Rating in Microfinance: Cross-Country Evidence

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Abstract
This paper studies whether microfinance rating agencies were able to impose market discipline on microfinance institutions (MFIs) during the period 1998-2002. Results indicate that not all rating agencies had equal impact. While some rating agencies were able to promote better sustainability, there is some weak evidence that rating by a particular rater might have induce moral hazard, whereby after receiving good rating, MFIs had worse performance perhaps because in some regions several raters operated simultaneously. Evidence also suggests that subsidized rating does not encourage improvements in sustainability and has negative impact on outreach. Rating by some individual raters helped MFIs to raise additional funds.

Introduction

Development of financial institutions boosts economic growth and, moreover, benefits the poor more than other segments of the population (King and Levine, 1993; Beck *et al.*, 2004). Worldwide, microfinance institutions (MFIs) expand the frontier of finance by providing loans and other financial services to the under-served entrepreneurial poor. In recognition of the microfinance industry's impact, and in an effort to attract more attention by governments and potential donors, the United Nations proclaimed 2005 as the International Year of Microcredit.

The emergence and growth of a number of agencies specializing in rating MFIs indicate that the industry has reached a certain level of maturity (*The Economist*, November 6th 2005). Given the lack of developed equity and debt markets, donors and investors could benefit from independent evaluation of the performance of MFIs. Microfinance institutions themselves could benefit from rating if it helps them attract additional funds. Furthermore, some managers report that in the absence of sufficient technical assistance subsidized rating could help identify shortcomings and areas that need improvement. To date, however, the impact of rating on MFIs' performance and their ability to raise funds has not been explored. This paper focuses on these

issues by analyzing a new database containing financial and outreach information of MFIs from 62 countries and data collected from microfinance rating agencies.

Well-run microfinance institutions make better use of scarce funds by providing better financial services and reaching more poor clients. Exploring whether microfinance rating improves MFIs' performance is important because there are few alternative mechanisms that promote MFI accountability. Recent study found that about 90% of the one billion dollars that funded microfinance initiatives up to 2004 has come from public sources, mainly from taxpayers in developed countries (CGAP, 2004). Donors and investors in microfinance are searching for effective mechanisms of external control and some have focused on rating. To support rating of MFIs, in 2001, the Consultative Group to Assist the Poor (CGAP) established a special fund with the purpose to subsidize rating of MFIs (see http//:www.ratingfund.org). Thus, from policy perspective, a study on the impact of microfinance rating agencies and their ability to serve as an effective mechanism of external control is timely and important.

The purpose of microfinance rating agencies is to generate independent information, which could be used by existing stakeholders to improve governance, and by potential lenders to make appropriate lending decisions. However, rating could also lead to moral hazard, at least in short term. This could happen if microfinance rating is not a continuous evaluation of MFIs' creditworthiness but a one-time event, since it may induce managers of MFIs who have received good rating and, as a result, secured financial support, to slack off and exercise less effort in the consequent period(s). In addition, similarly to mainstream rating agencies, microfinance rating agencies have little competition and, since most have both consulting and rating operations, are rigged with conflict of interest problems (*The Economist*, May 26, 2005).

Exploring the role of rating in microfinance is also important in the context of the discussion on the ability of market forces to discipline financial intermediaries. Specifically, this literature focuses on the consequences of interactions between regulator-imposed rules, rating agency signals, and market discipline (Sironi, 2003). These issues are especially relevant in microfinance, where market discipline through equity prices is non-existent and through debt prices is weak because regulators and donors may create significant distortions.

This paper develops a new database of about 130 MFIs operating in 62 countries and analyses their performance by adopting an empirical approach used in studies on the impact of market forces, rating, and regulation on performance of financial intermediaries. The main conclusion is that the rating agencies differ greatly in their impact on MFI performance and ability to raise funds. The evidence on the impact of subsidized rating is somewhat weak but it indicates that subsidizing may induce behavior consistent with the moral hazard hypothesis.

The rest of the paper is organized as follows: section two reviews the literature on rating as it applies to microfinance raters, section three describes the empirical specifications, section four describes the data, section five discusses the results, and section six offers concluding remarks.

Review of the Relevant Literature

Credit rating agencies such as Moody's and Standard & Poor's help impose market discipline by rating companies' creditworthiness (and probability of default) which in turn affects their securities prices. A survey of recent developments of credit rating research is published in a special issue of the *Journal of Banking and Finance,* 2004. In its editorial, Cantor states that, although research has produced valuable insights, some important issues are still outstanding.

These include identifying the natural structure of the industry (oligopoly or more competition), understanding whether ratings in regulation entrench existing players or subsidize marginal players, how raters should be paid, and whether the stability of rating agencies and their lag in following securities prices diminish or enhance the rating's usefulness (Cantor, 2004 p.2572)

Most of the research on credit rating focused on non-financial firms, although credit rating agencies also rate financial intermediaries usually because regulators require it for some types of activities. For example, in the US banks need rating to issue letters of credit (De Young et al., 2001). Since financial intermediaries are subject to regulations and supervision, and since the regulator may provide explicit or implicit guarantees (for example, that the bank will be recapitalized to protect a country's payment system), credit ratings may fail to play its usual disciplining role. While some empirical evidence suggests that rating agencies are able to discipline banks as well as non-financial firms, the main contribution of rating agencies may be to help regulators identify problem banks (Morgan and Stiroh, 2000; Morgan, 2002). It is yet unknown if microfinance rating can impose market discipline given that donors also serve as creditors and equity providers and may choose to recapitalize a failing institution that serves important outreach mission and, thus, diminish the disciplining role of credit rating.

Cross-country empirical studies on the impact of credit ratings are rare. For the case of European banks, Sironi (2003) finds that rating helps impose market discipline, to a lesser extent on banks with external subsidies and public sector banks. However, the ability of rating agencies to influence firm performance in developing countries may be limited as there is evidence that credit rating agencies underinvest in information collection in these countries (Ferri, 2004).

Rating in microfinance is new and understanding what works and what does not is important. For example, microfinance rating is now voluntary but there is a tendency to make it

more common and even compulsory, although theoretical research supports voluntary rating and is against compulsory rating (Nayar, 1993). Microfinance raters usually conduct a one-time rating and do not issue consequent updates unless an MFI requested it (and pays for it). One exception was M-CRIL whose rating is valid only for one year. Boot, Milbourn, and Schmeits (2004) show, however, that continuous monitoring and the mechanism of CreditWatch in particular play a major role in disciplining management.

In addition, Mukhopadhyay (2003) shows that rating agencies may create moral hazard—once the firm is rated, and funds are secured, managers may lose the incentives to exercise maximum effort and may slack off. He shows that, to remove the moral hazard problem, it is sufficient to offer payments to the rating agency based on expected returns on the debt.

The ability of credit rating agencies to impose market discipline may also be hindered by the inherent conflict of interest. For example, most microfinance rating agencies have both consulting and rating departments and there is no information on whether these are sufficiently independent. However, while S&P and Moody's are by far the most influential general raters, in microfinance there is more competition among raters with half a dozen raters operating during the study period.

