Governance and Performance of Microfinance Institutions in Central and Eastern Europe and the Newly Independent States

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Abstract: This paper presents the first evidence on the impact of board diversity and independence, and management compensation on outreach and sustainability of microfinance institutions in Central and Eastern Europe and the Newly Independent States. Results indicate that board diversity improves both outreach and sustainability while larger and less independent boards lower sustainability. Performance-based compensation is not effective in aligning the interest of managers and stakeholders, and underpaying managers reduces outreach.

Keywords: governance, microfinance, board of directors, managerial compensation

Introduction

Microfinance is the provision of loans and other financial services to the entrepreneurial poor. The *microfinance institution* (MFI) has evolved as a result of the efforts of committed individuals and assistance agencies to reduce poverty by promoting self-employment and entrepreneurship in predominantly rural areas. The MFI faces unique challenges because it must achieve a double bottom line—provide financial services to the poor (*outreach*) and cover its costs (*sustainability*). Microfinance is a significant and growing industry, yet there are no studies that explore the link between governance and performance. Previous studies have focused mainly on the role of innovative lending practices for improving outreach and sustainability, and on the impact that MFIs have on borrowers (Morduch, 1999; Aghion and Morduch, 2000).

Microfinance practitioners have recognized that good governance is critical for the success of the MFIs (Campion, 1998; Rock, Otero and Saltzman, 1998) but only few studies on regulations in microfinance have touched upon governance issues (McGuire, 1999). Closer examination of the role of various governance mechanisms is important because MFI managers control significant resources. In Central and Eastern Europe and the Newly Independent States (CEE & the NIS) the asset base of these organizations is estimated to be 500 million dollars (Foster, Green, and Pytkowska, 2003). In addition all MFIs in the region serve (although to a different degree) entrepreneurs in rural areas who lack access to other sources of finance.

There are several reasons for the lack of studies on the effect of MFI governance on performance. First, performance data are considered proprietary and are hard to obtain. Although the majority of MFIs are funded with public funds channeled through large international development agencies, until recently the practice was to withhold performance information from the general public.[1] Moreover, there are no market mechanisms that promote transparency as scrutiny is not in the interest of either donors or MFI managers, and thus governance practices are not very transparent.

Next, the microfinance industry is quite diverse in terms of organizational types, with MFIs organized as non-governmental organizations (NGOs), banks, credit cooperatives or non-bank financial institutions. This diversity complicates the analysis because it makes it difficult to choose appropriate conceptual framework. The literature on governance focuses mainly on problems of the modern public company while the governance issues in banks and in non-profit organizations are much less understood and empirical studies of these organizational types are rare. However, a 1998 industry survey shows that there are few differences in the objectives and performance of MFIs organized under different legal

[1] The industry practice has been to publish performance information aggregated by region, such as the data published by the Microbanking Bulletin. Individual data are also published but only in terms of number of clients, *e.g.* the data collected and published by the Microcreditsummit.

forms. Therefore, an empirical approach built on theoretical predictions relevant to MFIs could be used to identify the impact of various governance mechanisms.

This paper uses unique data from recently conducted surveys in Central and Eastern Europe and in the Newly Independent States to study the relationships between governance and MFI performance. Results indicate that governance mechanisms impact outreach and sustainability differently. The board is an effective internal governance mechanism and MFIs with local boards have higher sustainability. Board diversity improves both outreach and sustainability. The pursuit of both outreach and sustainability, it seems, may create difficulties for stakeholders who, by being represented on the board, hope to protect their interest. For example, results show that donor representatives improve depth of outreach but worsen breadth of outreach and sustainability. On the other hand, as expected, financiers promote sustainability. Consistent with other studies on board size and independence, this paper finds that in microfinance larger boards and boards with higher proportion of insiders have worse financial results. Results also indicate that performance-based compensation is not effective in aligning the interest of managers with that of other stakeholders and underpaying managers lowers outreach.

The rest of the paper is organized as follows. Part 2 presents theoretical considerations and the empirical model, part 3 briefly describes the data, part 4 discusses the results and part 5 offers conclusions.

