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Determinants of Financial Profitability of Microfinance Institutions in Ethiopia

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Abstract
Microfinance is a term often applied in reference to small-scale financial services primarily credit, savings and insurance. It is a tool that has been acceptable over time to offer poor people access to basic financial services, such as loans, savings, money transfer services and micro insurance. The rapid changes in the business environment have led to the increase in resource productivity and decrease in non-performing assets. However, the profitability has come under pressure because of changing environmental requirement of safe care of money. This study attempted to investigate the factors that determine the financial performance of MFIs in Ethiopia. The study followed a quantitative research approach using a balanced panel data set of 39 observations from 13 MFIs over the period 2004, 2006 and 2008. From the findings, outreach, borrowing, capital asset ratio, equity and percentage of female borrowers were important variables in determining financial profitability of Microfinance institutions in Ethiopia. Thus, interventions must be undertaken by promote and support women's in accessing credit, increase number of borrowers, increase the total as well as average loan size and in general should ensure their profitability growth to go in line with their objectives to make their initial mission sustain, serving the interest of small groups of people.
Keywords: Financial profitability, microfinance institutions, outreach

Introduction

Microfinance institutions (MFIs) are found among the institutions which provide different financial service for the poor who are out of the conventional banking system particularly in developing countries. It provides financial services to poor clients who in most cases have no access to formal financial institutions. During the last three decades, microfinance has captured the interest of both academics and policy makers. This is, among other things, due to the success of the industry (Assefa et al., 2013). It has become an important tool for poverty reduction in many parts of the world. Provided the incidence of poverty, financing is seen as crucial in achieving the poverty reduction goal. As Ganka (2010) states the microfinance paradigms focus on reduction of income poverty through improving access to finance and financial services.

The importance of the factors determining Microfinance institutions' profitability can be appraised at the micro and macro levels of the economy. At the micro level, profit is the essential prerequisite of a competitive financial institution and the cheapest source of funds. It is not merely a result, but also a necessity for successful banking in a period of growing competition on financial markets. Hence, the basic aim of microfinance's management is to achieve a profit, as the essential requirement for conducting any business (Bobáková, 2003). At the macro level, a sound and profitable financial sector is better able to withstand negative shocks and contribute to the stability of the financial system. The importance of microfinance institutions' (MFIs) profitability at both the micro and macro levels has made researchers, academicians, managements and regulatory authorities to develop considerable interest on the factors that determine micro finance institutions' profitability (Athanasoglou*et al*., 2005).

The rapid changes in the business environment have led to the increase in resource productivity, increasing level of deposits, credits and profitability and decrease in non-performing assets. However, the profitability, which is an important criteria to measure the performance of financial institutions in addition to productivity, financial and operational efficiency, has come under pressure because of changing environmental requirement of safe custody of money. Therefore, an efficient management of MFIs' operations aimed at ensuring growth in profits requires up-to-date knowledge of all those factors on which the bank's profit depends (McDonald, 1999).

Concept and Definition of Micro Finance

The definitions of microfinance institutions proposed by some scholars and organizations are seemingly different from one another. However, the essence of the definitions is usually the same. Microfinance is the provision of small scale financial services to low income or unbanked people (Hartarska, 2005). It is about provision of "a broad range of financial services such as deposits, loans, payment services, money transfers and insurance to the

poor and low income households and their farm or non-farm micro-enterprises" (Mwenda and Muuka, 2004).

Microfinance institutions are considered as a tool for poverty alleviation through improving access to finance and financial services. According to Basu*et al*. (2004) MFIs complement effectively the formal banking sector in providing financial services to the poor. The rationale of improving finance comes from the premise that empowerment of the poor through creating income generating capacity enables the poor to access all development requirements to get out of multifaceted dimensions of poverty and reduce their vulnerability to unexpected events (Davis *et al.*, 2004).

Challenges and Benefit of Micro Finance

Many studies in recent years have shown that risks like sickness, natural disaster and over indebtedness are a critical dimension of poverty and that very poor people rely heavily on informal savings to manage these risks (Rahman,2001). It might be expected that microfinance institutions would provide safe, flexible savings services to this population, but they have been very slow to do so. Some experts argue that most micro credit institutions are overly dependent on external capital. A study of micro credit institutions in Bolivia in 2003, for example, found that they were very slow to deliver quality micro savings services because of easy access to cheaper forms of external capital. Global data tables from *The Micro banking Bulletin* show that savings represent a small source of funds for micro credit institutions in most developing nations.