Empirical Specifications

The literature on rating suggests testable hypotheses for the impact of rating on MFI performance. However, the empirical methodologies used in this literature cannot directly be applied to rating in microfinance because MFIs differ from banks and other financial intermediaries. For example, the asset base of most MFIs was created through grants by donors and MFIs do not have widely held equity and are not publicly traded companies. Moreover,

MFIs do not usually issue bonds, do not necessarily collect deposits, and may or may not be regulated. Although the main stakeholders –donors—do not require dividends, they usually continue to monitor the MFI they created.

As in other organizations, an MFI will survive if it is able to raise funds and have sufficient liquidity to meet current obligations. Therefore, the willingness of donors and other creditors to provide liquidity and fund future projects is important. MFI creditors seek information on MFI performance to ensure that their lending is prudent. These stakeholders base their decisions on information on the performance of MFIs, usually available through audited financial statements. In addition to this information, rating provided by independent market participants may affect the willingness of potential equity holders, donors and creditors to fund an MFI. Thus, rating in microfinance may play the same disciplining role as rating in banks and other financial institutions.

Microfinance institutions have a mission to serve the poor and the emphasis on outreach is also important. Microfinance rating agencies develop methodologies that focus on the overall performance of the organization in terms of both outreach and sustainability. Thus, studies on the impact of rating in microfinance should account for the impact of rating on MFI outreach.

As many MFIs are regulated, regulatory involvement may affect the ability of rating agencies to help discipline MFI managers. In banking, the regulator may distort market signals because of the implicit guarantee that, to prevent bank runs, the regulator may rescue a bank if it does not do very well (Sironi, 2003). In microfinance, similar guarantees may be expected by donors who care about the mission of the organization and may provide implicit "guarantees" that the MFI can be recapitalized after bad performance. Therefore, all MFIs—regulated, NGO,

and non-bank financial institution—may be subject to such distortions, and thus the value of the information provided by a rating agency may be diminished.

While, in general, rating agencies rate debt and the probability of default on a continuous basis, rating in microfinance is more spaced in time and may be expected to be valid for a longer period of time, unless otherwise stated (as in the case of M-CRIL). In addition, unlike rating in other industries, rating of MFIs has been of a more descriptive nature, whereby the reports provide an overview and assessment of the achievement (both outreach and sustainability) of the MFI and how these achievements compare to that of other MFIs in the area.

Rating methodologies differ significantly across raters, and all are multidimensional, in most cases evaluating each sub-category. For example, ACCION provides overall assessment of the MFI performance and uses the CAMEL evaluation methodology **(**Capital, Assets, Management, Earnings, and Liquidity) employed by US bank regulators (FDIC) to evaluate the safety and soundness of banks. PlaNet Rating used its G.I.R.A.F.E. methodology (governance and decision making processes; information and management tools; risks analysis and control; activities and loan portfolio; funding: equity and liabilities; and efficiency and liability). M-CRIL rates governance, managerial factors, financial performance and focuses on outreach indicators such as dropout rates, etc. During the study period, MicroRate did not have typical rating scale but had a distinct methodology that compared MFI's performance to that of other MFIs and provided in-depth description and assessment for future potential including risk factors.

During the study period, raters did not provide an overall evaluation that can be summarized with a letter grade perhaps because merging performance when MFIs pursue both

outreach and sustainability is not trivial. Only in 2003 most rating agencies adopted rating which results in an overall letter grade and the discussion on the pros and cons is still ongoing.[1]

These considerations do not permit the application of empirical methods that compare changes in security prices, changes in rating, and company performance to establish whether rating functioned as a disciplining device for this period. Therefore, this paper adopts an empirical approach usually employed to study bank performance (Molyneux et al., 1992; Samolyk, 1994; Barth et al., 2003).

The literature on rating suggests that rated MFIs may perform better if rating functions as an effective disciplining device, or slack off if rating induces moral hazard. The first null hypothesis to be tested then is that there is no link between rating and performance. A rejection of this hypothesis and a statistically significant positive link between rating and performance indicates that rating imposes market discipline, while a negative link indicates moral hazard. To test this hypothesis, the following model is estimated:

$$P_{it} = constant + \alpha' B_{it} + \beta' R_t + \phi' M_t + \varepsilon_{it} \quad (1)$$

where P_{it} is a performance variable for MFI *i* at time *t*. B_{it} is a vector of MFI specific variables which control for the level of capitalization such as capital ratio (*CAPITAL*) and focus on lending through loans-to-total-assets ratio *(LOAN),* the level of risk through the portfolio-at-risk (*PAR*), MFI size (*SIZE*) and age (*AGE*). R_t is a vector of variables that control for rating in the current year (based on past year performance) and include a dummy for being rated (*RATING*) and, as an alternative, separate dummies for each specific rater, ACCION , M-CRIL, MicroRate, Microfinanza Ltd, PlaNet Rating, as well as a dummy for subsidized rating (*FinAid*). M_t are macroeconomic country-specific variables, such as inflation and availability of deposit insurance to protect the interest of depositors in MFIs that collect deposits. Since empirical evidence shows

that changes in sovereign rating affects local market returns, country and year dummies are included to control for such potential impact (Brooks *et al*., 2004).

The empirical analysis includes dummies for individual raters to control for the quality of the rater because studies have shown that credit agencies differ in their evaluation of regulated financial intermediaries (Morgan, 2002). In addition, since MFIs have a dual objective—outreach and sustainability—individual microfinance raters may place different values on these performance indicators. To study the impact of rating on both outreach and sustainability, the empirical model is estimated with sustainability indicator (*OSS*) and outreach indicator (*NAB*) used as explanatory variables.

Rating will play a disciplining role if it helps managers to raise additional funds. The second null hypothesis will be that rated MFIs were not able to raise additional funds either through increase in equity or through increase in borrowed funds. Hence, the second empirical model that is estimated is:

$$ChF_{it} = constant + \alpha' B_{it-1} + \beta' R_t + \phi' M_t + \varepsilon_{it} \qquad (2)$$

where ChF_{it} is the log difference of the change in funds and the other variables are as before. In this equation, all MFI specific variables are lagged one period. Two dependent variables are used. The first one is the log difference in borrowed funds other than deposits (*LiabCh*) used in order to study the impact of rating on the ability of MFIs to attract loans. The second is the log difference in equity (*EqCh*), which captures the ability of MFIs to raise additional equity.

Data

Data for this study come from several sources. Individual MFI data come from the database collected by MIX MARKET information platform (www.mixmarket.org). To date, this is the

most detailed publicly available data on financial and outreach performance of microfinance institutions. At the time of data collection, it had listed the profiles of more than 130 MFIs from over 62 countries for the period 1998-2002, which resulted in about 350 individual annual MFI observations.