Theoretical Considerations and Empirical Specifications

In microfinance, governance refers to the mechanisms through which donors, equity investors and other providers of funds ensure themselves that their funds will be used according to the intended purposes.[2] Such control mechanisms are necessary because managers and providers of funds may have diverging preferences and objectives. For example, MFI managers may work towards fulfilling the mission of the MFI but they may also have preferences for non-pecuniary rewards. In the corporate governance literature, this problem is known as the agency problem. This literature refers to the manager as an Agent, who unlike the Principal, does not own the resources of the firm. The Principal owns the resources and bears the residual risk, that is, the Principal is the residual claimant of the firm's wealth (Jensen and Meckling, 1976). Costs associated with the agency problem are called agency costs and represent costs that residual claimants bear in order to benefit from the professional services of managers. The goal of many governance mechanisms is to minimize agency costs by aligning the objectives of the owner-Principal with the objectives of the manager-Agent.

The key mechanisms of an effective governance framework are ownership (including institutional and managerial ownership), board and board structure (size and composition), CEO (manager) and director (board member) remuneration, auditing, information, and the market for corporate control (Keasey, Thompson & Write, 1997). This paper explores all mechanisms besides ownership, because the database used does not contain data on ownership.

MFIs have some unique characteristics that complicate the study of their governance. For example, they need to fulfill an outreach mission by serving poor clients, and many operate as NGOs, which makes them similar to non-profit firms. Many MFIs are similar to banks because they are regulated or supervised by a regulatory body and/or because they collect deposits. The organizational diversity of MFIs makes the empirical study of their governance difficult. This challenge is addressed by specifying several empirical models based on insights from the corporate governance literature, from the literature on governance in banks and from the literature on governance in non-profit organizations.

Since MFIs strive to achieve outreach and sustainability, some governance mechanisms may impact mainly outreach and some may affect mainly sustainability depending on whose rights these mechanisms are supposed to protect. For example, donors may prefer outreach to sustainability, while

[2] This definition is based on the definition by Shleifer and Vishny (1997) where corporate governance is defined as the mechanism through which shareholders (providers of funds) ensure themselves that they will receive maximum return on their investments.

private investors prefer sustainability to outreach. These two stakeholders (a group of people with similar interests in the organization) may install their representatives on the board and influence the direction of manager's effort. The empirical analysis addresses this challenge by estimating the impact of each governance mechanisms on both sustainability and outreach.

The MFI board

Boards are important in microfinance because of the relatively limited role of external market forces. The board of directors is an internal governance mechanism that helps resolve the agency problems between owners and managers. Corporate boards are elected by shareholders to monitor and advise managers. The degree of alignment of board and shareholder objectives is measured in the empirical corporate governance literature by the proportion of outside/independent directors on the board. More independent directors (non-employees, not related to the company) are expected to act as better monitors and advisors. Empirical studies have found both positive and negative relationships between the proportion of outside directors and firm value (review of the literature in Hermalin and Weisbach, 2003).

Non-profit boards are typically comprised of outsiders, so the role of insiders versus outsiders is normally not considered.[3] In this sample, the typical board consists of about 10 percent voting insiders and that is why we estimate a model that accounts for the role of insiders, outsiders and implicitly for the role of "gray directors."[4]

In the boardroom, the major conflict is between the manager, who has incentives to capture the board and thus ensure his job and non-pecuniary benefits, and the directors (board members) who have incentives to maintain their independence to monitor and, if necessary, replace the manager. Directors are paid, and the market for their services should ensure diligent monitoring (Fama and Jensen, 1983a) although corporate directors may also have considerable incentives to slack off or get along with managers (Holmstrom, 1999).

In a non-profit organization, the absence of residual claimants avoids the donor-residual claimant agency problems (Fama and Jensen (1983a). Internal agents (managers and employees) will still desire to expropriate donations, but the non-profit board allows for separation of management from control. Although board members of non-profit firms are rarely paid, they do provide continuous personal time and/or wealth, and would want to do a good job on the board. Board members no longer committed to the mission leave, and substitution is done by the remaining board members based on mutually agreed upon criteria (Fama and Jensen, 1983b).

Since some MFIs are subject to regulation, they may share some of the specific characteristics of boards in regulated industries. For example, boards in banking have a larger proportion of outside directors than boards of firms in manufacturing (Adams and Mehran, 2003).

Board efficacy can be influenced by board size, with larger boards being less effective than smaller boards because when the board gets too big, free riding by some directors may become an issue (Jensen, 1993; Lipton and Lorch, 1992). This hypothesis is confirmed by studies on both large corporate boards and boards of small firms (Yermack, 1996; Eisenber Sungren and Wells, 1998). In non-profit firms, monitoring by the board declines with firm size, although fundraising increases with size (Oster and O'Reagan, 2003). Banks, however, have larger boards than firms in other industries (Adams and Mehran, 2003).