Some microfinance institutions use excessive interest rates. In recent years, there has been increasing attention paid to the problem of interest rate disclosure, as many suppliers of micro credit quote their rates to clients using the flat calculation method, which significantly understates the true Annual Percentage Rate (Fraser Ian.2007).

Existing literature suggests that the environment in which financial institutions, like any otherfirms, operate influences them. Therefore, the financial market structure, the economic conditionof the country, the legal and political environment all may influence the performance of MFIs(Mcdonald J, 1999). It is expected to have an effect on numerous factors related to thesupply and demand for loans and deposits, which in turn have an effect on the profitability ofMFIs. A positive relation is expected between the performance of the financial institutions andthese variables (Staikouras C. and Wood G., 2003). In a stable political environment and an enabling macro economy, microfinance institutions are important in providing savings, credit, funds transfer and other financial intermediation facilities to low-income households, micro-enterprises and marginal small-scale enterprises. Effective, long-term provision of these facilities occurs through microfinance institutions that adhere to the key principles of microfinance endorsed by the Consultative Group to Assist the Poorest.

Microfinance in Ethiopia

Traditional banking sector cannot reach millions of poor for whom small loans could make huge differences. There are several reasons for this. Most of the poor are rural, and they are much dispersed. They have low education levels, if at all. As a result, administrative cost of supplying loans to the poor population is extremely high. Another issue that makes it difficult to serve these customers through traditional banking is that the poor does not have any assets to use as collateral. As a result, the poor had access to loans only through local money-lenders at exorbitantly high interest rates. The development of microfinance institutions in Ethiopia is a recent phenomenon. The proclamation, which provides for the establishment of microfinance institutions, was issued in July 1996. Since then, various microfinance institutions have legally been registered and started delivering microfinance services (Wolday, 2000).

Financial institutions play a vital role in supporting the business sector as well as in national development. In regards to this the number of micro finance institutions as well as the number of clients is increasing from time to time. The existing political and economic condition of the country contributes a lot for the development of the microfinance industry. According to Getaneh (2005), the Licensing and Supervision of Microfinance Institution Proclamation of the government encouraged the spread of Microfinance Institutions (MFIs) in both rural and urban areas as it authorized them. Today there is a strong trend towards commercialization and revolution of the contributors of microfinance into formal financial institutions. This is driven by motivation of profitability and sustainability of microfinance institutions. Largely MFIs became independent due to donor funding and ability to raise capital from the capital markets as they increased their footing. According to Drake and Rhyne, (2002), this allows MFIs to expand their operations and increase the level of outreach. The establishment of sustainable microfinance institutions that reach a large number of rural and urban poor who are not served by the conventional financial institutions, such as the CommercialBanks, has been a prime component of the new development strategy of Ethiopia(AEMFI 2000).

According to Degefa (2009) in Ethiopia microfinance services were introduced after the demise of the derg regime following the policy of economic liberalization. It is taken as a shift from government and NGO subsidized credit programs to financial services run by specialized financial institutions. With this shift some NGO and government micro credit programs were transformed to microfinance institutions. Such shift was

mainly promoted by a regulatory framework that was put in place to license and supervise the institutions under the country's central bank. The regulatory framework was developed as a part of government's effort to liberalize the financial sector and lay down an alternative institutional framework to provide financial services mainly to the rural poor to boost agricultural production, enable food self-sufficiency, and reduce rural poverty.

Research Methodology

In this section, a brief overview of various dimensions of the research, tools, techniques and methods employed to achieve the research objective. The study examines financial profitability of microfinance institutions in Ethiopia. The research is analytical and empirical in nature and makes use of secondary data. The data used for this study is purely secondary taken from the Microfinance Information Exchange(MIX) Market Inc. website over the period of 2002 -2012.However, the data for majority of Microfinance Institutions(MFIs) missed, and even unavailable for some years, panel data set for the periods 2004, 2006 and 2008 taken in to account for the present study. Although theactual number MFIs as per the National Bank of Ethiopia database are more than 30, in the MIX market website from which the researchers have accessedthe data, only 13 Ethiopian MFIs available. Thus, 13 MFIs (cases)for 3 waves (39 observations) are included in the final analysis.