Rating data were collected from several sources. First, the CGAP Rating Fund (www.ratingfund.org) lists MFI name, rater and the year in which rating was conducted for all MFIs that received financial support for the rating. For the years up to 2002, this database included the following raters: ACCION, M-CRIL, Microfinanza Ltd Ltd., MicroRate, and Planet Rating. These raters were contacted and kindly provided data on what organization they rated and in what year.[2] Their data were merged with the data profiles of individual MFIs from the MIX MARKET information exchange platform.[3]

Rating is recorded for the year for which it was conducted but, in most cases, rating was based on financial statements for the preceding years. For example, if an MFI was rated in 2000 it was recorded as rated in 2000, although the rater actually used financial statements for the years up to and including 1999. All raters who provided information confirmed that, in most cases, pervious years' financial statements were used. In cases of mid-year rating, the rater used past years as well as current mid-year indicators of performance. This recording of rating permits studying the impact of rating on performance in the period after rating occurred and for which data was available.

A study of the impact of rating must rely on an appropriate control group. The data collected by MIX MARKET are very appropriate for this purpose. MFIs with listed financial and outreach profiles (and in many cases posted audited financial statements) have elected to participate usually motivated by the possibility that potential investors may review their profile

and select them for funding. Thus, all listed MFIs have identified themselves as seeking funds and as being more transparent than MFIs that did not provide profiles. Among these MFIs, not all were rated, which permits studying the impact of rating. While raters provided complete information of the MFIs they rated, only a part of each rater's clients were also part of the MIX MARKET database. Therefore, this paper assumes that the resulting database represents a relatively random sample of MFIs that are transparent in their transactions and some of whom have experience with rating and some of whom do not.

The MFIs in the sample are relatively evenly distributed across time—15 percent of the annual observations are from 1998, 22 percent are from 1999, 25 from 2000, 21 percent from 2001, and 17 percent in 2003. Most of the ratings (60 percent) have occurred in 2001 & 2002, while about 40 percent of the annual observations are from this period. This concentration of rating in the last 2 years of the study period is consistent with the industry developments as rating has become more popular since 2001.

Table 1 shows the distribution of MFIs by geographic regions as well as the regions served by raters during the study period. In the sample, Latin America (LA) and Eastern Europe and Central Asia (ECA) are the regions with the highest concentration of raters (in each, 3 raters were active), while in only one rater is represented in this sample.[4] Regional sub-samples were also created and used to re-estimate (1) and (2). Year and country dummies were included in the analysis to partial out the impact of time and country specific characteristics.

[INSERT TABLE 1 HERE]

Table 2 presents definitions of the variables used in the analysis. Performance is measured in terms of sustainability and outreach. Sustainability is measured by operational self-sustainability (*OSS*), which measures how well the MFI can cover its costs through operating

revenues and is the industry's most widely used indicator of performance.[5] MFI performance in terms of outreach is measured by the log of the number of active borrowers (*NAB*), which is the number of individuals that currently have an outstanding loan balance with the MFI.[6] Log difference of equity (*EqCh*) and log difference of liabilities (*LiabCh*) are used to study whether rating helps MFIs raise more funds.[7]

[INSERT TABLE 2 HERE]

The core explanatory variables are measures of capital ratio (*CAPITAL)*, MFI age *(AGE)* and MFIs size measured as the log of total assets *(SIZE)*, loans-to-asset ratio (*LOAN)*, and savings (deposits) ratio (*SAVINGS).*[8] Inflation (*INFLATION*) and country dummies control for the impact of general economic conditions.[9] Among the variables representing MFIs' profiles (excluding age), *SIZE* is not a ratio; thus, the value of total assets using *SIZE* is adjusted for inflation using the US CPI.

Table 3 presents summary statistics of the variables used in the empirical analysis for years when the MFIs were not rated versus years when the MFIs were rated, and by rater. The table is organized in two panels: Panel A presents the summary statistics of current year individual MFI profiles used in the estimation of (1), and Panel B presents the summary statistics of previous (lagged) year individual MFI profiles used in the estimation of (2).

[INSERT TABLE 3 HERE]

During the study period, of the 139 MFIs, 37 were rated at least once. In total, the database contains 54 ratings, including 39 ratings that received financial support from the CGAP Rating Fund. At the time of rating, rated MFIs had higher *OSS*, *NAB*, and loan-to-assets ratios, they were older and larger. However, there is no statistically significant difference between the rated and non-rated groups in terms of their capital structure and risk profile measured by the

portfolio-at-risk variable and in terms of changes in equity and liability. There is significant variation in the means of the variables of MFIs rated by various raters which suggests that the analysis should control for the use of a specific rater.

Discussion of the results

Results from estimation of (1) with performance measured in terms of sustainability, that is, with *OSS* as the dependent variable, are presented in Table 4. Results from estimation of (1) with *NAB* as a measure the impact of rating on outreach are presented in Table 5. Estimation was done using the worldwide sample as well as sub-samples for all regions. However, in order to save space, results from models of regions with too few observations or poorly fitting models (Asia and Africa) are not shown. Thus, each table presents results from the estimation using first the whole dataset and, next, using data from the two sub-regions for which adequate number of observations is available. These regions are Latin America and Eastern Europe and Central Asia. Breusch-Pagan tests shown at the bottom of these tables indicate that the random effect model is appropriate.

[INSERT TABLE 4 HERE]

Model 1 in Table 4 represents a specification where the impact of rating is captured by *RATING*—the simple dummy variable for rating—while Model 2 is a specification with *FinAid,* the dummy variable for subsidized rating.[10] These two models indicate that rating and subsidized rating had no effect on sustainability in the pooled (worldwide) sample, thus in a model where all raters are treated as equal, the first null hypothesis cannot be rejected. In Latin America, however, MFIs that obtained subsidized rating had 0.15 percentage point higher OSS in the next period.

Results from specifications that include dummies for individual raters suggest that not all raters have the same effect on MFIs (Models 3 and 4). This is not surprising given that individual microfinance raters employ different rating methodologies. While most coefficients are positive not all are significant in the worldwide sample. In the Latin American sub-sample, however, MFIs rated by ACCION had higher *OSS* by 0.25 percentage points and the null can be rejected in favor of a one sided alternative that rating has positive impact.[11, 12]

More importantly, rating by some raters may be associated with a negative performance at least in the short term, as the coefficient on the dummy for rating by Microfinanza Ltd is negative and statistically significant. These results are relatively robust to alternative specifications in the worldwide sample (in Model 4, the result is statistically significant at the 10 percent level for a one-sided t test) while in the sub-sample of MFIs operating in ECA the results is close to significant at the 10 percent, with p value of the one sided t-test of 0.13.

In 2002, Microfinanza Ltd used overall letter grades and MFIs in the sample received good grades—on 10 grid-scale, all MFIs rated by this rater received a rating of A (which comes third after AAA, and AA). All except one of these observations come from the database on subsidized ratings since Microfinanza Ltd neither supplied information on non-subsidized rating nor explained whether such is available; hence these results should be interpreted with caution. Yet, Microfinanza Ltd operated in regions with at least three raters and results may suggest that when the local rating industry is competitive, and given that raters serve as both raters and consultants, rating may not be the best disciplining mechanism.