To study the role of board size and board independence the following model is estimated:

[3] Callen and Falk (1993) have defined insiders as board members who receive pay, but because pay is atypical in nonprofit boards, this measure is not very useful. Independence is also measured by the power of the CEO to nominate the board and to vote on board selection (Shivdasani and Yermack, 1999; Oster and O'Reagan, 2002).
[4] The term *gray* board member is used to describe board members who are not employee of the MFI but are involved in some of the MFI activity.

$$Performance_{i,t} = \alpha_1 + \beta_1 Bsize_{i,t} + \beta_2 Insiders_{i,t} + \beta_3 Non\text{-}affiliated\ Outsiders_{i,t} + \\ + \sum_{j=1}^{m} \beta_j Controls_{i,t,j,} + \varepsilon_{i,t} \quad (2)$$

where *Bsize* is the size of the board, *Insiders* is the proportion of employees who are voting board members (usually the manager), *Non-affiliated Outsiders* is the proportion of non-affiliated board members, *Controls* is a vector of variables that control for various qualities of institutions, economic conditions and MFI-specific characteristics such a size and age.

Research has also focused on how board diversity affects firm performance. There is evidence that women directors spend more time on monitoring activities. The occupation of board members does not affect time spent on monitoring, but it affects fundraising (Oster and O'Reagan, 2003). Corporate performance is also affected by board diversity. Corporations with higher proportions of women and ethnic minorities perform better, according to a recent study of the largest Fortune 1000 companies (Carter, Simkins and Simpson, 2003).

The MFI board has unique characteristics. It is not unusual for several major stakeholders to be represented on the board. The major stakeholders in an MFI are donors, equity investors, insiders (employees and managers), and creditors (who often provide a significant amount of the funding available for microloans). Some MFIs have included clients on their boards (Campion, 1998). The relative power of these various stakeholders affects outreach and sustainability.

To study how board diversification affects MFI performance, the following equation is estimated:

$$Performance_{i,t} = \alpha_1 + \beta_1 Bsize_{i,t} + \beta_2 Women\ Directors_{i,t} + \beta_3 Donors_{i,t} + + \beta_4 Financiers_{i,t} \\ + \beta_5 Local\ Businessmen_{i,t} + \beta_6 Clients_{i,t} + \beta_7 Other_{i,t} + \sum_{j=1}^{m} \beta_j Controls_{i,t,j} + \varepsilon_{i,t} \quad (3)$$

where *Women Directors* is the proportion of women on the board, *Donors* is the proportion of donors, *Financiers* is the proportion of members with financial skills, *Clients* is the proportion of clients, and *Others* is the proportion of other professions and characteristics. *Controls* here is the vector of control variables described earlier.

Managerial Compensation as an Incentive-Aligning Mechanism

According to the agency literature, compensation that includes both a performance-based element and a fixed element is the best mechanism to align the interests of managers with that of equity holders and donors. Indeed, performance-related bonuses are used in the microfinance industry. The empirical literature on corporations confirms that there is a nonlinear pay-performance link, but the sensitivity is relatively small; in their widely cited study Jensen and Murphy (1990) find that, for large corporations, pay-performance sensitivity is only $3.25 for every $1,000 increase in shareholder value. Recent papers show that this sensitivity has been increasing (Murphy, 1999).

Banks are regulated industries and regulation may substitute for or complement incentive features in managerial contracts (John, Mehran , and Qian, 2004). High-powered incentives (remuneration where the bonus part is significant) may align the interests of managers too much with those of equity holders, and induce managers to take higher risks at the expense of depositors, who would suffer most if the MFI fails. For the US bank industries, John, Saunders and Senbet (2000) have argued that regulation that takes into account the top management salary may be more effective than capital regulation in ameliorating risk-shifting incentives. In banks, the higher leverage (use of deposits) requires that the manager's interest

are not aligned too much with the interest of equity holders; thus low pay-performance sensitivity is recommended (John and John, 1993). Indeed, pay-performance sensitivity in banking has been smaller than that in other industries (Houston and James, 1995; John and Qian, 2003; Adams and Mehran, 2003).