The nature of data used in this study enables the researcher to use panel data models that deemed to have advantagesover cross section and time series data methodology. A panel data approach is more useful than either cross-section or time-series data alone. As Brook (2008) states the advantages of using the panel data set; first it can address a broader range of issues and tackle problems that are more complex. It takes in to account unobserved heterogeneity and directs the way to handle the problem. Besides, by combining cross-sectional and time series data, one can increase the number of degrees offreedom, and thus the power of the test. It can also help to mitigate problems of multicollinearity among explanatoryvariables that may arise if time series or cross-sections are modeled individually.

The general notation for the basic panel data model is: $y_{it} = x_{it}'\beta + v_{it}$

where, a double subscripts i, refers to cases or the unit (e.g. individual, household, firm, state, entity…) and t, refers to time period (year), respectively; i = 1, … , N and t = 1 , … , T; N- number of observations and T-number of time periods/observations for each individual(each time is referred to as a "wave")

$x_{it}'\beta$= vector of covariates

v_{it} = Composite error term ($v_{it} = \alpha_i + u_{it}$), the most important part of the analysis, where α_i is unobserved unit-specific error or (unobserved heterogeneity), which is unobserved fixed effect or time-invariant and correlated with X_{it}(FE model), but if uncorrelated (RE model) & specific to each individual and,

u_{it} = idiosyncratic error which varies over individuals and time (the usual error term) and it should fulfill the assumptions for standard OLS error terms.

Observations are at the MFI level, and do not represent individual borrowers. The dependent variable is always an indicator of financial profitability and the independent variables are possible determinants of financial profitability. Therefore, the operational model for the empirical investigation used in this study is given as:

$Profitability_{it} = \beta 0 + \beta 1(AVOUTBALit) + \beta 2(Borrowit) + \beta 3(CAPASRATit) + \beta 4(Deposit_{it}) + \beta 5(Equity_{it}) + \beta 6(NOACTBORit) + \beta 7(Operexpit) + \beta 8(OUTREACHRit) + \beta 9(PERFEBORit) + \acute{\varepsilon}$

Where: **$Profitability_{it}$**, is the financial Profitabilitymeasured by profit margin for firm *i* in period *t*; ***$AVOUTBAL_{it}$***, average outstanding balance forfirm *i* in period *t*; ***$Borrow_{it}$***, average loan size for firm *i* in period *t*; ***$CAPASRAT_{it}$***, capital asset ratio for firm *i* in period *t*; ***$Deposit_{it}$***,total deposit for firm *i* in period *t*; ***$Equity_{it}$***, total capital for firm *i* in period *t*; ***$NOACTBOR_{it}$***, total number of active borrowers, ***$Operexp_{it}$***, cost per borrower for firm *i* in period *t*; ***$OUTREACHR_{it}$***, the extent of providing services for firm *i* in period *t*; ***$PERFEBOR_{it}$***, percentage of female borrowers for firm *i* in period *t*and $\acute{\varepsilon}$ the error term.

With the above multivariate regression equation, the impact of each of the explanatory variables on financial profitability estimate was assessed in terms of the statistical significance of the coefficients 'βi'. However, coefficients derived from the multiple regression models may be subject to omitted variables bias. This is when some variables, which were not included in the model, affect the dependent variable and, therefore, estimating the coefficients without controlling for these variables lead to omitted variables bias (Woodridge, 2006). How the control is done will depend on the nature of the omitted variables. That is whether they are constant or changing over time and whether they are constant or changing over cases. These are also known as the time specific and individual specific effects of unobservable or omitted variables, and the econometrics literature suggests two common methods of dealing omitted variables. These are the fixed effect and random effect (Hsiao, 2007).

The Hausman test used to differentiate between fixed effects model and random effects model in panel data estimation. The non-significant p-value of Hausman test statistic declares that the two models yield the same result and so indifferent. In this case, we prefer the random effect model that results in consistent and efficient coefficients (higher efficiency) to the fixed effect model with consistent, but inefficient parameter estimates under the null. In our case, the non-significant p-value of the test result/statistic (pr (chi2) = 8.34 > 0.05)

indicates that we are unable to reject the null hypothesis of difference in coefficients is not systematic against alternative hypothesis of difference in coefficients is systematic. This is equivalent with accepting the null hypothesis of random effect model yields consistent and efficient parameter estimates;hence, conclude that random effect model is appropriate.