The economic impact of rating by various raters is also significant. According to Model 4, compared to the rest of the sample, the *OSS* of MFIs rated by Microfinanza Ltd were 0.54 percent points less in the period following rating. On the other hand, everything else equal, the

OSS of Latin American MFIs increased by 0.67 points in the period following rating by ACCION.

Overall, the specifications in Table 4 fit the data reasonably well as indicated by the high R-squared of around 0.5, thus providing support for the use of this approach to study MFI performance. Results also indicate that the MFIs' level capitalization, size and focus on lending (higher *LOAN* value) do not have a statistically significant impact on performance and the relationship between MFIs' risk profile (*PAR*) and performance especially across regions is not consistent. Older MFIs have better sustainability but the impact of age is reversed after the 12-15 years in the worldwide sample, although the reversal is different for each region (for example, about 5 years in the ECA).

Except for the MFIs in Latin America, results show that MFIs have learned to operate in inflationary environment and to use inflation to their advantage as indicated by the positive and significant sign on the inflation coefficient, consistent with results from cross-country studies on financial intermediaries (Demirguc-Kunt, Laeven and Levine, 2004; Barth et al., 2003).

Evidence suggests that there is positive impact of deposit insurance on MFI performance. According to Model 4, even after controlling for the country, year, and inflation effects, MFIs operating in a country with deposit insurance scheme such as India have 0.25 percentage point higher *OSS* than MFIs operating in a country without deposit insurance scheme such as Pakistan.

Considering the impact of rating on outreach, it seems that, while rating has a positive and significant effect on outreach, individual raters did not have any effect (Table 5).[13] In general, the magnitude of the impact is significant—rated MFIs reached 18.4 % more borrowers in the period following rating than non-rated MFIs. For the Latin American sub-sample, the magnitude is this impact is much larger – 41.9 percent. While overall subsidizing rating did not

seem to affect outreach, MFIs in the ECA that got financial aid for their rating had 33.6 percent lower outreach.

[INSERT TABLE 5 HERE]

The size of the MFIs is positively related to outreach: one percent increase in total assets improves outreach by 0.78 percent (both size and number are in log form). As expected, MFIs with higher loan-to-total assets ratios reach more borrowers. However, age, organizational type (NGO, Bank etc), and country inflation levels have no impact on outreach.

Rating agencies also differ in terms of their effect on the MFIs' ability to attract additional funding. Results from estimation of (2) with *LiabCh* as the dependent variable are in Table 6; results form estimation of (2) with *EqCh* as the dependent variable are in Table 7.

[INSERT TABLE 6 HERE]

Results in Table 6 confirm the hypothesis that simply being rated is not sufficient to help MFIs attract additional resources as the coefficients on *RATING* and *FinAid* are not statistically significant in any of the specifications. The results indicate that it matters who does the rating. The coefficients on the dummies for various raters are both negative and positive. MFIs rated by PlaNet Rating were able to borrow more resources in the period following rating as indicated by the positive and statistically significant coefficients. These results hold for the worldwide sample and for the sample of the ECA region. For the Latin American sample, the coefficients on the dummy variables for rating by ACCION and MicroRate are negative but not statistically significant.

As expected, better capitalized MFIs were able to raise more debt. MFIs in countries with deposit insurance raised more debt perhaps because big lenders felt that the government guarantees of deposits decrease the overall default risk. Only MFIs in Eastern Europe and

Central Asia were able to borrow more in the face of high inflation and MFI that had higher proportion of savings to total assets also raised more non-deposit liabilities.

Table 7 shows the impact of rating on the MFIs' ability to attract additional equity. These results are complementary to results in Table 6, where the dependent variable was change in non-deposit liabilities. These results are also consistent with the idea that the choice of a rater affects MFIs' ability to raise additional funds. While the coefficients on rating and subsidized rating are not statistically significant in any of the specifications, MFIs in LA rated by ACCION attracted more equity. The negative and statistically significant coefficient on PlaNet Rating (Model 4) is consistent with the positive coefficient at the dummy for this rater in the estimation of the log change in liabilities.[14]

The results from this analysis should be interpreted with caution for several reasons. First, data constraints do not permit to test whether the grade an MFI received affects its performance and ability to raise funds. Specifically, it is not possible to tell whether an MFI with better rating has more incentives to improve than an MFI with worse rating; results only show that a rating by Microfinanza Ltd of MFIs operating in may have had negative impact.

Second, the data quality is also an issue, as about 25 MFIs provided data only prior to rating but not after rating, which makes the results more dependent on rating up to 2001, and thus valid for this specific time period. Since the industry has evolved substantially since 2001, more recent data, larger sample and, if possible, unified letter grades of the specific MFI rating would help better understand the impact of rating in microfinance.

Conclusions

In spite of the fact that developed countries have invested about $900 million in microfinance,

very little is known about the effectiveness of the mechanisms designed to exercise control over the use of these resources. This paper focuses on studying the ability of microfinance rating agencies to impose market discipline on microfinance institutions and their managers by rating these organizations' performance.

Overall, results indicate that microfinance rating may help impose market discipline as it affected MFIs' outreach and sustainability and their ability to raise funds, while subsidized rating may not have been appropriate, at least not in the ECA region. The main result is, however, that not all rating agencies are equal and that simply having a rating affects positively consequent outreach but not necessarily sustainability. In fact, there is some evidence for the moral hazard argument, namely that after receiving a good rating by a particular rater, some MFIs may slack off and show worse financial results. This result may provide support to the argument that less competition in the industry may be preferable, because the rater associated with moral hazard operated in a market where at least two other raters operated. Since this issue if very important for policy purposes, and since the result is only valid for a specific time period and regions it needs to be further addressed with better data and for other regions.

Future work may need to focus on the impact of conflict of interest within microfinance raters, since conflicts of interest may drive some of the results in this paper. While some organizations may be able to isolate these functions, others may not. For example, while both PlaNet Rate and Microfinanza Ltd have a 60/40 mix of rating and consulting, only rating by the latter is associated with a moral hazard effect.

Microfinance raters are converging toward an overall numerical or letter grade system, and it remains important to study how well each raters' system is able to correctly predict risk and affect MFIs ability to raise funds. When more and more recent data become available,

further studies on microfinance rating need to use these newly introduced numerical and letter grades to identify rating methodologies that are most effective in imposing market discipline.

ENDNOTES

[1] This information is based on personal correspondence with two microfinance raters.

[2] Microfinanza was the only rater that did not provide private information but referred to the ratingfund wabpage. One observation of rating by Microfinanza came from the MIXMARKET data base.

[3] All information on rating and time of the rating comes from the raters themselves. This is important because the MIX MARKET data contains information on rating but this information is incomplete (there is no specific date of rating, and in some cases, MFIs failed to disclose a second rater, etc.)

[4] During the study period, each MFIs could apply for rating by any of the raters but MFIs seem to have chosen raters with experience in their region.