In non-profits, many forms of incentive pay are illegal. In fact, it has been shown that the asymmetric information between clients and managers (that is, managers know more about the product than clients) makes fixed salaries the better choice for non-profit managers (Easley and O'Hara, 1986). Specifically, since managers get fixed salaries, they are indifferent between telling the truth and lying, and thus will tell the truth. Clients and donors will find the information provided by non-profit managers more credible and this will lead to better funded and better performing firms.

Instead of offering performance-based compensation as agency theory would suggest, non-profits boards may be able to recruit managers by offering compensation packages combining lower wages with some perquisites that only individuals committed to the mission will self-select to take (Handy and Katz, 1998). Additionally, the appeal of a position of power in non-profit firms may be sufficient to attract good managers (James, 1983). It has been shown that if wages paid to NGO managers are similar to those paid to for-profit managers, and if the NGO technology is superior to that of the for-profit firm, the NGOs will dominate the industry (Scott and Hopkins, 1999)[5]

To evaluate the role of managerial compensation on MFI performance the following empirical model is used:

$$Performance_{i,t} = \alpha_1 + \beta_1\ Higher\ Wage_{i,t} + \beta_2\ Lower\ Wage_{i,t} + \beta_3 Fixed\ Wage_{i,t} + \\ + \beta_4 Experience_{i,t} + \sum_{j=1}^{m} \beta_j\ Controls_{i,t,j} + \varepsilon_{i,t} \quad (4)$$

where *Performance* includes indicators for outreach and sustainability, *Higher Wage* is a dummy that takes the value of one if the manager stated that his salary is higher than what he could get at an alternative job, *Lower Wage* is a dummy that takes the value of one if the manager stated that his salary is lower than what he could get at an alternative job, *Fixed Wages* is a dummy for fixed pay, namely a wage not based on performance, *Experience* is the number of years of experience (usually used to proxy a manager's quality), and *Controls* is a vector of controls described earlier.

The Data

Data for this study came from three surveys. The first survey was conducted in 1998 by the regional network organization, the Microfinance Center for Central and Eastern Europe and the Newly Independent States (MFC for CEE and the NIS). The survey collected data on MFI governance and performance. The second survey was conducted in 2001 by the same regional network. In this survey, MFIs reported their performance, organizational and product characteristics for the period 1998-2001. Since 2000, many MFIs have been sending annual reports to the MFC for CEE and the NIS and their initial profiles were updated for 2002 by this organization's staff. The third survey focused specifically on governance and was conducted in 2002 by the author in cooperation with the MFC for CEE and the NIS. The data on MFI performance, board characteristics and mechanisms of external control were used to develop the database.

The microfinance industry is new in Central and Eastern Europe and the Newly Independent States and not all MFIs had a board in place at the time the survey was conducted. In fact, in 2001, of the 140 organizations (including credit unions and cooperatives) that participated in the survey only 71 had a

[5] Donors fund both for-profit and non-profit MFIs and this paper models exactly a situation where donors fund both NGOs and for-profit firms in the first period and only the efficient organizations in the second period. As the microfinance industry matures, donors are increasingly concerned with efficiency and are willing to fund only the efficient MFIs so the prediction that the lending/saving technology, and not staff wages, will determine survival is an important insight. A caveat of this model suggests that wages could even be lower if personnel are very committed to the MFI mission.

board. These 71 MFIs were contacted in 2002 and asked to complete a second survey with detailed questions on governance. The response rate was nearly 50% as 34 organizations completed the survey.

Credit unions and cooperatives (24 organizations) were excluded from the database because they have distinctively different governance.[6] The resulting sample size is even smaller since many MFIs turned in incomplete surveys, or reported performance for only one year and their information could not be used in panel data analysis. Sample size also varies across performance measures because many MFIs reported only a few performance indicators. The staff of the Microfinance Center collected and added additional performance measures to the database.

Variables used in the regression analysis are defined in Table 1. In microfinance, performance is measured in terms of outreach and sustainability. Sustainability is measured by accounting-based indicators. In general, accounting measures are considered more appropriate for long–term studies because managers may be able to manipulate financial statements for a year but their ability to manipulate statements for longer periods is limited (Bhagat and Jefferis, 2002). In this analysis sustainability is measured by return on assets (ROA), and by operational self-sustainability (OSS). Operational self-sufficiency measures how well the MFI can cover its costs through operating revenues. It is a better measure in this context because ROA is self-reported and does not necessarily include the value of donations, in-kind subsidies and inflation that MFIs should be incorporating in this ratio.