In addition, the Breusch and Pagan Lagrangian Multiplier test helps us to decide between a random effects regression and a simple OLS regression. The null hypothesis in the LM test is that variance across entities is zero, or no significant difference across units (i.e. no panel effect).

The significant p-value of the test statistic enables us to reject this null and conclude that random effect is still appropriate. Therefore, we cannot run a simple OLS regression; rather the GLS that best fit for the estimation has to be employed. Thus, for this particular data set RE model following GLS was employed to estimate parameter estimates.

Result and Discussion

In this section the study presents the econometric results on factors affecting the financial profitability of microfinance institutions in Ethiopia. From the econometric result, the R2 value indicates that the proportion of variance in the dependent variables which can be explained by the independent variables is 70%. That is, about 30% of the variations in the dependent variable are not explained by the independent variables included in the model. However, (Cameron, 2009 cited in Ganka, 2010) expresses that for panel data, the R2 above 0.2 is still large enough for reliable conclusions. The results and interpretation for each of the independent variables are given below.

Outreach: the breadth of outreach, which uses the number of borrowers as proxy, improves the financial profitability of microfinance institutions. According to Ledgerwood (1999), the number of borrowers or clients as a measure of outreach considers only the total number of clients served from various products of MFIs without their relative level of poverty. The econometric result for this variable indicates positive relationship between the outreach and MFIs' financial profitability. The relationship was significant at 10% significant level. This is because increasing number of borrowers will increase the volume of sell; and increasing volume of sell is one means to maximize profitability.

Borrowings: it is the total amount of load which could be dispersed for borrowers. The coefficient for the loan size is positive and statistically significant at 5% significant level. This indicates that microfinance profitability is associated with higher loan sizes since larger loans are associated with higher cost efficiency and, therefore, profitability. The finding is also in line with Ganka (2010) and Adongo and Stork (2006) that profitability relates selling bigger loans.

Capital asset ratio: it isthe share of own capital from total assets. The coefficient for the capital asset ratio is positive and statistically significant at 5% significant level. When we see Microfinance institution's capital narrowly, it can be seen as the amount contributed by the owners of the institution (paid-up share capital) that gives them the right to enjoy all the future earnings of the MFI. More comprehensively, it can be seen as the amount of owners' funds available to support the institution's business (Athanasoglou*et al.*,2005). This is in line with Woller and Schreiner(2002) in which the combination of various sources of capital like shares could affect profitability microfinance institutions.

Equity: which is considered as own capital from total asset. The relationship was positive and statistically significant at 10% significant level. Bourke (1989) and Naceur (2003) agree that well-capitalized banks face lower need to external funding and lower bankruptcy and funding costs; and this advantage translates into better profitability. Therefore, researchers widely posit that the more capital a financial institution has, the more resistant it will be to failure (Uche, 1998). This is also in line with Bobáková, (2003), a MFI's capital is widely used to analyze the status of its financial strength.

Percent of female borrowers: it is the number of female borrowers from the total in ratio.The coefficient for the capital asset ratio is positive and statistically significant at 5% significant level.As the result shows as borrowers become female, the profitability of the institution will increase by 87 unit as compared to male. This shows female borrowers are have significant contribution in profitability of Microfinance institution.

Conclusions and Recommendations

Based on the findings of the study from the econometrics analysis; outreach, borrowing, capital to asset ratio, equity and percentage of female borrowers were found important variables in determining financial profitability of Microfinance institutions in Ethiopia. Though, no significant association was found in between deposit and financial profitability of microfinance institutions and the same is true for operating expense to asset. Thus, that microfinance institutions in Ethiopia should promote and support women's in accessing credit. They should increase outreach service so that they could increase the volume of sell or loan. However, selling high volume of loan alone may not guarantee financial profitability. Likewise, microfinance institutions should increase the total as well as average loan size to be profitable as well as sustainable. That is, larger average loan size will improve

financial profitability, however; it increases the level of risk in case of defaults of repayments. Thus, MFIs should make every effort to thump to balance the average loan size. They should also be aware of that, as the econometrics result indicates the profitability and then sustainability of these microfinance institutions had been growing hand in hand with the average loan size, implying less depth of outreach, which indicates the sign of mission drift. Therefore, microfinance institutions in Ethiopia should ensure their profitability growth to go in line with their objectives if the MFIs still have to make their initial mission sustain, serving the interest of small groups of people.