[5] The Mixmarket information platform ranks the quality of the data collected for each MFI. The data for this analysis come from MFIs ranked 4 and 5 stars, which indicates that the data are from audited financial statements, presumably with standard industry adjustment applied to it. There is no qualitative difference between 4 and 5 except that 5 have at least 3 years of financial statements report, while 4 have less than three years.

[6] The number of active borrowers, however, represents only one dimension of outreach. To some stakeholders, the ability to reach poorer borrowers may be a better indicator of outreach than simply the number of active borrowers. The industry standard for this dimension is "depth of outreach" calculated as the ratio of average outstanding loan size divided by the per capita GNP. Regression on a smaller sample with depth of outreach as the dependent produced poor results, however.

[7] *LiabCh* captures changes in borrowed funds from sources other than deposits.

[8] The lending practices of some MFIs require mandatory savings from their borrowers. Only 4 MFIs in the sample explicitly indicated this but evidence suggests that there are more MFIs which use mandatory savings. Unfortunately, the data does not allow credible distinction between mandatory and voluntary savings.

[9] Originally, the per capita income and the GDP per country as a proxy of wealth level and size of the economy were included but, as they were highly correlated with country dummies, were consequently excluded from the analysis to prevent severe multi-collinearilty problems.

[10] Both *RATE* and *FinAid* can not be used as they are strongly correlated..

[11] Due to high level of correlation between LOAN and PAR, and CAPITAL and PAR, and given that the banking literature uses either of these ratios as a control for risk, two specifications are estimated: the first includes LOAN and CAPITAL which are not correlated (Model 3), and the second includes only PAR (Model 4). Results on are robust to specifications with different risk measures

[12] To calculate the precise magnitude the formula 100*[(exp(coefficient)-1] was used.

[13] This result was robust to alternative specifications.

[14] Results form the estimation using the sub-sample on Eastern Europe and Central Asia are not included since the model fit was poor and there were too few observations.

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Table 1. Distribution of sample MFIs and raters by geographic region.

Country Distribution by Region	Rater serving this region	No. MFIs	(% of sample)	Rated	
				No	(% within region)
Africa	MicroRate ACCION	74	18.78	3	4.05
Asia	M-CRIL	77	19.56	2	5.56
Eastern Europe and Central Asia	Microfinanza Ltd MicroRate PlaNet Rating	68	17.26	8	11.76
Latin America and The Caribbean	ACCION Microfinanza Ltd MicroRate	146	37.06	37	25.34
Middle East and North Africa	PlaNet Rating MicroRate	29	7.36	3	10.34
Total		394	100	53	

Table 2. Variable definition:

Variable	Definition
OSS	Operational self-sufficiency = Operating revenue / (Financial expense + Loan Loss Provision + Operating Expense). Measures how well the MFI can cover its costs through operating revenues
NAB	Logarithm of the number of current borrowers, that is the number of individuals that currently have an outstanding loan balance with the MFI or are responsible for repaying any portion of the gross loan portfolio
RATING	1 if rated in the current year; usually based on previous years financial statements
FinAid	1 if rating was paid for partially or in full by CGAP Rating Fund
ACCION	Rating by Rater No.1 etc. recorded in the year it occurred
CAPITAL	Total equity to total assets
AGE; AGE2	Age of the MFI = number of years since inception; Age2=age squared
SIZE	Logarithm of the total assets of the MFI. Total assets include all assets net of contra asset accounts such as the loan loss reserve and accumulated depreciation.
SAVINGS	Ratio of saving to total assets
LOAN	Ratio of loans outstanding to total assets; measures risk exposure [a]
PAR	Portfolio at Risk > 30 days
Bank	1 if the MFI is organized as a bank, zero otherwise
NGO	1 if the MFI is a NGO, zero otherwise
INFLATION	GDP per capita in constant 1995 US dollars; source: IMF
DEPOSIT	1 if the country has deposit insurance schemes

[a] Most empirical models that study bank performance include *LOAN* as a measure of bank risk exposure. Unlike banks, however, most MFIs do not engage in income generating activities other than lending, therefore, *LOAN* not only controls for risk exposure but also for MFI focus on lending because using funds for other purposes such as new buildings, cars etc, is likely to affect income generation..

Table 3. Summary statistics by non-rated, rated, and individual rater [a].

Panel A. Current Year

Variable	Non-rated (mean)[b]	Rated (mean)	ACCION (mean)	MicroRate (mean)	Microfinanza (mean)	PlaNetRating (mean)
OSS	1.049	1.238***	1.449	1.228	1.182	1.470
	(0.550)[c]	(0.322)	(0.501)	(0.262)	(0.136)	(0.496)
NAB	8.751	9.593***	9.901	9.982	7.833	9.350
	(2.124)	(0.928)	(0.695)	(0.770)	(0.660)	(0.638)
LiabCh	0.392	0.437	0.434	0.362	0.316	0.815
	(0.732)	(0.540)	(0.472)	(0.388)	(1.114)	(0.793)
EqCh	0.267	0.196	0.017	0.170	0.277	0.216
	(0.484)	(0.380)	(0.563)	(0.363)	(0.225)	(0.343)
CAPITAL	0.486	0.453	0.495	0.381	0.667	0.612
	(0.328)	(0.264)	(0.229)	(0.232)	(0.315)	(0.198)
LOAN	0.664	0.736**	0.788	0.750	0.868	0.729
	(0.202)	(0.164)	(0.180)	(0.134)	(0.094)	(0.145)
PAR	0.051	0.045	0.048	0.050	0.039	0.012
	(0.086)	(0.045)	(0.038)	(0.043)	(0.025)	(0.011)
SIZE	14.801	16.007***	16.183	16.444	15.048	15.325
	(2.038)	(1.108)	(0.465)	(0.892)	(0.820)	(0.926)
AGE	7.805	10.051***	11.375	12.000	3.500	5.333
	(6.544)	(5.246)	(4.069)	(4.913)	(1.291)	(1.506)
AGE2	103.641	128.09*	143.875	167.355	13.500	30.333
	(186.260)	(119.117)	(122.425)	(118.160)	(9.110)	(18.074)
FinAid		0.310	0.000	0.258	1.000	0.500
		(0.467)	0.000	(0.445)	0.000	(0.548)
ACCION		0.138		0.032	0.000	0.167
		(0.347)		(0.180)	0.000	(0.408)
M-CRIL		0.017	0.000	0.000	0.000	0.000
		(0.131)	0.000	0.000	0.000	0.000
MicroRate		0.517	0.125		0.000	0.000
		(0.504)	(0.354)		0.000	0.000
Microfinanza Ltd		0.069	0.000	0.000		0.000
		(0.255)	0.000	0.000		0.000
Planet Rating		0.121	0.125	0.000	0.000	
		(0.328)	(0.354)	0.000	0.000	
DEPOSIT	0.539	0.767	0.875	0.750	0.667	0.500
	(0.499)	(0.427)	(0.354)	(0.444)	(0.577)	(0.548)

[a] Rater 2 is not included due to the limited number of observations (2), [b] Means are estimated for the year for which rating occurred, [c] Standard errors are in the parenthesis.