Outreach, in turn, is measured in two dimensions—breadth and depth. Breadth of outreach is measured by the logarithm of the number of active borrowers; that is, borrowers who currently have a loan. Depth of outreach is measured by a variable *DEPTH*, which is the average loan size divided by the annual GDP per capita, all in US dollars.[7] Smaller value of this variable is proffered because smaller values indicate that poorer people are being served. Conversely, higher values of *DEPTH* indicate that wealthier clients are being served. Therefore, from a poverty-alleviation perspective, a negative impact on *DEPTH* is preferred because it indicates that this variable improves the depth of outreach by helping serve poorer people.

Table 2 presents the summary statistics of the variables used in the regression analysis. The values are the averages for all applicable years. Numerous control variables are used to account for the differences in MFIs and in the conditions in which they operate. Data on individual characteristics include MFI size measured as the logarithm of total assets, MFI age in years, and MFI type—NGO, Non-bank Financial Institution, and Bank which is the omitted dummy in the regression analysis.

Differences in economic conditions across countries are controlled for by the size of the economy (*Economy Size*) measured by logarithm of GDP and by the average inflation rate (*Inflation*) measured by the average consumer price index. Differences in institutional development across countries are captured by three indexes computed by the EBRD. These indexes approximate the level of banking sector reform (*BSR*), regulations that promote competition (*CP*), and infrastructure reform (*IR*). The first index captures the level of regulation of MFIs and their competitors. The last two indexes affect clients. If clients operate in a repressive environment, with poor infrastructure and in a regulatory environment that stifles competition, then such clients will be more difficult to serve in a profitable manner, holding constant the effort of managers and board members.

Discussion of the Results

The MFI board is an important governance mechanism for MFIs in Central and Eastern Europe and the Newly Independent States. Results on the effect of board size and board independence on MFI profitability and outreach are interesting. Agency theory suggests that board independence influences MFI performance positively. Indeed, in Table 4 the coefficient on the proportion of insiders on the board is negative for all the performance measures but it is statistically significant only when performance is

[6] The most distinctive feature is the rule "one person, one vote," which changes the decision making process.
[7] GDP per capita data were obtained from the European Bank for Reconstruction and Development (EBRD).

measured by ROA. On average replacing one director with an insider lowers ROA by 6.6 percentage points.[8]

The specification for OSS in Table 4 also shows results consistent with the literature that finds a negative relationship between board size and financial results. Holding all other factors fixed, one additional board member lowers OSS by 10 percentage points.

Board diversity matters in Central and Eastern Europe and the Newly Independent States (Table 5). Boards with higher proportions of women on the board reach more and poorer borrowers, and have higher returns on assets. Specifically, replacing one board member with a woman would help reach 48 percent more borrowers, improve ROA by 3.5 percentage points and lower the index of outreach by 57 percentage points (equivalent to serving poorer borrowers). Replacing one board member with a donor would help the MFI serve poorer clients (the index of depth of outreach would fall 35 percentage points) but it would also lead to fewer borrowers (by 35 percent), and lower levels of OSS (by 25 percentage points). Donors' emphasis on serving poorer borrowers may be diverting attention from sustainability. Furthermore, the ability of donor representatives to raise funds may bring in easy money, and thus lower incentives to achieve high level of OSS. As expected, board members with banking and financial skills improve sustainability (replacement of a board member with a financier improves ROA by 4.25 percentage points and OSS by 17 percentage points) without affecting outreach. Somewhat surprisingly, local businesses representatives on the board do not affect sustainability but improve breadth of outreach (one replacement with such a board member by 42 percent), which indicates that this category may include "useful board members."

Results concerning the role of clients on the board are interesting. This category of board members affects sustainability positively (OSS would be improved by 27 percentage points for a replacement with a client), but this would be at the expense of depth, as clients-board members seem to be pushing for serving wealthier borrowers (one replacement by a client would increase the index of depth of outreach by 80 percentage points).

