient expenses management in MFIs inversely affects their profitability on one hand and their sustainability on other hand. Thus, officers of MFIs shall focus on minimizing operating expense or at least keep constant to improve the financial performance of MFIs.

The size of microfinance institutions was the final explanatory variable and was measured in terms of MFIs total assets. The study finding reveals that the natural logarithm of MFIs total assets (0.010317, p = 0.0001) has positive significant impact on financial performance of the MFIs. The finding is in consistent with previous study (Tilahun, 2013) and it implies that owning more assets contributes to the profitability and sustainability of MFIs in Ethiopia.

VIII. CONCLUSION AND RECOMMENDATION

Debt to equity ratio, liquidity ratio and operating expenses ratio have negative significant impacts on financial performance of MFIs whereas financial self-sufficiency ratio, operational self-sufficiency ratio and size of MFIs impact the financial performance of MFIs positively. Based on the research findings we recommend the officers of MFIs to give great emphases on improving the engagement of current assets on generating more cash inflows, wise utilization of debt financing and minimization of operating expenses. In addition, they shall work more on improving the operational and financial efficiency of MFIs.

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