*difference in means between rated and non-rated statistically significant at the 10% level, ** difference in means between rated and non-rated statistically significant at the 5% level, ***difference in means between rated and non-rated statistically significant at the 1% level

Table 3. Summary statistics by non-rated, rated, and individual rater[a]

Panel B. Previous Year

Variable	Non-rated (mean) [b]	Rated (mean)	ACCION (mean)	MicroRate (mean)	Microfinanza (mean)	PlaNetRating (mean)
L_OSS [c]	1.018	1.171**	1.328	1.171	1.050	1.411
	(0.532)[d]	(0.294)	(0.444)	(0.258)	(0.297)	(0.496)
L_NABb	8.549	9.269***	9.824	9.612	7.545	8.893
	(2.166)	(1.049)	(0.767)	(0.857)	(0.552)	(0.508)
L_CAPITAL	0.498	0.498	0.604	0.408	0.709	0.721
	(0.330)	(0.291)	(0.282)	(0.252)	(0.301)	(0.206)
L_LOAN	0.656	0.723*	0.899	0.727	0.850	0.692
	(0.206)	(0.179)	(0.053)	(0.132)	(0.069)	(0.181)
L_PAR	0.052	0.045	0.042	0.052	0.046	0.032
	(0.080)	(0.043)	(0.038)	(0.043)	(0.026)	(0.069)
L_ SAVINGS	0.142	0.144	0.090	0.159	0.000	0.052
	(0.222)	(0.222)	(0.239)	(0.216)	(0.000)	(0.135)
L_SIZE	14.602	15.722***	16.031	16.198	14.682	14.939
	(2.043)	(1.233)	(0.451)	(0.948)	(0.889)	(0.902)
L_AGE	7.076	9.125***	10.571	11.276	2.500	4.333
	(6.387)	(5.312)	(4.353)	(4.935)	(1.291)	(1.506)

[a] Rater 2 is not included due to the limited number of observations (2)
[b] Means are estimated for the year for which rating occurred.
[c] L stands for the variable lagged one period.
[d] Standard errors are in the parenthesis.
* difference in means between rated and non-rated statistically significant at the 10% level,
** difference in means between rated and non-rated statistically significant at the 5% level,
*** difference in means between rated and non-rated statistically significant at the 1% level

Table 4. Random effect estimates of rating impact on sustainability, measured by *OSS*

	(1)	(2)	(3)	(4)	LA[1]	LA[1]	ECA[2]	ECA[2]
RATING	-0.002							
	(0.03)							
FinAid		0.055			0.152			
		(0.61)			(2.28)**			
ACCION			0.250	0.142		0.232		
			(1.51)	(0.77)		(2.66)***		
M-CRIL			0.457	0.517		0.044		
			(1.31)	(1.52)		(0.91)		
MicroRate			0.007	0.002				
			(0.07)	(0.02)				
Microfinanza Ltd			-0.417	-0.433			-0.447	-0.544
			(1.88)*	(1.98)**			(1.53)	(1.80)*
PlaNet Rating			0.197	0.198			-0.085	-0.132
			(1.39)	(1.30)			(0.39)	(0.59)
PAR				0.300				-1.075
				(0.96)				(1.60)
CAPITAL	0.171	0.170	0.187		0.149	0.167	0.228	
	(1.36)	(1.38)	(1.52)		(1.11)	(1.25)	(1.31)	
LOAN	0.335	0.343	0.348		0.003	0.043	0.736	
	(1.95)*	(2.02)**	(2.05)**		(0.02)	(0.27)	(1.91)*	
SIZE	0.084	0.085	0.083	0.123	0.120	0.117	0.119	0.204
	(2.74)***	(2.82)***	(2.74)***	(4.46)***	(3.23)***	(3.16)***	(1.38)	(2.26)**
AGE	0.051	0.049	0.049	0.070	0.041	0.041	0.377	0.488
	(2.85)***	(2.81)***	(2.77)***	(4.60)***	(2.44)**	(2.51)**	(1.90)*	(2.51)**
AGE2	-0.002	-0.002	-0.002	-0.002	-0.001	-0.001	-0.033	-0.052
	(3.24)***	(3.22)***	(3.16)***	(4.94)***	(3.22)***	(3.29)***	(1.43)	(2.33)**
NGO	0.163	0.159	0.158	0.214	-0.028	-0.019	0.061	-0.085
	(1.28)	(1.28)	(1.24)	(2.17)**	(0.20)	(0.14)	(0.47)	(0.56)
BANK	-0.054	-0.060	-0.053	-0.181	-0.225	-0.227		
	(0.28)	(0.32)	(0.27)	(1.13)	(1.08)	(1.10)		
INFLATION	0.647	0.673	0.646	0.934	-0.797	-0.758	3.747	3.203
	(1.78)*	(1.87)*	(1.82)*	(2.49)**	(0.86)	(0.82)	(3.13)***	(2.64)***
DEPOSIT	0.103	0.107	0.174	0.253	0.207	-0.670	-0.599	-0.477
	(0.84)	(0.88)	(1.41)	(1.99)**	(0.99)	(1.65)*	(2.01)**	(1.61)
Constant	-0.844	-1.648	-1.669	-2.015	-1.098	-0.372	-1.430	-1.666
	(1.31)	(2.31)**	(2.33)**	(3.20)***	(1.78)*	(0.81)	(1.05)	(2.30)**
Observations	366	379	379	320	116	116	70OLS	68
Number of id	115	115	115	108	36	36		
Overall R2	0.49	0.49	0.50	0.56	0.55	0.55	0.75	0.74
Chi 2	145	147	155	205	49	53	0.62	0.59
							AdjR2	
BP	48	48	51	36	39	40	5.7 F	5.11 F
Rho	0.60	0.60	0.62	0.44	0.78	0.78		

[1] Latin America sample

[2] Eastern Europe and Central Asia sample

Absolute value of t statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5. Random effect estimates of rating impact on outreach, measured by *NAB*