As suggested by the literature on non-profit firms, incentives that align the interest of managers with the interests of stakeholders work differently in microfinance. MFI performance is not affected by the type of wage; that is, it does not matter whether managers are paid a fixed wage, or fixed wage plus a performance-based bonus (Table 6). What matters is that managers are adequately compensated, as lower wages affect outreach negatively. Everything else equal, an underpaid manager reaches 2.4 times less borrowers than a manager who is adequately or overcompensated. Wages higher than those in alternative employment do not lead to significant improvements in outreach and sustainability, but this specific result should be regarded with caution because answers to questions on income are notoriously unreliable. More experienced managers seem to be interested in lending to poorer borrowers, but the magnitude of this effect is small—10 extra years of experience would lower the index of depth of outreach by only 35 percentage points.

The empirical analysis shows that economic, institutional and MFI specific factors should be taken into consideration when evaluating the performance of MFIs and their managers. Size of the economy impacts positively outreach and sustainability, while high inflation harms both. Banking sector reform influences sustainability negatively but improves depth of outreach, perhaps because competition from other banks forces MFIs to serve poorer clients. Infrastructure reform improves both outreach and sustainability, as it decreases costs to MFIs and their clients. Improvement in competition policy impacts depth by making wealthier borrower more attractive. Everything else equal, NGOs and non-bank financial institutions have about 200 percentage points better depth of outreach; that is, these institutions serve significantly poorer borrowers.

[8]Replacing one board member refers to replacing one board member of a type not affecting performance with a type affecting performance. The calculation is based on 0.17 increase in the proportion of the relevant board member which is about one person on a board consisting of 6 board members (the average value for the sample).

Conclusion

This paper studies how governance mechanisms affect performance of MFIs in Central and Eastern Europe and the Newly Independent States. Using insights from the corporate governance literature, the literature on non-profit boards and the literature on boards of banks, the paper examines the impact of external mechanisms of control, management remuneration, and board independence and diversity, while holding constant institutional, macroeconomic and MFI-specific factors. Not all known governance mechanisms affect performance and moreover, different factors affect outreach and sustainability.

Consistent with other studies on board size and independence, this paper finds that in microfinance larger boards and boards with higher proportion of insiders have worse financial results. Policies to promote board diversity seem appropriate. The presence of women on the board improves depth and breadth of outreach as well as sustainability. Somewhat surprisingly, local businessmen on the board do not affect sustainability but improve breadth of outreach while members with diverse skills (the category "other") improve sustainability. The pursuit of both outreach and sustainability, it seems, may create difficulties for stakeholders who, by being represented on the board, hope to protect their interest. For example, results show that donor representatives improve depth of outreach but worsen breadth of outreach and sustainability. On the other hand, as expected, financiers promote sustainability.

The analysis sheds light on an important question: "Should MFI clients be allowed on the board?" Advocates have argued that clients are stakeholders because their welfare is affected by the performance of the organization, and therefore clients should be represented on the board. Results here show that having clients as board members improves sustainability at the expense of depth of outreach; that is, at the cost of shifting the focus toward serving richer borrowers.

This study finds that traditional mechanisms designed to align the interests of managers with those of other stakeholders have a limited role in microfinance. Performance–based compensation of managers does not improve MFI performance. However, offering lower salary so that only managers committed to the mission would take the job (as suggested by the NGO literature) is ineffective because MFIs with underpaid managers achieve less outreach. Finally, manager experience does not affect sustainability and its impact on depth of outreach is small in magnitude.

This paper presents the first evidence on the link between governance mechanisms and performance in microfinance. Clearly, while some traditional governance mechanisms seem to work, more comprehensive data collection and more research is needed to better understand how various governance mechanisms affect the performance of microfinance institutions.

Table 1. Definition of Variables

Variable	Definition
ROA	Return on assets; measures how well the MFI uses its total assets to generate returns; since self-reported may not be adjusted for grants and donations
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.
Log (No. active borrowers)	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
DEPTH	Average outstanding loans size / GDP per capita in $US. Higher values mean that the MFI serves richer borrowers
MFI age	Number of years since inception
Log(Total Assets)	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.
Insiders	The proportion of voting board members that are also employees of the MFI
Independent	The proportion of board members who do not have an affiliation with any of the stakeholders of the MFI
Board Size	Number of board members
Fixed Wage	A dummy that equals one if the manager receives a fixed salary, zero otherwise
Higher Wage	A dummy that equals one if the manager estimated that he is paid more than what he could get at a similar job
Lower Wage	A dummy that equals one if the manager estimated that he is paid less than what he could get at a similar job
Women	The proportion of women on the board
Donor	The proportion of board members who represent donors or grant-giving organization
Financiers	The proportion of board members with financial skills
Local Businessmen	The proportion of board members who are local businessmen
Clients	The proportion of clients on the board
Other	The proportion of other representatives; excludes government representatives and community leaders.
Experience	The number of years of experience of the manager
Economy size	Logarithm of the total GDP (gross domestic product of the country) for year *t*
Inflation	Average annualized consumer price index
IR	Index of infrastructure reform; higher values indicate better infrastructure, varies from 1 to 6
BSR	Index of the banking sector reform; varies from 1 to 6; higher values indicate higher level of development
CP	Index of competition policies: higher values indicate better policies, varies from 1 to 6.
NGO	The MFI is an NGO, and zero otherwise
Non-Bank FI	The MFI is a non-bank financial institution, and zero otherwise