References

Adongo, J. and Stork, C. (2006), "Factors influencing the financial sustainability of selected microfinance institutions in Namibia", The Namibian Economic Policy Research Unit, Research Report No. 39.

AEMFI, (2000). Review of Microfinance Industry in Ethiopia: Regulatory Framework and Performance' Occasional Paper No. 24

ASSEFA, E., HERMES, N. & MEESTERS, A.,(2013). Competition and the performance of microfinance institutions.*Applied Financial Economics,* 23, 767-782.

Athanasoglou P.P., Brissimis S.N. and Delis M., (2005). Bank-Specific, Industry-Specific and Macroeconomic Determinants of Bank Profitability, Bank of Greece Working Paper, No. 25

Bobáková, I.V. (2003) Raising the Profitability of Commercial Banks, BIATEC, Volume XI

Basu, A.,Blavy, R. and Yulek, M. (2004)."Microfinance in Africa: Experience and lessons from selected African countries", Working Paper, International Monetary Fund.

Brooks, C. (2008), *Introductory Econometrics for Finance*, 2nd ed., the ICMA Centre, University of Reading.

Davis, R., Onumah, G. and Butterworth, R., (2004). "Making rural finance work for the poor",DFID,unpublished mimeo, [Online] Available: http://dfid-agriculture-consultation.nri.org/pdf (April 25, 2017).

DegefaDuressa. (2009). *Microfinance in Ethiopia: Elixir or Poison?* Doctorial Thesis for developmentstudies.Institute of social studies.Wageningen University.Shakar Publishing, The Netherlands.

Drake, D., &Rhyne, E. (2002). The commercialization of microfinance: Balancing business anddevelopment. Bloomfield, CT: Kumarian Press.

Ganka, D. (2010)."Financial sustainability of rural microfinance institutions in Tanzania", PhDthesis, University of Greenwich, Australia.

Hsiao, C. (2007), *Analysis of panel data.* 2nd ed., Econometrics society monographs, Cambridge University press, New York.

Ledgerwood, J. (1999), "Microfinance handbook: An institutional and financial perspective", the World Bank publications, USA.

Mcdonald J, (1999).The Determinants of Firm Profitability in Australian Manufacturing, Economic Record, Vol. 75.

Rahman,Aminur, (2001).Women and Microcredit in Rural Bangladesh: Anthropological Study of Grameen Bank Lending, Westview Press, Colorado.

Staikouras C. and Wood G., (2003).The determinants of bank profitability in Europe. TheEuropean Applied Business Research Conference, Venice.

Woller, G. and Schreiner, M. (2002)."Poverty lending, financial self-sufficiency, and the six aspects of outreach", working paper, Washington, DC, USA.

Wooldridge, M. (2006), *Introductory economics*: *A modern approach*, International student edition, Canada.

Table 1: Potential Determinants, Measures and Hypothesized Impact

Variable	**Measurement/proxy used**	**Hypothesized impact**
Dependent Financial Profitability	Ratio/Profit margin	
Independent		
Borrowings	Amount of total borrowing	+
Capitalassetratio	Share of own capital from total assets in ratio	+
Deposits	Amount of money deposited	+
Equity	Amount of own capital	+
Operatingexpenseperassets	Ratio of Operating expenses to assets	+
Outreach	Coverage of service in level	+
Percentoffemaleborrowers	Ratio	+

Table 2: Econometric Results for Determinants of Financial Profitability

Variable	**Coefficient**	**Z-statistics**	**Prob.**
Borrowings	0.000105	2.46	0.014**
Capital asset ratio	1.46263	2.00	0.045 **
Deposits	0.000193	1.49	0.137
Equity	0.005030	1.75	0.080*
Operating expense per assets	-4.015921	-1.55	0.122
Outreach	0.2086133	1.86	0.062*
Percent of female borrowers	0.8766199	2.29	0.022**

R-sq: 0.6995; Prob> chi2 = 0.0002
***significant at 1%; ** significant at 5%