	(5)	(1)	(3)	LA[1]	LA[1]	ECA[2]
RATING		0.169	0.151	0.358	0.325	
		(1.83)*	(1.65)*	(2.15)**	(1.95)*	
FinAid						-0.411
						(2.08)**
ACCION	0.299					
	(1.26)					
M-CRIL	0.081					
	(0.16)					
MicroRate	0.049					
	(0.42)					
Microfinanza Ltd	-0.325					
	(1.13)					
PlaNet Rating	-0.056					
	(0.25)					
PAR			-0.049		-3.371	0.317
			(0.11)		(1.76)*	(0.44)
CAPITAL	0.161	0.119		0.169		
	(0.91)	(0.67)		(0.32)		
LOAN	1.334	1.323		0.528		
	(6.04)***	(6.01)***		(0.91)		
SIZE	0.768	0.761	0.837	0.685	0.811	0.745
	(15.39)***	(15.11)***	(15.59)***	(4.86)***	(5.26)***	(4.81)***
AGE	0.005	0.005	0.005	-0.001	-0.001	-0.287
	(0.30)	(0.31)	(0.27)	(0.02)	(0.02)	(1.22)
NGO	0.202	0.204	0.274	0.333	0.501	0.740
	(0.86)	(0.87)	(1.13)	(0.70)	(1.02)	(1.43)
Bank	-0.506	-0.534	-0.637	-0.163	-0.382	
	(1.48)	(1.56)	(1.64)	(0.24)	(0.54)	
INFLATION	-0.055	-0.022	-0.418	-1.920	-1.463	0.600
	(0.11)	(0.04)	(0.86)	(0.73)	(0.56)	(0.48)
Constant	-6.973	-6.915	-3.876	3.574	2.936	-3.869
	(5.78)***	(5.72)***	(3.09)***	(2.02)**	(1.52)	(2.11)**
Observations	449	431	364	128	116	70
Number of id	135	135	127	46	44	22
Overall R2	0.86	0.86	0.86	0.62	0.62	0.89
Chi2	1138	1132	966	102	98	336
BP	225	200	190	52	46	305
Pho	0.76	0.76	0.81	0.75	0.78	0.87

[1] Latin America sample

[2] Eastern Europe and Central Asia sample

Absolute value of t statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 6. OLS of rating impact on log changes in liability.

	(2)	(3)	(1)	(1)	(4)EE	(4)EE	(5)LA
RATING	-0.124						
	(0.50)						
FinAid		-0.162					
		(0.46)					
ACCION			-0.452	-0.721			-0.571
			(0.63)	(1.04)			(1.58)
M-CRIL			-0.785	-0.263			
			(0.63)	(0.23)			
MicroRate			0.185	0.181			-0.027
			(0.49)	(0.53)			(0.18)
Microfinanza Ltd			-0.486	-1.556	0.429	0.324	
			(0.41)	(1.38)	(0.25)	(0.21)	
PlaNet Rating			1.182	0.765	2.106	2.870	
			(2.01)**	(1.37)	(2.34)**	(3.46)***	
SIZE	-0.100	-0.102	-0.141	-0.106	0.061	-0.024	-0.040
	(1.36)	(1.39)	(1.51)	(1.45)	(0.11)	(0.05)	(0.50)
L_AGE	-0.012	-0.012	-0.003	-0.014	-0.028	-0.671	-0.007
	(0.70)	(0.70)	(0.18)	(0.88)	(0.05)	(1.24)	(0.72)
L_PAR			-0.853			0.423	
			(0.52)			(0.16)	
L_LOAN	0.242	0.264		0.281	-0.822		0.820
	(0.46)	(0.50)		(0.53)	(0.45)		(1.86)*
L_CAPITAL	1.354	1.359		1.272	0.685		1.437
	(3.86)***	(3.85)***		(3.59)***	(0.78)		(3.73)***
INFLATION	0.231	0.335	-0.583	0.236	-26.861	-26.914	3.004
	(0.07)	(0.10)	(0.15)	(0.07)	(1.94)*	(2.13)*	(0.88)
L_SAVINGS	0.861	0.838	0.912	0.855	-43.635	-37.442	0.742
	(1.69)*	(1.65)	(1.36)	(1.69)*	(0.71)	(0.63)	(2.09)**
L_DEPOSIT	1.997	2.028	2.027	3.020	4.080	4.815	0.419
	(2.39)**	(2.40)**	(1.76)*	(2.82)***	(1.76)*	(2.31)**	(0.48)
NGO	-0.104	-0.099	-0.072	-0.097	0.271	-0.180	0.010
	(0.40)	(0.38)	(0.22)	(0.37)	(0.42)	(0.25)	(0.04)
Bank	-0.276	-0.278	-0.537	-0.287		0.000	-0.175
	(0.81)	(0.81)	(1.21)	(0.84)		(.)	(0.71)
Constant	-0.812	-0.835	-0.055	-1.837	-5.589	0.292	-0.720
	(0.45)	(0.46)	(0.03)	(0.96)	(0.86)	(0.04)	(0.76)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	232	232	189	232	39	36	68
R-squared	0.47	0.47	0.52	0.48	0.74	0.82	0.55
Adj R2	0.31	0.31	0.32	0.32	0.39	0.54	0.36
Ftest	3.04	3.03	2.73	2.91	2.11	2.97	2.48

[1] Latin America sample

[2] Eastern Europe and Central Asia sample

Absolute value of t statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7. OLS of rating impact on log changes in equity.

	(1)	(1)	(2)	(3)	LA	(5)LA
	eqch	eqch	eqch	eqch	eqch	eqch
RATING			0.080			
			(0.80)			
FinAid				0.127		
				(0.90)		
ACCION	0.449*	0.464			0.391	0.455
	(1.67)	(1.53)			(1.73)*	(2.10)**
M-CRIL	-0.123	-0.171				
	(0.26)	(0.32)				
MicroRate	0.090	0.053			0.118	0.106
	(0.65)	(0.33)			(1.23)	(1.03)
Microfinanza Ltd	0.201	0.215				
	(0.48)	(0.48)				
PlaNet Rating	-0.264	-0.425				
	(1.19)	(1.73)*				
SIZE	-0.113	-0.103	-0.114	-0.113	-0.057	-0.015
	(3.52)***	(2.54)**	(3.60)***	(3.57)***	(1.35)	(0.30)
L_AGE	-0.001	-0.006	-0.002	-0.002	-0.017	-0.018
	(0.20)	(0.78)	(0.34)	(0.33)	(2.62)**	(2.53)**
L_PAR		-0.117				-1.287
		(0.15)				(0.95)
L_LOAN	0.242		0.262	0.242	0.482	
	(1.13)		(1.25)	(1.14)	(1.95)*	
L_CAPITAL	-0.730		-0.737	-0.742	-0.539	
	(4.65)***		(4.76)***	(4.78)***	(2.26)**	
INFLATION	0.238	-0.719	0.329	0.253	-0.610	-0.903
	(0.19)	(0.48)	(0.27)	(0.20)	(0.29)	(0.42)
L_SAVINGS	0.091	0.180	0.090	0.106	0.135	0.232
	(0.42)	(0.62)	(0.42)	(0.49)	(0.63)	(1.03)
L_DEPOSIT	-0.705	-0.707	-0.612	-0.632	0.350	-0.499
	(2.05)**	(1.85)*	(2.11)**	(2.17)**	(1.48)	(0.87)
NGO	0.109	0.062	0.102	0.098	0.446	0.548
	(1.09)	(0.48)	(1.03)	(0.98)	(2.89)***	(2.98)***
Bank	0.185	0.288	0.177	0.178	0.120	-0.028
	(1.20)	(1.41)	(1.15)	(1.16)	(0.79)	(0.18)
Constant	2.342	1.783	1.048	1.042	0.441	0.169
	(3.34)***	(2.36)**	(2.06)**	(2.05)**	(0.60)	(0.34)
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Observations	243	200	243	243	70	65
R-squared	0.36	0.35	0.35	0.35	0.50	0.51
Adj R2	0.17	0.11	0.17	0.17	0.30	0.31
F	1.86	1.47	1.95	1.95	2.49	2.49