Table 2: Summary Statistics

Variable	No. of observations	Mean	Std. Dev.
ROA (%)	166	3.038	29.290
OSS (%)	215	91.990	45.380
No. Active Borrowers	380	7,268	64,943
DEPTH (%)	327	425	134
Total Assets ($ thousands)	189	6,437	26,935
Have_Board	435	0.773	0.420
Bsize	268	6.09	2.258
Women	258	0.232	0.230
Donor	259	0.183	0.301
Financiers	258	0.209	0.274
Local Businessmen	258	0.127	0.177
Clients	259	0.040	0.138
Others	258	0.036	0.140
Insider	141	0.115	0.187
Independent	138	0.582	0.332
Meetings	138	4.971	2.991
Higher Wage	170	0.118	0.323
Lower Wage	170	0.324	0.469
Fixed Wage	138	0.768	0.424
Experience	170	14.338	7.718
LogTa	193	13.913	1.910
MFI age	380	2.881	1.859
Economy Size	380	23.182	1.435
Inflation	380	0.181	0.301
IR	380	1.971	0.530
BSR	380	2.206	0.602
CP	380	1.865	0.623
NGO	380	0.659	0.475
Non-bank FI	380	0.087	0.283

Table 4: Random effect estimates of the impact of board independence

	ROA[1]	*OSS*[1]	*logNab*[1]	*DEPTH*[1]
Constant	-110.846	63.126	5.363	194.822
	(1.21)	(0.25)	(0.60)	(0.43)
Bsize	1.170	-9.852**	-0.078	0.798
	(0.72)	(2.36)	(0.49)	(0.10)
Insider	-39.774*	-115.559	-2.731	-39.352
	(1.66)	(1.55)	(1.18)	(0.34)
Independent	4.915	31.259	0.937	-65.408
	(0.42)	(0.98)	(0.83)	(1.16)
Controls				
LogTa	-0.376	0.198	0.056	-0.619
	(0.56)	(0.09)	(0.91)	(0.20)
MFI age	0.358	3.303	0.174*	3.098
	(0.25)	(1.06)	(1.76)	(0.62)
Economy Size	8.286	9.074	-0.020	36.256
	(1.61)	(0.65)	(0.04)	(1.55)
Inflation	-9.110	-214.949**	-7.811***	120.042
	(0.27)	(2.24)	(3.08)	(0.96)
IR	16.778***	50.698***	1.412***	-18.128
	(3.52)	(3.84)	(3.47)	(0.88)
BSR	-55.404***	-100.475**	-1.557	-158.651***
	(3.69)	(2.48)	(1.41)	(2.81)
CP	7.897	10.679	0.065	160.421
	(1.34)	(0.61)	(0.13)	(0.67)
NGO	9.900	-12.871	1.993*	-188.435***
	(0.89)	(0.26)	(1.66)	(3.15)
Non-bank FI	5.096	-80296	2.042	-164.891**
	(0.44)	(0.16)	(1.61)	(2.49)
R-squared (overall)	0.54	0.55	0.55	0.58
Observations	56[2]	65	75	71

Absolute value of z statistics in parentheses, * significant at 10%; ** significant at 5%; *** significant at 1%

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
[1] The sample includes only MFIs with a board.
[2] Includes total number of observations from the 2002 governance survey. The number of observations varies across measures of performance because of incomplete performance data.
[3] Number of groups with at least 2 complete observations per year.