[1] Latin America sample

[2] Eastern Europe and Central Asia sample

Absolute value of t statistics in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Appendix:

Table 1: Numbers of MFIs by country in the sample and their share in the population[1]

Country	Sample		Population[1]		Over/Under representation[2]
	No	%	No	%	
Albania*	3	0.79	8	0.32	2.49
Armenia*	10	2.63	12	0.48	5.54
B&H*	24	6.32	19	0.75	8.39
Bangladesh*	9	2.37	384	15.21	0.16
Bolivia*	27	7.11	20	0.79	8.97
Bulgaria*	2	0.53	8	0.32	1.66
Cambodia*	12	3.16	30	1.19	2.66
Cameroon	1	0.26	56	2.22	0.12
Colombia*	21	5.53	18	0.71	7.75
Dominican Republic*	6	1.58	11	0.44	3.62
Ecuador*	3	0.79	13	0.52	1.53
Egypt*	4	1.05	18	0.71	1.48
Ethiopia	5	1.32	30	1.19	1.11
Georgia*	4	1.05	13	0.52	2.04
Ghana*	3	0.79	51	2.02	0.39
Guatemala	3	0.79	25	0.99	0.80
Haiti*	4	1.05	14	0.55	1.90
Honduras*	5	1.32	13	0.52	2.55
India*	19	5.00	666	26.39	0.19
Indonesia*	6	1.58	127	5.03	0.31
Jordan*	8	2.11	3	0.12	17.71
Kazakhstan*	5	1.32	24	0.95	1.38
Kenya*	11	2.89	93	3.68	0.79
Kyrgyz Republic	3	0.79	21	0.83	0.95
Madagascar*	7	1.84	5	0.20	9.30
Mali	3	0.79	22	0.87	0.91
Mexico*	18	4.74	36	1.43	3.32
Mongolia*	5	1.32	3	0.12	11.07
Morocco*	7	1.84	8	0.32	5.81
Mozambique*	6	1.58	4	0.16	9.96
Nepal*	4	1.05	89	3.53	0.30
Nicaragua*	13	3.42	19	0.75	4.54
Nigeria	8	2.11	118	4.68	0.45
Pakistan*	9	2.37	35	1.39	1.71
Paraguay*	3	0.79	3	0.12	6.64

Peru**	30	7.89	37	1.47	5.39
Country	Sample		Population[1]		Over/Under representation[2]
	No	%	No	%	
Philippines*	8	2.11	101	4.00	0.53
Republic	3	0.79	17	0.67	1.17
Republic*	3	0.79	10	0.40	1.99
Russia	3	0.79	73	2.89	0.27
Rwanda*	3	0.79	9	0.36	2.21
Senegal	4	1.05	16	0.63	1.66
Slovakia*	3	0.79	124	4.91	0.16
Tajikistan	3	0.79	22	0.87	0.91
Tanzania*	4	1.05	21	0.83	1.27
Togo*	11	2.89	22	0.87	3.32
Turkey*	1	0.26	1	0.04	6.64
Uganda*	18	4.74	47	1.86	2.54
FR Yugoslavia	5	1.32	5	0.20	6.64
Total	380	100	2524	100	

[1] Data comprising the population in a country come from the Micro Credit Summit Project.

[2] Sample proportion divided by population proportion

* MFIs from that country are overrepresented in the sample.

Table 2. List of MFIs included in the analysis

Name	Country	Name	Country
ABA	Egypt	EMT	Cambodia
ACAD	Palestine	FADES	Bolivia
ACLEDA	Cambodia	FADU	Nigeria
ACLEDA	Cambodia	FAMA	Nicaragua
ACME	Haiti	FATEN	Palestine
ACODEP	Nicaragua	Faulu - KEN	Kenya
ACSI	Ethiopia	Faulu - UGA	Uganda
ACTUAR - Tolima	Colombia	FCC	Mozambique
ACTUAR Famiempresas - Antioquia	Colombia	FIE	Bolivia
ADEFI	Madagascar	FINADEV	Benin
Adelante	Honduras	Finamerica	Colombia
ADMIC	Mexico	Finca - TAN	Tanzania
ADOPEM	Dominican Republic	Finca - UGA	Uganda
Agency for Finance in Kosovo	Yugoslavia	FINCA Armenia	Armenia
AgroCapital	Bolivia	FINCOMUN	Mexico
AKRSP	Pakistan	FINDE	Nicaragua
Al Amana	Morocco	FMSD	Colombia
AREGAK	Armenia	FONDECO	Bolivia
ASDEB	Togo	FORA	Russia
Asian Credit Fund	Kazakhstan	G esis Empreserial	Guatemala
Banco Solidario	Ecuador	Hattha Kaksekar	Cambodia
BancoSol	Bolivia	IDF	Bangladesh
BASIX	India	IMED	India
Bay Tushum	Kyrgyz Republic	Independencia	Mexico
Bay Tushum Kyrgyz	Republic	Integra Foundation	Slovakia
BDB	Indonesia	JMCC	Jordan
BES	India	Kamurj	Armenia
BRAC	Bangladesh	KCLF	Kazakhstan
BRI	Indonesia	KEP	Kosovo
CARD Bank	Philippines	KSF	Ghana
CCA	Cameroon	MAYA	Turkey
CERUDEB	Uganda	MFW	Jordan
CMAC - Maynas	Peru	MiBanco	Peru
CMAC - Sullana	Peru	MI-BOSPO Tuzla	B&H
Compartamos	Mexico	MICRA (Founder CRS)	B&H
Compartamos	Mexico	Microfond Kardjali	Bulgaria
Constanta Foundation	Georgia	MIKROFIN, Banja Luka	B&H
Crear - Arequipa	Peru	NABW (Microcredit Centre)	Tajikistan
Crear - Tacna	Peru	Nirdhan	Nepal
DEC	Nigeria	NLCL	Pakistan
EBS	Kenya	Novo Banco	Mozambique
Eco Futuro	Bolivia	OPIC-TOGO	Togo
EDYFICAR	Peru	PADME	Benin
EKI WV	B&H	PAMECAS	Senegal

List of MFIs included in the analysis (Continued)

Name	Country
Partner Mikrokreditna Organizacija	B&H
PRIZMA	B&H
PRODEM	Bolivia
PROEMPRESA	Peru
ProMujer - Bolivia	Bolivia
ProMujer Peru	Peru
PROSHIKA	Bangladesh
PSHM	Albania
SEAP	Nigeria
SEEDS	Sri Lanka
SEF	South Africa
SIPEM	Madagascar
SKS	India
SMEP	Kenya
SOGESOL	Haiti
Spandana	India
SY	Mali
TSPI	Philippines
Urwego	Rwanda
UWFT	Uganda
Visi de Finanzas	Paraguay
WAGES	Togo
WWB - Cali	Colombia
WWB - Medell	Colombia
XacBank	Mongolia
Zakoura	Morocco