Table 6: Random effect estimates of the impact of board diversity

	ROA[1]	*OSS*[1]	*logNab*[1]	*DEPTH*[1]
Constant	48.125	1.589	-2.109	1661.233***
	(0.89)	(1.00)	(0.50)	(5.17)
Bsize	-2.650*	-0.083	0.125	-4.574
	(1.79)	(0.02)	(1.22)	(0.57)
Women	21.028*	-19.576	2.335**	-341.124***
	(1.69)	(0.52)	(2.30)	(4.30)
Donor	-23.588	-115.698**	-2.072*	-218.956**
	(1.60)	(2.21)	(1.70)	(2.36)
Financiers	24.973*	107.476**	0.410	137.657
	(1.73)	(2.36)	(0.35)	(1.55)
Local Businessmen	14.629	19.475	2.060**	94.438
	(1.14)	(0.52)	(2.13)	(1.17)
Client	18.956	160.007**	-1.055	471.853***
	(0.88)	(2.44)	(0.74)	(4.38)
Others	43.132***	46.169	-0.602	7.742
	(3.12)	(1.09)	(0.51)	(0.03)
Controls				
LogTa	-0.192	0.248	0.129**	-5.208
	(0.23)	(0.11)	(2.41)	(1.16)
MFI age	-0.589	2.452	0.209***	-5.104
	(0.38)	(0.73)	(2.72)	(0.80)
Economy Size	-3.642	-1.376	0.346*	-40.698***
	(1.55)	(0.19)	(1.82)	(2.79)
Inflation	-23.013	-121.26*	-6.112***	-123.024
	(0.80)	(1.77)	(3.92)	(0.94)
IR	17.783***	51.179***	1.292***	5.398
	(3.22)	(3.56)	(3.73)	(0.19)
BSR	-11.050	-59.090**	-2.031***	-63.420
	(1.25)	(2.48)	(3.69)	(1.38)
CP	4.067	3.283	-0.202	86.475***
	(0.67)	(0.21)	(0.57)	(2.91)
NGO	-6.400	-19.035	0.644	-201.347***
	(0.58)	(0.41)	(0.72)	(2.99)
Non-bank FI	-10.109	-23.614	-0.037	-58.869
	(0.87)	(0.50)	(0.04)	(0.79)
R-squared (overall)	0.46	0.38	0.66	0.60
Observations	81[1]	92	106	94
Number of MFIs	35[2]	36	41	37

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Table 7: Random effect estimates of the impact of managerial remuneration

	ROA[1]	*OSS*[1]	*logNab*[1]	*DEPTH*[1]
Constant	-95.377	-344.276	2.695	259.444
	(1.08)	(1.53)	(0.42)	(0.76)
Higher Wage	10.768	4.941	-0.891	-46.130
	(0.90)	(0.21)	(1.17)	(1.11)
Lower Wage	-7.4	-27.337	-2.406***	33.224
	(0.92)	(1.29)	(3.78)	(0.92)
Fixed Wage	8.489	27.677	0.658	-2.475
	(0.98)	(1.33)	(0.98)	(0.07)
Experience	0.057	0.619	0.021	-3.542*
	(0.13)	(0.57)	(0.61)	(1.81)
Controls				
LogTa	-0.61	0.138	0.042	0.497
	(0.93)	(0.06)	(0.73)	(0.17)
MFI age	-0.81	2.956	0.107	5.389
	(0.58)	(0.89)	(1.20)	(1.12)
Economy Size	7.47	27.546**	0.064	-35.973*
	(1.47)	(2.13)	(0.18)	(1.87)
Inflation	-2.442	-213.378**	-9.030***	153.426
	(0.08)	(2.21)	(3.94)	(1.26)
IR	18.197***	44.572***	1.390***	-20.170
	(3.82)	(3.20)	(3.71)	(1.00)
BSR	-48.422***	-122.749***	-1.2	-162.189***
	(3.23)	(3.15)	(1.21)	(2.98)
NGO	17.368	-6.890	2.658***	-212.801***
	(1.56)	(0.15)	(2.83)	(4.27)
Non-bank FI	8.034	-7.401	2.532***	-223.141***
	(0.70)	(0.16)	(2.61)	(4.06)
R-squared (overall)	0.53	0.53	0.55	0.66
Observations	56[1]	65	75	71
Number of MFIs	22[2]	23	26	25

Absolute value of z statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%
[1] The sample includes only MFIs with a board.
[2] Includes total number of observations from all applicable questions from the 2002 survey. The number of observations varies across measures of performance because of incomplete performance data.
[3] Number of groups with at least 2 complete observations per year.

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